

Response to Request for Proposals
State Project No.: 0029-M03-371, C501, P101, R201
Federal Project No.: STP-5104 (299)
Contract ID Number: C00118880DB114



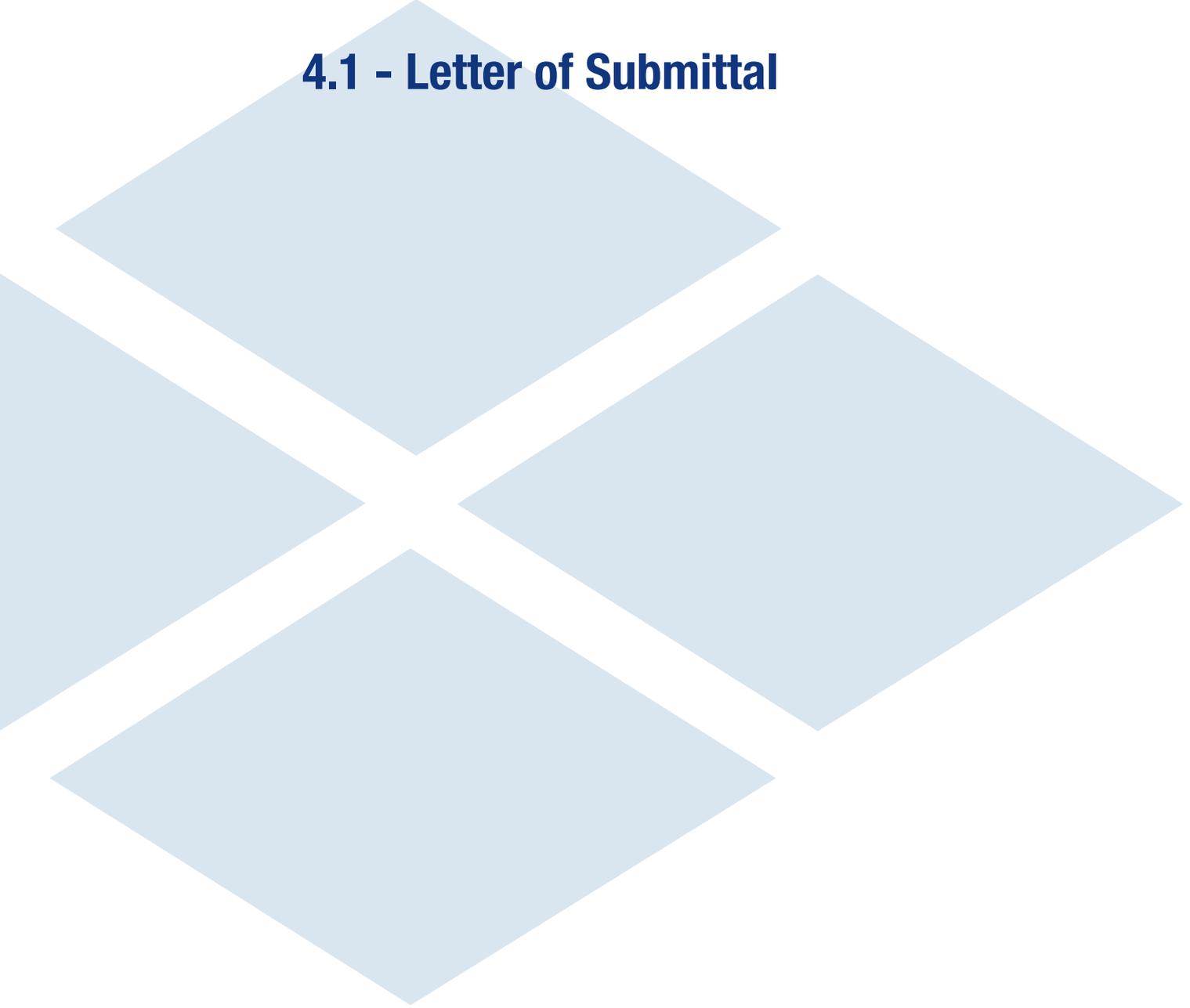
January 24, 2023 – Electronic Copy

Transportation Improvements at Hydraulic Road and US 29

City of Charlottesville and Albemarle County, Virginia



4.1 - Letter of Submittal





January 24, 2023

Mr. Bryan W. Stevenson, P.E., DBIA
Alternative Project Delivery Division
Virginia Department of Transportation
1401 East Broad Street
Annex Building, 5th Floor
Richmond, Virginia 23219

RE: Transportation Improvements at Hydraulic Road and US 29
Contract ID No.: C00118880DB114
4.1 Letter of Submittal

Dear Mr. Stevenson:

Shirley Contracting Company, LLC (Shirley), as the Offeror, and Dewberry Engineers Inc. (Dewberry), as the Lead Designer, are pleased to submit our Team's Technical Proposal for the Transportation Improvements at Hydraulic Road and US 29 Project (the Project). Our Team will provide the Virginia Department of Transportation (VDOT) and the traveling public with an unequalled level of assurance that the Project is completed successfully and exceeds the priorities established, while limiting risk to all stakeholders.

4.1.2 - 4.1.3 Declarations: Should Shirley be selected, it is our intent to enter into a contract with VDOT for the Project in accordance with the terms of the Request for Proposal (RFP). Further, the offer represented by our Technical and Price Proposals will remain in full force and effect for one hundred twenty (120) days after the date the Price Proposal is actually submitted to VDOT.

4.1.4 Point of Contact: Garry Palleschi, Vice President, Shirley Contracting Company, LLC
8435 Backlick Road, Lorton, VA 22079 | (P) 703.550.3579
(F) 703.550.9346 | (E) gpalleschi@shirleycontracting.com

4.1.5 Principal Office Gregory Smith, Division President, Shirley Contracting Company, LLC
8435 Backlick Road, Lorton, VA 22079 | (P) 703.550.8100

4.1.6 Final Completion Date: November 3, 2025

4.1.7 Unique Milestone #1 Date: September 24, 2024

4.1.8 Proposal Payment Agreement: An executed Proposal Payment Agreement Attachment 9.3.1 is included in the Appendix.

4.1.9 Certification Regarding Debarment: Signed Certification Regarding Debarment Forms from all team members are included as an attachment in the Appendix.

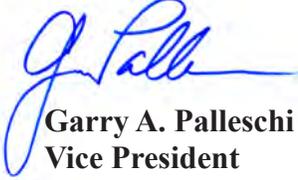
4.1.10 DBE Participation Goal: Shirley commits to achieving a 12% DBE participation goal for the entire value of the contract.

4.1.11 Confirmation of Commercial and Professional Registrations: We confirm that all commercial and professional registration requirements contained in our Statement of Qualifications are complete and accurate and that the Offeror, and business entities on the Offeror's Team, remain in good standing with

all applicable regulatory bodies and are eligible to provide the services required on the Project.

On behalf of the entire Shirley/Dewberry Team, we thank VDOT for the opportunity to submit this Technical Proposal and look forward to your favorable review.

Sincerely,



Garry A. Palleschi
Vice President

4.2 - Offeror's Qualifications



4.2 Offeror's Qualification

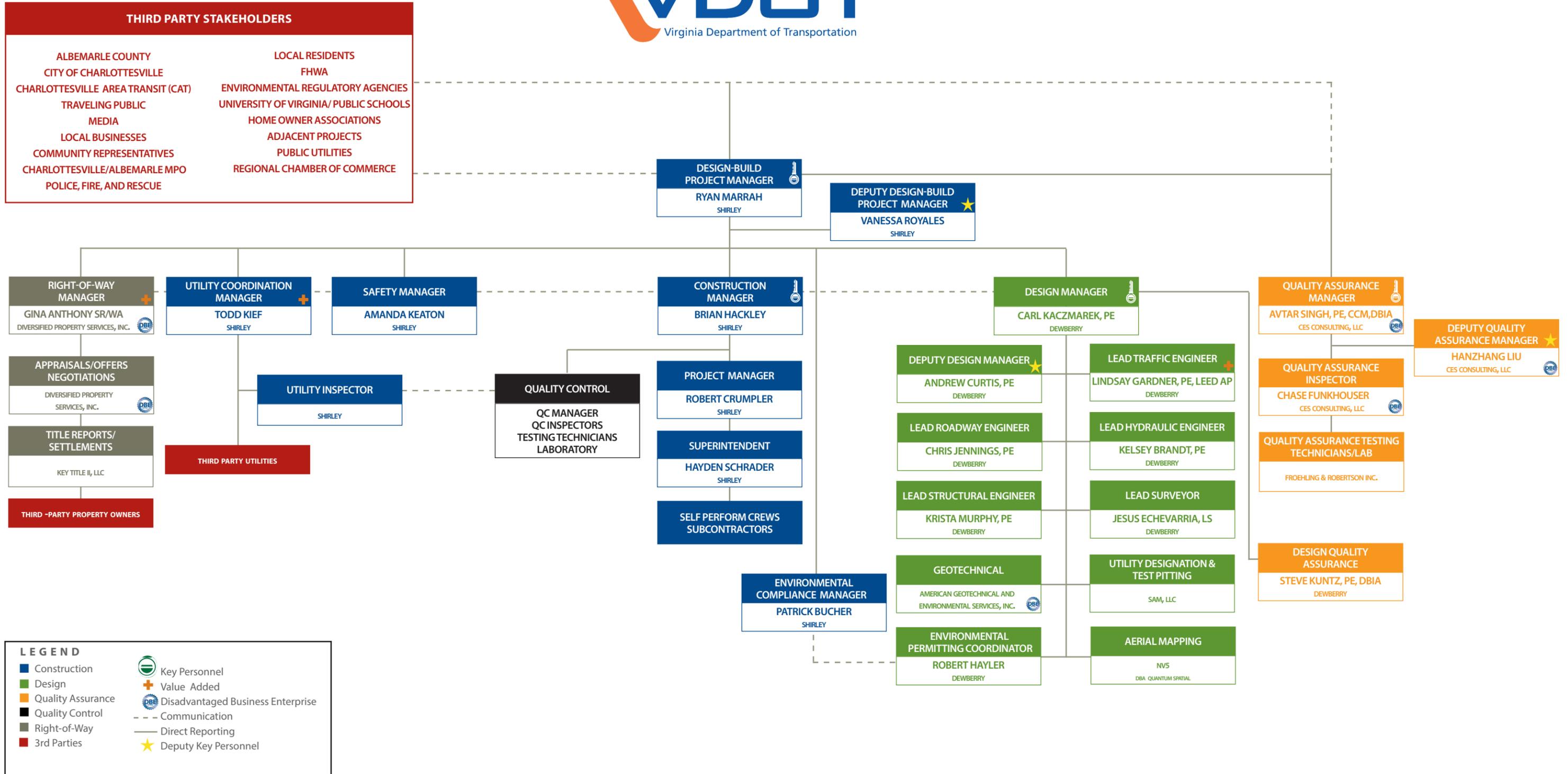
4.2.1 Confirmation

We confirm that the information contained in our Statement of Qualifications (SOQ) remains true and accurate. As allowed by Section 4.2 of the RFP, our Team intends to include Vanessa Royales as Deputy Design-Build Project Manager (DDBPM), Andrew Curtis, P.E. as Deputy Design Manager (DDM), and Hanzhang Liu as Deputy Quality Assurance Manager (DQAM). Resumes for each of these positions are included as an Attachment in the Appendix. In addition, per Part 2 Section 2.13 Utilities, we are adding the required position of Utility Inspector to our Organizational Chart.

The Organizational Chart shown as Figure 4.2.1.1 has been updated to reflect the addition of the DDBPM, DDM, DQAM, and Utility Inspector. As there are no other changes to our SOQ, an updated narrative is not required.



FIGURE 4.2.1.1 ORGANIZATIONAL CHART



4.3 - Design Concept

4.3 Design Concept

4.3 Design Concept

The completion of the Transportation Improvements at Hydraulic Road and US 29 Project (the Project) addresses mobility and safety for the traveling public along US 29 and Hydraulic Road in Albemarle County and the City of Charlottesville. These roadways experience extensive delays and congestion as they are frequently used as alternate routes for US 29 and US 250 Bypass. Connectivity to pedestrian facilities is also a safety issue as opportunities for safe crossings of US 29 and Hydraulic Road are limited.

The proposed improvements are comprised of four Elements as listed below. The color coding shown remains consistent throughout this proposal.

| Project Element Key |
|--|
| Element A: Hydraulic Road & US 29 Intersection |
| Element C: Pedestrian Bridge over US 29 |
| Element D: Roundabout at Hydraulic Road and Hillsdale Drive |
| Element E: Access Management Improvements on Hydraulic Road |

Our Team brings unparalleled experience delivering a similar scope of work having recently completed two pedestrian bridges over the Capital Beltway and Dulles Toll Road in Tysons and eight roundabouts throughout the Commonwealth. We have relied on this experience to identify enhancements that will improve safety, lower costs, reduce impacts to stakeholders, and provide early beneficial use of Project Elements. In addition, our Team’s concept:

- Meets or exceeds all requirements listed in the Design Criteria Table;
- Ensures that the limits of construction 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 RF or Addendum.

Our Team’s proposed enhancements are described in detail in the following sections, summarized in Table 1, and depicted in our Volume II Design Concept.

Table 1: Proposed Enhancements

| Location/Design Element | Enhancement | Project Benefit |
|----------------------------------|---|--|
| Element A | | |
| Northeast Quadrant Curb Ramp | Provide landing areas within the Type A curb ramp | <ul style="list-style-type: none"> ■ Improves safety by removing the landing area from pavement area |
| Meineke Car Care Center Entrance | Increase buffer strip by 1 foot | <ul style="list-style-type: none"> ■ Eliminates conflict with existing drainage structure on the west side of the entrance ■ Reduces cost |
| Element C | | |
| Pedestrian Bridge Location | Shifts crossing 12 feet to the north as compared to the RFP | <ul style="list-style-type: none"> ■ Eliminates conflict with existing electric duct bank ■ Minimizes impacts to 2” gas line ■ Simplifies construction sequencing ■ Minimizes schedule impacts from utility relocation ■ Reduces cost |

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| Location/Design Element | Enhancement | Project Benefit |
|---|--|---|
| Pedestrian Bridge Pier Location | Shifts pier 4 feet to the west as compared to the RFP | <ul style="list-style-type: none"> Eliminates conflict with existing 8" gas line Simplifies construction sequencing Minimizes schedule impacts from utility relocation Reduces impact to traveling public Reduces cost |
| West Approach Ramp Terminus | Shifts transition from the approach ramp to existing sidewalk 25 feet to the south | <ul style="list-style-type: none"> Reduces length of retaining wall by providing graded area Eliminates impacts to fiber optic junction boxes/manholes Eliminates RFP barrier that created a strike hazard Reduces cost |
| Pedestrian Bridge Superstructure | Utilizes three-girder system with concrete bulb-T beams | <ul style="list-style-type: none"> Increases redundancy Minimizes VDOT's long-term inspection and maintenance Increases corrosion resistance Reduces cost |
| Pedestrian Bridge Abutments | Provides semi-integral abutments with approach slabs | <ul style="list-style-type: none"> Eliminates transverse joint at end of deck Minimizes VDOT's long-term inspection and maintenance |
| Pedestrian Bridge Longitudinal Grade | Adjusts vertical profile to improve drainage | <ul style="list-style-type: none"> Reduces spread Eliminates bridge scuppers Improves pedestrian safety Minimizes VDOT's long-term inspection and maintenance |
| US 29 Signal at Seminole Court | Adds supplemental signal head | <ul style="list-style-type: none"> Improves traffic signal visibility Improves safety |
| Element D | | |
| Vertical Profile of Roundabout and Hydraulic Road | Improves the profile to more closely match the existing vertical curvature | <ul style="list-style-type: none"> Reduces depth of cut by up to 2.5 feet Shortens height and length of retaining wall in northeast quadrant Minimizes utility impacts Reduces limits of full depth pavement reconstruction Reduces cost |
| Drainage Layout | Optimizes inlet and storm sewer locations | <ul style="list-style-type: none"> Minimizes utility impacts Reduces cost |
| South and East Leg Refuge Islands | Improves pedestrian crossing alignment | <ul style="list-style-type: none"> Improves pedestrian safety Provides a direct path for visually impaired pedestrians |
| Element E | | |
| Hydraulic Road Median Island at Brandywine Drive | Maintains existing concrete median | <ul style="list-style-type: none"> Improves safety by physically restricting left turns from Brandywine Drive Reduces cost |
| US 250 Spur Geometry | Shifts alignment away from transmission tower | <ul style="list-style-type: none"> Eliminates retaining wall at transmission tower Improves vehicle turning movements and driver expectations Reduces cost |
| Drainage Layout | Optimizes inlet and storm sewer locations | <ul style="list-style-type: none"> Eliminates conflict with 8" sanitary sewer Reduces cost |
| Shared Use Path Curb Ramps | Provides full width ramps to match shared use path width | <ul style="list-style-type: none"> Improves safety by minimizing potential pedestrian and bicyclist conflict |

| Location/Design Element | Enhancement | Project Benefit |
|--|---|---|
| All Elements | | |
| CG-12 Type B Curb Ramps, Median Cut-Throughs, and Refuge Islands | Reduce curb height from 6” to 4” per VDOT RDM | <ul style="list-style-type: none"> ■ Improves safety by posing less of a tripping hazard for pedestrians ■ Improves safety by reducing the risk of bicycle pedals striking the curb |
| SWM Management Approach | Use of Scenario 5 | <ul style="list-style-type: none"> ■ Reduces nutrient credit requirement ■ Shifts location of 1% analysis point, reducing potential impacts to existing storm sewer ■ Reduces cost |

4.3.1 Conceptual Roadway Plans

Our Team’s design concept and associated enhancements, developed in accordance with the requirements of the RFP, are described below:

Element A

Improvements at this intersection reduce congestion by eliminating left turns from Hydraulic Road to US 29. This improves traffic operations and allows for realignment of the through lanes on Hydraulic Road to reduce the severity of the existing lane shift through the intersection. Additionally, our concept adds a signalized at-grade pedestrian crossing to improve pedestrian access and safety.

Element C

The pedestrian bridge over US 29 and associated sidewalk connections near Zan Road will greatly improve pedestrian connectivity and safety along US 29. Between Angus Road and Rio Road, there are currently no other marked pedestrian crossings, an approximate gap of 2 miles. Not only will the pedestrian bridge provide a safe crossing between these two points, it will also provide access to two major pedestrian generators - Stonefield Commons and Seminole Square Shopping Center. Bus stops with covered shelters will be constructed on either side of US 29 to further promote network connectivity.

Element D

The proposed roundabout at the intersection of Hydraulic Road and Hillsdale Road will provide safety, operational, and pedestrian improvements. This will be a hybrid roundabout with two through lanes provided for Hydraulic Road and one circulatory lane that provides access to Hillsdale Road and the Kroger Entrance. Pedestrian crosswalks will be provided for all approach legs, including Rapid Rectangular Flashing Beacons for added visibility at the multi-lane approaches. Implementing this roundabout also allows for the operational improvements described in Elements A and E by accommodating U-turn movements.

Element E

The proposed improvements at Hydraulic Road/Brandywine Drive and Hydraulic Road/Michie Drive, will improve safety and operations by restricting access to right-in, right-out and left-in movements only. Additionally, the right lane of Hydraulic Road from US 250 to Michie Drive will be converted to right turn only lane. The improvements will reduce conflict points and delays associated with the crossing movements. Alternative movements for the proposed turning restrictions will be achieved using the roundabout.

a) General Geometry

The general geometry is depicted in our Volume II Design Concept including horizontal curve data and associated design speeds, superelevation rates, and the number and widths of lanes and shoulders. Table 2 provides a summary of our Team’s design criteria meeting the RFP requirements.

Table 2: Design Criteria

| Location | Functional Classification and Geometric Standard | Design Speed (mph) | Superelevation Standard/ Maximum Rate | Minimum Lane Width | Number of Lanes (each direction) |
|-------------------------------|--|--------------------|---------------------------------------|-----------------------|---|
| US 29 | Urban Principal Arterial (GS-5) | NB:40, SB:45 | Match Existing | 11' or Match Existing | NB:3 (south of 743), 4 (north of 743), SB:3 |
| Hydraulic Road | Urban Minor Arterial (GS-6) | 35 | Match Existing | 11' or Match Existing | EB:2, WB:2 |
| US 29 | Urban Principal Arterial (GS-5) | 45 | Match Existing | 11' or Match Existing | NB:4, SB:5 |
| Shared Use Path, Ramp, Bridge | RDM Appendix A(I) | RDM Appendix A(I) | 2% Max | 10' | 1 |
| Hydraulic Road | Urban Minor Arterial (GS-6) | 35 | TC-5.11U (4% Max) | 11' or Match Existing | 2 |
| Hillsdale Drive | Urban Collector (GS-7) | 20 | TC-5.11ULS (2% Max) | 11' or Match Existing | 2 |
| Roundabout | NCHRP Report 672 | 20 | NCHRP Report 672 | 14'-17' | 1 |
| Kroger Entrance | N/A | 15 | N/A | 12' | 1 |
| US 250 Spur | N/A | 15 | 8% Max | 23' | 1 |
| Hydraulic Road | Urban Minor Arterial (GS-6) | 35 | Match Existing | 11' or Match Existing | EB:2, WB:1 |
| Brandywine Drive | Urban Collector (GS-7) | 25 | Match Existing | 16' | 1 |
| Michie Drive | Urban Local (GS-8) | 25 | Match Existing | 16' | 1 |

Consistent with existing conditions, the RFP, and the urban environment, shoulder sections are not proposed. For Element A, standard CG-3 will be provided adjacent to the US 29 travel lanes and standard CG-2 will be provided along Hydraulic Road or where required to match existing conditions. For Element C, standard CG-2/6 will be provided adjacent to the US 29 travel lanes to establish the bus turnouts, provide connections to existing curb, and replace curb impacted by construction activities. For Element D, standard CG-2/6 will be provided along Hydraulic Road, Hillsdale Drive, and the Kroger Entrance, with modified CG-3 along the roundabout truck apron. For Element E, standard CG-2/6 will be provided along Hydraulic Road, Brandywine Drive, and Michie Drive. As an enhancement, our Team proposes to reduce the curb height to 4 inches at all Elements where CG-12 Type B curb ramps, median cut-throughs, and refuge islands are provided. ***This will improve safety for pedestrians and bicyclists by posing less of a tripping hazard and reducing the risk of pedals striking the curb.***

b) Horizontal Alignments

Element A

Our Team's design concept focuses on reducing the lane shift as much as possible along Hydraulic Road and provides compliant pedestrian crossings and curb ramps. Enhancements include modifications at the Type A curb ramp in the northeast quadrant of the intersection to ***provide a landing area in the ramp.*** In addition, our concept ***increases the sidewalk buffer strip by 1 foot*** at the Meineke Car Care Center entrance ***to avoid conflicts with the existing drainage structure.***

Element C

Our Team's design concept includes design enhancements to reduce retaining wall heights and impacts to existing utilities. The proposed bridge is ***shifted approximately 12 feet to the north to avoid a conflict with the electric duct bank and 2" gas line*** and the pier is ***shifted approximately 4 feet to the west to avoid a conflict with the 8" gas line*** in the US 29 median. The west approach ramp transition is shifted

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approximately 25 feet to the south. This allows the retaining wall limits to be **reduced by approximately 50 feet** using appropriate benches and slopes between the proposed ramp and existing sidewalk. This adjustment **avoids impacts to the fiber optic junction boxes and manholes** adjacent to the existing sidewalk.

Element D

As noted in the RFP, the roundabout is a tilted-plane hybrid roundabout and 2-lanes fully within the circulatory roadway were not considered. Splitter islands are provided on all approaches in accordance with NCHRP Report 672 and are a minimum of 50 feet in length at all locations, except for the Kroger Entrance identified in the RFP Conceptual Plans. Pedestrian crosswalks will be provided at all legs of the roundabout with the addition of Rapid Rectangular Flashing Beacons for improved safety. Our design concept includes optimization of the alignment of the refuge islands at the south and east legs to **provide a more direct path for visually impaired pedestrians**, while maintaining a perpendicular crossing as much as possible in relation to the mainline roadway.

A critical element is the acceptance of the roundabout geometry by VDOT's Innovative Intersection Committee. Our Team has successfully completed this process on several projects in the region and is well versed in the expectations of the Committee. In order to expedite the process, our Team will submit a roundabout performance analysis package (fastest path, AutoTurn, intersection sight distance, stopping sight distance, and angle of visibility) to VDOT for preliminary review as plans are being developed. Our Team will then include the previously reviewed performance analysis package and all of the applicable plan submission requirements identified in Appendix A-3 of the VDOT Road Design Manual as part of the first plan submission to VDOT. This will enable the Committee to conduct a full review early in the design process, which will reduce the potential for design changes and schedule delays.

Element E

Upon evaluation of the RFP Conceptual Plan, the reduction in the median along Hydraulic Road at Brandywine Drive may be perceived as accommodating left-out movements and introduces the potential for drivers to be able to physically complete an illegal left-turn movement. To avoid these concerns, our Team's design concept **maintains the Hydraulic Road median island to provide a physical restriction of the left-out, while accommodating the appropriate design vehicles** with adjustments to the triangular island as shown in Figure 4.3.1.1. Additional improvements are shown at the US 250 Spur, which include horizontal alignment modifications **to remove curves separated by short tangents, to increase offsets to the transmission tower, and to accommodate full-width curb ramps**.

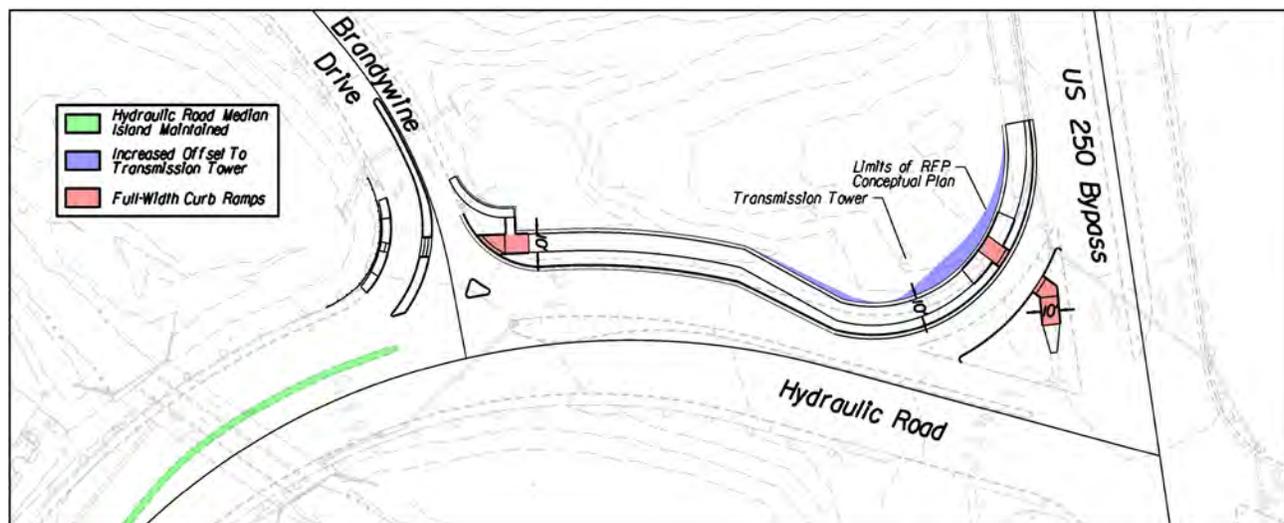


Figure 4.3.1.1 - Enhancements at Element E

c) Maximum Grades

Element A

Our Team's proposed grades are consistent with the RFP Conceptual Plan as no grade modifications are required to construct the median islands or pavement widening. Grades associated with the pedestrian crossings will be designed in accordance with VDOT and ADA requirements and the requirements identified in Attachment 2.2.

Element C

The maximum grades for each alignment are provided in Table 3 and meet the VDOT, AASHTO, and ADA criteria for each classification and associated design speeds, and the requirements identified in Attachment 2.2 of the RFP.

Table 3: Element C Maximum Grades

| Alignment | Maximum Allowable Grade | Maximum RFP Concept Grade | Maximum Proposed Grade |
|---------------------------------|--|--|--|
| US 29 | Match Existing | Match Existing | Match Existing |
| Shared Use Path/ Ramp/Bridge | 5.00% (without landings); 8.33% (with landings) | 5.00% (without landings); 8.33% (with landings) | 5.00% (without landings); 8.33% (with landings) |

The profile for the shared use path, ramps, and the bridge meets minimum and maximum grades, provides 17'-6" of vertical clearance over US 29, and ties to existing grades as quickly as possible to reduce construction limits and minimize utility impacts.

Element D

The maximum grades for each roadway shown in Table 4 meet the VDOT and AASHTO criteria for each roadway classification and associated design speeds, and the requirements identified in Attachment 2.2 of the RFP.

Table 4: Element D Maximum Grades

| Alignment | Maximum Allowable Grade | Maximum RFP Concept Grade | Maximum Proposed Grade |
|-----------------|-------------------------|---------------------------|------------------------|
| Hydraulic Road | 8.00% | 8.00% | 6.58% |
| Hillsdale Drive | 11.00% | 5.15% | 5.15% |
| Roundabout | 5.00% | 5.00% | 5.00% |
| Kroger Entrance | N/A | 10.00% | 10.00% |

The profiles for the roundabout and connecting roadways were developed to limit the vertical change from the existing profile as much as possible. Following the existing curvature around the roundabout while providing vertical curves consistent with a 20 mph design speed, allows our Design Concept to hold critical points along the Whole Foods curb return and at the Kroger Entrance. Combined with the tilted-plane of the roundabout, this reduces cut along the roundabout profile by approximately 1.5 feet. This allows an improved profile along Hydraulic Road, reducing the amount of cut there by up to 2.5 feet as shown in Figure 4.3.1.2. ***These improvements minimize impacts to existing utilities, reduce impacts to existing drainage, and reduce the length and height of the proposed retaining wall in the northeast quadrant. When compared to the RFP Conceptual Plans, our Team's design concept reduces the maximum grade from 8% to 6.58% along Hydraulic Road.***

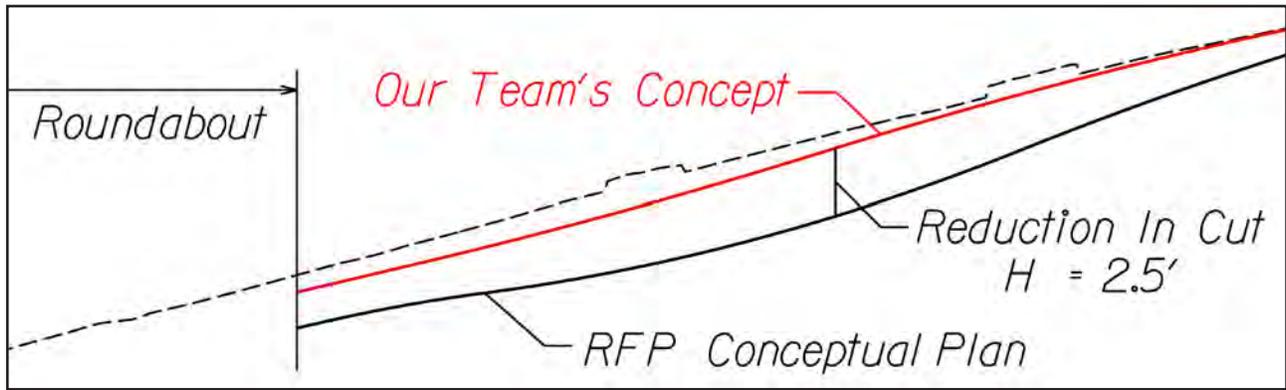


Figure 4.3.1.2 - Optimized Vertical Alignment

Element E

The maximum grades for each roadway are provided in Table 5 and meet the VDOT and AASHTO criteria for each roadway classification and associated design speeds, and the requirements identified in Attachment 2.2 of the RFP.

Table 5: Maximum Grades - Element E

| Alignment | Maximum Allowable Grade | Maximum Proposed Grade |
|------------------|-------------------------|------------------------|
| US 250 Spur | Existing (15%) | 14.71% |
| Hydraulic Road | Match Existing | Match Existing |
| Brandywine Drive | Match Existing | Match Existing |
| Michie Drive | Match Existing | Match Existing |

Our Team's proposed grades are consistent with the RFP Conceptual Plan as no modifications will be made to construct the median islands or mill/overlay along Hydraulic Road, Brandywine Drive, or Michie Drive. When compared to the RFP Conceptual Plan, our design concept also matches the maximum grade of the US 250 spur at 14.71%.

d) Typical Sections

The typical sections for each of the roadways are depicted in our Volume II Design Concept. All typical sections are consistent with VDOT requirements for each roadway and its associated classification, the RFP Conceptual Plans, and Attachment 2.2 of the RFP. Grading and ditch slopes will be provided at the appropriate widths and grades to meet clear zone and hydraulic analyses requirements, with side slopes no greater than 3:1 except for Element E where 2:1 slopes are permissible within VDOT right-of-way.

Element A

The typical sections include 11-foot lane widths (or match existing), 5-foot wide sidewalks, sidewalk buffer strip widths in accordance with the RFP, and 1-foot graded widths behind sidewalks. Maximum cross slopes, pavement sections, and incidental features are consistent with the RFP Conceptual Plans. Any lateral offset encroachments not identified for correction in the RFP Conceptual Plans will be addressed with the submission of Design Waiver No. 2.

Element C

The typical sections include 11-foot lane widths (or match existing), 5-foot sidewalk widths, 4-foot sidewalk buffer strip widths, 1-foot graded widths behind sidewalks, 10-foot wide shared use path with 2-foot shoulders on each side, and 3-foot graded width behind the shared use path. Maximum cross slopes, retaining walls, bridge structures, pavement sections, bus turnouts, and incidental features are consistent with the RFP Conceptual Plans.

Element D

The typical sections include 11-foot lane widths (or match existing) for Hydraulic Road and Hillsdale Drive and 14 to 17-foot lane widths for the roundabout, 5-foot sidewalk widths, 4-foot sidewalk buffer strip widths, and 1-foot graded widths behind sidewalks. Maximum cross slopes, pavement sections, and incidental features are consistent with the RFP Conceptual Plans. Design Waiver No. 1 and No. 2 will address existing and proposed substandard elements related to pedestrian access route geometrics and lateral offsets

Element E

The typical sections includes lane widths of 11-foot (or match existing) for Hydraulic Road and 23-foot for the US 250 Spur, 5-foot sidewalk widths, 4-foot sidewalk buffer strip widths, 1-foot graded widths behind sidewalks, 10-foot shared use path width, and 2-foot graded width behind shared use paths. Pavement sections and incidental features are consistent with the RFP Conceptual Plans. Design Waiver No. 1 will address proposed substandard elements related to pedestrian access route geometrics.

e) Conceptual Hydraulic and Stormwater Management Design

Our Team's hydraulic and stormwater management approach is consistent across each of the Project Elements, relying on existing and proposed topography to ensure we have an accurate and thorough understanding of the drainage patterns within the Project limits. Our Team includes replacement of all existing storm drainage and structures identified in the RFP. We will also perform inspection and assessments of all other drainage systems that are a functional element of the proposed drainage design to ensure that any substandard elements are addressed in consultation with VDOT.

Hydraulic Design Approach

Our drainage approach is based on utilizing the existing terrain to optimize the flow of existing and proposed runoff and maintain drainage divides as much as possible. Curb inlets are placed and sized in accordance with VDOT requirements to ensure spread and depth do not exceed allowable values during the appropriate design storm. Closed system storm sewer facilities will convey the collected flow into ditches, culverts, and stormwater management facilities for proper treatment and outfall controls. When compared to the RFP Conceptual Plans, ***alternative drainage layouts have been developed to reduce impacts to existing utilities***. Conflicts are avoided by moving inlet structures to not sit on top of utilities, relocating storm sewer from running parallel to or on top of existing utilities, and reducing the number of crossings. Our Team's drainage layout and conceptual design is reflected in our Volume II Design Concept.

Stormwater Management Approach

As outlined in the RFP, all stormwater treatment will be completed through the purchase of nutrient credits, and construction of on-site stormwater management facilities is not required. Stormwater management design will be in accordance with Part IIB Technical Criteria and will consider all improvements as one single project. This Project entails large areas of pavement reconstruction, particularly in the area of the proposed roundabout. Our Team will apply Scenario 5 of IIM-195.13 which allows the areas of pavement reconstruction to be removed from the Project site area. ***In combination with our design concept, this reduces the phosphorus removal requirement and the number of nutrient credits to be purchased.***

Five outfalls will receive runoff from the Project Elements. Detailed adequate outfall analyses will be completed for each location to ensure every outfall has appropriate capacity and to address water quantity requirements for the site. Utilizing Scenario 5 will provide an additional benefit towards water quantity requirements by allowing the 1% limit of analysis to be met sooner, which may reduce the limits of required storm sewer survey. It will also minimize the reduction in peak flow required for outfalls to meet the 1-year post-development peak flow based on the energy balance equation. All outfalls will connect into an existing storm sewer system, and each will be analyzed until the 1% point is reached.

f) Proposed Right-of-Way Limits

Improvements associated with each Element are within the existing and proposed right-of-way depicted on the RFP Conceptual Plans. No adjustments to right-of-way or easement limits are proposed for Element A due to the minimal amount of work along the outsides of the roadway and pedestrian facilities. Based on the enhancements proposed by our Team and discussed throughout this section, the following right-of-way and easement adjustments are proposed at the other Element locations:

Element C

The adjusted location of the pedestrian bridge avoids impacts to existing gas, electric and communication utilities, reducing the relocations required. Although not shown on the RFP Conceptual Plans, the easements associated with these utility relocations are reduced or avoided, resulting in less property and parking lot reconstruction impacts.

Element D

While proposed right-of-way limits remain consistent with the RFP Conceptual Plans, temporary easement impacts are reduced due to our optimized profile. The most significant improvement is related to avoidance of utility relocations. With our enhanced profile, many impacts to gas, water, sanitary, and communication utilities are avoided, eliminating the need to acquire additional easements for their relocations. Accordingly, the utility easement footprint is reduced as compared to what would have been required for the RFP Conceptual Plans.

Element E

Modifications to the US 250 Spur alignment increases the offset to the transmission tower and other existing utilities, minimizing utility relocations and easement acquisitions. Additionally, our optimized drainage layout along Hydraulic Road avoids impacts to the existing 8-inch sanitary sewer, eliminating acquisition of a new utility easement for relocation of that facility.

g) Proposed Utility Impacts

Proposed utility impacts, relocations, and mitigation strategies are described in greater detail in Section 4.4.2 and depicted in our Volume II Design Concept. Our Team's primary approach is to avoid or minimize impacts through the optimization of the RFP Conceptual Plans. Examples of these are included below:

Element C

Our concept includes several modifications to the layout of the pedestrian bridge to reduce utility impacts. These include an adjustment to the US 29 median pier to ***eliminate impacts to the 8-inch gas line***, an adjustment of the ramp connection to the existing sidewalk adjacent to southbound US 29 to ***avoid impacts to the fiber optic junction boxes and manholes***, and a shift of the pedestrian bridge north to ***avoid impacts by the east abutment to electric duct banks and gas lines adjacent to northbound US 29***.

Element D

Our Team's unique vertical profile at the roundabout eliminates utility impacts by reducing the depth of cut by as much as 2.5 feet. This maintains cover over existing utilities and ***minimizes relocations of a 6-inch gas line, 12-inch water line, and an 8-inch sanitary sewer***. Our drainage design at the southwest quadrant provides a pipe crossing to the Hydraulic Road median in lieu of running parallel and on top of existing utilities. This will further ***reduce impacts to the 6-inch gas line, electrical duct bank, and communications facilities*** adjacent to the sidewalk.

Element E

An anticipated impact associated with the RFP Conceptual Plans is due to impacts of the storm drainage along Hydraulic Road between US 250 and Brandywine Drive to an existing 8-inch sanitary line. As depicted in our Volume II Design Concept, we eliminated this impact with an alternative drainage layout.

h) Lighting

For Elements A and E, there is no proposed lighting or anticipated impacts to existing lighting.

Element C

Pedestrian scaled pathway lighting will be included on the ramps and pedestrian bridge. This will consist of bollard-style lighting with a consistent fixture used throughout the ramps and bridge to optimize maintenance and provide a consistent aesthetic. The bollard lighting provides advantages to the recessed or handrail-embedded lighting as the bollards can be more easily replaced in the future if necessary as they are not integral with another element. The bollards will be mounted on the curb that also supports the fence, staggered to not conflict with fence posts. Additionally, pedestrian scaled lights will be provided at the bus stops.

Element D

Lighting will be provided for both the roundabout along Hydraulic Drive and the associated pedestrian crossings in accordance with the latest IES RP-8 and VDOT's Traffic Engineering Design Manual. Light poles impacted along Hillsdale Drive will be relocated to new foundations or replaced. For each system, our Team will first develop and submit a photometric analysis package (with lighting design criteria) for review and approval prior to developing full lighting plans and electrical design.

i) Guardrail/Barrier

As noted in the RFP, the Project is within an urban environment where providing clear zone may not be feasible or practical. If not clearly identified for relocation in the RFP Conceptual Plans, upgrading and relocating hazards to meet current clear zone requirements may be outside of the scope of the Project and will be addressed in Design Waiver No. 2.

For Elements A and D, there is no proposed guardrail/barrier.

Element C

Consistent with the RFP Conceptual Plans, bridge pier protection is proposed in the US 29 median, adjacent to both directions of traffic. Guardrail and/or concrete barrier are not anticipated along the outsides of US 29. Handrail and fencing are being provided on the pedestrian bridge and approach ramps per the requirements of the RFP. As noted in the RFP, the Project is within an urban environment where providing clear zone may not be feasible or practical. However, our concept is focused on ensuring bridge elements are outside of the clear zone or crashworthy.

Element E

Minor adjustments to existing guardrail at the intersection of Hydraulic Road and Brandywine Drive will be implemented to accommodate modifications to pedestrian facilities. Additional guardrail and/or barrier are not anticipated.

j) Locations of Mill and Overlay/Build-Up of Pavement

The limits of mill and overlay/build-up are depicted in our Volume II Design Concept and are consistent with the limits shown in the RFP Conceptual Plans. There are no anticipated modifications to Element A.

Element C

Due to the nature of the proposed improvements, grade adjustments that require build-up are not anticipated and re-surfacing will only occur to repair disturbed pavement associated with lane shifts and the bridge construction.

Element D

When compared to the limits identified in the RFP Conceptual Plans, our limits of full depth replacement have been reduced due to the improved vertical profile of Hydraulic Road. Mill and overlay/build-up will be completed from the limit of the reconstructed pavement to the mill and overlay limit shown on the RFP Conceptual Plans.

Element E

Grade adjustments that require build-up are only anticipated on the US 250 Spur.

k) Other Key Project Features

Element A

Traffi Signals: Anticipated modifications include the removal of heads and signs for left turn movements from Hydraulic Road onto US 29, new and modified pedestrian signalization, and modified signal detection. *The Shirley Team commits to installing all applicable pedestrian equipment, signs, and markings to open the proposed pedestrian crossing of US 29 by September 24, 2024 as Unique Milestone #1.* This enhancement advances the addition of this marked crossing of US 29 at the intersection by 14 months, prioritizing the delivery of pedestrian safety.

Element C

Traffi Signals: As discussed in our Proprietary Meeting, stopping sight distance on northbound US 29 approaching Seminole Court will be reduced by construction of the pedestrian bridge. While it is acknowledged that stopping sight distance still meets minimum requirements, the reduced visibility may increase the probability of a driver missing the red indication or encountering an unexpected traffic queue. To address this, our Team, with VDOT's support, commits to *installing an additional signal head* mounted lower to the ground on the existing signal pole upright. This 3-section head will improve signal indication sight distance, improving safety along northbound US 29 and at the Seminole Court intersection.

Bus Stops: Two bus stops and shelters will be constructed, one on either side of US 29. Our Design Concept proposes a minor shift to the bus stop on the west side of US 29 to accommodate the shift of the pedestrian bridge to the north for avoidance of utility conflicts. Bus stops and shelters will be designed in accordance with the requirements of the RFP and the bus turnouts will be designed in accordance with the VDOT Road Design Manual.

Element D

Traffi Signals: The existing signal equipment will be removed and salvaged in accordance with contract requirements.

Textured Vein (Buffer) All multi-lane approach legs, departure legs, and circulatory lanes are separated by a 4-foot concrete colored and textured vein (buffer). These buffers will reduce the potential for path overlap and side swipe crashes, control vehicle speeds, and restrict access to the circulatory lane. The color and texture will match the concrete truck apron in accordance with the RFP requirements.

Landscaping: Approximately 2,000 square feet of landscaping will be provided primarily within the central island of the roundabout. Additional areas outside of the roundabout may be considered if planting areas are limited due to sight distance restrictions within the central island. This may include the replacement of impacted trees designated for removal, if appropriate.

All Elements

Additional Curb Ramp Locations: Our Team will evaluate the additional curb ramp locations identified in Part II, Section 2.2, Table 2.2 and provide replacement/repair recommendations to VDOT. Evaluation criteria will include visible deterioration or damage, placement of curb ramps, direction of crossings, presence of landing areas, ramp grades and cross slopes, presence or crosswalk markings, presence or correct installation of detectable warning surfaces, and improvements to opposing ramps. As noted in Part II, if replacements or repairs are to be completed, they will be addressed under a Work Order. Therefore, these replacements or repairs are not depicted in the Volume II Design Concept, identified in the Proposal Schedule, and will not be included in the Price Proposal.

4.3.2 Conceptual Structural Plans

Element C

Our Team reviewed the RFP documents and evaluated multiple configurations and alternatives for the pedestrian bridge crossing in Element C. Alternatives studied include different types of superstructure elements (prefabricated trusses, prestressed concrete beams, and steel girders), modified span lengths, different foundation types, and the use of framed structures vs. retained-earth structures for the approach ramps. Based on a comprehensive analysis and review, we developed our design approach as described below and as shown on our Team's Conceptual Structural Plans included in Volume II Design Concept. Our Design Concept is compliant with RFP requirements and includes the following enhancements:

- Use of a three-girder superstructure instead of a truss increases redundancy, reduces frequency and complexity of inspections, and lowers VDOT's long-term maintenance costs;
- Modification of superstructure material from steel to concrete increases resistance to corrosion and reduces VDOT's long-term maintenance costs;
- Revised pier location eliminates the conflict with the existing 8-inch gas line reducing risk and cost;
- Abutment A and the East Ramp relocation eliminate the conflict with the 2-inch gas line minimizing construction risk and reducing cost;
- Semi-integral abutments eliminate transverse joints that would be required for a deck slab extension abutment and reduces VDOT's long-term maintenance costs; and
- Increased longitudinal grade over US 29 reduces spread on the superstructure and improves safety without the inclusion of a deck drainage system. This reduces VDOT's long-term maintenance costs.

Superstructure

The transverse section will provide a 14-foot wide travel way with VDOT standard pedestrian fencing (BPF-6) and a continuous handrail connection to the approach ramps. The deck, curbs and backwall will be structurally integral and constructed of low permeability concrete reinforced with corrosion resistant reinforcing steel. We anticipate utilizing a two-span, three-girder superstructure with VDOT Standard Prestressed Concrete Bulb-T beam spans continuous for live load. A consistent beam depth will be provided for both spans. The superstructure will be supported by steel-reinforced elastomeric bearings. A transverse section of the main spans is presented in Figure 4.3.2.1.

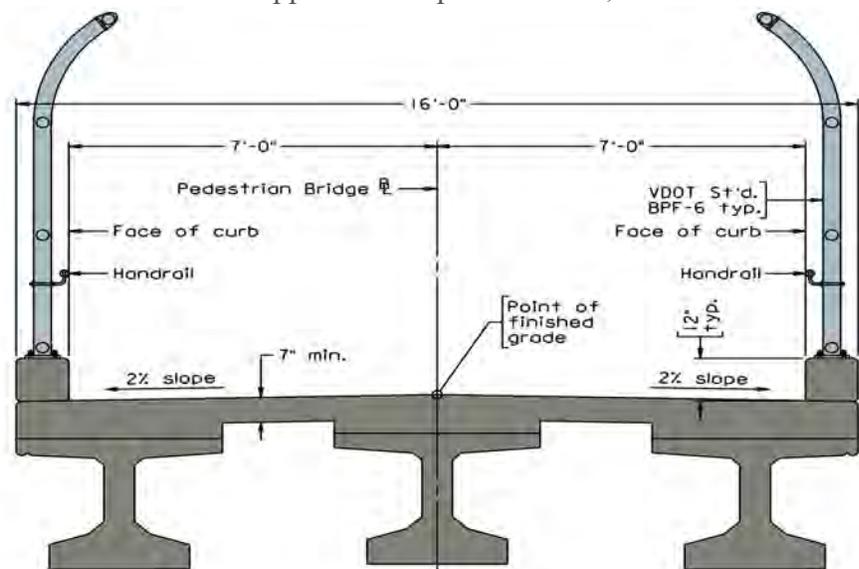


Figure 4.3.2.1 - Transverse Section

A two-span option is chosen to minimize the superstructure depth and approach ramp lengths. The shorter span lengths eliminate the need for a box truss and reduces the loads on the abutments which allows for shallower foundation depths. Furthermore, smaller superstructure elements allow smaller cranes to be used during construction. Ultimately the cost savings on superstructure and abutment construction for a two-span bridge clearly outweigh the cost to construct a pier in the median.

To reduce construction costs and provide redundancy, a three-girder system is the preferred superstructure configuration. In addition to not being fracture critical, the number of connections for a girder type bridge is greatly reduced making VDOT's inspection easier and maintenance less costly. Opting for a concrete

4.3 Design Concept

superstructure further reduces both the initial cost and future maintenance costs by eliminating the need for protective coating by means of galvanizing and painting the steel.

Substructure and Approach Ramps

End supports for the main spans over US 29 will be semi-integral cast-in-place concrete abutments supported by drilled shaft foundations. The median pier will be composed of two columns supported directly on drilled shafts. The columns will be protected from vehicular impacts with a 54-inch bridge pier protection system on each side. The final foundation types will be dependent upon the design geotechnical investigation; however, deep foundations are anticipated based on the desire to have a small footprint adjacent to existing underground utilities.

Access to the bridge crossing will be provided by ramps on either side of US 29. The longitudinal grade and cross slopes of the ramps will be in accordance with ADA and VDOT guidelines. In addition to ADA compliant ramps, stairways were considered; however, it was determined that they would not be economical based on utility conflicts and right-of-way impacts. The approach ramp will be constructed with a concrete walking surface and handrail HR-1 Type III, will be provided adjacent to the ramps where required. Approach ramps in fill are anticipated to be supported by precast panel MSE retaining walls with corrosion resistant reinforcing steel in the coping and panels within the splash zone limits. The cut wall adjacent to the West Ramp will be constructed of cast-in-place concrete.

Geotechnical Considerations

Deep foundations are recommended based on preliminary analysis of the bridge substructure loads and in-situ soils. The retaining walls will be analyzed for global and external stability. Design will be chosen to minimize total and differential settlement of the structure and meet all RFP requirements. For more information on the foundations and settlement, refer to Section 4.4.3 Geotechnical Approach.

Construction Considerations

Our Team plans to optimize the placement of the pier by shifting its location from the center of the median to the west as shown in Figure 4.3.2.2. An offset pier provides the required horizontal clearance to the buried 8-inch gas line. Early communication during preparation of this Technical Proposal with the utility companies has allowed for optimal placement of the pier and lowered risk during construction of the foundation and footing. Deep foundation elements will further reduce this risk by minimizing the footprint of the footing. If driven piles are used in lieu of drilled shafts, the top portion of the pile will be pre-bored to avoid utility conflicts and minimize construction risk. Furthermore, moving the pier location will reduce the potential risk of utility conflicts with the City of Charlottesville Department of Utilities by allowing for greater flexibility in the location of the pier protection system adjacent to northbound US 29.

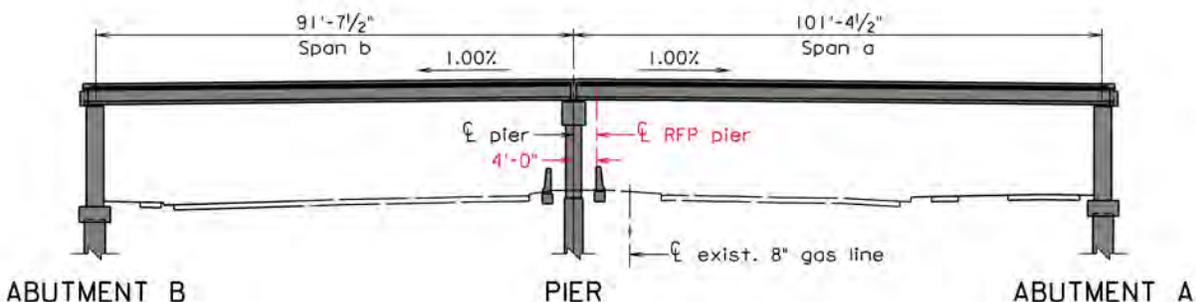


Figure 4.3.2.2 - Proposed Concept

Safety and Public Acceptance Considerations

To maximize pedestrian safety, a grade separated crossing presents the best alternative to an at-grade crossing. The proposed pedestrian bridge baseline provides the shortest path from The Shops at Stonefield to the bus stop east of US 29 which encourages pedestrians to safely use the bridge rather than cross at-grade at the intersection. In addition, pier protection in the median serves as a deterrent for pedestrians wanting a shorter route to cross US 29 to access the west bus stop. Lastly, the chosen bridge location is beneficial because it closely matches the position presented in the RFP and public hearings which will maintain public acceptance.

Safety is further enhanced by lighting provided at the bus stop and on the bridge and approach ramps. In addition to visibility, the appearance of a safe space will instill a feeling of safety with the public. In addition, anti-graffiti coating will be applied to the substructure units and retaining walls to present a clean appearance of the structure. By utilizing retaining wall approach ramps instead of framed structures, covered spaces are eliminated which will discourage loitering.

Finally, the bridge walking surface is optimized to provide a safe path for pedestrians. Low permeability concrete reinforced with corrosion resistant reinforcing steel is more resistant to the elements and chemicals and provides a smooth walking surface without spalling. To promote safety in inclement weather, an enhanced profile will reduce spread on the main structure to provide a safer walking surface. Furthermore, area drains will be provided on the approach ramps to prevent ponding of water.

Future Inspection and Maintenance Considerations

Our Team minimizes inspection and maintenance costs in several ways. First, we are providing preventative measures to protect the structure from vehicular damage. A minimum vertical clearance of 17'-6" prevents impact on the superstructure from tall vehicles. The structure is further protected by pier protection systems on either side of the pier to redirect off-course vehicles and prevent damage to the substructure.

Second, materials and protective coatings are chosen to slow degradation from the elements and chemicals. The use of low permeability concrete and corrosion resistant reinforcing steel greatly reduces maintenance for the proposed bridge. In addition, providing semi-integral abutments, concrete beams, MSE retaining wall approach ramps, and a jointless structure also reduces long-term maintenance and inspection costs. Furthermore, steel railings, fencing and bearing assemblies that are susceptible to corrosion will be galvanized to prevent deterioration.

Finally, design elements are optimized to simplify inspections and reduce maintenance costs. A girder-type bridge is a redundant structure which requires fewer inspections than a fracture critical truss. This type of structure is also less complex which simplifies bridge inspections and analysis of the bridge for future load ratings, or repairs over the lifetime of the bridge. Additionally, the behavior of a continuous deck slab composite with a girder type structure is more rigid than the flexible link slab required for a truss. As a result of this stiffness, the deck will not exhibit the cracks that are common with flexible link slabs and can result in leakage over the pier and damage to bearings. Should bearings need replacement in the future, our concept includes areas around the bearing seats to permit future jacking.

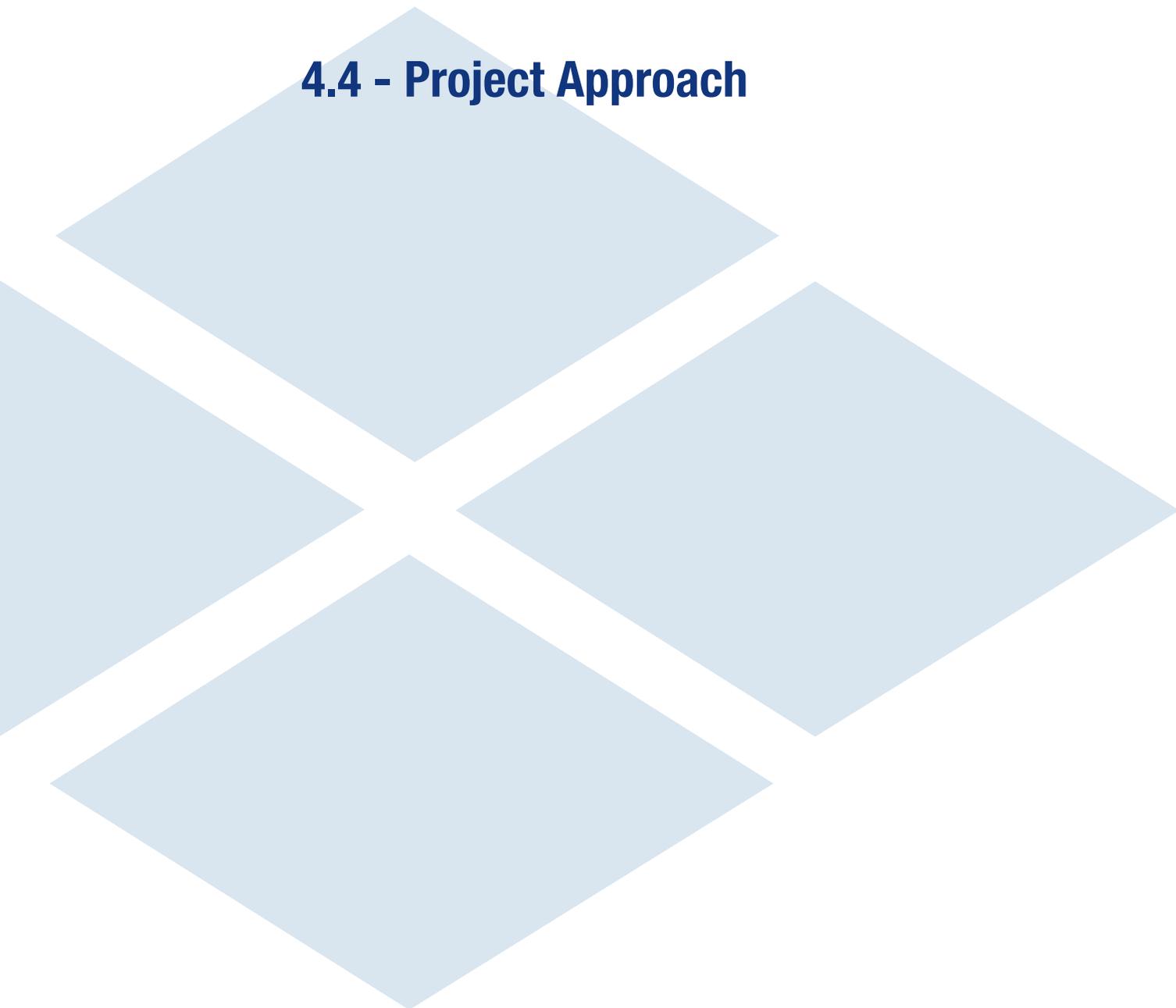
Retaining Walls

All Elements

Other than the retaining walls associated with the bridge approach ramps, we anticipate two other retaining walls on the Project. The first is located in Element C adjacent to the bus shelter along NB US 29. This is a short fill wall behind the platform to avoid impacts to the car wash parking lot. The second is an approximate 95-foot long cut wall located in Element D along the northwest corner of the roundabout. ***By optimizing the profiles of Hydraulic Road and Hillsdale Drive, the wall length has been reduced by approximately 117 feet compared to the RFP concept and the maximum exposed wall height has been reduced to approximately 4 feet.*** A third retaining wall was identified in the RFP Conceptual Plans in Element E adjacent to an existing transmission tower; however, ***our concept eliminates this wall*** due to an adjustment in the horizontal alignment of the US 250 Spur. The proposed retaining wall limits are depicted in our Volume II Design Concept.

It is anticipated that these walls will be VDOT Standard RW-3 gravity walls. The final wall type will be dependent on geotechnical investigation. The proposed retaining walls will be evaluated in accordance with VDOT and AASHTO LRFD requirements and follow geotechnical recommendations based on soil borings to be completed at the wall locations prior to final design. Wall settlement will be limited in accordance with the RFP. For more information on the foundations and settlement, refer to Section 4.4.3 Geotechnical Approach.

4.4 - Project Approach



4.4 Project Approach

4.4.1 Environmental Management

Comprehensive environmental risk management is one of the most critical aspects of a successful Project, and requires not only proper planning and coordination during design, but also proper implementation and monitoring throughout construction. Our approach to environmental risk management efforts begins during the preparation of our Technical Proposal and includes involvement from our environmental team, including Shirley’s Environmental Compliance Manager (ECM) and Dewberry’s Environmental Coordinator. Close coordination and involvement of our environmental staff ensures

- Design is developed to avoid and minimize impacts to jurisdictional areas, and reduce tree clearing;
- Schedules accurately reflect environmental constraints and permit approval timelines
- Confirmation that all necessary permits and approvals are identified and obtained prior to commencing construction efforts; and
- Construction is completed in accordance with permit requirements, NEPA commitments, and contract requirements.

Our Project specific approach to mitigate environmental challenges due to recognized environmental constraints and requirements are summarized in Table 6.

Table 6: Strategies to Mitigate Environmental Challenges

| Resource | Project Phase | Avoidance and Minimization Strategy |
|---|---------------|---|
| Compliance | Design | <ul style="list-style-type: none"> ■ Mandatory pre-construction environmental compliance training for all Project personnel concurrent with Shirley’s safety training ■ Create tracking matrix to ensure that commitments of the NEPA documentation and associated state and federal permits are being met ■ Maintain status of VDOT NEPA Certification Training by staff |
| | Construction | <ul style="list-style-type: none"> ■ Use checklists developed internally to track and monitor project-wide compliance ■ Mandate construction staff training to ensure all environmental permit conditions are adhered to throughout the Project |
| CE Re-Evaluation (Environmental Summary Document) | Design | <ul style="list-style-type: none"> ■ Confirm with VDOT whether re-evaluation is required and provide documentation and support as needed ■ Provide additional documentation on Environmental Justice per I&IM 714.1 ■ Closely coordinate with VDOT Project Manager and environmental personnel for reviews and approvals |
| | Construction | <ul style="list-style-type: none"> ■ Monitor NEPA commitments |
| Threatened & Endangered Species | Design | <ul style="list-style-type: none"> ■ Coordinate clearing with USFWS and VDOT in compliance with updated guidelines related to the Northern Long-eared Bat (<i>Myotis septentrionalis</i>) ■ Minimize and eliminate tree clearing ■ Coordinate Section 7 with USFWS to exclude a species survey for the James Spineymussel (<i>Parvaspina collina</i>) ■ At NTP, re-run and submit threatened and endangered species database reviews ■ Provide the T&E package submitted to USFWS, DWR, DCR to VDOT District Environmental Manager |
| | Construction | <ul style="list-style-type: none"> ■ Adhere to VDOT Special Provisions for Tree Removal TOYR for Bat Habitat, and Protection of Nesting Migratory Birds |

| Resource | Project Phase | Avoidance and Minimization Strategy |
|---------------------------------|---------------|---|
| Hazardous Waste | Design | <ul style="list-style-type: none"> Develop a Spill Prevention, Control and Countermeasure Plan and implement work safety protocols |
| | Construction | <ul style="list-style-type: none"> Adhere to VDOT Standards and Specifications for contaminated soil Adhere to VDOT Special Provision for Removal or Connection of Asbestos Cement Pipe |
| Stormwater Pollution Prevention | Design | <ul style="list-style-type: none"> Prepare a Stormwater Pollution Prevention Plan (SWPPP) Include the Spill Prevention, Control, and Countermeasure Plan in the final SWPPP document |
| | Construction | <ul style="list-style-type: none"> Maintain good housekeeping measures to minimize potential for run-off Conduct SWPPP management training and adhere to inspection schedules |

Approach to Environmental Risk Management During Design

Environmental challenges on highly constrained transportation projects require in-depth, upfront planning with the entire Project Team to reduce and address risk. As our Team begins the design phase, our approach to risk management continues with refinement and confirmation that our design accounts for all environmental commitments and constraints. To integrate environmental concerns into the overall plan and minimize the risk of unforeseen impacts and schedule delays, an environmental constraints map was developed during the procurement stage to ensure all environmental constraints and commitments are accounted for as design progresses. The environmental constraints map is an electronic design file which can be referenced and cross-checked with design plans. Using the environmental constraints map during preliminary planning helps identify areas of concern that will be targeted with innovative solutions to minimize environmental risk. The specific environmental management efforts that will be used during design are summarized below:

Environmental Management Plan (EMP)

To maintain compliance with environmental commitments, the NEPA document, and permit conditions, our Team will prepare and execute a comprehensive EMP. The EMP will detail key milestones and timelines for the submittal of reports, permits, and environmental approvals during the Design Phase. Our Team will work directly with VDOT to provide documentation utilizing the EMP as a tracking mechanism to enhance monitoring of Project compliance.

Environmental Permitting

Based on the scope of the four Elements, minimal permitting efforts are anticipated to be required, as listed below and included in Table 7. Our Proposal Schedule, included in Section 4.6, and Table 7 account for the realistic timeframes to obtain these permits and approvals.

- Clean Water Act (CWA)** - We expect the Project to qualify for a United States Army Corps of Engineers (USACE) Nationwide Permit (NWP) for minor impacts, and Section 401 Certification from DEQ. The need for this permit will be determined by completing a wetland delineation and obtaining a Jurisdictional Determination from USACE. Our Team will identify unavoidable impacts to jurisdictional features due to modifications of an existing drainage structure related to Design Element E.
- Virginia Stormwater Management Program (VSMP)** - As part of the VSMP, Virginia Pollution Discharge Elimination System (VPDES), and Chesapeake Bay Preservation Act (CBPA) requirements will be addressed through the development and approval of drainage, stormwater management, and erosion and sediment control designs. Our Team is accustomed to completing and complying with the VSMP and the VDOT equivalent LD-445 construction permit series. We will provide a comprehensive SWPPP, including a Spill Prevention, Control and Countermeasure Plan, to ensure compliance with VPDES requirements, which will be kept on-site and up to date. Based on our extensive experience in obtaining VPDES permits, our schedule has accounted for the appropriate time to prepare, submit, and obtain approvals so that construction is not delayed.

Table 7: Anticipated Permit Approval List and Timelines

| Agency | Permit Type/Approval | Anticipated Time Frame |
|---------------------|--|------------------------|
| USACE (Section 404) | Nationwide Permit | 2-3 Months |
| DEQ | Section 401 Certificatio | 2-3 Months |
| VMRC | No Permit Required | N/A |
| USFWS | Section 7 Threatened & Endangered Species Coordination | 3 Months |
| VDOT & DEQ | VPDES Permit & LD 445 | 2 Months |

Approach to Environmental Risk Management During Construction

Environmental risk management continues through all phases of construction. Our Team recognizes the importance of environmental reviews and compliance during construction to ensure adherence to all permit and NEPA conditions and avoid unintended impacts to resources. Our approach is outlined in detail in our EMP and developed with involvement from regulatory agencies and uses previous experience and lessons learned to ensure environmental compliance is consistently maintained. This collaborative approach is highlighted in Figure 4.4.1.1 showing coordination among team members to ensure environmental compliance.

Environmental Management Plan (EMP)

During construction, the ECM, Construction Manager (CM), and Quality Assurance Manager (QAM) will work closely with VDOT to oversee the implementation of the EMP. This includes:

- Identification of responsible parties, including qualifications, and descriptions of communication hierarchy;
- Ensure permit conditions and inspection schedules are incorporated into the design plans and are strictly adhered to during construction;
- Monitor compliance with environmental commitments in the NEPA documentation, issued permits, and other pertinent documents;
- Continually evaluate the Project to modify and improve avoidance and minimization measures whenever possible; and
- Provide VDOT with supporting documentation to verify compliance with all environmental commitments and permits on a semi-annual basis, or as requested to support compliance monitoring.



Figure 4.4.1.1 - Environmental Compliance Team Collaboration

The EMP will also detail the following environmental risk management efforts that will be used during construction:

- **Mandatory Environmental Training** – As part of the mandatory safety training requirements, our environmental team will develop a project specific training program prior to the start of construction. Sensitive environmental resources and compliance requirements per the CE and VSMP permit will be highlighted. The training will be video recorded and all project personnel including subcontractors will be required to view it, which will ensure all parties are aware of the environmental commitments within the project area.
- **Pre-Construction Coordination** – Prior to the start of any construction, and as expected in forthcoming CWA permit conditions, our environmental team will return to the field to demarcate all wetlands, WOUS, and environmental resources to ensure limits are easily identifiable by construction personnel. Permit impact plates detailing temporary and permanent impact limits will be provided to all construction staff and foremen to ensure avoidance of non-permitted areas. Additionally, a pre-construction environmental constraints and commitments meeting will be held to educate all parties

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on the allowable limits of work as well as project specific permit conditions such as Time of Year Restrictions for tree clearing.

- **Virginia Stormwater Management Program and C-107 Compliance Checks** - Following the issuance of the VSMP Construction General Permit (CGP) and mandatory environmental training, installation of erosion and sediment control (ESC) measures, as shown on Figure 4.4.1.2, will take place prior to any land disturbing activities. Site inspections related to CGP compliance ensure permit requirements are met, ESC measures are correctly installed and maintained, and areas that may require additional attention are identified prior to construction activities to help prevent unintended impacts. Our Team will provide updates on the status of any action items identified during inspections, and proactively implement corrective measures.



Figure 4.4.1.2 - Sample of ESC measures

Close coordination between our Team and VDOT environmental staff has proven to be an essential element for ensuring on-schedule completion of our past projects. Our Team will work closely with all project stakeholders to reduce risks and address compliance through the tracking of environmental constraints, previous environmental commitments, permit conditions, NEPA commitments, and stakeholder communications.

4.4.2 Utilities

Approach to Utility Coordination, Adjustments, and Relocations

Our Team initiated our design-build program over 20 years ago. Since then, we have successfully managed utility relocations on more than 50 design-build projects. Our extensive experience allows us to recognize the potential impact utility conflicts have on every discipline including design, permitting, right-of-way, construction phasing, and the schedule. We therefore developed our overall approach to address coordination of these items as shown in Figure 4.4.2.1. Led by our Utility Coordination Manager, our experience affords us the ability to manage complicated design-build projects with an extensive utility component. We have established a group of knowledgeable, dedicated, in-house resources that focus solely on overseeing and managing this scope. Over the years, we have developed strong working relationships with each of the utility owners in the region that are vital to ensure efficient coordination and positive results. Our experience and close working relationship with each utility owner has already benefited and positively affected our design approach and concept by facilitating solutions that minimize risk, reduce potential conflicts, and promote schedule certainty.

Our Team's first and highest priority throughout the design-build process is to completely avoid utility impacts through design. Where conflicts cannot be completely avoided, we work diligently with each



Figure 4.4.2.1 – Approach to Utilities Coordination

4.4 Project Approach

utility owner to minimize relocations through a combination of redesign, work re-sequencing, and/or utility protection measures during construction. Relocating existing utilities to eliminate conflicts with new construction should only be performed as a last resort.

During the preparation of this Technical Proposal, our Team’s early coordination began by meeting with the various utility owners to better understand their existing facilities, review designations, discuss both the conceptual and proposed design, review our proposed schedule, and address potential conflicts and risk. This early coordination has enabled our Team to avoid utilities that were in conflict with the RFP Conceptual Plans as follows:

Element C

- Shift the bridge location to avoid the underground Dominion Energy duct bank, an 8-inch gas main in the median of US 29, and a 2-inch gas main at the east abutment
- Modify the western ramp connection to avoid impacts to the fiber optic junction boxes

Element D

- Adjust the roundabout profile to maintain cover over the existing 6-inch gas line, 12-inch waterline and 8-inch sanitary sewer
- Adjust the storm design to avoid impacts to the underground Dominion Energy duct bank, fiber optic lines, and 6-inch gas line in the southeast quadrant of the roundabout

Element E

- Revise storm design to avoid relocation of the 8-inch sanitary sewer

Table 8 is a summary of the known utilities, potential conflicts, and our relocation and mitigation strategies. The Conflict ID# listed correlates to our Volume II Design Concept where each conflict is identified.

Table 8: Potential Utility Conflicts and Mitigation Strategies

| Utility Owner / Description | Conflict ID# and Location/Station | Conflict | Relocation Plan / Mitigation Strategy |
|---|---|--|--|
| Element A | | | |
| Albemarle County Service Authority <ul style="list-style-type: none"> ▪ Sanitary Sewer | ID# A-400 Hydraulic Road, Station 404+75 to 406+00. | No conflict | Adjust manhole covers to grade |
| Dominion Energy <ul style="list-style-type: none"> ▪ Utility Poles (power distribution) | ID# A-100 Hydraulic Road, Station 404+00 to 400+50, LT and 518+00 to 520+75, LT | No conflict. Poles are within existing sidewalk and/or sidewalk buffer | Increase sidewalk width around obstruction and include in Design Waiver #2 |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> ▪ 8-inch Gas; 6-inch Gas | ID# A-500 Along NB Median, US 29, Station 117+50, LT and Station 119+15, LT | Potential conflict with storm sewer | Acquire test hole information; perform off-set relocations if necessary |
| FiberLight <ul style="list-style-type: none"> ▪ Underground T/Tg Duct | ID# A-200 Along NB Median, US 29. Station 117+50 to 119+75, LT | Potential conflict with storm sewer | Acquire test hole information; relocate duct bank as necessary |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> ▪ Water Valves | ID# A-300 US 29 / Hydraulic Road Intersection, mill & overlay limits | No conflict | Adjust valve covers to grade |

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| Utility Owner / Description | Conflict ID# and Location/Station | Conflict | Relocation Plan / Mitigation Strategy |
|--|--|---|---|
| Element C | | | |
| Albemarle County Service Authority <ul style="list-style-type: none"> 8-inch & 12-inch Sanitary Sewer | ID# C-401 Parallel to southbound US 29, Station 234+00 to 238+00, LT | Conflict with new bridge and pedestrian ramp | Relocate portion of existing sewer as necessary |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 8-inch Sanitary Sewer | ID# C-402 Crossing US 29, approximate northbound Station 133+65 | Conflict with switchback ramp | Get permission from owner to completely abandon, as manholes are not currently utilized |
| Lumen/CenturyLink/Brightspeed; Comcast; Lumos <ul style="list-style-type: none"> Underground cables, vaults, and handholes | ID# C-201 Parallel to southbound US 29, Station 234+00 to 238+00, LT | Potential conflict with new bridge, pedestrian ramp, storm, and grading | Acquire test hole information; utilize lift-and-lay techniques for cable; relocate/adjust vaults & handholes to grade |
| Dominion Energy <ul style="list-style-type: none"> Underground cables and vault | ID# C-101 Parallel to southbound US 29, Station 234+00 to 238+00, LT | Potential conflict with new bridge, pedestrian ramp, and storm | Conflict avoided through design |
| Lumen/CenturyLink/Brightspeed; Comcast; MCI; and MMI/FiberLight <ul style="list-style-type: none"> Underground Communication | ID# C-202 Parallel to northbound US 29, Station 130+50 to 134+50, RT | Conflict with new bus turn-out, bridge, and switchback ramp | Acquire test hole information; utilize lift-and-lay techniques for cable; relocate/adjust vaults and handholes to grade |
| City of Charlottesville <ul style="list-style-type: none"> Gas Service Lines | ID# C-501 US 29, Station 132+30, RT (near corner of future pedestrian ramp) | Conflict with new bridge and ramp | Conflict avoided through design |
| Dominion Energy <ul style="list-style-type: none"> Underground cables and above-ground equipment | ID# C-102 Parallel to northbound US 29, Station 130+50 to 133+00, RT | Conflict with new bridge and ramp | Conflict avoided through design |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 8-inch Gas | ID# C-502 Parallel to US 29, Station 132+00 to 133+00, LT (within existing median) | Conflict with bridge pier and protection | Conflict avoided through design |
| Element D | | | |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> Fire Hydrant | ID# D-301 Northwest quadrant of intersection | Conflict with road widening | Relocated to the back of future sidewalk |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 6-inch Gas | ID# D-503 Runs east/west from station 511+50 to 512+75, LT | Potential conflict with storm sewer | Conflict avoided through design |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 2-inch Gas | ID# D-504 "Asphalt Drive", Station 80+80 RT. (2-inch coming off 6-inch main) | Potential conflict with storm sewer | Acquire test hole and as-built information; perform off-set relocation if necessary |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 8-inch Water | ID# D-302 "Asphalt Drive", Station 80+80, RT. (8-inch coming off 12-inch main) | Potential conflict with storm sewer | Acquire test hole and as-built information; perform off-set relocation if necessary |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 6-inch Gas | ID# D-505 Hydraulic Road, Station 512+80, LT | Potential conflict with storm sewer | Acquire test hole and as-built information; perform off-set relocation if necessary |

4.4 Project Approach

| Utility Owner / Description | Conflict ID# and Location/Station | Conflict | Relocation Plan / Mitigation Strategy |
|---|---|---|--|
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 12-inch Water | ID# D-303 Hydraulic Road, Station 512+80, LT | Potential conflict with storm sewer | Acquire test hole and as-built information; perform off-set relocation if necessary |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 8-inch Water | ID# D-304 Crossing Hydraulic Road, Station 514+45, RT (northwest quadrant) | Potential conflict with proposed retaining wall | Acquire test hole and as-built information; perform off-set relocation if necessary |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 8-inch Water | ID# D-305 Crossing Hydraulic Road, Station 514+45, LT (northwest quadrant) | Potential conflict with storm sewer | Acquire test hole and as-built information; perform off-set relocation if necessary |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 8-inch Water | ID# D-306 Hillsdale Road, Station 71+14, LT | Potential conflict with storm sewer | Acquire test hole and as-built information; perform off-set relocation if necessary |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 8-inch Sanitary Sewer | ID# D-403 Hydraulic Road, Station 514+45, RT (northwest quadrant) | Potential conflict with proposed retaining wall | Acquire test hole and as-built information; design wall to accommodate |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 12-inch Water 8-inch Sanitary Sewer | ID# C-307 Facilities located primarily along the south side of Hydraulic Road and crossing through new roundabout | Conflict with proposed roadway profile and excavation | Conflict avoided through design |
| Dominion Energy <ul style="list-style-type: none"> Underground duct bank | ID# D-103 Southeast quadrant of intersection | Conflict with storm sewer | Conflict avoided through design |
| Lumen/CenturyLink/Brightspeed; Comcast; Lumos <ul style="list-style-type: none"> Underground cable, vaults, and handholes | ID# D-204 Southeast quadrant of intersection | Conflict with storm sewer | Conflict avoided through design |
| Element E | | | |
| City of Charlottesville Department of Utilities <ul style="list-style-type: none"> 8-inch Sanitary Sewer | ID# E-404 Hydraulic Road, Station 502+00 to 503+50, RT | Conflict with storm sewer | Conflict avoided through design |
| Comcast Communication <ul style="list-style-type: none"> Underground cable and handhole | ID# E-205 Hydraulic Road, Station 502+25, RT and 503+75, RT | Potential conflict with storm sewer and shared-use-path | Acquire test hole information; utilize lift-and-lay techniques for cable; adjust handhole as necessary |
| Lumen/CenturyLink/Brightspeed <ul style="list-style-type: none"> Pole #1733 | ID# E-206 Hydraulic Road, Station 502+45, RT | Conflict with proposed shared-use-path | Relocate pole |

Mitigation of Unexpected Utilities & Schedule Delays

Encountering unexpected or unknown utilities is a risk that can cause many challenges including added cost and the potential for schedule delays. The following strategies can be utilized to limit those risks:

Early Coordination: Our Team has initiated early coordination with each utility owner to acquire a comprehensive understanding of their existing facilities. We have obtained previous design plans, as-built drawings, and GIS mapping for review. Further, our Team has coordinated site visits, performed field investigations and taken photographs of critical areas to ensure the utility designations and surveys provided are complete and accurate. This coordination and review of the existing facilities limits the risk of discovering an unidentified utility during construction

4.4 Project Approach

Test Pitting: Shirley Underground, a division of Shirley, provides in-house resources to assist our Project Team in developing a clear understanding of the subsurface conditions before major construction work begins. Our fleet of vacuum trucks are readily available to quickly test pit utilizing the hydro-excavation method that expedites locating utilities during construction while minimizing the risk of damage to these existing underground facilities.

Redesign of Project Features: Once an unknown utility is identified, we will immediately perform an as-built survey of its location and overlay with the proposed design to determine the extent of the conflict. Options will then be reviewed with affected disciplines to redesign elements that will minimize and/or avoid the conflict. If redesign is feasible, our Team will make necessary adjustments for the area of concern.

Adjust in Place: Our Team has successfully raised, lowered, or performed “lift-and-lay” operations (lateral and horizontal adjustments) to eliminate a conflict. Performing in-place relocations is a key component to minimizing risk of schedule delay, reducing cost, and reducing the impact to the utility owner’s facility.

Assisting with Relocation Construction: To mitigate the impact of unidentified utilities impacting the schedule, our Team is prepared to assist utility companies with their relocation work. This may include assisting with the construction of duct banks, performing directional drilling, or installing utility poles for utility owners to expedite relocations. Self-performing this work allows our Team to better control portions of the utility relocation schedule, thereby reducing the risk of adverse Project Schedule impacts or delays.

Schedule Integration

During the RFP phase, our Team has coordinated with each discipline and utility owner to develop phasing and durations for each utility relocation, as detailed in Section 4.6. This advanced schedule coordination includes multiple discussions with each utility owner, and historical data developed from our past design-build experience. These utility relocation activities are integrated into our Proposal Schedule with appropriate ties to design, easement acquisition, permitting, and construction activities. After Award, our Team continues to refine the schedule based on test pit information, final design changes, and on-going coordination with the utility owners as utility plans and estimates are prepared.

As the utility relocation activities are performed, our Utility Coordination Manager constantly monitors progress of the relocations to quickly identify schedule concerns. This is accomplished by maintaining a Project Utilities Tracking spreadsheet for each utility company identifying critical relocation event dates that must be met for roadway construction activities to follow. ***The Project’s Utility Coordination Manager and the designated Utility Inspector will be in continuous communication to ensure that appropriate records are maintained to capture the nature, progress, and projected costs associated with the utility relocation activities.*** As they monitor the progress of relocations and adjustments, schedule slippages will become apparent. If encountered, our Utility Coordination Manager will consult with the utility company to determine the nature of the delay and review options for the utility to correct. Simultaneously, utility schedule issues are reviewed with the Construction Manager to identify opportunities for resequencing of work, extending work hours, supplementing field resources, or any combination thereof. Additional scrutiny will be placed on the utility company’s performance and progress until our Team is satisfied that the schedule has recovered. All this gathered information will also be used to ensure accurate Project as-builts for the completed utility relocation scope.

4.4.3 Geotechnical Approach

Coordination of Geotechnical Design Concepts and Construction Activities

VDOT has performed the preliminary subsurface investigation provided with the RFP which provides detailed geotechnical information to develop accurate and complete strategies for design and construction.

4.4 Project Approach

In final design, our Team makes a priority of including geotechnical considerations as part of the overall Project approach, and places importance on identification of risks posed by the subsurface conditions. The geotechnical design process begins with reviewing the preliminary information and geologic literature, preparing and developing a comprehensive subsurface exploration and geotechnical laboratory testing program, providing complete and clear geotechnical recommendations, and ends with remaining engaged and available during construction to provide clarification, oversight, and input for unsuitable materials, subgrade evaluation, and structure foundations.

The boring layout for the final design subsurface exploration program is developed to satisfy the requirements of Part 2, Section 2.6 and the *VDOT Material Division Manual of Instructions, Chapter III*, and will be modified as design progresses. The subsurface exploration will characterize the site conditions and minimize uncertainty for proper geotechnical design and construction of the roadway, pavement, subgrade, retaining structures, pedestrian bridge foundations, and drainage pipes. The phasing of the subsurface exploration program will be conducted to maintain the Project Schedule and there will be careful coordination within the Team to identify early action borings that are necessary for critical design items. The laboratory testing for the borings will provide a comprehensive characterization of the soils and bedrock, if encountered, for design and construction of the pedestrian bridge foundations, retaining wall foundations, and pavement sections.

The critical geotechnical concerns relate to the potential for unsuitable subgrade materials, verification of the existing pavement thickness and condition for areas of mill and overlay, and the design of foundations for the pedestrian bridge, ramps, and retaining walls. Our approach to addressing geotechnical constraints are identified in Table 9.

Table 9: Geotechnical Approach

| Geotechnical Design Procedures | Project Benefit |
|--|--|
| Prioritization of borings to advance design of schedule critical items | Early action design packages will accelerate overall schedule and identify geotechnical risks for mitigation prior to construction |
| Multiple subgrade treatments may be utilized depending on conditions | Refinement of subgrade improvements to limit impacts to adjacent utilities and existing features considering soil type |
| Design of embankment slopes and retaining walls through site-specific analyses | Embankments and retaining wall foundations will be selected to minimize impacts to adjacent structures and slopes |
| Considerations for bedrock depth related to excavation limits for pedestrian bridge deep foundations | Excavation methods and depths will be selected and adjusted based on actual subsurface and groundwater conditions |

The Geotechnical Engineer will observe the construction operations at a frequency necessary to confirm that the Quality Assurance Team is following the geotechnical recommendations. The Geotechnical Engineer will perform inspection of the site when requested and for specific items related to the roadway subgrade, unsuitable materials, and structural foundations.

Managing Geotechnical Risk

Potential geotechnical risks and mitigation measures are summarized in Table 10 and discussed below:

Table 10: Geotechnical Risks and Mitigation

| Geotechnical Items | Potential Risks | Risk Level | Risk Mitigation |
|---|---|------------------|---|
| Pedestrian Bridge Foundations (Element C) | Utility conflicts and unknown bedrock depth | Moderate to High | Design foundations to avoid utilities, sample bedrock in additional borings |
| Retaining Wall Foundations (Elements C and D) | Potential for unsuitable material at bearing elevations | Low | Additional borings necessary, standard retaining wall design |
| Pavement Section (Elements A, C, D, and E) | Insufficient existing pavement section for mill and overlay | Moderate | Collect additional pavement core data for validation |

| Geotechnical Items | Potential Risks | Risk Level | Risk Mitigation |
|--|---------------------------|------------|--|
| Unsuitable Soils (Elements A, C, D, and E) | Low subgrade soil modulus | Moderate | Additional subgrade testing to support pavement design |

Structure Foundations

Although the excavation of weathered and intact bedrock is likely limited due to the depth at which refusal was exhibited in the preliminary design borings and knowledge of the local geology, additional bedrock information will be collected during final design at the pedestrian bridge to properly evaluate deep foundations for the abutments and pier locations. The foundation locations, types, and construction methods will consider the presence of existing underground utilities to mitigate potential conflicts with foundation construction. The use of spread footings for the pedestrian bridge abutments and pier is not considered appropriate due to concerns with settlement of the underlying existing fill soils and load distribution which may impact underground utilities. The settlement of the substructures will be analyzed to ensure the criteria in RFP Attachment 2.3, Additional Foundation Criteria, is satisfied. Analyses will be performed to determine if the loading from the proposed ramp structures will induce settlement of the underlying soils to generate possible downdrag forces on the deep foundations of the pedestrian bridge. Drilled shafts supporting individual columns at the pier will eliminate the footing cap and reduce the overall foundation width. At the abutments, prebored piles advanced below existing underground utilities and driven to final capacity will be considered as an alternate to drilled shafts with a footing cap depending on the additional subsurface information collected during final design.

Pavement Sections

Existing pavement core data was presented in the RFP documents but does not provide information in every location where conceptual mill and overlay is indicated. A minimum of three pavement cores and/or borings will be taken on Hydraulic Road to the west of US 29 to provide existing pavement data and subgrade information for asphalt widening pavement design and to perform validation of mill and overlay. Inspection of the existing pavement sections will be performed during excavation to validate the design parameters. The use of proper drainage for the final pavement section and throughout construction is vital to the integrity of the constructed product.

The pavement design will be validated using AASHTOWare Pavement ME Design (Version 2.2.6) based on the traffic data provided with the RFP. The use of AASHTO 1993 Pavement Design for flexible and rigid pavement will also be considered for areas with mill and overlay to provide a comparison in evaluating existing pavement sections. Based on the sensitivity of the pavement design to the subgrade resilient modulus, additional subgrade testing will be conducted during final design to provide additional statistical reliability for the recommended pavement sections during the scope validation period. The Team will notify VDOT of the findings from the pavement design validation. For Element D and other areas where buildup of the pavement sections is possible, the use of profile adjustment during final design may be considered in locations where existing pavement sections may be inadequate based on additional pavement core data.

Unsuitable Soils

In applying the recommended subgrade treatments for full depth pavement construction, particularly in Element D, it is necessary to evaluate the specific concerns in selection of the most appropriate remediation. Our Team has completed similar evaluations of subgrade treatments on VDOT projects to minimize impacts to adjacent utilities and properties. A toolbox of potential mitigation methods for treatment is shown in Table 11 and allows flexibility to perform specific subgrade treatments while protecting VDOT assets. Regular communication within the Team will be important in choosing the proper subgrade stabilization during construction to ensure excavation depths are minimized near existing foundations and structures to avoid impacts. Early installation of underdrains will aid in minimizing damage to the subgrade material due to construction traffic and moisture. The use of chemical subgrade stabilization near traffic stage lines and utilities will aid in control of the excavation limits to reduce conflicts with existing features with the understanding that the full treatment of unsuitable material is required to ensure long-term performance of the pavement structure. The sequencing of treatments to minimize unnecessary subgrade removal will include

4.4 Project Approach

proper drainage installation and early action remediation in high volume construction traffic locations.

Table 11: Potential Subgrade Treatment Methods

| Unsuitable Soil Conditions | Treatment Method |
|---|---|
| Highly Plastic Soils / Low Resilient Modulus Soils / Organic Material | Replace with suitable soil a minimum of 3 feet below subgrade |
| Loose / Soft Soil | Moisture condition to acceptable moisture content and compact; or, chemical stabilization in upper 12 inches; or, replace with suitable soil a minimum of 3 feet below subgrade |
| Wet / Dry Soil | Dry soils by aerating and re-compact or moisture condition to acceptable moisture content; or, in-place mixing with lime or cement to dry soils |

Maintaining Existing Structures and Slopes During Construction

Construction of the slopes and retaining wall structures requires excavations into the existing slopes for benching and construction. The selected slope and retaining wall treatments minimize the need for temporary excavation support adjacent to the roadway while maintaining access for pedestrians and businesses. Excavations for drainage structures consider adjacent facilities and necessary measures are taken to avoid disturbance of existing features.

The embankment slopes will be properly keyed in at the base and standard benching along the existing slope will be utilized to provide an adequate embankment to minimize requirements for maintenance. Undercuts will be evaluated at embankment areas to mitigate long-term settlement concerns based on elastic and consolidation settlement analyses as necessary. Global slope stability analysis is performed at critical slope locations with the maximum embankment height using the SLIDE2 computer program to verify adequate slope performance. Retaining wall design considers global slope stability, bearing capacity, settlement, sliding, and overturning and the wall type selection will minimize impacts to adjacent properties.

For Element C, a small fill retaining wall will be necessary to support the proposed bus shelter. Retaining walls for the pedestrian bridge approach ramps will also be necessary in Element C. For Element D, a small cut retaining wall will be necessary to support the parking lot in the northwestern quadrant of the roundabout. For Element E, a minor cut slope will be necessary adjacent to an existing utility foundation for a Dominion Energy transmission tower. Global stability analysis will be performed to verify that the proposed slope and retaining walls provide adequate performance.

4.4.4 Quality Assurance/Quality Control

Our Team refines our quality approach from project to project to ensure we are providing VDOT with confidence and objective evidence that project deliverables meet or exceed the project-specific contract requirements. For this Project, we are committing the resources and establishing the transparency and audit capability that demonstrate our quality management systems are adhered to by our qualified quality management professionals. Our QA/QC approach addresses both design and construction and defines the organization, work processes, and systems necessary to provide assurance that a quality Project is successfully delivered by our Team. Our QA/QC Plan is in accordance with *VDOT's Minimum Requirements for Quality Assurance and Quality Control on Design-Build and Public-Private Transportation Act Projects, July 2018* (July 2018 QA/QC Guide) and establishes criteria for quality control, quality assurance, owner's independent assurance, owner's verification sampling & testing, and oversight duties for all personnel. Throughout design and construction, our Quality Assurance Manager (QAM), Avtar Singh, P.E. will monitor and verify that our QA/QC processes are adhered to and contract deliverables comply with contract requirements.

Design QA/QC Approach

Our approach to design QA/QC includes implementing multiple processes with various QA/QC personnel

4.4 Project Approach

throughout the duration of the Project. We will ensure the appropriate quality standards are included, suitable materials are selected, and the safety and constructability of the work is addressed. The benefits of our design QA/QC process are that it is:

- Well-structured;
- Easily audited; and
- Continually maintained to minimize VDOT's resource requirements.

Our Team implements design QA/QC by adhering to the approved QA/QC Plan, conducting design reviews, completing interdisciplinary coordination, performing constructability reviews, involving VDOT and the QAM in the overall design review process, and confirming that all field changes follow the same process as the original design.

Design QA/QC Plan

Our Design Manager, Carl Kaczmarek, P.E., implements and manages the design QA/QC program (a subset of our QA/QC Plan) which identifies design quality assurance and quality control requirements. The design QA/QC program establishes the following:

- Procedures for preparing and checking all drawings, specifications, and other design submittals including procedures to correct errors and deficiencies prior to submission
- Processes to ensure design submittals are stamped, signed, and dated by the responsible Professional Engineer licensed by the Commonwealth of Virginia;
- Actions to confirm that the level, frequency, and methods for review of design including independent review are in compliance with VDOT's functional requirements;
- Procedures for ensuring designs developed by different disciplines are coordinated and avoid conflicts, omissions, or misalignments;
- Procedures for identifying elements of design that require special construction QA/QC attention or emphasis;
- Identification by firm, discipline, name, qualification, duty, responsibility, and authority for all personnel and/or entities responsible for design QA/QC including sub-consultants; and,
- Establishment of design QA/QC functions, including scheduled activities for design QA/QC, identifying the drawings, specifications, and other design submittals that are submitted to VDOT.

Our QA/QC Process for Deliverable Documents:

1. **Creation of the QC Document (copy of the deliverable) by the Originator.**
2. **The QC Document is then dated, reviewed, and "red-lined" as appropriate by the design discipline leads.**
3. **The QC Document is returned to the Originator.**
4. **The Originator "highlights" the "red-line" comments. Discussions of the comments with the discipline leader for final determination, making note of final resolution.**
5. **Originator keeps the QC Document for record purposes.**
6. **The Design Quality Assurance Manager provides oversight that design activities adhere to this process and records all reviews.**

The Design Manager verifies conformance with the QA/QC Plan using informal observations and by conducting audits of the checking and review processes established within the QA/QC Plan. Documents marked "Released for Construction" are accompanied by written certification from the Design Manager that the documents were reviewed in accordance with the QA/QC Plan.

Design Review

Design quality control includes review of drawings, engineering computations, and other design related documents for technical accuracy, conformance to contract requirements, grammar and style, and formatting. Design quality assurance evaluates whether the designers assessed problems appropriately, applied correct analyses, and assigned qualified personnel to tasks when conducting design related activities.

Design quality control functions are provided by design discipline leads checking completed work and are carried out to a level commensurate with the complexity of the design element. This effort is managed by the Design Manager who ensures formal and documented reviews occur at predetermined times for

4.4 Project Approach

submitted design documents as identified within the QA/QC Plan

The Design QA Manager performs design quality assurance reviews as set forth in the QA/QC Plan. He verifies that required quality control functions were performed properly and in conjunction with the Design Manager and directs the correction of nonconforming design practices to ensure that:

- Design standards, methods, and requirements of the Project are met;
- Correct application of engineering judgment was made; and,
- Appropriate degree of care was utilized.

Interdisciplinary Coordination

Coordination between disciplines is critical to the success of the Project, not just during design, but during right-of-way acquisition, utility relocation, and construction phases. Interaction between all discipline leaders through all phases leads to properly coordinated project elements and minimal impacts to the schedule.

During design, weekly meetings are held to discuss design details and coordinate with the multiple discipline leaders including roadway, structural, hydraulics, and traffic engineers. Environmental permitting, utility relocation, right-of-way acquisition, construction and QA staff are involved to ensure the design progresses in a manner which considers environmental commitments, utility conflicts, property impacts and construction quality, means, methods, and schedule. Potential conflicts or challenges are recognized and discussed at these meetings, and the entire Project Team is able to efficiently identify alternate solutions. Coordination between disciplines continues beyond the design phase, ensuring that unforeseen situations which may arise are addressed efficiently and collectively.

Constructability Review

Throughout our Team's history of working on VDOT design-build projects, we have found that regular, informal, over-the-shoulder type reviews from construction personnel work best to produce quality designs. These types of reviews are conducted at weekly internal progress meetings where roll plots and/or developed plans are presented to the construction personnel who are building particular pieces of the Project. Immediate feedback regarding the design is provided and appropriate adjustments are discussed so that unnecessarily difficult, unsafe, or out of sequence construction is avoided. Explanations regarding design requirements are conveyed to construction personnel, resulting in a greater overall understanding of project requirements.

In addition to informal constructability reviews, the DBPM coordinates formal reviews of the design by construction personnel and the QAM prior to each plan submission. Comments regarding the constructability of the design are provided to the Design Manager for incorporation and/or further discussion prior to completing each design phase.

Quality Assurance and Quality Control of Design and Field Changes

Design changes, including proposed field modifications to the design, occurring after final approval of Release for Construction Documents are subjected to the same procedures stipulated in the Design QA/QC Plan. Requests for field changes are reviewed by the engineer that performed the original design. After the engineer affirms compliance with applicable design standards and contractual requirements, the proposed change is only accepted after certification by the Design Manager confirming completion of all design quality assurance and quality control procedures. When the need for a field change is identified, the Construction Manager and Design Manager discuss the requested change and determine if it is minor in nature and can be documented through a Request for Information (RFI), or if a formal plan revision is necessary to document a major field change. All field changes, whether resulting from RFIs or plan revisions, are not issued for construction until approved by VDOT.

QAM Involvement During Design

The QAM will coordinate with the DBPM and Design Manager throughout the design phase to ensure

4.4 Project Approach

that Design QA/QC processes are strictly followed. In addition to participation in Interdisciplinary Coordination meetings and constructability reviews, the QAM will audit QA/QC documentation for all design document submissions and field changes to the design, including erosion and sediment control plan changes in accordance with Figure 10-1 of the Drainage Manual.

Construction QA/QC Approach

Our Team's Construction QA and QC Procedures, further described within our QA/QC Plan, have been established to conform to VDOT's July 2018 QA/QC Guide. Our Plan provides the specific requirements of the Project and encompasses procedures for construction QA, construction QC, VDOT's role, materials testing, inspections, documentation, and auditing and recovery. Schedule and coordination of QA and QC activities are addressed including Witness and Hold Points for inspection of work at critical stages. During construction, the QA and QC Teams follow the established and approved QA/QC Plan. The QA/QC Plan is structured to ensure that QC and QA functions are performed independently and that procedures are closely followed and verified through audit processes. Key elements of the construction QA/QC procedures are outlined in the following paragraphs.

Construction Quality Control

The Quality Control Team, led by Quality Control Manager (QCM), is responsible for daily QC inspections and materials testing for all construction operations as directed by the Construction Manager. In addition to inspection of the construction activities, the QC Team is responsible for all QC sampling, testing and analysis of materials and verifying quality at frequencies meeting or exceeding the VDOT *Construction Manual*, the *Materials Manual of Instructions*, and the July 2018 QA/QC Guide. The QCM participates in the preparation of the QA/QC Plan, including the checklists utilized by QC inspectors during the inspection process.

All QC staff actively inspecting and/or testing components of the Project complete an Inspector Daily Report (IDR). The IDRs are electronic diaries in accordance with VDOT guidelines and include, as an attachment, copies of all QC materials tests completed for the day's activities. Signed hard copies of the IDRs are submitted to the QCM daily for review and approval and saved to a shared drive for access and immediate review by the QAM and VDOT. The QCM prepares and submits an electronic Quality Control Monthly Report which summarizes all work completed during the period, inspections, tests, materials placed, action taken for failing materials and NCRs. The QC Team coordinates daily with the construction staff to facilitate scheduling and coordination of testing and inspections

Construction Quality Assurance

The Quality Assurance Team, led by the QAM, is independent of the designer and contractor and is responsible for Quality Assurance of the roadway, structures, and all other construction operations, including managing the independent QA testing technicians. The QA Team includes two full-time lead inspectors, one for structures and one for roadway construction, supported by additional inspectors and testing technicians. The QA Team will be present during all construction operations and ensure that the work and QC activities are performed per Contract requirements. The QAM reports directly to the DBPM and has the authority and responsibility to stop work if not performed in accordance with the Contract requirements.

The QAM conducts preparatory inspection meetings for all major trades and work activities. These meetings are held prior to the start of any new work packages and are attended by the Construction Manager, Superintendent, subcontractors, QA staff, QC staff and VDOT. QA and QC procedures are reviewed in detail in the meetings and Witness and Hold Points are identified. QA inspectors perform daily inspections and material testing as required to meet all QA sampling, testing and analysis requirements. The QA Team ensures that construction quality is verified at frequencies meeting or exceeding those required by the VDOT *Construction Manual*, the *Materials Manual of Instructions*, and the July 2018 QA/QC Guide. All QA inspectors complete daily inspection reports and document all QA Independent Assurance (QA IA) and verification sampling and testing (QA VST). The QAM compares QA IA and QA VST results to the QC, Owner Independent Assurance (OIA) and Owner Verification Sampling and

Testing (OVST) results for consistency.

The QAM oversees the maintenance of the Project’s Materials Book, ensuring documentation of all materials, source of materials, methods of acceptance, and compliance with Buy America requirements. Each month the QAM audits project documentation, approves applications for payment and reports to VDOT if payments should be withheld for non-conformance or work that lacks the proper materials documentation.

QA/QC Staffing and Coordinati

The QA/QC staff has the training and experience required to properly execute the quality program and all staff hold the applicable certifications required by the July 2018 QA/QC Guide for the work they are inspecting. In order to manage QA/QC staff responsibilities, the QAM holds weekly quality review meetings attended by the Construction Manager, the QCM, lead inspectors, and VDOT. These meetings provide a forum to review the weekly look-ahead schedules and plan QC and QA inspection schedules and staffin needs. These meetings also allow the group to review inspection and testing results, examine deficiency reports and solutions for corrective action, and discuss audit findings and necessary updates to the QA/QC Plan. These meetings have been an effective tool to collaborate on improvements in the quality management program based on constructive dialogue between the Construction Team, QA/QC Staff and VDOT. This regular open dialogue should provide assurance to VDOT that quality outcomes are being met and allow the Department to minimize its oversight of the Project as it chooses. In addition to this weekly coordination, the QAM communicates daily with the Construction Manager and QCM to adapt to schedule changes and address quality concerns.

A list of QA/QC staff and duties is provided in Table 12.

Table 12: QA/QC Staff and Dutie

| |
|---|
| Design-Build Project Manager |
| Ryan Marrah provides supervision and administrative management of the entire project including the overall design and construction. He establishes the QA/QC program and ensures design and construction QA and QC efforts are adequate for the Project. |
| Design Manager |
| Carl Kaczmarek, P.E. directs and coordinates the design process, including work by subconsultants, and is accountable for the Design QA/QC Plan. He is responsible for implementing, monitoring, and adjusting the Design QA/QC Plan to ensure acceptable quality of the design work. |
| Design Quality Assurance Manager |
| Steve Kuntz, P.E., DBIA is responsible for quality assurance of design elements included in the Project. He verifies completion of design quality control reviews and performs a complete QA review of all design documents prior to submission to VDOT. |
| Construction Manager |
| Brian Hackley directs and manages day-to-day construction operations and the construction QC. He ensures construction is in accordance with the Project requirements and will be on site full-time for the duration of construction operations. |
| Quality Assurance Manager |
| Avtar Singh, P.E., DBIA is responsible for the development of and adherence to the QA/QC Plan, ensuring all work and materials as well as testing and sampling are performed in accordance with the Contract requirements and approved construction plans and specific tions. He has full authority to initiate work stoppage and is able to recommend to VDOT withholding payment for design and/or construction activities lacking the documentation that shows they are in compliance with the requirements - this authority will be made in writing as part of the QA/QC Plan. |
| Quality Assurance Inspections |
| CES Consulting, LLC provides Quality Assurance Inspectors for both structures and roadway construction elements. There will be two full-time lead QA inspectors with additional inspectors assigned during peak construction months to ensure quality assurance testing and inspections of work items is performed, QC inspections are observed, and correction of non-conformities are completed in accordance with the Contract documents. |
| Quality Assurance Testing |
| Froehling & Robertson, Inc. is AMRL and CCRL certified and will perform Q laboratory testing for the Project. |

Quality Control Manager

The QCM is responsible for construction quality control and oversees construction quality control inspection and testing activities. The QCM assigns inspectors and testing technicians for each work package and monitors reporting documentation to ensure that the work was completed per Contract requirements.

Construction Quality Control Inspections and Testing Laboratory

Similar to the QA staffin plan, there will be two lead Quality Control Inspectors on site full-time, one for roadway and one for structures. Additional inspectors will be utilized when required by the Project Schedule to ensure sufficien coverage is provided at all times. An independent certified QC laboratory will be engaged to perform all QC laboratory tests

Geotechnical Engineer

The lead Geotechnical Engineer with American Geotechnical and Environmental Services, Inc. will oversee design geotechnical evaluations, prepare the project's geotechnical engineering report, and provide recommendations for geotechnical instrumentation and monitoring to the QAM for inclusion in the QA/QC Plan. The geotechnical engineer will visit the site during construction to evaluate pavement subgrade, unsuitable materials, and structural foundations.

Utility Inspector

Reporting to the Utility Coordination Manager, the Utility Inspector will monitor the relocation of utilities including documentation of progress, crew makeup, material resources, and as-built records. The Utility Inspector will coordinate with the QC Inspection staff for verification of suitable backfill materials and compactio

4.5 - Construction of the Project



4.5 Construction of the Project

4.5.1 Sequence of Construction

From the earliest stages of preparing this Technical Proposal, our Team focused on developing a sequence of construction approach that exceeds VDOT’s schedule goals, promotes a safe environment for workers and the public, and limits disruptions to motorists and pedestrians while providing early beneficial use of Project Elements. As a result, *we plan to achieve an early Final Completion by November 03, 2025*, as detailed in Section 4.6. Additionally, *our Team is committing to Unique Milestone #1 which provides the new at-grade signalized pedestrian crossing of US 29 in Element A by September 24, 2024, 14 months earlier than required by the RFP*. This crossing will enhance pedestrian safety and access by providing the only east/west crossing of US 29 for a 2 mile stretch between Angus Road and Rio Road.

Our Proposal Schedule, presented in Section 4.6, provides a detailed outline of our interdisciplinary approach. In addition, our Team’s Sequence of Construction narrative below provides an overview of our approach to completing the Project within the schedule timeframe.

Project Work Areas

The breakdown of work areas is shown in Exhibit 4.5.2.1 on page 43 and is consistent with the Elements defined by VDOT in the RFP. These work area designations represent logical breaks in our approach to the work, utility relocation restrictions, and right-of-way constraints and are defined as follows

| Project Element Key |
|--|
| Element A: Hydraulic Road and US 29 Intersection |
| Element C: Pedestrian Bridge over US 29 |
| Element D: Roundabout at Hydraulic Road and Hillsdale Drive |
| Element E: Access Management Improvements on Hydraulic Road |

Sequence of Construction Philosophy

Our Sequence of Construction is developed to allow efficient execution and progress tracking of the Project Schedule. To facilitate this effort, Elements A, D and E are interrelated and sequenced together as portions of the work in Elements A and E cannot be started until the roundabout in Element D is opened to traffic. As construction of the Pedestrian Bridge over US 29 for Element C is independent of the work in the other Elements, it will be constructed concurrently with the other Elements construction activities. This approach allows our Team to:

- Prioritize the roundabout construction in Element D;
- Expedite work in Elements A and E that can be completed ahead of the roundabout;
- Minimize impacts to the traveling public;
- Enhance safety; and
- Provide early beneficial use of project features

Construction Sequence

Our Team’s construction phasing is divided into the four Project Elements, with two to three stages in each Element. The phasing and general sequence of activities to complete the work is described as follows:

4.5 Construction of the Project

Element A (as shown in Figure 4.5.1.1)



Figure 4.5.1.1: Construction Stages - Element A

Stage A1: This stage will include all Element A work that can be completed prior to the opening of the Hydraulic Road and Hillsdale Drive roundabout and the removal of the left turn lane movements. The work within this stage consists of installing new curb and handicap ramps at all four corners of the intersection, the reconstruction of the porkchop island in the SE corner of the intersection, the median work on US 29 south of Hydraulic Road, and installation of signalized pedestrian movements.

The median construction at US 29 requires installation of new storm drainage that may conflict with existing 8" and 6" gas lines. Work on this stage will begin immediately following the approval of the plans, permits, right of way acquisition, and the resolution of these gas line conflicts. All work in this stage will be completed utilizing Group II channelizing devices for traffic control and working at night when lane closures are required. *Following completion of Stage A1 we will activate the signalized pedestrian crossing of US 29 on the south side of Hydraulic Road achieving our Unique Milestone #1 by September 24, 2024, more than 14 months early.*

Stage A2: As the left turn lanes from Hydraulic Road to US 29 will be maintained until the roundabout in Element D is opened to traffic Stage A2 construction will not start until Stage D2 is completed. Once the roundabout is open to traffic we will modify the signal at Hydraulic Road and US 29 and close the left turn movements to US 29. The removal of the left turn lanes opens up the area in the median of Hydraulic Road for pavement and median reconstruction to realign the westbound through lanes. This work will be completed behind Group II channelizing devices. Following the median reconstruction, Stage A2 will complete with a traffic shift of the westbound lanes of Hydraulic Road toward the median, removing the transition across the US 29 intersection.

Stage A3: The shift of westbound traffic toward the median in Stage A2 creates room to reconstruct the porkchop island in the northwest quadrant of the intersection. This work will be completed in Stage A3 utilizing Group II channelizing devices for traffic control and working at night when lane closures are required. As shown in our Proposal Schedule in Section 4.6, we expect to complete Element A through intermediate asphalt by October 8, 2024.

Element C (as shown in Figure 4.5.1.2)

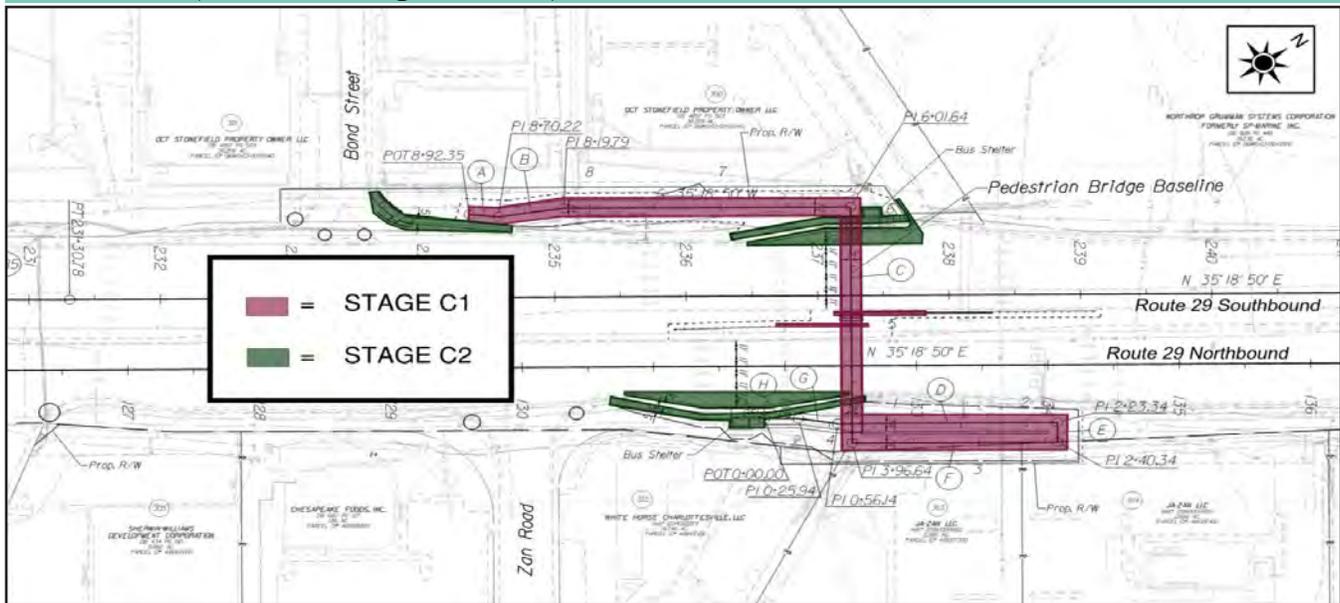


Figure 4.5.1.2: Construction Stages – Element C

Stage C1: Element C is independent from and will be constructed concurrently with the other Elements. Stage C1 will begin following approval of the plans, permits and acquisition of right-of-way. This Stage will start with the relocation of the 12” sanitary sewer that runs parallel to US 29 in conflict with the MSE walls and the west abutment. Concurrent with this work we will uncover and perform a lift-and-lay relocation of the communication lines in conflict with the retaining walls at the east abutment. Once these utility relocations are complete, we will start bridge construction with excavation and construction of drilled shaft foundations at the east abutment, west abutment, and the pier, sequentially. Following the installation of the foundations we will complete the cast-in-place substructure and retaining walls for the ramps at the abutments.

Superstructure construction will start with setting the bulb-T beams, following by forming, installing corrosion resistant reinforcing steel, and pouring the bridge deck, semi-integral backwalls and closure diaphragm, and integral curbs. Bridge finishes will include fencing with handrail and bollard-style lighting to illuminate the walking surface.

Following completion of the retaining walls at the abutments and concurrent with superstructure construction, we will install drainage in the ramps, cast the concrete walking surface, and install HR-1 Type III railing and bollard-style lighting on the ramps. In the median, bridge pier protection systems will be installed to protect the pier from impacts of vehicular crashes.

All work in Stage C1 will be completed utilizing Group II channelizing devices with pedestrian separation along the sidewalks to keep pedestrians out of the work area.

Stage C2: Once the bridge is complete in Stage C1, the work area will be opened up to construct the bus turnouts at each abutment. This work will be performed utilizing Group II channelizing devices for traffic control and working at night when lane closures are required. Pedestrian traffic will be maintained through the work area in temporary configurations that can be safely maintained during construction. The work will start with demolition of the sidewalk and curb, construction of new and re-routed drainage elements and construction of the new curb, pavement section and sidewalk. The ramps leading to the pedestrian bridge will be tied into the existing sidewalks and bus shelters and pedestrian scaled lighting will be installed. As shown in our Proposal Schedule, we expect to complete Element C by September 15, 2025.

Element D (as shown in Figure 4.5.1.3)

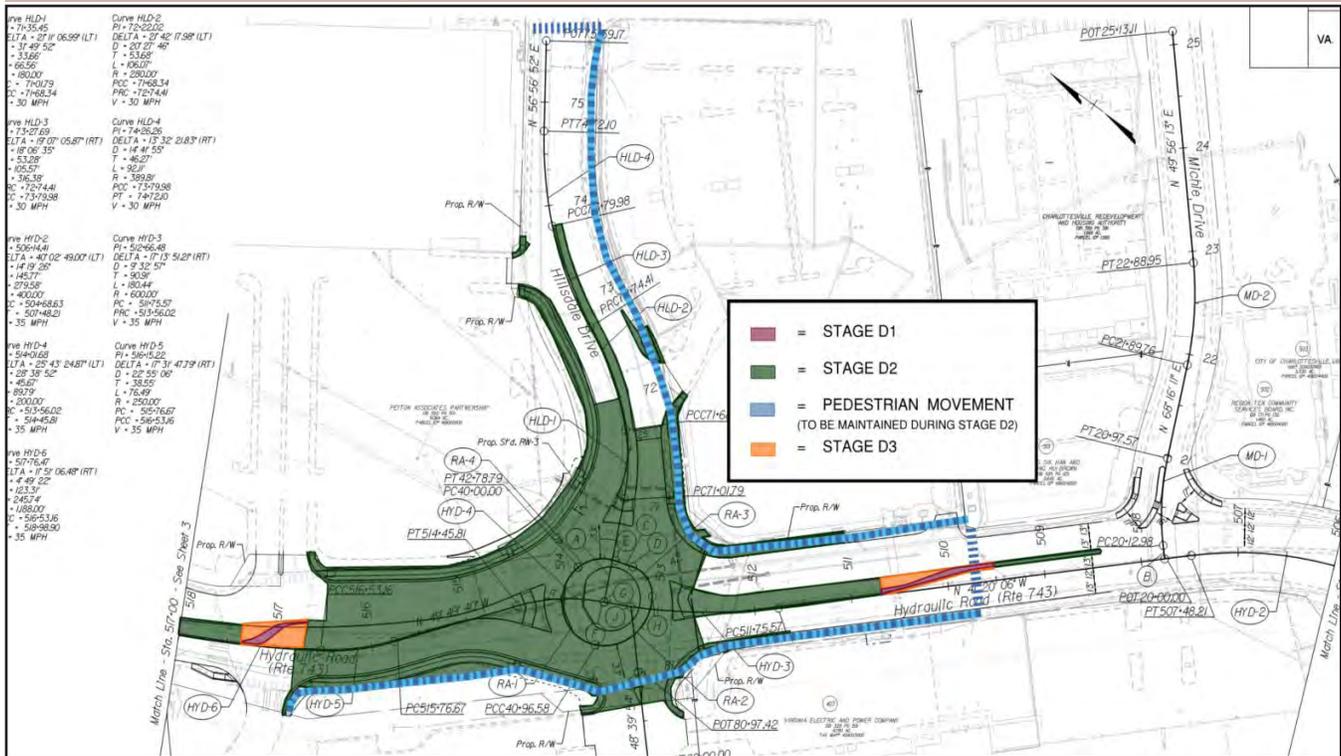


Figure 4.5.1.3: Construction Stages – Element D

Stage D1: The focus of Stage D1 is to construct crossovers in the median of Hydraulic Road on each side of the roundabout to facilitate traffic maintenance during the shutdown. These crossovers will improve access to adjacent businesses and allow for u-turning movements at the points where Hydraulic Road will be closed.

Stage D1 will start after approval of plans and permits. This stage will begin with demolition of the median and construction of temporary pavement at Hydraulic Road Station 517+00 at the Kroger entrance. Crews will then move to Hydraulic Road Station 510+00, demolish the median and construct temporary pavement to improve access for Whole Foods and Dominion Energy. These two activities are required before the shutdown of through traffic at the intersection of Hydraulic Road and Hillsdale Drive and will be completed utilizing Group II Channelizing Devices for traffic control while also working at night when temporary lane closures are required.

Stage D1 will also include relocation of utilities that are in conflict with the existing roadway for unavoidable utility conflicts. These utility relocations will be completed under lane closures at night in advance of the shutdown.

Stage D2: Stage D2 will start following the completion of Stage D1, acquisition of right of way, and extensive public outreach to notify the public of the impending shutdown. First, crews will install signing and pavement markings to properly detour traffic around the intersection as discussed in Section 4.5.2. Once this detour is in place, the closure of the intersection of Hydraulic Road and Hillsdale Drive will begin on or about June 17, 2024. Work that will be completed under the intersection closure includes all work required by Section 5.2.2 of the Provision for “No Excuses Incentive” and will be sequenced generally as follows: demolition of the existing pavement, installation of storm drainage, retaining wall construction, earthwork, construction of the central island curb and truck apron, installation of textured concrete buffers and splitter islands, installation of underdrain, construction of outside curbs, construction of full depth pavement section through intermediate asphalt, construction of sidewalks, installation of temporary pavement markings, permanent signing, lighting, and Rectangular Rapid Flashing Beacons.

4.5 Construction of the Project

Following completion of this roundabout construction, we will open the roundabout to traffic remove all detour signage and temporary traffic control devices and address any non-conformance items of work within the shutdown period. As shown on our Proposal Schedule, all work in Stage D2 is completed by August 2, 2024, 46 days after the shutdown period began.

Through extensive public outreach, VDOT determined that the least impactful time period for the shutdown is during the summer when local schools are not in session. Our Team's Proposal Schedule and sequence of construction has prioritized the activities that need to be completed to achieve this shutdown in 2024, including early right-of-way plans, early utility coordination, prioritizing the parcels needed for Stage D2 in the right-of-way sequence, and construction activities. However, should coordination with adjacent property owners and right-of-way acquisition timeframes unavoidably extend into the summer of 2024, preventing completion of the roundabout before the start of the new school year, we are prepared to shift the shutdown period to the summer of 2025 and ensure that VDOT's commitment to the community that the work will be completed during the summer will be achieved.

Stage D3: Stage D3 work consists of replacement of the median at Hydraulic Road Station 510+00 and 517+00. This work will be completed utilizing Group II channelizing devices for traffic control and working at night when lane closures are required. As shown in our Proposal Schedule, we expect to complete Stage D3 by August 19, 2024.

Element E (as shown in Figure 4.5.1.4)

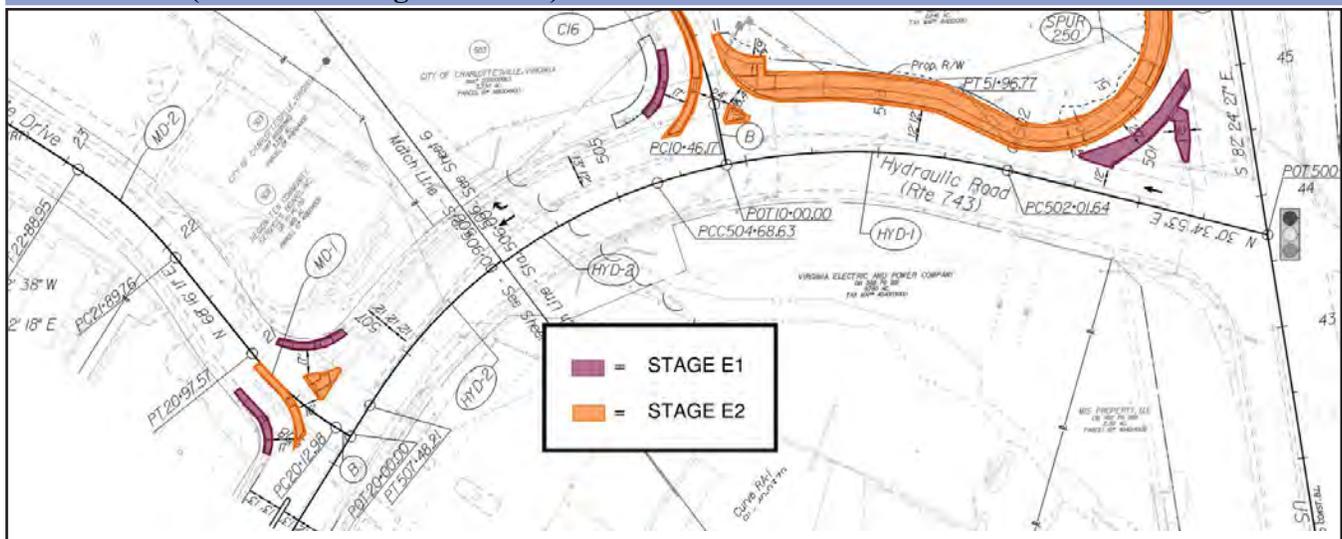


Figure 4.5.1.4: Construction Stages – Element E

Stage E1: This stage will include all Element E work that can be completed prior to the opening of the Hydraulic Road and Hillsdale Drive roundabout in Element D. Stage E1 will begin following approval of the plans and permits and acquisition of right-of-way. This Stage will start with the realignment of the curb along the island at the US 250 Spur. We will also complete drainage improvements on both sides of Brandywine Drive and the curb and handicap ramps on at Brandywine Drive and Michie Drive. This Stage will also include relocation of unavoidable utility conflicts including the utility pole in the existing shared use path at Hydraulic Road Station 503+50 and communication lines that are potentially in conflict with the proposed storm drainage

Stage E2: Following Stage E1 and the opening of the roundabout in Stage D2, we will shift the traffic on the US 250 spur toward the island. In Stage E2, we will work behind group II Channelizing devices for traffic control while also working at night when temporary lane closures are required. Once traffic is shifted at the US 250 spur, we will demolish the existing pavement along the north side of Hydraulic Road and construct the storm drainage, pavement section, underdrain, curb and shared use path between US 250 to Brandywine Drive. Finally Stage E2 will complete with reconstruction of the raised medians

4.5 Construction of the Project

and islands at Michie Drive and Brandywine Drive. As shown in our Proposal Schedule, we expect to complete Element E by November 12, 2024.

Project Finishes

As the sequence of Elements A, D and E are interrelated and expected to be completed during 2024. We will complete the surface paving, pavement markings and landscaping for these elements together once the work listed above for these elements has been completed. As shown in our Proposal Schedule, the Project Finishes for these elements will be completed by December 3, 2024. For Element C, bridge and ramp construction will extend into 2025 at which time we will complete the mill and overlay of the existing lanes of US 29 at the pedestrian bridge in the fall of 2025. As shown in our Proposal Schedule, the Project Finishes for Element C will be completed by September 19, 2025. ***Final Completion by November 03, 2025 will occur upon completion of inspections and punchlist 32 days earlier than required by the RFP.***

Anticipating and Mitigating Potential Delays

The primary method that our Team uses to anticipate delays is through close updating and monitoring of the Project Schedule, as well as the 2 and 3-week look-ahead schedules. Progress that is lagging behind anticipated timeframes, activities taking longer than planned, or disruptions to the planned sequence of work are all indicators that the Schedule is being delayed or adversely impacted. A second method that indicates a potential delay is the close monitoring of production rates, particularly for self-perform activities. When delays are identified, the DBPM and CM will quickly review the issue to determine the cause and discuss appropriate recovery actions with the responsible discipline lead(s) to mitigate the impact. Mitigation measures can include re-sequencing the Schedule, adding resources, increasing work hours, or replacing resources with more productive ones.

Specific to this Project, utility relocations and right-of-way acquisitions pose the most significant risks to the Project Schedule to start Element D by the summer of 2024. To mitigate this risk, we will develop an early right-of-way package for approval by the end of 2023, allowing us to start early right-of-way acquisition for Element D as our Priority 1 parcels. We will also begin utility relocations early by working at night within the right-of-way ahead of the Element D acquisitions. However, should right-of-way acquisitions not be completed in time for a 2024 shutdown, we are prepared to shift the 46-day shutdown period to the summer of 2025 to ensure the shutdown can be completed during the least impactful time period.

Safety and Operations

At the top of our list of Core Values at Shirley is the Safety of our people, our subcontractor partners, the client, and the public. The design and the means and methods of construction are developed with the safety of the workers and the traveling public as the highest priority. Our motto “Safety Starts with Me” reflects the company’s policy and position that every individual must be involved, empowered and accountable for project safety. The construction team will implement safety on site through the following, now standard, practices:

- ✓ A Safety Manager assigned to the Project with support from the corporate Safety Department;
- ✓ Task-specific training on construction safety, fall protection, first aid/CPR, rigging, trenching and excavation;
- ✓ Safety Orientation to the Project’s unique conditions for all Shirley and subcontractor employees;
- ✓ Daily “Take-5” safety discussions and review of the Safe Plan of Action (SPA) for the day’s activities;
- ✓ Issuance of a Shirley “Dig Permit” prior to any excavation activity, or work adjacent to overhead utilities;
- ✓ 100% Glove Policy for all personnel on-site to mitigate hand injuries;
- ✓ “Safe Start” program requirements included in all subcontracts;
- ✓ Daily safety inspections performed by members of the Project team designed to engage all workers on site;

4.5 Construction of the Project

- ✓ Monthly Safety Meetings to review incidents, trends and safety topic training;
- ✓ Recognition of employees who consistently display a good safety attitude, practice safe work practices, and achieve safety performance goals; and
- ✓ Job wide safety incentives to reward a successful Safety culture.

For the safety of the traveling public, our Team's Transportation Management Plan (TMP), presented in Section 4.5.2, provides the baseline for maintaining mobility through the Project with limited interaction with construction activities. For any work zone setup, or any temporary lane closures allowed by the contract, the VDOT Work Zone Safety Checklist will serve as the minimum standard for conformance with the Project's safety requirements, and checks will be performed daily. In the case of any incidents on or adjacent to the site, our Team will work closely with first responders and VDOT's Traffic Operations Center (TOC) and Incident Management staff to make the scene safe and restore traffic when applicable.

Shirley Underground, a division of Shirley equipped with multiple Hydro-excavation trucks, has the capability to complete soft digging operations on our projects as a safe means to locate underground utilities. This is an advantage to our construction team's operations by providing prompt reaction to the discovery of unknown utilities, and advanced test pitting to locate and expose known facilities. Our Team's ability to react quickly to a potential issue, and minimize service disruptions or crew downtime when a utility may be discovered, allows our construction crews to more safely and efficiently complete work.

Staging and Storage Areas

While all storage and staging locations have not been determined at this time, the Team has identified several locations that are available both on and off the Project. Our approach to construction will include timely ordering and staging of material which eliminates unnecessary double handling of materials and greatly reduces the need for specific lay down areas. These areas will be developed early, such that inclusion in the initial SWPPP documents is possible. In the case that these areas cannot be secured prior to submission of our SWPPP, we will ensure that we attain the rights to and document them prior to commencing physical work requiring lay down areas.

In addition, once construction begins, our Team will provide deliverymen with specific guidance for all deliveries as well as specific directions for material haulers performing on-site movement of machinery and equipment to avoid conflicts with local businesses and citizens. Construction entrances will be strategically located at existing signalized intersections whenever possible for safe access at controlled locations.

4.5.2 Transportation Management Plan

US 29 is a vital regional route, carrying over 40,000 vehicles per day and connecting points between Culpeper and Northern Virginia to the north, and Lynchburg to the south. In addition to US 29 and Hydraulic Road facilitating commercial and local access, the Project limits include one of the highest concentration of crashes in the region, substantial congestion in the morning and afternoon peaks, high volumes and high number of conflicting turn movements, the presence of Charlottesville Area Transit (CAT) routes and stops, and lack of a controlled pedestrian crossing of US 29. These factors compound the importance of developing a strategic and comprehensive Transportation Management Plan that addresses constructability challenges while also preserving traffic mobility, public safety for all modes of transportation, and construction personnel safety.

Our Team is dedicated to exceeding expectations by delivering this Project in a way that minimizes impacts to the public during construction. Our Transportation Management Plan (TMP) and Temporary Traffic Control (TTC) plans will be developed with a focus on maximizing safety for the traveling public and construction personnel, minimizing travel delays and access impacts throughout all stages of construction, and implementing crash avoidance and incident management techniques. To accomplish these safety, mobility, and communication goals, we have committed to numerous enhancements *that exceed the requirements of the RFP*. These include:

4.5 Construction of the Project

- Monitoring of work zone conditions throughout construction by our Traffic Engineers who are VDOT Certified in Advance Work Zone Traffic Control
- Expediting the delivery of pedestrian safety improvements by opening the proposed pedestrian crossing of US 29 at Hydraulic Road by **September 24, 2024, as Unique Milestone #1**.
- Improving safety of pedestrian traffic during construction by providing physical pedestrian protection and temporary high visibility crossings for detoured pedestrian traffic
- Communicating with bus and transit operators for maintenance of bus stop and route access; and
- Utilizing enhanced safety devices and strategies, including tighter channelizing device spacing at critical areas for increased work zone delineation and improved safety.

TMP Philosophy

Our TMP and construction program is focused on reducing the Project's anticipated impacts to the traveling public. This will place a particularly heavy emphasis on eliminating the need for temporary lane closures to the largest extent possible, as we thoroughly understand the impact that lane closures can have to mobility, property access, and safety. **Additionally, our Team commits to field reviews by our Advance Work Zone Traffic Control VDOT Certified traffic engineers during construction.** These regular reviews will verify that traffic controls have been implemented per the design engineer's intent and provide recommendations for further enhancements based on field conditions. This enhancement is in addition to the Work Zone Safety Inspections completed by our QA and QC Team. An example of these traffic engineer reviews can be seen in Figure 4.5.2.

Sequence of Construction/Phasing

As introduced in Section 4.5.1, the Project is categorized by four distinct Project Elements and further segmented into stages of construction. These stages maximize public safety, minimize public impacts, and allow for the timely completion of the Project. The sequence of construction was designed to accomplish the following:

- Advance work that can be completed prior to roundabout detour implementation in Element D to reduce schedule risk after roundabout completion;
- Expedite construction of elements that improve pedestrian safety, such as the controlled crossing of US 29 at Hydraulic Road shown as our Unique Milestone #1;
- Minimize impacts to businesses; and
- Minimize impacts to non-motorized users.

In addition, the sequence maintains continuous property access at all times during construction, and honors the RFP requirement of implementing of Element D roundabout operations prior to removing left turn movements from Hydraulic Road, Michie Drive, and Brandywine Drive. This detailed and up-front planning also allows our Team the confidence that the Project will be delivered on-time in a safe manner with limited public impacts.

As introduced in Section 4.5.1, this sequencing allows our Team to efficiently construct the Project while minimizing impacts to traffic. We carefully studied numerous options when developing this staging, resulting in a plan that minimizes traffic impacts and maximizes continuous surrounding multi-modal access and property access. Sequencing highlights are detailed in Figure 4.5.2.2 and displayed on Exhibit 4.5.2.1. The exhibit contains a color coded map for each stage of construction, potential concurrent timing of activities to reduce schedule impacts, and explains the specific features, challenges, and solutions of each Element. The red stages for each element are to occur first, followed by the green stages. The orange stages are not to occur until after the opening of the Element D roundabout.

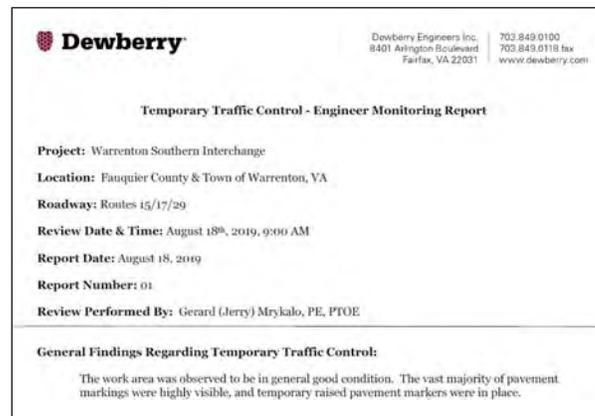


Figure 4.5.2.1 - TTC Engineer Monitoring Report

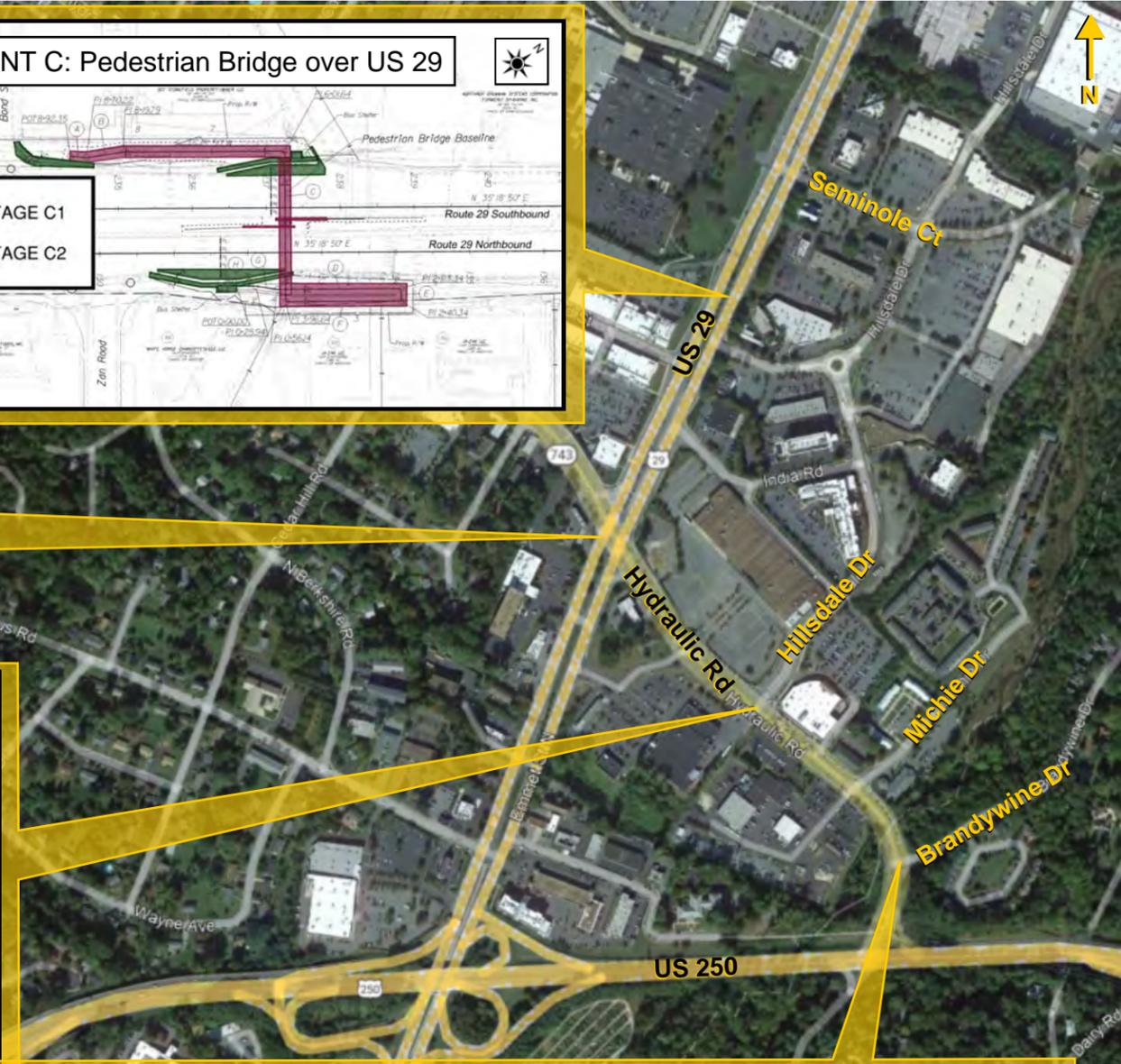
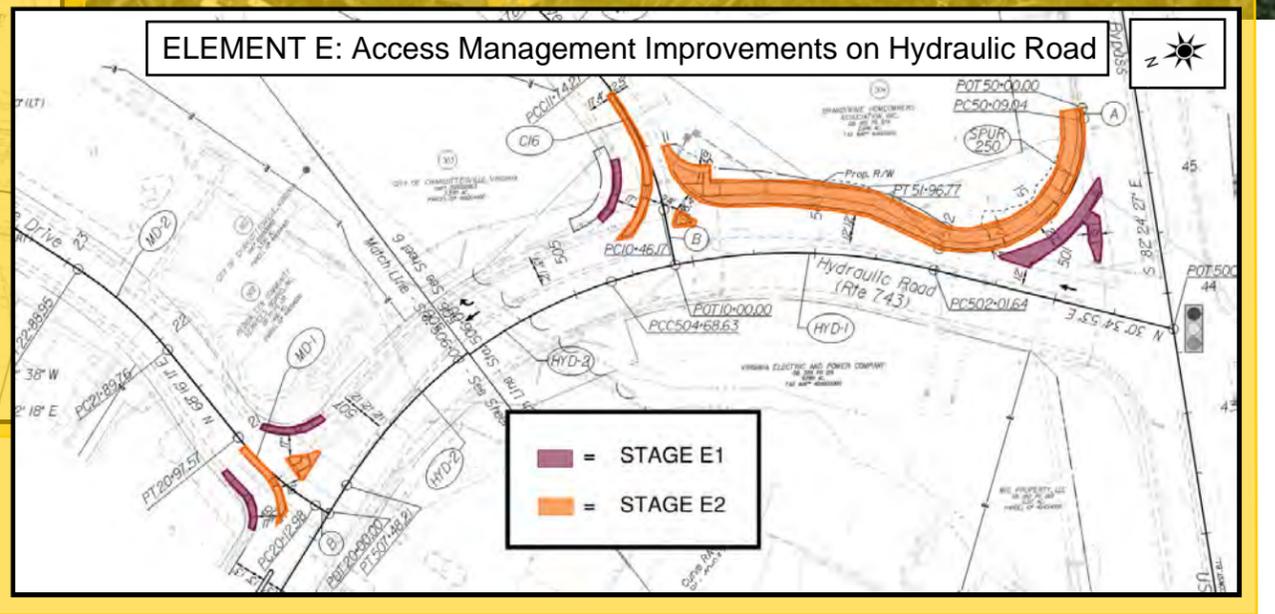
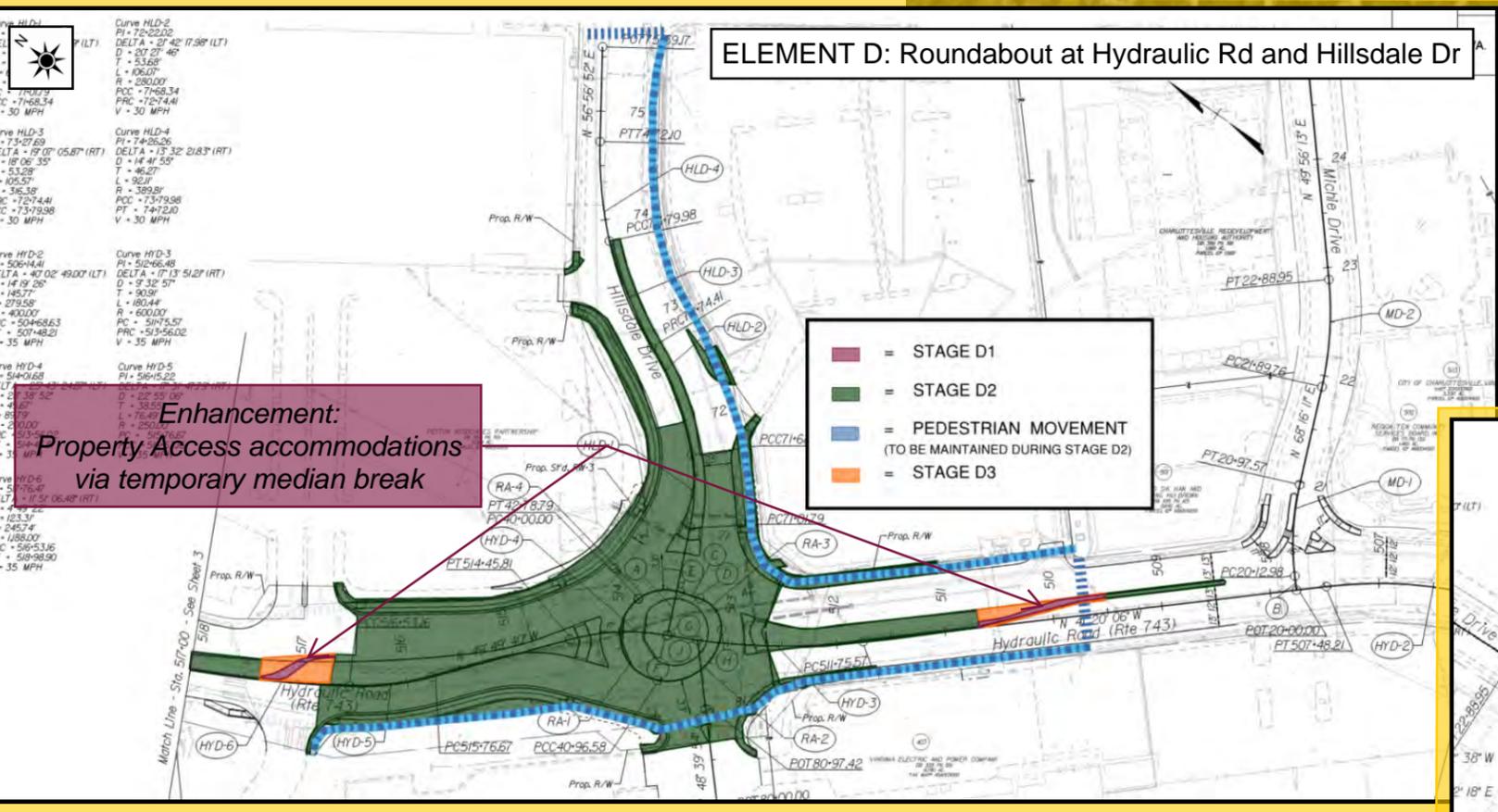
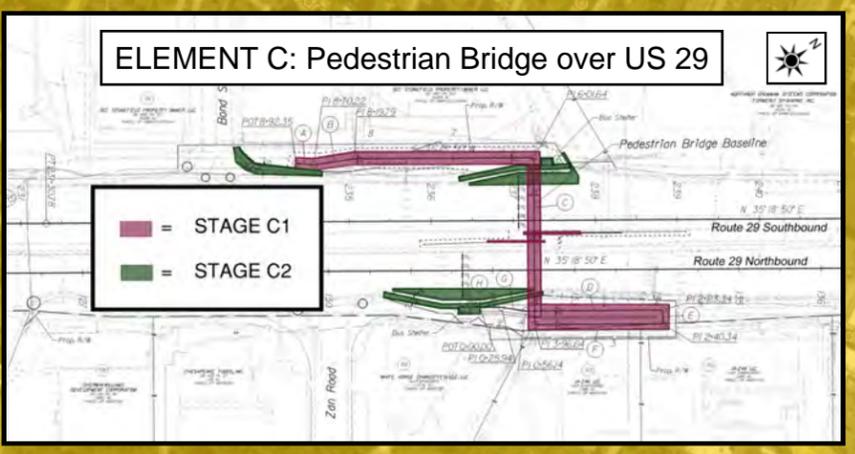
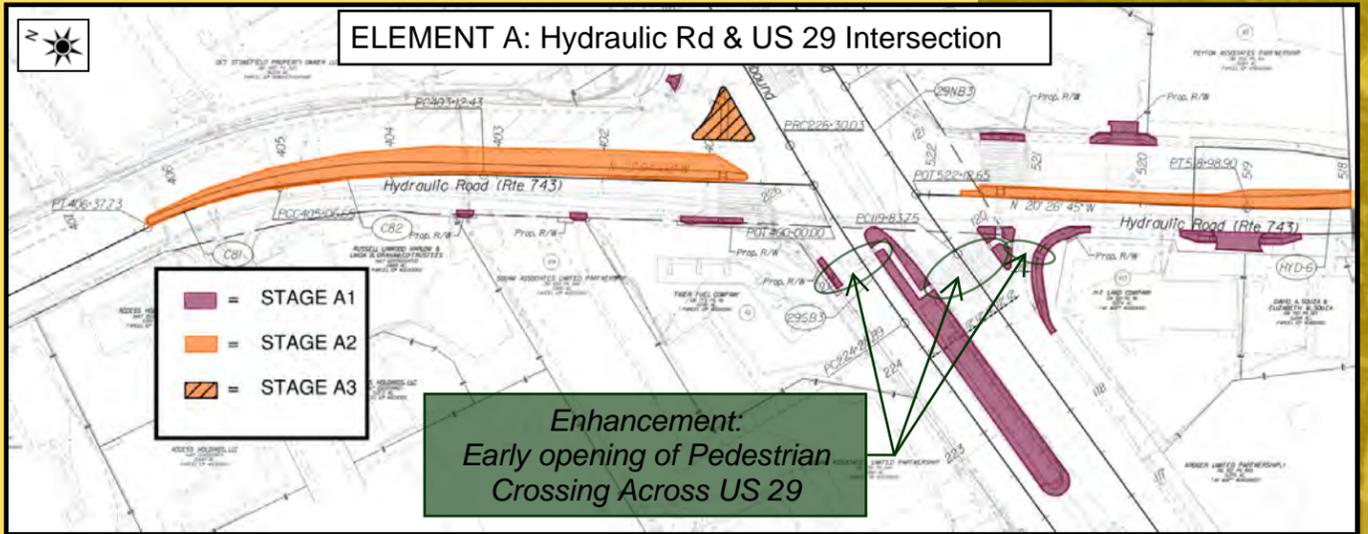


EXHIBIT 4.5.2.1
01-24-2023 N.T.S.

NOTE:
Stages indicated in Orange () are not to occur prior to the opening of the Roundabout at Hydraulic Rd and Hillsdale Dr.

4.5 Construction of the Project

Figure 4.5.2.2 Sequencing Highlights (color chart below matches stages on Exhibit 4.5.2.1)

Use of a pre-stage (Stage D1) for the construction of temporary median break crossovers at two locations on Hydraulic Road to allow for the maintenance of property access to adjacent businesses during the full roadway closure in Stage D2

Early work during Stages A1 and E1 to complete curb and curb ramps, pedestrian access, median work, and work along US 29 at the Pedestrian Bridge and median pier in areas with no impact to existing traffic pattern

Stage C2 work along US 29 to include relocation of existing sidewalks followed by construction of bus stop pull-offs, while using physical pedestrian barriers to maintain pedestrian traffic during construction.

Stage D2 work within the full roadway closure of Hydraulic Road at Hillsdale Drive and including temporary high visibility pedestrian crossings of Hydraulic Road at Michie Drive and of Hillsdale Drive north of the roadway closure to maintain pedestrian traffic through and around the road closure area.

Stages A2, A3, D3, and E2 will begin after the completion of Stage D2 and the opening of Roundabout operations at Hydraulic Road and Hillsdale Drive. These stages will consist of median work on Hydraulic Road at US 29 to remove the left turn lanes and reconstruct concrete island, work on Hydraulic Road to complete the median work at the Roundabout approaches, intersection access limitation construction on Hydraulic Road at Michie Drive, Brandywine Drive, and Route 250, and shared use path extension from Route 250 to Brandywine Drive.

Traffic Control Details

Our Team has developed a temporary traffic control strategy that minimizes impacts to the traveling public. Upon Award, we will begin the design of the Type C, Category V TMP and will develop site-specific TTC plans for each stage of construction. The plans will detail all controls required for construction, such as work areas, protection devices, channelizing devices, signs, PCMS, temporary markings, temporary drainage elements, construction access points, lane closures and detours, coordination with temporary signal modifications, and all other requirements per VDOT's I&IM-241/TE-351, the *Virginia Work Area Protection Manual*, and the *Manual on Uniform Traffic Control Devices (MUTCD)*. Our Team also recognizes common shortfalls with TTC in urban work zones, and we are committed to avoiding these conditions with carefully designed site specific TTC plans. For example, we will utilize reduced channelizing device spacing to better delineate the interface of the work zone from the travelway, exceeding the requirements of the RFP.

Lane and Road Closures, Detours, Flagging, Pedestrians, and Lane Widths

Element A

- No planned long-term lane closures or long-term road closures with detours;
- No anticipated long-term temporary lane shifts;
- Lane closure (time of day) restrictions will follow Part 2, Section 2.10.3 of the RFP. Temporary lane closures are anticipated for activities such as paving, curb improvements, signal work, and delivery of materials;
- Temporary 20-minute maximum full stoppages on US 29 will only be implemented for activities that mandate stoppages, such as overhead signal work;
- No flagging operations are anticipated on multi-lane roadways; and
- Minimum 11 foot wide lanes will be maintained.

Element C

- No planned long-term lane closures or long-term road closures with detours;
- No anticipated long-term temporary lane shifts;
- Lane closure (time of day) restrictions will follow Part 2, Section 2.10.3 of the RFP. Temporary lane closures are anticipated for activities such as paving, curb improvements, bridge work, and delivery of materials;
- Temporary 20-minute maximum full stoppages on US 29 will only be implemented for activities that mandate stoppages, such as overhead bridge work;
- No flagging operations are anticipated on multi-lane roadways; an
- Minimum 11 foot wide lanes will be maintained.

Element D

- Full closure of intersection with detour and access maintenance for adjacent businesses;
- Lane closure (time of day) restrictions will follow Part 2, Section 2.10.3 of the RFP. Temporary lane closures are anticipated for activities such as paving, curb improvements, and delivery of materials;
- No flagging operations are anticipated on multi-lane roadways; an
- Minimum 11 foot wide lanes will be maintained where work is within limits open to traffic

Element E

- No planned long-term lane closures or long-term road closures with detours;
- No anticipated long-term temporary lane shifts;
- No anticipated temporary full stoppages;
- Lane closure (time of day) restrictions will follow Part 2, Section 2.10.3 of the RFP. Temporary lane closures are anticipated for activities such as paving, curb and sidewalk improvements, and delivery of materials;
- Flagging operations on Michie Drive and Hillsdale Drive for median and island construction will comply with lane closure restrictions in Part 2, Section 2.10.3 of the RFP; and,
- Minimum 11 foot wide lanes will be maintained.

Work Zone Speed Reductions

Our Team recommends maintaining the existing speed limit during construction given that speed reductions, where not justified based on geometry, have the potential to lead to speed differentials, and increase the likelihood of work zone crashes. Our TTC lane configurations will be in accordance with existing speed limits on all roads.

Project Stakeholders, Communication, and Impact Mitigation Strategies

The presence of several modes of traffic (vehicular, pedestrian, bicycle and transit) and numerous stakeholders within the Project limits underscores the importance of developing strategies that minimize impacts to stakeholders and thoroughly communicates construction activities. This includes the need to maintain traffic mobility for the high traffic volumes during peak periods, ensure pedestrian, bicycle, and transit access and safety is accommodated at all times, and ensure impacts to businesses and adjacent properties are minimized.

Our Team recognizes that proactive communication with all stakeholders is essential to a successful TMP. As with any large-scale transportation improvement project, some inconvenience is unavoidable, but our Team's goal is to minimize these impacts. VDOT has already engaged in a public involvement process during the development of the RFP Conceptual Plans, including a public hearing. Our Team commits to continuing the robust public involvement during final design, right-of-way acquisition, and all construction phases. As detailed in the following sections, we have identified the Project's stakeholders, determined how they may be impacted, and devised targeted mitigation and communication strategies to eliminate or reduce impacts. Below are the major communication and mitigation strategies proposed, organized by stakeholder group, all of which will be in compliance with Section 2.11 of the RFP (Public Involvement/Public Relations).

4.5 Construction of the Project

Traveling Public (Vehicular)

US 29 is a vital commuter route for the Charlottesville area and experiences heavy traffic during peak periods. Roadway users have come to expect an acceptable level of mobility through the corridor. Our Team understands that roadway construction activities can cause impacts to the traveling public and local residents in the form of travel time delays, construction noise, driver confusion, and potential safety impacts, and therefore proactive and timely communication of construction activities and the potential impacts is a critical mitigation strategy. Strategies include:

Targeted Communications - A proven way to improve safety and minimize community impacts is to ensure the public is well informed of events such as lane closures and new traffic patterns. We will collaborate closely with VDOT's public relations personnel to promote work zone safety for all modes of transportation. Effective methodologies include website and social media postings, flyers for distribution at local businesses, and local media stories.

Public "Pardon Our Dust" Meetings - In addition to the affected stakeholder meetings required by Section 2.11 of the RFP, we commit to holding three "Pardon our Dust" meetings for the general public. This communication ensures the community at large has access to the Project Team in an effort to manage expectations of mobility for roadway users, reduce driver frustration, and increase familiarity of traffic patterns, thereby improving safety.

Utilization of PCMS Devices - PCMS devices offer critical and timely communication of construction activities and traffic impacts as roadway users are entering the Project limits. These PCMS messages will be developed by design engineers, ensuring the messages are succinct and comprehensible.

Traveling Public (Non-Motorized)

Non-motorized traffic includes pedestrian, bicyclists, scooter users, and transit (bus) users. These groups require special attention due to the potential severity of a collision with a vehicle. Strategies specifically designed for these groups include:

Targeted Communications - Similar to the strategies for vehicular traffic noted above, we will collaborate closely with VDOT's public relations personnel to promote work zone safety for the non-motorized traffic. Effective methodologies include website and social media postings, posters at bus stops, and outreach to bicycle groups.

Specialty Devices - Given pedestrian traffic is not constrained to travel lanes as vehicles are, we understand the importance of providing physical separation between pedestrian traffic and work activities, and demarcation of the interface with construction. To accomplish this, physical pedestrian fencing will be implemented along this interface to safely maintain pedestrian traffic during construction. Also, special guide signs specifically for pedestrians will be included to ensure routes are fully understood, as shown in Figure 4.5.2.3. Furthermore, the sequence of sidewalk construction will be fully integrated into the TTC plans and TMP to ensure continuous access is provided.

Early Opening of Pedestrian Improvements - As an enhancement that exceeds the requirements of the RFP, the Team commits as Unique Milestone #1 to open the proposed pedestrian crossing of US 29 by September 24, 2024. This enhancement advances the addition of this safe crossing by 14 months, expediting the delivery of pedestrian safety.

High Visibility Devices - We commit to providing high visibility temporary pedestrian crossings: one at Hydraulic Road and Michie Drive, and one at Hillsdale Drive north of the roadway closure to ensure safe pedestrian access to all properties in the vicinity of the road closure limits. These crossings will include oversized fluorescent yellow-green warning signs and high-visibility "ladder" style crosswalks



Figure 4.5.2.3 - Pedestrian Detour Signs

4.5 Construction of the Project

Local Residents, Local Businesses, Organizations, Community Associations

Given that US 29 and Hydraulic Road are highly utilized by commuters, local residents, and retail and commercial traffic mitigation of impacts of the full roadway closure of Hydraulic Road at Hillsdale Drive is critical. To accomplish this, our Team commits to the following to reduce impacts to the local businesses and the community:

Early Median Work on Hydraulic Road - On the east and west edges of the road closure limits of Hydraulic Road, temporary access modifications will facilitate continuous access to adjacent businesses during the full roadway closure of Hydraulic Road, with benefits including accommodating u-turn movements and limiting the impacts to local businesses, organizations, and community associations as shown in Figure 4.5.2.4.

Enhanced Wayfinding Signing - Recognizing that travel pattern changes during detour operations can be confusing, our Team commits to installing business specific wayfinding guide signs to limit impacts to traveling public and the affected businesses. This will include coordinating directly with those business owners to address any specific access concerns.

Stakeholder Meetings - Formal and informal meetings with affected businesses, stakeholders, local residents, and community associations will be held in collaboration with VDOT staff

High Visibility Devices - Content for VDOT's website and social media feeds will be developed, including project updates, upcoming traffic impacts, and other notable events.

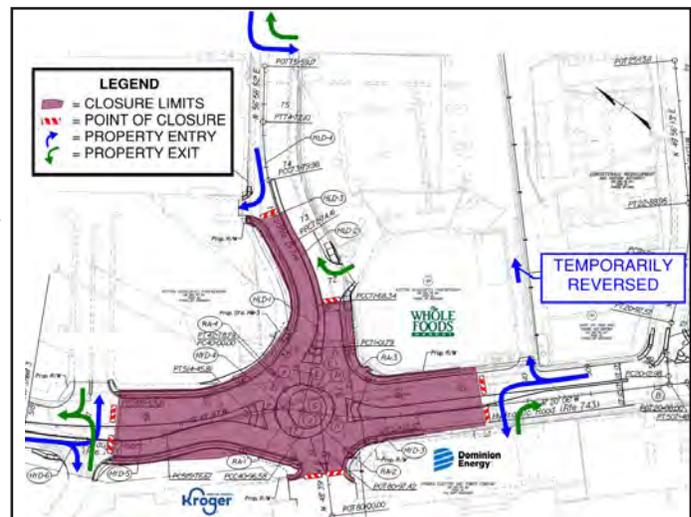


Figure 4.5.2.4: Business Access During Closure Period

First Responders

The maintenance of continuous roadway access throughout the project area, as well as advance notification of access changes, is critical for maintaining response times for local First Responders.

Including First Responders in public “Pardon Our Dust” meetings and pre-switch emergency responder meetings for response planning, will not only help inform the First Responders of road closures and construction activities and reduce impacts to response times, but the open communication will also aid in incident response strategies for incidents that occur within the project limits and adjacent local properties. Optimization of the full roadway closure of Hydraulic Road at Hillsdale Drive is also critical to minimizing impacts to these local First Responders.

Early work in the median of Hydraulic Road within Element D on the east and west edges of the road closure limits will not only provide alternative access to adjacent businesses for their customers and deliveries, but will also limit impacts to the response time for First Responders in the case of incidents at those properties.

Local Schools and School Bus Transportation

Our Team understands the importance of implementing control measures during construction that aid in maintaining access to local school bus stops and promote safety for school students. Following the RFP requirement to limit the full roadway closure on Hydraulic Road to summer months when school is not in session will reduce impacts to local schools and school bus transportation routes. The following strategies will be employed throughout construction:

- Notifications of work will be sent to school transportation contacts in advance of traffic switches; a

4.5 Construction of the Project

- Coordination of bus stop relocations during temporary bus stop closures.

Local Jurisdictions and Governing Entities (City of Charlottesville and Albemarle County, VDOT)

As the Project is located in a heavily populated and thriving area, roadway construction projects impact not only roadway users, but also local jurisdictions and governing entities. Some impacts include project review and comment periods and coordination with adjacent projects. Our mitigation strategies include:

- Operating as a liaison between VDOT and City of Charlottesville and Albemarle County to ensure compliance with local ordinances; and
- Coordinating reviews and addressing all comments by local jurisdictions when directed by VDOT.

4.6 - Proposal Schedule

4.6 Proposal Schedule

4.6.1 Proposal Schedule

Our Team’s Proposal Schedule is provided in Volume II - Design Concept.

4.6.2 Proposal Schedule Narrative

Schedule Overview

Our Team has reviewed the Project and schedule requirements of the RFP in detail and developed a Proposal Schedule outlining our plan to successfully manage the anticipated scope of work. This schedule has been optimized to deliver the Project in the shortest time possible while meeting RFP requirements, minimizing impacts to road users and pedestrians, protecting the environment, and ensuring the safety of workers and public. Activity durations are derived from estimated quantities required by our unique design concept and combined with anticipated production rates based on site specific conditions, and historical data from our Team’s experience with similar work on other projects.

Schedule Milestones

Project milestones have been established to easily monitor the delivery of the Project in advance of the RFP specified completion date of December 5, 2025. Our Team commits to an **Early Final Completion Date of November 3, 2025, 32 days earlier than the RFP**. Additionally, **our Team commits to Unique Milestone #1 to deliver an at-grade pedestrian crossing of US 29 at its intersection with Hydraulic Road by September 24, 2024, 14 months early**. A summary of our contractual and schedule milestones is included in Table 13.

Table 13: Contract and Schedule Milestones

| Contract and Schedule Milestones | Date |
|--|---------------------------|
| Notice of Intent to Award | March 17, 2023 |
| CTB Approval / Notice to Award | April 19, 2023 |
| Design-Build Contract Execution | May 18, 2023 |
| Notice to Proceed | May 23, 2023 |
| Unique Milestone #1 | September 24, 2024 |
| Shut Down for Element D Roundabout | June 17, 2024 |
| Shut Down Period for Element D - 46 Days | |
| Element D Roundabout Open to Traffic | August 2, 2024 |
| Early Final Completion | November 3, 2025 |

Schedule Calendars

As specified below, activity calendars are assigned using project-level calendars. All calendars are based on 8-hour workday except as described below:

5 HOL: “5-Day Workweek with Holidays”: This calendar allows work five days per week except on standard holidays and it is used for all design and administrative activities in the CPM network.

5 HOL_WTH: “5-Day with Normal Anticipated Weather”: This calendar is used for most construction activities. It includes holidays as inserted in the ‘5 HOL’ calendar as well as ‘block-out’ days for the anticipated normal weather in the region.

5HOL_WTH ASPHALT: “Winter Shutdown”: Assigned to activities that are anticipated to be shut down during the winter, such as asphalt surface paving and pavement markings, this calendar contains no working days from December 15 one year to March 15 of the next year.

4.6 Proposal Schedule

7DAY: “7-Day No Holidays”: This calendar allows work seven days per week on activities that progress on a calendar-day basis such as design and construction submittal review activities.

5 HOL_WTH: “Roundabout Shifts”: This calendar is identical to the 5-day Workweek with normal Anticipated Weather calendar except that it provides for 16-hour workdays during the allowable Hydraulic Road/Hillsdale Drive intersection shutdown period. This calendar is assigned to activities under Stage D2 which are expected to work double shifts during the shutdown.

5HOL_LANDSCAPE “Landscaping Calendar”: Assigned to activities that are unable to be performed during November 1st through March 15th and May 1st to August 31st due to allowable “planting season”.

Work Breakdown Structure

Our Team has developed a detailed Proposal Schedule in accordance with the RFP requirements. The schedule is organized into a hierarchal Work Breakdown Structure (WBS) to demonstrate the relationships and activity durations among the schedule milestones, design phase, environmental permitting, public involvement, right-of-way acquisition, utility relocations, and construction. These elements of the design-build process are captured under the Level 1 WBS as described below:

- A. Schedule Milestones:** Area reserved for easy review of the Project status containing major milestones that are critical to the Project or prescriptive in RFP. This section also includes the Scope Validation Period and Construction Milestones.
- B. Design Phase:** Includes preliminary engineering services, plan development, QA/QC reviews, submittal milestones, and reviews and approvals of plans by VDOT and other regulatory agencies. This section of the schedule includes a second level WBS structure to group design activities by type of design submission classifying it by Preliminary Design and Final Design and third level WBS to group activities by type of preliminary design work and final plan submission package
- C. Environmental Permitting:** Includes permit coordination and preparation, permit submissions, reviews, and approvals. Initial efforts will include identifying and locating Waters of the US followed by coordination for the Joint Permit Application, including T&E Species coordination. This section also includes the LD 455/ VPDES Permit and the SWPPP submissions needed for the Construction General Permit.
- D. Public Involvement/Public Relations:** This section of the schedule allows for public coordination, planned public involvement meetings, and updates with the stakeholders.
- E. Right-of-Way/Easement Acquisition:** This section of the schedule is used to monitor the acquisition of right-of-way and easements for the Project including appraisals and appraisal reviews, offers, negotiations, settlements, and certificates. To prioritize groups of properties by order of need, we have included a second level WBS structure that separates right-of-way acquisition activities by Priority. Dividing the right-of-way activities into groups will enable our Team to focus our right-of-way acquisition efforts on the most schedule critical acquisitions and track these critical acquisitions to ensure on-time completion.
- F. Utility Relocations:** The Utility Relocation section of the schedule starts with the coordination and includes activities for UFI meetings, preparation of plan and estimates (P&E), approval of P&E by the design-builder and VDOT, and relocation of the utilities. This section includes second level WBS to divide the activities by utility owner.
- G. Construction:** The Construction section of the schedule is segmented by levels of WBS structure to divide the construction activities by location and stages to show the interfaces and easily track progress to ensure early completion. This section also includes Procurement, Submittals and Fabrication Activities and Construction Quality Assurance and Quality Control.

4.6 Proposal Schedule

Critical Path

The critical path has been defined as the Longest Path. After Notice to Proceed, it begins with bridge design activities for Element C followed by bulb-T shop drawings and fabrication and delivery of the beams. It then continues through erection of the beams and bridge superstructure construction. Once the decks are poured, the critical work includes completion of the MSE walls in Stage C1. The critical path then moves to Stage C2, with construction of the bus turnouts, sidewalks, and bridge pier protection barriers before completing milling of US 29 at Element C. Following Stage C2, we will place surface asphalt and pavement markings and complete punch list inspection and punch list corrections ahead of the early Final Completion Date. A detailed listing of Critical Path is as follows:

Schedule Milestones

- Notice to Proceed (05/23/2023)

Design Phase

Final Design - Roadway Design

- Prepare and Submit Stage 1 Bridge Design (TS&L)
- VDOT Review/Comment Bridge Preliminary Design
- Prepare Stage 2 Bridge Plans (1st Submission)
- Submit Stage 2 Bridge Plans (1st Submission)

Construction

Shop Drawings Submittals and Procurement

Structures

Bridge Girder

- Prepare and Submit Bridge Girder Shop Drawings-1st Submission
- VDOT 1st Review Bridge Girder Shop Drawings
- Address Comments and Submit Final Bridge Girder Shop Drawings
- VDOT Final Review & Approve Bridge Girder Shop Drawings
- Fabricate Bridge Girders

Element C – US 29 Bike / Ped Bridge

Stage C1

Structure

- Prep for Erection
- Set/Prep Bearings
- Erect Span A
- Erect Span B
- Install Lagging
- Install Overhangs
- Install SIP Forms
- Form Deck
- Rebar
- Electric Prep
- Penetration Install
- Fence Anchor Install
- Pour Deck A
- Cure Deck A

4.6 Proposal Schedule

MSE

- Abutment A - Backfil
- Abutment A - Finish Panels Above Stem
- Abutment A - Install Coping
- Abutment B - Finish Panels Above STEM
- Abutment B - Install Coping

Stage C2

- Demo Asphalt/Concrete STA 130+75 TO 132+50 RHS
- Install Storm STA 132+00 TO 132+75 RHS
- Install CG STA 130+75 TO 132+50 RHS
- Prep & Install Sidewalk STA 130+75 TO 132+40 RHS
- Back Up Sidewalk STA 130+75 TO 132+40 RHS
- Demo Asphalt/Concrete STA 233+40 TO 234+00 LHS
- Install Storm STA 233+40 TO 234+00 LHS
- Install Storm STA 236+25 TO 236+75 LHS
- Install Storm STA 237+50 LHS
- Install CG & Ramp STA 236+25 to 237+75 LHS
- Prep & Install Sidewalk STA 236+25 to 237+75 LHS
- Back Up CG & Sidewalk STA 236+25 to 237+75 LHS
- Install 21B & Asphalt STA 236+25 to 237+75 LHS
- Adjust Temporary MOT Devices
- Grade Island STA 131+00 TO 132+50 LHS
- Install Bridge Pier Protection System STA 131+80 TO 132+50 LHS
- Grade Island STA 237+00 TO 239+00 RHS
- Install Bridge Pier Protection System STA 237+00 TO 237+70 RHS
- Install Median Barrier STA 237+70 TO 238+20 RHS
- Install Guardrail STA 238+20 TO 239+00 RHS
- Planing & Resurfacing/Buildup STA 233+25 TO 239+25
- Planing & Resurfacing/Buildup STA 130+75 TO 135+00

Project Finishes

- Surface Asphalt & Pavement Markings Stage C
- Final Surface Asphalt Completed

Schedule Milestones

- Punch List Inspection
- Address Punch List
- Early Completion Date- Final Completion Date

Overall Plan to Accomplish the Work

The narrative below describes our team's overall plan and sequence of operations grouped by the Level 1 WBS Project disciplines. The sequencing of each discipline was developed by considering the construction staging and determining the longest path to project completion. The Project sequence was developed to address the full scope of work. We divided the Project into logical and manageable areas that can be tracked and managed by dedicated supervision during design and construction stages.

Design

The Design Schedule has been broken down into various design packages that will be submitted for approval. The early design packages are identified as follows:

- Early Design / MOT Plans
- Design QA/QC Plans

4.6 Proposal Schedule

- Survey
- Geotechnical Investigations Reports
- Utility Designation and Test Pits (Bore Holes)

Starting the design early for the above packages ensures a robust schedule allowing design development phasing, environmental permit timelines, and critical items to proceed as early as possible. Detailed design submissions necessary to achieve RFC plans have been separated into three stages, allowing 21 calendar days for VDOT reviews at interim periods throughout design development. Design stages for submissions are as it follows:

- 1st Submission: 60% Development or Stage I Submittal
- 2nd Submission: 90% Development or Stage II Submittal
- Final Submission: 100% Final Design

Our Team encourages the early engagement reviews throughout the design phase to help optimize the review periods and avoid delays to the approval schedule. This schedule results in Released for Construction (RFC) plan approval of the bridge plans by March 14, 2024 and the Roadway Plans by May 8, 2024.

Environmental Permitting

This section of the schedule includes activities for preliminary environmental studies and environmental permits, including the joint permit application (JPA) for wetlands and waters and VPDES permit. The JPA will be submitted following 60% comment resolution and is expected to be acquired by July 3, 2024. A single VPDES permit will be acquired for all elements of the project based on the final roadway plans. This permit will be acquired on May 14, 2024 following RFC roadway plan approval.

Public Involvement

The public involvement schedule includes submitting our Emergency Contact List, meeting with Culpeper District Public Affairs and holding public outreach meetings at the start of the construction phase. The schedule includes a major milestone activity for the Public Information meetings before the start of construction. However, there are many other public involvement activities that our Team will perform, including meeting with affected stakeholders, providing information for regular updates at progress meetings and weekly lane closure plans and maintaining a log and database of issues, questions or comments received from stake holders and resolutions.

Right-of-Way Acquisition / Easements

The Project requires the acquisition of right-of-way and easements from 17 individual properties. To mitigate the potential delays stemming from the late acquisition of right-of-way, our Team has broken down the coordination into the Priority 1 and Priority 2 parcels to remove right-of-way easements from the critical path and minimize the risks of delays. We have prioritized these acquisitions to ensure early acquisition of key parcels including those needed for the roundabout, utility relocations and the early pedestrian crossing of US 29.

Utility Relocations

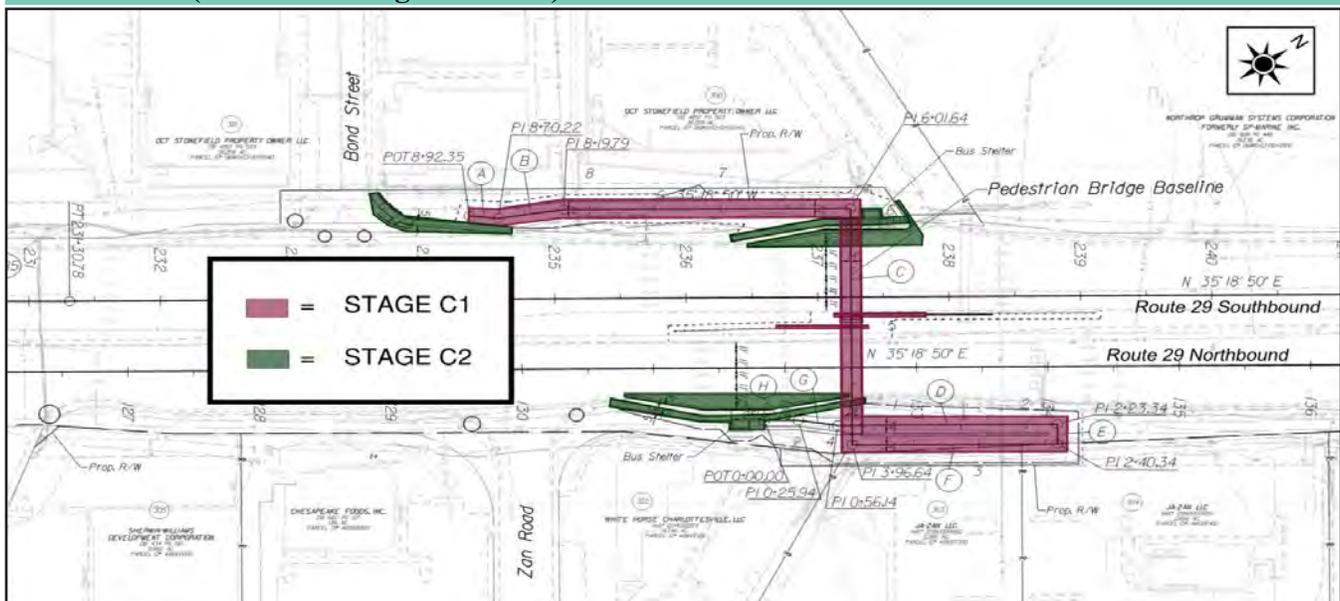
To simplify and track the utility coordination on the Project, our Team has created WBS that groups the utility coordination by owner as follows:

4.6 Proposal Schedule

Stage A2: As the left turn lanes from Hydraulic Road to US 29 will be maintained until the roundabout in Element D is opened to traffic Stage A2 construction will not start until Stage D2 is completed. Once the roundabout is open to traffic we will modify the signal at Hydraulic Road and US 29 and close the left turn movements to US 29. The removal of the left turn lanes opens up the area in the median of Hydraulic Road for pavement and median reconstruction to realign the westbound through lanes. This work will be completed behind Group II channelizing devices. Following the median reconstruction, Stage A2 will complete with a traffic shift of the westbound lanes of Hydraulic Road toward the median, removing the transition across the US 29 intersection.

Stage A3: The shift of westbound traffic toward the median in Stage A2 creates room to reconstruct the porkchop island in the northwest quadrant of the intersection. This work will be completed in Stage A3 utilizing Group II channelizing devices for traffic control and working at night when lane closures are required. As shown in our Proposal Schedule in Section 4.6, we expect to complete Element A through intermediate asphalt by October 8, 2024.

Element C (as shown in Figure 4.6.1.2)



Stage C1: Element C is independent from and will be constructed concurrently with the other Elements. Stage C1 will begin following approval of the plans, permits and acquisition of right of way. This Stage will start with the relocation of the 12" sanitary sewer that runs parallel to US 29 in conflict with the MSE walls and the west abutment. Concurrent with this work we will uncover and perform a lift-and-lay relocation of the communication lines in conflict with the retaining walls at the east abutment. Once these utility relocations are complete, we will start bridge construction with excavation and construction of drilled shaft foundations at the east abutment, west abutment, and the pier, sequentially. Following the installation of the foundations we will complete the cast-in-place substructure and retaining walls for the ramps at the abutments.

Superstructure construction will start with setting the bulb-T beams, following by forming, installing corrosion resistant reinforcing steel, and pouring the bridge deck, semi-integral backwalls and closure diaphragm, and integral curbs. Bridge finishes will include fencing with handrail and bollard-style lighting to illuminate the walking surface.

Following completion of the retaining walls at the abutments and concurrent with superstructure construction, we will install drainage in the ramps, cast the concrete walking surface, and install HR-1

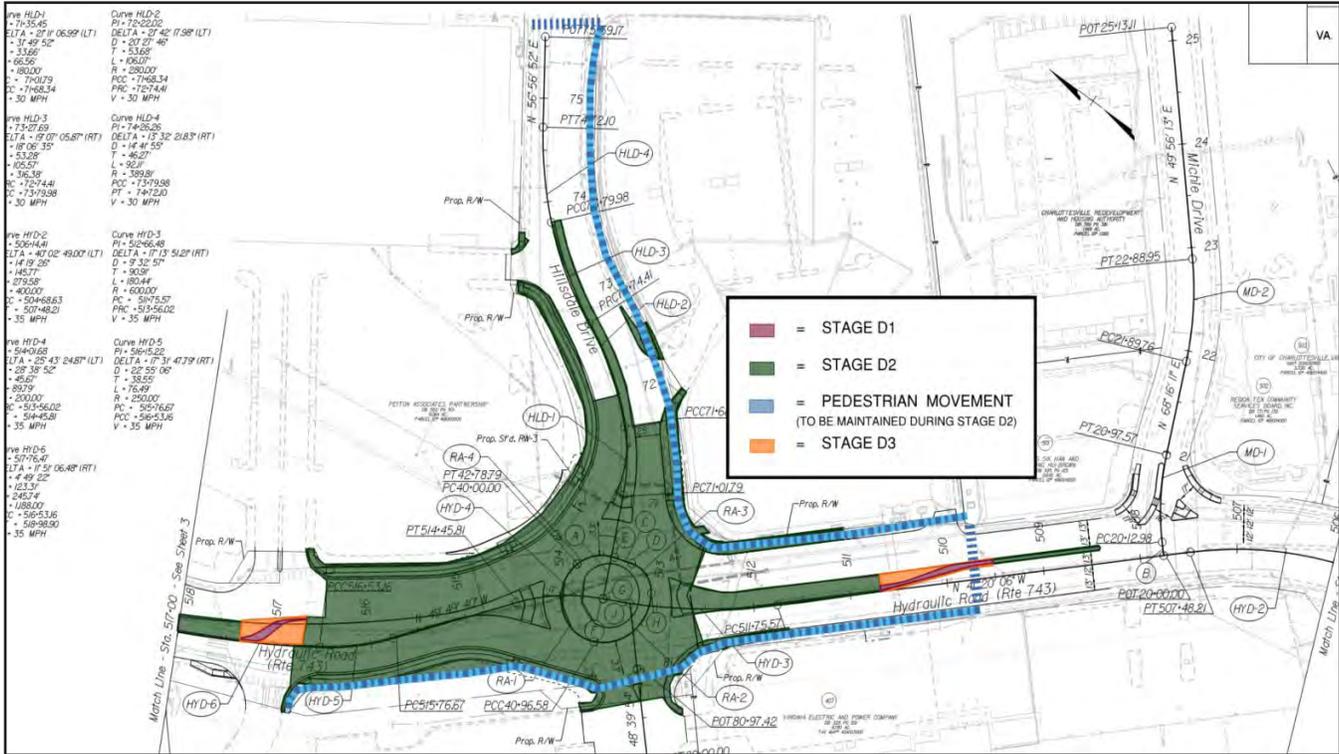
4.6 Proposal Schedule

Type III railing and bollard-style lighting on the ramps. In the median, bridge pier protection systems will be installed to protect the pier from impacts of vehicular crashes.

All work in Stage C1 will be completed utilizing Group II channelizing devices with pedestrian separation along the sidewalks to keep pedestrians out of the work area.

Stage C2: Once the bridge is complete in Stage C1, the work area will be opened up to construct the bus turnouts at each abutment. This work will be performed utilizing Group II channelizing devices for traffic control and working at night when lane closures are required. Pedestrian traffic will be maintained through the work area in temporary configurations that can be safely maintained during construction. The work will start with demolition of the sidewalk and curb, construction of new and re-routed drainage elements and construction of the new curb, pavement section and sidewalk. The ramps leading to the pedestrian bridge will be tied into the existing sidewalks and bus shelters with pedestrian scaled lighting will be installed. As shown in our Proposal Schedule, we expect to complete Element C by September 15, 2025.

Element D (as shown in Figure 4.6.1.3)



Stage D1: The focus of Stage D1 is to construct crossovers in the median of Hydraulic Road on each side of the roundabout to facilitate traffic maintenance during the shutdown. These crossovers will improve access to adjacent businesses and allow for u-turning movements at the points where Hydraulic Road will be closed.

Stage D1 will start after approval of plans and permits. This stage will begin with demolition of the median and construction of temporary pavement at Hydraulic Road Station 517+00 at the Kroger entrance. Crews will then move to Hydraulic Road Station 510+00, demolish the median and construct temporary pavement to improve access for Whole Foods and Dominion Energy. These two activities are required before the shutdown of through traffic at the intersection of Hydraulic Road and Hillsdale Drive and will be completed utilizing Group II Channelizing Devices for traffic control while also working at night when temporary lane closures are required.

4.6 Proposal Schedule

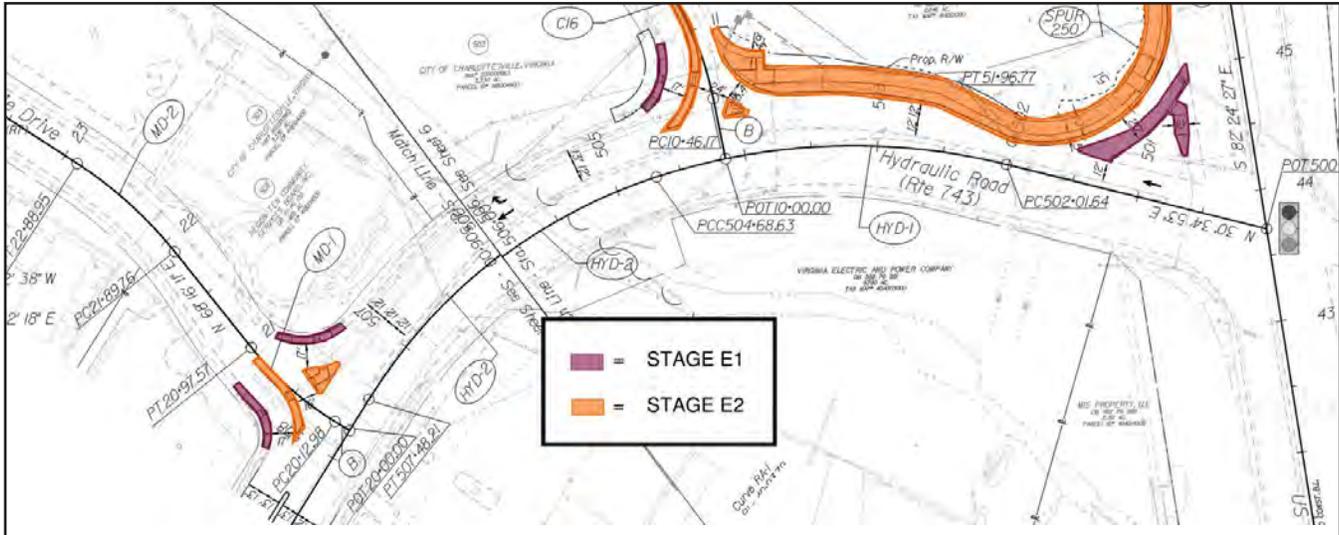
Stage D1 will also include relocation of utilities that are in conflict with the existing roadway for unavoidable utility conflicts. These utility relocations will be completed under lane closures at night in advance of the shutdown.

Stage D2: Stage D2 will start following the completion of Stage D1, acquisition of right of way, and extensive public outreach to notify the public of the impending shutdown. First, crews will install signing and pavement markings to properly detour traffic around the intersection as discussed in Section 4.5.2. Once this detour is in place, the closure of the intersection of Hydraulic Road and Hillsdale Drive will begin on or about June 17, 2024. Work that will be completed under the intersection closure includes all work required by Section 5.2.2 of the Provision for “No Excuses Incentive” and will be sequenced generally as follows: demolition of the existing pavement, installation of storm drainage, retaining wall construction, earthwork, construction of the central island curb and truck apron, installation of textured concrete buffers and splitter islands, installation of underdrain, construction of outside curbs, construction of full depth pavement section through intermediate asphalt, construction of sidewalks, installation of temporary pavement markings, permanent signing, lighting, and Rectangular Rapid Flashing Beacons. Following completion of this roundabout construction, we will open the roundabout to traffic remove all detour signage and temporary traffic control devices and address any non-conformance items of work within the shutdown period. As shown on our Proposal Schedule, all work in Stage D2 is completed by August 2, 2024, 46 days after the shutdown period began.

Through extensive public outreach, VDOT determined that the least impactful time period for the shutdown is during the summer when local schools are not in session. Our Team’s Proposal Schedule and sequence of construction has prioritized the activities that need to be completed to achieve this shutdown in 2024, including early right-of-way plans, early utility coordination, prioritizing the parcels needed for Stage D2 in the right-of-way sequence, and construction activities. However, should coordination with adjacent property owners and right-of-way acquisition timeframes unavoidably extend into the summer of 2024, preventing completion of the roundabout before the start of the new school year, we are prepared to shift the shutdown period to the summer of 2025 and ensure that VDOT’s commitment to the community that the work will be completed during the summer will be achieved.

Stage D3: Stage D3 work consists of replacement of the median at Hydraulic Road Station 510+00 and 517+00. This work will be completed utilizing Group II channelizing devices for traffic control and working at night when lane closures are required. As shown in our Proposal Schedule, we expect to complete Stage D3 by August 19, 2024.

Element E (as shown in Figure 4.6.1.4)



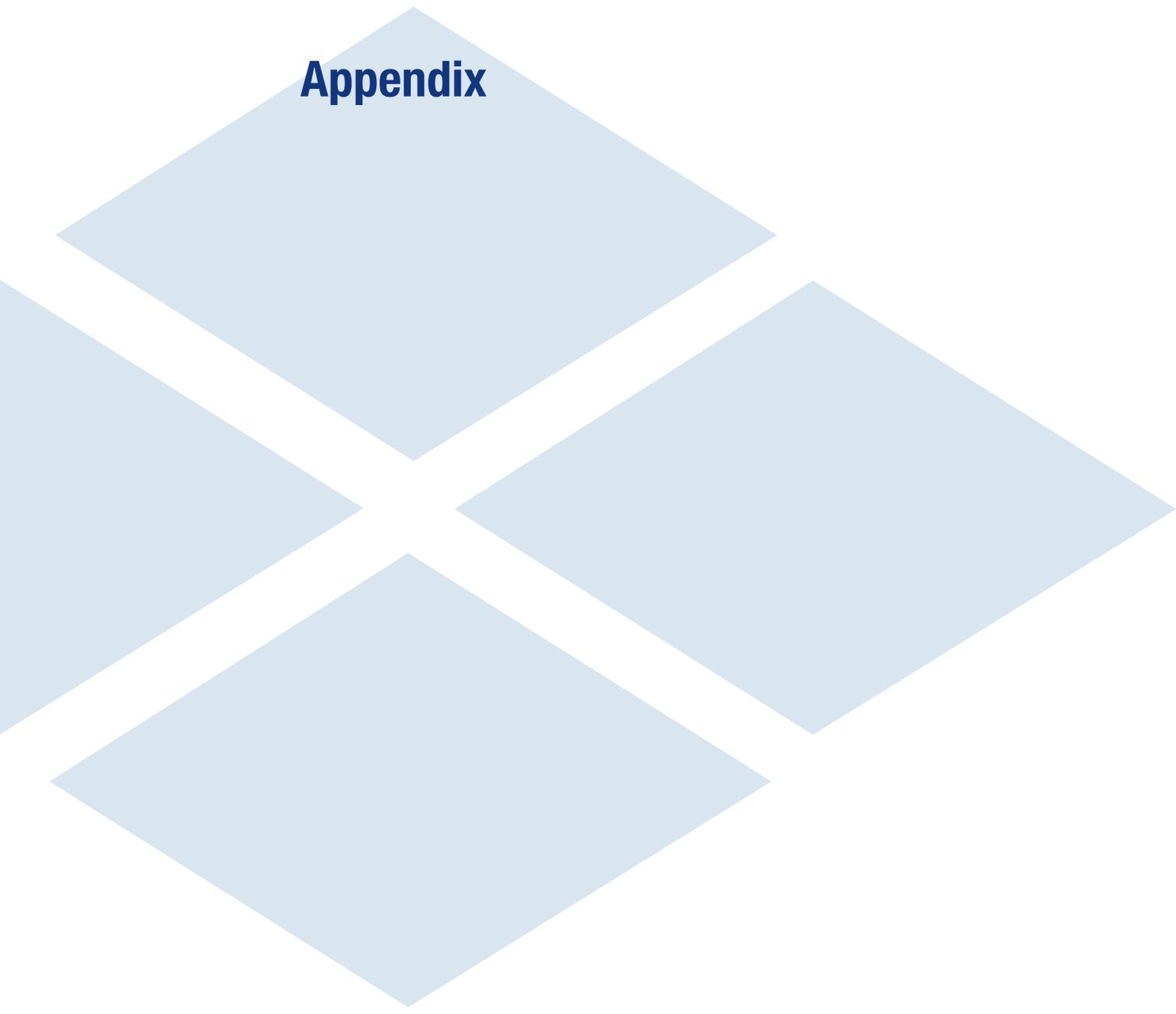
4.6 Proposal Schedule

Stage E1: This stage will include all Element E work that can be completed prior to the opening of the Hydraulic Road and Hillsdale Drive roundabout in Element D. Stage E1 will begin following approval of the plans and permits and acquisition of right of way. This Stage will start with the realignment of the curb along the island at the US 250 Spur. We will also complete drainage improvements on both sides of Brandywine Drive and the curb and handicap ramps on at Brandywine Drive and Michie Drive. This Stage will also include relocation of unavoidable utility conflicts including the utility pole in the existing shared use path at Hydraulic Road Station 503+50 and communication lines that are potentially in conflict with the proposed storm drainage

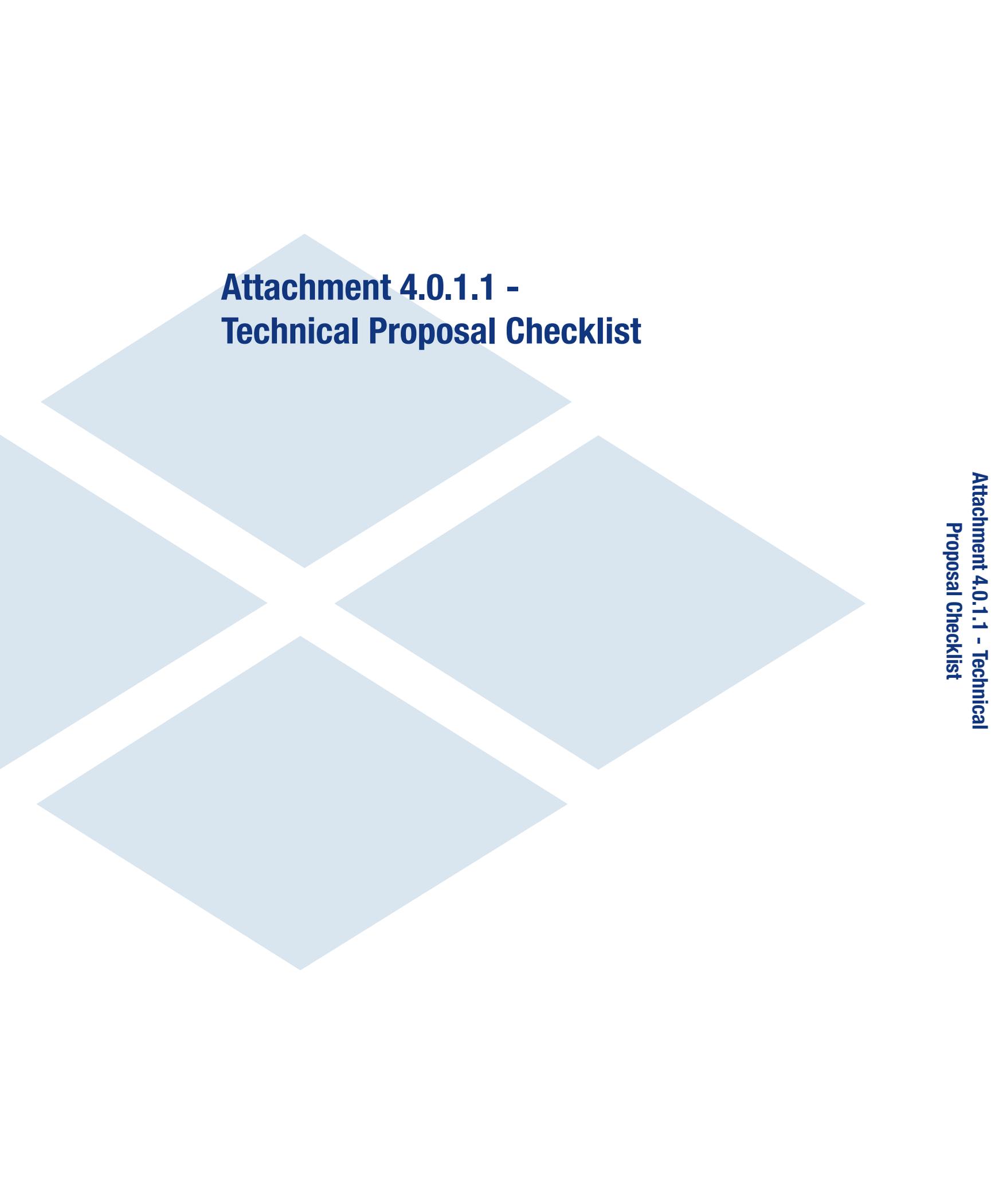
Stage E2: Following Stage E1 and the opening of the roundabout in Stage D2, we will shift the traffic on the US 250 spur toward the island. In Stage E2, we will work behind group II Channelizing devices for traffic control while also working at night when temporary lane closures are required. Once traffic is shifted at the US 250 spur, we will demolish the existing pavement along the north side of Hydraulic Road and construct the storm drainage, pavement section, underdrain, curb and shared use path between US 250 to Brandywine Drive. Finally Stage E2 will complete with reconstruction of the raised medians and islands at Michie Drive and Brandywine Drive. As shown in our Proposal Schedule, we expect to complete Element E by November 12, 2024.

Other Key Assumptions

- There are no hazardous materials, threatened or endangered species, or unforeseen environmental constraints, other than those identified in the RF , that could delay the Schedule;
- Crews are based on 8-hour workday and 5-day workday calendar except for work in Element D during the shutdown which will be completed using double shifts. A detailed description of the calendars is included in this narrative. Saturday and Sunday work may be completed to mitigate weather impacts in excess of the weather days included in the schedule;
- Generally, the schedule has been built with work in certain areas of the Project starting when access is available (either via work availability, property rights, or utility access) and /or at the completion of a prior stage of work. We have provided some crew flow throughout the schedule mainly where adjacent work is available and crew flow is logical as to not ‘stack’ too many work areas on top of each other. Crew flow ties may be adjusted during construction to re-sequence work and mitigate delays; and
- Utility relocation schedules are incorporated based on early coordination with the utility companies and will be updated when the utility provides final durations with the P&E



Appendix



**Attachment 4.0.1.1 -
Technical Proposal Checklist**

ATTACHMENT 4.0.1.1
Transportation Improvements at
Hydraulic Road and US 29
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

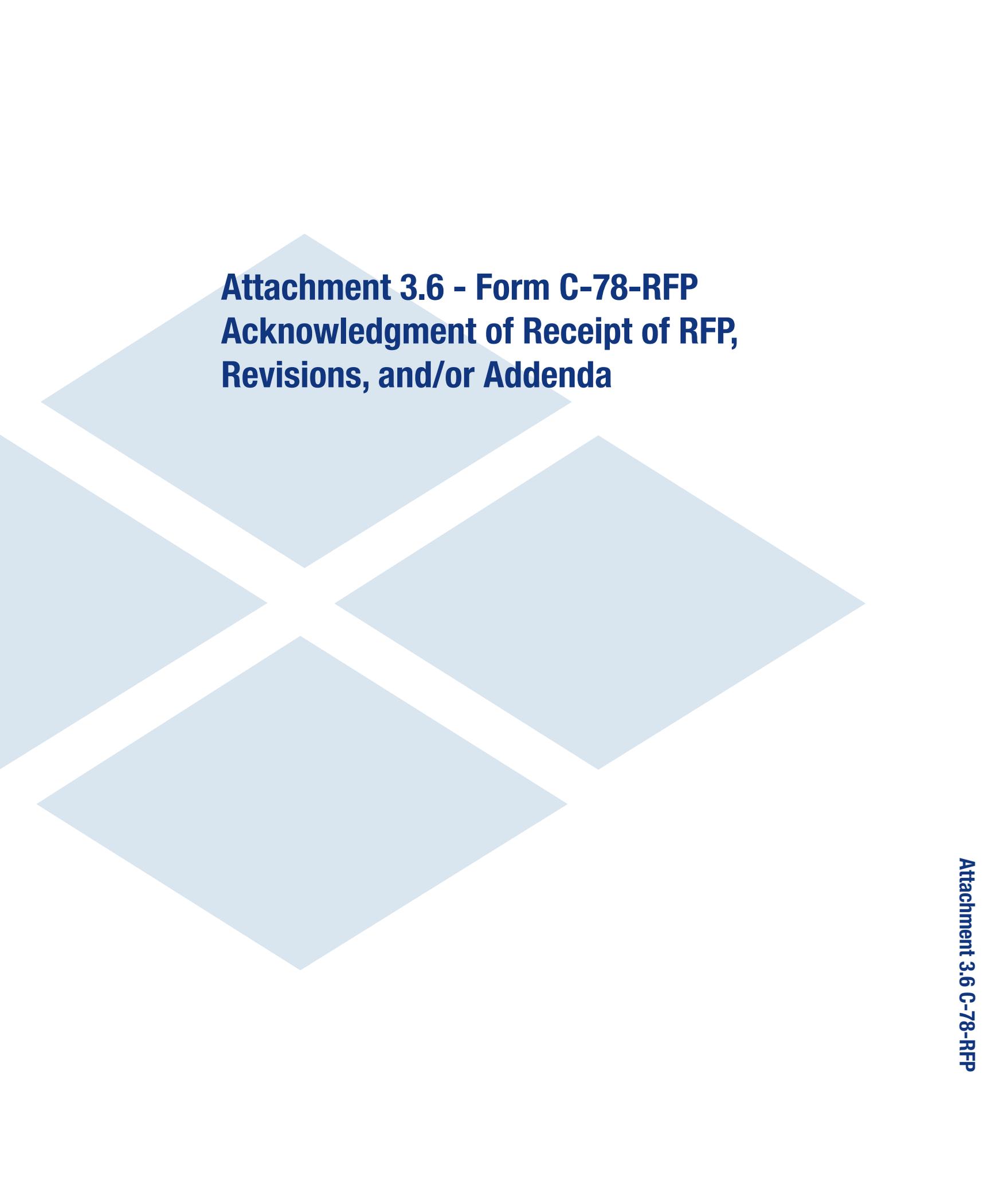
| Technical Proposal Component | Form (if any) | RFP Part 1 Cross Reference | Included within page limit? | Technical Proposal Page Reference |
|--|--|-----------------------------------|------------------------------------|--|
| Technical Proposal Checklist and Contents | Attachment 4.0.1.1 | Section 4.0.1.1 | no | Appendix |
| Acknowledgement of RFP, Revisions, and/or Addenda | Attachment 3.6 (Form C-78-RFP) | Sections 3.6, 4.0.1.1 | no | Appendix |
| Letter of Submittal | NA | Sections 4.1 | | |
| Letter of Submittal on Offeror's letterhead | NA | Section 4.1.1 | yes | 1 |
| Identify the full legal name and address of Offeror | NA | Section 4.1.1 | yes | 1 |
| Authorized representative's original signature | NA | Section 4.1.1 | yes | 1 |
| Declaration of intent | NA | Section 4.1.2 | yes | 1 |
| 120 day declaration | NA | Section 4.1.3 | yes | 1 |
| Point of Contact information | NA | Section 4.1.4 | yes | 1 |
| Principal Officer information | NA | Section 4.1.5 | yes | 1 |
| Final Completion Date | NA | Section 4.1.6 | yes | 1 |
| Proposal Payment Agreement or Waiver of Proposal Payment | Attachment 9.3.1 or 9.3.2 | Section 4.1.8 | no | Appendix |
| Certification Regarding Debarment Forms | Attachment 11.8.6(a) Attachment 11.8.6(b) | Section 4.1.9 | no | Appendix |
| Commitment to DBE participation of 12% | NA | Section 4.1.10 | no | 2 |

ATTACHMENT 4.0.1.1
Transportation Improvements at
Hydraulic Road and US 29
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

| 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 | | |
| 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 | 3 |
| Organizational chart with any updates since the SOQ submittal clearly identified | NA | Section 4.2.1 | yes | 4 |
| Revised narrative when organizational chart includes updates since the SOQ submittal | NA | Section 4.2.1 | yes | N/A |
| | | | | |
| Design Concept | NA | Section 4.3 | | |
| Conceptual Roadway Plans and description | NA | Section 4.3.1.1 | yes | 5-15 & 49-55 |
| Conceptual Structural Plans and description | NA | Section 4.3.1.2 | yes | 16-18 & 56-59 |
| | | | | |
| Project Approach | NA | Section 4.4 | | |
| Environmental Management | NA | Section 4.4.1 | yes | 19-22 |
| Utilities | NA | Section 4.4.2 | yes | 22-26 |
| Geotechnical | NA | Section 4.4.3 | yes | 26-29 |
| Quality Assurance/ Quality Control (QA/QC) | NA | Section 4.4.4 | yes | 29-34 |
| | | | | |
| Construction of Project | NA | Section 4.5 | | |

ATTACHMENT 4.0.1.1
Transportation Improvements at
Hydraulic Road and US 29
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

| Technical Proposal Component | Form (if any) | RFP Part 1 Cross Reference | Included within page limit? | Technical Proposal Page Reference |
|--|---------------|-------------------------------|-----------------------------------|--|
| Sequence of Construction | NA | Section 4.5.1 | yes | 35-41 |
| Transportation Management Plan | NA | Section 4.5.2 | yes | 41-48 |
| | | | | |
| Proposal Schedule | NA | Section 4.6 | | |
| Proposal Schedule | NA | Section 4.6 | no | Volume II |
| Proposal Schedule Narrative | NA | Section 4.6 | no | N/A |
| Proposal Schedule in electronic format | NA | Section 4.6 | no | N/A |
| | | | | |



**Attachment 3.6 - Form C-78-RFP
Acknowledgment of Receipt of RFP,
Revisions, and/or Addenda**

ATTACHMENT 3.6

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**

RFP NO. C00118880DB114
PROJECT NO.: 0029-M03-371

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 – November 3, 2022
(Date)
2. Cover letter of Addendum #1 – December 6, 2022
(Date)
3. Cover letter of Addendum #2 – December 21, 2022
(Date)
4. Cover letter of Addendum #3- January 6, 2023
(Date)



SIGNATURE

January 24, 2023

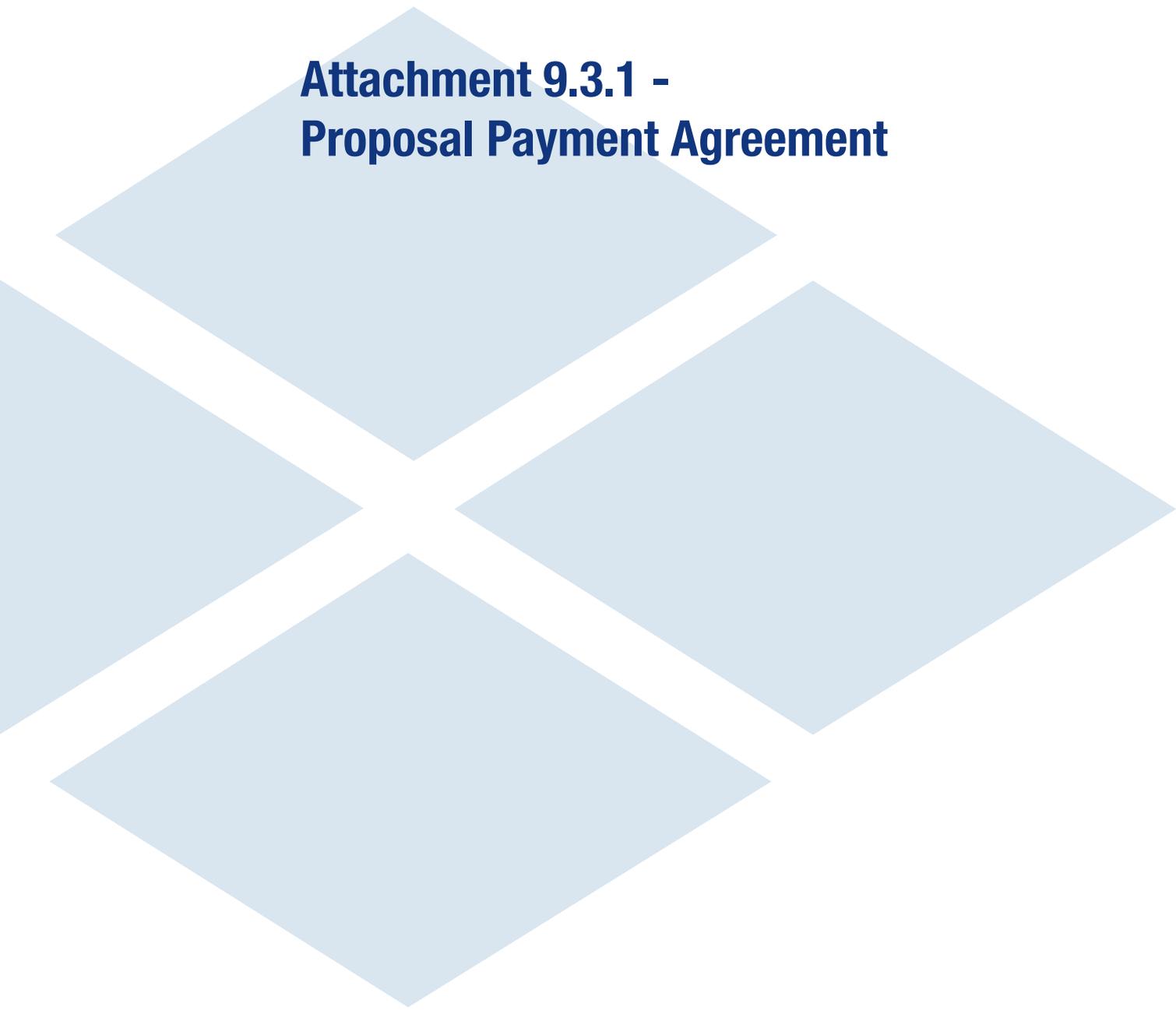
DATE

Garry A Palleschi

PRINTED NAME

Vice President

TITLE



Attachment 9.3.1 - Proposal Payment Agreement

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this “Agreement”) is made and entered into as of this ____ day of _____, 2023, by and between the Virginia Department of Transportation (“VDOT”), and Shirley Contracting Comapny, LLC (“Offeror”).

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications (“SOQs”) pursuant to VDOT’s April 19, 2022 Request for Qualifications (“RFQ”) (latest Addendum #1 May 10, 2022) and was invited to submit proposals in response to a Request for Proposals (“RFP”) for the **Transportation Improvements at Hydraulic Road and US 29, Project No. 0029-M03-371** (“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 aracknowledged by the parties, the parties agree as follows:

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

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

3. Proposal Payment. VDOT agrees to pay Offeror the lump sum amount of **One Hundred Seventeen Thousand and 00/100 Dollars (\$117,000.00)** ("Proposal Payment"), which payment constitutes payment in full to Offeror for the conveyance of Offeror's Intellectual Property to VDOT in accordance with this Agreement. Payment of the Proposal Payment is conditioned upon: (a) Offeror's Proposal being, in the sole discretion of VDOT, responsive to the RFP; (b) Offeror complying with all other terms and conditions of this Agreement; and (c) either (i) Offeror is not awarded the Design-Build Contract, or (ii) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror.

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

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

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

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

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

9. **Miscellaneous.**

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

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

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

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

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

of the Commonwealth of Virginia.

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

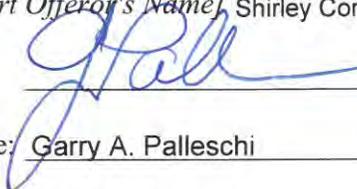
VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

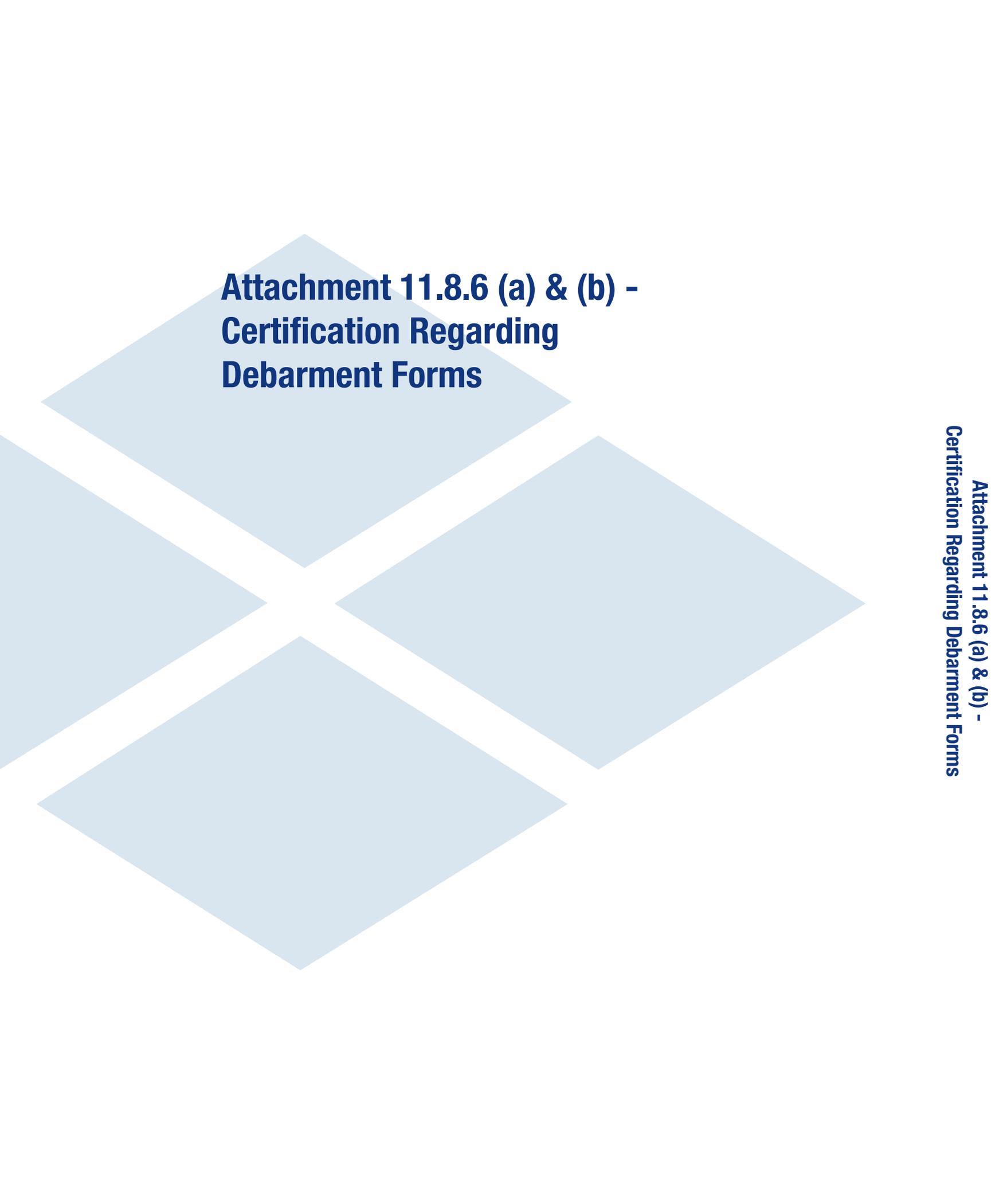
Title: _____

[Insert Offeror's Name] Shirley Contracting Comapny, LLC

By:  _____

Name: Garry A. Palleschi _____

Title: Vice President _____



**Attachment 11.8.6 (a) & (b) -
Certification Regarding
Debarment Forms**

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project No.: 0029-M03-371

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

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

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

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

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

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

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



Signature

January 16, 2023
Date

Vice President

Title

Shirley Contracting Comapny, LLC

Name of Firm

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

Project No.: 0029-M03-371

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

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

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

| | |
|--------------------------------|-----------------|
| <u>Dave Mahoney</u> | <u>1/9/2023</u> |
| Signature | Date |
| <u>Dewberry Engineers Inc.</u> | <u></u> |
| Name of Firm | Title |

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

Project No.: 0029-M03-371

- 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>1/3/2023</u> _____ Date | <u>President</u> _____ Title |
|---|----------------------------------|------------------------------------|

CES Consulting LLC

Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0029-M03-371

- 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

12/9/22
Date

Branch Manager
Title

Froehling and Robertson, inc.
Name of Firm

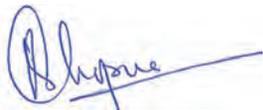
ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0029-M03-371

- 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.

| | | |
|---|----------|-----------|
|  | 1/6/2023 | President |
| Signature | Date | Title |

American Geotechnical & Environmental Services, Inc.
Name of Firm

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

Project No.: 0029-M03-371

- 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.

| | | |
|-----------------------------------|---------------|---|
| <small>DocuSigned by:</small> | | |
| <i>Carla F. Munson</i> | 01-23-2023 | Vice President, General Counsel & Secretary |
| <small>D830117A89C54AD...</small> | | |
| _____ Signature | _____ Date | _____ Title |

Surveying And Mapping, LLC

Name of Firm

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

Project No.: 0029-M03-371

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.

Marlin Zook
Signature _____ Date _____

Production Mgr./VP
Title _____

Quantum Spatial dba NV5 Geospatial
Name of Firm _____

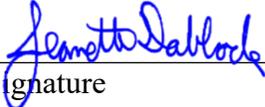
ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0029-M03-371

- 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.

| | | |
|--|----------|-----------|
|  | 1/4/2023 | President |
| Signature | Date | Title |

Diversified Property Services, Inc.
Name of Firm

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

Project No.: 0029-M03-371

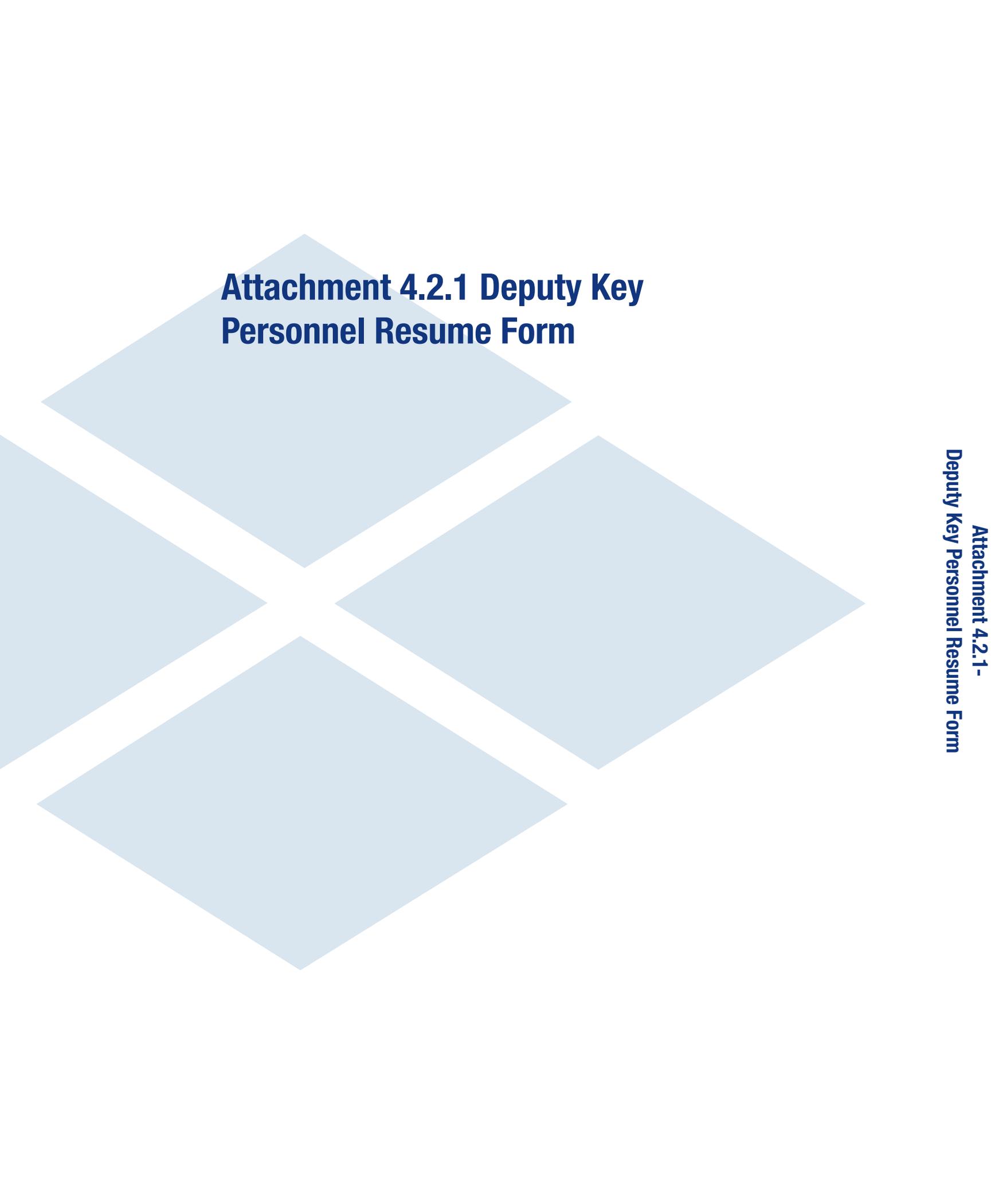
- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

- 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.

R Robert Rushe 1-3-23 Vice President
Signature Date Title

Key Title II, LLC
Name of Firm



**Attachment 4.2.1 Deputy Key
Personnel Resume Form**

ATTACHMENT 4.2.1

DEPUTY KEY PERSONNEL RESUME FORM

| |
|--|
| Brief Resume of Key Personnel anticipated for the Project. |
| a. Name & Title: Vanessa Royales, Senior Project Engineer |
| b. Project Assignment: Deputy Design-Build Project Manager (DDBPM) |
| c. Name of the Firm with which you are employed at the time of submitting Technical Proposal: Shirley Contracting Company, LLC |
| d. Employment History: With this Firm <u>6</u> Years With Other Firms <u>0</u> Years Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below): Shirley Contracting Company, LLC Senior Project Engineer/Project Engineer - 2018 - Present As Senior Project Engineer Vanessa is responsible for project set-up including budget formatting, subcontractor and supplier purchasing, project submittals, creating RFI's, progress documentation and leading progress meetings with both internal and external stakeholders. In addition, she assists in creating the project Baseline Schedule, owner submittals, timecards and reports payroll for field employees, coordinates between field staff and project management, assists with implementing safety protocols, and with project closeout packages for supplier and subcontractor agreements. <ul style="list-style-type: none">• Northstar Boulevard Design-Build (\$46M) 12/2020 to 11/2024 – Senior Project Engineer• Route 50 & Trailhead Drive Roundabout Design Build Project (\$5.9M) 11/2022 to 11/2024 – Senior Project Engineer• Boundary Channel Drive at I-395 Interchange Design-Build (\$14M) 7/2021 to 11/2023 – Senior Project Engineer• Route 1 Widening Featherstone to Mary's Way (\$32M) 10/2020 to 5/2023 – Senior Project Engineer• Route 28 Widening Phase III Design-Build (\$28M) 11/2019 to 3/2023 – Senior Project Engineer• Mosbey Drive Emergency Culvert Replacement (\$654K) 8/2020 to 8/2021 - Project Engineer• Vint Hill Road Widening (\$10M) 10/2018 to 8/2021 - Project Engineer• Minnieville Road Widening (\$30M) 10/2016 to 10/2018-Project Engineer |
| e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: <ul style="list-style-type: none">• Virginia Polytechnic Institute and State University, Blacksburg, VA, BS Civil Engineering 2018 |
| f. Active Registration: Year First Registered/ Discipline/VA Registration #: <ul style="list-style-type: none">• VDOT Erosion and Sediment Control Certified Contractor (ESCCC – 3-01056)• Engineer in Training (EIT) |
| g. Document the extent and depth of your experience and qualifications relevant to the Project. <ol style="list-style-type: none">1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i>2. <i>Note whether experience is with current firm or with other firm.</i>3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> <p>(List only three (3) relevant projects for which you have performed a similar function. On-call contracts with multiple task orders (on multiple projects) should not be listed as a single project.</p> <p>1. Route 1 Widening Featherstone Road to Mary's Way, Woodbridge, VA Shirley Contracting Company, LLC, Senior Project Manager/Design-Build Project Manager (10/2020 - 5/2023) Role/Responsibilities: As Senior Project Engineer, Vanessa is responsible for project submittals, creating RFI's, progress documentation and leading internal progress meetings as with stakeholders, assisting with updating the Project Schedule, and submitting timecards and reposts to payroll for field employees. She assists with coordination between field staff and Project Management, assists with implementing jobsite safety protocols, and with project closeout packages to finalize subcontractor and supplier contracts. The Project scope for this \$32M project included widening Route 1 from 4-lanes to 6-lanes from Featherstone Road to Mary's Way and providing five new underground stormwater management systems. The Project also provided pedestrian facilities in each direction of Route 1 and upgraded signalized intersections, six gravity retaining walls and one cantilever retaining wall with design elements addressing global stability concerns.</p> <p>2. Route 28 Phase III Widening Design-Build, Manassas, VA Shirley Contracting Company, LLC, Senior Project Manager/Design-Build Project Manager (11/2019 - 3/2023) Role/Responsibilities: As Senior Project Engineer, Vanessa is responsible for project submittals, creating RFI's, progress documentation and leading internal progress meetings as with stakeholders, assisting with updating the Project Schedule, and submitting timecards and reposts to payroll for field employees. She assists with coordination between field staff</p> |

and Project Management, assists with implementing jobsite safety protocols, and with project closeout packages to finalize subcontractor and supplier contracts. The Project scope for this \$28M project included reconstructing and widening Nokesville Road (Route 28) to 6-lanes from Linton Hall Road to Pennsylvania Avenue including pedestrian facilities in each direction of Nokesville Road, with superstructure modifications to the bridge over Broad Run, installation of a 36" waterline for the City of Manassas, and construction of three retaining walls.

3. Minnieville Road Widening, Woodbridge, VA

Shirley Contracting Company, LLC, Project Engineer (10/2016 - 10/2018)

Role/Responsibilities: As the Project Engineer, Vanessa was responsible for submitting Requests for Information (RFI's) from subcontractors to the project Owner, assisting with progress documentation and providing input during progress meetings both internal and with project stakeholders, assisting with updates to the Project Schedule including percent complete, imputing timecards and payroll reports for field employees, coordinating with project foreman on daily project tasks, and updating Miss Utility tickets. The Project scope for this \$30M project included widening Minnieville Road from 2-lanes to 4-lanes from Spriggs Road to Dumfries Road and providing a new pre-cast arch structure spanning Powell's Creek. The Project also provided pedestrian facilities in each direction of Minnieville Road and new signalized intersections at Spriggs Road, Harvest Moon Lane, and Dumfries Road.

ATTACHMENT 4.2.1

DEPUTY KEY PERSONNEL RESUME FORM

| |
|--|
| Brief Resume of Key Personnel anticipated for the Project. |
| a. Name & Title: Andrew Curtis, PE, Associate, Senior Project Manager |
| b. Project Assignment: Deputy Design Manager (DDM) |
| c. Name of the Firm with which you are employed at the time of Technical Proposal: Dewberry Engineers Inc. |
| d. Employment History: With this Firm <u>8</u> Years With Other Firms <u>7</u> Years Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below): Dewberry Engineers Inc.; Deputy Design Manager 4/2020 to Present Andrew is responsible for assisting the Design Manager in overall project management for roadway improvement projects, serving both public and private clients. Management requirements involve integrating multiple engineering disciplines, including roadway, structural, hydraulic, traffic, and environmental disciplines, as well as coordinating various subconsultant services. Specific project experience with Deputy Design and Project Management responsibilities include: <ul style="list-style-type: none">▪ Route 50 and Trailhead Drive Roundabout (\$5.9M), 11/2021 to 1/2025, Deputy Design Manager▪ Dulles West Boulevard (\$81.6M), 4/2020 to 6/2025, Deputy Design Manager Dewberry Engineers Inc.; Lead Designer/Senior Project Engineer/Project Engineer 9/2014 to 4/2020 Andrew was responsible for design for multiple design-build and design-bid-build projects, including coordination with subconsultants and design coordination efforts to incorporate overall roadway design including structural, hydraulic, traffic engineering, and environmental permitting services. He was involved with internal coordination with other design disciplines, design-build team meetings with construction staff, as well as regular meetings with clients/owners for each of the projects. Roadway and hydraulic design responsibilities include development of horizontal alignments, vertical profiles, superelevation design, typical sections, 3D modeling, cross sections, roadway drainage plans and calculations, grading plans, cross sections, erosion & sediment control plans, roadway construction plans, utility relocation plans, right-of-way acquisition plans, general plan preparation for submissions, and prepared design and calculation documentation for agency review. Design projects with engineering roles include: <ul style="list-style-type: none">▪ Warrenton Southern Interchange (\$19.6M), 2/2018 to 11/2020, Senior Project Engineer▪ Route 7/690 Interchange (\$40.7M), 8/2019 to 6/2020, Senior Project Engineer▪ Northstar Boulevard – Route 50 to Evergreen Mills (\$12.6M), 9/2018 to 5/2019, Lead Designer▪ Route 28 Phase III – Linton Hall to Pennsylvania Ave (\$24.9M), 8/2017 to 9/2018, Lead Designer▪ I-95 / Route 630 Reconstruction and Widening (\$195M), 1/2017 to 09/2018, Senior Project Engineer▪ Route 606 Over I-95 Bridge Replacement (\$16.5M), 1/2017 to 10/2017, Senior Project Engineer▪ Route 659 Reconstruction and Widening (\$45.4M), 7/2015 to 12/2015, Senior Project Engineer▪ Route 7 Westbound Truck Climbing Lane (\$28.8M), 1/2014 to 5/2014, Project Engineer▪ Dulles Metro Rail Phase 2, Package A Design-Build (\$1.2B), 9/2013 to 7/2014, Project Engineer▪ Dulles Metro Rail Phase 1, Design-Build (\$2.9B), 5/2007 to 10/2012, Project Engineer |
| e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: University of Virginia, Charlottesville, VA / BS / 2007 / Civil Engineering |
| f. Active Registration: Year First Registered/ Discipline/VA Registration #: Professional Engineer / 2015 / Virginia #0402055157 |
| g. Document the extent and depth of your experience and qualifications relevant to the Project. <ol style="list-style-type: none">1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i>2. <i>Note whether experience is with current firm or with other firm.</i>3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> <p>(List only three (3) relevant projects for which you have performed a similar function. On-call contracts with multiple task orders (on multiple projects) should not be listed as a single project.</p> <p>1. Warrenton Southern Interchange Design-Build – Fauquier County, Virginia (\$19.6M) Dewberry Engineers Inc., Senior Project Engineer (2/2018 to 11/2020) Role/Responsibilities: Andrew served as a Senior Project Engineer assisting the Lead Roadway Engineer and Design Manager for this design-build project that consisted of roadway capacity and safety improvements at the intersection of US Route 15/17/29 Bypass and US Route 15/17/29 Business in Warrenton, Virginia. The existing at-grade intersection was replaced with a grade separated interchange featuring two roundabouts on each side of the bridge. The existing right</p> |

of way was established for a trumpet interchange, therefore one of the roundabouts was required to be offset to the southeast and both roundabouts were designed on grade to meet the vertical constraints. Additional improvements included a Park & Ride facility, shared use path, and lighting within the roundabouts and parking lot. This section of Route 15 also fell within the Journey Through Hallowed Ground (JTHG) Living Legacy Project and over 70,000 SF of landscaping was developed in accordance with the design palate for the region.

Andrew assisted in developing the roadway horizontal and vertical alignments, drainage design, erosion and sediment control design, right-of-way coordination and plan preparation, utility coordination, general plan preparation, quality control reviews, and client coordination. Stakeholder outreach was especially critical for this project, and Andrew assisted in outreach among Lord Fairfax Community College, Fauquier County, JTHG, Town of Warrenton, impacted landowners, the traveling public, and VDOT. Andrew also led all 3D design efforts using the latest Bentley OpenRoads software to aid in the design process, more quickly identify conflicts, track construction quantities, and improvement public outreach with all stakeholders. Design was completed February 2019 and construction was completed November 2020.

**2. I-95 / Route 630 Reconstruction and Widening Design-Build, Stafford County, VA (\$105M)
Dewberry Engineers Inc., Senior Project Engineer (1/2017 to 9/2018)**

Role/Responsibilities: Andrew served as a Senior Project Engineer for the design of this \$105M design-build project which widened and realigned Route 630 for approximately 2 miles West of I-95, incorporated a new diverging diamond interchange at I-95 and Courthouse Road, realigned and completed approximately 1 mile of new 4-lane divided roadway East of I-95 to connect Courthouse Road to Route 1, and provided park-and-ride facilities totally nearly 1,100 parking spaces East of I-95. Multiple local roads were realigned to accommodate the improvements to Courthouse Road and modifications were made to numerous entrances and driveways, including at Colonial Forge High School. Finally, a contract modification was authorized by VDOT to incorporate a bridge on the entrance ramp to Northbound I-95 to accommodate local road access to the future I-95 Express Lanes, which were under design at the time this project was being completed. This project won the 2021 ACEC Virginia Pinnacle Award for Engineering Excellence.

As a Senior Project Engineer for this project, Andrew assisted in developing the horizontal and vertical roadway alignments, drainage design, erosion and sediment control design, right-of-way coordination and plan preparation, utility coordination, general plan preparation, quality control reviews, and client coordination. Other responsibilities during construction included coordinating roadway profile changes, pavement reconstruction, slope adjustments, and drainage modifications to stay within the project footprint and maintain traffic during construction. Andrew also took the lead in the development of the 3D model of all portions of this project, using the latest versions of Bentley OpenRoads, to help streamline the design process, more quickly identify conflicts, optimize the design within the VDOT established footprint, track construction quantities, improvement public outreach with all stakeholders. Design was completed in July 2017 and construction was completed in July 2020.

**3. Dulles West Boulevard – from Arcola Boulevard to Northstar Boulevard – Loudoun County, VA (\$81.6M)
Dewberry Engineers Inc., Deputy Design Manager/Lead Designer (4/2020 to 6/2025)**

Role/Responsibilities: Andrew is currently the Deputy Design Manager and Lead Designer for the design of a new 1.2 mile stretch of 4-lane divided roadway in Loudoun County, VA from newly constructed Arcola Boulevard to the ongoing design-build construction of Northstar Boulevard, North of Route 50. In addition to the new roadway, this project will include pedestrian facilities on both sides of the roadway, realignment of intersecting Stone Springs Boulevard to correct existing substandard geometry, and intersection improvements at either end of the project at Racefield Lane and Arcola Boulevard. Additional improvements include closed system drainage, two stormwater facilities, a quadruple box culvert for the crossing of South Fork Broad Run, traffic signal design, and utility relocations.

As Deputy Design Manager and Lead Designer, Andrew is responsible for managing the coordination of all design disciplines, and sub-consultants, including but not limited to; field surveys (wetland delineations, utility designations and test pits, traffic counts, geotechnical investigations), environmental permitting and monitoring, roadway and stormwater management design, maintenance of traffic, and plat preparation. Andrew is also managing coordination with stakeholder involvement with Loudoun County, VDOT, Loudoun Water, and adjacent developers, including a concurrent design-build project that is intersecting with this project. Andrew was also responsible for major elements of the roadway design, including horizontal and vertical alignment, and led the effort in developing the 3D model to be utilized in design enhancement and public outreach. Design is on schedule, at 100%, and in the final stages of receiving approval from Loudoun County and VDOT. Land acquisitions are scheduled to being in early 2023.

ATTACHMENT 4.2.1

DEPUTY KEY PERSONNEL RESUME FORM

| |
|--|
| Brief Resume of Key Personnel anticipated for the Project. |
| a. Name & Title: Hanzhang Liu, PE, Quality Assurance Construction Engineer |
| b. Project Assignment: Deputy Quality Assurance Manager (DQAM) |
| c. Name of the Firm with which you are employed at the time of submitting Technical Proposal: CES Consulting, LLC |
| d. Employment History: With this Firm 1.5 Years With Other Firms 2 Years Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below): CES Consulting, LLC; QA Construction Engineer (7/2021 - Present) Hanzhang supervises inspection of civil construction work related to ITS, tolling, and integrated traffic systems on the I-95 Express Lanes Fredericksburg Extension project. He conducts constructability reviews; reviews technical shop drawings; facilitates solutions to quality issues; analyzes and verifies pay applications Dulles Engineering; Construction Inspector (2/2020 - 7/2021) Hanzhang managed daily field activities and provided technical expertise to field staff; identified potential problems and proactively recommended solutions to mitigate or avoid them. He conducted geotechnical lab testing of materials and prepared test reports. He worked with the Senior Geotechnical Engineer in selecting geotechnical design parameters for cut slope, deep and shallow foundations and earth retaining structures. Sanshi Construction; Construction Inspector (6/2017 - 12/2017) Hanzhang managed daily field activities and provided technical expertise to field staff; identified potential problems and proactively recommended solutions to mitigate or avoid them. He conducted geotechnical lab testing of materials and prepared test reports. He worked with the Senior Geotechnical Engineer in selecting geotechnical design parameters for cut slope, deep and shallow foundations and earth retaining structures. |
| e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: • Texas A&M University, College Station, TX / MS / 2019 / Civil Engineering • Southwest Jiaotong University, Chengdu, China / BS / 2017 Civil Engineering |
| f. Active Registration: Year First Registered/ Discipline/VA Registration #: 2022 / Professional Engineer / VA #Hanzhang passed the PE exam in October 2022, awaiting DPOR license and registration number. Certifications: Virginia Soils & Aggregate Compaction / 12/2025; Asphalt Field Levels I & II / 12/2025; Pavement Marking / 12/2026; Surface Treatment / 12/2025; Slurry Treatment / 12/2026; ACI Concrete Field / 03/2025/ Guardrail Installation Training / 09/2024; Intermediate Work Zone & Flagger / 07/2023; Nuclear Gauge Safety / 03/2023; DEQ ESC Inspector / 11/2024; DEQ SWM Inspector / 12/2024; OSHA Safety Training |
| g. Document the extent and depth of your experience and qualifications relevant to the Project. <ol style="list-style-type: none">1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i>2. <i>Note whether experience is with current firm or with other firm.</i>3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> <p>(List only three (3) relevant projects for which you have performed a similar function. On-call contracts with multiple task orders (on multiple projects) should not be listed as a single project.</p> <p>1. I-95 Express Lanes Fredericksburg Extension Design-Build-Stafford, VA CES Consulting, LLC, Quality Assurance Inspector (7/2021 - 5/2024) Role/Responsibilities: Hanzhang is directly responsible for inspection, testing and documentation of civil construction related to ITS, tolling, and integrated traffic systems for this \$298.6M Design-Build project that extends the I-95 Express Lanes 10 miles south to Route 17 to tie into the I-95 Rappahannock River Crossing projects. He independently coordinates inspections with the ITS contractor's construction operations. He conducts constructability reviews of ITS and tolling plans and makes recommendations that increase efficiency and safety; inspects all components and operations related to ITS and tolling construction including deep foundations and bolting of overhead gantry trusses; and works with the contractor, QA Manager, and designers to resolve and prevent quality issues based on VDOT specification,</p> |

standards, and contract technical requirements. For example, prior to installing the lightening protection for the toll gantries, Hanzhang reviewed the plans and found the plans did not comply with Electronic Tolling Components Civil Requirements. He notified the ITS Manager and QA Manager, who issued an NCR for design modifications. This early identification of the design issue prevented costly reinstallation of the lightening protection system. He closely monitors lane closures and MOT set-ups related to ITS/tolling work as well as safety. Hanzhang reviews technical shop drawings of structural foundations, overhead sign structures, tolling and ITS equipment and hardware, and electrical and fiber optic wiring installation. He reviews as-built plans and documents field design changes as construction progresses. He analyzes and verifies pay application items and maintains inspection reports, material notebook, and project correspondence.

**1. South Capitol Street Corridor, Phase I Design-Build, Washington, D.C.
Dulles Engineering, Inc., Quality Control Inspector 2/2020 - 7/2021)**

Role/Responsibilities: Hanzhang supervised inspectors, inspected bridge and roadway operations, and served as the lead night shift inspector to support a \$441M Design-Build project that replaced the 70-year-old Frederick Douglass Memorial Bridge over the Anacostia River with a 6-lane, 1564-foot-long, steel-girder signature bridge that features 3 pairs of 168-foot, above-deck steel arches. He inspected all components of bridge construction including pile driving; abutment dimensions and elevations; joint and railing installations; superstructure replacement, repairs, and rehab; reinforcing steel; girder erection; foundation exploration; drilled shaft foundations; and earthwork. He conducted rotational bolt testing, dry runs with the screed for the bridge deck, and depth checks during deck concrete placement. Hanzhang also inspected roadway construction including roadway approaches, intersection improvements, sidewalks, curb and gutter, bike trails, shared-use path, signal and streetlights; electrical work; thermoplastic pavement markings; asphalt and concrete placements; and mass concrete pours. Other project operations included cut and fill, jack and bore, blasting, excavation, and utility relocations. Hanzhang independently coordinated phases of construction with the contractor; supervised inspectors; reviewed lines, grades, elevations, and dimensions; tested materials soils, asphalt, and concrete; confirmed environmental / ESC compliance; monitored MOT / TMP; and evaluated field conditions and made non-engineering adjustments to resolve discrepancies. Hanzhang analyzed and interpreted plans; identified errors; and determined impacts. He recommended solutions to field and design issues; and coordinated solutions with designers.

3. Prince William Parkway Interchange at Realigned Balls Ford Road Design-Build, Prince William County, VA Dulles Engineering, Inc., Quality Control Inspector (9/2020 - 7/2021)

Role/Responsibilities: Hanzhang conducted daily QC inspection to support a \$69M Design-Build project that realigns a 1.9-mile segment of Balls Ford Road south of its existing intersection with Prince William Parkway and constructs a diverging diamond interchange carrying Balls Ford Road over the Parkway. He inspected construction operations including roadway excavation and paving; sidewalk installation; construction of granite curb and concrete gutters; earthwork; installation of under drains and storm lines; MOT; and electrical work including installations of streetlights. Also, he tested soils, asphalt, and concrete; maintained QC project records; and recommended solutions to field issues and non-compliant work. For example, the contractor installed 200 feet of sewer pipe and topped it with bedding stones without undercutting the unsuitable soil, which would result in future failure of the pipe alignment. Hanzhang identified the issue and facilitated corrective actions to ensure the undercutting of the unsuitable soil was performed for this and future sewer pipe installations.

Response to Request for Proposals

State Project No.: 0029-M03-371, C501, P101, R201

Federal Project No.: STP-5104 (299)

Contract ID Number: C00118880DB114

January 24, 2023 – Electronic Copy



Transportation Improvements at Hydraulic Road and US 29

City of Charlottesville and Albemarle County, Virginia

Volume II: Design Concept

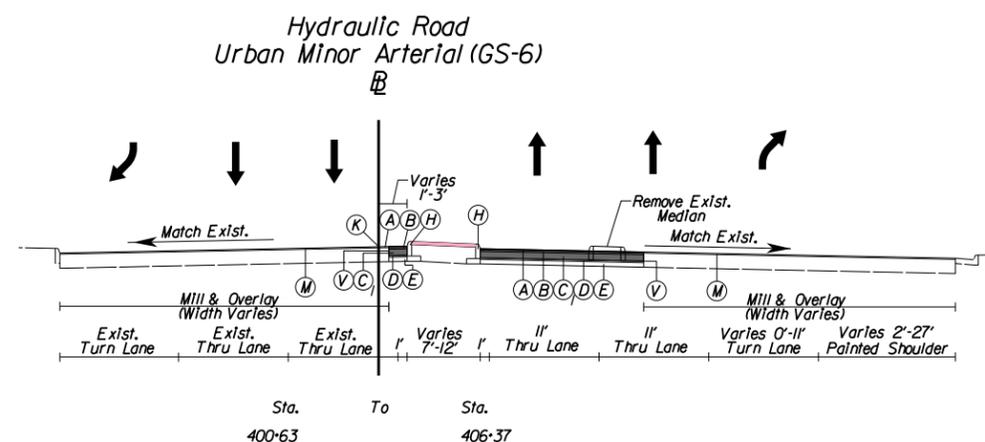
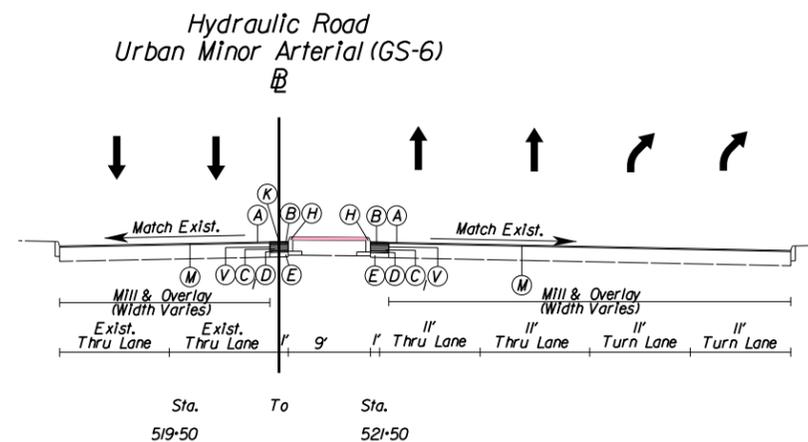
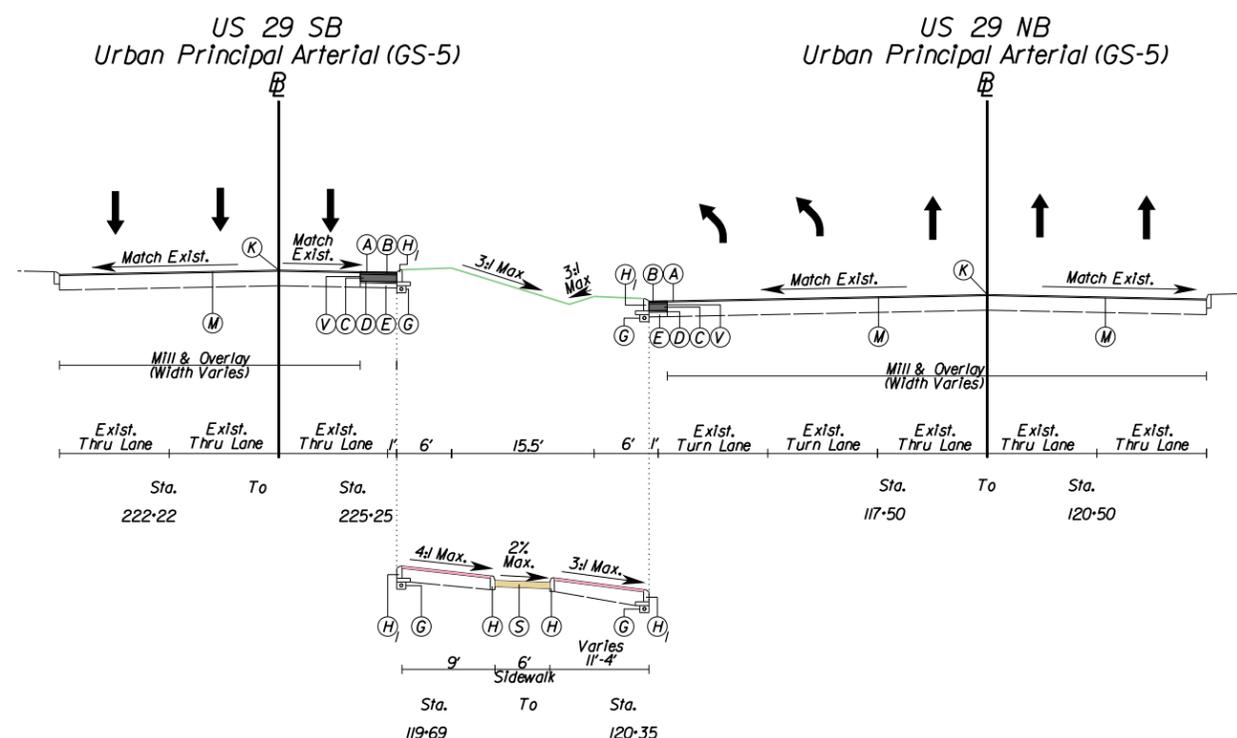


4.3.1 - Conceptual Roadway Plans

| REVISED | STATE | ROUTE | STATE PROJECT | SHEET NO. |
|---------|-------|-------|--------------------------------------|-----------|
| | VA. | 29 | 0029-M03-371, P101, R201, C501, B601 | |

PROJECT ELEMENT A

TYPICAL SECTIONS



LEGEND

- | | | | |
|--|---|---|---|
| (A) 1.5" Asphalt Concrete, Type SM-9.5D | (F) S'd. HR-1, Type III | (L) 9" A-3 Hydraulic Cement Concrete, Standard PR-2 Placed Above 6.5" Plain Aggregate, Type 1, Size No. 21A or 21B | Denotes Proposed Asphalt Pavement |
| (B) 2" Asphalt Concrete, Type IM-19.0A | (G) Underdrain, S'd. UD-4 Req'd. | (M) Mill Exist. Surface 1.5" and Replace with 1.5" Asphalt Concrete, Type SM-9.5D | Denotes Proposed Grass Median/ Buffer/Planted Area |
| (C) 9" Asphalt Concrete, Type BM-25.0A | (H) Curb, S'd. CG-2 Req'd. | (N) In Areas of Variable Depth Build-up - Replace with up to 3" Asphalt Concrete, Type IM-19.0A and up to 1.5" Asphalt Concrete, Type SM-9.5D | Denotes Proposed Concrete Sidewalk |
| (C ₁) 8.5" Asphalt Concrete, Type BM-25.0A | (H ₁) Curb, Modified CG-3 Req'd. | (S) 4" Hydraulic Cement Concrete, Class A3 Placed Above 4" Aggregate Base Material, Type 1, No. 21B | Denotes Proposed Truck Apron, Median, or Textured Veins |
| (D) 2" Open Graded Drainage Layer - Asphalt or Cement Stabilized | (J) Curb & Gutter, S'd. CG-6 Req'd. | (T) 2" Asphalt Concrete, Type SM-9.5A | Denotes Proposed Shared Use Path |
| (E) 6" Cement Treated Aggregate (CTA) | (J ₁) Curb & Gutter, S'd. CG-7 Req'd. | (U) 6" Aggregate Base Material, Type 1, No. 21B extended 6" on either side of the surface | |
| | (K) Profile Grade Line (PGL) / Point of Rotation | (V) Full Depth Saw Cut | |

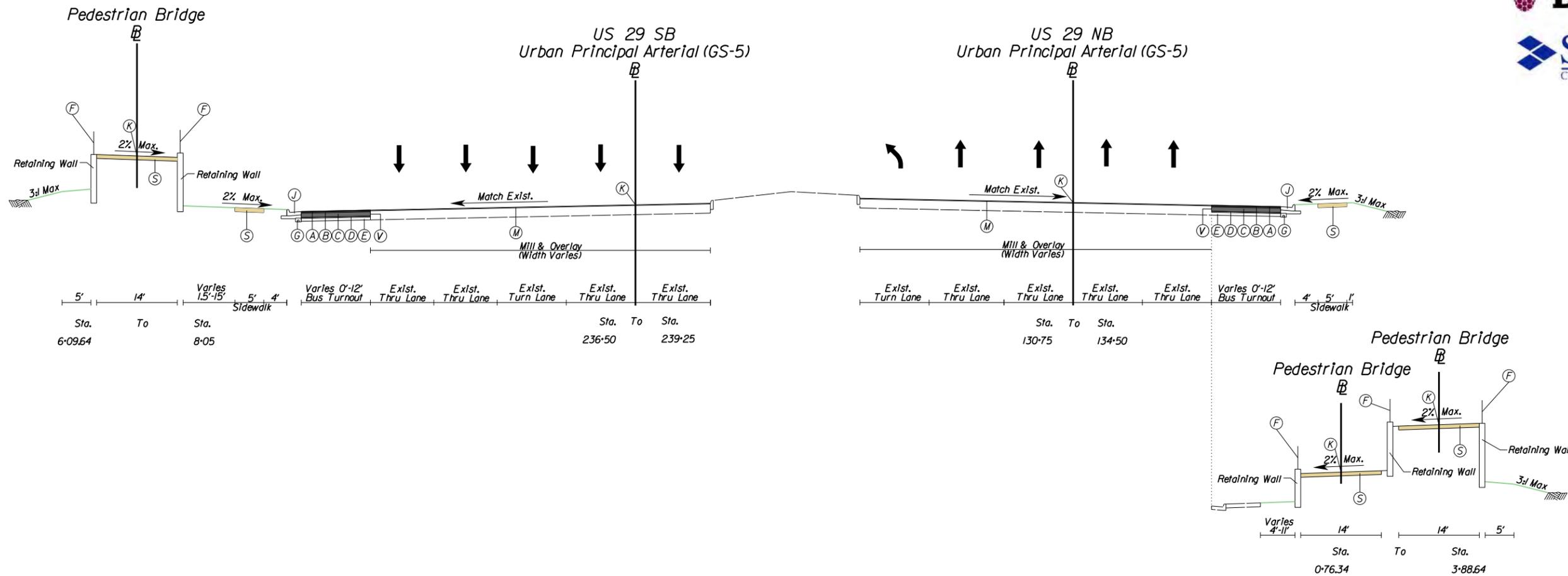
Note: Concrete for curb, curb & gutter and sidewalks within the City limits shall be tinted to match Charlottesville's desired "City mix" color, based on Solomon Colors #306 Canvas (SR1 37).

| | | |
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| SCALE 0 10' 20' | PROJECT 0029-M03-371 | SHEET NO. |
|--------------------|-------------------------|-----------|

| REVISED | STATE | ROUTE | STATE PROJECT | SHEET NO. |
|---------|-------|-------|--------------------------------------|-----------|
| | VA. | 29 | 0029-M03-371, P101, R201, C501, B601 | |

PROJECT ELEMENT C

TYPICAL SECTIONS



PROJECT ELEMENT D



LEGEND

- | | | | |
|--|---|---|---|
| (A) 1.5" Asphalt Concrete, Type SM-9.5D | (F) S'f'd. HR-1, Type III | (L) 9" A-3 Hydraulic Cement Concrete, Standard PR-2 Placed Above 6.5" Plain Aggregate, Type I, Size No. 21A or 21B | Denotes Proposed Asphalt Pavement |
| (B) 2" Asphalt Concrete, Type IM-19.0A | (G) Underdrain, S'f'd. UD-4 Req'd. | (M) Mill Exist. Surface 1.5" and Replace with 1.5" Asphalt Concrete, Type SM-9.5D | Denotes Proposed Grass Median/ Buffer/Planted Area |
| (C) 9" Asphalt Concrete, Type BM-25.0A | (H) Curb, S'f'd. CG-2 Req'd. | (N) In Areas of Variable Depth Build-up - Replace with up to 3" Asphalt Concrete, Type IM-19.0A and up to 1.5" Asphalt Concrete, Type SM-9.5D | Denotes Proposed Concrete Sidewalk |
| (C ₁) 8.5" Asphalt Concrete, Type BM-25.0A | (H ₁) Curb, Modified CG-3 Req'd. | (S) 4" Hydraulic Cement Concrete, Class A3 Placed Above 4" Aggregate Base Material, Type I, No. 21B | Denotes Proposed Truck Apron, Median, or Textured Veins |
| (D) 2" Open Graded Drainage Layer - Asphalt or Cement Stabilized | (J) Curb & Gutter, S'f'd. CG-6 Req'd. | (T) 2" Asphalt Concrete, Type SM-9.5A | Denotes Proposed Shared Use Path |
| (E) 6" Cement Treated Aggregate (CTA) | (J ₁) Curb & Gutter, S'f'd. CG-7 Req'd. | (U) 6" Aggregate Base Material, Type I, No. 21B extended 6" on either side of the surface | |
| | (K) Profile Grade Line (PGL) / Point of Rotation | (V) Full Depth Saw Cut | |

Note: Concrete for curb, curb & gutter and sidewalks within the City limits shall be tinted to match Charlottesville's desired "City mix" color, based on Solomon Colors #306 Canvas (SR1 37).

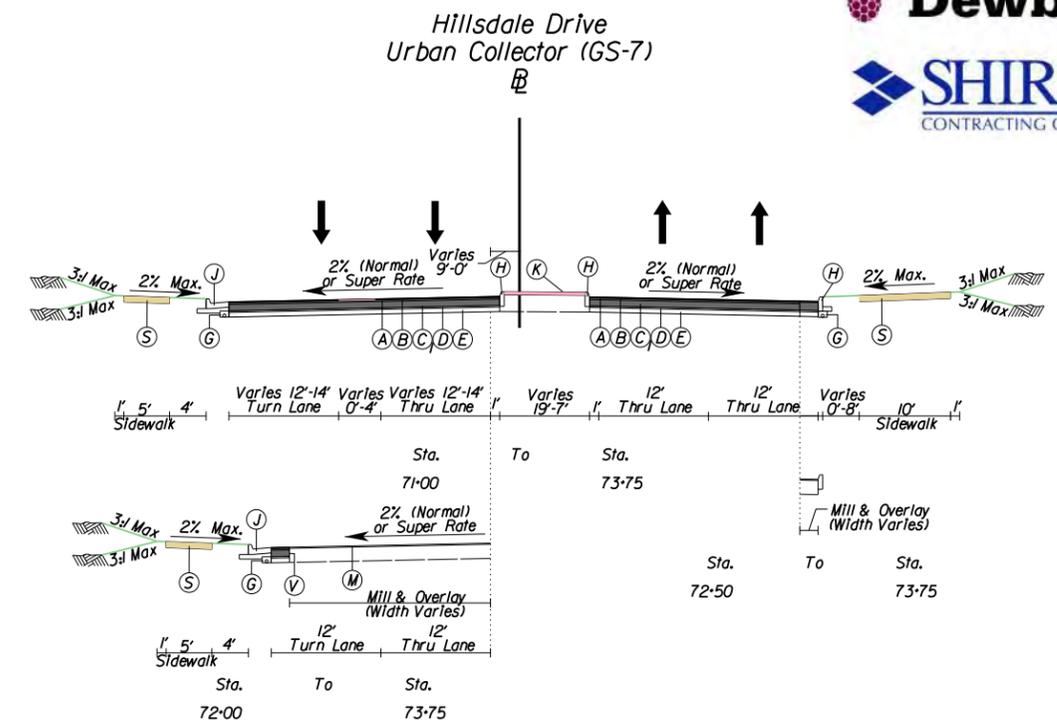
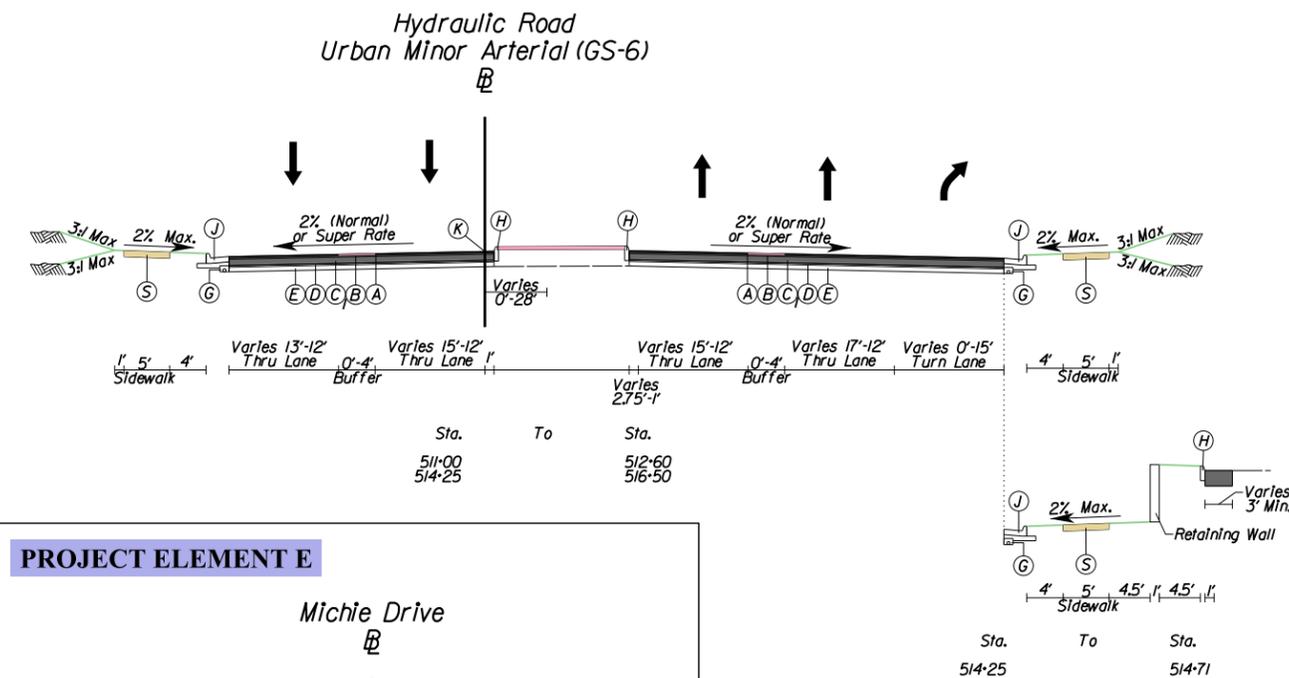
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| SCALE 0 10' 20' | PROJECT 0029-M03-371 | SHEET NO. |
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| REVISED | STATE | ROUTE | STATE PROJECT | SHEET NO. |
| | VA. | 29 | 0029-M03-371, P101, R201, C501, B601 | |

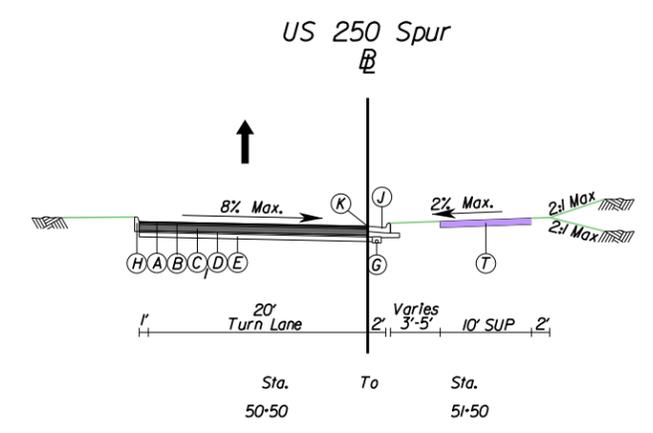
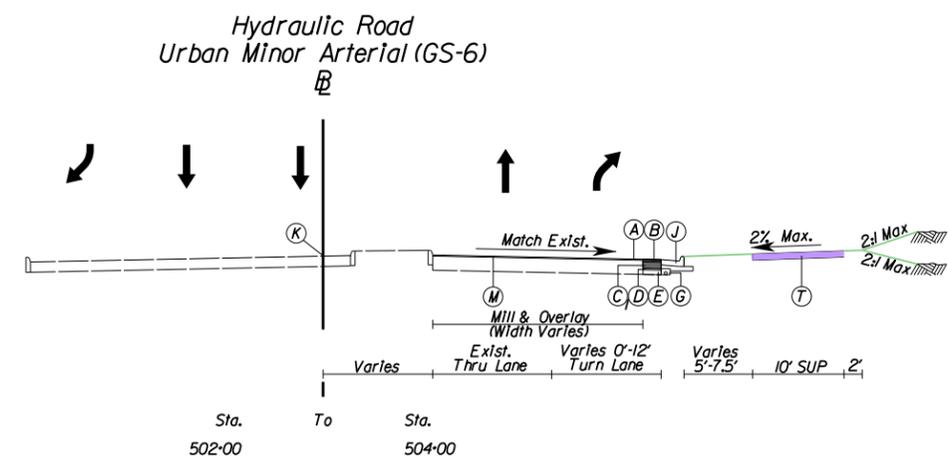
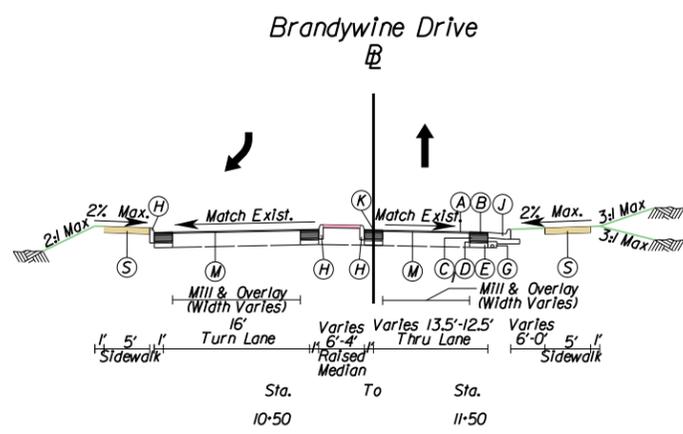
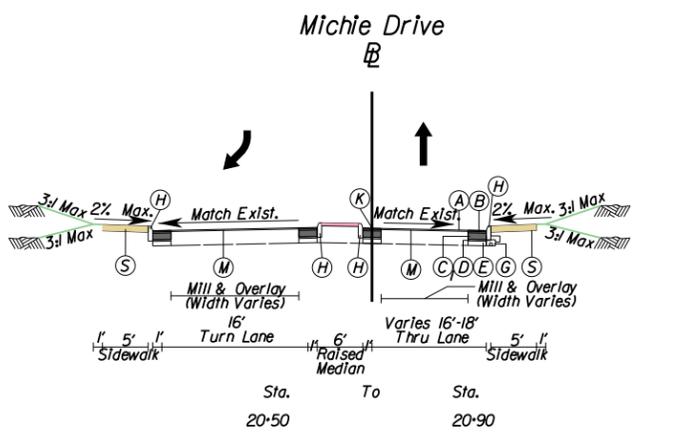
TYPICAL SECTIONS



PROJECT ELEMENT D



PROJECT ELEMENT E



LEGEND

- | | | | |
|--|---|---|---|
| (A) 1.5" Asphalt Concrete, Type SM-9.5D | (F) S'd. HR-1, Type III | (L) 9" A-3 Hydraulic Cement Concrete, Standard PR-2 Placed Above 6.5" Plain Aggregate, Type I, Size No. 21A or 21B | Denotes Proposed Asphalt Pavement |
| (B) 2" Asphalt Concrete, Type IM-19.0A | (G) Underdrain, S'd. UD-4 Req'd. | (M) Mill Exst. Surface 1.5" and Replace with 1.5" Asphalt Concrete, Type SM-9.5D | Denotes Proposed Grass Median/ Buffer/Planted Area |
| (C) 9" Asphalt Concrete, Type BM-25.0A | (H) Curb, S'd. CG-2 Req'd. | (N) In Areas of Variable Depth Build-up - Replace with up to 3" Asphalt Concrete, Type IM-19.0A and up to 1.5" Asphalt Concrete, Type SM-9.5D | Denotes Proposed Concrete Sidewalk |
| (C ₁) 8.5" Asphalt Concrete, Type BM-25.0A | (H ₁) Curb, Modified CG-3 Req'd. | (S) 4" Hydraulic Cement Concrete, Class A3 Placed Above 4" Aggregate Base Material, Type I, No. 21B | Denotes Proposed Truck Apron, Median, or Textured Veins |
| (D) 2" Open Graded Drainage Layer - Asphalt or Cement Stabilized | (J) Curb & Gutter, S'd. CG-6 Req'd. | (T) 2" Asphalt Concrete, Type SM-9.5A | Denotes Proposed Shared Use Path |
| (E) 6" Cement Treated Aggregate (CTA) | (J ₁) Curb & Gutter, S'd. CG-7 Req'd. | (U) 6" Aggregate Base Material, Type I, No. 21B extended 6" on either side of the surface | |
| | (K) Profile Grade Line (PGL) / Point of Rotation | (V) Full Depth Saw Cut | |

Note: Concrete for curb, curb & gutter and sidewalks within the City limits shall be tinted to match Charlottesville's desired "City mix" color, based on Solomon Colors #306 Canvas (SRI 37).

| | | |
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| SCALE 0 10' 20' | PROJECT 0029-M03-371 | SHEET NO. |
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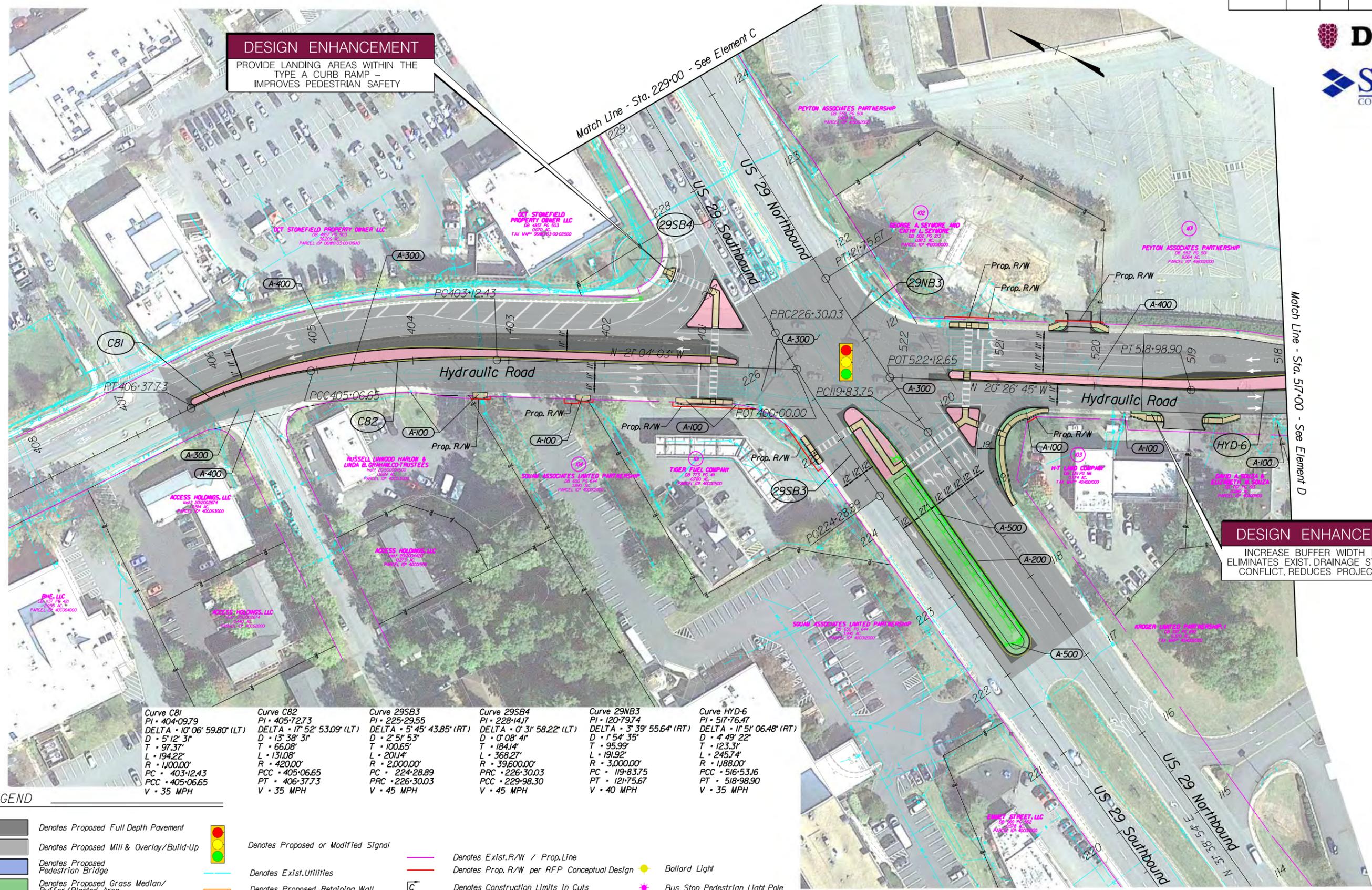
PROJECT ELEMENT A

| REVISED | STATE | ROUTE | STATE PROJECT | SHEET NO. ROUTE |
|---------|-------|-------|--------------------------------------|-----------------|
| | VA. | 29 | 0029-M03-371, P101, R201, C501, B601 | |



DESIGN ENHANCEMENT
 PROVIDE LANDING AREAS WITHIN THE TYPE A CURB RAMP - IMPROVES PEDESTRIAN SAFETY

DESIGN ENHANCEMENT
 INCREASE BUFFER WIDTH BY 1' - ELIMINATES EXIST. DRAINAGE STRUCTURE CONFLICT, REDUCES PROJECT COST



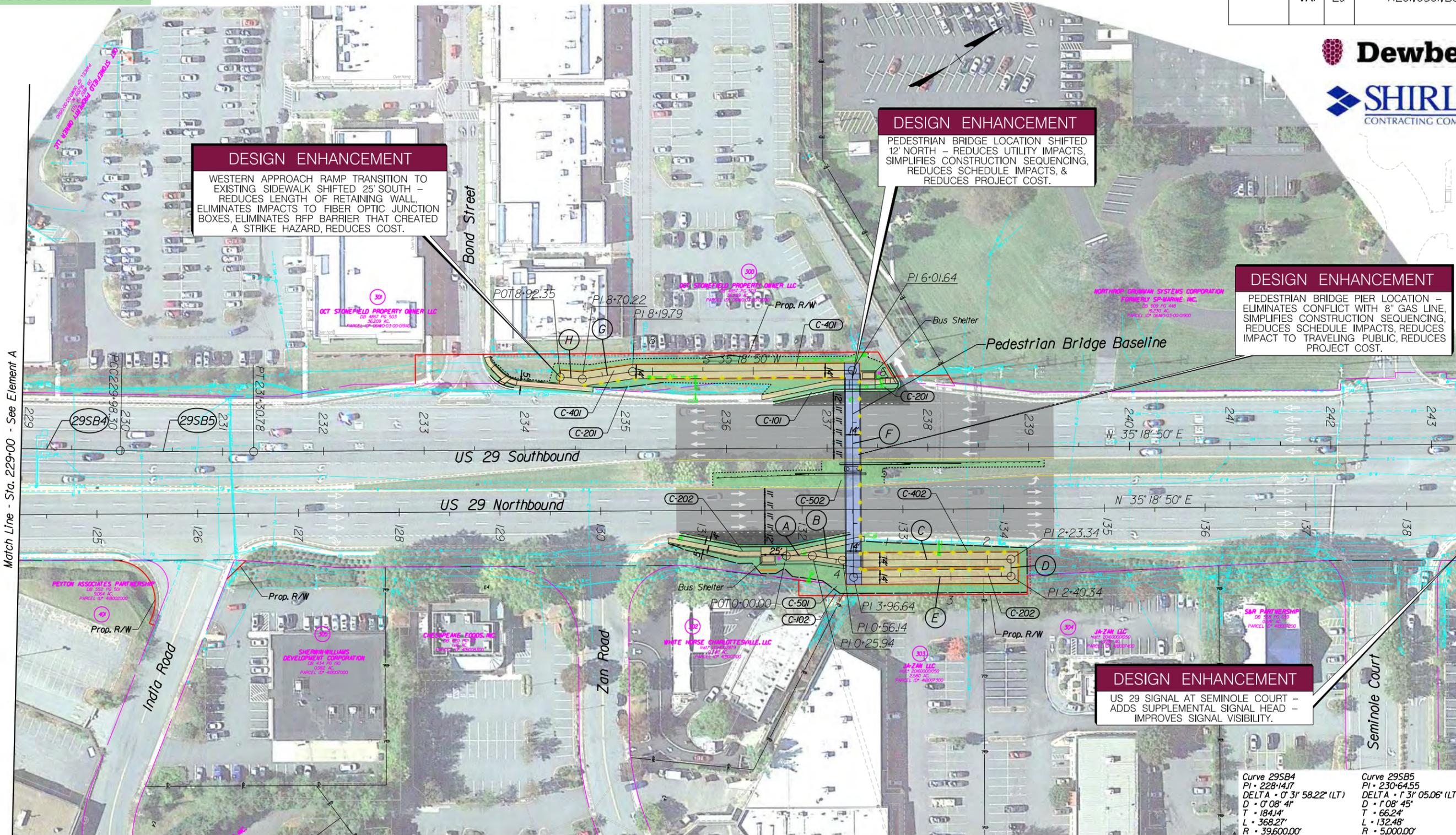
| | | | | | |
|--|---|---|--|--|---|
| <p>Curve C81 PI - 404-09.79 DELTA - 10° 06' 59.80" (LT) D - 5' 12' 31" T - 97.37' L - 194.22' R - 1,000.00' PC - 403-12.43 PCC - 405-06.65 V - 35 MPH</p> | <p>Curve C82 PI - 405-72.73 DELTA - 17° 52' 53.09" (LT) D - 13' 38' 31" T - 66.08' L - 131.08' R - 420.00' PCC - 405-06.65 PT - 406-37.73 V - 35 MPH</p> | <p>Curve 29SB3 PI - 225-29.55 DELTA - 5° 45' 43.85" (RT) D - 2' 51' 53" T - 100.65' L - 201.4' R - 2,000.00' PC - 224-28.89 PRC - 226-30.03 V - 45 MPH</p> | <p>Curve 29SB4 PI - 228-14.17 DELTA - 0° 31' 58.22" (LT) D - 0' 08' 41" T - 184.14' L - 368.27' R - 39,600.00' PRC - 226-30.03 PCC - 229-98.30 V - 45 MPH</p> | <p>Curve 29NB3 PI - 120-79.74 DELTA - 3° 39' 55.64" (RT) D - 1' 54' 35" T - 95.99' L - 191.92' R - 3,000.00' PC - 119-83.75 PT - 121-75.67 V - 40 MPH</p> | <p>Curve HYD-6 PI - 517-76.47 DELTA - 11° 51' 06.48" (RT) D - 4' 49' 22" T - 123.31' L - 245.74' R - 1,188.00' PCC - 516-53.16 PT - 518-98.90 V - 35 MPH</p> |
|--|---|---|--|--|---|

LEGEND

- Denotes Proposed Full Depth Pavement
- Denotes Proposed Mill & Overlay/Build-Up
- Denotes Proposed Pedestrian Bridge
- Denotes Proposed Grass Median/Buffer/Planted Area
- Denotes Proposed Concrete Sidewalk
- Denotes Proposed Truck Apron, Median, or Textured Veins
- Denotes Proposed or Modified Signal
- Denotes Exist. Utilities
- Denotes Proposed Retaining Wall
- Denotes Proposed Shared Use Path
- Denotes Demolition of Pavement
- Denotes Exist. R/W / Prop. Line
- Denotes Prop. R/W per RFP Conceptual Design
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills
- Denotes Utility Conflict ID No.
- Bollard Light
- Bus Stop Pedestrian Light Pole
- Pedestrian Lighting Replacement on Hillside Drive
- LP-2 Light Pole w/ 35' Mounting Height

PROJECT ELEMENT C

| REVISED | STATE | ROUTE | STATE PROJECT | SHEET NO. ROUTE |
|---------|-------|-------|--------------------------------------|-----------------|
| | VA. | 29 | 0029-M03-371, P101, R201, C501, B601 | |



DESIGN ENHANCEMENT
 WESTERN APPROACH RAMP TRANSITION TO EXISTING SIDEWALK SHIFTED 25' SOUTH - REDUCES LENGTH OF RETAINING WALL, ELIMINATES IMPACTS TO FIBER OPTIC JUNCTION BOXES, ELIMINATES RFP BARRIER THAT CREATED A STRIKE HAZARD, REDUCES COST.

DESIGN ENHANCEMENT
 PEDESTRIAN BRIDGE LOCATION SHIFTED 12' NORTH - REDUCES UTILITY IMPACTS, SIMPLIFIES CONSTRUCTION SEQUENCING, REDUCES SCHEDULE IMPACTS, & REDUCES PROJECT COST.

DESIGN ENHANCEMENT
 PEDESTRIAN BRIDGE PIER LOCATION - ELIMINATES CONFLICT WITH 8" GAS LINE, SIMPLIFIES CONSTRUCTION SEQUENCING, REDUCES SCHEDULE IMPACTS, REDUCES IMPACT TO TRAVELING PUBLIC, REDUCES PROJECT COST.

DESIGN ENHANCEMENT
 US 29 SIGNAL AT SEMINOLE COURT - ADDS SUPPLEMENTAL SIGNAL HEAD - IMPROVES SIGNAL VISIBILITY.

| | |
|--|--|
| Curve 29SB4 PI - 228-14.7 DELTA - 0° 31' 58.22" (LT) D - 0' 08' 41" T - 184.14' L - 368.27' R - 39,600.00' PRC - 226-30.03 PCC - 229-98.30 PT - 231-30.78 V - 45 MPH | Curve 29SB5 PI - 230-64.55 DELTA - 7° 31' 05.06" (LT) D - 7' 08' 45" T - 66.24' L - 132.48' R - 5,000.00' PRC - 229-98.30 PT - 231-30.78 V - 45 MPH |
|--|--|

LEGEND

- Denotes Proposed Full Depth Pavement
- Denotes Proposed Mill & Overlay/Build-Up
- Denotes Proposed Pedestrian Bridge
- Denotes Proposed Grass Median/Buffer/Planted Area
- Denotes Proposed Concrete Sidewalk
- Denotes Proposed Truck Apron, Median, or Textured Veins
- Denotes Proposed or Modified Signal
- Denotes Exst. Utilities
- Denotes Proposed Retaining Wall
- Denotes Proposed Shared Use Path
- Denotes Demolition of Pavement
- Denotes Exst. R/W / Prop. Line
- Denotes Prop. R/W per RFP Conceptual Design
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills
- Denotes Utility Conflict ID No.
- Bollard Light
- Bus Stop Pedestrian Light Pole
- Pedestrian Lighting Replacement on Hillside Drive
- LP-2 Light Pole w/ 35' Mounting Height

- (A) N 35° 18' 50" E
- (B) N 43° 53' 05" E
- (C) N 35° 18' 50" E
- (D) S 54° 41' 10" E
- (E) S 35° 18' 50" W
- (F) N 54° 41' 10" W
- (G) S 27° 18' 50" W
- (H) S 40° 31' 37" W

| REVISED | STATE | ROUTE | STATE PROJECT | SHEET NO. ROUTE |
|---------|-------|-------|--------------------------------------|-----------------|
| | VA. | 29 | 0029-M03-371, P101, R201, C501, B601 | |



PROJECT ELEMENT D

Curve HLD-1
PI • 71-35.45
DELTA • 21° 11' 06.99" (LT)
D • 31' 49' 52"
T • 33.66'
L • 66.56'
R • 180.00'
PC • 71-01.79
PCC • 71-68.34
V • 30 MPH

Curve HLD-2
PI • 72-22.02
DELTA • 21° 42' 17.98" (LT)
D • 20' 27' 46"
T • 53.68'
L • 106.07'
R • 280.00'
PCC • 71-68.34
PRC • 72-74.41
V • 30 MPH

Curve HLD-3
PI • 73-27.69
DELTA • 19° 07' 05.87" (RT)
D • 18' 06' 35"
T • 53.28'
L • 105.57'
R • 316.38'
PRC • 72-74.41
PCC • 73-79.98
V • 30 MPH

Curve HLD-4
PI • 74-26.26
DELTA • 13° 32' 21.83" (RT)
D • 14' 41' 55"
T • 46.27'
L • 92.11'
R • 389.81'
PCC • 73-79.98
PT • 74-72.10
V • 30 MPH

Curve HYD-3
PI • 512-66.48
DELTA • 17° 13' 51.21" (RT)
D • 9' 32' 57"
T • 90.91'
L • 180.44'
R • 600.00'
PC • 511-75.57
PRC • 513-56.02
V • 35 MPH

Curve HYD-4
PI • 514-01.68
DELTA • 25° 43' 24.87" (LT)
D • 28' 38' 52"
T • 45.67'
L • 89.79'
R • 200.00'
PCC • 513-56.02
PT • 514-45.81
V • 35 MPH

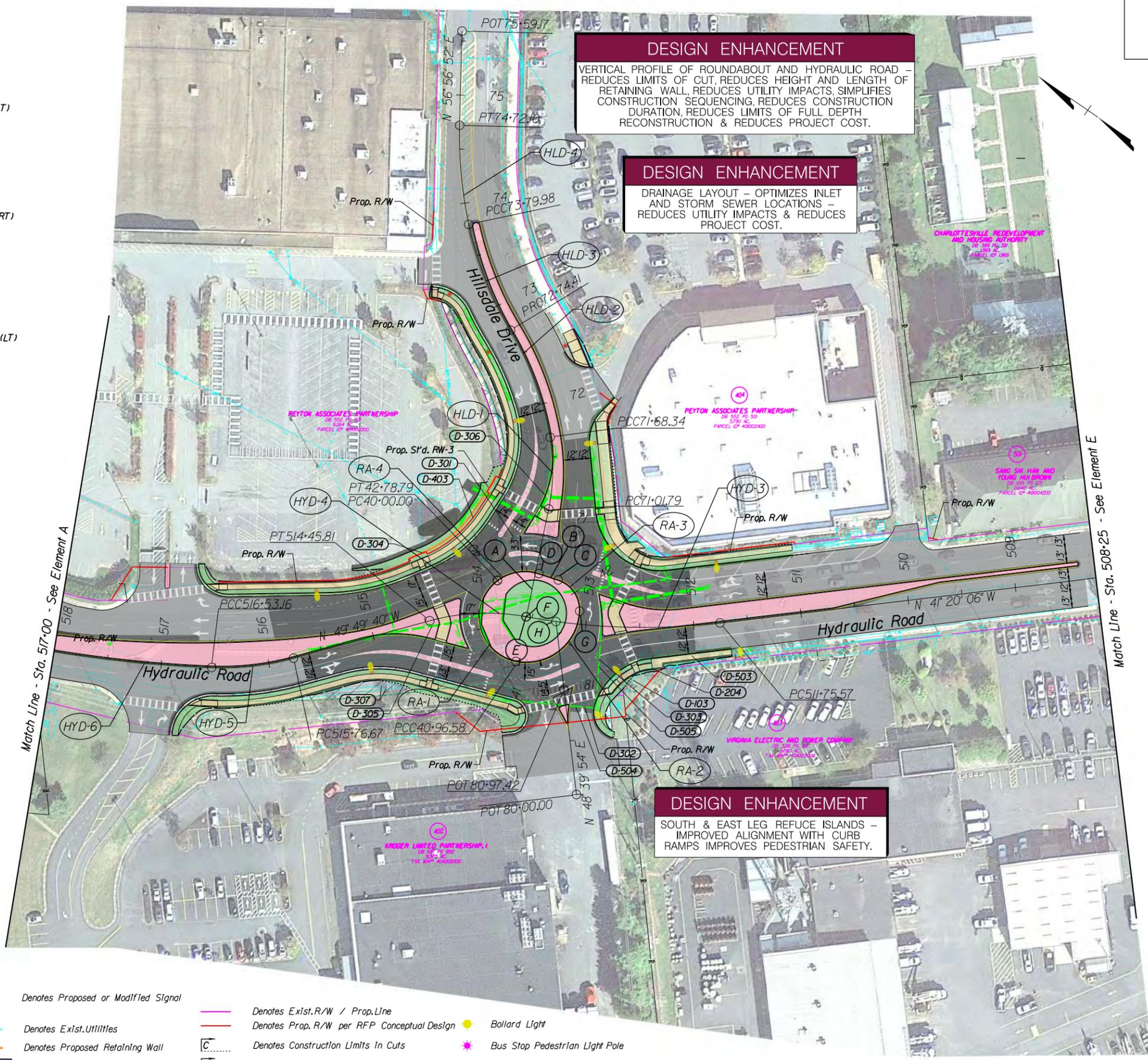
Curve HYD-5
PI • 516-15.22
DELTA • 17° 31' 47.79" (RT)
D • 22' 55' 06"
T • 38.55'
L • 76.49'
R • 250.00'
PC • 515-76.67
PCC • 516-53.16
V • 35 MPH

Curve HYD-6
PI • 517-76.47
DELTA • 11° 51' 06.48" (RT)
D • 4' 49' 22"
T • 123.31'
L • 245.74'
R • 1188.00'
PCC • 516-53.16
PT • 518-98.90
V • 35 MPH

DESIGN ENHANCEMENT
VERTICAL PROFILE OF ROUNDABOUT AND HYDRAULIC ROAD – REDUCES LIMITS OF CUT, REDUCES HEIGHT AND LENGTH OF RETAINING WALL, REDUCES UTILITY IMPACTS, SIMPLIFIES CONSTRUCTION SEQUENCING, REDUCES CONSTRUCTION DURATION, REDUCES LIMITS OF FULL DEPTH RECONSTRUCTION & REDUCES PROJECT COST.

DESIGN ENHANCEMENT
DRAINAGE LAYOUT – OPTIMIZES INLET AND STORM SEWER LOCATIONS – REDUCES UTILITY IMPACTS & REDUCES PROJECT COST.

DESIGN ENHANCEMENT
SOUTH & EAST LEG REFUGE ISLANDS – IMPROVED ALIGNMENT WITH CURB RAMPS IMPROVES PEDESTRIAN SAFETY.



Curve RA-1
PI • 40-93.79
DELTA • 131° 45' 18.88" (LT)
D • 136' 25' 07"
T • 93.79'
L • 96.58'
R • 42.00'
PC • 40-00.00
PCC • 40-96.58
V • 20 MPH

Curve RA-2
PI • 41-54.30
DELTA • 98° 45' 54.88" (LT)
D • 115' 44' 57"
T • 57.72'
L • 85.33'
R • 49.50'
PCC • 40-96.58
V • 20 MPH

Curve RA-3
PI • 42-03.87
DELTA • 74° 16' 37.15" (LT)
D • 197' 34' 18"
T • 21.96'
L • 37.59'
R • 29.00'
PCC • 41-81.91
PT • 42-19.50
V • 20 MPH

Curve RA-4
PI • 42-60.29
DELTA • 55° 12' 05.57" (LT)
D • 136' 25' 07"
T • 21.96'
L • 40.46'
R • 42.00'
PC • 42-38.33
PT • 42-78.79
V • 20 MPH

- (A) N 67° 10' 49" E
- (B) N 16° 21' 10" W
- (C) PT 42-19.50
- (D) PC 42-38.33
- (E) PRC 513-56.02
- (F) POT 70-00.00
- (G) PCC 41-81.91
- (H) POT 81-60.86

LEGEND

- Denotes Proposed Full Depth Pavement
- Denotes Proposed Mill & Overlay/Build-Up
- Denotes Proposed Pedestrian Bridge
- Denotes Proposed Grass Median/Buffer/Planted Area
- Denotes Proposed Concrete Sidewalk
- Denotes Proposed Truck Apron, Median, or Textured Veins
- Denotes Proposed or Modified Signal
- Denotes Exst. Utilities
- Denotes Proposed Retaining Wall
- Denotes Proposed Shared Use Path
- Denotes Demolition of Pavement
- Denotes Exst. R/W / Prop. Line
- Denotes Prop. R/W per RFP Conceptual Design
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills
- Denotes Utility Conflict ID No.
- Bollard Light
- Bus Stop Pedestrian Light Pole
- Pedestrian Lighting Replacement on Hillsdale Drive
- LP-2 Light Pole w/ 35' Mounting Height

| REVISED | STATE | ROUTE | STATE PROJECT | SHEET NO. ROUTE |
|---------|-------|-------|--------------------------------------|-----------------|
| | VA. | 29 | 0029-M03-371, P101, R201, C501, B601 | |

PROJECT ELEMENT E



Curve C16
 PI • 11+11.60
 DELTA • 28° 47' 00.09" (LT)
 D • 22' 28" 08"
 T • 63.43'
 L • 128.10'
 R • 255.00'
 PC • 10+46.17
 PCC • 11+74.27
 V • 25 MPH

Curve C17
 PI • 12+12.06
 DELTA • 5° 32' 48.21" (LT)
 D • 7' 20" 44"
 T • 37.78'
 L • 75.51'
 R • 780.00'
 PCC • 11+74.27
 PT • 12+49.78
 V • 25 MPH

Curve HYD-1
 PI • 503+38.69
 DELTA • 3° 52' 10.07" (LT)
 D • 1' 56" 12"
 T • 137.05'
 L • 266.99'
 R • 480.00'
 PC • 502+01.64
 PCC • 504+68.63
 V • 35 MPH

Curve HYD-2
 PI • 506+14.41
 DELTA • 40° 02' 49.00" (LT)
 D • 14' 19" 26"
 T • 145.77'
 L • 279.58'
 R • 400.00'
 PCC • 504+68.63
 PT • 507+48.21
 V • 35 MPH

Curve SPUR250
 PI • 51+51.36
 DELTA • 11° 57' 31.61" (RT)
 D • 59' 38" 10"
 T • 142.33'
 L • 187.74'
 R • 96.08'
 PC • 50+09.04
 PT • 51+96.77
 V • 15 MPH

Curve MD-1
 PI • 20+55.69
 DELTA • 19° 36' 16.80" (RT)
 D • 23' 10" 38"
 T • 42.71'
 L • 84.59'
 R • 247.21'
 PC • 20+12.98
 PT • 20+97.57
 V • 25 MPH

Curve MD-2
 PI • 22+39.79
 DELTA • 18° 19' 57.76" (LT)
 D • 18' 28" 57"
 T • 50.02'
 L • 99.19'
 R • 310.00'
 PC • 21+89.76
 PT • 22+88.95
 V • 25 MPH

- (A) N 81° 22' 38" W
- (B) S 84° 52' 18" E
- (C) N 48° 39' 54" E



DESIGN ENHANCEMENT
 MEDIAN ISLAND - PHYSICALLY RESTRICTS LEFT-OUTS - IMPROVES OPERATIONS, SAFETY, & VEHICLE MOVEMENTS. REDUCES PROJECT COSTS

DESIGN ENHANCEMENT
 SHARED USE PATH CURB RAMPS - PROVIDES FULL 10' WIDE RAMPS - IMPROVES PEDESTRIAN SAFETY

DESIGN ENHANCEMENT
 DRAINAGE LAYOUT - OPTIMIZES INLET AND STORM SEWER LOCATIONS - ELIMINATES CONFLICT WITH 8" SANITARY SEWER & REDUCES PROJECT COSTS

DESIGN ENHANCEMENT
 US 250 SPUR GEOMETRY - REMOVES COMPOUND CURVES - IMPROVES VEHICLE TURNING MOVEMENTS AND DRIVER EXPECTATIONS

LEGEND

| | | | |
|---|-------------------------------------|---|---|
| Denotes Proposed Full Depth Pavement | Denotes Proposed or Modified Signal | Denotes Exst. R/W / Prop. Line | Bollard Light |
| Denotes Proposed Mill & Overlay/Build-Up | Denotes Exst. Utilities | Denotes Prop. R/W per RFP Conceptual Design | Bus Stop Pedestrian Light Pole |
| Denotes Proposed Pedestrian Bridge | Denotes Proposed Retaining Wall | Denotes Construction Limits in Cuts | Pedestrian Lighting Replacement on Hillside Drive |
| Denotes Proposed Grass Median/ Buffer/Planted Area | Denotes Proposed Shared Use Path | Denotes Construction Limits in Fills | LP-2 Light Pole w/ 35' Mounting Height |
| Denotes Proposed Concrete Sidewalk | Denotes Demolition of Pavement | Denotes Utility Conflict ID No. | |
| Denotes Proposed Truck Apron, Median, or Textured Veins | | | |

4.3.2 - Conceptual Structural Plans

| | | | |
|---|----------------|---|---------|
| STATE | FEDERAL AID | STATE | SHEET |
| ROUTE | PROJECT | ROUTE | PROJECT |
| VA. | STP-5104 (299) | 0029-M03-371, B601 | 56 |
| Federal Structure No. 0000000000XXXXX | | FHWA Construction and Scour Code: X981-SN | |
| Federal Stewardship and Oversight Code: N/A | | UPC No. I18880 | |

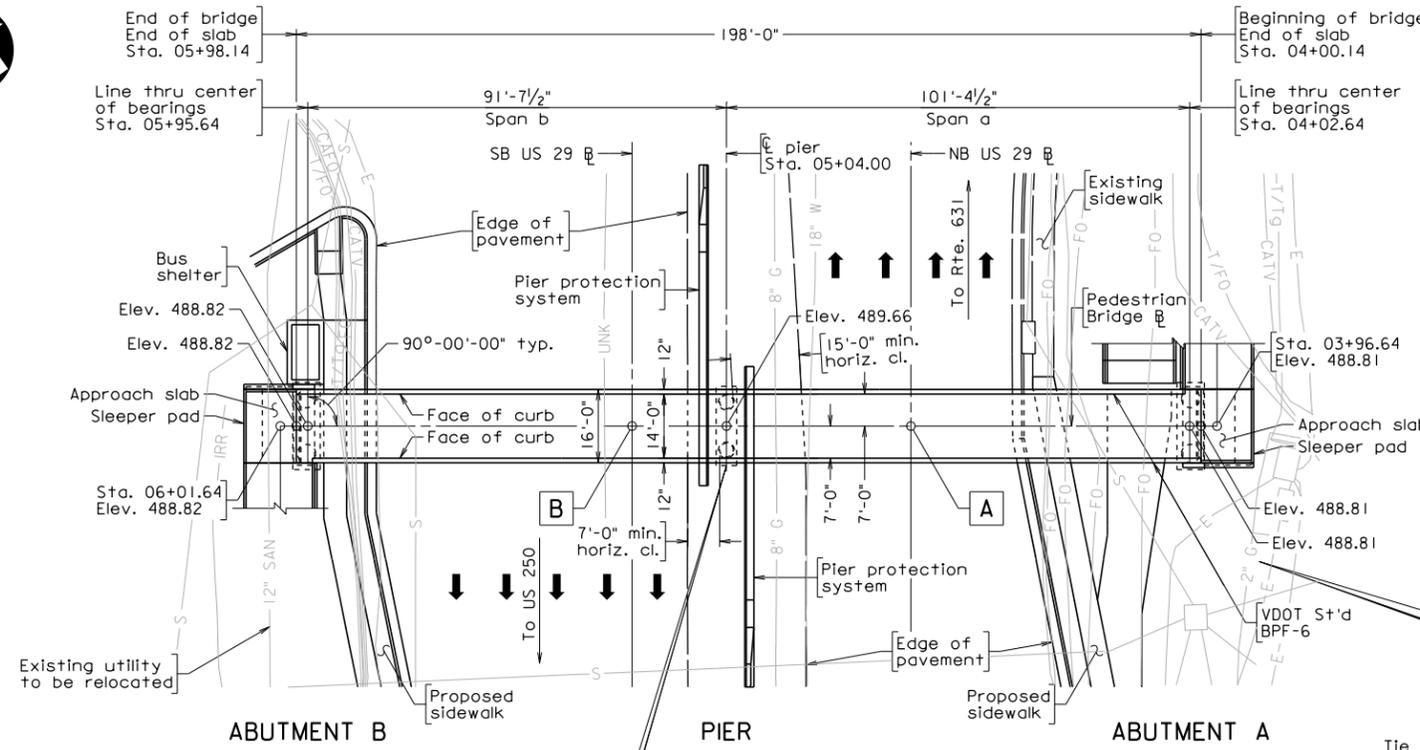
DESIGN EXCEPTION(S):

None.

GENERAL NOTES:

- Width: 14'-0" face-to-face of curbs.
- Span layout: 91'-7 1/2" - 101'-4 1/2" prestressed concrete 37" deep bulb-T beam spans continuous for live load.
- Capacity: AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges (2009).
- Specifications:
 - Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.
 - Design: AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges 2nd Edition, 2009 with 2015 Interim Revisions, and VDOT Modifications.
 - AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017; and VDOT Modifications.
 - Standards: Virginia Department of Transportation Road and Bridge Standards, 2016; including all current revisions.

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



DESIGN ENHANCEMENT
 ABUTMENT LOCATION - INCREASES DISTANCE TO ELECTRICAL DUCT BANK AND 2" GAS LINE, AVOIDS RELOCATION, AND MINIMIZES CONSTRUCTION RISK AND COST

DESIGN ENHANCEMENT
 PIER LOCATION - INCREASES OFFSET TO EXISTING 8" GAS LINE AND PROVIDES REQUIRED HORIZONTAL CLEARANCE

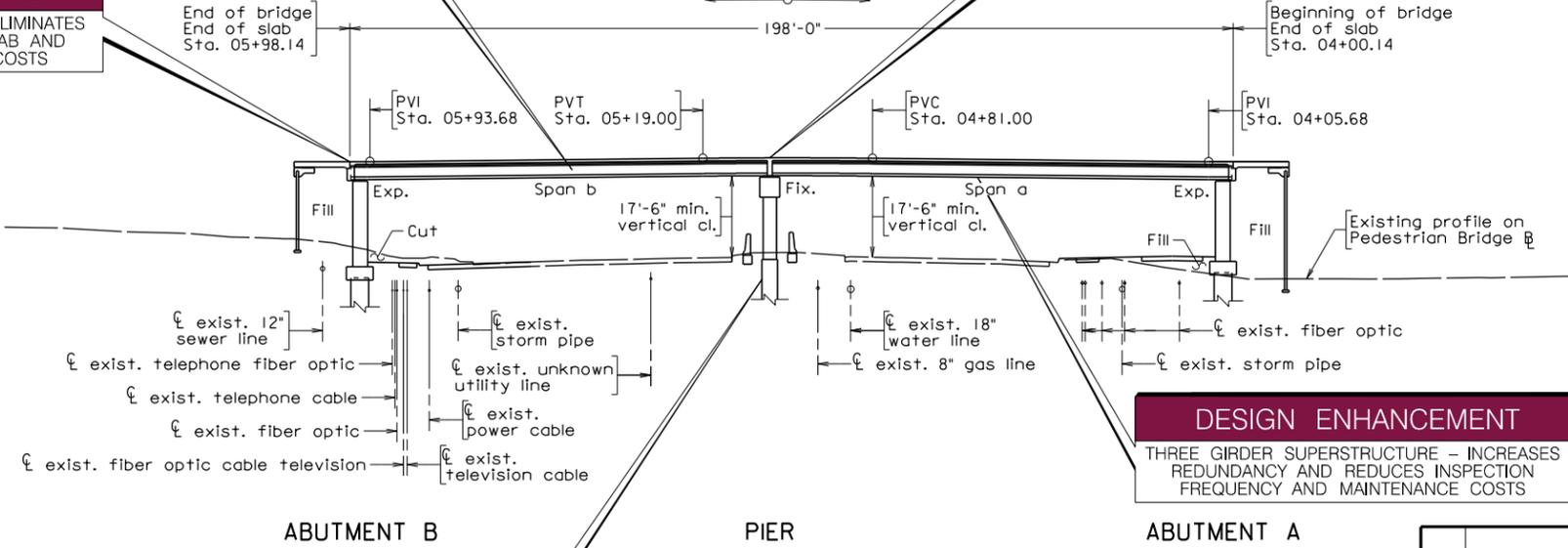
DESIGN ENHANCEMENT
 INCREASED GRADE - REDUCES SPREAD AND IMPROVES PEDESTRIAN SAFETY

- Tie stations:
- A** POT Sta. 04+63.64 Pedestrian Bridge $\Delta = 90^\circ-00'-00"$ Rt.
 - B** POT Sta. 05+24.64 Pedestrian Bridge $\Delta = 90^\circ-00'-00"$ Rt.

DESIGN ENHANCEMENT
 CONCRETE GIRDERS - INCREASES CORROSION RESISTANCE AND REDUCES CONSTRUCTION AND MAINTENANCE COSTS

DESIGN ENHANCEMENT
 SEMI-INTEGRAL ABUTMENT - ELIMINATES JOINT AT END OF DECK SLAB AND REDUCES MAINTENANCE COSTS

DESIGN ENHANCEMENT
 CONTINUOUS DECK SLAB - REDUCES CRACKING OVER THE PIER COMMON WITH FLEXIBLE LINK SLABS



DESIGN ENHANCEMENT
 THREE GIRDER SUPERSTRUCTURE - INCREASES REDUNDANCY AND REDUCES INSPECTION FREQUENCY AND MAINTENANCE COSTS

DESIGN ENHANCEMENT
 DRILLED SHAFTS - ELIMINATES FOOTING CAP, REDUCES FOUNDATION WIDTH AND SHORTENS COLUMN HEIGHTS

PRELIMINARY PLANS
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: 1" = 20'



COMMONWEALTH OF VIRGINIA
 DEPARTMENT OF TRANSPORTATION
 PROPOSED PEDESTRIAN BRIDGE
 PEDESTRIAN BRIDGE OVER US 29
 ALBEMARLE COUNTY AND CITY OF CHARLOTTESVILLE
 0.2 MI. N. OF HYDRAULIC ROAD
 PROJ. 0029-M03-371, B601

001.dgn

| |
|---|
| RECOMMENDED FOR APPROVAL FOR CONSTRUCTION |
| VDOT PROJECT MANAGER |
| DISTRICT CONSTRUCTION ENGINEER |
| DEWBERRY ENGINEERS INC. FAIRFAX, VA STRUCTURAL ENGINEER |
| PLANS BY: Dewberry Engineers Inc. |
| COORDINATED: |
| SUPERVISED: James D. Davidson |
| DESIGNED: Patricia S. O'Neill |
| DRAWN: John P. Doulis |
| CHECKED: Krista L. Murphy |

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

Recommended for Approval: Shirley Contracting Company, LLC Date _____

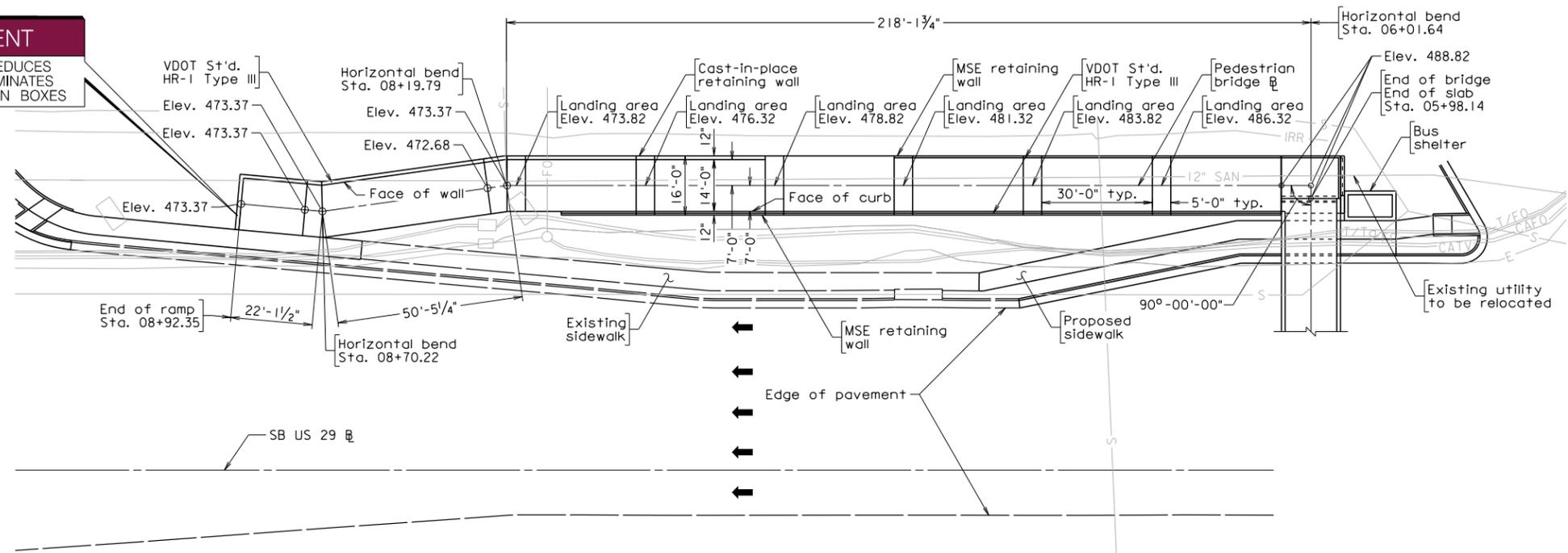
Approved: Chief Engineer Date _____

Date: January 24, 2023 © 2023, Commonwealth of Virginia Sheet 56

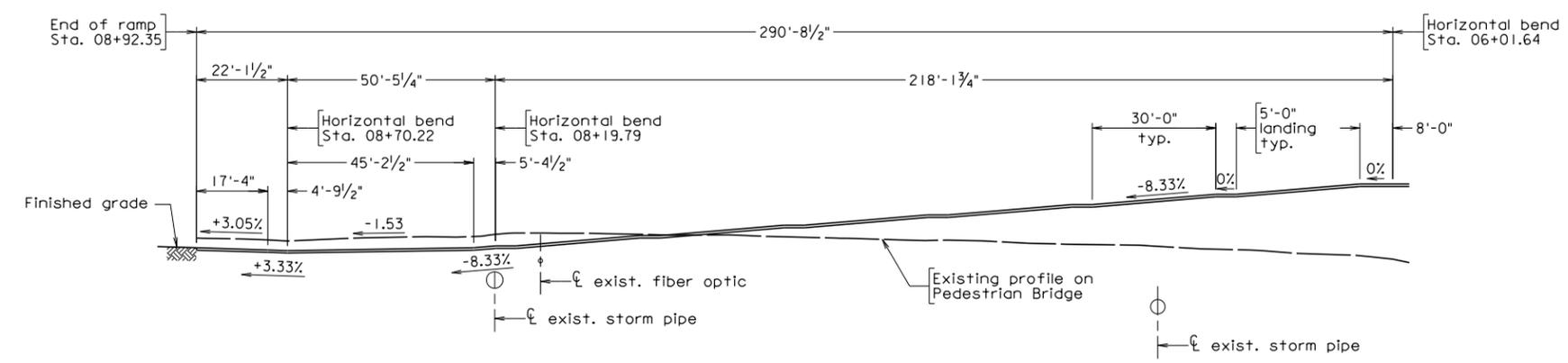
XXX-XX



DESIGN ENHANCEMENT
 APPROACH RAMP TERMINUS - REDUCES RETAINING WALL LIMITS AND ELIMINATES IMPACTS TO FIBER OPTIC JUNCTION BOXES



PLAN



DEVELOPED SECTION ALONG CL

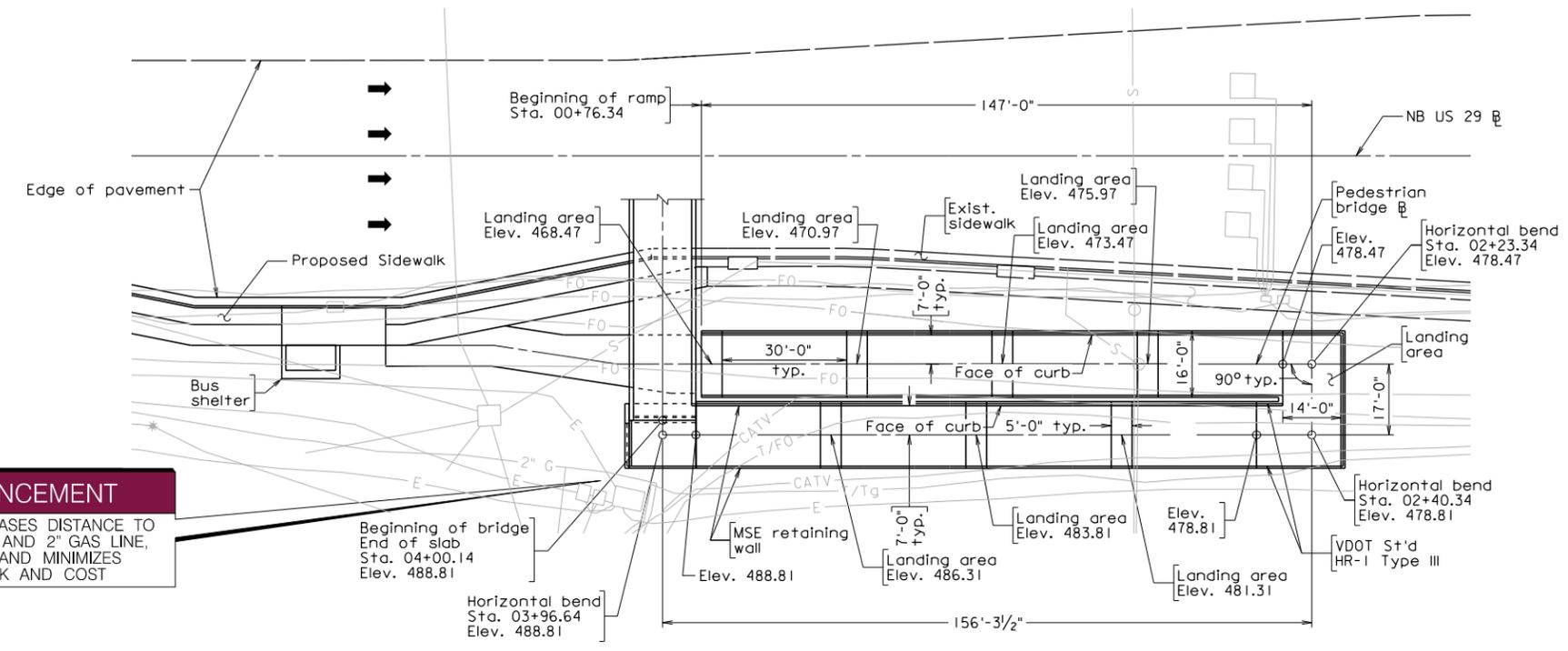


PRELIMINARY PLANS
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

| | | | |
|--|-------------|-----------|---|
| COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE AND BRIDGE DIVISION | | | |
| WEST RAMP PLAN AND ELEVATION | | | |
| No. | Description | Date | Designed: KLM..... Drawn: Checked: JDD..... |
| | Revisions | Jan. 2023 | Plan No. XXX-XX Sheet No. 57 |

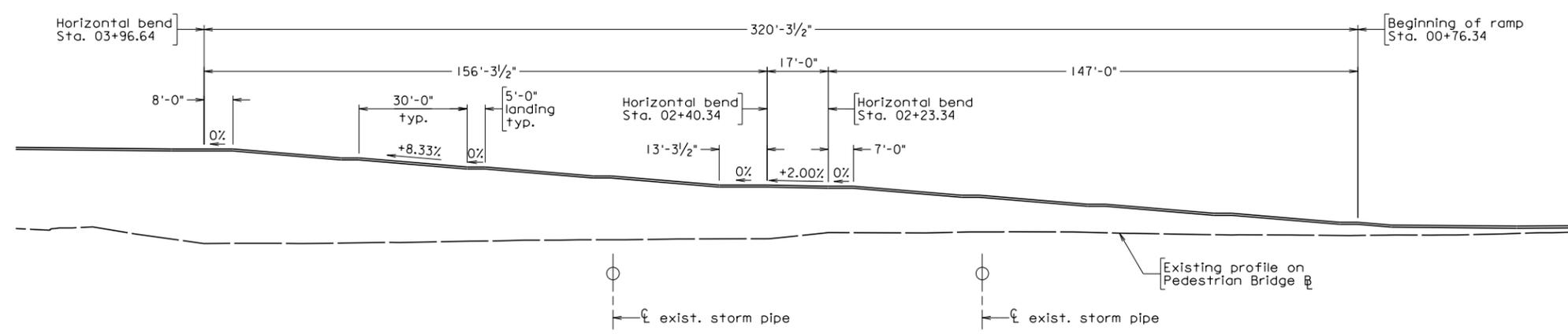
002.dgn

| | | | | |
|-------|-------------|--|--------------------|---------|
| STATE | FEDERAL AID | | STATE | SHEET |
| ROUTE | PROJECT | | ROUTE | PROJECT |
| VA. | | | 0029-M03-371, B601 | 58 |



DESIGN ENHANCEMENT
 RAMP LOCATION - INCREASES DISTANCE TO ELECTRICAL DUCT BANK AND 2" GAS LINE, AVOIDS RELOCATION, AND MINIMIZES CONSTRUCTION RISK AND COST

PLAN

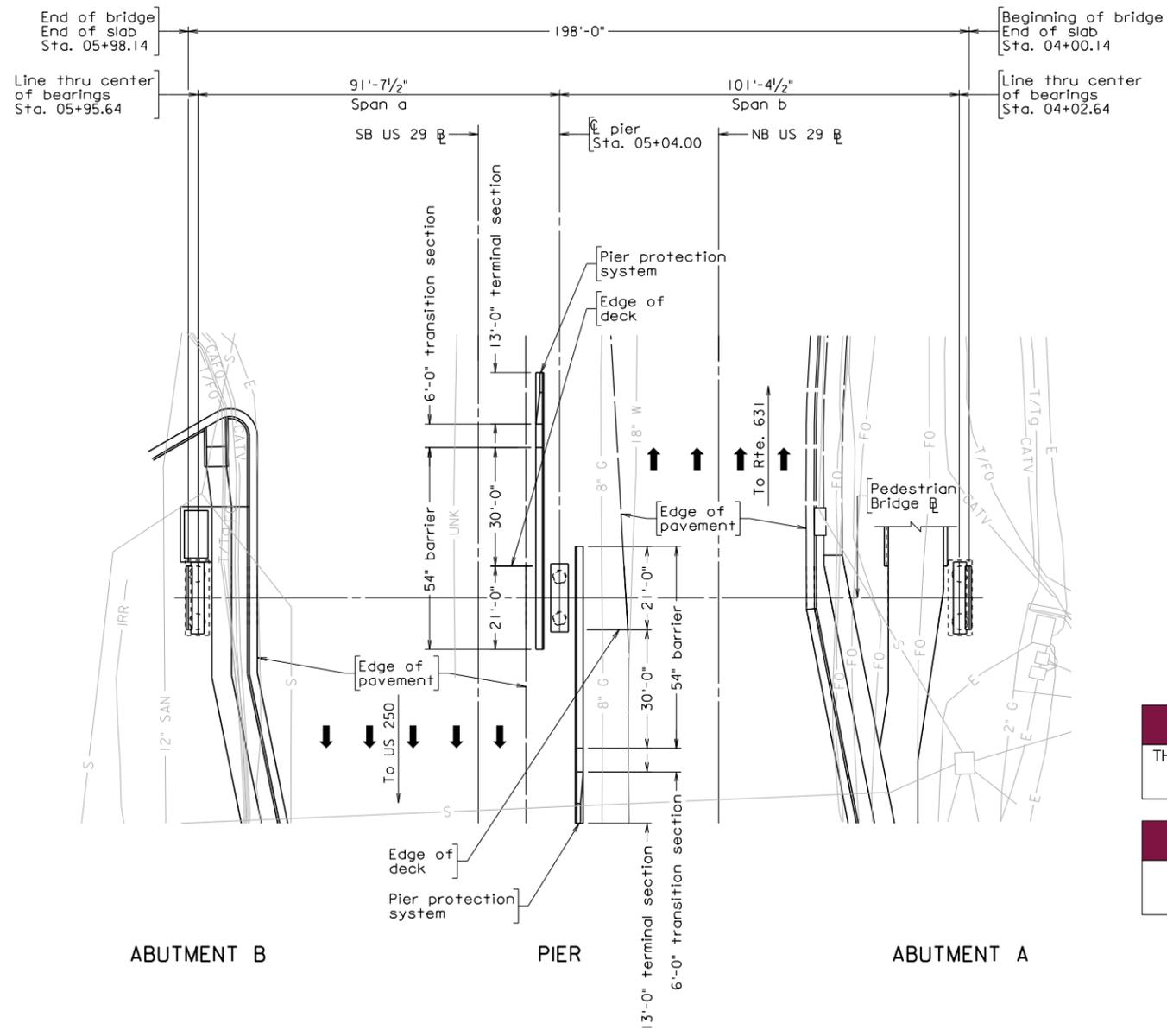


DEVELOPED SECTION ALONG B-B

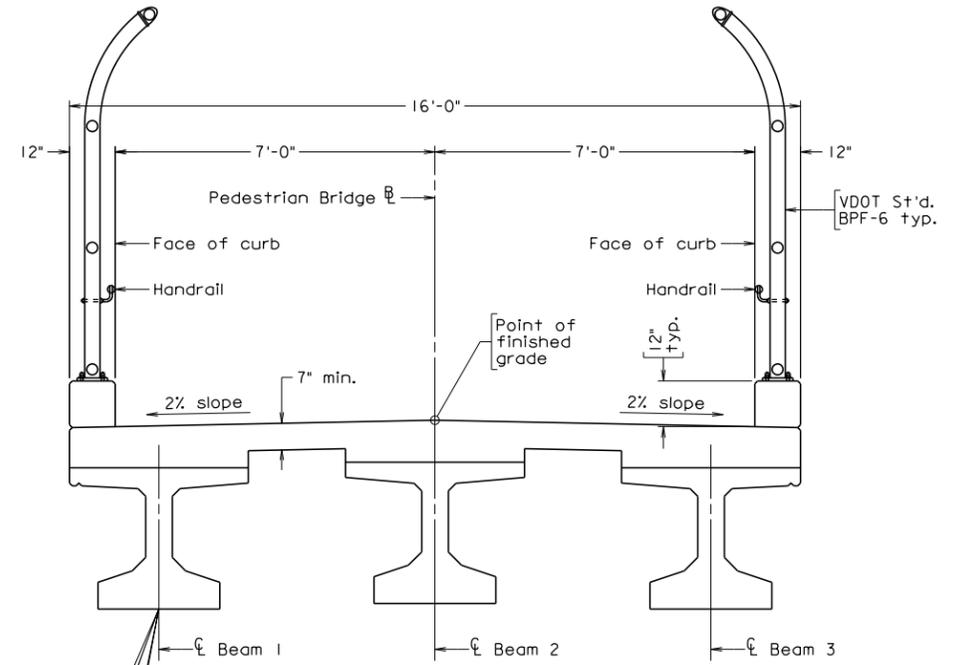
PRELIMINARY PLANS
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

| | | | |
|--|-------------|-----------|---|
| COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE AND BRIDGE DIVISION | | | |
| EAST RAMP PLAN AND ELEVATION | | | |
| No. | Description | Date | Designed: KLM..... Drawn: Checked: JDD..... |
| Revisions | | Jan. 2023 | Plan No. XXX-XX Sheet No. 58 |

003.dgn



PIER PROTECTION SYSTEM PLAN



TRANSVERSE SECTION
Scale: 1/2" = 1'-0"

DESIGN ENHANCEMENT
THREE GIRDER SUPERSTRUCTURE - INCREASES REDUNDANCY AND REDUCES INSPECTION FREQUENCY AND MAINTENANCE COSTS

DESIGN ENHANCEMENT
CONCRETE SUPERSTRUCTURE - INCREASES CORROSION RESISTANCE AND REDUCES CONSTRUCTION AND MAINTENANCE COSTS

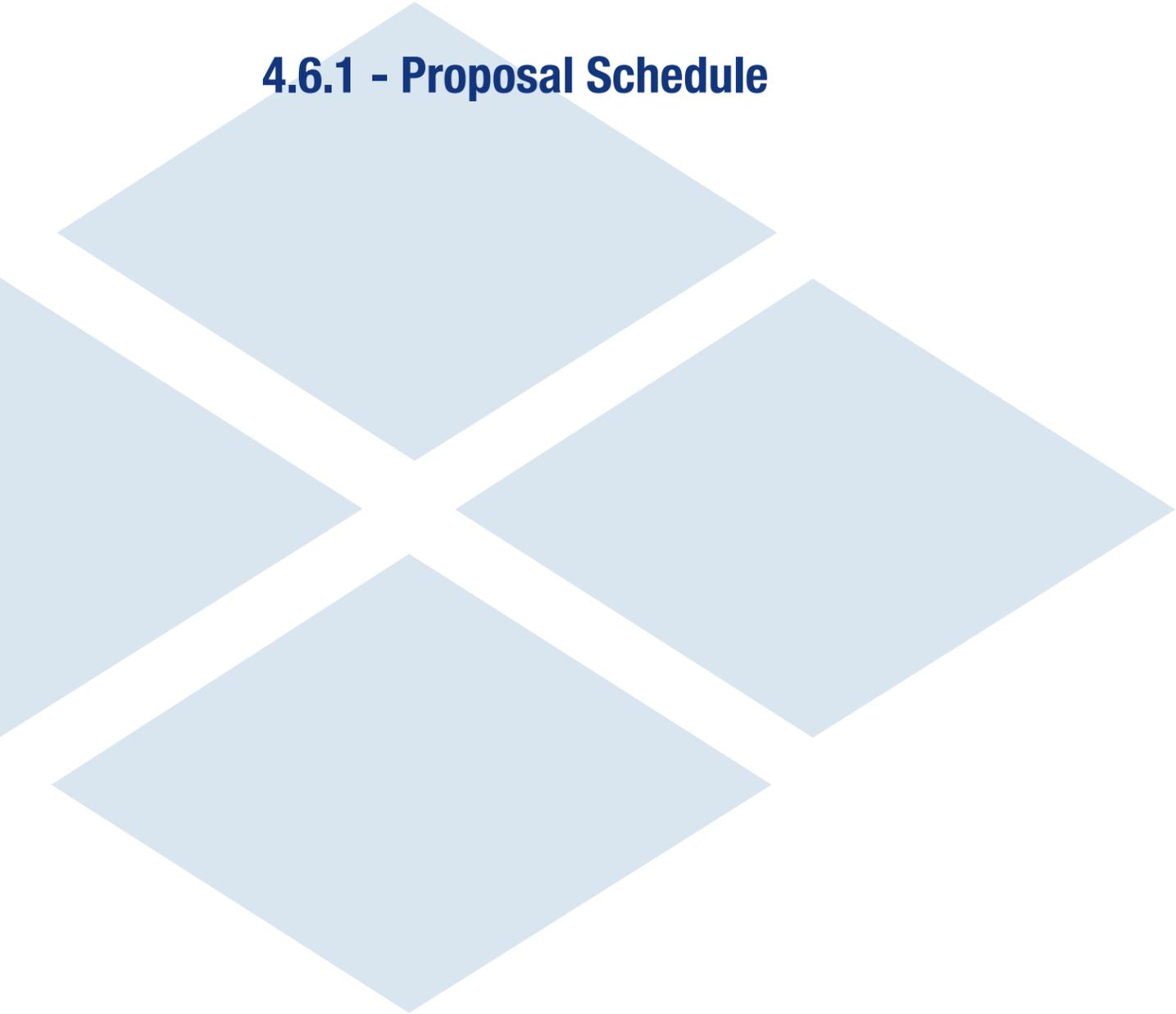


PRELIMINARY PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

| | | | | | | |
|--|-------------|------|---|-------------------|--------------------|-----------------|
| COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION | | | | | | |
| STRUCTURE AND BRIDGE DIVISION | | | | | | |
| PIER PROTECTION SYSTEM PLAN AND TRANSVERSE SECTION | | | | | | |
| No. | Description | Date | Designed: KLM..... Drawn: Checked: JDD..... | Date Jan. 2023 | Plan No. XXX-XX | Sheet No. 59 |
| Revisions | | | | | | |

004.dgn

4.6.1 - Proposal Schedule



| Activity ID | Activity Name | Original Duration | Start | Finish | 2023 | | | | | | | | | | | | 2024 | | | | | | | | | | | | 2025 | | | | | | | | | | | | | | |
|--|---|-------------------|------------|------------|---|-----------|-----------|---|---|---|-----|---|---|-----|---|---|------|---|---|-----|---|---|-----|---|---|---|---|---|------|---|---|-----|---|---|-----|---|---|--|--|--|--|--|--|
| | | | | | Apr | M | Jun | Jul | A | S | Oct | N | D | Jan | F | M | Apr | M | J | Jul | A | S | Oct | N | D | J | F | M | Apr | M | J | Jul | A | S | Oct | N | D | | | | | | |
| TRANSPORTATION IMPROVEMENTS AT HYDRAULIC ROAD AND US 29 | | | | | 668 | 17-Mar-23 | 03-Nov-25 | 03-Nov-25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SCHEDULE MILESTONES | | | | | 668 | 17-Mar-23 | 03-Nov-25 | 03-Nov-25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1000 | NOTICE OF INTENT TO AWARD | 0 | 17-Mar-23* | | NOTICE OF INTENT TO AWARD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1010 | CTB AWARD | 0 | 19-Apr-23 | | ◆ CTB AWARD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1020 | DESIGN-BUILD CONTRACT EXECUTION | 0 | 18-May-23 | | ◆ DESIGN-BUILD CONTRACT EXECUTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1040 | NOTICE TO PROCEED (05/23/2023) | 0 | 23-May-23* | | ◆ NOTICE TO PROCEED (05/23/2023) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1050 | SCOPE VALIDATION PERIOD (120 DAYS) | 120 | 23-May-23 | 19-Sep-23 | [] SCOPE VALIDATION PERIOD (120 DAYS) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1180 | PUNCH LIST INSPECTION | 5 | 22-Sep-25 | 26-Sep-25 | [] PUNCH LIST INSPECTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1210 | ADDRESS PUNCH LIST | 30 | 22-Sep-25 | 03-Nov-25 | [] ADDRESS PUNCH LIST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONSTRUCTION KEY DATES | | | | | 351 | 17-Jun-24 | 03-Nov-25 | 03-Nov-25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-5000 | SHUT DOWN FOR ROUNDABOUT | 0 | 17-Jun-24 | | ◆ SHUT DOWN FOR ROUNDABOUT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-5005 | SHUT DOWN PERIOD | 46 | 17-Jun-24 | 02-Aug-24 | [] SHUT DOWN PERIOD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-5010 | OPEN ROUNDABOUT | 0 | | 02-Aug-24* | ◆ OPEN ROUNDABOUT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-5015 | UNIQUE MILESTONE #1 - PEDESTRIAN ACCESS AT US 29 | 0 | | 24-Sep-24 | ◆ UNIQUE MILESTONE #1 - PEDESTRIAN ACCESS AT US 29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-5020 | EARLY COMPLETION DATE- FINAL COMPLETION | 0 | | 03-Nov-25* | ◆ EARLY COMPLETION DATE- FINAL COMPLETION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DESIGN PHASE | | | | | 244 | 23-May-23 | 08-May-24 | 08-May-24, DESIGN PHASE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRELIMINARY DESIGN | | | | | 139 | 23-May-23 | 10-Dec-23 | 10-Dec-23, PRELIMINARY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EARLY DESIGN / MOT | | | | | 129 | 24-May-23 | 27-Nov-23 | 27-Nov-23, EARLY DESIGN / MOT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1000 | PREPARE EARLY MOT PLANS | 40 | 24-May-23 | 20-Jul-23 | [] PREPARE EARLY MOT PLANS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1010 | PREPARE TRANSPORTATION MANAGEMENT PLAN (TMP) | 20 | 21-Jul-23 | 17-Aug-23 | [] PREPARE TRANSPORTATION MANAGEMENT PLAN (TMP) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1020 | DESIGN QA/QC MOT PLANS | 5 | 18-Aug-23 | 24-Aug-23 | [] DESIGN QA/QC MOT PLANS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1030 | VDOT REVIEW TMP & EARLY MOT PLANS | 21 | 25-Aug-23 | 14-Sep-23 | [] VDOT REVIEW TMP & EARLY MOT PLANS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1040 | SUBMIT MOT PLANS (1ST SUBMISSION) | 0 | 25-Aug-23 | | ◆ SUBMIT MOT PLANS (1ST SUBMISSION) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1050 | INCORPORATE VDOT COMMENTS TO MOT PLANS | 20 | 15-Sep-23 | 12-Oct-23 | [] INCORPORATE VDOT COMMENTS TO MOT PLANS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1060 | DESIGN QA/QC MOT PLANS (2ND SUBMISSION) | 5 | 13-Oct-23 | 19-Oct-23 | [] DESIGN QA/QC MOT PLANS (2ND SUBMISSION) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1070 | VDOT REVIEW TMP & EARLY MOT PLANS (2ND SUBMISSION) | 21 | 20-Oct-23 | 09-Nov-23 | [] VDOT REVIEW TMP & EARLY MOT PLANS (2ND SUBMISSION) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1080 | SUBMIT MOT PLANS (2ND SUBMISSION) | 0 | 20-Oct-23 | | ◆ SUBMIT MOT PLANS (2ND SUBMISSION) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1090 | FINAL COMMENT RESOLUTION - EARLY MOT PLANS | 10 | 10-Nov-23 | 27-Nov-23 | [] FINAL COMMENT RESOLUTION - EARLY MOT PLANS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA10000-1100 | RFC - EARLY START / MOT PLANS ISSUED FOR CONSTRUCTION | 0 | | 27-Nov-23 | ◆ RFC - EARLY START / MOT PLANS ISSUED FOR CONSTRUCTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DESIGN QA/QC PLAN | | | | | 18 | 23-May-23 | 16-Jun-23 | 16-Jun-23, DESIGN QA/QC PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA20000-1000 | PREPARE/SUBMIT DESIGN QA/QC PLAN | 3 | 23-May-23 | 25-May-23 | [] PREPARE/SUBMIT DESIGN QA/QC PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA20000-1010 | PRESENT DESIGN QA/QC PLAN / KICK OFF MEETING | 1 | 26-May-23 | 26-May-23 | [] PRESENT DESIGN QA/QC PLAN / KICK OFF MEETING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA20000-1020 | VDOT REVIEW DESIGN QA/QC PLAN | 21 | 27-May-23 | 16-Jun-23 | [] VDOT REVIEW DESIGN QA/QC PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA20000-1030 | QA/QC PLAN APPROVED | 0 | | 16-Jun-23 | ◆ QA/QC PLAN APPROVED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SURVEYS | | | | | 61 | 23-May-23 | 17-Aug-23 | 17-Aug-23, SURVEYS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA30000-1000 | SET CONTROL AND PANEL POINTS | 15 | 23-May-23 | 13-Jun-23 | [] SET CONTROL AND PANEL POINTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA30000-1010 | DISTRIBUTE ACCESS LETTERS | 5 | 23-May-23 | 30-May-23 | [] DISTRIBUTE ACCESS LETTERS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA30000-1020 | BASE MAPPING / FIELD SURVEY | 40 | 24-May-23 | 20-Jul-23 | [] BASE MAPPING / FIELD SURVEY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA30000-1030 | PROPERTY ACCESS HOLD | 30 | 31-May-23 | 29-Jun-23 | [] PROPERTY ACCESS HOLD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA30000-1040 | CHECK PROPERTY CORNERS | 20 | 30-Jun-23 | 28-Jul-23 | [] CHECK PROPERTY CORNERS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA30000-1050 | PROPERTY RESEARCH | 20 | 30-Jun-23 | 28-Jul-23 | [] PROPERTY RESEARCH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA30000-1060 | SURVEY LAYOUT SOIL BORING LOCATIONS | 15 | 30-Jun-23 | 21-Jul-23 | [] SURVEY LAYOUT SOIL BORING LOCATIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA30000-1070 | PERFORM TRAFFIC COUNTS | 10 | 23-May-23 | 06-Jun-23 | [] PERFORM TRAFFIC COUNTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA50000-1010 | EXISTING DRAINAGE INVENTORY SURVEY | 20 | 21-Jul-23 | 17-Aug-23 | [] EXISTING DRAINAGE INVENTORY SURVEY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEOTECHNICAL INVESTIGATION REPORTS | | | | | 139 | 23-May-23 | 10-Dec-23 | 10-Dec-23, GEOTECHNICAL INVESTIGATION REPORTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BA40000-1000 | PREPARE ROADWAY SOIL BORING LOCATION PLAN | 10 | 23-May-23 | 06-Jun-23 | [] PREPARE ROADWAY SOIL BORING LOCATION PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | 2023 | | | | | | | | | | | | 2024 | | | | | | | | | | | | 2025 | | | | | | | | | | | |
|---|--|-------------------|-----------|-----------|---|---|-----|-----|---|---|-----|---|---|-----|---|---|------|---|---|-----|---|---|-----|---|---|---|---|---|------|---|---|-----|---|---|-----|---|---|--|--|--|
| | | | | | Apr | M | Jun | Jul | A | S | Oct | N | D | Jan | F | M | Apr | M | J | Jul | A | S | Oct | N | D | J | F | M | Apr | M | J | Jul | A | S | Oct | N | D | | | |
| BD1090 | VDOT CHIEF ENGINEER SIGNS BRIDGE PLANS | 2 | 13-Mar-24 | 14-Mar-24 | VDOT CHIEF ENGINEER SIGNS BRIDGE PLANS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ENVIRONMENTAL PERMITTING | | | | | 03-Jul-24, ENVIRONMENTAL PERMITTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CA00000-0000 | BEGIN ENVIRONMENTAL PERMITTING | 0 | 30-Jun-23 | | ◆ BEGIN ENVIRONMENTAL PERMITTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CA00000-0010 | ENVIRONMENTAL PERMITTING COMPLETE | 0 | 14-May-24 | | ◆ ENVIRONMENTAL PERMITTING COMPLETE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JOINT WTLANDS AND WATER PERMITTING | | | | | 03-Jul-24, JOINT WTLANDS AND WATER PERMITTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CA00000-1010 | WETLAND DELINEATIONS - SURVEY & FLAGGING | 15 | 30-Jun-23 | 21-Jul-23 | ■ WETLAND DELINEATIONS - SURVEY & FLAGGING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CA00000-1020 | COE JURISDICTIONAL DETERMINATION | 70 | 24-Jul-23 | 30-Oct-23 | ■ COE JURISDICTIONAL DETERMINATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CA00000-1030 | SECTION 7 T&E COORDINATION | 45 | 28-Aug-23 | 30-Oct-23 | ■ SECTION 7 T&E COORDINATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CA00000-1040 | PREPARE & SUBMIT JOINT PERMIT APPLICATION | 40 | 07-Feb-24 | 04-Apr-24 | ■ PREPARE & SUBMIT JOINT PERMIT APPLICATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CA00000-1050 | AGENCY REVIEW & APPROVAL OF JPA | 90 | 04-Apr-24 | 03-Jul-24 | ■ AGENCY REVIEW & APPROVAL OF JPA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LD 445 / VPDES/ STORMWATER PERMIT | | | | | 14-May-24, LD 445 / VPDES/ STORMWATER PERMIT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT WIDE LAND DISTURBANCE PERMIT | | | | | 14-May-24, PROJECT WIDE LAND DISTURBANCE PERMIT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CC00000-1020 | LD-445 FORMS - TO BE SUBMITTED WITH 60% PLANS | 10 | 24-Jan-24 | 07-Feb-24 | ■ LD-445 FORMS - TO BE SUBMITTED WITH 60% PLANS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CC00000-1030 | COMPLETE SWPPP (LD-455E) CERTIFICATIONS | 5 | 07-Feb-24 | 14-Feb-24 | ■ COMPLETE SWPPP (LD-455E) CERTIFICATIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CC00000-1040 | REQUEST PERMIT COVERAGE (APPLICATION COMPLETE - HOLD POINT) | 0 | 07-Feb-24 | | ◆ REQUEST PERMIT COVERAGE (APPLICATION COMPLETE - HOLD POINT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CC00000-1050 | APPROVED LAND DISTURBANCE PERMIT APPLICATION AND SWPPP PROJECT | 0 | 14-Feb-24 | | ◆ APPROVED LAND DISTURBANCE PERMIT APPLICATION AND SWPPP PROJECT WIDE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CC00000-1060 | VDOT SECURE PERMIT COVERAGE AND RELEASE WORK (HOLD POINT) | 90 | 14-Feb-24 | 14-May-24 | ■ VDOT SECURE PERMIT COVERAGE AND RELEASE WORK (HOLD POINT) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PUBLIC INVOLVEMENT | | | | | 08-May-24, PUBLIC INVOLVEMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D000000-1000 | PREPARE AND SUBMIT EMERGENCY CONTACT LIST | 5 | 30-Jun-23 | 04-Jul-23 | ■ PREPARE AND SUBMIT EMERGENCY CONTACT LIST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D000000-1020 | MEET WITH DISTRICT PUBLIC AFFAIRS TO DISCUSS PUBLIC INVOLVEMENT | 15 | 05-Jul-23 | 25-Jul-23 | ■ MEET WITH DISTRICT PUBLIC AFFAIRS TO DISCUSS PUBLIC INVOLVEMENT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D000000-1030 | DESIGN PUBLIC INFORMATION MEETING #1- EARLY COORDINATION | 0 | 04-Jan-24 | | ◆ DESIGN PUBLIC INFORMATION MEETING #1- EARLY COORDINATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D000000-1040 | PUBLIC INFORMATION MEETING #2 - START OF CONSTRUCTION | 0 | 08-May-24 | | ◆ PUBLIC INFORMATION MEETING #2 - START OF CONSTRUCTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RIGHT OF WAY ACQUISITIONS/ EASEMENTS | | | | | 12-Nov-24, RIGHT OF WAY ACQUISITIONS/ EASEMENTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT SPECIFIC ACQUISITION AND RELOCATION PLAN | | | | | 25-Aug-23, PROJECT SPECIFIC ACQUISITION AND RELOCATION PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EA00000-1000 | PREPARE AND SUBMIT R/W AQUISITION AND RELOCATION PLAN | 40 | 23-May-23 | 01-Jul-23 | ■ PREPARE AND SUBMIT R/W AQUISITION AND RELOCATION PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EA00000-1010 | VDOT R/A AQUISITION AND RELOCATION PLAN | 21 | 02-Jul-23 | 22-Jul-23 | ■ VDOT R/A AQUISITION AND RELOCATION PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EA00000-1030 | COMMENT RESPONSE/RE-SUBMIT AQUISITION PLAN | 10 | 24-Jul-23 | 04-Aug-23 | ■ COMMENT RESPONSE/RE-SUBMIT AQUISITION PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EA00000-1040 | VDOT REVIEW/APPROVE 2ND SUBMISSION AQUISITION PLAN | 21 | 05-Aug-23 | 25-Aug-23 | ■ VDOT REVIEW/APPROVE 2ND SUBMISSION AQUISITION PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ROW/EASEMENT ADQUISITIONS | | | | | 12-Nov-24, ROW/EASEMENT ADQUISITIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRIORITY 1 ROW ACQUISITION | | | | | 15-Oct-24, PRIORITY 1 ROW ACQUISITION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1000 | R/W PRIORITY 1 - COMPLETE APPRAISAL | 40 | 31-Oct-23 | 28-Dec-23 | ■ R/W PRIORITY 1 - COMPLETE APPRAISAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1010 | R/W PRIORITY 1 - COMPLETE 60 YR TITLE EXAM | 20 | 31-Oct-23 | 29-Nov-23 | ■ R/W PRIORITY 1 - COMPLETE 60 YR TITLE EXAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1020 | R/W PRIORITY 1 - REVIEW APPRAISER COMPLETES REVIEW | 8 | 29-Dec-23 | 10-Jan-24 | ■ R/W PRIORITY 1 - REVIEW APPRAISER COMPLETES REVIEW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1030 | R/W PRIORITY 1 - SUBMIT APPRAISAL TO VDOT (RUMS) | 2 | 11-Jan-24 | 12-Jan-24 | ■ R/W PRIORITY 1 - SUBMIT APPRAISAL TO VDOT (RUMS) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1040 | R/W PRIORITY 1 - VDOT APPROVES APPRAISAL | 21 | 13-Jan-24 | 02-Feb-24 | ■ R/W PRIORITY 1 - VDOT APPROVES APPRAISAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1050 | R/W PRIORITY 1 - PREPARE OFFER PACKAGE | 5 | 15-Jan-24 | 19-Jan-24 | ■ R/W PRIORITY 1 - PREPARE OFFER PACKAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1060 | R/W PRIORITY 1 - NEGOTIATOR MAKE INITIAL CONTACT / PRESENT OFFER | 10 | 05-Feb-24 | 16-Feb-24 | ■ R/W PRIORITY 1 - NEGOTIATOR MAKE INITIAL CONTACT / PRESENT OFFER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1070 | R/W PRIORITY 1 - NEGOTIATIONS | 45 | 20-Feb-24 | 22-Apr-24 | ■ R/W PRIORITY 1 - NEGOTIATIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1080 | R/W PRIORITY 1- OBTAIN SIGNED OPTION | 5 | 23-Apr-24 | 29-Apr-24 | ■ R/W PRIORITY 1- OBTAIN SIGNED OPTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1090 | R/W PRIORITY 1- PREPARE CERTIFICATE PACKAGE | 5 | 23-Apr-24 | 29-Apr-24 | ■ R/W PRIORITY 1- PREPARE CERTIFICATE PACKAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1100 | R/W PRIORITY 1- SEND NOTICE OF FILING CERTIF. TO PROPERTY OWNER | 3 | 23-Apr-24 | 25-Apr-24 | ■ R/W PRIORITY 1- SEND NOTICE OF FILING CERTIF. TO PROPERTY OWNER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1110 | R/W PRIORITY 1- PROPERTY ACCESS FOR CONSTRUCTION - IF BY OPTION | 0 | | 29-Apr-24 | ◆ R/W PRIORITY 1- PROPERTY ACCESS FOR CONSTRUCTION - IF BY OPTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1120 | R/W PRIORITY 1- OPTION / SETTLEMENT DOCS SUBMITTED TO VDOT | 5 | 30-Apr-24 | 06-May-24 | ■ R/W PRIORITY 1- OPTION / SETTLEMENT DOCS SUBMITTED TO VDOT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1130 | R/W PRIORITY 1- VDOT REVIEWS / ISSUES CERTIFICATE & CHECK | 40 | 30-Apr-24 | 08-Jun-24 | ■ R/W PRIORITY 1- VDOT REVIEWS / ISSUES CERTIFICATE & CHECK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1140 | R/W PRIORITY 1- SUBMIT CERTIFICATE PACKAGE TO VDOT | 0 | 30-Apr-24 | | ◆ R/W PRIORITY 1- SUBMIT CERTIFICATE PACKAGE TO VDOT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EB00000-1150 | R/W PRIORITY 1- VDOT REVIEWS SETTLEMENT DOCUMENTS | 30 | 07-May-24 | 05-Jun-24 | ■ R/W PRIORITY 1- VDOT REVIEWS SETTLEMENT DOCUMENTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | 2023 | | | | | | | | | | | | 2024 | | | | | | | | | | | | 2025 | | | | | | | | | | | |
|------------------------------|---|-------------------|-----------|-----------|---|---|-----|-----|---|---|-----|---|---|-----|---|---|------|---|---|-----|---|---|-----|---|---|---|---|---|------|---|---|-----|---|---|-----|---|---|--|--|--|
| | | | | | Apr | M | Jun | Jul | A | S | Oct | N | D | Jan | F | M | Apr | M | J | Jul | A | S | Oct | N | D | J | F | M | Apr | M | J | Jul | A | S | Oct | N | D | | | |
| CHARLOTTESVILLE WATER | | | | | 05-Jul-24, CHARLOTTESVILLE WATER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FB00000-1000 | HOLD UFI MEETING WITH CHARLOTTESVILLE WATER | 1 | 04-Dec-23 | 04-Dec-23 | HOLD UFI MEETING WITH CHARLOTTESVILLE WATER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FB00000-1010 | PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN CHARLOTTESVILLE V | 30 | 05-Dec-23 | 17-Jan-24 | █ PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN CHARLOTTESVILLE WATER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FB00000-1030 | CHARLOTTESVILLE WATER COMPLETES UTILITY DESIGN | 30 | 07-Feb-24 | 21-Mar-24 | █ CHARLOTTESVILLE WATER COMPLETES UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FB00000-1040 | APPROVE UTILITY DESIGN | 5 | 21-Mar-24 | 28-Mar-24 | █ APPROVE UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FB00000-1050 | RELOCATE FIRE HYDRANT ELEMENT D | 5 | 28-Jun-24 | 05-Jul-24 | █ RELOCATE FIRE HYDRANT ELEMENT D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FB00000-1060 | RELOCATE 8" WATER ELEMENT D | 20 | 28-Mar-24 | 25-Apr-24 | █ RELOCATE 8" WATER ELEMENT D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FB00000-1070 | RELOCATE 8" WATER ELEMENT D AT RETAINING WALL | 5 | 12-Jun-24 | 18-Jun-24 | █ RELOCATE 8" WATER ELEMENT D AT RETAINING WALL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DOMINION | | | | | 05-Aug-24, DOMINION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FC00000-1240 | HOLD UFI MEETING WITH DOMINION | 1 | 04-Dec-23 | 04-Dec-23 | HOLD UFI MEETING WITH DOMINION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FC00000-1250 | PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN DOMINION | 30 | 05-Dec-23 | 17-Jan-24 | █ PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN DOMINION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FC00000-1260 | DOMINION SUBMITS PE ESTIMATE | 30 | 18-Jan-24 | 29-Feb-24 | █ DOMINION SUBMITS PE ESTIMATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FC00000-1270 | REVIEW/APPROVE PE ESTIMATE | 5 | 01-Mar-24 | 07-Mar-24 | █ REVIEW/APPROVE PE ESTIMATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FC00000-1280 | DOMINION COMPLETES UTILITY DESIGN | 40 | 08-Mar-24 | 02-May-24 | █ DOMINION COMPLETES UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FC00000-1290 | APPROVE UTILITY DESIGN | 5 | 03-May-24 | 09-May-24 | █ APPROVE UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FC00000-1300 | DOMINION PERFORM RELOCATIONS AT ELEMENT C | 30 | 24-Jun-24 | 05-Aug-24 | █ DOMINION PERFORM RELOCATIONS AT ELEMENT C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FC00000-1310 | DOMINION PERFORM RELOCATIONS AT ELEMENT D | 30 | 10-May-24 | 21-Jun-24 | █ DOMINION PERFORM RELOCATIONS AT ELEMENT D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CHARLOTTESVILLE GAS | | | | | 23-May-24, CHARLOTTESVILLE GAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FE00000-1240 | HOLD UFI MEETING WITH CHARLOTTESVILLE GAS | 1 | 04-Dec-23 | 04-Dec-23 | HOLD UFI MEETING WITH CHARLOTTESVILLE GAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FE00000-1250 | PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN CHARLOTTESVILLE C | 20 | 05-Dec-23 | 03-Jan-24 | █ PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN CHARLOTTESVILLE GAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FE00000-1260 | CHARLOTTESVILLE GAS SUBMITS PE ESTIMATE | 20 | 04-Jan-24 | 31-Jan-24 | █ CHARLOTTESVILLE GAS SUBMITS PE ESTIMATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FE00000-1270 | REVIEW/APPROVE PE ESTIMATE | 5 | 01-Feb-24 | 07-Feb-24 | █ REVIEW/APPROVE PE ESTIMATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FE00000-1280 | CHARLOTTESVILLE GAS COMPLETES UTILITY DESIGN | 40 | 08-Feb-24 | 04-Apr-24 | █ CHARLOTTESVILLE GAS COMPLETES UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FE00000-1290 | APPROVE UTILITY DESIGN | 5 | 05-Apr-24 | 11-Apr-24 | █ APPROVE UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FE00000-1310 | ADJUST GAS AT ELEMENT A | 10 | 10-May-24 | 23-May-24 | █ ADJUST GAS AT ELEMENT A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FE00000-1320 | ADJUST 6" & 2" GAS AT ELEMENT D | 20 | 12-Apr-24 | 09-May-24 | █ ADJUST 6" & 2" GAS AT ELEMENT D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COMCAST | | | | | 21-Jun-24, COMCAST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1240 | HOLD UFI MEETING WITH COMCAST | 1 | 04-Dec-23 | 04-Dec-23 | HOLD UFI MEETING WITH COMCAST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1250 | PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN COMCAST | 30 | 05-Dec-23 | 17-Jan-24 | █ PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN COMCAST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1260 | COMCAST SUBMITS PE ESTIMATE | 30 | 18-Jan-24 | 29-Feb-24 | █ COMCAST SUBMITS PE ESTIMATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1270 | REVIEW/APPROVE PE ESTIMATE | 5 | 01-Mar-24 | 07-Mar-24 | █ REVIEW/APPROVE PE ESTIMATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1280 | COMCAST COMPLETES UTILITY DESIGN | 40 | 08-Mar-24 | 02-May-24 | █ COMCAST COMPLETES UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1290 | APPROVE UTILITY DESIGN | 5 | 03-May-24 | 09-May-24 | █ APPROVE UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1300 | COMCAST PERFORM RELOCATIONS AT ELEMENT C SB | 10 | 10-Jun-24 | 21-Jun-24 | █ COMCAST PERFORM RELOCATIONS AT ELEMENT C SB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1310 | COMCAST PERFORM RELOCATIONS AT ELEMENT C NB | 10 | 24-May-24 | 07-Jun-24 | █ COMCAST PERFORM RELOCATIONS AT ELEMENT C NB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1330 | COMCAST PERFORM RELOCATIONS AT ELEMENT E | 10 | 10-May-24 | 23-May-24 | █ COMCAST PERFORM RELOCATIONS AT ELEMENT E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FIBERLIGHT | | | | | 21-Jun-24, FIBERLIGHT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FH00000-1240 | HOLD UFI MEETING WITH FIBERLIGHT | 1 | 04-Dec-23 | 04-Dec-23 | HOLD UFI MEETING WITH FIBERLIGHT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FH00000-1250 | PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN FIBERLIGHT | 30 | 05-Dec-23 | 17-Jan-24 | █ PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN FIBERLIGHT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FH00000-1260 | FIBERLIGHT SUBMITS PE ESTIMATE | 30 | 18-Jan-24 | 29-Feb-24 | █ FIBERLIGHT SUBMITS PE ESTIMATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FH00000-1270 | REVIEW/APPROVE PE ESTIMATE | 5 | 01-Mar-24 | 07-Mar-24 | █ REVIEW/APPROVE PE ESTIMATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FH00000-1280 | FIBERLIGHT COMPLETES UTILITY DESIGN | 60 | 08-Mar-24 | 31-May-24 | █ FIBERLIGHT COMPLETES UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FH00000-1290 | APPROVE UTILITY DESIGN | 5 | 03-Jun-24 | 07-Jun-24 | █ APPROVE UTILITY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FH00000-1340 | ADJUST FIBERLIGHT ELEMENT A | 5 | 10-Jun-24 | 14-Jun-24 | █ ADJUST FIBERLIGHT ELEMENT A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FH00000-1350 | FIBERLIGHT PERFORM RELOCATIONS AT ELEMENT C NB | 5 | 17-Jun-24 | 21-Jun-24 | █ FIBERLIGHT PERFORM RELOCATIONS AT ELEMENT C NB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LUMEN | | | | | 05-Aug-24, LUMEN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FG00000-1340 | HOLD UFI MEETING WITH LUMEN | 1 | 04-Dec-23 | 04-Dec-23 | HOLD UFI MEETING WITH LUMEN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

| Activity ID | Activity Name | Original Duration | Start | Finish | 2023 | | | | | | | | | | | | 2024 | | | | | | | | | | | | 2025 | | | | | | | | | | | |
|-------------------------------------|---|-------------------|-----------|-----------|---|---|-----|-----|---|---|-----|---|---|-----|---|---|------|---|---|-----|---|---|-----|---|---|---|---|---|------|---|---|-----|---|---|-----|---|---|--|--|--|
| | | | | | Apr | M | Jun | Jul | A | S | Oct | N | D | Jan | F | M | Apr | M | J | Jul | A | S | Oct | N | D | J | F | M | Apr | M | J | Jul | A | S | Oct | N | D | | | |
| C25'S AND UTILITY MATERIALS | | | | | 25-May-24, C25'S AND UTILITY MATERIALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1240 | PREPARE AND SUBMIT INTIAL C-25'S / MATERIAL SUBMITTALS-1ST SUBMISSION | 5 | 23-May-23 | 30-May-23 | ■ PREPARE AND SUBMIT INTIAL C-25'S / MATERIAL SUBMITTALS-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1250 | VDOT 1ST REVIEW INTIAL C-25'S-1ST SUBMISSION | 21 | 31-May-23 | 28-Jun-23 | ■ VDOT 1ST REVIEW INTIAL C-25'S-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1270 | ADDRESS COMMENTS AND SUBMIT FINAL INITIAL C-25'S / MATERIAL VDOT | 5 | 29-Jun-23 | 06-Jul-23 | ■ ADDRESS COMMENTS AND SUBMIT FINAL INITIAL C-25'S / MATERIAL VDOT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1280 | VDOT FINAL REVIEW & APPROVE INTIAL C-25'S | 21 | 07-Jul-23 | 04-Aug-23 | ■ VDOT FINAL REVIEW & APPROVE INTIAL C-25'S | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1300 | FABRICATE WATERLINE MATERIALS | 40 | 07-Aug-23 | 02-Oct-23 | ■ FABRICATE WATERLINE MATERIALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1310 | FABRICATE STORM MATERIALS | 40 | 05-Aug-23 | 13-Sep-23 | ■ FABRICATE STORM MATERIALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ELECTRICAL PACKAGE ELEMENT C | | | | | 25-May-24, ELECTRICAL PACKAGE ELEMENT C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1710 | PREPARE AND SUBMIT ELECTRICAL PACKAGE SHOP DRAWINGS-1ST SUBMISS | 20 | 07-Dec-23 | 05-Jan-24 | ■ PREPARE AND SUBMIT ELECTRICAL PACKAGE SHOP DRAWINGS-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1740 | VDOT FINAL REVIEW & APPROVE ELECTRICAL PACKAGE SHOP DRAWINGS | 21 | 08-Jan-24 | 05-Feb-24 | ■ VDOT FINAL REVIEW & APPROVE ELECTRICAL PACKAGE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1750 | FABRICATE ELECTRICAL PACKAGE | 110 | 06-Feb-24 | 25-May-24 | ■ FABRICATE ELECTRICAL PACKAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STRUCTURES | | | | | 07-Feb-25, STRUCTURES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REBAR | | | | | 25-May-24, REBAR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1460 | PREPARE AND SUBMIT REBAR SHOP DRAWINGS-1ST SUBMISSION | 20 | 29-Nov-23 | 27-Dec-23 | ■ PREPARE AND SUBMIT REBAR SHOP DRAWINGS-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1470 | VDOT 1ST REVIEW REBAR SHOP DRAWINGS | 21 | 28-Dec-23 | 26-Jan-24 | ■ VDOT 1ST REVIEW REBAR SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1480 | ADDRESS COMMENTS AND SUBMIT FINAL REBAR SHOP DRAWINGS | 20 | 29-Jan-24 | 26-Feb-24 | ■ ADDRESS COMMENTS AND SUBMIT FINAL REBAR SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1490 | VDOT FINAL REVIEW & APPROVE REBAR SHOP DRAWINGS | 21 | 27-Feb-24 | 26-Mar-24 | ■ VDOT FINAL REVIEW & APPROVE REBAR SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1500 | FABRICATE REBAR | 60 | 27-Mar-24 | 25-May-24 | ■ FABRICATE REBAR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BEARING ASSEMBLIES | | | | | 03-Aug-24, BEARING ASSEMBLIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1510 | PREPARE AND SUBMIT BEARING ASSEMBLIES SHOP DRAWINGS-1ST SUBMISS | 20 | 29-Nov-23 | 27-Dec-23 | ■ PREPARE AND SUBMIT BEARING ASSEMBLIES SHOP DRAWINGS-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1520 | VDOT 1ST REVIEW BEARING ASSEMBLIES SHOP DRAWINGS | 21 | 28-Dec-23 | 26-Jan-24 | ■ VDOT 1ST REVIEW BEARING ASSEMBLIES SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1530 | ADDRESS COMMENTS AND SUBMIT FINAL BEARING ASSEMBLIES SHOP DRAW | 20 | 29-Jan-24 | 26-Feb-24 | ■ ADDRESS COMMENTS AND SUBMIT FINAL BEARING ASSEMBLIES SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1540 | VDOT FINAL REVIEW & APPROVE BEARING ASSEMBLIES SHOP DRAWINGS | 21 | 27-Feb-24 | 26-Mar-24 | ■ VDOT FINAL REVIEW & APPROVE BEARING ASSEMBLIES SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1550 | FABRICATE BEARING ASSEMBLIES | 130 | 27-Mar-24 | 03-Aug-24 | ■ FABRICATE BEARING ASSEMBLIES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BRIDGE GIRDER | | | | | 07-Dec-24, BRIDGE GIRDER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1560 | PREPARE AND SUBMIT BRIDGE GIRDER SHOP DRAWINGS-1ST SUBMISSION | 60 | 29-Nov-23 | 23-Feb-24 | ■ PREPARE AND SUBMIT BRIDGE GIRDER SHOP DRAWINGS-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1570 | VDOT 1ST REVIEW BRIDGE GIRDER SHOP DRAWINGS | 21 | 26-Feb-24 | 25-Mar-24 | ■ VDOT 1ST REVIEW BRIDGE GIRDER SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1580 | ADDRESS COMMENTS AND SUBMIT FINAL BRIDGE GIRDER SHOP DRAWINGS | 20 | 26-Mar-24 | 22-Apr-24 | ■ ADDRESS COMMENTS AND SUBMIT FINAL BRIDGE GIRDER SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1590 | VDOT FINAL REVIEW & APPROVE BRIDGE GIRDER SHOP DRAWINGS | 21 | 23-Apr-24 | 21-May-24 | ■ VDOT FINAL REVIEW & APPROVE BRIDGE GIRDER SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1600 | FABRICATE BRIDGE GIRDERS | 200 | 22-May-24 | 07-Dec-24 | ■ FABRICATE BRIDGE GIRDERS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FENCE | | | | | 03-Aug-24, FENCE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1610 | PREPARE AND SUBMIT FENCE SHOP DRAWINGS-1ST SUBMISSION | 20 | 29-Nov-23 | 27-Dec-23 | ■ PREPARE AND SUBMIT FENCE SHOP DRAWINGS-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1620 | VDOT 1ST REVIEW FENCE SHOP DRAWINGS | 21 | 28-Dec-23 | 26-Jan-24 | ■ VDOT 1ST REVIEW FENCE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1630 | ADDRESS COMMENTS AND SUBMIT FINAL FENCE SHOP DRAWINGS | 20 | 29-Jan-24 | 26-Feb-24 | ■ ADDRESS COMMENTS AND SUBMIT FINAL FENCE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1640 | VDOT FINAL REVIEW & APPROVE FENCE SHOP DRAWINGS | 21 | 27-Feb-24 | 26-Mar-24 | ■ VDOT FINAL REVIEW & APPROVE FENCE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1650 | FABRICATE FENCE | 130 | 27-Mar-24 | 03-Aug-24 | ■ FABRICATE FENCE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ELECTRICAL PACKAGE | | | | | 07-Feb-25, ELECTRICAL PACKAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1660 | PREPARE AND SUBMIT ELECTRICAL PACKAGE SHOP DRAWINGS-1ST SUBMISS | 40 | 13-Mar-24 | 07-May-24 | ■ PREPARE AND SUBMIT ELECTRICAL PACKAGE SHOP DRAWINGS-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1670 | VDOT 1ST REVIEW ELECTRICAL PACKAGE SHOP DRAWINGS | 21 | 08-May-24 | 06-Jun-24 | ■ VDOT 1ST REVIEW ELECTRICAL PACKAGE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1680 | ADDRESS COMMENTS AND SUBMIT FINAL ELECTRICAL PACKAGE SHOP DRAW | 10 | 07-Jun-24 | 20-Jun-24 | ■ ADDRESS COMMENTS AND SUBMIT FINAL ELECTRICAL PACKAGE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1690 | VDOT FINAL REVIEW & APPROVE ELECTRICAL PACKAGE SHOP DRAWINGS | 21 | 21-Jun-24 | 22-Jul-24 | ■ VDOT FINAL REVIEW & APPROVE ELECTRICAL PACKAGE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1700 | FABRICATE ELECTRICAL PACKAGE | 200 | 23-Jul-24 | 07-Feb-25 | ■ FABRICATE ELECTRICAL PACKAGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MSE WALL | | | | | 01-Oct-24, MSE WALL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1330 | PREPARE AND SUBMIT MSE WALL SHOP DRAWINGS-1ST SUBMISSION | 90 | 29-Nov-23 | 05-Apr-24 | ■ PREPARE AND SUBMIT MSE WALL SHOP DRAWINGS-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1400 | VDOT 1ST REVIEW MSE SHOP DRAWINGS | 21 | 08-Apr-24 | 06-May-24 | ■ VDOT 1ST REVIEW MSE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1420 | ADDRESS COMMENTS AND SUBMIT FINAL MSE SHOP DRAWINGS | 20 | 07-May-24 | 04-Jun-24 | ■ ADDRESS COMMENTS AND SUBMIT FINAL MSE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1430 | VDOT FINAL REVIEW & APPROVE MSE SHOP DRAWINGS | 21 | 05-Jun-24 | 03-Jul-24 | ■ VDOT FINAL REVIEW & APPROVE MSE SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

| Activity ID | Activity Name | Original Duration | Start | Finish | 2023 | | | | | | | | | | | | 2024 | | | | | | | | | | | | 2025 | | | | | | | | | | | | | | |
|--|---|-------------------|------------|------------|---|-----------|-----------|---|---|---|-----|---|---|-----|---|---|------|---|---|-----|---|---|-----|---|---|---|---|---|------|---|---|-----|---|---|-----|---|---|--|--|--|--|--|--|
| | | | | | Apr | M | Jun | Jul | A | S | Oct | N | D | Jan | F | M | Apr | M | J | Jul | A | S | Oct | N | D | J | F | M | Apr | M | J | Jul | A | S | Oct | N | D | | | | | | |
| TRANSPORTATION IMPROVEMENTS AT HYDRAULIC ROAD AND US 29 | | | | | 621 | 23-May-23 | 03-Nov-25 | ▶ 03-Nov-25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SCHEDULE MILESTONES | | | | | 621 | 23-May-23 | 03-Nov-25 | ▶ 03-Nov-25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1040 | NOTICE TO PROCEED (05/23/2023) | 0 | 23-May-23* | | ◆ NOTICE TO PROCEED (05/23/2023) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1180 | PUNCH LIST INSPECTION | 5 | 22-Sep-25 | 26-Sep-25 | ■ PUNCH LIST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-1210 | ADDRESS PUNCH LIST | 30 | 22-Sep-25 | 03-Nov-25 | ■ ADDRE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONSTRUCTION KEY DATES | | | | | 0 | 03-Nov-25 | 03-Nov-25 | ▼ 03-Nov-25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A000000-5020 | EARLY COMPLETION DATE- FINAL COMPLETION | 0 | | 03-Nov-25* | ◆ EARLY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DESIGN PHASE | | | | | 131 | 23-May-23 | 28-Nov-23 | ▶ 28-Nov-23, DESIGN PHASE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRELIMINARY DESIGN | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EARLY DESIGN / MOT | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DESIGN QA/QC PLAN | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SURVEYS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GEOTECHNICAL INVESTIGATION REPORTS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UTILITY DESIGNATION AND TEST PITS (BORE HOLES) | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FINAL DESIGN | | | | | 131 | 23-May-23 | 28-Nov-23 | ▶ 28-Nov-23, FINAL DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RIGHT OF WAY PLANS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ROADWAY DESIGN | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BRIDGE DESIGN | | | | | 131 | 23-May-23 | 28-Nov-23 | ▶ 28-Nov-23, BRIDGE DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BD1000 | PREP/SUBMIT STAGE 1 BRIDGE DESIGN (TS&L) | 40 | 23-May-23 | 19-Jul-23 | ■ PREP/SUBMIT STAGE 1 BRIDGE DESIGN (TS&L) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BD1010 | VDOT REVIEW/COMMENT BRIDGE PRELIMINARY DESIGN | 21 | 20-Jul-23 | 17-Aug-23 | ■ VDOT REVIEW/COMMENT BRIDGE PRELIMINARY DESIGN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BD1020 | PREPARE STAGE 2 BRIDGE PLANS (1ST SUBMISSION) | 70 | 18-Aug-23 | 28-Nov-23 | ■ PREPARE STAGE 2 BRIDGE PLANS (1ST SUBMISSION) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BD1030 | SUBMIT STAGE 2 BRIDGE PLANS (1ST SUBMISSION) | 0 | | 28-Nov-23 | ◆ SUBMIT STAGE 2 BRIDGE PLANS (1ST SUBMISSION) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ENVIROMENTAL PERMITTING | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JOINT WTLANDS AND WATER PERMITTING | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LD 445 / VPDES/ STORMWATER PERMIT | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT WIDE LAND DISTURBANCE PERMIT | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PUBLIC INVOLVEMENT | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RIGHT OF WAY ACQUISITIONS/ EASEMENTS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT SPECIFIC ACQUISITION AND RELOCATION PLAN | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ROW/EASEMENT ADQUISITIONS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRIORITY 1 ROW ACQUISITION | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PRIORITY 2 ROW ACQUISITION | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UTILITY RELOCATION | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CHARLOTTESVILLE DPW | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CHARLOTTESVILLE WATER | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DOMINION | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CHARLOTTESVILLE GAS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| COMCAST | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FIBERLIGHT | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LUMEN | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CENTURY LINK | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BRIGHT SPEED | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LUMOS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MCI | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONSTRUCTION | | | | | 459 | 29-Nov-23 | 19-Sep-25 | ▶ 19-Sep-25, CO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SHOP DRAWINGS SUBMITTALS AND PROCUREMENT | | | | | 260 | 29-Nov-23 | 07-Dec-24 | ▶ 07-Dec-24, SHOP DRAWINGS SUBMITTALS AND PRO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Activity ID | Activity Name | Original Duration | Start | Finish | 2023 | | | | | | | | | | | | 2024 | | | | | | | | | | | | 2025 | | | | | | | | | | | |
|---|---|-------------------|-----------|-----------|---|---|-----|-----|---|---|-----|---|---|-----|---|---|------|---|---|-----|---|---|-----|---|---|---|---|---|------|---|---|-----|---|---|-----|---|---|--|--|--|
| | | | | | Apr | M | Jun | Jul | A | S | Oct | N | D | Jan | F | M | Apr | M | J | Jul | A | S | Oct | N | D | J | F | M | Apr | M | J | Jul | A | S | Oct | N | D | | | |
| ROADWAY | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C25'S AND UTILITY MATERIALS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ELECTRICAL PACKAGE ELEMENT C | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STRUCTURES | | | | | 260 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REBAR | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BEARING ASSEMBLIES | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BRIDGE GIRDER | | | | | 260 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1560 | PREPARE AND SUBMIT BRIDGE GIRDER SHOP DRAWINGS-1ST SUBMISSION | 60 | 29-Nov-23 | 23-Feb-24 | 07-Dec-24, STRUCTURES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1570 | VDOT 1ST REVIEW BRIDGE GIRDER SHOP DRAWINGS | 21 | 26-Feb-24 | 25-Mar-24 | 07-Dec-24, BRIDGE GIRDER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1580 | ADDRESS COMMENTS AND SUBMIT FINAL BRIDGE GIRDER SHOP DRAWINGS | 20 | 26-Mar-24 | 22-Apr-24 | PREPARE AND SUBMIT BRIDGE GIRDER SHOP DRAWINGS-1ST SUBMISSION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1590 | VDOT FINAL REVIEW & APPROVE BRIDGE GIRDER SHOP DRAWINGS | 21 | 23-Apr-24 | 21-May-24 | VDOT 1ST REVIEW BRIDGE GIRDER SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GA00000-1600 | FABRICATE BRIDGE GIRDERS | 200 | 22-May-24 | 07-Dec-24 | ADDRESS COMMENTS AND SUBMIT FINAL BRIDGE GIRDER SHOP DRAWINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FENCE | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ELECTRICAL PACKAGE | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MSE WALL | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONSTRUCTION QUALITY ASSURANCE / QUALITY CONTROL PROCESS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONSTRUCTION | | | | | 199 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PROJECT GENERAL ITEMS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EARLY TEMPORARY WORKS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A - US 29 & HYDRUALIC ROAD INTERSECTION IMPROVEMENTS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STAGE A1 | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STAGE A2 | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STAGE A3 | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C - US 29 BIKE / PED BRIDGE | | | | | 195 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STAGE C1 | | | | | 115 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EXCAVATION | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STRUCTURE | | | | | 89 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FOUNDATIONS | | | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUBSTRUCTURE | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-3020 | ABUTMENT A - FPS BACKWALL | 2 | 14-Apr-25 | 15-Apr-25 | 15-Apr-25, STRUCTURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUPER STRUCTURE | | | | | 87 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4040 | PREP FOR ERECTION | 5 | 09-Dec-24 | 16-Dec-24 | 15-Apr-25, SUBSTRUCTURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4050 | SET/PREP BEARINGS | 3 | 17-Dec-24 | 19-Dec-24 | 11-Apr-25, SUPER STRUCTURE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4060 | ERECT SPAN A | 2 | 20-Dec-24 | 23-Dec-24 | PREP FOR ERECTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4070 | ERECT SPAN B | 2 | 24-Dec-24 | 26-Dec-24 | SET/PREP BEARINGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4080 | INSTALL LAGGING | 2 | 27-Dec-24 | 30-Dec-24 | ERECT SPAN A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4082 | INSTALL OVERHANGS | 8 | 31-Dec-24 | 13-Jan-25 | ERECT SPAN B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4084 | INSTALL SIP FORMS | 4 | 14-Jan-25 | 20-Jan-25 | INSTALL LAGGING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4110 | FORM DECK | 15 | 21-Jan-25 | 13-Feb-25 | INSTALL OVERHANGS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4120 | REBAR | 8 | 14-Feb-25 | 28-Feb-25 | INSTALL SIP FORMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4130 | ELECTRIC PREP | 12 | 03-Mar-25 | 19-Mar-25 | FORM DECK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4140 | PENETRATION INSTALL | 6 | 20-Mar-25 | 27-Mar-25 | REBAR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4150 | FENCE ANCHOR INSTALL | 4 | 28-Mar-25 | 03-Apr-25 | ELECTRIC PREP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4160 | POUR DECKA | 1 | 04-Apr-25 | 04-Apr-25 | PENETRATION INSTALL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-4180 | CURE DECKA | 7 | 05-Apr-25 | 11-Apr-25 | FENCE ANCHOR INSTALL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MSE | | | | | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-5020 | ABUTMENT A - BACKFILL | 5 | 16-Apr-25 | 22-Apr-25 | 21-May-25, MSE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-5060 | ABUTMENT A - FINISH PANELS ABOVE STEM | 5 | 23-Apr-25 | 29-Apr-25 | ABUTMENT A - BACKFILL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-5070 | ABUTMENT A - INSTALL COPING | 5 | 30-Apr-25 | 06-May-25 | ABUTMENT A - FINISH PANELS ABOVE STEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C_BR-5090 | ABUTMENT B - FINISH PANELS ABOVE STEM | 5 | 08-May-25 | 14-May-25 | ABUTMENT A - INSTALL COPING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

