VDOT
Virginia Department of Transportation

Technical Proposal - Volume I

Transportation Improvements at Hydraulic Road and US 29 Design-Build

City of Charlottesville and Albemarle County, VA

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

Albemarle Bundle
Albemarle County, VA

Midlothian Turnpike Widening DB
Chesterfield County, VA

MLK Pedestrian Bridge
City of Portsmouth, VA

Submitted by

Curtis Contracting Inc.

In Association With

WALLACE MONTGOMERY

Submission Due: January 24, 2023 at 4:00 PM

P.O. Box 769
West Point, VA 23181
Phone: 804.843.4633
Fax: 804.843.2545

4.1

Letter of Submittal

Submitted by

Curtis Contracting Inc.

In Association With

WALLACE MONTGOMERY

CURTIS CONTRACTING, INC.

Post Office Box 769
West Point, Virginia 23181
(804) 843-4633/FAX: (804) 843-2545
website: www.curtiscontracting.net

January 24, 2023

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

RE: Transportation Improvements at Hydraulic Road and US 29 Design Build
Contract ID #C00118880DB114
4.1 Letter of Submittal

Dear Mr. Stevenson:

Curtis Contracting Inc. is pleased to submit to VDOT our Technical Proposal for the Transportation Improvements at Hydraulic Road and US 29 Design-Build Project. In accordance with the Letter of Submittal requirements as set forth in Section 4.1 of the RFP, we offer the following:

4.1.1 Full Legal Offeror Name and Address: Curtis Contracting, Inc. 7481 Theron Road, West Point, VA 23181

4.1.2 Declaration of Offeror's Intent: If selected, Curtis Contracting, Inc. intends to enter into a contract with VDOT for the Project in accordance with the terms of this RFP.

4.1.3 Validity of Offeror: Curtis Contracting, Inc. affirms that our offer represented by the Technical and Price Proposals will remain in full force and effect for one hundred twenty (120) days from the date the Price Proposal is actually submitted to VDOT.

4.1.4 Point of Contact:
Stephen L. Ordung, DBIA, Vice President
7481 Theron Road, P.O. Box 769
West Point, Virginia 23181
(P) 804.843.4633 (F) 804.843.2545
s.ordung@curtiscontracting.net

4.1.5 Principal Officer:
Andrew R. Curtis, Jr., President
7481 Theron Road, P.O. Box 769
West Point, Virginia 23181
(P) 804.843.4633 (F) 804.843.2545
a.curtis@curtiscontracting.net

4.1.6 Final Completion: Curtis Contracting, Inc. proposes a final completion date of October 31, 2025.

4.1.7 Unique Milestone Dates: Curtis Contracting, Inc. does not propose any unique milestone dates.

4.1.8 Executed Proposal Payment Agreement: Curtis Contracting, Inc. has included an executed Proposal Payment Agreement in the Appendix.

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

4.1.10 Commitment to DBE Participation: Curtis Contracting, Inc. commits that we will achieve the 12% DBE participation goal for the entire value of the contract.

4.1.11 Team Registration Requirements Statement: Curtis Contracting, Inc. confirms that all commercial and professional registration requirements contained in our Statement of Qualifications, including, but not limited to those requirements of the Virginia State Corporation Commission (SCC) and the Virginia Department of Professional and Occupational Regulations (DPOR) are complete and accurate, and that Curtis Contract, Inc., and business entities on our Team, remain in good standing with all applicable regulatory bodies and are eligible to provide the services required on the Project.

Curtis Contracting, Inc. provides exceptional quality in each and every project we construct. Our core values focus on safety and quality above profit and ensure our customer is completely satisfied. We offer VDOT a Team experienced in design-build with a shared approach to partnering and integrating innovative solutions and a proven track record of delivering successful transportation infrastructure projects on time and within budget. Thank you for the opportunity to submit our Technical Proposal.

Sincerely,
CURTIS CONTRACTING, INC.

Stephen L. Ordung, DBIA
Vice President

4.2

Offeror's Qualifications

Submitted by

Curtis Contracting Inc.

In Association With

WALLACE MONTGOMERY

4.2.1 Confirmation of True and Accurate Information

The Curtis Contracting, Inc. (CCI) Design-Build Team (DBT) confirms that the information in the Statement of Qualifications (SOQ) submitted on June 7, 2022 remains true and accurate in accordance with Part 1, Section 11.4. CCI also confirms that the Key Personnel presented in our SOQ have not changed.

As allowed by Section 4.2 of the RFP, our Team has included the following Deputy Key Personnel:

- **Deputy Design-Build Project Manager (DDBPM)**: ***Bill Richards, PE*** (CCI) will report directly to the DBPM, Steve Ordung, DBIA, and perform duties to assist Steve under his direct supervision.
- **Deputy Quality Assurance Manager (DQAM)**: ***Beau Gutridge, PE, PMP*** (CES) will report directly to the QAM, Avtar Singh, PE, CCM, DBIA, and perform duties to assist Avtar under his direct supervision.
- **Deputy Design Manager (DDM)**: ***Simone Champaigne, PE*** (WM) will report directly to the DM, Julia Simo, PE, and perform duties to assist Julia under her direct supervision.

Organizational Chart and Revised Narrative

Our organizational chart as shown on the following page has been updated to reflect the addition of the Deputy Design-Build Project Manager (DDBPM), Deputy Quality Assurance Manager (DQAM), and Deputy Design Manager (DDM).

We have also added two Non-Key Personnel to the Organizational Chart. Beau Gutridge, PE, PMP (CES) was identified as the Lead QA Inspector in our SOQ submission. We have promoted Beau to the Deputy Quality Assurance Manager (as described above) and replaced him with two Lead QA Inspectors. We have assigned two Lead QA Inspectors to accommodate our Sequence of Construction that includes simultaneous construction activities at the roundabout and the pedestrian bridge.

- **Lead QA Inspector for Roundabout and Roadway Construction Activities**: ***Kevin Davis*** (CES)
- **Lead QA Inspector for Pedestrian Bridge Construction Activities**: ***Justin Milbourne*** (CES)

As there is no change to any functional relationships among the participants since the submittal of our SOQ, an updated narrative is not required.

Project Stakeholders

US Post Office, UVA, Charlottesville HS, Buford MS, Walker Upper and Greenbrier ES, Charlottesville Area Transit (CAT), Charlottesville Police-District 5, Charlottesville/Albemarle Rescue Squad, Charlottesville Fire Station #1, EMS, Region Ten Community Services, Heathwood Apartments, Brandywine Court, Meadowbrook Heights, The Meadows, Oak Terrace, Lynnhaven, Inglewood Square, Turtle Creek, Granite Park, *Impacted Businesses

City of Charlottesville and Albemarle County, VA

VDOT

Public Relations
William Cockrell, AICP (EPR)

Design-Build Project Manager
Steve Ordung, DBIA (CCI)

Deputy Design-Build Project Manager
Bill Richards, PE (CCI)

Quality Assurance Manager
Avtar Singh, PE, PMP, DBIA (CES)

Deputy Quality Assurance Manager
Beau Gutridge, PE, PMP (CES)

Quality Assurance
Lead QA Inspector
Roadway Kevin Davis (CES)
Bridge Justin Milbourne (CES)
~~Beau Gutridge, PE, PMP (CES)~~
QA Inspectors
CES
QA Lab
F&R

Design Manager
Julia Simo, PE (WM)

Deputy Design Manager
Simone Champaigne, PE (WM)

Design-Build Advisors
Eric Sender, PE, DBIA (WM)
Bill Richards, PE (CCI)

Construction Manager
Cole Eller (CCI)

Design QA/QC
Mark Ledebur, PE (WM)
Ian Johnston, PE (CN)

DESIGN TEAM

Structural Design Lead
Matt Davis, PE (WM)

Hydraulics/SWM/E&S Lead
Diane Durscher, PE (WM)
Christos Damalas, PE (CN)

Signing, Marking & Signals Lead
Ryan Mattern, PE, PTOE (WM)
Whitney Duffy, PE, PTOE (CN)

Landscaping Design Lead
Megan Maffeo, PLA (FTLA)

Geotechnical Lead
Peng "Paul" Zhang, PE (DMY)

Pavement Lead
Satish Thyagarajan, PE (WM)

Constructability Lead
Robert Ridgell, PE (WM)

Value Engineering Lead
Ian Millikan, PE (WM)

Roadway Design
~~Simone Champaigne, PE (WM)~~
Wes Parker, PE (CN)

ADA/Pedestrian/Trail Design
Russ Anderson, PE (WM)

MOT & TMP Lead
John Rectanus, PE, PTOE (WM)

Right-of-Way Manager
Ronnie Van Cleve (BC)

Utility Coordination Manager
Richard Bennett (BC)

Field Surveys Lead
Obadyah Foord, LS (BC)

Environmental Permit Lead
Jessica Klinefelter, CEP, CWB (WM)

HAZMAT Coordination Lead
Brian Wyatt (ECS)

Utility Owners
Comcast; Dominion Energy, City of Charlottesville; Albemarle Co Svc Authority; AT&T; Brightspeed; Level 3; Lumos Network; Lightower Fiber; Quest; UVA Fiber; Riviana River Water and Sewer Authority

Environmental Agencies
USACOE, VDEQ, VDHR

CONSTRUCTION TEAM

General Superintendent
Scott Williams (CCI)

Roadway Superintendent
Reginald Lindsey (CCI)

PlanGrid Task Manager
Sean Eavers (CCI)

TTC Coordinator
Matt McDaniel (CCI)

Bridge Superintendent
Brian Adkins (CCI)

Utility Coordinator
Dustin Herndon (CCI)

Safety Manager
Richard Jordan (CCI)

Environmental Compliance
Daniel Ellis (CCI)

E&S Manager
Ralph Voyles (CCI)

DBE Compliance Coordinator
Crystal Rammell (CCI)

Construction QC
QC Manager
Monya McMichael (CCI)
QC Inspectors
ECS
QA Lab
ECS

***Impacted Businesses**

Kroger
Whole Foods
Dominion Power
Trader Joes
7-Eleven/Exxon
Meineke Car Care
Days Inn
Country Inn & Suites
Northrop Grumman
Pepsi-Cola
Soul Korean BBQ
Maharaja Indian Cuisine
Burtons Grill & Bar

LEGEND

——	Reporting
- - - - -	Communication
	Key Personnel
	Deputy Key Personnel
★	DBE Subconsultant
CCI	Curtis Contracting, Inc.
WM	Wallace Montgomery
CN	Clark Nexsen
CES	CES Consulting, LLC ★
BC	Bowman Consulting
DMY	DMY Engineering ★
EPR	EPR, P.C. ★
ECS	ECS Mid-Atlantic
FTLA	Floura Teeter Landscape Architects ★
F&R	Froehling & Robertson

4.3 Design Concept

Submitted by

Curtis Contracting Inc.

In Association With

WALLACE MONTGOMERY

4.3 Design Concept

Introduction

The Transportation Improvements at Hydraulic Road and US 29 (the Project) is located within a highly congested urban corridor with limited pedestrian accommodations. As the existing vacant or underutilized commercial parcels become redeveloped, pedestrian and vehicular traffic will increase, making the improvements critical to maintaining and supporting economic development in the area. The **Curtis Contracting, Inc.** (**CCI**) **Design Build Team** (**DBT**) has the local experience, skill, and deep bench of staff, equipment, and resources needed to deliver this important project for VDOT's Culpeper District on budget and on schedule.

Our **DBT** has recent experience working together on similar projects in the area, most notably the $29.4M Albemarle Intersection Bundling DB project. We have learned over the years that the best way to deliver a design-build project is through extensive coordination and communication. We do this by fully integrating the Contractor, design team, quality assurance personnel, and VDOT into every phase of the project. Our **DBT**'s interdisciplinary collaboration for this Project began during the SOQ Phase so we could better understand VDOT's priorities, as well as the project goals for the City of Charlottesville and Albemarle County. We are confident that the design included in Volume II of the Technical Proposal is clear, constructible, and provides the absolute best benefit to VDOT and the travelling public. Throughout our Technical Proposal, we have identified additional enhancements that our Team will provide to VDOT that exceed or expand upon RFP requirements (see *Exhibit 4.3.1*).

The Project is located in Albemarle County and the City of Charlottesville, Virginia, and involves the design and construction of four project elements:

- ***Element A***: A signalized pedestrian crossing and reconfigured traffic movements at the Hydraulic Road and US 29 intersection to eliminate left turns from Hydraulic Road to US 29
- ***Element C***: A grade separated pedestrian bridge over US 29 with bus stops and shelters near Zan Road
- ***Element D***: Intersection improvements to Hydraulic Road and Hillsdale Drive (roundabout)
- ***Element E***: Access management improvements at the Hydraulic Road/Brandywine Drive and Hydraulic Road/Michie Drive intersections along with the extension of a shared use path

Our design is completely contained within the right-of-way limits shown in the RFP Plans and does not require Design Exceptions and/or Design Waivers other than those identified in the RFP. Our Limits of Disturbance (LOD) are located within the boundary identified in the Categorical Exclusion.

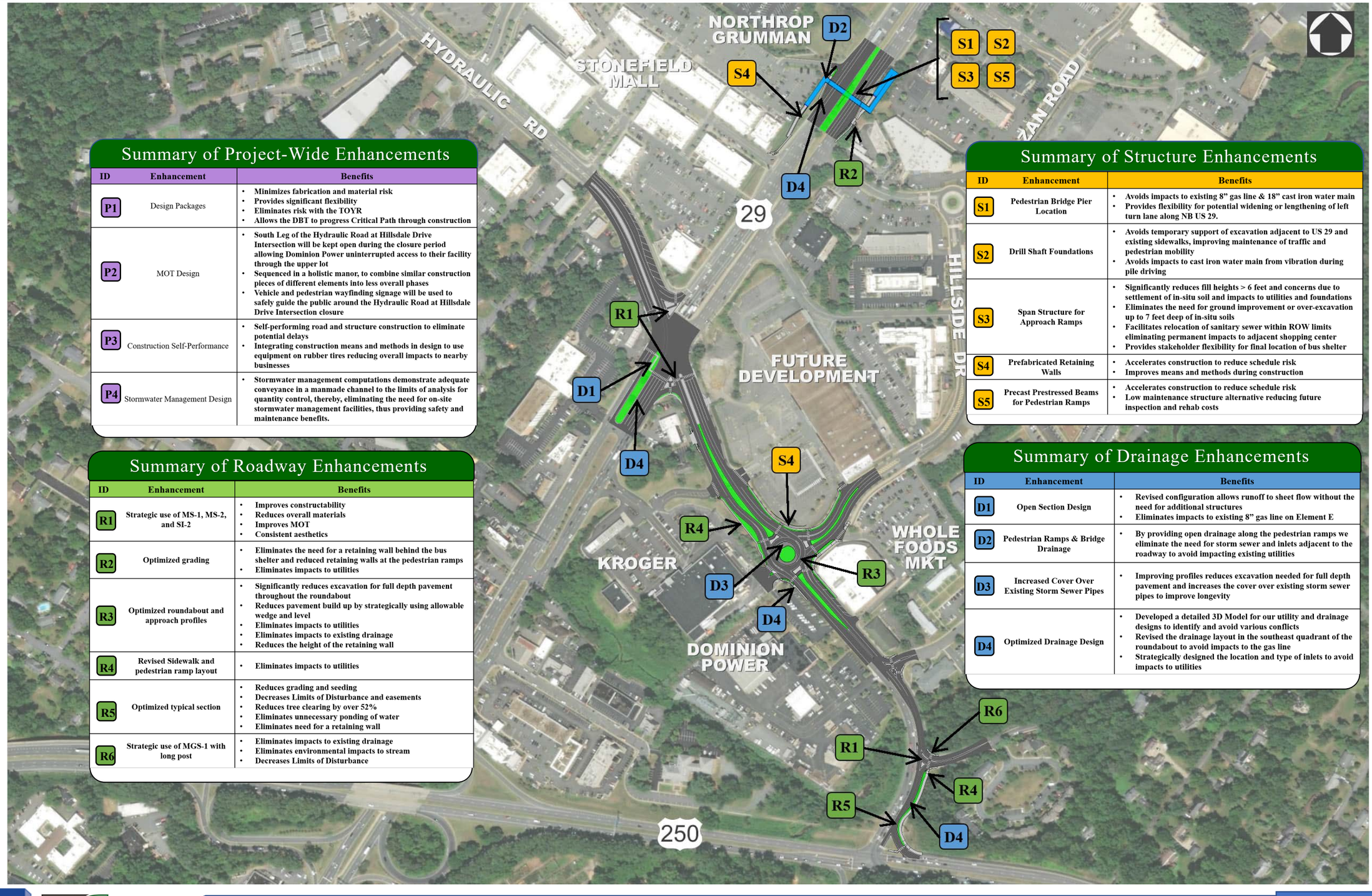
In order to develop an efficient design that mitigates potential challenges within the corridor, our **DBT** held several risk and innovation cross discipline workshops with the entire team to identify risks, mitigation strategies, and ways to improve the RFP Plans. As our design progressed, these workshops transitioned into full-blown task force meetings that focused on developing specific enhancements to mitigate risks and provide value.

As shown in *Exhibit 4.3.1*, our enhancements maximize the benefits associated with this Project for VDOT and end users by:

- Improving safety for the traveling public, construction workers, inspection personnel, and VDOT
- Maintaining logical traffic operations and providing lane continuity throughout construction
- Eliminating 23 of the 27 potential utility relocations
- Minimizing schedule risk and expediting project completion, as described in Section 4.5 and 4.6
- Utilizing innovative construction means and methods
- Minimizing VDOT's long-term inspection and maintenance requirements

Although the Project is segmented into four separate project elements, the proximity of each requires a collective and seamless approach to safely maintain traffic, protect the environment, and expedite construction. In that regard, we will be developing integrated Maintenance of Traffic (MOT) and Erosion and Sediment Control (ESC) plans that ensure all phases of construction are appropriately addressed without negatively impacting adjacent constructive elements or the continuity of operations on US 29 and Hydraulic Road. A centerpiece of our design is the development of early works plans for clearing, utility relocation, MOT, and E&S to lay the groundwork for completion of the Hydraulic Road closure and detour as expeditiously as possible while avoiding risks from time of year restrictions. Since our **DBT** has recent teaming experience, **Wallace Montgomery** (**WM**) is able to tailor the design to include means and methods, materials, and a sequence that best fits **CCI**'s strengths and experience. This relationship minimizes risk by allowing self-performance of crucial structural and roadway construction. Self-performance allows **CCI** to eliminate potential delays caused by subcontractor staffing shortages or conflicting commitments. The trusted relationships that **CCI**, **WM**, and **CES** have formed while working together to successfully deliver the Albemarle Intersection Bundling DB project will carry over to this Project and create efficiencies to ensure our **DBT** delivers the Project on budget and ahead of schedule.

4.3 Design Concept



Summary of Project-Wide Enhancements

ID	Enhancement	Benefits
P1	Design Packages	• Minimizes fabrication and material risk • Provides significant flexibility • Eliminates risk with the TOYR • Allows the DBT to progress Critical Path through construction
P2	MOT Design	• South Leg of the Hydraulic Road at Hillsdale Drive Intersection will be kept open during the closure period allowing Dominion Power uninterrupted access to their facility through the upper lot • Sequenced in a holistic manor, to combine similar construction pieces of different elements into less overall phases • Vehicle and pedestrian wayfinding signage will be used to safely guide the public around the Hydraulic Road at Hillsdale Drive Intersection closure
P3	Construction Self-Performance	• Self-performing road and structure construction to eliminate potential delays • Integrating construction means and methods in design to use equipment on rubber tires reducing overall impacts to nearby businesses
P4	Stormwater Management Design	• Stormwater management computations demonstrate adequate conveyance in a manmade channel to the limits of analysis for quantity control, thereby, eliminating the need for on-site stormwater management facilities, thus providing safety and maintenance benefits.

Summary of Roadway Enhancements

ID	Enhancement	Benefits
R1	Strategic use of MS-1, MS-2, and SI-2	• Improves constructability • Reduces overall materials • Improves MOT • Consistent aesthetics
R2	Optimized grading	• Eliminates the need for a retaining wall behind the bus shelter and reduced retaining walls at the pedestrian ramps • Eliminates impacts to utilities
R3	Optimized roundabout and approach profiles	• Significantly reduces excavation for full depth pavement throughout the roundabout • Reduces pavement build up by strategically using allowable wedge and level • Eliminates impacts to utilities • Eliminates impacts to existing drainage • Reduces the height of the retaining wall
R4	Revised Sidewalk and pedestrian ramp layout	• Eliminates impacts to utilities
R5	Optimized typical section	• Reduces grading and seeding • Decreases Limits of Disturbance and easements • Reduces tree clearing by over 52% • Eliminates unnecessary ponding of water • Eliminates need for a retaining wall
R6	Strategic use of MGS-1 with long post	• Eliminates impacts to existing drainage • Eliminates environmental impacts to stream • Decreases Limits of Disturbance

Summary of Structure Enhancements

ID	Enhancement	Benefits
S1	Pedestrian Bridge Pier Location	• Avoids impacts to existing 8" gas line & 18" cast iron water main • Provides flexibility for potential widening or lengthening of left turn lane along NB US 29.
S2	Drill Shaft Foundations	• Avoids temporary support of excavation adjacent to US 29 and existing sidewalks, improving maintenance of traffic and pedestrian mobility • Avoids impacts to cast iron water main from vibration during pile driving
S3	Span Structure for Approach Ramps	• Significantly reduces fill heights > 6 feet and concerns due to settlement of in-situ soil and impacts to utilities and foundations • Eliminates the need for ground improvement or over-excavation up to 7 feet deep of in-situ soils • Facilitates relocation of sanitary sewer within ROW limits eliminating permanent impacts to adjacent shopping center • Provides stakeholder flexibility for final location of bus shelter
S4	Prefabricated Retaining Walls	• Accelerates construction to reduce schedule risk • Improves means and methods during construction
S5	Precast Prestressed Beams for Pedestrian Ramps	• Accelerates construction to reduce schedule risk • Low maintenance structure alternative reducing future inspection and rehab costs

Summary of Drainage Enhancements

ID	Enhancement	Benefits
D1	Open Section Design	• Revised configuration allows runoff to sheet flow without the need for additional structures • Eliminates impacts to existing 8" gas line on Element E
D2	Pedestrian Ramps & Bridge Drainage	• By providing open drainage along the pedestrian ramps we eliminate the need for storm sewer and inlets adjacent to the roadway to avoid impacting existing utilities
D3	Increased Cover Over Existing Storm Sewer Pipes	• Improving profiles reduces excavation needed for full depth pavement and increases the cover over existing storm sewer pipes to improve longevity
D4	Optimized Drainage Design	• Developed a detailed 3D Model for our utility and drainage designs to identify and avoid various conflicts • Revised the drainage layout in the southeast quadrant of the roundabout to avoid impacts to the gas line • Strategically designed the location and type of inlets to avoid impacts to utilities

4.3.1 Conceptual Roadway Narrative

4.3.1.1 Element A

Element A reconfigures the existing signalized intersection at Hydraulic Road and US 29 to make it safer for vehicles and pedestrians. This consists of reconstructing the medians on Hydraulic Road to better align the westbound travel lanes through the intersection with US 29, eliminating left turns from Hydraulic Road, and replacing the existing single signalized pedestrian crossing with three signalized pedestrian crossings. Pedestrian refuge areas will be provided in the median with one of the new crossings utilizing a two-phase signal to improve operations and enhance safety. The existing signal timing will be adjusted and coordinated with intersections throughout the corridor.

General Geometry: Improvements along Hydraulic Road have been designed using the GS-6 criteria with a 35 MPH design speed. Improvements adjacent to US 29 have been designed using VDOT's GS-5 criteria with a 40 MPH design speed for the northbound lanes and a 45 MPH design speed for the southbound lanes. Both roads accommodate a WB-67 Design Vehicle and utilize a curb & gutter configuration. The pedestrian accommodations provide a 5-ft sidewalk width along the road and a 6-ft sidewalk width at the medians and refuge islands. Our design does not require any Design Exceptions or Waivers other than those identified in the RFP.

Horizontal Alignments: The alignment of the westbound travel lanes along Hydraulic Road is improved. All horizontal alignments meet RFP requirements and remain within the existing and proposed right-of-way (ROW).

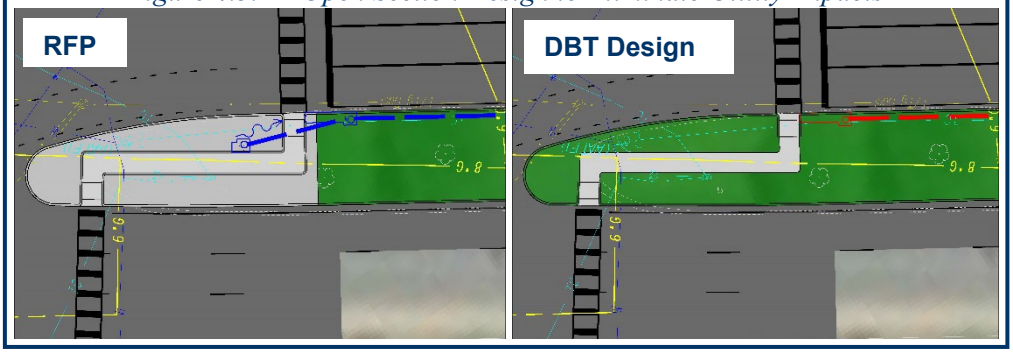
Maximum Grades: Vertical profiles mimic existing conditions and minimize vertical adjustments. Vertical grades for the sidewalk meet the maximum sidewalk grade as highlighted in the RFP Attachment 2.2.

Typical Sections: Typical sections for the roadways and sidewalks are included in Volume II. Cross-slopes for the sidewalks and roadways meet RFP requirements. Our design strategically uses a standard MS-1 as opposed to the RFP MS-1A from Station 400+75 to 406+25 and an MS-2 as opposed to an MS-1A from Station 224+33 to 225+25 to improve constructability of the project by reducing overall materials and providing additional space for maintenance of traffic (MOT). Additionally, our design strategically uses and SI-2 for the refuge islands R1.

Conceptual Hydraulic and Stormwater Management (SWM) Design: Quantity control will be addressed by safely conveying runoff through the median of US 29 southward to an existing cross culvert for an unnamed tributary of Meadow Creek. The land disturbing area draining to the existing cross culvert is 0.9% of the tributary's drainage area at that point, meeting the limit of analysis criteria. Runoff from the proposed improvements will be contained within a manmade conveyance system (storm drain and roadside/median ditches) with non-erosive velocities to this limit of analysis. Therefore, detention-based SWM facilities will not be required for Element A P4. Quality management will be met with nutrient credits.

Hydraulic/Drainage Design – As shown in *Figure 4.3.1*, northbound US 29 has been revised to remove the inlet over the gas line at the pedestrian ramp by removing the curb in this location D1, reducing the amount of pipe needed and avoiding impacts to the existing utilities under the curb D4. Additionally, the pedestrian walkway has been regraded to utilize a constant slope that no longer needs structure A-01 next to the walkway. This eliminates the concern of standing water in the pedestrian walkway, thereby reducing future maintenance concerns for VDOT.

Figure 4.3.1 – Open Section Design to Eliminate Utility Impacts



Proposed ROW Limits: The **DBT**'s design is wholly within the permanent easement and ROW acquisition areas identified in the RFP and shown on the Volume II Roadway Plans.

Proposed Utility Impacts: We have eliminated the proposed inlet over the gas line D1 and have developed a detailed 3D model for our utility and drainage designs to minimize other conflicts D4. In addition, we will coordinate with local utility owners to adjust existing manholes in the roadway so they do not require relocation.

Lighting: Intersection lighting will use the existing lighting infrastructure to the greatest extent possible. New poles and luminaires will be provided where needed. All luminaires will be LED type. The intersection will be

analyzed using AGI32 software to ensure lighting meets IES RP-8-21 requirements. Individual illuminance levels will be modeled for each crosswalk and the intersection to provide proper lighting levels and uniformity.

Guardrail and Barrier: This element does not require any guardrail and barrier. Barrier is not required for the existing utilities within the clear zone in accordance with the Design Waiver obtained by VDOT.

Locations of Mill and Overlay or Buildup of Existing Pavement/New Pavement: The limits of mill and overlay and new pavement are identified in Volume II.

Other Key Project Features:

Pedestrian Facilities – Pedestrian facilities for the intersection will be upgraded to meet ADA requirements. The ramps and crosswalk locations will be properly illuminated, meet accessible pedestrian signals (APS) requirements, and have positive drainage to prevent ponding issues.

Existing Signal – Signal modifications for the eliminated left turns from Hydraulic Road and the new/realigned pedestrian crossings will be provided. Pedestrian signals will be located to meet APS requirements. Existing signal heads for the left turns along Hydraulic Road will be removed, and existing signal heads adjusted to align by the 'center of lane' methodology. All other existing signal infrastructure will be modified as required. Signal timings for the intersection will be optimized and coordinated with the existing corridor timing plans.

4.3.1.2. Element C

Element C introduces a new pedestrian bridge over US 29 between Zan Road and Seminole Court at Sta. 237+15. Two new bus stops and shelters will be provided with one located at either end of the proposed pedestrian bridge.

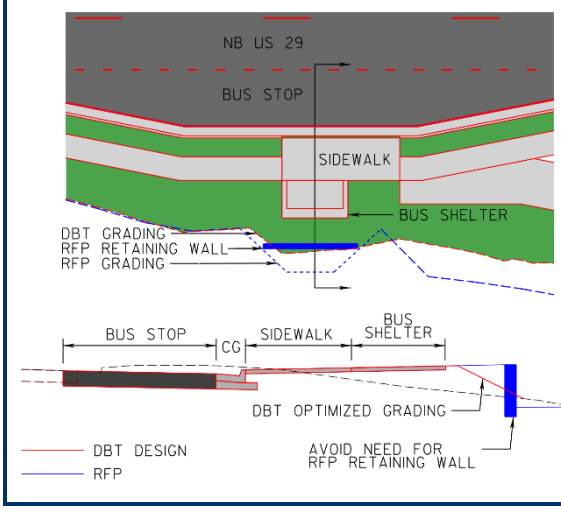
General Geometry: Improvements to US 29 have been designed using VDOT's GS-5 design criteria with a minimum design speed of 45 MPH. The existing lanes are maintained and not modified throughout the corridor with the exception of the bus pull-off areas for the two new bus shelters. One pull-off area will accommodate buses traveling southbound US 29 and the other will accommodate buses traveling northbound US 29.

Horizontal Alignments: Bus ramps are designed in accordance with the RFP. Horizontal alignments follow the Design Criteria Table 2.2 and the VDOT RDM Appendix A (1), Figure A (1)-48. Our **DBT** made slight adjustments to the location of the pedestrian ramps and pedestrian bridge to further reduce utility impacts.

Maximum Grades: Pedestrian ramps meet the RFP Design Criteria Table 2.2 using a maximum vertical grade of 8.33% with landings, and the maximum rise between landings does not exceed 2.5-ft. Min. vertical clearance on US 29 is 17.5-ft.

Typical Sections: US 29 matches existing conditions with four northbound (NB) lanes and five southbound (SB) lanes. Travel lanes will be 11-ft wide or greater (matching existing) and side slopes are a 3:1. As shown in *Figure 4.3.2*, the **DBT**'s 3D model and grading enhances the RFP design by eliminating the need for a retaining wall behind the bus shelter along NB US 29 R2.

Figure 4.3.2 – Eliminating Retaining Wall



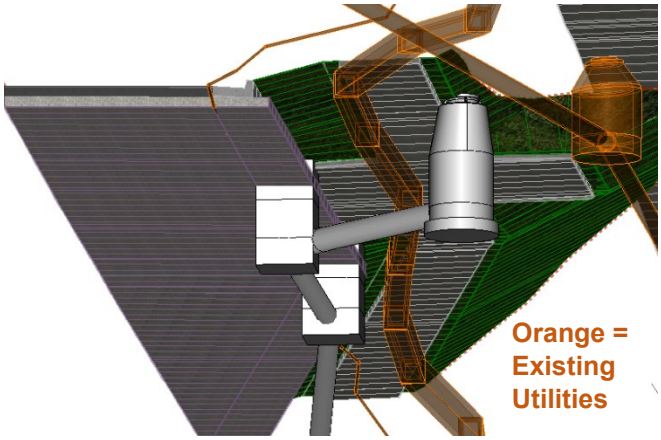
Conceptual Hydraulic and SWM Design: Quantity control for Element C will be addressed by conveying runoff through an existing storm drain system below the existing commercial parking lots down to the Meadow Creek floodplain. The land disturbing area draining to Meadow Creek through this system is 0.1% of the creek's drainage area at that point, meeting the limit of analysis criteria. Runoff from the proposed improvements will be contained within a manmade conveyance system (storm drain) with non-erosive velocities to this limit of analysis. Therefore, detention-based SWM facilities will not be required P4. Quality management will be met with nutrient credits.

Hydraulic/Drainage Design – The roadway drainage design for Element C efficiently conveys flows, optimizes drainage structure locations, and minimizes utility crossings and impacts. In Element C, we propose to adjust the existing storm drain in the roadway in front of the bus stop to improve safety concerns for VDOT inspection and maintenance crews. We will adjust the inlet types to reduce utility impacts near the bus stop at Abutment B D4. By using an open section for the pedestrian ramps, our design eliminates the drainage pipe at the bottom of the SB ramp D2. The pedestrian bridge will utilize scuppers that tie into the proposed roadway drainage system D2.

Proposed ROW Limits: The **DBT**'s design is wholly within the permanent easement and ROW acquisition areas identified in the RFP and shown on the Volume II Roadway Plans.

Proposed Utility Impacts: Our **DBT** has modeled the existing utility infrastructure in 3D to identify and eliminate conflicts with the roadway model and drainage model to the greatest extent practical as shown in *Figure 4.3.3* D4. Our design shifts the pier to eliminate the need to relocate the gas line in the median and prevent constructability concerns with the cast-iron water line. (*Figure 4.3.7* on page 11) This eliminates the need for pier protection on top of the existing gas line as shown in the RFP plans S1. The use of a span type structure for the ramps provides enough space to relocate the ACSA sanitary sewer line within the ROW limits to significantly reduce impacts to the shopping development located on the west side of US 29 S3.

Figure 4.3.3 – 3D Model for Subsurface Features



Lighting: Lighting will be provided for the pathway, ramps, bridge, and bus shelter. All areas will be analyzed using AGI32 software to ensure IES RP-8-21 lighting requirements are met. Lighting along the pathway and adjacent to the bus stop will be LED pole mounted luminaires. Pole mounted fixtures will not be used along the bridge or ramp portions of the pathway. The ramp and bridge lighting are recessed LED luminaires.

Guardrail and Barrier: Barrier will be provided at the median for pier protection utilizing VDOT standards.

Locations of Mill and Overlay or Buildup of Existing Pavement/New Pavement: The limits of mill and overlay and new pavement are identified in the Volume II.

Other Key Project Features:

Pedestrian Accommodations – By slightly shifting the ramps and optimizing grading in this area, our **DBT** was able to reduce the amount of required retaining walls R2, thus reducing VDOT's long term maintenance responsibilities. The sidewalk along US 29 will have a width of 5-ft with a 1-ft graded area and a 4-ft buffer strip. The pedestrian ramps and bridge will accommodate a total 14-ft path with a 3-ft graded shoulder and an 8-ft buffer strip. The maximum cross slopes for the pedestrian facilities are 2%.

Bus Stop and Shelter – The bus stop design meets the RFP Design Criteria table. Our design illustrates that the span type pedestrian ramp S3 will allow maximum flexibility for the final location of the bus stop based on utilities and stakeholder preference by allowing the bus shelter to be located under the pedestrian ramp.

4.3.1.3 Element D

Element D replaces the existing signalized intersection at Hydraulic Road and Hillsdale Drive with a multi-lane, tilted-plane hybrid roundabout. Pedestrian crosswalks will be provided on all legs of the roundabout.

General Geometry: Improvements to the intersection utilize VDOT's GS-6 design criteria with a design speed of 35 MPH, VDOT's GS-7 design criteria for Hillsdale Drive with a design speed of 30 MPH, and a Roundabout design speed of 20 MPH. The Design Vehicle for the intersection is a WB-40 and the control vehicle is a modified WB-67. Our design does not require any additional Design Exceptions or Waivers.

Horizontal Alignments: The horizontal alignments for the roadway match the alignments provided in the RFP. A roundabout analysis will be completed as part of the design package submittal for this element.

Maximum Grades: The **DBT**'s design optimizes the RFP profiles to significantly reduce excavation for full depth paving to minimize utility impacts, reduce the amount of total depth pavement reconstruction, expedite construction, and improve mobility during construction R3. As shown in Volume II, the maximum vertical grade is 8%, the minimum vertical grade is 0.5%, and the crest and sag vertical curves meet the RFP requirements.

Typical Sections: Typical sections are included in Volume II and meet RFP requirements.

Conceptual Hydraulic and SWM Design: Quantity control will be addressed by conveying runoff through storm drain along Hydraulic Road eastward to an existing cross culvert under Hydraulic Road for Meadow Creek. The stormwater approach will be to maintain the existing drainage patterns in each system. The land disturbing area draining to Meadow Creek at Hydraulic Road includes runoff from both Elements D and E and is 0.3% of the creek's drainage area at that point, meeting the limit of analysis criteria. Runoff from the proposed improvements

will be contained within a manmade conveyance system (storm drain) with non-erosive velocities to this limit of analysis. Therefore, detention-based SWM facilities will not be required P4. Quality management will be met with nutrient credits.

Hydraulic/Drainage Design – The hydraulic design mimics the existing storm drain pattern as much as possible, while sending runoff to the two existing separate storm drain systems that outfall at Meadow Creek. Our reduction in excavation for full depth paving R3 increases cover over existing storm sewer pipes D3. The existing storm drain system will be inspected to conform with VDOT's Pipe Rehabilitation requirements. Pipe Rehabilitation will be self-performed by **CCI** to control the schedule P3. We have accounted for pipes noted in the RFP that need to be replaced or repaired to remain as a functional element. The storm drain system has been adjusted to improve MOT D4. Inverts will mimic the inverts of the existing storm drain to reduce utility impacts.

Proposed ROW Limits: Our design for this element is located wholly within the permanent ROW and permanent easements identified in the RFP and shown on the Volume II Roadway Plans.

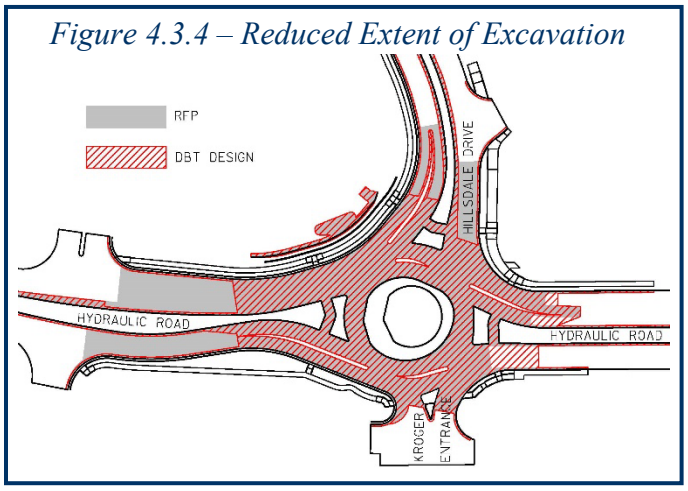
Proposed Utility Impacts: We have minimized utility impacts by improving the profiles and reducing excavation for full depth paving R3. As demonstrated in our 3D model D4, raising the grade of the road R3 and modifying the pedestrian accommodations R4 (more detail below) reduces utility impacts. Only the 8" water line in the median of Hillsdale Drive remains in conflict due to the need for an inlet at the median of the roadway. Relocation will be self-performed by **CCI** to control the schedule P3.

Lighting: Lighting will be provided for pedestrian crosswalks and the roundabout roadway per VDOT's Roundabout Design Guidance and will meet IES DG-19-08 standards using LED luminaires. The illuminance levels will be modeled using AGI32 software to ensure lighting levels and uniformity are met.

Guardrail and Barrier: Element D does not require guardrail or barrier.

Locations of Mill and Overlay or Buildup of Existing Pavement/New Pavement: We have optimized the roadway profiles for this element to reduce the excavation needed for full depth pavement reconstruction wherever practical. Areas requiring buildup of existing/ new pavement are identified in Volume II and is shown on *Figure 4.3.4*. Buildup will be accomplished by milling the existing pavement 1.5 inches and replacing it with up to 3 inches of IM-19.0A and up to 1.5 inches of SM-9.5D. Mill and overlay limits are shown in Volume II.

Figure 4.3.4 – Reduced Extent of Excavation



Other Key Project Features:

Pedestrian Facilities – Pedestrian crosswalks will be included across each leg of the roundabout. Curb ramps provide proper ADA slopes and detectable warning surfaces. Rectangular Rapid Flashing Beacons (RRFBs) will be included at both ends of each crosswalk. Sidewalks will have a width of 5-ft, and 6-ft when crossing medians and refuge islands. A 4-ft minimum buffer strip is provided as well as a maximum cross slope of 2%. Our design optimizes the alignment for the sidewalk along the southwest quadrant to reduce utility impacts to the waterline, gas line, and Dominion utility pole. During our discussion with Dominion Energy, their representatives indicated that the angle for the guy wires could not be modified, so we realigned the sidewalk to traverse through the guy wires and the utility poles. Minimum vertical clearance will be met by modifying the guy wires while maintaining the existing angles. This avoids relocating multiple Dominion utility poles R4.

Access Management – During construction and the RFP allowed closure of the Hydraulic Road and Hillsdale Drive intersection, access will be maintained for all adjacent properties. Specialty wayfinding signs will be coordinated with the nearby commercial property owners to guide customers and delivery drivers to the proper access points.

4.3.1.4 Element E

Element E removes left turn movements from Michie Drive and Brandywine Drive onto Hydraulic Road to improve operations and safety in the corridor. The existing right turn spur from westbound US 250 will be reconfigured to a yield condition with a single receiving lane along northbound Hydraulic Road. The existing shared use path along US 250 westbound will be extended to Brandywine Drive and sidewalk, pedestrian ramps, and concrete median improvements will be provided as shown in Volume II.

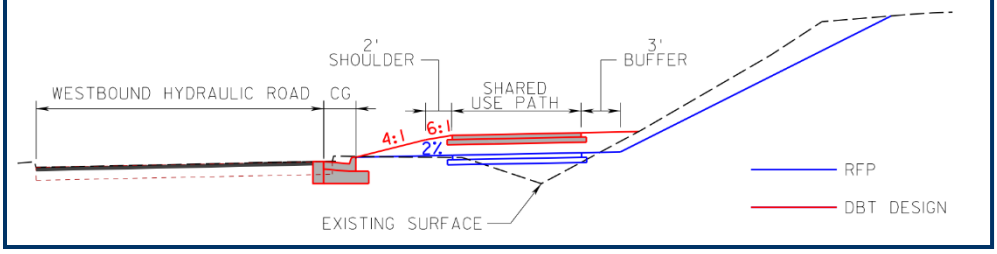
General Geometry: Improvements to Hydraulic Road will follow VDOT's GS-6 design criteria with a 35 MPH design speed. The US 250 spur is designed with a 15 MPH speed. Brandywine Drive is classified as a GS-7 and Michie Drive is classified as a GS-8. These improvements will accommodate a WB-67 vehicle.

Horizontal Alignments: The horizontal alignments match those provided in the RFP.

Maximum Grades: The maximum vertical grade matches the existing roadway and meets RFP requirements.

Typical Sections: Our design meets slope design standards and allowable buffer strip widths and minimizes impacts to the Dominion high transmission line without requiring the retaining wall shown in the RFP plans R5. As shown in *Figure 4.3.5*, our reduced grading limits minimizes tree clearing and preserves 2,287 SF of potential Northern Long-Eared Bat habitat. We also ensured positive drainage throughout the design (it is unclear if the RFP plans provide positive drainage in the back of the shared use path) and strategically use SI-2 for the pedestrian refuge islands to improve constructability, reduce materials, and improve MOT R1.

Figure 4.3.5 – Optimized Typical Section to Reduce Grading Limits



Conceptual Hydraulic and SWM Design: Quantity control will be addressed by conveying runoff through storm drain along Hydraulic Road to an existing cross culvert for Meadow Creek. The land disturbing area draining to Meadow Creek at Hydraulic Road includes runoff from both Elements D and E and is 0.3% of the creek's drainage area at that point, meeting the limit of analysis criteria. Runoff from the proposed improvements will be contained within a manmade conveyance system (storm drain) with non-erosive velocities to this limit of analysis. Therefore, detention-based SWM facilities will not be required P4. Quality management will be met with nutrient credits.

Hydraulic/Drainage Design – The drainage design accounts for the proposed roadway and sidewalk adjustments. Slope grading on the north side of Brandywine Drive will eliminate the RFP culvert extension into Meadow Creek, reducing permitting impacts. Minor inlet adjustments will be made to avoid utilities. D4

Proposed ROW Limits: Our design for this element is located wholly within the permanent ROW and permanent easements identified in the RFP and shown on the Volume II Roadway Plans. The amount of temporary construction easement that will be needed is reduced because of our optimized typical section. R5

Proposed Utility Impacts: Our drainage design avoids impacts to the existing sanitary sewers. Relying on our experience with the Albemarle Intersection Bundling DB project, our **DBT** will relocate the existing sanitary sewer manhole that is in the proposed Route 250 spur to remove it from the roadway to improve access for long-term maintenance. The shared use path impacts an existing Brightspeed pole; however, we were able to eliminate impacts to an existing utility pedestal by adjusting the location of the pedestrian ramp R4.

Lighting: The existing roadway lighting along Hydraulic Road will remain. Proposed LED luminaires and poles will be located to illuminate the proposed crosswalk locations per IES-RP-8 and photometrics modeled in AGI32.

Guardrail and Barrier: Approximately 96 LF of existing guardrail will need to be replaced near Michie Drive. We will use long post guardrail to reduce grading limits and avoid impacts to the existing drainage patterns in the area R6. This eliminates environmental impacts to the intermittent stream (tributary to Meadow Creek). Our Team is aware that the guardrail crosses a fiber optic and the sanitary sewer. These utilities will be located prior to construction and the guardrail will be strategically installed to avoid any impacts.

Locations of Mill and Overlay or Buildup of Existing Pavement/New Pavement: Locations of mill and overlay as well as new pavement are shown in Volume II.

Other Key Project Features:

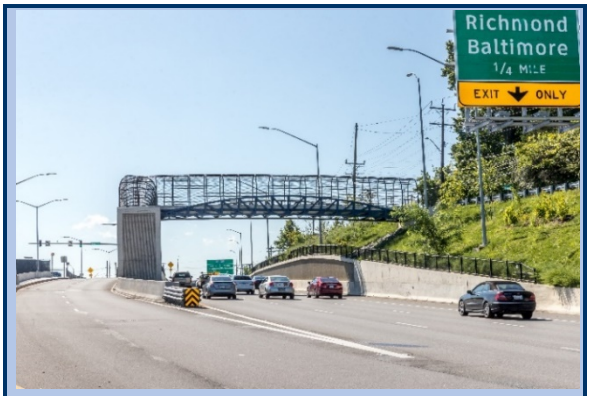
Pedestrian Facilities – Pedestrian facilities for this element include sidewalks and crosswalks that are upgraded to meet ADA requirements. Proposed curb ramps will provide proper ADA slopes and detectable warning surfaces. The ramps and crosswalks will be properly illuminated and have positive drainage to prevent ponding.

4.3.2 Conceptual Structures Narrative

The Project includes a grade separated pedestrian bridge and ramps to improve accessibility for pedestrians and cyclists to the surrounding commercial amenities along NB and SB US 29. **WM** has successfully designed similar

pedestrian structures, most recently the pedestrian bridge over Branch Avenue in Prince George's County, MD. The pedestrian bridge consisted of a 75' long, prefabricated truss constructed outside the active travel lanes without interruption to traffic.

Our **DBT** determined the type, size, and location of the pedestrian structure over US 29 with an emphasis on minimizing and avoiding utility impacts to the maximum extent practical. We also focused on facilitating construction means and methods to reduce schedule risk, minimize traffic impacts, maintain pedestrian access, and promote safety for all users. We understand the importance of providing a low maintenance and sustainable structure that will meet VDOT's goals for the Project. The structure type and layout for the ramps eliminates the need for excessive fills and heavy truck traffic that would be required for hauling these materials. Key elements of our structural design are detailed below.

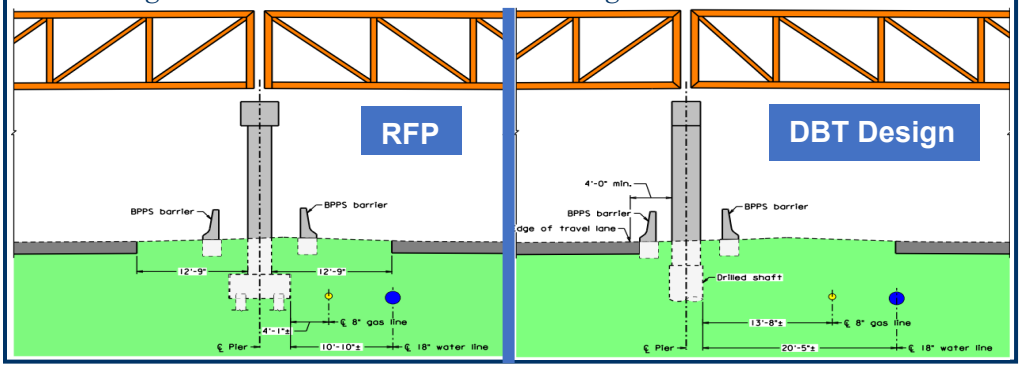


WM designed this award-winning pedestrian bridge over Branch Avenue

Pedestrian Bridge

- A two-span 190' long prefabricated steel truss superstructure supporting a reinforced concrete deck with BPF-6 curb and fencing. Maximum deck cross slopes of 2% will be utilized, satisfying ADA requirements.
- Reinforced concrete abutments and multi-column and cap pier supported on drilled shaft foundations.
- The proposed pier will be strategically located to avoid impacts and provide the required clearance to the existing 8" gas line and 18" cast iron waterline within the median of US 29 as shown in *Figure 4.3.7*. S1
- Abutment foundations will be strategically located to minimize utility impacts.
- Abutments will be four-sided concrete towers to support the bridge and approach ramps. Since the structure will not require excessive amounts of fill, settlement will not be a concern. This eliminates the risk for settlement related impacts to adjacent utilities and expedites the construction schedule of Element C.
- Cap and column piers on drilled shaft foundations will be used to avoid excavation and the need for temporary sheeting during construction. S2
- A bridge pier protection system will be installed along the inside shoulder of southbound US 29 to provide protection and safety for vehicular traffic.
- Exposed surfaces of abutments and retaining walls will be coated with an anti-graffiti coating.
- Since vibrations associated with conventional pile driving would likely impact the existing cast iron waterline, drilled shaft foundations will be utilized to eliminate the risk altogether. S2
- Scuppers will be placed at the end of the bridge to convey drainage and prevent ponding and sheet flow on the elevated walking surfaces. Drainage design on the pedestrian bridge meets the RFP requirement of less than 3-ft of spread for a 4-in/hr storm.

Figure 4.3.7 – Relocated Pedestrian Bridge Pier to Avoid Utilities



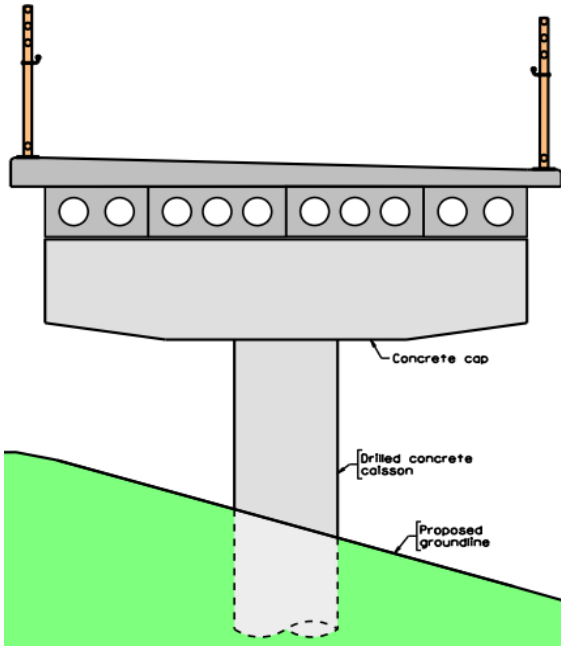
Pedestrian Ramps

- The approach ramps adjacent to US 29 will consist of multi-span continuous concrete superstructures utilizing VDOT standards for prestressed adjacent slabs and jointless construction methods to reduce future maintenance concerns, accelerate construction, and reduce the risk of delays to the schedule. S5
- Our strategic use of the multi-span structure shown in *Figure 4.3.8* significantly reduces fill, thereby eliminating design, construction and future maintenance concerns related to settlement. This design will allow the required relocation of the sanitary sewer line to be performed quickly and avoid ROW impacts to the

adjacent shopping center. As an added benefit, the existing underground electric duct bank and fiber optic lines do not have to be relocated because they can still be accessed and maintained by the utility companies. S3

- The ramps will provide an open section to simplify the drainage design and eliminate the need for additional inlets or pipe sections. D2 Appropriate ground protection will be provided to prevent long term maintenance issues for VDOT.
- A prefabricated/pre-engineered retaining wall will be installed along the east side of the ramp between Sta. 7+87.92 and Sta. 7+29.42 to avoid impacts to the existing sidewalk and maintain pedestrian mobility during construction. S4
- Hammerhead piers supported on single drilled shaft foundations will be utilized for the ramp substructures. Using drilled shafts eliminates the need for excavation and associated impacts to the existing sidewalk, existing underground electric duct bank near the west ramp, and existing fiber optic lines near the east ramp. S2
- The hammerhead piers are strategically located to avoid impacts to existing drainage structures and the existing fiber optic and communication lines in the vicinity.
- The prestressed concrete superstructure will simplify means and methods related to the equipment required for forming and pouring concrete and reduce schedule risks by accelerating erection construction. Precast prestressed superstructures will provide improved durability and finish compared to cast-in-place concrete and will not require the maintenance of painted structural steel. S5

Figure 4.3.8 – Span Structure for Ramps will Reduce Utility, ROW and Construction Impacts



Enhancements that Benefit VDOT and End Users

Our **DBT** analyzed the RFP Concept Plans to identify areas where we could improve the benefit to end users by introducing safety, operations, schedule, construction, and public acceptance enhancements. We considered the types of materials, methods, and functionality used to reduce a need for future VDOT inspection and maintenance.

Safety

Our **DBT** design improves safety for motorists, non-motorized users, construction and inspection personnel, and VDOT in the following ways:

MOT and TMP Design P2: A holistic approach to the sequence of construction with five major phases will group segments of elements to be constructed at the same time, providing consistent lane continuity throughout all four elements, and reducing the number lane shifts and lane closures required to minimize disruptions and improve safety. Wayfinding signage will be used during the Hydraulic Road and Hillsdale Drive closure to safely guide motorists, truck delivery drivers, and pedestrians to the adjacent properties. As part of our TMP approach, a Project Delivery Advisory Panel will be set up to meet on a regular basis to coordinate with stakeholders, provide construction progress updates, and allow direct two-way communication between the **DBT** and stakeholders.

Pedestrian Bridge S2: Drilled shafts for the pier foundation will not require temporary support of excavation adjacent to the travel lanes. This provides a larger buffer between the work area and live traffic and improves mobility and safety for the traveling public.

Optimized Grading R2 R3 R5: The optimized grading in Element C and Element E uses safe slopes to tie into the existing ground without requiring retaining walls, thereby eliminating potential fall hazards within the project limits. Similarly, the optimized grading associated with the roundabout design and approach profiles in Element D reduces the height of the proposed retaining walls in this element.

Utility Avoidance: It is important to not overlook the safety benefits of eliminating utility impacts. By significantly reducing the number of utilities that must be relocated, we are also reducing the number of utility crews that have to be on site working adjacent to traffic to perform the relocations. Our **DBT** has eliminated all private utility relocations adjacent to US 29 and only requires the relocation of one private utility: a telecom pole in Element E adjacent to Hydraulic Road. This relocation can be performed safely without impacting traffic.

Operations

As soon as the RFP Information Package was available, our **DBT** reviewed the RFP Plans and the design year traffic models to understand how we could further improve traffic operations during construction and after final completion of the Project to provide a better experience for all users. We have incorporated the following enhancements that will improve corridor and intersection operations within the Project area:

MOT Design P2: The **DBT** will implement a contiguous MOT plan that will better match driver expectations throughout the Hydraulic Road and US 29 corridors by maximizing lane continuity during construction. We will reduce the number of traffic switches required and prioritize efficient night work to minimize impacts to the traveling public to the greatest extent practical. Our MOT plan includes keeping the existing access points for Kroger and Dominion from Hydraulic Road open at all times during construction of the project.

Signal Timing P2: The Construction Manager will monitor the existing signals (US 29 at Hydraulic Road, Hydraulic Road at Hillsdale Drive, Hydraulic Road at Route 250, and the intersections along the detour routes) located throughout the project limits during construction and report any queueing concerns to the Design Manager. Queue lengths and the existing signal timings will be analyzed. Proposed signal timing updates will be coordinated with VDOT to optimize the signal network during construction.

Pedestrian Bridge: The specific location that our **DBT** chose for the pedestrian bridge pier was strategic. This location allows VDOT to make future improvements to US 29 to further improve operations. It will accommodate either a future widening project or the lengthening of the left turn lane along NB US 29 without requiring any adjustments to the bridge S1.

In addition, the means and methods required to support the pier on drilled shaft foundations will require a much smaller footprint than conventional pile driving. This results in a less complex MOT design and reduces operational impacts to southbound US 29 during construction of the pier S2. The pedestrian bridge itself will be a prefabricated steel truss superstructure. Using a prefabricated structure significantly reduces impacts to traffic along US 29 because erection of the bridge is accelerated and can occur in two night-time shifts.

Public Acceptance

Our **DBT**'s Construction Manager, **Cole Eller**, and Design Manager, **Julia Simo, PE** attended the Design Public Hearing for Project on May 25, 2022. Based on our attendance at that meeting, we understand that local stakeholders, businesses, and property owners are invested in the success of the Project. The Meadows neighborhood is located nearby and The Shops at Stonefield shopping center is located within our project limits. We will coordinate with the City of Charlottesville to provide aesthetics that are consistent with the corridor and in line with stakeholder preferences. Our **DBT** is committed to delivering a project that exceeds stakeholder expectations, and will take the following steps to ensure public acceptance for the Project:

MOT Design P2: During the closure of the intersection of Hydraulic Road at Hillsdale Drive, the south leg of the intersection will remain open for Kroger deliveries and access for Dominion Power. This removes the need for Kroger trucks to maneuver through the customer parking, reducing congestion, benefiting the Kroger, Kroger customers, and employees of Dominion.

Public Outreach Plan: Our **DBT** includes EPR for public outreach because they are intimately involved with the community, understand how to communicate with the public, and know the stakeholders on this Project. In addition to the Albemarle Bundle DB project, EPR has provided public engagement support for the Charlottesville Area Transit Vision Plan with a diverse set of stakeholders, are currently assisting with the Thomas Jefferson Planning District Commission's Charlottesville-Albemarle MPO's 2050 Long Range Transportation Plan, and are currently working with Albemarle County to update their comprehensive plan.

Our commitment to public acceptance is highlighted by the citizen compliment our **DBT** recently received via VDOT's Customer Service Center on 1/17/2023 for our work on the US 250/Route 151 Roundabout element on the nearby Albemarle Bundling DB Project:

"I would like to compliment you on the traffic circle at 151 and 250. I was very skeptical that the diameter would be adequate but I was wrong. Kudos to the engineer and the workmen/work women for the good job. It works very well. Thank you."

--Bill Faulkenberry

Local Business Coordination: **CCI** has established a relationship with Riverbend Development during the construction phases of the Albemarle Intersection Bundling DB Project. Agreements were made that allowed **CCI** to utilize certain properties owned by Riverbend as staging areas while adjacent project elements were under construction. **CCI** and Riverbend have had preliminary discussions regarding the potential land use of the abandoned K-Mart parking lot as a staging area to support construction of this Project. Options for staging areas near the Project are limited so this resource will be invaluable and mutually beneficial to both the developer and **CCI**.

Schedule

Our **DBT** is committed to opening the roundabout to traffic on **August 21, 2024** and delivering Project Final Completion by **October 31, 2025**, more than **1 month ahead** of the Contractually Required December 5, 2025 completion date. We have been able to accelerate our schedule and provide float for long lead time items, that are typically on the critical path, by optimizing the design of the Project, improving constructability, and utilizing materials that expedite construction by implementing the following methods:

Design Work Packages P1: The first significant submission to VDOT will consist of a limited ROW level plan set for Elements C and D to perform the early relocation of major utilities within Elements C and D (gravity sanitary sewer and water main). As the Critical Path progresses through the construction of these elements and our **DBT** prepares for the closure and detour of Hydraulic Road, our design team will make submission of final ROW and approved for construction plan sets for the remainder of the Project. This approach will allow our **DBT** to achieve the incentive for reopening of the roundabout prior to the 46-day deadline. As highlighted in Section 4.6, our Design phase elements have been sequenced in a manner that minimize fabrication and material risk, provides for significant flexibility, and eliminates risk with the time-of-year restriction.

Utility Conflict Avoidance: As shown in *Exhibit 4.3.1*, our numerous design enhancements avoid many utility conflicts and eliminate the schedule risk associated with these relocations. On Element A, our **DBT** is avoiding impacts to the gas line by creating an open section to the pedestrian ramp on the median along US 29 D1. On Element C, using open sections on the pedestrian ramp structures eliminates the need for additional drainage structures on the existing roadway, avoiding unnecessary utility crossings D2. In addition, the strategic location of the pier for the pedestrian bridge will avoid impacts to the existing gas line within the US 29 median S1 and using drilled shaft foundations avoids impacts to the cast iron water main from vibration during pile driving S2. On Element D, our profile enhancement R3 improves clearance on various utilities, our sidewalk optimization R4 reduces significant impacts to the Dominion power pole and provides better clearance and maintenance access to the gas line and the waterline. On Element E we are avoiding a utility pedestal by slightly adjusting the pedestrian ramp along the south side of Brandywine Drive R4 and Hydraulic Rd, and we optimized the drainage design to avoid significant impacts to the sanitary sewer D4.

Prefabricated Steel Truss Superstructure: Using a prefabricated structure simplifies erection means and methods and accelerates construction. This significantly reduces schedule risk and traffic impacts during construction.

Precast Superstructure Elements: The strategic use of precast superstructure elements for approach ramps will simplify means and methods, reduce construction duration, and improve mobility during construction. S5

Multi-Span Approach Ramps: The multi-span type approach ramps will eliminate settlement concerns because the placement of excessive fill is not required. This significantly reduces the amount of time it will take to construct the approach ramps because our **DBT** does not have to account for over-excavation, or pre-consolidation/ surcharging of the existing soils. S3

Optimized Roundabout and Approach Profiles: One of the primary benefits of optimizing the vertical profile of Element D is to minimize excavation and full depth pavement reconstruction. Full depth pavement reconstruction is a time intensive construction activity that has major MOT impacts. By reducing the amount of excavation required in this element, the construction schedule is further expedited because our **DBT** was able to avoid impacting many of the underground utilities in the area. This significantly improves the construction schedule for Element D, removes many activities from the project's critical path, and reduces the required detour time. R3

Significant Self-Performance of Construction Activities: **CCI** is extremely diversified and can self-perform the majority of work associated with the Project. This includes crews specialized in grading, bridge/structures, signal/ITS, signs, guardrail, storm drainage, milling, asphalt paving, MOT, pipe lining/rehab, pipe jack and boring, and ESC. Maintaining a diversified workforce allows **CCI** to control resource allocation on this Project. We do not have to rely on many subcontractors to ensure that the necessary crews are available to complete the Project ahead of schedule. This reduces schedule risk and improves reliability for VDOT. P3

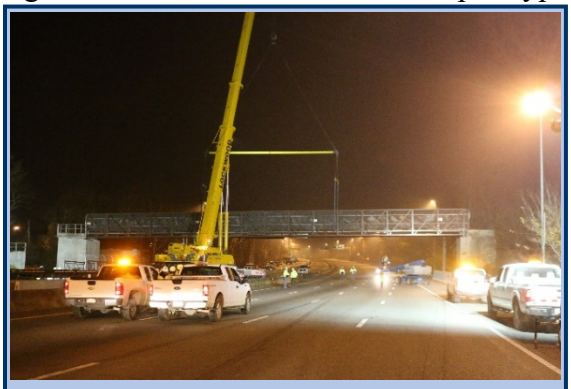
Construction

Steve Ordung (DBPM), **Cole Eller** (Construction Manager), **Bill Richards** (Deputy DBPM), and other members of the construction team have assisted with the development of the Volume II Conceptual Roadway and Bridge Plans. Their involvement has helped the design team tailor each element specifically to meet CCI's intended means and methods and deliver a final design that is safe, easily constructable, and efficient. The **DBT**'s design has improved construction in the following ways:

Strategic Use of MS-1, MS-2, and SI-2 R1: Our design introduces MS-1, MS-2, and SI-2 in medians and pedestrian refuge islands to reduce construction impacts and improve constructability by reducing materials required, providing additional space for MOT operations, and utilizing consistent aesthetics.

Optimized Roundabout and Approach Profiles R3: This significantly reduces excavation and allows the **DBT** to use Wedge and Level within the allowable tolerances provided in the RFP. Construction operations are significantly simplified and impacts to existing utilities and existing drainage structures are reduced to minimize the number of crews required to construct the element.

Span Structure for Approach Ramps S3 S5: Installing span type structures in lieu of retaining walls which require excessive fills will reduce the need for the contractor to haul and stockpile large amounts of soil. The use of drilled shaft foundations for approach ramp structures will eliminate the need for excavation and reduce impacts to the utility duct bank along southbound US 29 and fiber optic along northbound US 29. The multi-span type approach ramps will eliminate settlement that would otherwise be caused from placement of excessive fills and avoids the need for **CCI** to pre-consolidate or surcharge the existing soils. Using precast superstructure elements for approach ramps will simplify the contractor's means and methods and accelerate construction.



CCI Erection of Pedestrian Bridge over I-264 for the MLK Expressway Extension

Use of Drilled Shaft Foundations at Pedestrian Bridge S2: Drilled shaft foundations will eliminate impacts to the cast iron water line that would be caused by vibrations from traditional pile driving techniques. Additionally, drilled shaft foundations at the bridge pier will eliminate the need for temporary support of excavation adjacent to the existing SB US 29 and the associated MOT challenges due to the proximity of the pier to live traffic.

Prefabricated Retaining Walls S4: Using this system on the SB approach ramp and in Element D provides a low maintenance alternative that accelerates and simplifies construction because it does not require forming and pouring concrete.

Integrating Construction Means & Methods into MOT Design P2: Our MOT design integrates **CCI**'s intention to use rubber tire equipment that can be moved off the roadway after each shift to reduce impacts to businesses.

Materials and Methods to Reduce Future VDOT Inspection and Maintenance

Our **DBT**'s design intentionally considers the materials will be used on the Project and the methods in which they will be placed to maximize the ultimate functionality of the system in a manner that reduces VDOT's need for future inspection and maintenance. Our considerations and enhancements include:

Span Structure with Precast Superstructure for Approach Ramps S3 S5: Using span structures with precast superstructure elements on approach ramps will provide a low maintenance alternative and eliminate post construction settlement concerns that would otherwise be caused by excessive fill required for retaining walls. The precast superstructures will provide improved durability and finish compared to cast-in-place concrete and will not require future VDOT maintenance of painted structural steel on the ramps.

SWM Facilities P4: Our **DBT** has demonstrated adequate conveyance in a manmade system to the limit of analysis at Meadow Creek and its tributaries, so on-site SWM quantity control facilities (i.e. basins) will not be required. In addition, nutrient credits will be purchased to avoid on-site water quality facilities. VDOT will not have to inspect or maintain any stormwater management facilities in the future as a result of this Project.

Elimination/Reduction of Retaining Walls: Our **DBT**'s optimized grading R2 eliminates the need to have a retaining wall behind the bus shelter on US 29 NB. Additionally, we have significantly reduced the required retaining walls for the pedestrian ramp on US 29 SB. Our optimized roundabout and approach profiles R3 reduced the height of the proposed retaining walls in the northwest quadrant of Element D. Finally, our optimized typical section R5 for Element E, eliminated the need for a retaining wall to avoid impacts to the high-transmission Dominion lines. Our design significantly reduces the number and square footage of retaining walls that have to be inspected and maintained by VDOT in the future.

Increased Cover over Existing Storm Sewer Pipes and Existing Utilities D3: Our optimized roundabout and approach profiles R3 increases the cover over many of the existing storm sewer pipes and utilities located within Element D. This will provide additional protection for the pipes and utilities from future damage caused by traffic and improve their overall useful lifespans.

4.4

Project Approach

Submitted by

Curtis Contracting Inc.

In Association With

WALLACE MONTGOMERY

4.4.1 Environmental Management

The **CCI DBT** employs a diverse group of environmental experts who will ensure success throughout design and construction, guaranteeing compliance and eliminating schedule delays associated with environmental risks. Our approach to environmental management will identify and carry out commitments considering Noise Impacts, Air Quality, Water Quality, Hazardous Materials, Cultural Resources, Threatened and Endangered Species, NEPA Studies, and other Natural Resources. Our proposed design and construction techniques also include enhancements that minimize or eliminate potential environmental impacts that could be caused by the Project without proper due diligence. In partnership with VDOT and permitting agencies, we will implement an environmental risk management program by taking the following approach during design and construction:

Approach to Sustainability

- *Our DBT's Sustainability Lead is Robert Ridgell, PE with **ENV SP** certification*
- *Using mobile concrete waste containment*
- *Recycling milled asphalt and demolished curbing/sidewalk*
- *Minimizing hauling, import, and disposal*
- *Repairing and reusing existing drainage assets where possible*

Table 4.4.1.1 – Approach to Environmental Risk Management

Design Mitigations
• Maintain and reduce the Limit of Disturbance (LOD) identified in the RFP plans to avoid additional agency coordination
• Reduce tree clearing required in Element E by 52% to preserve 2,287 SF of Northern Long-Eared Bat (NLEB) habitat
• Avoid all impacts to a tributary to Meadow Creek near Brandywine Dr. and eliminate the need for a regulatory permit
• Incorporate tree clearing TOYR of April 1 to November 15 into sequence of construction to avoid potentially impacting northern long-eared bat habitat
• Regular interdisciplinary reviews during design
Construction Mitigations
• Mandatory Environmental training and monitoring program – every construction personnel will have dedicated training and orientation of environmental resources/permitting conditions prior to working on site
• Orange fencing will be placed around resource boundaries to alert project personnel that it is off-limits
• Update SWPPP electronically in real time to provide VDOT with collaborative updates
• Identify environmentally sensitive areas in safety plan for the Project
• Apply temporary seed and Flexterra® for immediate temporary stabilization of all soils exposed for more than 7 days; use of ProGanics Biotic Soil Media for maximum vegetation establishment for erosion control
• Mobile concrete waste containment
• Milled asphalt and demolished curbing and sidewalk will be recycled

APPROACH DURING DESIGN | Our **DBT** has experience adjusting designs to avoid and minimize impacts to environmental and natural resources on hundreds of projects throughout the Mid-Atlantic. Most notably, this includes recent and relevant experience doing this for the Albemarle Intersection Bundling DB project for VDOT's Culpeper District. During design of the Route 20/Route 649 element, the **DBT** minimized stream impacts by refining the final roundabout geometrics and culvert crossing layout to reduce the amount of permanent stream and wetland impacts. The amount of right-of-way (ROW) acquisition was also reduced.

Our approach to any design-build project begins with a concentrated focus on the Limits of Disturbance (LOD) identified in the NEPA Document. Our **DBT**'s design does not expand the LOD or require changes to the NEPA Document for this Project. In fact, our **DBT** has identified areas where we can reduce construction activities and minimize the LOD. This includes using the MGS-1 with Long Post to eliminate impacts to a tributary of Meadow Creek.

After thoroughly reviewing the RFP plans and visiting the project site, we have identified the following environmental resources, potential impacts, and our approach to minimize environmental risks on the Project:

- ***Cultural Resources*** – Potential effects of the Project are limited to the RFP proposed ROW limits which has been previously disturbed and does not contain any structures over 50 years old or any archaeological sites or battlefields recorded in the V-CRIS. The **DBT** design avoids potential impacts by maintaining the design footprint within the proposed RFP ROW.
- ***Stream and Wetland Impacts*** – Based on the RFP design, a culvert extension is needed at headwall #5512, which would impact an intermittent stream (tributary to Meadow Creek) and require a regulatory permit. Our **DBT** design has minimized grading in this area and no longer requires the culvert extension. This completely avoids the impact and eliminates the need for the regulatory permit.

- ***Hazardous Materials*** – Based on the proposed work and previous ESA I/II completed by VDOT, the potential for encountering contaminated soil or groundwater is low. Our design effectively eliminates any chance of encountering hazardous materials because all excavations will be above groundwater elevation (30' deep) and the buildup in Element E significantly reduces the need to cut into existing subgrade.
- ***Threatened and Endangered (T&E) Species*** – The Northern Long-Eared Bat (NLEB) will be uplisted to "endangered" effective January 30, 2023. Our **DBT** understands the importance of mitigating impacts to the NLEB habitat and will abide by the proposed Time of Year Restriction (TOYR) for tree clearing from April 1 – November 15 each year. The TOYR is incorporated into our Proposal Schedule. In addition to the TOYR, our **DBT** looked for ways to preserve the potential NLEB habitat within the project limits. We have accomplished this by revising the drainage design and grading to significantly reduce the amount of clearing required for Element E. As shown in *Figure 4.1.1.1*, our **DBT** has reduced the amount of clearing in this area by over 52% compared to the RFP Plans, which indicated that 4,380 SF of forested area was within the LOD. In doing so, we are preserving 2,287 SF of potential NLEB habitat.

Figure 4.1.1.1 Reduced Clearing Limits

APPROACH DURING CONSTRUCTION | The real environmental work is just beginning once plans are approved. During construction, we will coordinate closely with the DEQ to ensure permit requirements are met, construction monitoring is completed efficiently and effectively, and documentation is kept up-to-date at all times. We have successfully completed many design-build projects that included coordination with permitting agencies. Based on our experience, our **DBT** has developed the following approach during construction to ensure environmental compliance:

Training: Several team members dedicated to this Project are already DEQ certified Registered Land Disturbers (RLDs). All project personnel will complete Environmental Sensitivity Training as part of their immediate orientation to the Project in order to ensure they are aware of environmental tools and policies in place to maintain environmental compliance. Additionally, pre-construction constraints and environmental commitment training meetings will be led by environmental staff and attended by construction and inspection staff to discuss permit requirements, TOYRs, environmental commitments, etc. that must be adhered to during construction. Orange fencing will be placed around resource boundaries to alert project personnel that those areas are off-limits. Project personnel will adhere to the sequence of construction and the LOD at all times.

Environmental Compliance: Our **DBT**'s Construction Manager (CM) will be responsible for overseeing the Project's environmental compliance and Environmental Management Plan (EMP), including but not limited to E&S Controls, Best Management Practices, Permits, and the SWPPP. The CM will ensure that all required documentation is completed on schedule and that the Project is holistically within compliance at all times. To enhance our Team's environmental program, our CM is a DEQ-certified RLD who has working knowledge and experience in water quality permitting and will be onsite during all construction activities.

C-107 Compliance Checks and Compliance Reporting: Overseen by our QAM, C-107 compliance checks will be completed by our Certified QA and QC Inspectors following Schedule 2. Every C-107 will be completed electronically using PlanGrid so they are available to all project personnel (including VDOT) in real time. They will identify deficiencies in existing erosion control measures and locate areas for additional attention. Our Team will proactively report any unanticipated environmental issues and will quickly implement remediation efforts in the field. We will proactively maintain an adequate supply of temporary seed and mulch at a local storage facility for immediate temporary stabilization of all bare or disturbed soils that may be exposed for more than 7 days. We will also use Flexterra® as an effective EC-2 alternative that minimizes potential trip hazards and ProGanics Biotic Soil Media as a topsoil alternative to maximize vegetation establishment.

ANTICIPATING & MITIGATING DELAYS | Our **DBT** has identified potential environmental risks associated with the Project and determined specific efforts that we will undertake during design and construction to minimize the likelihood that they will delay the project schedule if they are encountered (*Table 4.4.1.2*).

Table 4.4.1.2 – Planned Efforts to Avoid Delays Associated with Environmental Risks

Environmental Risk	Design Mitigation	Construction Mitigation
NEPA Clearance	All design elements will remain within the proposed LOD, and we will minimize the LOD wherever practical.	NEPA Document included in the EMP. Orange fencing will be placed around resources to be avoided; environmental training will be provided to construction staff. CM will ensure all commitments are tracked and satisfied during construction.
Water Quality	Our design eliminates impacts to a tributary of Meadow Creek so that regulatory permits and stream mitigation is not required.	N/A. Risk has been eliminated
Wetlands	Our design will stay within the footprint identified in the RFP so that no wetlands are impacted.	N/A. No wetlands will be impacted by the Project.
Threatened and Endangered (T&E) Species	DBT will coordinate with the USFWS regarding the potential presence of suitable habitat for the NLEB through the self-certification process. The DBT design reduces the amount of forest clearing (potential NLEB habitat) within Element E by 52%.	A TOYR calendar has been included in our Project Schedule to ensure that tree removal activities are outside of any TOYR imposed by the USFWS or VDOT and are not on the Project's critical path. Orange fencing will be placed around clearing limits to ensure preservation of the bat habitat to the greatest extent possible.
Hazardous Materials	Phase I/II Environmental Site Assessments data were taken into account to avoid construction processes that would require disturbing contaminated soil and groundwater.	Deep excavations will be avoided to minimize encountering petroleum that could be in the project area's groundwater. The buildup in Element E significantly reduces the need to cut into existing subgrade.

SCHEDULE INTEGRATION | Our **DBT** purposefully included environmental staff from the design and construction teams to help develop the Proposal Schedule so time required for permits and approvals, TOYRs, and compliance activities could be accurately and realistically incorporated. By eliminating impacts to a tributary to Meadow Creek near Brandywine Drive, our Team will not need to coordinate with USACE which will save time in our schedule. We assessed the risk associated with each environmental activity and applied an appropriate amount of float to ensure that environmental compliance does not drive the Project's critical path. We have incorporated the anticipated April 1-November 15 tree clearing TOYR in our proposal schedule, and specifically included clearing as a separate submittal in our Early Works package to accommodate the TOYR. Anticipated timeframes for the acquisition of environmental approvals and the amount of time we have allowed in the Proposal Schedule are identified in *Table 4.4.1.3*.

Table 4.4.1.3 – Anticipated Major Permits/Approvals and Timelines

Agency	Permit Type/Approval	Anticipated Timeframe	Schedule Allowed Timeframe
VDOT	Environmental Management Plan	21 days	32 days
VDEQ	VPDES	2 months	2 months
VDOT	Right-of-Way Reevaluation (EQ-201)	21 days	21 days
VDOT	PS&E Reevaluation (EQ-200)	21 days	21 days
USFWS	Section 7 Concurrence	2 months	3 months

The schedule we have developed accounts for finalizing NEPA re-evaluations before ROW and PS&E authorizations and appropriately incorporates the construction TOYR for tree clearing.

4.4.2 Utilities

APPROACH TO UTILITY COORDINATION, ADJUSTMENTS, AND RELOCATIONS

Our **DBT** has extensive experience locating, avoiding, mitigating, and relocating every type of utility that may be encountered on the Project. The **DBT**'s Utility Manager, **Richard Bennett**, has also been serving as the Utility Manager on the nearby Albemarle Intersection Bundling DB Project. Richard brings over 50 years of utility relocation expertise and relationships to our **DBT**. Our first priority is to avoid utilities wherever possible. When existing utilities cannot be avoided, we will leverage Richard's existing relationships with utility owners in the area to ensure that the required relocations are coordinated and completed ahead of schedule so they do not delay project completion. Richard will be intimately involved with the design and construction of the project to make sure our **DBT** minimizes impacts where conflicts cannot be avoided and mitigates potential conflicts with unexpected utilities.

4.4 Project Approach

We have developed a comprehensive approach to utility coordination that we have used and refined on previous successful DB projects for VDOT. We aim to build upon our existing relationships to develop continuous communication and coordination with each impacted utility throughout the design, conflict analysis, utility relocation, and construction phases of each project element as shown below:

RFQ & RFP Phase: Contact all utility owners, prepare a Utility Investigation Plan and collaborate with the Design Team.

Preliminary Design Phase: Perform test hole investigations. Work with Designers to evaluate conflicts/ solutions. Prepare 3-D modeling to compare proposed design solutions to existing utilities so conflicts can be avoided or minimized.

Final Design Phase: Hold UFI meeting. Confirm items with utility owners. Prepare Preliminary Utility Adjustment/ Relocation Plans. Work with utility owners to determine need for utility easements and incorporate into ROW plans. Obtain and review PS&E from utility companies. Finalize cost responsbilities. Prepare utility relocation agreements.

Utility Relocation Phase: Incorporate final utilty plans into roadway plans. Prepare an agremeent covering any utility betterment. Closely monitor utility schedule and record progress in Utility Status Report.

Construction Phase: Discuss and implement solutions if utility related issues arise during construction. Prepare as-builts. Secure final billings and close out letters.

Our **DBT** has thoroughly reviewed the RFP Plans to best understand the exact locations of potential utility conflicts. This understanding has been workshopped with the Design Team to identify ways to minimize required relocations. Our **DBT** has already begun coordination with potentially impacted utility owners to expedite the utility relocation process and has a thorough understanding of the challenges presented by each utility.

EXISTING UTILITY OWNERS AND PREVIOUS EXPERIENCE WORKING WITH THEM

We have reviewed the subsurface utility designating files provided by VDOT side-by-side with the utility owners in the corridor to verify their accuracy, identify opportunities for avoidance, and determine the extent of impacts that are unavoidable. During these meetings, we have identified locations where additional utility test holes can be obtained after project award to supplement the as-built information and verify the extent of impacts. *Table 4.4.2.1* identifies the Utility Company representatives that we have already engaged.

Table 4.4.2.1 –Utility Companies with Facilities Within the Project Corridor

Utility Owner	Contact
❖ ACSA	Richard Nelson | rnelson@serviceauthority.org | (434) 977-4511
City of Charlottesville (DPU)	Roy Nestor | nesterr@charlottesville.gov | (434) 970-3908
❖ City of Charlottesville (Gas)	Christian Chirico | chiricoc@charlottesville.gov | (434) 970-3811
RWSA	Victoria Fort | vfort@rivanna.org | (434) 906-2183
❖ Dominion - Distribution	Nate Horstick | Nathaniel.d.horstick@dominionenergy.com | (571) 997-5339
Dominion - Transmission	Melissa Stephens | Melissa.L.Stephens@dominionenergy.com | (540) 280-3318
❖ BrightSpeed (Century Link)	Therese Bryant | theresa.bryant@brightspeed.com | (980)376-1335
❖ Comcast	Philip Perry | philip_perry@comcast.com | (540) 769-7043
Fiberlight	Wayne Haithcox | wayne.haithcox@fiberlight.com | (571) 421-7575
❖ MCI/Express-Tek	Andrew Huffine | ahuffine@express-tex.com | (540) 827-8444
❖ Segra (Lumos)	Dean Scheidt | dean.scheidt@segra.com | (540) 457-0711
❖ Verizon MCI	Adam Rice | adam.rice@verizon.com | (571) 220-8979
❖ Qwest (Lumen)	Mark Harley | mark.harley@lumen.com (610) 613-0979
❖ Bowman has recent and relevant experience coordinating utility relocations with these Utility Owners	

As an example of our **DBT**'s success in working with utility owners, during our preliminary coordination with the Rivanna Water and Sewer Authority (RWSA), we discussed their long-range plan for interconnection of their water main between US 29 and the area east of the Project. RWSA has not selected a final water main alignment alternative or achieved funding approval for this conceptual betterment. Our **DBT** will implement a design enhancement that preserves a sub-surface corridor for this future water main. This enhancement mitigates future construction challenges and impacts to Hydraulic Road.

POTENTIAL UTILITY CONFLICTS AND RESOLUTIONS

Our **DBT**'s advanced coordination and 3D model of subsurface utilities has allowed us to **avoid 23 of the 27 (85%) potential utility conflicts** as shown in the RFP plans. This significantly reduces the potential cost and schedule risk associated with utility relocations. Utility conflicts avoided by our **DBT** are outlined below:

Table 4.4.2.2 – Potential Utility Conflicts Avoided by our DBT

Location	Potential Utility in Conflict	Our DBT Resolution
Element A	MCI FO line in median south of Hydraulic	✓ Avoided by drainage design modifications
Element A	Dominion Power OH Poles	✓ Avoided by curb ramp design modifications
Element A	Brightspeed Duct Bank	✓ Avoided by median island and drainage design modifications
Element A	Charlottesville Gas Line	✓ Avoided by drainage design modifications
Element C	Dominion Electric Duct (Southbound)	✓ Avoided by ped bridge design modifications
Element C	Brightspeed Duct Bank (Southbound)	✓ Avoided by ped bridge design modifications
Element C	Gas Line in Median	✓ Avoided by ped bridge design modifications
Element C	RWSA 18" Water line in Median	✓ Avoided by ped bridge design modifications
Element C	MCI FO line (Northbound)	✓ Avoided by ped bridge design modifications
Element C	Dominion UGE (Northbound)	✓ Avoided by bus shelter design modification
Element C	Dominion UGE (Northbound)	✓ Avoided by ped bridge design modifications
Element C	Middle Mile UG FO (Northbound)	✓ Avoided by ped bridge design modifications
Element C	Comcast CTV (Northbound)	✓ Avoided by ped bridge design modifications
Element D	Dominion OH Angle Pole	✓ Avoided by realigning sidewalk
Element D	Charlottesville Sanitary Sewer	✓ Avoided by storm sewer design modifications
Element D	Charlottesville 12" Water Line	✓ Avoided by realigning sidewalk and modifying storm drain
Element D	Charlottesville Gas Line	✓ Avoided by realigning sidewalk and modifying storm drain
Element D	Dominion UGE Duct	✓ Avoided by reducing excavation
Element D	Comcast UG CTV	✓ Avoided by reducing excavation
Element D	Segra UGFO	✓ Avoided by reducing excavation
Element E	Brightspeed UGFO Junction Box	✓ Avoided by curb ramp design modifications
Element E	Brightspeed UGFO	✓ Avoided by grading design modifications
Element E	Charlottesville Sanitary Sewer	✓ Avoided by storm sewer design modifications

Our **DBT**'s technical concept will require four utility relocations. Each specific relocation and our **DBT**'s approach to mitigating their unique risks is outlined below:

Table 4.4.2.3 – Required Utility Relocations

Owner	Utility	Risk/Mitigation
Albemarle County Service Authority (ACSA)	Sanitary Sewer Along Southbound US 29 at Element C	***Reason for Relocation***: The location of the western abutment and ramps for the pedestrian bridge avoid critical electrical and fiber optic utilities. The location of the pedestrian ramp impacts the existing gravity sanitary sewer. Our Team sought approval from ACSA to use deep foundations and our structural ramp concept to span over the utility. Due to maintenance access concerns, the sanitary sewer required relocation outside of the structural footprint.
		Risk Mitigation: The cost and time impacts of relocating the sanitary sewer is substantially less than impacting the electrical duct bank and communication conduits because the sanitary sewer can be relocated as an in-plan utility and self-performed by **CCI** to maintain control of the schedule. The span structure for the pedestrian ramp provides additional space to relocate the sanitary sewer within the right-of-way and will not impact in the Stonefield Shopping center.
		Anticipated Time for Relocation: 45 days
		Time Allowed in Proposal Schedule & Available Float: 60 days (89 days)
City of Charlottesville	8" Waterline Along Hillsdale Drive at Element D	***Reason for Relocation***: The drainage design requires an inlet at the median on Hillsdale Drive that directly impacts the existing 8" Waterline.
		Risk Mitigation: The roundabout design significantly reduces the excavation required for the full depth pavement and avoids conflicts with private utilities in the area. The waterline will be relocated as an in-plan utility and self-performed by **CCI** to maintain control of the relocation schedule. Avoiding the private utilities eliminates concerns that the private utility owners would not relocate their facilities on schedule.
		Anticipated Time for Relocation: 45 days
		Time Allowed in Proposal Schedule & Available Float: 60 days (47 days)

Table 4.4.2.3 – Required Utility Relocations (Continued)		
Owner	**Utility**	**Risk/Mitigation**
Brightspeed	Overhead Telephone Pole Along Hydraulic Road (Between Brandywine Drive and US 250 Bypass)	***Reason for Relocation***: The proposed trail along Hydraulic Road directly impacts the existing overhead telephone pole. This impact was unavoidable.
		Risk Mitigation: Coordination with Brightspeed has already begun. The relocation will be straightforward and is scheduled so that construction of other elements can be performed concurrently with the relocation of the pole so the Project is not delayed. The relocation is not on the project's critical path.
		Anticipated Time for Relocation: 120 days
		Time Allowed in Proposal Schedule & Available Float: 180 days (213 days)
City of Charlottesville	8" Sanitary Sewer Along Hydraulic Road (Just West of US 250 Bypass)	***Reason for Relocation***: An existing sanitary sewer manhole is located within the splitter island for the US 250 Bypass spur ramp onto Hydraulic Road. The island will be modified as part of the project and the new location of the spur ramp would place the manhole within the pavement. Relocating the manhole will allow maintenance of the sanitary sewer without closing the road.
		Risk Mitigation: The sanitary sewer will be relocated as an in-plan utility and the work will be self-performed by **CCI** so we maintain control of the schedule.
		Anticipated Time for Relocation: 45
		Time Allowed in Proposal Schedule & Available Float: 60 days (177 days)

SCHEDULE INTEGRATION AND CONSTRUCTION SEQUENCING

The Project is located within an urban corridor that has many existing utilities to serve the adjacent commercial properties. Our **DBT** purposefully avoided as many existing utilities as possible to minimize the likelihood that utility relocations would impact the critical path and delay the delivery of the Project. Three out of the four utility conflicts that were unavoidable are considered in-plan and will be self-performed by **CCI** to eliminate risk associated with delays caused by the utility company. The only utility requiring relocation by a private company is adjacent to the proposed trail. We have sequenced construction in our Proposal Schedule so that this Element of the Project is not on the critical path for completion.

4.4.3 Geotechnical

Our **DBT** has reviewed the Geotechnical Data Report (GDR) included in the RFP Information Package alongside available geologic maps and internal information available on nearby projects. The results of our review are described below, demonstrating our **DBT**'s commitment to addressing geotechnical risks in our project approach.

GEOTECHNICAL INVESTIGATIONS | The RFP and RFQ provided extensive subsurface data. We have used this information to develop our geotechnical design and will obtain additional subsurface data during the Scope Validation Period to validate key assumptions, meet VDOT Manual of Instruction (MOI) requirements, and complete final project design. Our geotechnical investigation program will consist of additional Standard Penetration Test (SPT) borings, laboratory CBR and/or Unconfined Compressive Strength tests on pavement subgrade materials, consolidation and shear strength tests, and in-situ Pressuremeter Tests (PMT) in existing fill, residual soils, and Intermediate Geomaterial (IGM).

UNDERSTANDING OF GEOTECHNICAL RISKS | Based on our review, the Project is located within the Lynchburg Group of the Blue Ridge Anticlinorium geologic group. The Project is generally underlain by fill with deep fills (up to 37 feet) encountered in borings for the proposed Element C pedestrian bridge. Both the fill and natural residual soils consist of predominantly silt, lean clays, elastic silts, and silty sands with variable amounts of gravel and rock fragments. The natural residual soils transition relatively quickly to IGM at depths between 6.5 and 48.5 feet below current site grades. Although bedrock was not encountered in the borings, rock ledges may be encountered within the IGM layer as indicated in GDR Boring 22BH-007. The predominant rock type in this area consists of gneiss, conglomerate, meta-argillite, phyllite, and granite. Based on these considerations, we have identified the geotechnical risks in *Table 4.4.3.1*. Our **DBT** carefully evaluated each of these geotechnical risks and developed our design concepts and construction strategies to eliminate or mitigate these risks.

Table 4.4.3.1 – Geotechnical Risks, Mitigations, and Enhancements

Settlement of Embankment Fill, Downdrag on Abutment Piles, Settlement of Adjacent Structures	*Risk Impact*	• Significant total and differential settlements resulting in unsatisfactory structure performance • Highly variable subsurface conditions from existing fills • Magnitude of settlement and the impact on existing utilities adjacent to approach ramps • Damage to adjacent structures
	Mitigations	• Limit fill/wall heights to approximately 6-ft and utilize span type structures supported on deep foundations for pedestrian bridge ramps in lieu of retaining structures to eliminate the need for settlement waiting periods and reduce the design risks associated with settlement and downdrag • Obtain additional geotechnical data at the new elevated pedestrian walkway substructures • Perform pressuremeter testing to better characterize the settlement and strength of on-site soils
	Enhancements	• Utilize drilled shafts and span type structures for support of pedestrian bridge ramps to avoid significant retaining structures, minimize settlement risks, and accelerate construction delivery
Impacts to Adjacent Structures & Deep Foundation Construction Challenges	*Risk Impact*	• Ground vibration could cause damage to adjacent utility lines and structures, particularly the 8" cast-iron water main in the median of US 29 • Piles and drilling could prematurely refuse on small rock lenses • Grading within the zone of influence of Dominion self-supporting distribution pole structures at the Hydraulic Road/US 29 intersection
	Mitigations	• Use drilled shafts in lieu of driven piles to minimize construction vibrations • Perform additional exploration at deep foundation element locations to identify obstructions and verify competent bearing materials • Avoidance and control of grading within the immediate vicinity of the Dominion poles • Vibration monitoring
	Enhancements	• Self-perform drilled shaft construction with experienced crews minimizing schedule risk and accelerating construction delivery
Unsuitable Pavement Subgrade with CBR Values <5	*Risk Impact*	• The presence of highly plastic, wet, and/or low strength subgrade soils
	Mitigations	• Conduct additional field exploration to better delineate unsuitable soils • Conduct additional CBR and/or Unconfined Compressive Strength tests to determine/verify the design Resilient Modulus • Sequence construction to efficiently dry soils mechanically to optimum moisture content • Chemically dry or modify highly plastic or wet soils with lime • Undercutting of unsuitable subgrade soils and replace with suitable soils or select material
	Enhancements	• The **DBT**'s local presence and adjacent on-going projects provide rapidly available sources for suitable replacement soils for use in undercut and excavation backfills minimizing cost and availability risks while improving sustainability • Build-up required for the existing roundabout, using this readily available fill material reduces the need for undercut and associated schedule and performance risks
Reconstruction of Existing Slopes	*Risk Impact*	• Fill required for roadway profile and traffic safety elements such as guardrail site preparation increases driving forces on slopes, reducing stability, such as the slope adjacent to Meadow Creek
	Mitigations	• Use long-post guardrail to avoid additional back-up requirements for slope minimizing fill placement while providing a capable traffic safety solution
	Enhancements	• Self-perform guardrail construction with experienced crews minimizing schedule risk and accelerating construction delivery

4.4.4 Quality Assurance/Quality Control (QA/QC)

Every member of the **CCI DBT** has a history of providing quality services for both the design and construction of transportation facilities. Our **DBT** purposefully identified QA/QC team members who have experience working together on successful projects, reviewing project designs, and evaluating construction sequencing for efficiency, constructability, and safety. We have developed and implemented corrective plans and measures that work in the real world. Our effective QA/QC program enables us to deliver transportation projects with fewer mistakes, and reduce the amount of costly, and time consuming, re-work. To accomplish this mission, we have assigned highly experienced and technically knowledgeable senior staff to important QA/QC team positions.

APPROACH TO QA/QC | Our QA/QC process begins with our Team's unique and fundamental understanding of the VDOT Minimum Requirements for Quality Assurance and Quality Control on Design-Build and Public-Private Transportation Act Projects, dated July 2018 (the VDOT QA/QC Manual). Not only is our Team currently following the guidance in this manual on the Albemarle Intersection Bundling DB project, but our team member, Ian Millikan, PE, DBIA, PMP, CCM, wrote much of the revised language when he was serving as VDOT's Assistant State Construction Engineer. In addition to integrating value engineering concepts into our design, Ian will provide specific training to make sure that everybody on the **CCI** Team understands their role in the quality assurance and quality control process. Our Design Manager, Julia Simo, PE also recently implemented VDOT's tablet-based inspection

program while formerly serving as VDOT's State eConstruction Engineer. She will provide additional training to all QC, QA, and VDOT's OIA & OIV staff to ensure all eConstruction platforms are utilized to the fullest extent possible. Photos documenting every step of construction will be tagged to plan sheets, punchlists identifying design and/or construction deficiencies will be continuously generated and reviewed regularly by the QAM, and inspectors will digitally upload inspection reports at the end of each day. Our Team's collaborative use of technology will provide the QAM with every resource necessary to ensure the delivery of a quality project.

The **DBT**'s Quality Plan is comprised of two sections: the Design Quality Plan and the Construction Quality Plan. We understand the Quality Plan will be a living document that is updated throughout the Project duration. It will be closely monitored by our QAM, Avtar Singh, PE, PMP, DBIA and updated as necessary whenever we develop or receive new project information. The most up-to-date version of the Quality Plan will be available to VDOT at all times.

DESIGN QUALITY PLAN | Our Design Manager, Julia Simo, PE will ensure the quality of all design deliverables. Julia will review each design submittal/package to ensure that it conforms with the contract requirements, standards, specifications, and the approved project Design QA/QC Plan. She will tailor a checklist for all applicable and required design elements. The checklist will be comprised of the VDOT LD-436 form and other internal checklists that our design team has developed on similar DB projects to minimize the effort it takes VDOT to provide comments. Our Team will use the following approach for design QA/QC:

- Independent Senior Engineers within their respective disciplines will serve as Reviewers and check each design submittal. They will check and sign off on all design calculations. Each Reviewer will ensure that the design meets RFP requirements.
- Prior to each plan submission, a constructability/maintainability review will be performed by **CCI**, and a design review will be performed. In addition to traditional QA/QC, these reviews will emphasize adherence to the ROW limits and environmental restrictions/commitments, and make sure design submittals are well structured and easy for VDOT to review and approve.
- Design QA/QC Reviewers will sign off as appropriate to verify that each design submittal has completed the QA/QC process identified in the Design QA/QC Plan.

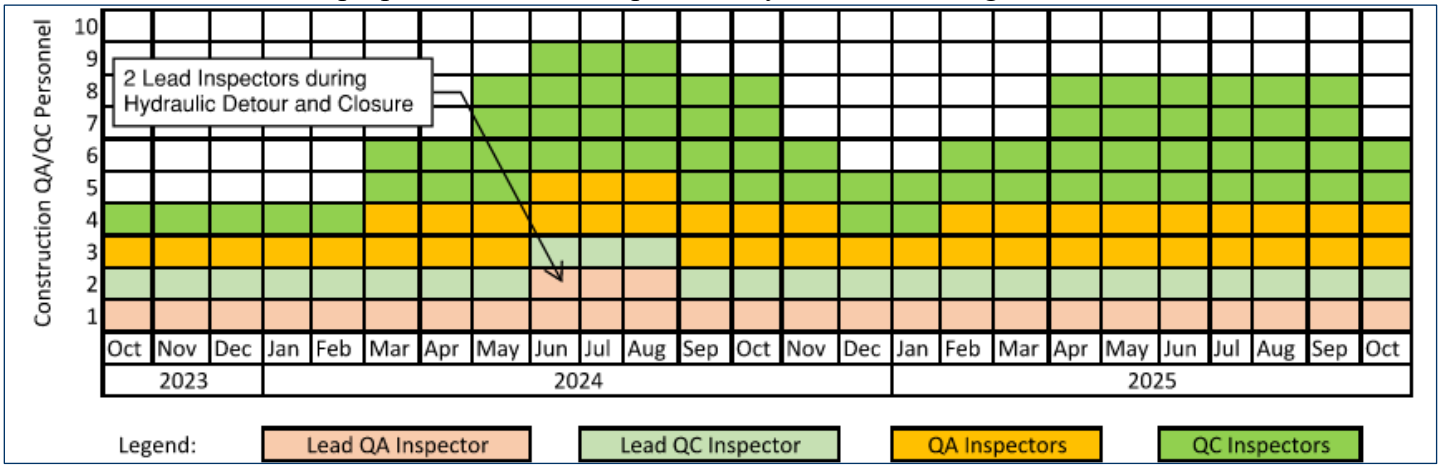
Supporting Julia Simo, PE in the design quality plan process will be Mark Ledebur, PE with Wallace Montgomery (WM) and Ian Johnston, PE with Clark Nexsen (CN). WM and CN have committed to providing independent technical reviews of each other's deliverables. This belt-and-suspenders approach is the same method WM and CN used on the Albemarle Intersection Bundling DB project. It leverages the respective QA strengths and staff experience of the two major design firms to ensure high quality design.

CONSTRUCTION QUALITY PLAN | Our Team has the design-build experience required to understand the importance of executing a meaningful Construction Quality Plan that saves both VDOT and the Design-Builder time and money. We plan to construct every element of the project correctly the first time, and we have proven that we can do this successfully by following a detailed Construction Quality Plan. Our QAM, Avtar Singh, will develop the Construction Quality Plan specifically for the Hydraulic Road and US 29 Improvements Project based on the proposed baseline schedule so that inspection resources are readily available for every test, inspection, witness point, and hold point required in the VDOT QA/QC Manual. Avtar knows that the key to delivering a quality design-build project is preparation and communication. This will be achieved by conducting a thorough Preparatory Inspection Meeting (PIM) prior to the start of each work activity that not only includes construction personnel and QA/QC staff, but also specifically invites NPDES and ECI personnel to ensure E&S control and environmental compliance is "baked in" to every activity. This is in addition to the fundamental responsibilities of creating and maintaining a digital Materials Notebook, appropriately documenting all deficiencies, and being a proactive advocate for the timely and thorough resolution of deficiencies prior to the submission of the monthly payment application.

PIMs will be led by Avtar and include pertinent members from the design team, the Construction Manager, Quality Control Manager, Lead QA Inspector(s), and every QC Inspector or QA Inspector that will be involved with that work package. VDOT's Project Manager and OIA/OIV Inspection staff will also be invited and encouraged to attend. Avtar will schedule the meeting at least two weeks in advance to maximize attendance, and he will distribute a detailed agenda five days before each meeting. After a safety message, the first topic of each meeting will be a discussion of the design intent for that work element to confirm the completeness and suitability of the plans that will be constructed. The specific inspection plans and testing plans that were developed for the work activity will be reviewed in detail so everybody has a comprehensive understanding about where, when, and who will be performing every materials test and inspection. Avtar will specifically address any right-of-way constraints, utility locations, environmental permit requirements, and SWPPP concerns that are unique to the work activity, so the entire team is aware of potential risks and agreed upon mitigation strategies. Minutes of the PIM will be distributed for comments within two days after the meeting. The final minutes will become an official appendix to the Construction Quality Plan and uploaded digitally so they are easily accessible by VDOT and the entire **DBT** at any time in the field or in the office.

4.4 Project Approach

Even the best Construction Quality Plan can only be effective if an appropriate amount of resources and time are dedicated to ensure it is followed. We will empower the QAM to develop a QA/QC Staffing Plan that forecasts the number of QA and QC personnel that will be required each month based on the work activities identified in the baseline construction schedule to ensure every construction activity is adequately inspected. This staffing plan will be a living document that is regularly updated and included in each Monthly Report. Based on the work activities identified in our proposal schedule, the preliminary QA/QC Staffing Plan is shown below:



The Materials Notebook, Deficiencies Log, and Non-Conformance Report will be maintained digitally so they are accessible to the **DBT** and VDOT at all times. The Materials Notebook will include all documentation necessary to verify that the appropriate materials were sourced (C-25), delivered (tickets/receipts), and tested (material test reports) prior to being incorporated into the Project. The Deficiency Log will be used by all project staff (including, but not limited to the VDOT PM, QAM, Lead QA Inspector, and QC/QA/OIA/OIV Inspectors) to document any element of the project that is inspected and determined to not be in compliance with the contract. This will serve as a running punch list of items that must be corrected prior to acceptance. Any item on the Deficiency Log that is not corrected prior to the next Application for Payment, or items that are not correctable (such as safety or environmental permit violations) will be identified in the Non-Conformance Report. Avtar will review the Materials Notebook, Deficiency Log, and Non-Conformance Report prior to certifying payment for each work package on the monthly payment request. The QAM will be authorized by the DB Project Manager to stop work for any issue, including those related to safety, environmental, and nonconformances.

MINIMIZING THE NEED FOR ADDITIONAL VDOT OVERSIGHT | Our **DBT** has developed an integrated strategy to working with VDOT that will reduce the need for additional oversight. The key will be consistent, concise, and transparent communication at each level of all organizations. This begins with the design review and comment response process. Our Team prides itself on working with VDOT by hosting over-the-shoulder review meetings to understand the intent of design review comments so we can avoid unnecessary, and time consuming, back-and-forth correspondence. This approach has been incredibly successful on the Albemarle Intersection Bundling DB project where VDOT's PM noted the following on the July 2021 Design-Build Performance Evaluation, "**The Designer (WM) continues to address the Department's design review comments with an attitude of what is best for the project vs. an attitude of only doing the bare minimum.**"

Our commitment to transparent communication with VDOT will continue through the Project construction phase. The QAM and Lead QA Inspectors will be on site full-time for the duration of construction activities and have an open and direct line of communication with VDOT at all times (24/7/365), so VDOT is always aware of when and where construction activities and QA and QC inspections are taking place. During critical sequences of work such as the roundabout closure and detour, additional inspection resources will be provided to ensure coverage at all times as work is being performed. Our **DBT** also proposes to designate a second Lead QA inspector for structural work at the pedestrian bridge since it is concurrent with the construction of the roundabout. Daily diaries and material test reports will be electronically uploaded and available for VDOT review within 48 hours of the observations and testing being completed. The folder structure for this information will be well organized so it can be easily audited. We follow through on our commitment to construction quality and minimize the need for additional VDOT oversight as witnessed by the VDOT PM when noted the following on a recent DB Performance Evaluation, "**CCI has put a heavy emphasis on the importance of safety…CCI has implemented additional safety measures beyond what is required. So many things are going right, it would be hard to list them all.**"

4.5

Construction of the Project

Submitted by

Curtis Contracting Inc.

In Association With

WALLACE MONTGOMERY

4.5 Construction of the Project

Introduction

The **DBT** has extensive experience in developing a comprehensive approach to constructing Design-Build (DB) projects similar to the Hydraulic Road & US 29 Improvements Project. Our **DBT** has demonstrated this experience on projects in the Culpeper District such as the Albemarle Bundling Design-Build. A comprehensive approach to construction requires a consistent integration of our Team's design and construction experience. Our construction approach must provide a viable and realistic execution of our design concept that complies with or exceeds the various contractual and third-party constraints including but not limited to, resource availability, temporary construction accessibility, right-of-way clearance, utility relocation, and maintenance of traffic (MOT) limitations. We commit to **Project Final Completion by October 31, 2025**.

Table 4.5.1 – Construction Enhancements and Benefits
• Early Works Phase for relocation of critical utilities in areas not requiring right-of-way acquisitions
• Shifting of Median Pier for Element C to minimize conflict and impacts to existing median utilities
• Early identification of Bridge Staging and assembly area in former K-Mart parking lot for preparation of elements outside traffic
• Development of conceptual erection sequences to erect bridge elements previously assembled on-site
• Optimization of the Element C Pedestrian Bridge location and ramp construction to avoid high risk utility relocations
• Early development and submission of utility relocation packages with 3D conflict analysis to constructed elements
• Sequencing design and construction operations such that all VDOT responsible schedule activities, such as reviews, generally have at least 7 days of float. Where less float is present, we have included multiple review cycles to minimize schedule risk
• Use of early packages, concurrent design, and utility prioritization to deliver Project Completion with all lanes open to traffic by **October 31, 2025 – 36 days ahead** of the contractually required December 5, 2025 Project Completion
• Completion of the Hydraulic Road and Hillsdale Drive roundabout in 32 days or less achieving the full project incentive payment and enhanced beneficial use to motorists
• During closure of Hydraulic Road, our Construction Sequence maintains access to Dominion's facility through the Kroger entrance and the upper parking lot

Section 4.5.1 Sequence of Construction provides a walkthrough of the scope of work in each Phase and Segment with links to the Project Schedule. Section 4.5.2 Transportation Management Plan (TMP) places a focus on how our Team will safely control motorized and non-motorized traffic through the work zones, minimize delays, keep key stakeholders such as First Responders and Incident Management informed, and ultimately provide reliable travel times.

4.5.1 Sequence of Construction (SOC)

As previously described, our **DBT** has developed a Sequence of Construction (SOC) that allows the Team to achieve **Project Completion by October 31, 2025** to avoid Thanksgiving Holiday impacts. The developed SOC also focuses on the **early reopening of Hydraulic Road within the required 46 days of the closure** for construction of Element D, the Hydraulic Road and Hillsdale Drive roundabout. Our proposal sequence and schedule intend to complete the Roundabout within the 32 day no-excuses incentive window. This sequence further serves as the foundation for our Proposal Schedule included in *Section 4.6* which demonstrates our commitment to detailed and meticulous planning. Each portion of our sequence is predicated on the identification of constraints in each specific work area. We have developed an agile plan to satisfy or otherwise mitigate constraints to allow the expeditious prosecution of work. Constraints may include contractual, operational, design, review, permitting, and governmental approvals. During development of this proposal, the **DBT** has completed multiple risk and innovation task force meetings as described in *Section 4.3* allowing collaboration between our Design, Construction, and Quality teams. This integration ensures our SOC utilizes concepts that meet or exceed VDOT design criteria while promoting safe, efficient construction and minimal impacts. Our SOC takes into consideration the following key themes and elements:

- Timely completion of the Scope Validation Process including but not limited to conducting geotechnical exploration, verification of existing structure conditions, survey including right-of-way limits, pavement condition, and confirmation of Design Exceptions/Waivers identified in the RFP. To mitigate schedule risks often associated with geotechnical laboratory testing, the **DBT** has already identified gaps in the subsurface data and has a boring and access plan ready to submit upon NTP.
- Timely completion of Utility Validation processes to confirm type, horizontal location, and depth for all conflicting utilities. Utility test holes will provide survey grade data for completion of three-dimensional (3D) conflict detection and avoidance. This conflict resolution will be a foundational cornerstone of our design process to minimize utility relocations, outages, and risks.
- Minimizing disruption and safety concerns to the traveling public by reducing the number of major traffic shifts/detours required to maintain traffic.

- Prioritizing early design elements to submit and receive environmental permitting.
- Minimizing unnecessary ESC risks and therefore overall need for temporary stabilization measures.
- Prioritizing early design elements to advance all utility relocations. This includes maintaining an aggressive, while appropriate, project schedule driven by critical construction elements ensuring no overly compressed timeframes for design QA/QC review, constructability reviews, construction QA Plan development in accordance with the 2018 Minimum QA/QC Standards for DB, as well as all required agency reviews.
- Providing ample time and prioritizing base design for the procurement, detailing, and fabrication of long lead materials such as steel trusses for bridge construction, reinforcing steel, drainage structures, utility components, and signal components.

Our DBT has maintained four geographical Elements described in the RFP. Our Team proposes to complete construction over five unique timeframes or Phases over the course of the Project duration.

Our sequence maintains four work Elements, A, C, D, and E. A geographical map of the project Elements is shown in *Exhibit 4.5.1.1*. Element D represents the Hydraulic Road and Hillsdale Drive roundabout. It is important to consider that the construction of Element D will utilize a closure and detour of Hydraulic Road with temporary access provided to the existing businesses surrounding the Hydraulic Road and Hillsdale Drive Intersection. Element E consists of the Access Management Improvements on Hydraulic Road. The existing left-hand turns in Elements A and E may not be closed until the reopening of the functional Element D Roundabout. Piecemeal construction of Elements A and E is not desirable from a resource management or maintenance of traffic perspective. Our Team has developed our sequence to address improvements in Elements A and E and maintain a consistent workzone with fewer movements and hazards for drivers. This sequence simplifies public outreach with straightforward driver impacts. This approach also minimizes the number of simultaneous labor, material, and equipment resources lowering our planned sequence's susceptibility to labor and material availability risks.

Element C, the Pedestrian Bridge over US 29, is heavily constrained by potential utility conflicts including existing water, gas, electrical, and communication utilities. *Table 4.5.1.1* summarizes the various constraints and their mitigations pertaining to each element. During our risk and integration task force meetings, our **DBT** has determined the most advantageous and risk reducing mitigations for each of these constraints and has developed our sequence to enable their efficient implementation.

Table 4.5.1.1 – Project Element Sequence Constraints

Element	Constraint	Mitigations in Sequence
Project-wide	Lane closures must follow the table of Allowable Lane Closures in Part 2 Section 2.10.3	Sequenced for early design delivery and construction by overnight lane closures. Packages focus on minimizing alternating lane closures and maintaining consistency throughout the workzone.
Element A	Left hand turn closures on Hydraulic Road may not be implemented until the opening of the Element D roundabout	Sequenced to be completed following opening of Hydraulic Road Roundabout between two Phases that correspond to inside/outside work, effectively integrating optimized MOT design in construction sequence.
Element C	Relocation of existing 12" gravity sanitary sewer parallel to southbound US 29 must occur prior to the western abutment and ramp construction.	Developed an Early Works design and construction package to enable early sewer relocation and remove its conflict with bridge construction.
Element D	Relocation of the existing 8" water main along Hillsdale Drive and Hydraulic Road must be completed to avoid conflicts with storm sewer required for the roundabout	Early Works design and construction package enables early overnight activities for water line relocation along Hydraulic Road and Hillsdale Drive which removes schedule risk and complex MOT so work is accomplished during the Hydraulic Road closure and detour.
	The closure of Hydraulic Road at Hillsdale Drive must be completed between noon on the day after the last day of school and noon the day prior to the first day of school for Charlottesville & Albemarle Co Public Schools.	Sequence prioritizes all available project roadway crew resources to completing the roundabout and reopening of Hydraulic Road. No roadway or drainage work is sequenced in any other Elements during the closure eliminating additional traffic impacts and resource demands.
	Access must be maintained to Kroger and Whole Foods during the closure of Hydraulic Road and Hillsdale Drive.	During the closure period, no additional roadway lane closures including commercial entrances is sequenced to occur, maintaining access at all times to the adjacent businesses.
Element E	Left hand turn closures on Hydraulic Road may not be implemented until the opening of the Element D roundabout.	Sequenced to be completed following opening of Hydraulic Road Roundabout over two Phases that correspond to inside/outside work, effectively integrating optimized MOT design in construction sequence.

4.5 Construction of the Project

Our sequence focuses on five overarching construction phases. This breakdown into simplified Phases enables our **DBT** to sequence and prioritize design, ensure ample time and resources for utility relocations, manage overall project resources to avoid inefficiencies, improve safety and quality, advance concurrent work packages, and takes into consideration the need to maintain drainage in temporary conditions for a seamless ESC plan. *Exhibits 4.5.1.1* through *4.5.1.6* summarize the five-phase breakdown of the Project. The exhibits show how each phase includes specific elements of work in each of the four project Elements. In establishing the limits of each Phase, our **DBT** seeks to create continuous and logically traversable work areas ensuring a safe and efficient work zone. Additionally, the Phasing is developed to ensure that additional resources can be efficiently applied to the Project as they become available or the schedule mandates. The Exhibits also highlight key construction activities and MOT features for each distinct Phase and Element. *Table 4.5.1.2* outlines the primary scopes of work included in each Phase by Element.

Table 4.5.1.2 – Scope of Work by Phase and Element

Phase	Element	Scope of Work
Phase 1	Project-wide	Utility test holes; geotechnical exploration; survey; pipe inventory; clearing
Phase 2 – Early Works	Element C	12" Sanitary sewer relocation
	Element D	8" Water main and storm sewer relocation along Hydraulic Road and Hillsdale Drive; roundabout construction outside of traffic
Phase 3 – Hydraulic Closure	Element C	Bridge abutments and pier; pier protection system; approach ramp structures
	Element D	Roundabout construction in former Hydraulic Road travel lanes
Phase 4 – Interior Roadway Work	Element A	Closure of Hydraulic Road left turns; median pedestrian improvements at US 29
	Element C	Superstructure erection; US 29 median guardrail; median stabilization
	Element D	Hydraulic Road median islands outside roundabout
	Element E	Median strip construction; closure of left turns
Phase 5 – Exterior Roadway Work	Element A	Intersection pedestrian ramps; sidewalks; channelizing islands; surface paving
	Element C	Roadway widening; bus stop installation; surface paving; final stabilization outside
	Element D	US 29 outside guardrail; barrier; sidewalk completion; surface paving
	Element E	Hydraulic Road sidewalks; pedestrian ramps; curb and gutter; guardrail

Exhibit 4.5.1.1 – MOT All Phases

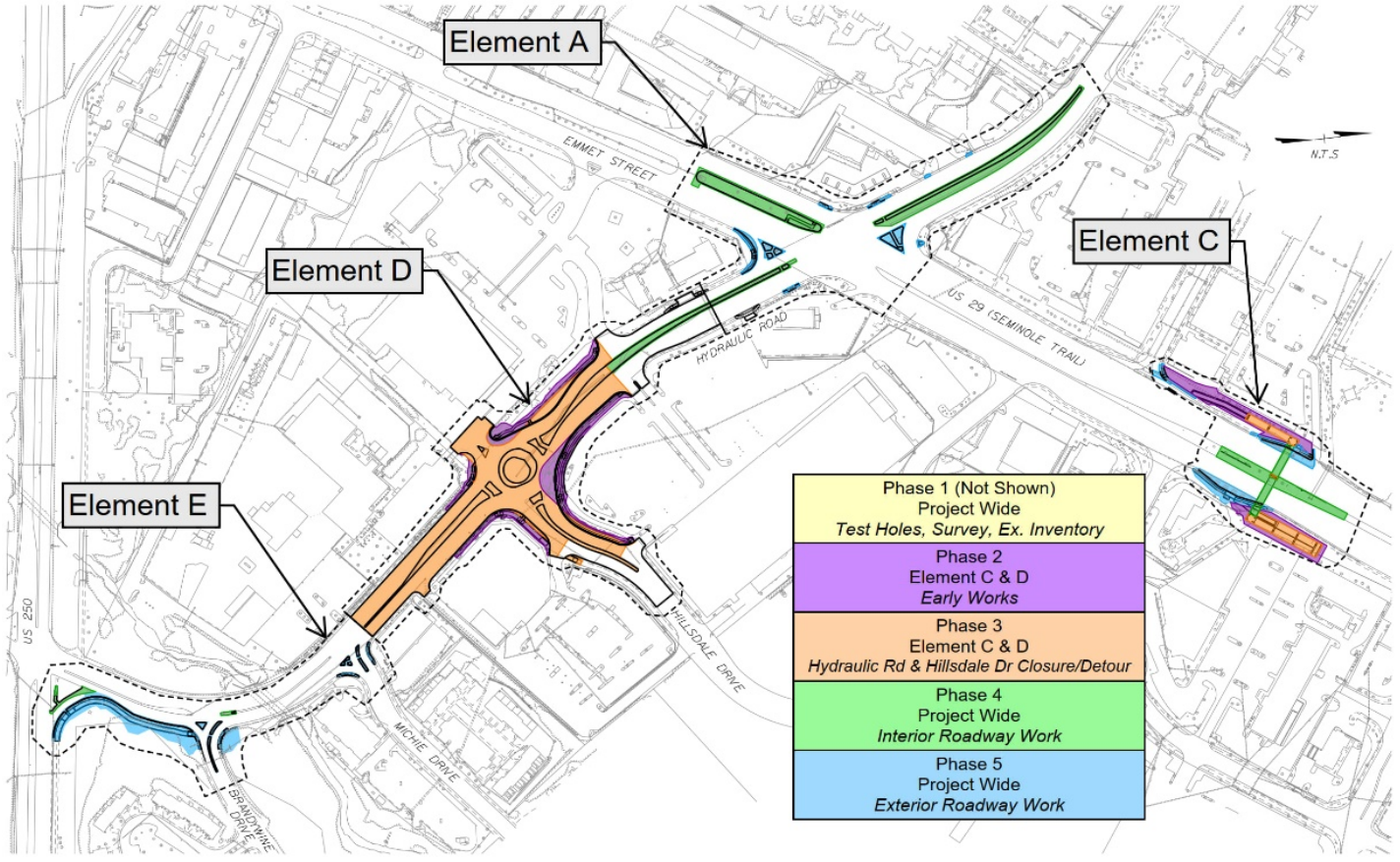


Exhibit 4.5.1.2 – MOT Phase 1

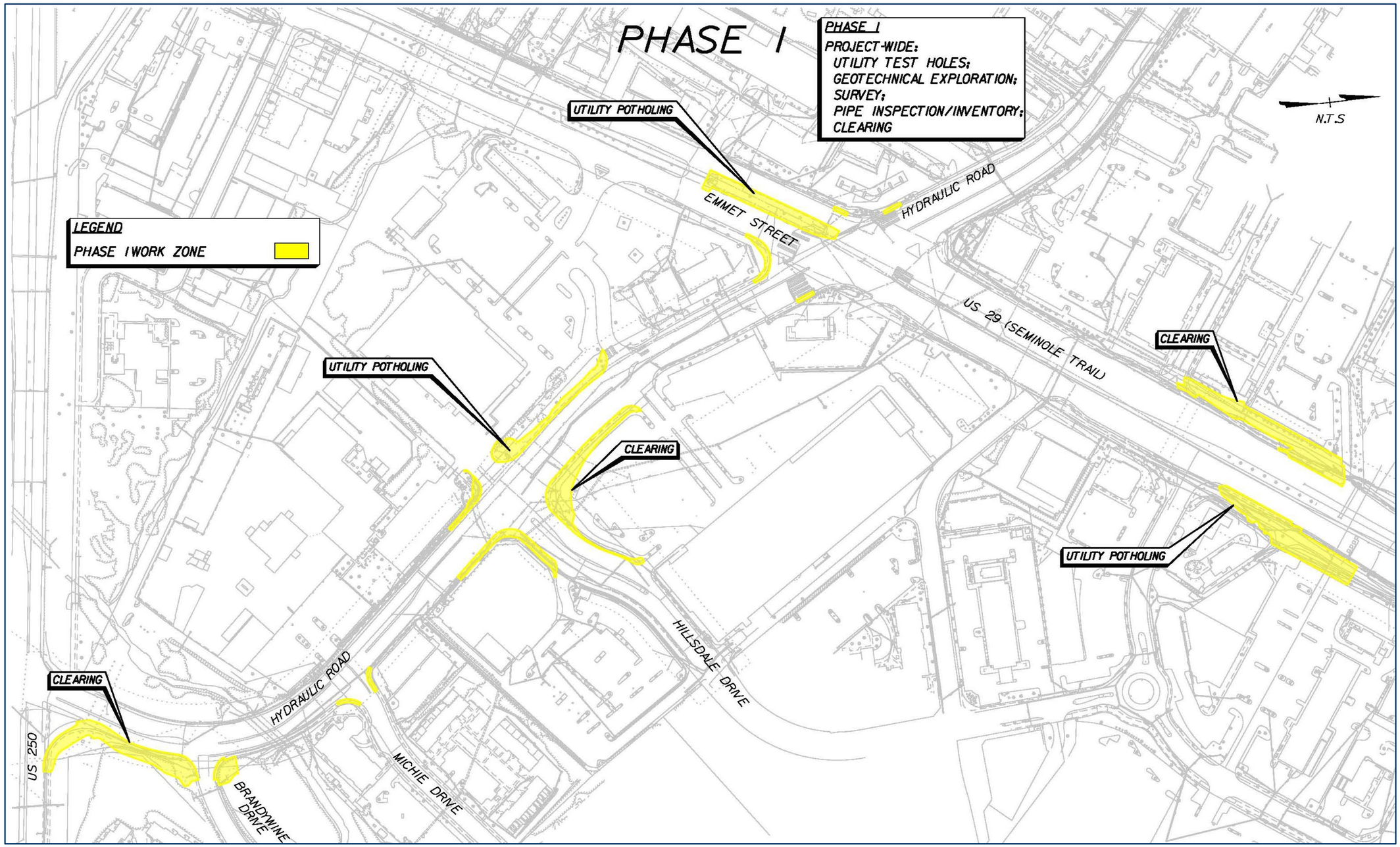


Exhibit 4.5.1.3 – MOT Phase 2

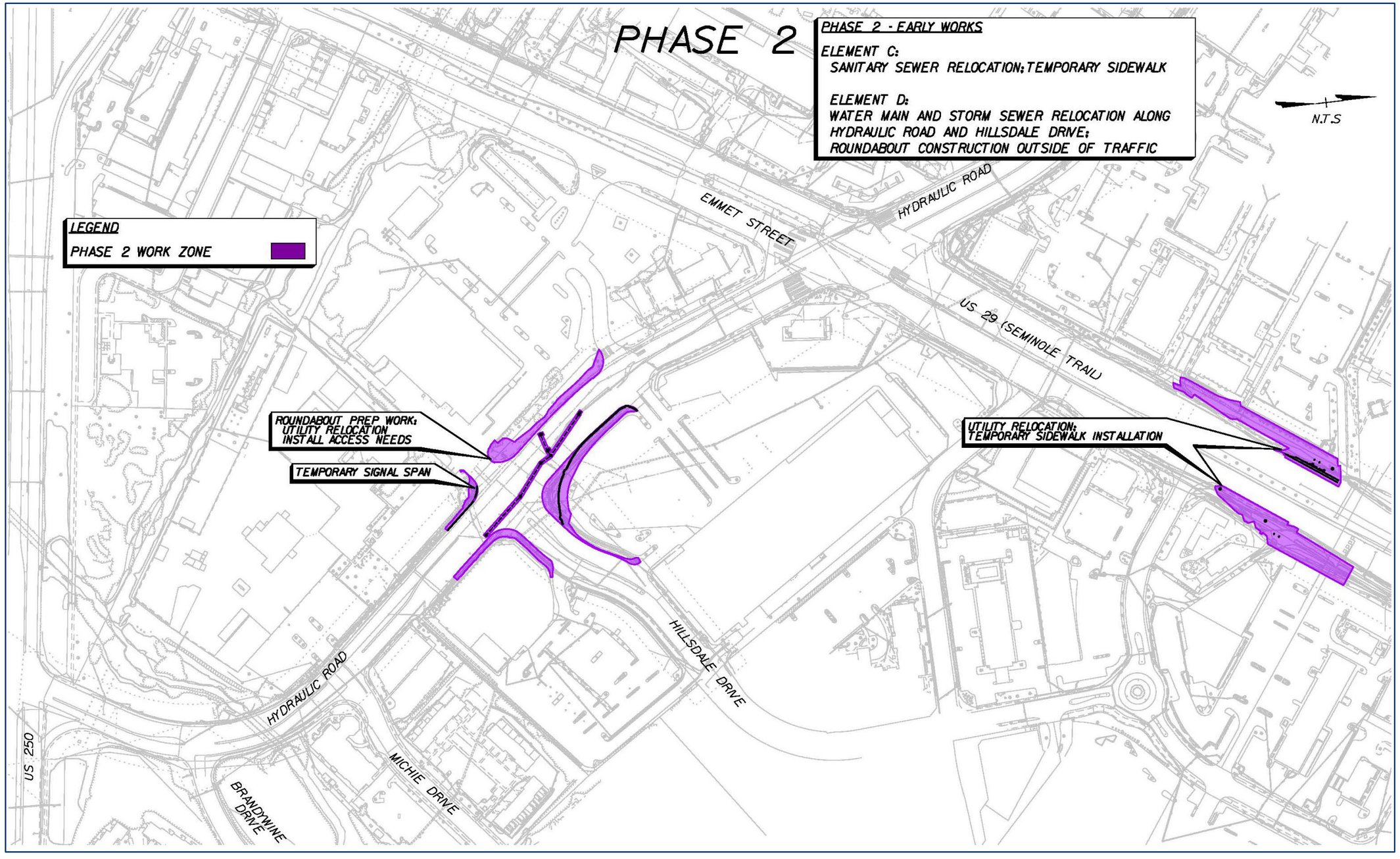


Exhibit 4.5.1.4 – MOT Phase 3

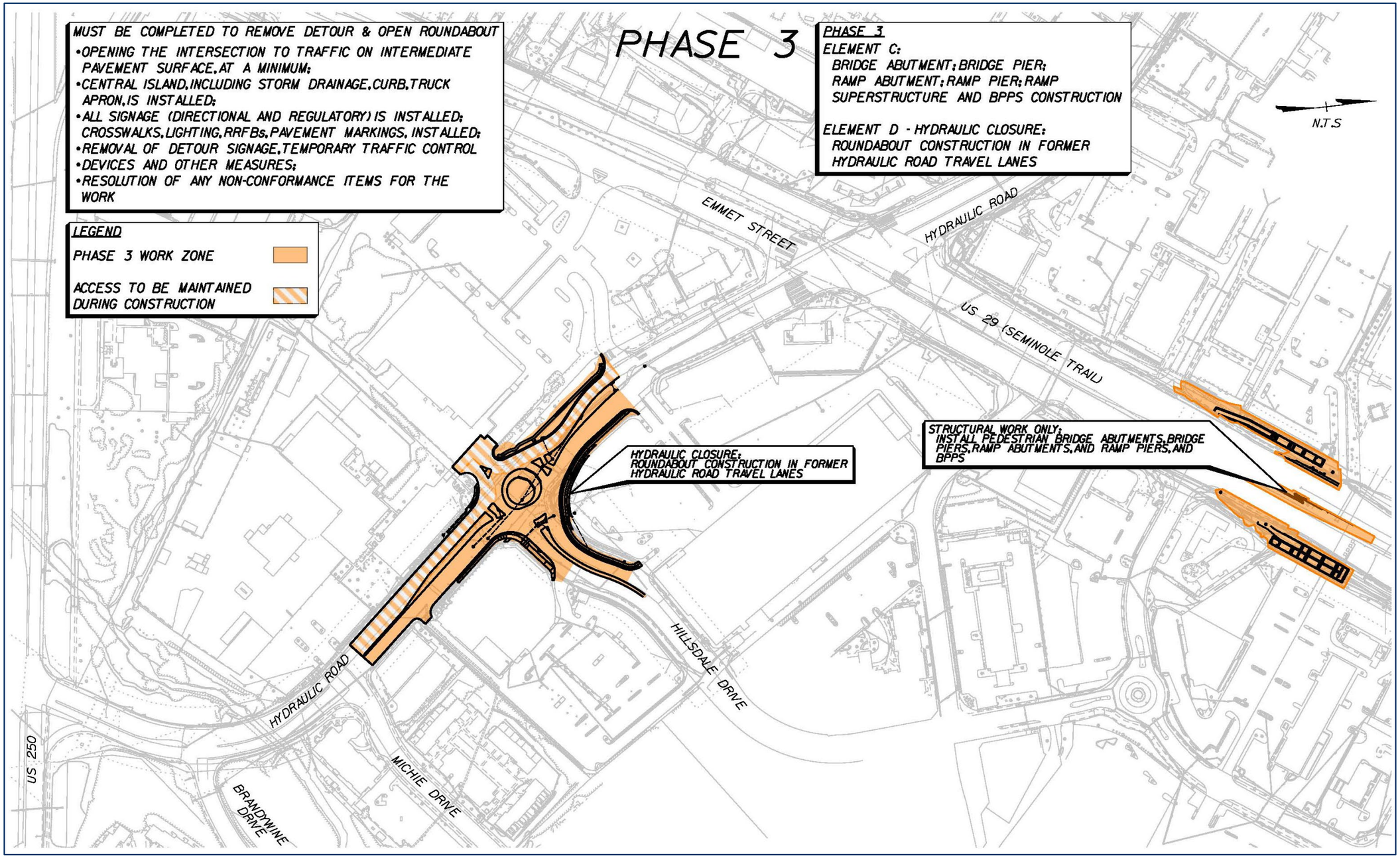


Exhibit 4.5.1.5 – MOT Phase 4

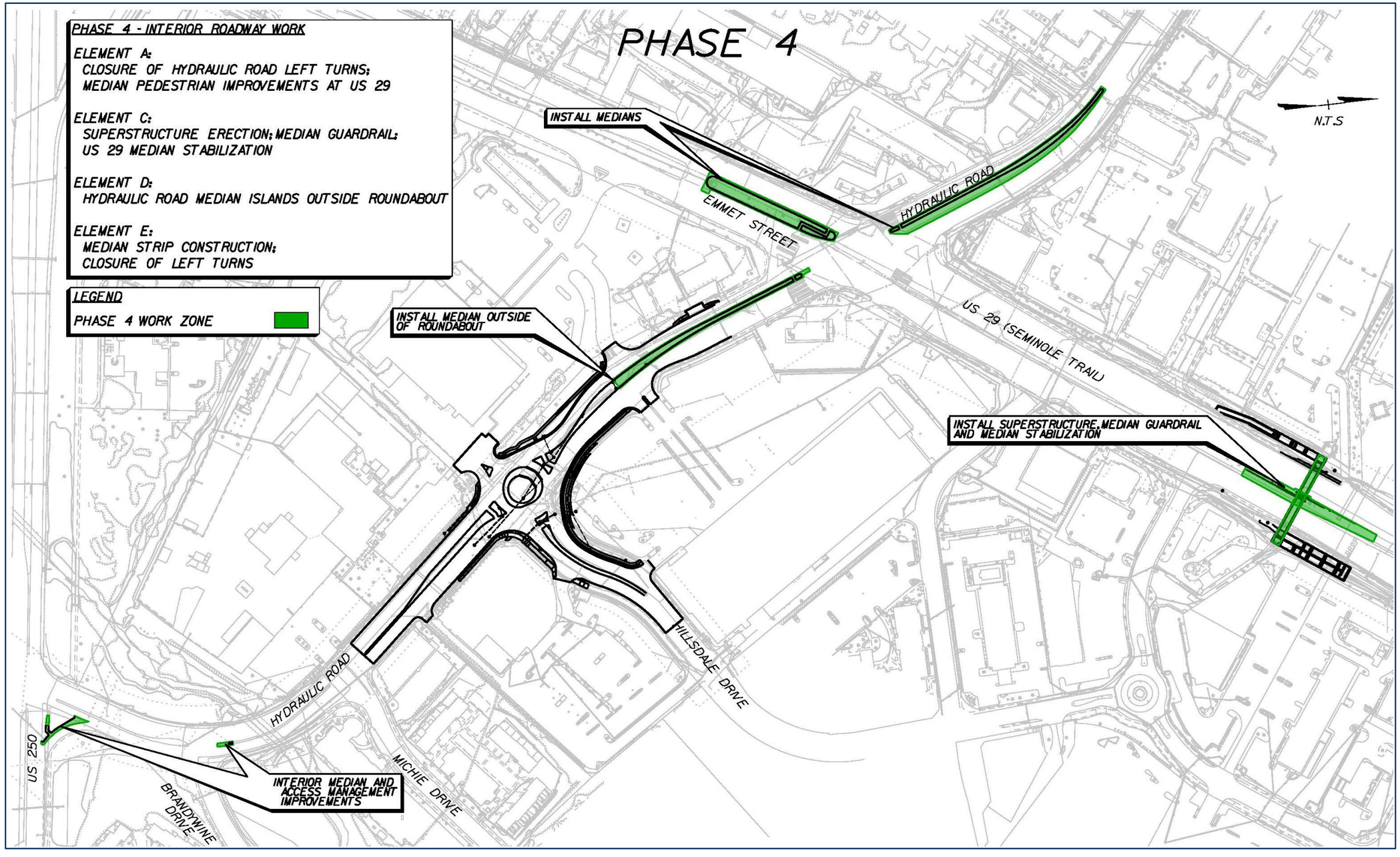
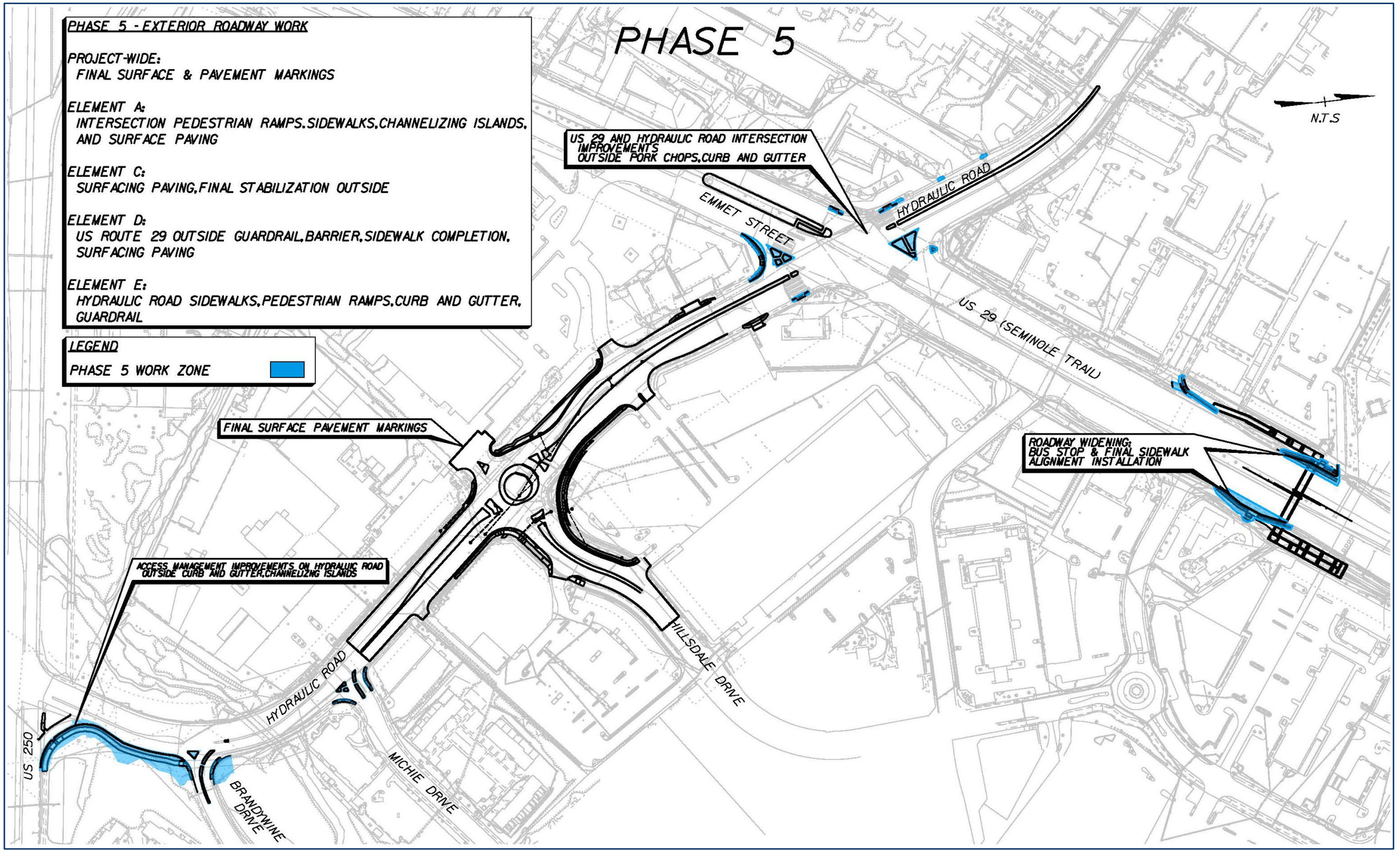


Exhibit 4.5.1.6 – MOT Phase 5



Phase 1 Geotechnical, Utility Exploration, and Scope Validation: Our **DBT** has identified utility relocations and geotechnical conditions as substantial risks to the timely completion of the Project, particularly in Elements C and D. The criticality of the utility relocation risk has led our Team to designate a specific early Phase in our sequence for conducting required geotechnical exploration, subsurface utility exploration (SUE), and early setup of advanced work zone signing and elements. Several utilities near the abutments and median pier of the Element C Pedestrian Bridge present significant risks to construction. These are summarized in Section 4.4 *Table 4.4.2.3*. Phase 1 work will consist of:

- Perform test holes for existing 8-inch gas and 10-inch cast-iron water mains in US 29 median to confirm final bridge pier location and avoid costly relocations.
- Perform test holes for 12-inch gravity sanitary sewer, fiber optic communications utilities, and a critical 3-phase electrical utility to confirm final approach ramp pier and abutment locations to avoid impacts.
- Confirm presence/location of duct-bank which is anticipated to contain several of the fiber optic lines based on preliminary coordination with the utility providers.
- Perform test holes along proposed sanitary, water, and storm sewer relocations to verify locations of other utility crossings.
- Perform project-wide geotechnical exploration in accordance with VDOT Manual of Instructions (MOI). We have sequenced this exploration into two activities, with exploration in critical schedule elements, such as the Pedestrian Bridge Substructure, being prioritized.

Phase 2 Utility Relocation for Roundabout and Pedestrian Bridge: Our **DBT** proposes to develop and deliver an Early Works package primarily consisting of roadway, drainage, MOT, and in-plan utility relocation work necessary to facilitate the construction of final project elements. **This concept minimizes overall schedule risk and roadway user impacts during later Phases of construction**. This phase will consist of:

Element C:

- Perform relocation of existing gravity sanitary sewer, selective demolition, and temporary relocation of sidewalk adjacent to the western pedestrian bridge abutment and approach ramp.
- Early utility relocation will enable simultaneous completion of Hydraulic Road by roadway crews and the pedestrian ramps and bridge by structure crews during subsequent construction phases.
- Construct temporary sidewalk to provide continuous pedestrian access through work zone to the crossing at the Stonefield Shopping Center Entrance while maintaining 2’ buffer from US 29.
- Once temporary sidewalk is functional, remove portions of existing sidewalk to permit improved access to construct the western abutment.

Element D:

- Relocate critical utilities such as the waterline along Hydraulic Road and Hillsdale Drive.
- Simultaneously complete installation of storm drain trunk linearly along future western leg of Hydraulic Road/Hillsdale Drive roundabout.
- Complete select demolition, grading, and drainage needed for roundabout outside of existing travel lanes. Future median storm drain structures will be capped with temporary concrete lids as necessary until final roadway alignment in Phase 4 is complete, at which time final drainage structures will be installed.
- Erect temporary span wire signal to facilitate traffic signal removal on the southeastern corner of Hydraulic Road/Hillsdale Drive intersection. This will allow our Team to complete all non-traffic impacting work prior to implementation of the closure and detour directing our focus on the delivery of the roundabout within the 46-day closure window.

Construction will be completed utilizing temporary lane closures within the contract allowable lane closure hours. Excavations and demolition will be made safe for traffic each day before the end of the shift. Our **DBT** will develop and utilize details for temporary steel plating and other work zone safety elements to ensure motorist, pedestrian, and worker safety during construction. This work will allow our **DBT** the necessary time to complete final design of the project while best utilizing time during optimal construction conditions. This efficiency is a hallmark of effective Design-Build delivery.

Phase 3 Roundabout Detour and Pedestrian Bridge Substructure: During the previous Phases, our **DBT** has completed preparatory Early Works construction to enable implementation of the Hydraulic Road closure and detour with structures crews proceeding with construction of the pedestrian bridge substructure. During that same timeframe, our design team will complete the final AFC roadway and pedestrian bridge plans. Work consists of:

Element C:

- Mobilization of in-house deep foundation crews for pedestrian bridge and approach ramp substructures.

- Abutment and ramp foundations will be installed from previously created access areas outside of traffic with minimal impacts during allowable lane closure hours for deliveries and equipment movement.
- Median pier and the pier protection system will be installed using temporary allowable nighttime lane closures minimizing traffic impacts.
- Structural ramp elements such as reinforcing steel cages will be fabricated in our nearby storage and staging area and transported to their final location minimizing traffic impacts.
- Construct prestressed concrete superstructures for approach ramps.
- Structural steel superstructure elements will be fabricated off-site following approval of superstructure plan and working drawing.

Element D:

- Project roadway crews will be solely focused on the remaining roundabout construction during the closure and detour of Hydraulic Road
- Crews will ensure access through the southern leg of the roundabout is maintained during construction in accordance with Enhancement P2 allowing Dominion Power access through the upper lot.
- Crews will complete demolition of the interior portions of the roundabout previously carrying traffic in addition to the remainder of the traffic signal.
- Storm sewer relocations and new drainage structures will be completed.
- Final grading of the interior roundabout will be completed to tie in with previously graded outer portions.
- Complete stone course, pavements, curb and gutter, truck aprons, pedestrian ramps, and markings.
- **Prior to opening the roundabout, our DBT will provide design graphics including renderings and aerial photography to educate drivers on the new traffic patterns.**

Our **DBT** has developed our sequence to ensure the roundabout construction is the singular focus of all our roadway resources, that potential subsurface utility and soil conditions have been addressed or identified before closure implementation, and that access to adjacent businesses will be uninterrupted. **Our sequence proposes to implement the closure of Hydraulic Road on or before 07/19/2024 and open it within 32 days on or before 08/21/2024.** Furthermore, **by delivering the roundabout in the first year of construction, our proposal provides earlier benefits to roadway users** and minimizes potential risks with resource and material availability in out years.

Phase 4 Pedestrian Bridge Superstructure, Interior Medians: Following completion of the roundabout construction and reopening of Hydraulic Road, additional project work areas will open to construction. Elements A and E may have existing left-hand turns closed by the center median strip. Phase 4 work will occur during allowable lane closure hours and will include:

- ***Project-wide***: Construction of the interior median elements throughout the project including storm drainage structures, interior curb and gutter, final stabilization, and signing.
- ***Element A***: US 29 and Hydraulic Road signal will be modified.
- ***Element A***: Sidewalk and pedestrian ramps in the median of US 29 adjacent to the Hydraulic Intersection will be constructed during this phase during allowable lane closure hours with inside lane closures.
- ***Element C***: Erection of the pedestrian bridge superstructure including:
  - Assembly of the prefabricated truss in preparation for erection over US 29
  - Erection of superstructure during allowable lane closure over the course of two nights
  - Placement of the concrete jointless deck, curbs, and drainage devices
  - Handrails, fencing, and integrated lighting
- ***Element C***: Install guardrail, stabilization, and signing in the US 29 median following completion of the Pedestrian Bridge superstructure.

Phase 5 Outside Curb & Gutter, Channelizing Islands, and Final Pavement: This phase will be completed during allowable lane closure hours and will consist of:

- ***Project-wide***:
  - Mobilize shoulder closures to complete sidewalk, drainage structures, curb & gutter, aprons, buffer strips, signing, and final stabilization outside of traffic throughout project limits.
  - Following completion of all incidental concrete elements, perform project-wide surface paving to ensure optimal riding surface, joints, and longevity from the final pavement surface.
  - Complete final striping following surface pavement.
- ***Element A***: Construct pork-chops and channelizing islands at Element A.

APPROACH TO MITIGATING DELAYS | The **DBT**'s long history of delivering projects on time can be attributed to effectively partnering with VDOT and providing true integration between our Construction, Design, and Quality teams, a core tenant of DBIA recommended practices. These experiences have compelled frequent, open, and honest communication between the **DBT** and VDOT at all levels to complete DB projects on schedule. VDOT's management team has seen this in practice on the nearby Albemarle Bundle currently under delivery in VDOT's Culpeper District. Our ladder-based approach results in high quality working relationships with our **DBT**'s VDOT peers whether it is the VDOT PM and DBPM or the VDOT Construction Manager and DB Construction Manager. These relationships allow for fast-paced issue resolution at the lowest level possible. Issues are handled quickly and verbally with immediate written follow-up and confirmation. Our **DBT** also understands that project success requires knowing the people and processes in the locale of the project. During initial construction kickoff and partnering, our **DBT** will engage VDOT counterparts, team members, and stakeholders in the Culpeper District to ensure we have a firm grasp on the most up-to-date decision makers within the various agency and organizational directorates and the right people at the table for every decision.

Our DBT can self-perform all critical construction elements (roadway, drainage, structures, deep foundations, utilities, geotechnical) and includes **significant local manpower, equipment, and material resources**. These resources are fully available for reassignment to this project to supplement the planned project team and advance the project. This capability separates us from many of our peers and allows us to mitigate resource constraints, subcontractor performance issues, and other issues beyond the control of the **DBT** or VDOT to deliver on-time and on-budget. In conjunction, our **DBT** is also committed to achieving the 12% DBE participation goal for the entire value of the contract. We have identified quality assurance and concrete flat work that will be performed by our DBE team members.

We utilize multiple scheduling tools to anticipate potential delays and effectively communicate these with appropriate mitigation strategies to VDOT. The Team has developed and will maintain a very detailed CPM schedule that has integrated the design, review, procurement, fabrication, construction activities, and third-party constraints (see Proposal Schedule in *Section 4.6*). Our schedule is the result of close coordination between the design, construction, and quality team combined with our immense VDOT experience and subcontractor input. The schedule is based on available design and construction resources; establishes specific activities for quality control/constructability of all deliverables; provides review times of all submittals, including major working drawings; includes time for design, permitting, ROW acquisitions, utility relocations, construction, working drawings and material fabrication. Our approach to scheduling and sequencing the project mitigates delays and consists of the following activities:

- Building realistic and feasible schedules based on experience and team input
- Incorporating VDOT comments and suggestions from reviews and tracking resolution in real time
- Ensuring construction field supervisory personnel "doer" involvement and buy-in
- Correlating three-week look-ahead with activities and planning from the CPM
- Real-time updating of the active CPM to contemporaneously recognize impacts and plan mitigations
- Compiling of updates and thoroughly narrating reasoning and details in monthly record submissions
- Thorough and transparent review of the CPM file, including the running of various what-if scenarios for early identification and mitigation of potential issues at Monthly Progress Meetings

Our **DBT** believes critical path scheduling is more than just a required once-a-month submission. The schedule is a dynamic tool and provides a basis for identifying opportunities for improvements to project completion through resequencing, adjusting resources or altering the means and methods for performance of the work. The outcomes of our approach to scheduling include:

- Minimizing the duration of impacts to the traveling public
- Avoiding or appropriately anticipating right-of-way acquisition delays
- Monitoring all witness and hold points
- Placing traffic on permanent pavement as early as safely possible
- Clearly identifying the project's critical path
- Avoiding utility conflicts
- Reducing overall contract duration
- **No Surprises!**

The project schedule will be updated monthly during the duration of the project and will include design, permitting, submittal/shop drawing reviews, procurement of materials, subcontractors, and construction activities. Quality Assurance (QA) and Quality Control (QC) hold points and witness points will be clearly defined. The

schedule will be continuously monitored and updated to ensure that released-for-construction (RFC) plans, shop drawings, and governmental approvals are available when required, that resources are adequate and that materials are available when needed. Updating the schedule monthly and jointly reviewing the dynamic schedule file with VDOT at each progress meeting will allow us to identify any delay early and develop a recovery schedule as needed to open all lanes of traffic in their final configuration by our intended early completion date of **October 31, 2025** while also ensuring compliance with all enhancement timeframes included herein.

The 3-week look ahead when correlated to the project schedule will facilitate accurate scheduling of IA/QA/QC testing and inspection resources and manpower planning as highlighted in *Section 4.4*. Scheduled witness and hold points will clearly highlight these critical quality activities to all parties. Clear timelines on activities will allow VDOT the opportunity to be more efficient in its IA oversight because when VDOT is notified that an activity will occur, they can schedule their resources and avoid wasteful rescheduling and repeat visits.

Our **DBT** includes QA and QC firms with significant experience in VDOT Design-Build. We stand behind our Quality Assurance Manager (QAM) to ensure that deficiencies and non-conformities are addressed as expeditiously as possible with sound judgement, sufficient opportunities for VDOT input, and a best fit solution to the issue at hand. When properly utilized, a systematically functional QA/QC program can quickly identify singular and systemic issues minimizing costly rework and delays that can impact the project schedule.

This commitment to quality combined with our focus on managing to the project schedule augments the ability of VDOT IA and the **DBT** QA/QC personnel to plan required testing, have appropriately qualified staff on site, and ensure that VDOT's own plant QA services can arrange resources to inspect critical material deliveries. Ultimately excellence in QA/QC reduces the oversight burden on VDOT freeing up resources for other Department objectives.

Our **DBT** includes **Bowman Consulting** (**BC**) who have years of proven experience in managing utility avoidance and relocations by providing Utility Design coordination and Management Services. **Richard Bennett** (**BC**) will be an integral part of our **DBT** working with **Wallace Montgomery** (Lead Designer) and **CCI** to ensure the schedule is not impacted. One of the most common causes of construction delays are utility relocation issues. To mitigate this risk, **WM** will generate location specific 3D models generated from the Geopak design files while coordinating with Richard and the utility operators to ensure that the means and methods required to relocate utilities will be compatible with the proposed construction plan. As an integral part of the Team, Richard's input into project planning and scheduling has guided utility avoidance concepts in both design development and construction scheduling. Richard will be engaged throughout design and construction, maximizing the probability of anticipating and mitigation of utility delays to expedite utility work and meet the final completion.

APPROACH TO PUBLIC SAFETY AND OPERATIONS | Our approach to managing sequencing while ensuring public safety and continued operations in every step is multi-pronged:

- Reducing the overall number of traffic shifts required throughout the Project.
- Maintaining continuous and logical work zones throughout the project elements. Combining elements of work into one uniform work zone thereby reducing movements and motorist decision making.
- Using VAWAPM compliant, logical, and comprehensive work zone communications including not only on site signing and messaging, but also public outreach via traditional and social media strategies.
- Consistent and frequent coordination with first responders and incident management agencies including work zone tours, mapping of access routes and traffic routing, and routine coordination calls and meetings to enumerate upcoming changes and impacts.
- Providing on-call personnel, 24/7 for response to maintenance of the work zone. The project Point of Contact (POC) will be communicated in weekly operations reports to VDOT's District Operations Team.
- Development of renderings and driver education aides to assist in the education of drivers traversing the new roundabout traffic patterns.
- Consideration of transportation alternatives including ped, bike, transit access and continuity of operations.
- Providing 24/7 available on-call technicians for the maintenance of temporary and modified signals.

Our **DBT**'s approach ensures that we maximize the safety and mobility of roadway users, in all their forms. Our approach and sequence have public safety and operations baked in from concept design. We strive to maximize the safety of workers, reduce roadway user delays, and minimize business impacts. A sequence that delivers the project logically and ahead of schedule is the best way to accomplish these objectives. Our **DBT** also has noted the requirements of Part 2 Section 2.10.3.1 regarding special events. Our Team is familiar with the unique requirements within the Charlottesville area regarding the University of Virginia (UVA) including graduations, sporting events, or student arrival. US 29 is the primary access to the Charlottesville area from points North and

its uninterrupted operation is critical to the Charlottesville area. Our Team commits to proactively working with VDOT, UVA, and the City of Charlottesville to outline and plan for special events including UVA home football games. **Our Team commits to holding a twice annual operational review meeting with VDOT and other stakeholders at the Project Office to establish a listing of Special Events and the operational criteria to comply with the intent of Part 2 Section 2.10.3.1**. Our Team intends this meeting to occur in the weeks preceding the outset of each UVA semester.

APPROACH TO STAGING AND STORAGE AREAS | The **DBT** and our construction resources are strategically positioned to support this project. **CCI** maintains an administrative office, equipment maintenance operation and storage yard at 2430 Rio Mills Road in Earlysville, VA. This site is located within five miles of the Project and will provide staging for the project staff, equipment, MOT, and long lead material storage. Additionally, **CCI** has coordinated with the developers, Riverbend Development, on the NW Quadrant of the Hydraulic Road and Hillsdale Drive intersection (the Kmart Parcel); and has made preliminary arrangements to utilize a portion of the vacant parking area for staging of equipment, MOT and materials that will be used daily during the construction phases. In addition, the **DBT** has coordinated with the developers of the Seminole Square retail site, Great Eastern Management, for the use of a portion of the vacant parking are for potential staging during the Element C construction. The developer indicated that this retail site also has planned for renovations and construction to be performed concurrently with the work scheduled on Element C.

4.5.2 Transportation Management Plan (TMP)

The **DBT** is committed to reducing the overall impact to the traveling public and major Project stakeholders while prioritizing the safety of the public and construction personnel. The **DBT** (with **CCI** as the lead contractor and **WM** as the lead designer) has successful experience in the Charlottesville area safely designing, coordinating, and constructing the Albemarle Bundle that will allow us to utilize those best practices and contacts as a key advantage. The strategies and enhancements discussed in this section, are not only proposals that we will use but proven policies and procedures. We commit to the **following enhancements** to the RFP requirements:

Table 4.5.2.1 – Transportation Management Plan Enhancements Beyond RFP Requirements and Benefits

• The DBT will implement a program to conduct routine communication between District; NWRO; the City of Charlottesville, Construction Manager (CM); MOT managers; and VDOT/CCI public outreach staff
• The detour route traffic conditions, signal timing, queues and temporary conditions will be consistently monitored throughout construction by the CM. The CM will coordinate with the Design Team Traffic Engineer for solutions when needed.
• Wayfinding signs will be utilized to provide positive guidance to the public accessing properties adjacent to the closure location
• All staff (drafters, junior engineers, and engineers) who work on the Temporary Traffic Control Plans have completed the Advanced Work Zone Traffic Control training courses and are currently certified
• Temporary Traffic Control Plans will have an independent safety review completed, outside of the thorough QA/QC process
• The **DBT** will keep south leg access to Kroger shopping center at the Hydraulic Road and Hillsdale Drive intersection open for delivery drivers' access as well as Dominion access to the upper parking lot

TRANSPORTATION MANAGEMENT STRATEGY THROUGHOUT CONSTRUCTION | The **DBT** will focus on limiting the impacts to the traveling public by maintaining traffic through all phases of construction for each element. The **DBT** will achieve this by developing the TMP in a two-tiered approach. The first tier will entail developing the overall project TMP, evaluated from a macro level with one consistent methodology for the entirety of the project through its completion. The second tier will be developed at a micro level, focusing on each individual element and the specific needs to safely minimize impacts while maintaining the overall construction schedule. The TMP will be developed in accordance with I&IM-241/TE-351 and will be classified a Type C, Category V TMP. The **DBT** will implement three main components of the comprehensive TMP:

- Transportation Operations
- Public Communications
- Temporary Traffic Control

This approach ensures that we maximize the safety of roadway users and construction staff, minimize delays and business impacts, maintain travel time reliability, and deliver a project that opens all lanes in the final configuration within the schedule.

The **Transportation Operations Plan** clearly identifies a policy and process to ensure the traveling public's needs are met while identifying responsibilities and evaluation standards throughout the Project. This includes compiling local emergency contacts, VDOT contacts, **DBT** contacts, procedures for responding to traffic incidents that may occur in the project limits, and protocols for notifying the Northwest Regional Traffic

Operations Center (TOC) when work activity changes traffic patterns, such as lane and/or road closures. This will allow all necessary information to be placed into the 511 system.

The **Public Communications Plan** will provide the process for which information regarding scheduled work plans, scheduled delays due to detours or closures, and unscheduled delays will be conveyed to the proper channels to provide timely, accurate and consistent information to all stakeholders. The **DBT** has a track record of successfully working with VDOT's Culpeper District Communication Manager, Lou Hatter. The **DBT** will also identify communication tools and tactics to increase community outreach efforts that include educational programs to provide the traveling public with a knowledge of the project and ways to make informed travel decisions. The **DBT** will also rely on media outreach with VDOT coordination such as social platforms, paper, and digital mediums. The Public Communications Plan will allow the **DBT** to stay in constant contact with key stakeholders, including the traveling public and adjacent property owners.

The **Temporary Traffic Control Plans** (TTCP) will be developed to provide detailed engineering drawings of how vehicle, pedestrian and bicycle traffic is safely maintained while supplying the required work zones for the Project to be efficiently constructed. The TTCP design will be coordinated with all project design components (structural, roadway, drainage, utility, etc.) and meet the technical requirements of the Virginia Work Area Protection Manual (VWAPM) and the Manual on Uniform Traffic Control Devices (MUTCD) by staff who have completed the Advanced Work Zone Traffic Control training courses and are currently certified. The TTCP will provide a detailed sequence of construction, focusing on the overall project and each individual element location and will include general notes, typical/cross sections, detour plans, temporary barrier/attenuators, group 2 devices, portable changeable message signs, temporary signage, and pavement markings. These plans will also incorporate temporary designs for lighting, signals, drainage, and construction access.

The **DBT** understands the dynamic nature of construction and maintenance of traffic and will provide a sequence of construction that is flexible and provides additional operational analysis as appropriate. The following temporary traffic control measures will be utilized throughout the duration of the Project.

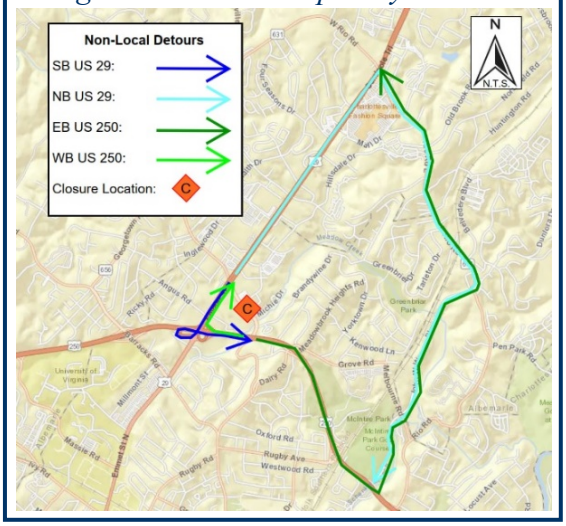
Road Closures: The **DBT** will implement a closure of the Hillsdale Drive and Hydraulic Road intersection during the summer of 2024 that will be no longer than the 46-day period per RFP requirements. Access to and egress from all adjacent properties will be maintained for vehicles and pedestrians. Locations for U-turns will be provided at the limits of the closure to ensure errant vehicles are directed away from the work zone.

There will be short term/rolling closures associated with the pedestrian bridge span construction. Any closure and detour exceeding twenty (20) minutes will be provided to VDOT for approval. Our DBT intends to complete the bridge erection with only two nighttime closure operations.

Temporary Detours: For the roundabout construction, the closure of the Hillsdale Drive and Hydraulic Road intersection will be implemented within 46 days during the summer of 2024 and a detour for non-local traffic utilizing US 29, US 250, Rio Road, and John Warner Parkway will be provided (see *Figure 4.5.2.1*). Our Team intends to strive to achieve the maximum incentive by opening this roundabout as early as 32 days after closure.

Over two nights, the bridge span will be placed, where closures greater than 20 minutes will be investigated as needed and a detour will be provided to VDOT for approval along with any additional traffic analysis.

Figure 4.5.2.1 – Temporary Detours



Proposed Lane Closures: The **DBT** will only implement lane closures during allowable hours in accordance with the RFP and will be detailed within the TTCP component of the TMP. Temporary lane closures will be utilized for each element of the project as laid out in the Maintenance of Traffic phasing below and implemented using Group 2 channelizing devices.

Time of Day Restrictions: The **DBT** is aware of the time-of-day restrictions, such as the allowable lane closures and the requirements listed in the RFP Part 2, Section 2.10.3 and will be documented within our TMP.

Flagging Operations: Flagging operations will be implemented for certain construction operations under allowable lane closure hours to provide positive guidance to road users traversing the work zone. All flaggers will be fully certified in accordance with the Virginia Flagger Certification Program and follow all OSHA standards.

Minimum Lane Widths: During construction, the minimum lane width will follow the provided design criteria. Along US 29, Hydraulic Road and Hillsdale Drive all temporary lanes will be 11-ft wide or match existing, whichever is greater. Turning movement analyses will be completed for the specified design vehicle at all intersections and entrances.

Work Zone Speed Reductions: All elements of our TTCP within our TMP will be designed for the existing posted speed limits to meet MUTCD and VAPM requirements. There will be no work zone speed reductions proposed for any element during construction.

Pedestrian Detours: During construction, pedestrians will be detoured away from the work zones in adherence to the Virginia Work Area protection manual. Pedestrian routes will be designed to minimize the delay and distances travelled.

MAINTENANCE OF TRAFFIC

The **DBT** has developed a project wide comprehensive MOT plan for each project element that is consistent with the five (5) phases of construction as detailed in *Section 4.5.1*. Our plan will minimize disruptions to the traveling public by identifying and merging similar construction elements either by method or location, reducing the need for traffic shifts and limiting the overall impact. The MOT plan will have five consistent phases for each element, to account for work activities happening throughout the project limits at adjacent elements as described below.

Phase 1 – Non-Conflicting Work and Early Works

All Elements:

- Pedestrian and Vehicle traffic remains in existing alignment.
- Temporary lane closures and/or flagging service operations will be utilized during allowable lane closure hours to complete utility test holes, geotechnical exploration, and pipe inspection.
- Any work adjacent to pedestrian pathways will be delineated and physically separated.

Phase 2 – Utility Relocation, Access Management Prep and Pedestrian Bridge Prep Work

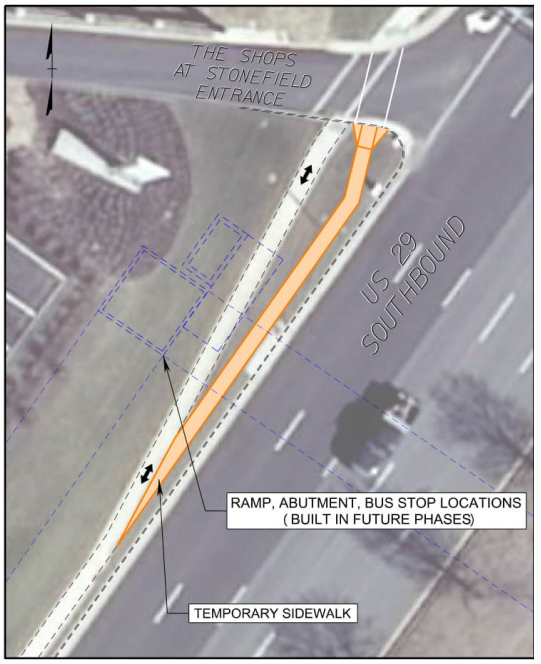
Element A:

- Pedestrian and vehicle traffic remain in existing alignment.

Element C:

- Temporary lane closures and/or flagging service operations will be utilized during allowable lane closure hours to relocate the existing gravity sanitary sewer along with grading and work to be done prior to any bridge structural work.
- Pedestrians will be maintained along the existing sidewalk. At the location near the western abutment, where the sidewalk veers away from the roadway, a temporary sidewalk will be constructed to maintain the existing buffer strip as shown in *Figure 4.5.2.2* to allow room for the abutment construction in Phase 3.

Figure 4.5.2.2 Phase 2 – Element C Temporary Sidewalk



Element D:

- Temporary lane closures and/or flagging service operations will be utilized during allowable lane closure hours to simultaneously relocate critical utilities such as the waterline along Hydraulic Rd and Hillsdale Drive and the installation of the storm drain trunk in linear fashion along the western leg of the intersection.
- A temporary span wire signal structure will be utilized to maintain the eastbound approach signal heads while the existing signal pole in the southeast quadrant is removed.
- Pedestrians will be maintained on existing sidewalks while temporary access is constructed.

Element E:

- Pedestrian and Vehicle traffic remains in existing alignment.
- Temporary lane closures and/or flagging service operations will be utilized during allowable lane closure hours to relocate any necessary utilities along Hydraulic Road.

Phase 3 – Roundabout Construction, Pedestrian Abutment, Bridge Pier and BPPS Construction

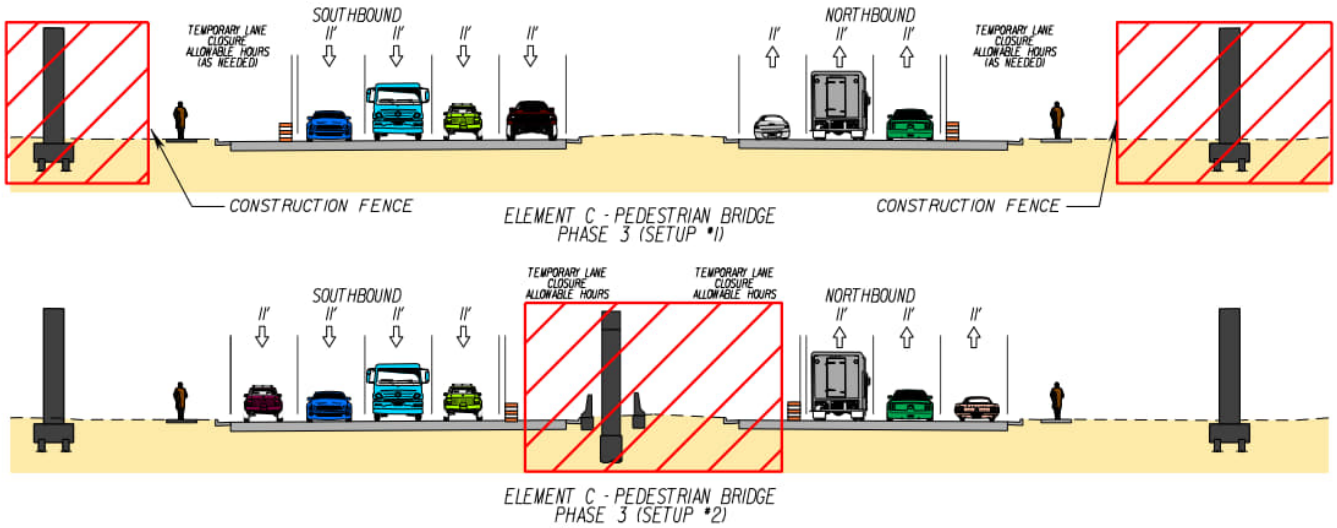
Element A:

- Pedestrian and vehicle traffic remains in existing alignment.

Element C:

- Temporary NB and SB outside lane closures periodically along US 29 during allowable lane closure hours will be implemented to install bridge abutments and ramps in Setup #1 as shown in *Figure 4.5.2.3*.
- Temporary inside NB and SB lane closures along US 29 during allowable lane closure hours will be implemented to install pier support and median improvements in Setup #2 as shown in *Figure 4.5.2.3*.
- Pedestrians will be maintained on the temporary western sidewalk built in Phase 2 and the existing sidewalk on the eastern side.

Figure 4.5.2.3 Phase 3 – Element C US 29 Temporary Lane Closures



Element D:

- The intersection of Hydraulic Road and Hillsdale Drive closure to be installed. Traffic will be detoured.
- U-Turns will be provided along Hydraulic Road, directly to the west and east of the closure.
- The south leg access to Kroger will be maintained for delivery driver access as well as Dominion access to upper parking lot.
- Hydraulic Road and Hillsdale Drive pedestrians will be maintained around the intersection using temporary paths and barrier to separate them from the work zone.
- Access will be maintained to Kroger via US 29 and Hydraulic Road and Whole Foods by access from Hillsdale Drive.

Element E:

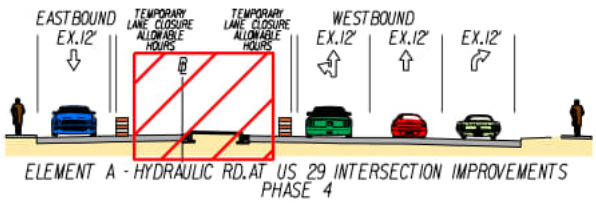
- Pedestrian and vehicle traffic to remain in existing alignment.

Phase 4 – Intersection and Access Improvements Inside Construction

Element A:

- Temporary inside NB and SB lane closures along US 29 during allowable lane closure hours will be implemented to construct south leg median crossing.
- Temporary inside EB and WB lane closures along Hydraulic Road during allowable lane closure hours will be implemented to construct east leg and west leg median adjustments while removing the left turns as shown in *Figure 4.5.2.4*.
- Pedestrians will be maintained on existing sidewalks.

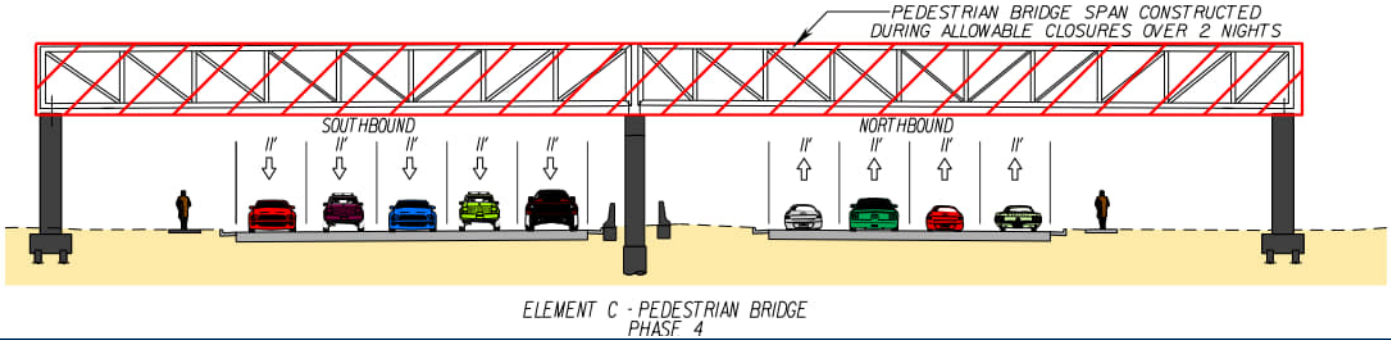
Figure 4.5.2.4 Phase 4 – Element A Temporary Lane Closures



Element C:

- During allowable lane closures over the course of two nights, the pedestrian bridge span will be constructed as shown in *Figure 4.5.2.5*.

Figure 4.5.2.5 Phase 4 – Element C Temporary Lane Closures



Element D:

- Vehicle and pedestrian traffic are placed in roundabout configuration.
- Temporary lane closures and/or flagging service operations will be utilized during allowable lane closure hours to complete final roundabout elements.

Element E:

- Temporary lane closures and/or flagging service operations will be utilized during allowable lane closure hours to construct the US 250 at Hydraulic Road channelizing island and median improvements.

Phase 5 – Intersection and Access Improvements Outside Construction

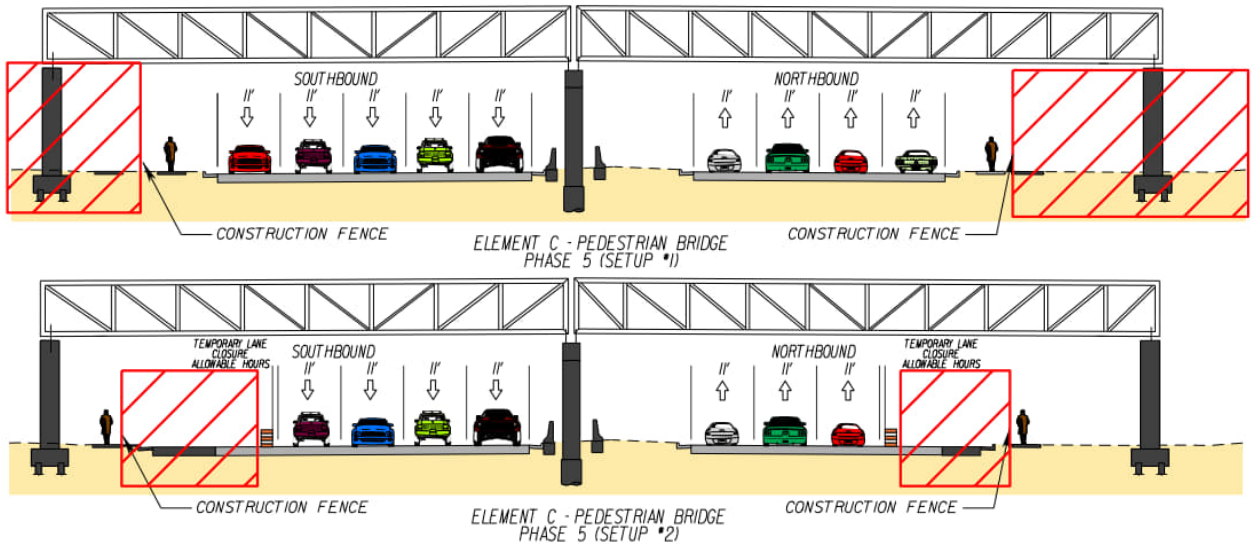
Element A:

- Temporary outside NB and SB lane closures along US 29 during allowable lane closure hours will be implemented to construct the outside ramp improvements.
- Temporary outside EB and WB lane closures along Hydraulic Road during allowable lane closure hours will be implemented to construct east leg and west leg adjustments while removing the left turns.
- Pedestrians will be maintained on existing sidewalks. Where pedestrian improvements are installed, Crosswalk Closure and Pedestrian Detour Operations will be utilized.

Element C:

- The proposed sidewalks and bus stops will be constructed in Setup #1 while pedestrians are maintained on the temporary sidewalk on western side and existing sidewalk on eastern side as shown in *Figure 4.5.2.6*.
- In Setup #2 Temporary NB and SB outside lane closures along US 29 during allowable lane closure hours will be implemented to construct the Bus Stop widening while pedestrians are maintained as shown in *Figure 4.5.2.6*.

Figure 4.5.2.6 Phase 5 – Element C US 29 Temporary Sidewalk & Bus Stop Widening (Setup #1 and #2)



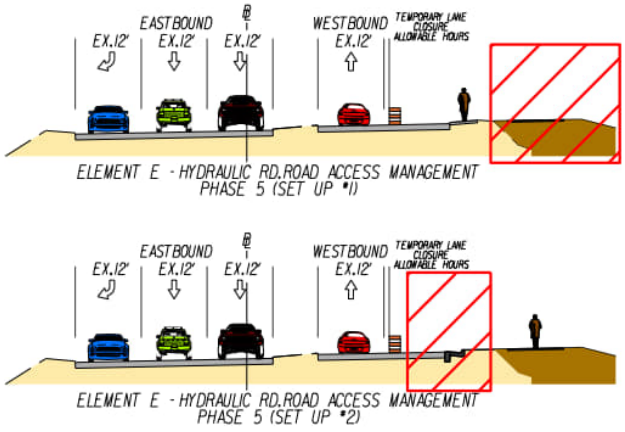
Element D:

- Vehicle and Pedestrian traffic remain in the roundabout configuration.
- Temporary lane closures and/or flagging service operations will be utilized during allowable lane closure hours to complete final roadway surfacing and roundabout elements.

Element E:

- Temporary lane closures and/or flagging service operations will be utilized during allowable lane closure hours to construct outside improvements at Hydraulic Road and Brandywine Drive and Michie Drive where left turns will be eliminated.
- Pedestrians will be maintained in two set ups, first along the existing sidewalks and then along the proposed pathway as shown in *Figure 4.5.2.7*. Where work zones overlap with existing sidewalks, alternative temporary pedestrian pathways with a detectable, channelized pedestrian route will be provided.

Figure 4.5.2.7 Phase 5 – Element E Pedestrian Access



STAKEHOLDER IMPACTS, PUBLIC OUTREACH AND MITIGATION

The **DBT** stakeholder outreach/public relations will begin immediately following award, continuing in design, right-of-way acquisition, and throughout construction. The **DBT** will rely on the following themes for our stakeholder engagement process:

1. **Early Engagement**: We will engage with stakeholder immediately following award and notice to proceed. Early stakeholder engagement will allow for maximum awareness and knowledge of the outreach processes.
2. **Transparency**: We propose transparency in all communications, avoiding stakeholders being surprised and to have a full understanding of the project approach.
3. **Open Communication**: We will provide consistent open communication channels for both outgoing updates such as press releases as well as incoming stakeholder feedback.

The **DBT** recognizes that US 29 is an important corridor within the community that will affect a diverse collection of stakeholders. We recognize each stakeholder may have unique concerns. Different residential neighborhoods may have a wide array of demographics with unique concerns, and individual businesses may view the project differently. The **DBT** will work closely with VDOT public affairs office to ensure the Project is coordinated with other official communication channels.

To uniquely handle the challenge of effectively coordinating with all stakeholders, the **DBT** will form a Project Delivery Advisory Panel to meet on a regular basis to coordinate with stakeholders. The **DBT** has identified the following stakeholders, impacts, and proposed mitigation strategies.

Table 4.5.2.4 – Project Stakeholder Matrix

Stakeholder	Impact	Mitigation Strategy
Traveling Public: Motorists, Pedestrians, Bicyclists, Commuters, Tourists, JAUNT/Paratransit	• Travel delay • Limited access • Alternative pedestrian pathways	• Constant public outreach and communication via 511 releases, media, and press releases for temporary altered access • Setup channels for communication and feedback • Signal time review and optimization • Lane reduction work conducted primarily at night • Wayfinding signs and PCMS located to notify of updated travel patterns • Monitor pedestrian pathways for ADA compliance
Closure Impacted Businesses: Whole Foods, Kroger, Dominion Energy	• Reduced access points • Increased customer travel times	• Establish regular coordination via emails, calls, meetings to establish dialogue, discuss issues, and project status • Proposed wayfinding directing delivery/customer traffic to always maintain alternative access points • Maintain access of the south leg entrance to Kroger/Dominion
University of Virginia: Students, Alumni, Sporting & Special Events	• Impacts to a key access route to campus	• Coordinate directly with the University representatives and provide press releases
Emergency Agencies: Police, Fire, EMS	• Potential response route changes and delays	• Coordinate directly with emergency agencies • Provide emergency access through closure locations

Table 4.5.2.4 – Project Stakeholder Matrix (continued)

Stakeholder	Impact	Mitigation Strategy
Local Businesses: Northrop Grumman, Meadowcreek Center Community Integration Program, Hans Plaza Businesses, Meineke Car Care Center, 7-11 Exxon, Trader Joes, Stonefield Shopping Center, Restaurants & Hotels along the corridor, Southern Env. Law Center	• Access route changes and potential misunderstanding for customers • Increased customer travel times	• Consistent updates and outreach • Setup channels for communication and feedback • Maintain all business access • Set regular coordination meetings
Local Residential Communities: Michie Drive Apartments, Brandywine Drive Subdivision, Heartwood Apartments, Meadows Neighborhood	• Access route changes and potential misunderstanding for residents • Potential construction impacts due to noise and dust	• Setup community outreach to communicate regular updates and the ability to receive comments • Implement E&SC strategy • The DBT Construction Manager will monitor noise and dust impacts and implement changes as needed
Local Schools/Learning Centers: Albemarle Co Public Schools, City of Charlottesville School District, Private Schools, Center for Autistic Citizens	• Potential delays to school bus pick-ups and drop-offs • Potential school bus route changes	• Coordinate directly with school transportation officials or equivalent
Utilities: ACSA, BrightSpeed, MCI/Express-Tek, Charlottesville Gas & DPU, Dominion, Segra (Lumos), MMI, Qwest, Comcast, Verizon	• Potential impacts and relocations required	• Setup weekly coordination meetings • Start early conflict identification and incorporate relocations into TMP phasing • Utilities will be 3D modeled
Local Jurisdictions: Albemarle County, City of Charlottesville	• Impacts to Charlottesville Area Transit bus stops and routes	• Coordinate directly with jurisdiction departments
Contracting Agency: VDOT	• Public perception risks	• Setup coordination meetings with VDOT

Public Safety

The **DBT** recognizes that Public Safety starts with the development and then implementation of a comprehensive TMP throughout the lifespan of the Project. This includes TTCP, Transportation Operations Plan and the Public Communication Plan. The **DBT** focuses on the safety of every motorist, cyclist, pedestrian, and construction worker that travels through the project limits. The **DBT** will implement the following measures to prevent disruptions to vehicular and pedestrian traffic:

The DBT has successfully completed multiple complex traffic switches in the Charlottesville area with ZERO injuries or vehicle accidents. We will use our proven best practices to continue a spectacular safety record.

- **Traffic will be kept in the existing alignment limiting** the impact to commuter traffic, thus reducing driver confusion and reducing the potential for work zone crashes.
- The **work zone activity area will be delineated** using appropriate traffic control devices, either Group 2 Devices, safety fencing or temporary barrier to safely exclude the traveling public from work activities.
- Due to the significant amount of night work, **Work Zone Lighting** will be utilized to illuminate work zones beyond existing lighting facilities. Where temporary accommodations are made, temporary lighting analysis will be performed, and additional lighting will be incorporated into the TTCP.
- The **DBT** Construction Manager will consistently **monitor the pedestrian access** throughout the project limits ensuring ADA compliance.
- The **DBT workforce will be trained and empowered** to implement a culture of work zone safety. Workers will have the ability to identify safety concerns, both inside and outside of the work zone.
- The **TTCP will be reviewed for maximum safety compliance** and will identify areas of safety improvement outside the normal QA/QC process. An Advanced Work Zone Traffic Control certified engineer will conduct the review independently of the design and review process.
- With any Project comes the possibility for driver confusion. Within the **DBT**'s outlined **Public Communications and Outreach Plan**, focusing on the identified stakeholders, is a key part in the approach to public safety. The **DBT** will implement the discussed elements to help increase public understanding of the Project and reduce crashes.

The DBT successfully acclimated the public to this new roundabout for the VDOT Albemarle Bundling Design-Build – Route 20/649 Roundabout Project.

4.6

Proposal Schedule

Submitted by

Curtis Contracting Inc.

In Association With

WALLACE MONTGOMERY

4.6 Proposal Schedule

The Curtis Contracting, Inc. (**CCI**) **Design-Build Team** (**DBT**) has provided a Proposal Schedule and Proposal Narrative demonstrating our understanding of the complexities and inter-relationships of the technical elements of the Project. PDF copies of the Proposal Schedule and narrative as well as a back-up copy of the Proposal Schedule's source document have been uploaded. As shown in *Table 4.6.1*, our **DBT** has the local demonstrated experience necessary to develop a comprehensive proposal schedule and overlying sequence of construction.

Table 4.6.1 – Schedule Risk Mitigation

MILESTONES	• Data driven optimization of construction sequence using CPM scheduling to ensure efficient application of resources. • Achieving Final Project completion no later than **October 31, 2025**. • Optimizing construction sequence to meet all contractual constraints for MOT and operations.
RISK ALLOCATION	• Development of non-critical paths with sufficient float provides flexibility to mitigate unforeseen delays such as long-lead items, utility approvals. • Recognition of critical utility relocations and associated reviews to focus team design and construction resources on the most expedient path to Project Completion and material benefits to roadway users.
SCOPE VALIDATION	• A preliminary geotechnical investigation plan has been considered by our **DBT** prioritizing certain project areas and elements both for design priority and to fill in any gaps in available data well within the 120-day scope validation window.
PUBLIC INVOLVEMENT	• Our Team has demonstrated success with local stakeholders on various projects in the Charlottesville area. • Prior to implementation of major traffic impacts, our team will conduct public information sessions. • Targeted one-on-one meetings with business owners and emergency responders will be conducted to ensure their operations are considered.
ENVIRONMENTAL	• The CPM schedule identifies and accounts for all environmental commitments, TOYRs, permitting strategies, and permitting conditions/requirements. • The CPM schedule accounts for TOYR for the Northern Long-Eared Bat (NLEB), by a project specific calendar for clearing activities. The NLEB is proposed to be up listed from threatened to endangered status in January 2023.
STORMWATER MANAGEMENT	• Our **DBT**'s design approach prioritizes early development of our SWM concept to allow early submission of Early Works and Right-of-Way plan sets to advance construction. Our SWM concept is streamlined into two critical elements split between Element C (Ped Bridge) and Elements A, D, E along Hydraulic Road.
RIGHT-OF-WAY	• Our CPM accounts for required property access letter timeframes as well as reasonable timeframes for appraisals, review and approval, and property owner negotiations. • Our CPM schedule considers reasonable additional time for renegotiation with property owners following the initial offer timeframe. • Our CPM schedule shows no ROW activities on the Critical Path.
UTILITIES	• The CPM has been developed to remove Utilities from the Critical Path. • Our **DBT**'s experience in using 3D modeling and visualizations with utility owners to complete conflict detection allows us to mitigate schedule risk through early identification of conflicts. This early identification increases the opportunity for avoidance while minimizing redesign and associated delays. • Our **DBT** will hold bi-monthly meetings with all utility owners to review the status of P&Es and update our CPM accordingly with each update to reflect and allow mitigations for any utility impacts that may arise.
CONSTRUCTION APPROACH	• Our MOT phasing is coordinated linearly between adjacent geographic Project Elements such that traffic will seamlessly shift in one direction or the other for the span of their trip through the work zone minimizing confusion and conflicts. • Our **DBT** has similar project experience in the region demonstrating the safe and efficient construction of projects with similar scopes of work. Our **DBT** has the capability to self-perform nearly all significant Critical Path work. Many of these resources are local to the Project during and following the VDOT Albemarle Bundling Design-Build Project. This capability allows our **DBT** the unique ability to recover by assigning additional local in-house resources should delays occur.
COORDINATION	• Our **DBT** will provide 3-week and 10-week look-ahead schedules for use by VDOT in communicating upcoming impacts, changes, and milestones on the Project. • These look-ahead schedules will also focus on QA/QC activities in the field to allow VDOT to plan its IA resources to minimize unnecessary oversight costs.

4.6 Proposal Schedule

4.6.1 Project Schedule

The **DBT** has developed a Proposal Schedule (located in Volume II), which incorporates the Interdisciplinary, Constructability, and QA/QC internal plan reviews, VDOT plan reviews and approvals, environmental permitting and constraints, right-of-way (ROW) acquisition, utility relocation, required submittals to include shop drawings, construction activities and QA/QC inspection and testing. The RFP Part 3 Article 5 for No Excuses Incentives provides Final Completion and Interim Completion Milestones for the Project. Additionally, the allowable lane closure restrictions within Section 2.10.3 establish contractual constraints that govern the logical completion of the project such as the inability to complete left turn closures on Hydraulic Road prior to completion and opening of the Element D Roundabout. Our optimized schedule permits all lanes of Hydraulic Road to be open to traffic within the 46-day detour period provided by the Contract. Additionally, our **DBT** proposes to achieve Project Final Completion by **October 31, 2025**, approximately **a month before** contractually required. The Proposal Schedule depicts the **DBT**'s proposed overall sequence of work and duration for each work task and deliverables required to complete the Project. The schedule is organized using a hierarchical Work Breakdown Structure (WBS), divided into CONTRACT ADMINISTRATION, PROJECT MILESTONES, PROJECT MANAGEMENT, SCOPE VALIDATION, DESIGN, ENVIRONMENTAL/PERMITTING, RIGHT-OF-WAY, UTILITIES, and CONSTRUCTION.

4.6.2 Project Schedule Narrative

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

Schedule Development

The **DBT** has reviewed in detail the scope and schedule requirements outlined with the RFP and its Addenda to develop our Proposal Schedule. The Proposal Schedule outlines our plan to successfully manage the delivery of the Project from Notice to Proceed through Completion inclusive of key design submissions, constructive elements, governmental approvals, and contractual work restrictions.

Our **DBT** reviewed our resource availability, maintenance of traffic concepts, long-lead materials, fabricated elements, and specific contractual constraints to arrive at a schedule that demonstrates the optimal path to project completion. This schedule development was further reviewed to evaluate key risks to the schedule based on factors such as total float, duration certainty, self-performance, and prior experience. In Section 4.3 our proposal describes our shift in the median pier positioning to avoid the existing gas main underlying the Route 29 median. Our experience with the same utility operator on the VDOT Albemarle Bundling Design-Build – I-64 and US 250 (Exit 124) Diverging Diamond Interchange project gives us unique insight into the extensive coordination, long lead time, and ultimately project cost and schedule impacts a relocation of the gas main would require. Our schedule is built on our past experience, providing VDOT assurance that we have mitigated local project specific risks.

The **Curtis Contracting Inc. Design-Build Team** is committed to delivery of Project Final Completion by **October 31, 2025**, approximately **one month ahead** of the Contractually Required December 5, 2025.

Table 4.6.2.1 – Project Milestones

Notice of Intent to Award	03/17/2023
Notice to Proceed	04/19/2023
Limited Notice to Commence ROW Acquisitions	08/18/2023
Notice to Commence Remaining ROW Acquisitions	10/10/2023
Limited Notice to Commence Construction (Physical Work Begins)	11/06/2023
Final Notice to Commence Construction	03/07/2024
Commence Hydraulic Road Detour	07/19/2024
Reopen Hydraulic Road, Roundabout Complete	08/21/2024
Final Completion (Contract Requirement – December 05, 2025)	10/31/2025

Work Breakdown Structure (WBS)

The **DBT** has organized the schedule into a hierarchical WBS to demonstrate the relationship and activity durations amongst the milestones, scope validation period, design, environmental permitting, ROW acquisition, utility relocation, construction, and project management disciplines for the Route 29 and Hydraulic Road Improvements Project. The following is a summary of our schedule organization followed by a complete WBS listing in *Table 4.6.2.2*.

- ***Project Milestones***: This section provides an overview of key project milestones including contractually defined milestones, key approvals and releases during construction, and major traffic impacts. A sub-grouping showing the construction sequence phasing is also included for clarity.
- ***Project Administration***: This section provides an overview of project submittals and required administrative meetings.
- ***Scope Validation***: Includes contractually outlined scope validation period, milestones, and submittals.
- ***Design***: Includes preliminary engineering services, plan development, QA/QC reviews, environmental plan, ROW required by the **DBT**'s design, utilities design, submittal milestones, internal reviews, constructability reviews, VDOT plan reviews and approvals, other regulatory agency reviews.
- ***Environmental and Permitting***: Includes required NEPA re-evaluations, environmental time of year restriction (TOYR), hazardous materials, water quality and general construction permitting application development and submission.
- ***Right-of-Way***: Includes legally required and/or reasonable timeframes for property access notifications, appraisals, title work, offers to property owners, negotiations, and filing certificate (as required).
- ***Utilities***: Includes development and submission of preliminary utility status report, utility update meetings, subsurface utility exploration, preparation, and execution of UFI meetings, and utility relocations.
- ***Construction***: Includes all roadway and bridge constructive elements including but not limited to, maintenance of traffic (MOT), procurement and fabrication of materials, construction access, drainage, erosion & sediment control, concrete placement, steel erection, asphalt paving, incidental concrete, signals, marking, and signing.

Table 4.6.2.2 – Work Breakdown Structure

WBS Code	WBS Name
C00118880DB114_PR01-3	Transportation Improvements at Hydraulic Road and US 29
C00118880DB114_PR01-3.1	Project Milestones
C00118880DB114_PR01-3.1.1	Construction Phasing
C00118880DB114_PR01-3.2	Project Administration
C00118880DB114_PR01-3.3	Scope Validation
C00118880DB114_PR01-3.4	Design
C00118880DB114_PR01-3.4.1	Pedestrian Bridge Design
C00118880DB114_PR01-3.4.1.1	Stage 1
C00118880DB114_PR01-3.4.1.2	Stage 2 Superstructure
C00118880DB114_PR01-3.4.1.3	Stage 2 Substructure
C00118880DB114_PR01-3.4.2	Right-Of-Way Plan Submission
C00118880DB114_PR01-3.4.2.1	Element C&D ROW
C00118880DB114_PR01-3.4.2.2	Remaining ROW
C00118880DB114_PR01-3.4.3	Early Works and Utility Relos
C00118880DB114_PR01-3.4.4	Final Roadway Plans
C00118880DB114_PR01-3.4.5	Geotechnical
C00118880DB114_PR01-3.4.5.1	Preliminary
C00118880DB114_PR01-3.4.5.2	Element C
C00118880DB114_PR01-3.4.5.3	Project Roadway Geotechnical Report
C00118880DB114_PR01-3.5	Environmental/Permitting
C00118880DB114_PR01-3.6	Right-of-Way
C00118880DB114_PR01-3.6.1	Early Aquisitions in Elements C & D
C00118880DB114_PR01-3.6.2	Remainder of Aquisitions
C00118880DB114_PR01-3.7	Utilities
C00118880DB114_PR01-3.7.1	ACSA 12" Sanitary Sewer Relocation Element C
C00118880DB114_PR01-3.7.2	8" Water Main Relocation Element D
C00118880DB114_PR01-3.7.4	Brightspeed Element E
C00118880DB114_PR01-3.7.5	City of Charlottesville 8" Sanitary Sewer Element E
C00118880DB114_PR01-3.8	Construction
C00118880DB114_PR01-3.8.1	Materials Procurement & Fabrication
C00118880DB114_PR01-3.8.1.1	Working Drawings
C00118880DB114_PR01-3.8.1.2	Fabrication
C00118880DB114_PR01-3.8.2	Element A
C00118880DB114_PR01-3.8.2.1	Phase 2
C00118880DB114_PR01-3.8.2.2	Phase 4
C00118880DB114_PR01-3.8.2.3	Phase 5
C00118880DB114_PR01-3.8.3	Element C
C00118880DB114_PR01-3.8.3.1	Phase 2
C00118880DB114_PR01-3.8.3.2	Phase 3
C00118880DB114_PR01-3.8.3.3	Phase 4
C00118880DB114_PR01-3.8.3.4	Phase 5
C00118880DB114_PR01-3.8.4	Element D
C00118880DB114_PR01-3.8.4.1	Phase 2
C00118880DB114_PR01-3.8.4.2	Phase 3 Detour
C00118880DB114_PR01-3.8.4.3	Phase 5
C00118880DB114_PR01-3.8.5	Element E
C00118880DB114_PR01-3.8.5.1	Phase 2
C00118880DB114_PR01-3.8.5.2	Phase 4
C00118880DB114_PR01-3.8.5.3	Phase 5

Calendars: The **DBT** has incorporated eight (8) calendars into the Project Schedule:

- ***Calendar Days***: Consists of a straight-line calculation of calendar days meeting the Part 4 Definition of Days for the purposes of milestone tracking, administrative items, and review durations.
- ***Standard 5 Day Workweek, US Holidays, No Winter SD***: Consists of a typical 40-hour workweek with Design-Build team internally observed US Holidays with no winter shutdown period.
- ***Standard 5 Day Workweek, US Holidays, Winter SD***: Consists of a typical 40-hour workweek with Design-Build team internally observed US Holidays with a December 15 – March 15 Winter Shutdown generally representative of asphalt material availability.
- ***Standard 5 Day Workweek, US Holidays, NLEB TOYR***: Consists of a typical 40-hour workweek with Design-Build team internally observed US Holidays with non-work periods during the proposed NLEB Time of Year Restriction (TOYR) from April 1st to November 15th. This calendar is generally applicable to clearing activities on this project.
- ***Standard 5 Day Workweek, VDOT MOT Holidays, No Winter SD***: Consists of a typical 40-hour workweek with Contractually Required MOT Holidays defined in Part 4 108.02 in addition to US Holidays with no winter shutdown period.
- ***Standard 5 Day Workweek, VDOT MOT Holidays, Winter SD***: Consists of a typical 40-hour workweek with Contractually Required MOT Holidays defined in Part 4 108.02 in addition to US Holidays with a December 15 – March 15 Winter Shutdown period representative of asphalt material availability.
- ***VDOT 5 Day Workweek, VDOT Staff Holidays***: Consists of a typical 40-hour workweek with non-workdays for Holidays currently published by DHRM for applicable State Offices.
- ***Standard 7 Day Workweek, US Holidays***: Consists of a 56-hour 7-day workweek with **DBT** internally observed US Holidays with no winter shutdown period. This calendar is applicable to Element D roundabout construction during the Hydraulic Road detour and closure.

Holidays: Our project schedule anticipates different Holidays based on the subject activity and its resources. This consists of three different sets of "holidays" for consideration:

- ***US Holidays***: These holidays represent the **DBT**'s staff holidays representing design and construction crews.
  - **New Years Day**: January 1 or Observed
  - **Martin Luther King Day**: Third Monday of January
  - **Memorial Day**: Last Monday of May
  - **Independence Day**: July 4
  - **Labor Day**: First Monday of September
  - **Veterans Day**: November 11
  - **Thanksgiving**: Fourth Thursday of November
  - **Day After Thanksgiving**
  - **Christmas**: December 25th or Observed
- ***VDOT MOT Holidays***: As defined in Part 4 108.02 of the RFP these holiday timeframes represent prohibitions on lane temporary lane closures per the Contract. This calendar also includes the aforementioned "US Holidays". This calendar is used for activities performed temporary lane closures.
  - **January 1**: From Noon on the preceding day until Noon on the following day, except as indicated for Holidays occurring on a Friday/Saturday or Sunday/Monday
  - **Easter**: As indicated for Holidays occurring on a Sunday
  - **Memorial Day**: As indicated for Holidays occurring on a Monday
  - **July 4**: From Noon on the preceding day until Noon on the following day, except as indicated for Holidays occurring on a Friday/Saturday or Sunday/Monday
  - **Labor Day**: As indicated for Holidays occurring on a Monday

- **Thanksgiving Day**: From Noon on the Wednesday preceding Thanksgiving Day until Noon on the Monday following Thanksgiving Day
- **Christmas Day**: From Noon on the preceding day until Noon on the following day, except as indicated for Holidays occurring on a Friday/Saturday or Sunday/Monday
- **Holidays on a Friday/Saturday**: From Noon on the preceding Thursday to Noon on the following Monday
- **Holidays on a Sunday/Monday**: From Noon on the preceding Friday to Noon on the following Tuesday

- ***VDOT Staff Holidays***: Our **DBT** schedule considers DHRM published holidays for our VDOT Contractual Notices such as Notice to Commence ROW and/or Construction and final inspections by VDOT Structure and Bridge
  - **New Years Day**: January 1 or Observed
  - **Martin Luther King Day**: Third Monday of January
  - **George Washington Day**: Third Monday of February
  - **Memorial Day**: Last Monday of May
  - **Juneteenth**: June 19 or Observed
  - **Independence Day**: July 4
  - **Labor Day**: First Monday of September
  - **Columbus Day (Yorktown Victory Day)**: Second Monday in October
  - **Veterans Day**: November 11 or Observed
  - **4 Hours Add't Time**: Day Before Thanksgiving
  - **Thanksgiving**: Fourth Thursday of November
  - **Day After Thanksgiving**
  - **4 Hours Add't Time**: Workday before Christmas
  - **Christmas**: December 25th or Observed

Time of Year Restrictions (TOYRs): Our project schedule anticipates a TOYR generally for clearing activities for the Northern Long Eared Bat (NLEB) from April 1st to November 15th annually. Given the limited amount of clearing on the subject project this TOYR is not anticipated to have a significant schedule impact.

Plan to Accomplish the Work: Our schedule is predicated on an early and innovative approach to utility location and identification, geotechnical exploration, and right-of-way (ROW) plan development. These elements are planned for early development starting the moment our **DBT** receives Notice to Proceed. The development of these early submissions does not impact VDOT's Contractual review timeframes which remain 28 days throughout our schedule. Our schedule also considers a 2nd review by VDOT for each submittal to disposition comments from the 1st submittal. Our Team is committed to thorough and proper QA/QC of submissions in addition to real-time over-the-shoulder issue and comment resolution to minimize commenting and reduce unnecessary resource utilization by VDOT.

The first significant submission to VDOT will consist of a limited ROW level plan set for Elements C and D. The ROW and easements shown in this early submission is crucial to the early relocation of major utilities within Elements C and D, consisting of a gravity sanitary sewer and water main, respectively. This submission will coincide with submission of preliminary drainage computation and permitting package demonstrating that the stormwater footprint will not extend beyond the proposed ROW.

During this same time-period, our **DBT** structural engineering team will prepare the Stage 1 report for the Pedestrian Bridge. Upon approval our **DBT** will submit the Stage 2 Superstructure plans for review to enable fabrication of the bridge superstructure truss elements while on-site construction continues. The Stage 2 Substructure plans will follow shortly after now essentially free of the project Critical Path.

Following approval of the Limited Notice to Commence Right-of-Way Acquisition, our **DBT** will reperform necessary property access letter for appraisals, followed by generation of offers, review by VDOT, submission of offers to property owners, and negotiations.

4.6 Proposal Schedule

Our design team at this time will be simultaneously developing the Early Works package including crucial in-plan utility relocations, drainage, abutment and median prep, outside of traffic roundabout preparations, MOT, temporary signal, and E&S plans. Following the plan review process with the completion of the early ROW acquisitions, our **DBT** would seek a Limited Notice to Commence Construction within the limits of the existing right-of-way and newly acquired parcels. Following issuance, Construction crews would mobilize to begin nighttime operations for the relocation of in pavement water utilities and drainage along Hydraulic Road, restoring all lanes of traffic each morning within the allowable period. Crews will also begin selective demolition and grading at the outer limits of the future roundabout, outside of traffic. A second crew would begin work preparing the abutment, ramp, and median areas at the Pedestrian Bridge.

As the Critical Path progresses through the construction preparing for the closure and detour of Hydraulic Road, our design team will make submission of final ROW and approved for construction plan sets inclusive of the remainder of the project. These plans will include all work to complete the Hydraulic Road Roundabout (Element D), Access Management on Hydraulic Road (Element E), and the modifications to the Route 29 and Hydraulic Road Intersection (Element A). Roadway, drainage, E&S, MOT, detour, signals, marking, and signing plans will be included in this final submission.

Upon completion of the Phase 2 preparatory work and issuance of a Final Notice to Commence Construction, our **DBT** will implement the Hydraulic Road Closure and Detour within the contractually permitted timeframe. During this period, our roadway crews will work 7-days per week within the Hydraulic Road roundabout to complete utilities, drainage, grading, pavement, sidewalks, curb & gutter, signing, and marking to reopen the roundabout within the allowable closure period. Our **DBT** intends to achieve the incentive for reopening of the roundabout prior to the August 23, 2024 deadline. As all our **DBT** roadway crew resources work on completion of the roundabout, our structures crew will begin installation of the pedestrian bridge substructure including the median pier, abutments, and ramp substructures.

Following the reopening of Hydraulic Road, our **DBT** roadway crews will transition to Phase 4 in which median islands, barrier, permanent guardrail, signing, and stabilization will be installed. Our structures crew will erect the Pedestrian Bridge Superstructure following assembly of the truss elements in the adjacent laydown and staging area described in section 4.5.1. The superstructure truss will be erected followed by casting of the bridge deck, installation of safety railings, integral lighting, and miscellaneous details.

Phase 5 will consist of the completion of exterior curb & gutter, sidewalks, channelizing islands, ramps, signing, surface pavement, and permanent stabilization throughout the project.

Design Phase Elements: Our schedule demonstrates four critical design phase packages split between ROW level plan submissions and approved for construction (AFC) plan submissions. These packages include a ROW and AFC plan set for early works and for final construction. The Early Works package includes preliminary E&S, clearing, preliminary grading, drainage, in-plan utility relocations, and MOT elements necessary to prepare the Element D roundabout area for successful implementation of the closure and detour of Hydraulic Road. Additionally, preliminary works in the Element C Pedestrian bridge are included to allow for the crucial relocation of the existing sanitary sewer in the footprint of the western abutment and ramps. Clearing throughout the Project is included in the early works package to eliminate schedule risk posed by the NLEB TOYR from April 1st through November 15th. Following release of a limited notice to commence construction on the early works package, our design team will diligently execute final design for submission of a final ROW and AFC plan set, respectively. These final comprehensive plan sets will include work throughout the Project inclusive of Elements A, C, D, and E. Our **DBT** proposes to develop a two VPDES submissions, the first to achieve initial permitting alongside the Early Works scope of work. Following completion of the final design package, our teams will advance a permit modification package to accommodate the scope of Work within the final approved for construction plans. As indicated by our proposal schedule, approval of the Early Works ROW and AFC plans are near critical elements. These submissions directly influence our ability to complete the Element D Hydraulic Road roundabout in 2024. Given our early and reasonably aggressive approach to design submission delivery, our schedule includes significant flexibility should roundabout construction require resequencing to 2025.

The design submissions for the Pedestrian Bridge have been sequenced in a manner that minimize fabrication and material risks. Our **DBT** proposes to first submit Stage 2 superstructure plans following the approval of the Stage 1 report. Substructure plans will be subsequently developed without risk of material and fabrication delays for the pedestrian bridge steel trusses. Not only does this approach minimize schedule risk, it also allows early procurement of steel materials and reduction of material escalation risks.

Right-of-Way: Our **DBT** considered ROW activities and their potential role/impact on the Construction Sequence. Based on our evaluation, no ROW activities, other than the transmission of property access letters, on the Project are considered part of the critical path. As indicated in Section 4.6 the Project critical path follows the delivery of the Geotechnical Investigation and Early Works package containing utility relocation, demolition, and early grading work to facilitate the closure and detour of Hydraulic Road in the summer of 2024 in compliance with the Contract requirements.

Utilities: Our **DBT** has identified two utilities with the ability to impact the project schedule consisting of the 8" gravity sanitary sewer underlying the proposed western abutment of the Element C Pedestrian Bridge and the 8" water line within Hydraulic Road. Our unique design approach avoids other schedule critical utilities such as the gas main and water main within the median of Route 29. Our schedule provides ample time for the in-plan relocation of the aforementioned schedule-critical utilities. All contractually required VDOT meeting timeframes are included within our schedule including development of the Preliminary Utility Status Report, holding of UFI meetings, and development of in-place relocations within the Early Works submission.

Scope Validation: Our **DBT** has included all contractually required activities and milestones for Scope Validation. Based on our proposal schedule, our **DBT** will have sufficient time within the Scope Validation period to complete necessary explorations, investigations, and testing to provide the required General Notice and subsequent backup data.

Public Outreach: Our **DBT** is committed to utilizing the project CPM schedule as a tool to not only manage manpower, materials, and equipment; but to plan for major milestones and traffic impacts that require communication to the public and key stakeholders. The schedule will be utilized in routine progress and communications strategy meetings to verify appropriate timeframes for media campaigns and outreach. This strategy will provide VDOT with notice well in advance of contractual requirements inclusive of contingency planning.

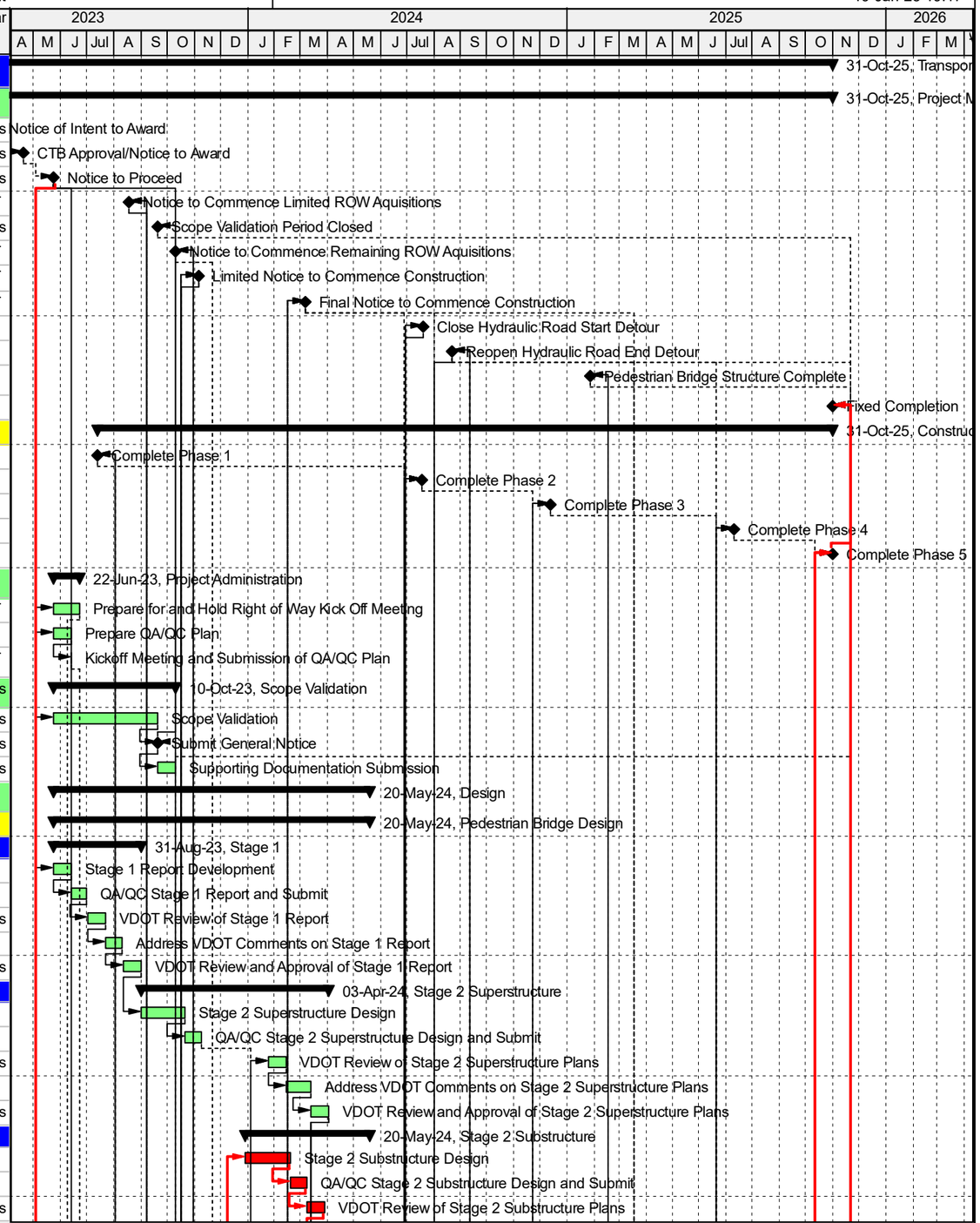
Key Schedule Risks and Mitigations:

- ***Completion of Early Design and Construction to Prepare for Hydraulic Road Closure and Detour***
  - ***Risk*** – In reviewing our proposal schedule design delays impacting the early works ROW and AFC packages can have profound impacts on our overall delivery strategy
  - ***Mitigation*** – Our schedule includes two review cycles of every submittal to ensure that our **DBT** has opportunity to address any comments from VDOT without impacting delivery. Furthermore, our reasonable aggressive approach to project delivery results in a significant amount of float to our **DBT**'s unique proposed completion date of **October 31, 2025**. Should impacts occur necessitating closure and detour of Hydraulic Road in Year 2, our schedule contains ample float and consideration to still meet our proposed completion date through resequencing.
- ***Completion of Right-of-Way Acquisition in a Timely Manner for Early Utility Relocation and Roundabout Construction***
  - ***Risk*** – Our schedule contains a near critical path in the early acquisition of Right-of-Way for Elements C and D. This ROW is necessary to complete the critical utility relocations within these Elements clearing the path of the bulk of the project work. Should these acquisitions delay, impacts have the potential to ripple through the schedule requiring resequencing of construction activities.
  - ***Mitigation*** – Firstly these activities are not currently critical, only near critical. Our schedule considers all legally required timeframes for ROW acquisition in addition to ample timeframes for negotiation, counteroffers, and reviews by VDOT. Our **DBT** understands and empathizes with VDOT's desire to minimize filing of certification for good faith negotiations that lower legal risks for VDOT while simultaneously improving public and stakeholder satisfaction.
- ***Timely Completion of the Hydraulic Road Roundabout and Reopening of Hydraulic Road***
  - ***Risk*** – The contractually permitted 46-day closure and detour of Hydraulic Road is buttressed on either end of the closure with significant traffic events pertaining to the University of Virginia and public school start and end of classes. A failure to reopen Hydraulic Road in a timely fashion will not only cause significant financial impact to our **DBT**, but traffic impacts to the Charlottesville region.
  - ***Mitigation*** – Our schedule currently indicates completion of the closure and detour within 38 days, 8 days ahead of the proposed closure window. Further our **DBT**'s approach to Work sequencing allows

substantial preparations of all "out-of-traffic" areas of the roundabout and its legs. This reduces the overall scope of work to be completed under closure and detour minimizing the risk of exceeding the allowable window.

Critical Path Overview: Our **DBT**'s proposal schedule indicates our Critical Path starting with property access letters and extending through geotechnical investigations, geotechnical report submissions, Phase 2 superstructure plans, fabrication of superstructure truss elements, construction and erection of the Pedestrian bridge, completion of the Hydraulic Road/Rt 29 Intersection Improvements, and the Hydraulic Road Access Management and Pedestrian Improvements. This critical path is representative of the longest path in accordance with VDOT Proposal Schedule requirements. It should be noted that this path, by virtue of our **DBT**'s proposed early completion, contains more float than other near critical paths. The early works package development, preparation of Hydraulic Road for the closure and detour, and completion of the work under the closure and detour contain less overall float to VDOT's proposed final completion date. Our previously discussed schedule risk mitigations will limit the overall risk associated with these near critical paths.

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
Transportation Improvements at Hydraulic Road and US		686	17-Mar-23	31-Oct-25	24	
Project Milestones		686	17-Mar-23	31-Oct-25	24	
C1150	Notice of Intent to Award	0	17-Mar-23*		0	Calendars Days
C1160	CTB Approval/Notice to Award	0	19-Apr-23*		34	Calendars Days
C1000	Notice to Proceed	0	23-May-23*		0	Calendars Days
C1050	Notice to Commence Limited ROW Aquisitions	0		18-Aug-23	0	VDOT 5 Day Workweek, VDOT
C1090	Scope Validation Period Closed	0		20-Sep-23*	0	Calendars Days
C1060	Notice to Commence Remaining ROW Aquisitions	0		10-Oct-23	211	VDOT 5 Day Workweek, VDOT
C1070	Limited Notice to Commence Construction	0	06-Nov-23		1	VDOT 5 Day Workweek, VDOT
C1080	Final Notice to Commence Construction	0	07-Mar-24		92	VDOT 5 Day Workweek, VDOT
C1010	Close Hydraulic Road Start Detour	0	19-Jul-24*		0	Stand 5 Day Workweek, US
C1020	Reopen Hydraulic Road End Detour	0		21-Aug-24*	1	Stand 5 Day Workweek, US
C1030	Pedestrian Bridge Structure Complete	0		27-Jan-25	218	Stand 5 Day Workweek, US
C1040	Fixed Completion	0		31-Oct-25*	22	Stand 5 Day Workweek, US
Construction Phasing		585	12-Jul-23	31-Oct-25	22	Stand 5 Day Workweek, US
C1100	Complete Phase 1	0		12-Jul-23	607	Stand 5 Day Workweek, US
C1110	Complete Phase 2	0		18-Jul-24	349	Stand 5 Day Workweek, US
C1120	Complete Phase 3	0		12-Dec-24	247	Stand 5 Day Workweek, US
C1130	Complete Phase 4	0		10-Jul-25	102	Stand 5 Day Workweek, US
C1140	Complete Phase 5	0		31-Oct-25	22	Stand 5 Day Workweek, US
Project Administration		23	23-May-23	22-Jun-23	15	
C1180	Prepare for and Hold Right of Way Kick Off Meeting	21	23-May-23	22-Jun-23	4	VDOT 5 Day Workweek, VDOT
C1190	Prepare QA/QC Plan	14	23-May-23	12-Jun-23	21	Stand 5 Day Workweek, US
C1170	Kickoff Meeting and Submission of QA/QC Plan	1	13-Jun-23	13-Jun-23	20	VDOT 5 Day Workweek, VDOT
Scope Validation		141	23-May-23	10-Oct-23	786	Calendars Days
SV1000	Scope Validation	120	23-May-23	19-Sep-23	0	Calendars Days
SV1010	Submit General Notice	0		19-Sep-23	0	Calendars Days
SV1020	Supporting Documentation Submission	21	20-Sep-23	10-Oct-23	786	Calendars Days
Design		260	23-May-23	20-May-24	69	
Pedestrian Bridge Design		260	23-May-23	20-May-24	69	
Stage 1		73	23-May-23	31-Aug-23	155	
A2450	Stage 1 Report Development	14	23-May-23	12-Jun-23	148	Stand 5 Day Workweek, US
A2460	QA/QC Stage 1 Report and Submit	14	13-Jun-23	30-Jun-23	148	Stand 5 Day Workweek, US
A2470	VDOT Review of Stage 1 Report	21	01-Jul-23	21-Jul-23	219	Calendars Days
A2480	Address VDOT Comments on Stage 1 Report	14	21-Jul-23	10-Aug-23	149	Stand 5 Day Workweek, US
A2490	VDOT Review and Approval of Stage 1 Report	21	11-Aug-23	31-Aug-23	217	Calendars Days
Stage 2 Superstructure		154	31-Aug-23	03-Apr-24	102	
A2500	Stage 2 Superstructure Design	35	31-Aug-23	20-Oct-23	149	Stand 5 Day Workweek, US
A2510	QA/QC Stage 2 Superstructure Design and Submit	14	20-Oct-23	09-Nov-23	149	Stand 5 Day Workweek, US
A2520	VDOT Review of Stage 2 Superstructure Plans	21	24-Jan-24	13-Feb-24	142	Calendars Days
A2530	Address VDOT Comments on Stage 2 Superstructure Plans	21	13-Feb-24	13-Mar-24	100	Stand 5 Day Workweek, US
A2540	VDOT Review and Approval of Stage 2 Superstructure Plans	21	14-Mar-24	03-Apr-24	144	Calendars Days
Stage 2 Substructure		102	28-Dec-23	20-May-24	54	
A2550	Stage 2 Substructure Design	35	28-Dec-23	19-Feb-24	53	Stand 5 Day Workweek, US
A2560	QA/QC Stage 2 Substructure Design and Submit	14	19-Feb-24	08-Mar-24	53	Stand 5 Day Workweek, US
A2570	VDOT Review of Stage 2 Substructure Plans	21	09-Mar-24	29-Mar-24	75	Calendars Days

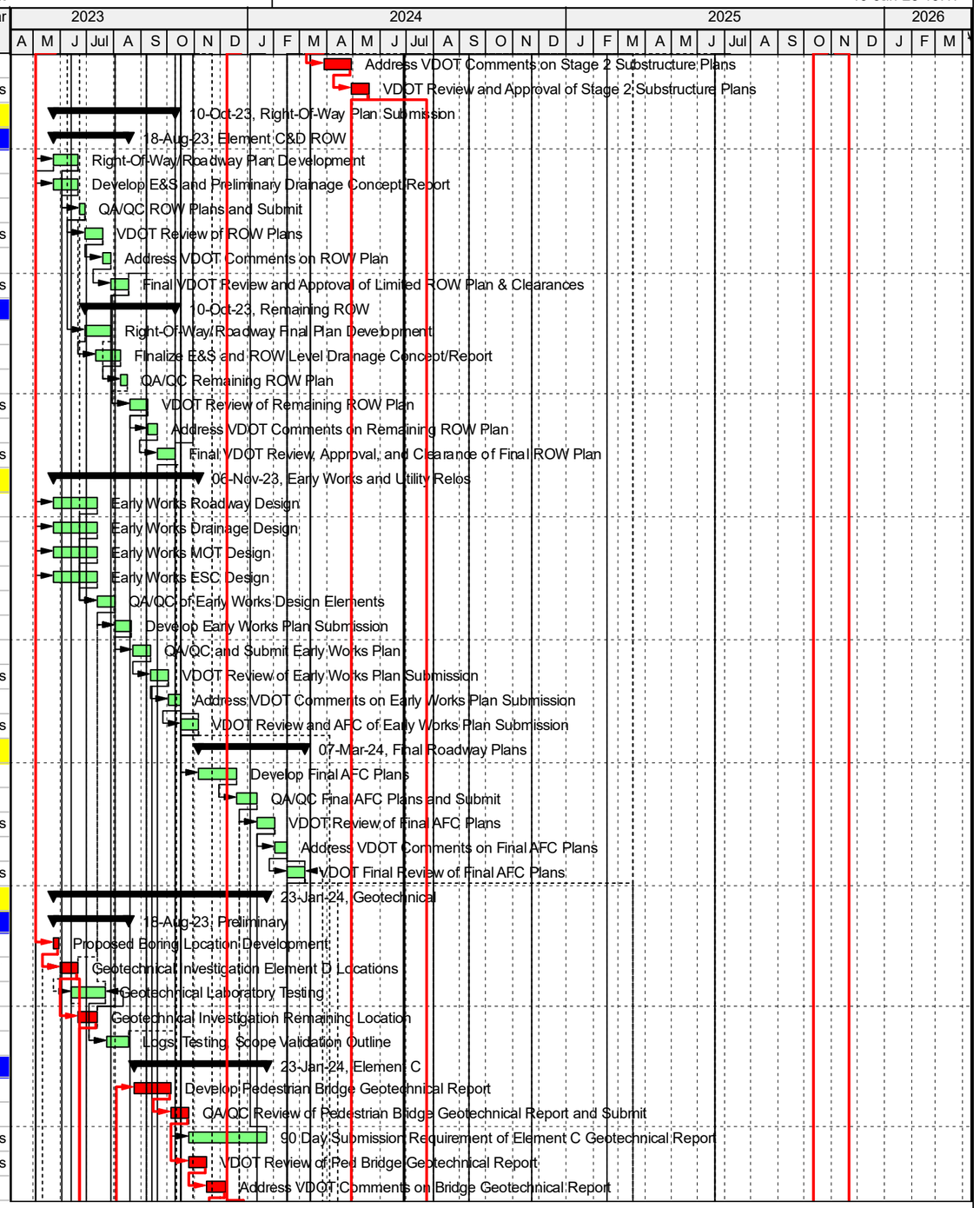


Actual Work | Critical Remaining Work | Summary
Remaining Work | Milestone

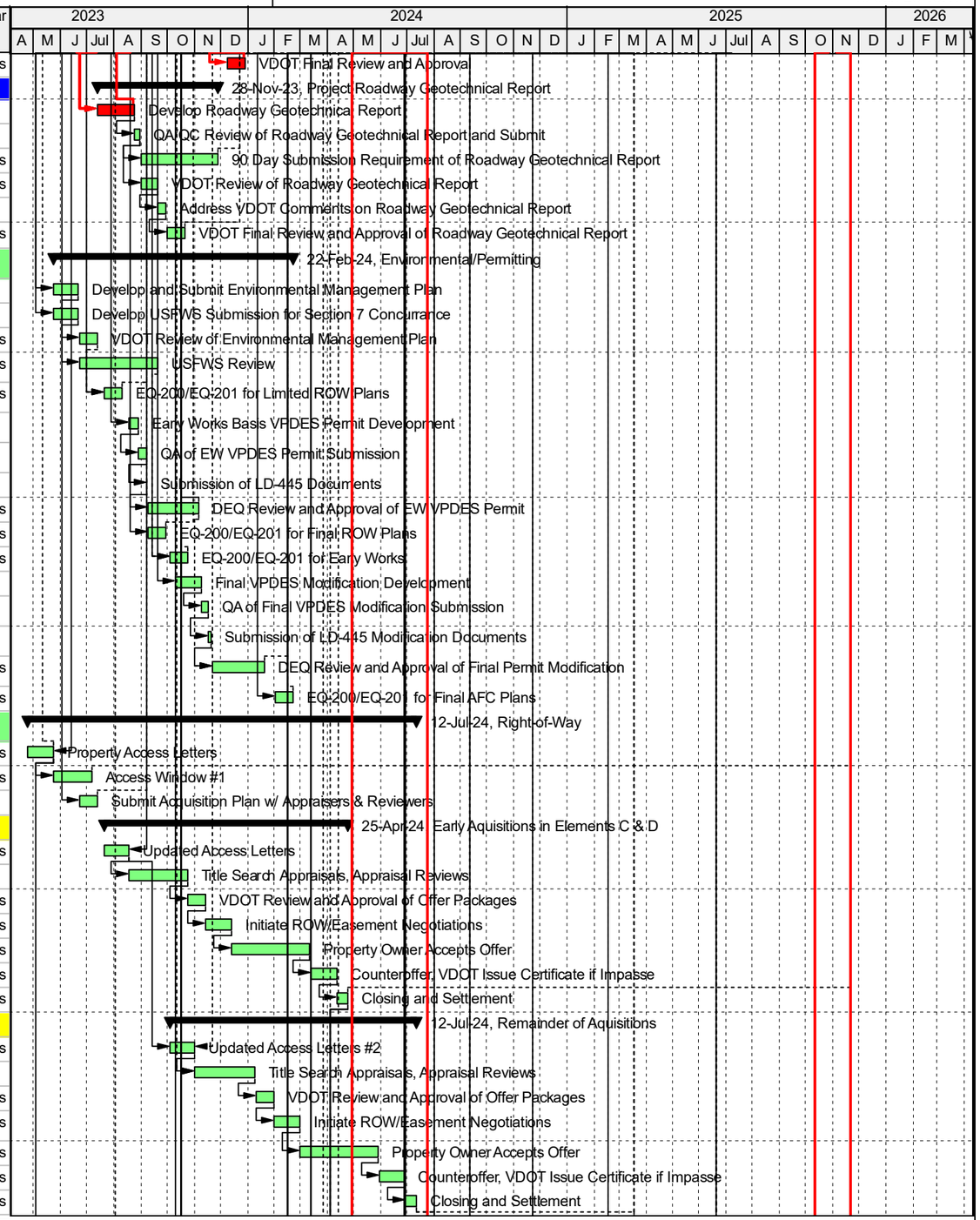
Curtis Contracting & Wallace Montgomery

TASK filter: All Activities
Proposal Schedule (1-18-2023)

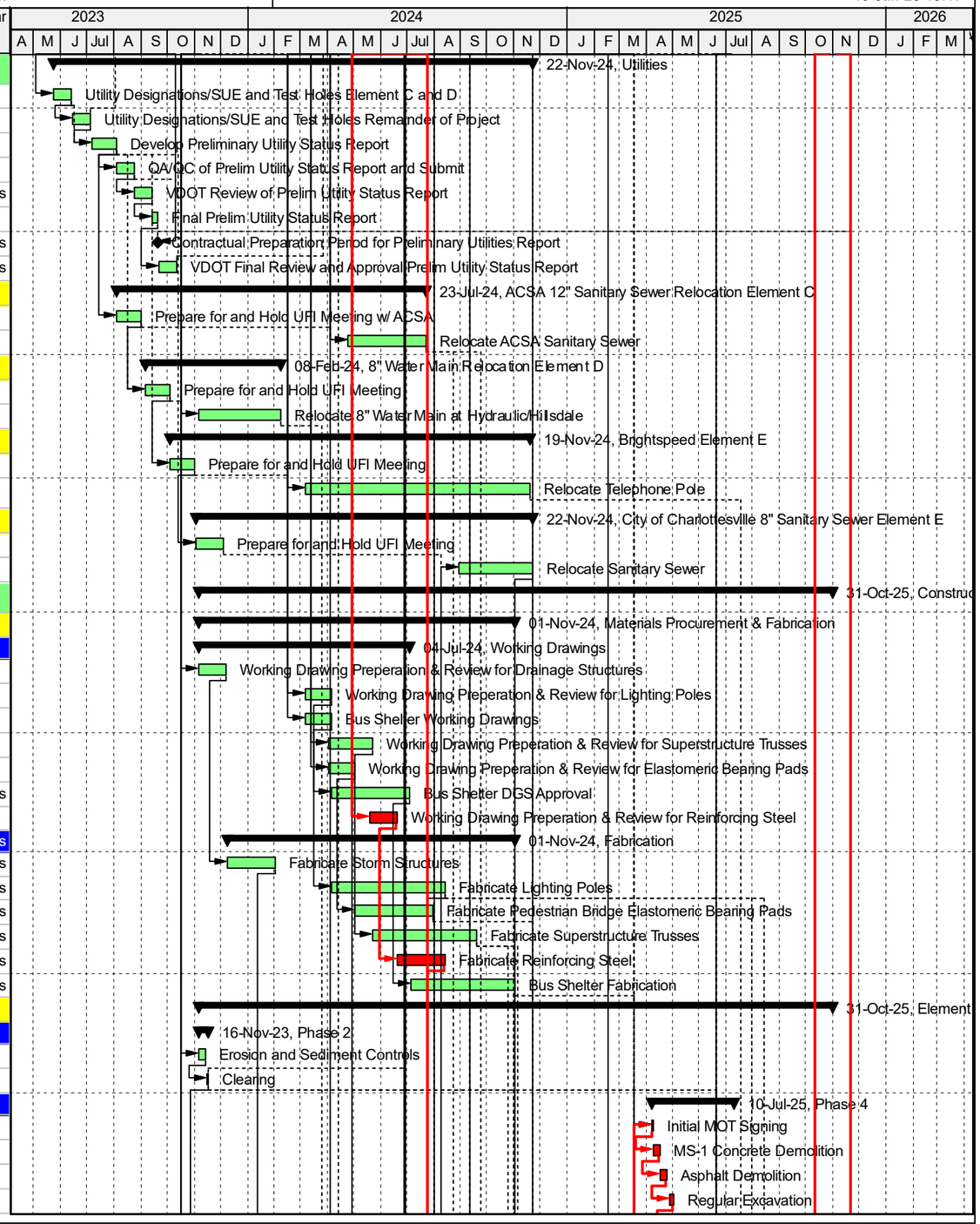
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A2580	Address VDOT Comments on Stage 2 Substructure Plans	21	29-Mar-24	29-Apr-24	52	Stand 5 Day Workweek, US
A2590	VDOT Review and Approval of Stage 2 Substructure Plans	21	30-Apr-24	20-May-24	76	Calendars Days
Right-Of-Way Plan Submission		101	23-May-23	10-Oct-23	23	
Element C&D ROW		64	23-May-23	18-Aug-23	0	
A2920	Right-Of-Way/Roadway Plan Development	21	23-May-23	21-Jun-23	0	Stand 5 Day Workweek, US
A2930	Develop E&S and Preliminary Drainage Concept/Report	21	23-May-23	21-Jun-23	0	Stand 5 Day Workweek, US
A2940	QA/QC ROW Plans and Submit	5	22-Jun-23	28-Jun-23	0	Stand 5 Day Workweek, US
A2950	VDOT Review of ROW Plans	21	29-Jun-23	19-Jul-23	0	Calendars Days
A2960	Address VDOT Comments on ROW Plan	7	19-Jul-23	28-Jul-23	0	Stand 5 Day Workweek, US
A2970	Final VDOT Review and Approval of Limited ROW Plan & Clearar	21	29-Jul-23	18-Aug-23	0	Calendars Days
Remaining ROW		74	29-Jun-23	10-Oct-23	23	
A3070	Right-Of-Way/Roadway Final Plan Development	21	29-Jun-23	28-Jul-23	25	Stand 5 Day Workweek, US
A3080	FInalize E&S and ROW Level Drainage Concept/Report	21	11-Jul-23	08-Aug-23	25	Stand 5 Day Workweek, US
A3090	QA/QC Remaining ROW Plan	5	09-Aug-23	15-Aug-23	25	Stand 5 Day Workweek, US
A3100	VDOT Review of Remaining ROW Plan	21	19-Aug-23	08-Sep-23	33	Calendars Days
A3110	Address VDOT Comments on Remaining ROW Plan	7	08-Sep-23	19-Sep-23	23	Stand 5 Day Workweek, US
A3120	Final VDOT Review, Approval, and Clearance of Final ROW Plan	21	20-Sep-23	10-Oct-23	33	Calendars Days
Early Works and Utility Relos		120	23-May-23	06-Nov-23	1	
A2700	Early Works Roadway Design	35	23-May-23	12-Jul-23	1	Stand 5 Day Workweek, US
A2710	Early Works Drainage Design	35	23-May-23	12-Jul-23	1	Stand 5 Day Workweek, US
A2720	Early Works MOT Design	35	23-May-23	12-Jul-23	1	Stand 5 Day Workweek, US
A2730	Early Works ESC Design	35	23-May-23	12-Jul-23	1	Stand 5 Day Workweek, US
A2740	QA/QC of Early Works Design Elements	14	13-Jul-23	01-Aug-23	1	Stand 5 Day Workweek, US
A2750	Develop Early Works Plan Submission	14	02-Aug-23	21-Aug-23	1	Stand 5 Day Workweek, US
A2760	QA/QC and Submit Early Works Plan	14	22-Aug-23	11-Sep-23	1	Stand 5 Day Workweek, US
A2770	VDOT Review of Early Works Plan Submission	21	12-Sep-23	02-Oct-23	1	Calendars Days
A2780	Address VDOT Comments on Early Works Plan Submission	10	02-Oct-23	16-Oct-23	1	Stand 5 Day Workweek, US
A2790	VDOT Review and AFC of Early Works Plan Submission	21	17-Oct-23	06-Nov-23	1	Calendars Days
Final Roadway Plans		88	06-Nov-23	07-Mar-24	5	
A2870	Develop Final AFC Plans	30	06-Nov-23	20-Dec-23	4	Stand 5 Day Workweek, US
A2880	QA/QC Final AFC Plans and Submit	14	20-Dec-23	11-Jan-24	4	Stand 5 Day Workweek, US
A2890	VDOT Review of Final AFC Plans	21	12-Jan-24	01-Feb-24	7	Calendars Days
A2900	Address VDOT Comments on Final AFC Plans	10	01-Feb-24	15-Feb-24	5	Stand 5 Day Workweek, US
A2910	VDOT Final Review of Final AFC Plans	21	16-Feb-24	07-Mar-24	7	Calendars Days
Geotechnical		176	23-May-23	23-Jan-24	102	
Preliminary		64	23-May-23	18-Aug-23	22	
A2160	Proposed Boring Location Development	5	23-May-23	30-May-23	8	Stand 5 Day Workweek, US
A2170	Geotechnical Investigation Element D Locations	15	31-May-23	20-Jun-23	8	Stand 5 Day Workweek, VDOT
A2200	Geotechnical Laboratory Testing	28	13-Jun-23	21-Jul-23	8	Stand 5 Day Workweek, US
A2180	Geotechnical Investigation Remaining Location	15	21-Jun-23	12-Jul-23	8	Stand 5 Day Workweek, VDOT
A2210	Logs, Testing, Scope Validation Outline	20	24-Jul-23	18-Aug-23	21	Stand 5 Day Workweek, US
Element C		109	24-Aug-23	23-Jan-24	102	
A2220	Develop Pedestrian Bridge Geotechnical Report	30	24-Aug-23	05-Oct-23	53	Stand 5 Day Workweek, US
A2230	QA/QC Review of Pedestrian Bridge Geotechnical Report and Su	14	06-Oct-23	25-Oct-23	53	Stand 5 Day Workweek, US
A2240	90 Day Submission Requirement of Element C Geotechnical Rep	90	26-Oct-23	23-Jan-24	142	Calendars Days
A2380	VDOT Review of Ped Bridge Geotechnical Report	21	26-Oct-23	15-Nov-23	81	Calendars Days
A2250	Address VDOT Comments on Bridge Geotechnical Report	14	15-Nov-23	07-Dec-23	52	Stand 5 Day Workweek, US



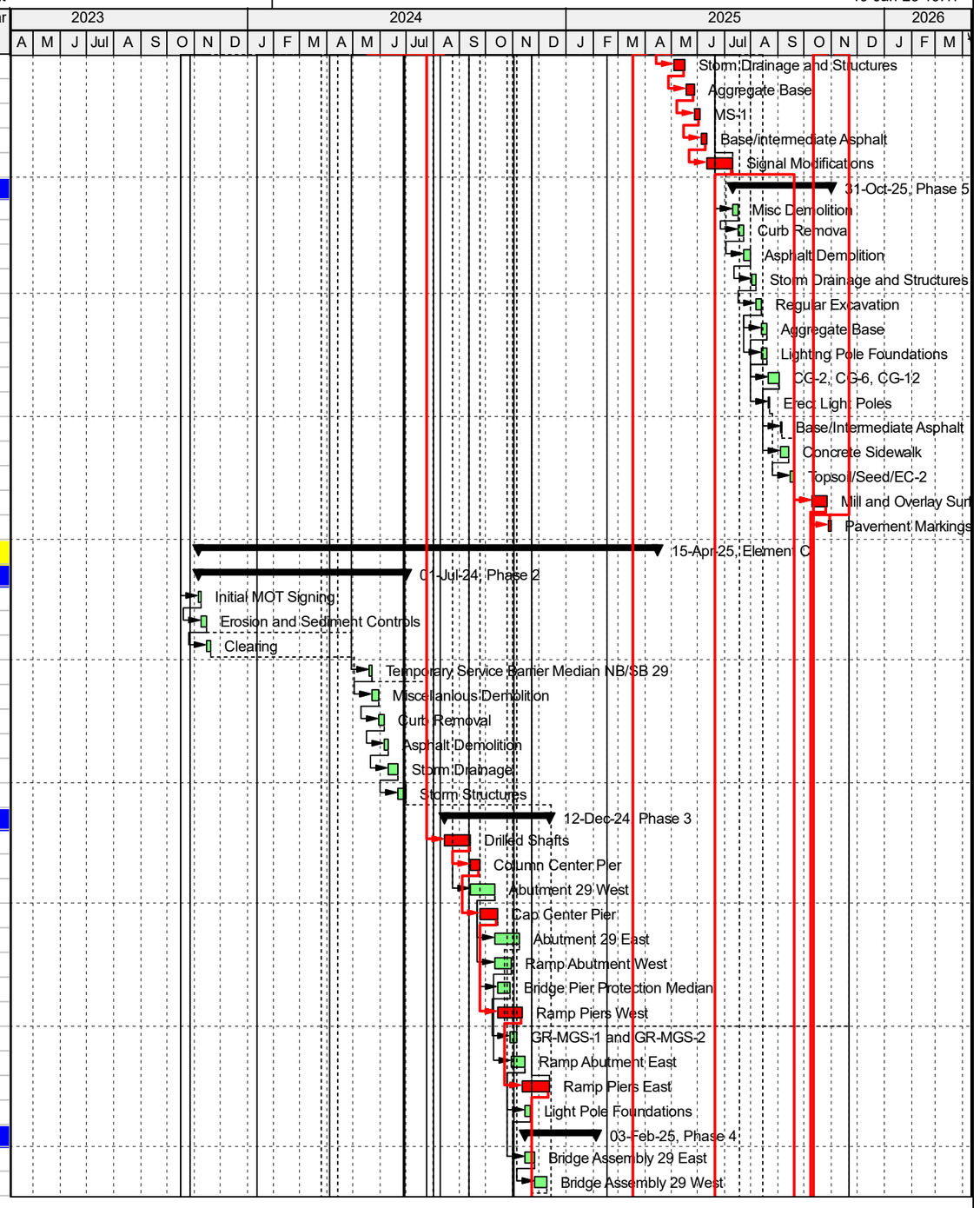
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A2260	VDOT Final Review and Approval	21	08-Dec-23	28-Dec-23	77	Calendars Days
Project Roadway Geotechnical Report		99	13-Jul-23	28-Nov-23	37	
A2270	Develop Roadway Geotechnical Report	30	13-Jul-23	23-Aug-23	36	Stand 5 Day Workweek, US
A2280	QA/QC Review of Roadway Geotechnical Report and Submit	5	24-Aug-23	30-Aug-23	36	Stand 5 Day Workweek, US
A2290	90 Day Submission Requirement of Roadway Geotechnical Repo	90	31-Aug-23	28-Nov-23	51	Calendars Days
A2400	VDOT Review of Roadway Geotechnical Report	21	31-Aug-23	20-Sep-23	89	Calendars Days
A2300	Address VDOT Comments on Roadway Geotechnical Report	7	20-Sep-23	29-Sep-23	61	Stand 5 Day Workweek, US
A2310	VDOT Final Review and Approval of Roadway Geotechnical Repo	21	30-Sep-23	20-Oct-23	90	Calendars Days
Environmental/Permitting		198	23-May-23	22-Feb-24	125	
A3490	Develop and Submit Environmental Management Plan	21	23-May-23	21-Jun-23	11	Stand 5 Day Workweek, US
A3510	Develop USFWS Submission for Section 7 Concurrance	21	23-May-23	21-Jun-23	19	Stand 5 Day Workweek, US
A3500	VDOT Review of Environmental Management Plan	21	22-Jun-23	12-Jul-23	16	Calendars Days
A3520	USFWS Review	90	22-Jun-23	19-Sep-23	28	Calendars Days
A3460	EQ-200/EQ-201 for Limited ROW Plans	21	20-Jul-23	09-Aug-23	9	Calendars Days
A3260	Early Works Basis VPDES Permit Development	7	18-Aug-23	29-Aug-23	1	Stand 5 Day Workweek, US Holidays_No Winter SD
A3270	QA of EW VPDES Permit Submission	5	29-Aug-23	06-Sep-23	1	Stand 5 Day Workweek, US Holidays_No Winter SD
A3280	Submission of LD-445 Documents	1	06-Sep-23	07-Sep-23	1	Stand 5 Day Workweek, US
A3290	DEQ Review and Approval of EW VPDES Permit	60	08-Sep-23	06-Nov-23	1	Calendars Days
A3470	EQ-200/EQ-201 for Final ROW Plans	21	09-Sep-23	29-Sep-23	321	Calendars Days
A3450	EQ-200/EQ-201 for Early Works	21	03-Oct-23	23-Oct-23	15	Calendars Days
A3300	Final VPDES Modification Development	21	10-Oct-23	08-Nov-23	124	Stand 5 Day Workweek, US
A3310	QA of Final VPDES Modification Submission	7	08-Nov-23	17-Nov-23	124	Stand 5 Day Workweek, US Holidays_No Winter SD
A3320	Submission of LD-445 Modification Documents	1	17-Nov-23	20-Nov-23	124	Stand 5 Day Workweek, US Holidays_No Winter SD
A3330	DEQ Review and Approval of Final Permit Modification	60	21-Nov-23	19-Jan-24	181	Calendars Days
A3480	EQ-200/EQ-201 for Final AFC Plans	21	02-Feb-24	22-Feb-24	147	Calendars Days
Right-of-Way		320	23-Apr-23	12-Jul-24	364	
A2320	Property Access Letters	30	23-Apr-23	23-May-23	18	Calendars Days
A2610	Access Window #1	45	23-May-23	06-Jul-23	882	Calendars Days
A2600	Submit Acquisition Plan w/ Appraisers & Reviewers	14	22-Jun-23	12-Jul-23	27	Stand 5 Day Workweek, US
Early Aquisitions in Elements C & D		201	20-Jul-23	25-Apr-24	0	
A2990	Updated Access Letters	30	20-Jul-23	18-Aug-23	2	Calendars Days
A3010	Title Search Appraisals, Appraisal Reviews	45	18-Aug-23	23-Oct-23	0	Stand 5 Day Workweek, US
A3020	VDOT Review and Approval of Offer Packages	21	24-Oct-23	13-Nov-23	0	Calendars Days
A3030	Initiate ROW/Easement Negotiations	30	14-Nov-23	13-Dec-23	0	Calendars Days
A3040	Property Owner Accepts Offer	90	14-Dec-23	12-Mar-24	0	Calendars Days
A3050	Counteroffer, VDOT Issue Certificate if Impasse	30	13-Mar-24	11-Apr-24	0	Calendars Days
A3060	Closing and Settlement	14	12-Apr-24	25-Apr-24	0	Calendars Days
Remainder of Aquisitions		204	03-Oct-23	12-Jul-24	203	
A3250	Updated Access Letters #2	30	03-Oct-23	01-Nov-23	288	Calendars Days
A3150	Title Search Appraisals, Appraisal Reviews	45	01-Nov-23	09-Jan-24	199	Stand 5 Day Workweek, US
A3160	VDOT Review and Approval of Offer Packages	21	10-Jan-24	30-Jan-24	285	Calendars Days
A3170	Initiate ROW/Easement Negotiations	30	31-Jan-24	29-Feb-24	285	Calendars Days
A3180	Property Owner Accepts Offer	90	01-Mar-24	29-May-24	285	Calendars Days
A3190	Counteroffer, VDOT Issue Certificate if Impasse	30	30-May-24	28-Jun-24	285	Calendars Days
A3200	Closing and Settlement	14	29-Jun-24	12-Jul-24	285	Calendars Days



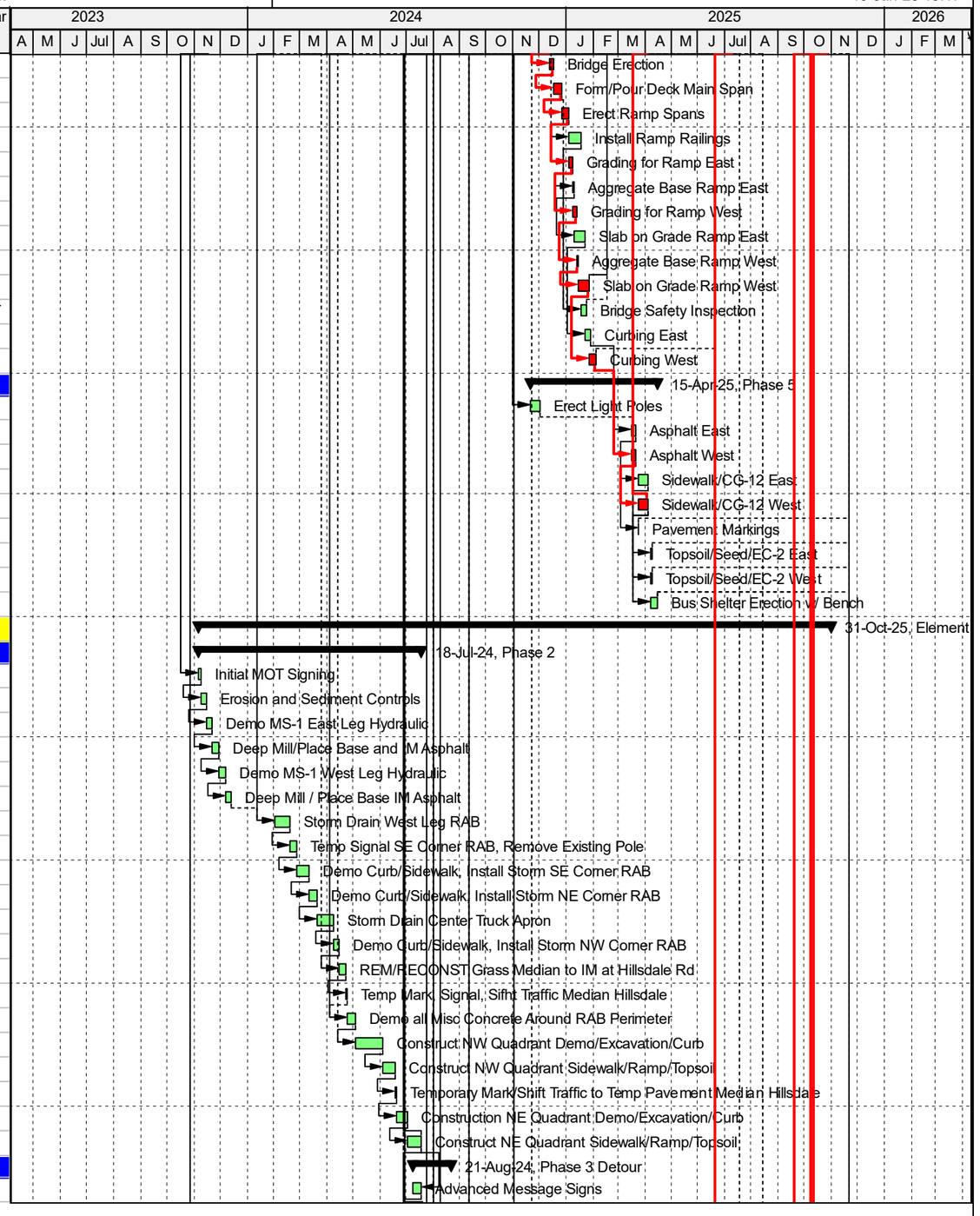
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
Utilities		394	23-May-23	22-Nov-24	269	
A2340	Utility Designations/SUE and Test Holes Element C and D	15	23-May-23	13-Jun-23	73	Stand 5 Day Workweek, US
A2330	Utility Designations/SUE and Test Holes Remainder of Project	15	14-Jun-23	05-Jul-23	73	Stand 5 Day Workweek, US
A2350	Develop Preliminary Utility Status Report	21	06-Jul-23	03-Aug-23	73	Stand 5 Day Workweek, US
A2370	QA/QC of Prelim Utility Status Report and Submit	14	04-Aug-23	23-Aug-23	105	Stand 5 Day Workweek, US
A2390	VDOT Review of Prelim Utility Status Report	21	24-Aug-23	13-Sep-23	155	Calendars Days
A2410	Final Prelim Utility Status Report	5	13-Sep-23	20-Sep-23	106	Stand 5 Day Workweek, US
A2360	Contractual Preparation Period for Preliminary Utilities Report	0		19-Sep-23	807	Calendars Days
A2430	VDOT Final Review and Approval Prelim Utility Status Report	21	21-Sep-23	11-Oct-23	155	Calendars Days
ACSA 12" Sanitary Sewer Relocation Element C		253	04-Aug-23	23-Jul-24	94	
A3210	Prepare for and Hold UFI Meeting w/ ACSA	21	04-Aug-23	01-Sep-23	73	Stand 5 Day Workweek, US
A3220	Relocate ACSA Sanitary Sewer	60	25-Apr-24	23-Jul-24	89	Stand 5 Day Workweek, VDOT
8" Water Main Relocation Element D		113	05-Sep-23	08-Feb-24	48	
A3230	Prepare for and Hold UFI Meeting	21	05-Sep-23	03-Oct-23	73	Stand 5 Day Workweek, US
A3240	Relocate 8" Water Main at Hydraulic/Hillsdale	60	06-Nov-23	08-Feb-24	46	Stand 5 Day Workweek, VDOT
Brightspeed Element E		287	04-Oct-23	19-Nov-24	202	Stand 5 Day Workweek, US
A3410	Prepare for and Hold UFI Meeting	21	04-Oct-23	01-Nov-23	288	Stand 5 Day Workweek, US
A3420	Relocate Telephone Pole	180	07-Mar-24	19-Nov-24	202	Stand 5 Day Workweek, US Holidays, No Winter SD
City of Charlottesville 8" Sanitary Sewer Element E		269	02-Nov-23	22-Nov-24	169	Stand 5 Day Workweek, US
A3430	Prepare for and Hold UFI Meeting	21	02-Nov-23	04-Dec-23	357	Stand 5 Day Workweek, US
A3440	Relocate Sanitary Sewer	60	29-Aug-24	22-Nov-24	169	Stand 5 Day Workweek, US
Construction		519	06-Nov-23	31-Oct-25	24	
Materials Procurement & Fabrication		259	06-Nov-23	01-Nov-24	274	
Working Drawings		173	06-Nov-23	04-Jul-24	274	
A2980	Working Drawing Preperation & Review for Drainage Structures	21	06-Nov-23	07-Dec-23	1	Stand 5 Day Workweek, US
A3140	Working Drawing Preperation & Review for Lighting Poles	21	07-Mar-24	05-Apr-24	5	Stand 5 Day Workweek, US
A3350	Bus Shelter Working Drawings	21	07-Mar-24	05-Apr-24	266	Stand 5 Day Workweek, US
A2860	Working Drawing Preperation & Review for Superstructure Trusse	35	03-Apr-24	22-May-24	100	Stand 5 Day Workweek, US
A3340	Working Drawing Preperation & Review for Elastomeric Bearing P	21	03-Apr-24	02-May-24	148	Stand 5 Day Workweek, US
A3360	Bus Shelter DGS Approval	90	06-Apr-24	04-Jul-24	384	Calendars Days
A3000	Working Drawing Preperation & Review for Reinforcing Steel	21	20-May-24	19-Jun-24	52	Stand 5 Day Workweek, US
Fabrication		330	08-Dec-23	01-Nov-24	384	Calendars Days
A2850	Fabricate Storm Structures	56	08-Dec-23	01-Feb-24	3	Calendars Days
A2820	Fabricate Lighting Poles	130	06-Apr-24	13-Aug-24	7	Calendars Days
A2830	Fabricate Pedestrian Bridge Elastomeric Bearing Pads	90	03-May-24	31-Jul-24	215	Calendars Days
A2800	Fabricate Superstructure Trusses	120	23-May-24	19-Sep-24	145	Calendars Days
A2840	Fabricate Reinforcing Steel	56	20-Jun-24	14-Aug-24	76	Calendars Days
A3370	Bus Shelter Fabrication	120	05-Jul-24	01-Nov-24	384	Calendars Days
Element A		519	06-Nov-23	31-Oct-25	24	
Phase 2		8	06-Nov-23	16-Nov-23	351	
A1010	Erosion and Sediment Controls	5	06-Nov-23	13-Nov-23	329	Stand 5 Day Workweek, VDOT
A1020	Clearing	2	15-Nov-23	16-Nov-23	177	Stand 5 Day Workweek, US
Phase 4		69	07-Apr-25	10-Jul-25	21	
A1000	Initial MOT Signing	3	07-Apr-25	09-Apr-25	21	Stand 5 Day Workweek, VDOT
A1050	MS-1 Concrete Demolition	5	10-Apr-25	16-Apr-25	21	Stand 5 Day Workweek, VDOT
A2420	Asphalt Demolition	5	17-Apr-25	25-Apr-25	21	Stand 5 Day Workweek, VDOT
A2620	Regular Excavation	5	28-Apr-25	02-May-25	21	Stand 5 Day Workweek, VDOT



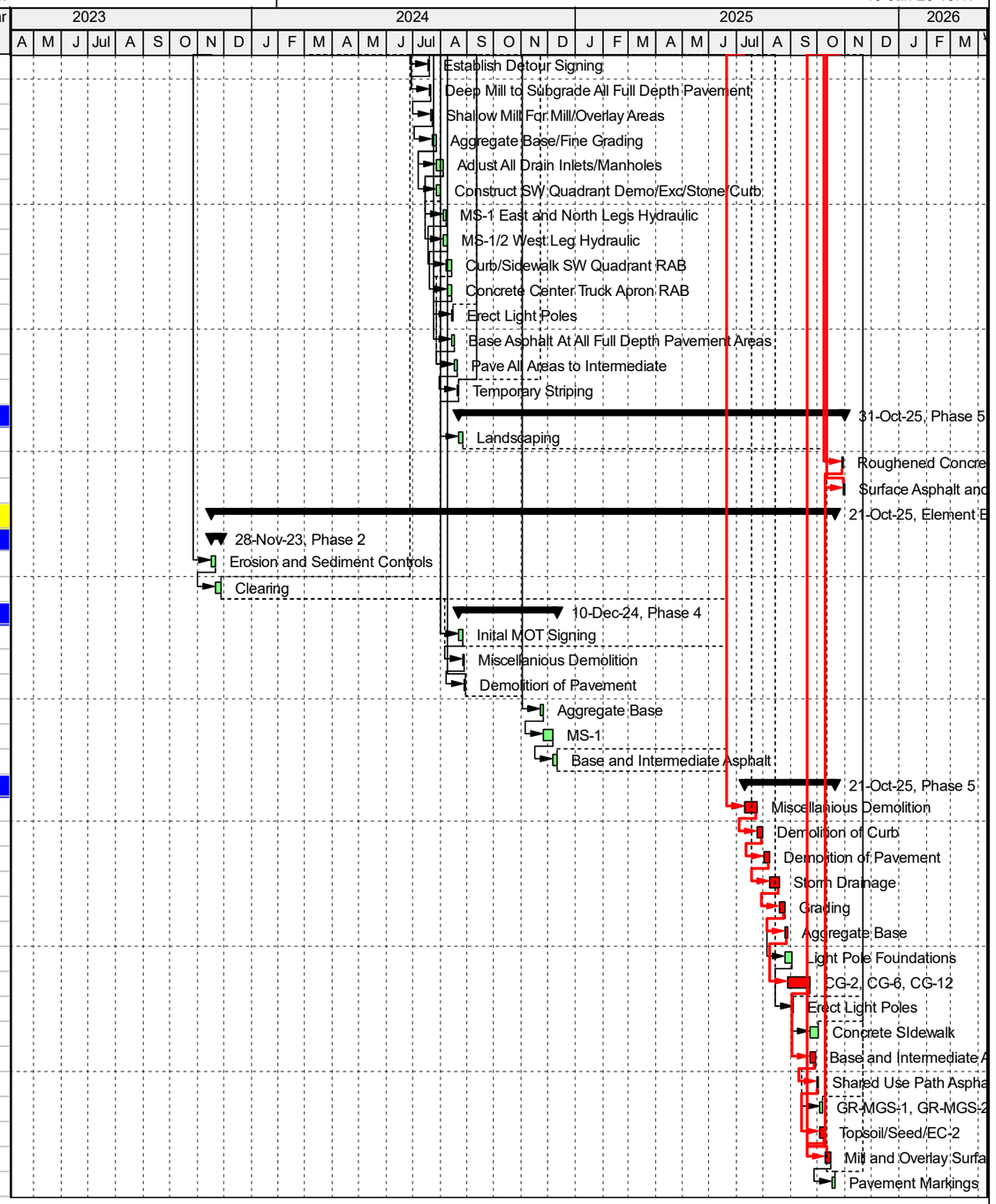
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A2630	Storm Drainage and Structures	10	05-May-25	16-May-25	21	Stand 5 Day Workweek, VDOT
A2190	Aggregate Base	5	19-May-25	27-May-25	21	Stand 5 Day Workweek, VDOT
A1130	MS-1	5	28-May-25	03-Jun-25	21	Stand 5 Day Workweek, VDOT
A2440	Base/Intermediate Asphalt	5	04-Jun-25	10-Jun-25	21	Stand 5 Day Workweek, VDOT
A1170	Signal Modifications	20	11-Jun-25	10-Jul-25	21	Stand 5 Day Workweek, VDOT
Phase 5		81	11-Jul-25	31-Oct-25	24	
A1030	Misc Demolition	4	11-Jul-25	16-Jul-25	35	Stand 5 Day Workweek, VDOT
A1040	Curb Removal	5	17-Jul-25	23-Jul-25	35	Stand 5 Day Workweek, VDOT
A1060	Asphalt Demolition	6	24-Jul-25	31-Jul-25	35	Stand 5 Day Workweek, VDOT
A1070	Storm Drainage and Structures	4	01-Aug-25	06-Aug-25	35	Stand 5 Day Workweek, VDOT
A1080	Regular Excavation	4	07-Aug-25	12-Aug-25	35	Stand 5 Day Workweek, VDOT
A1090	Aggregate Base	5	13-Aug-25	19-Aug-25	35	Stand 5 Day Workweek, VDOT
A2680	Lighting Pole Foundations	5	13-Aug-25	19-Aug-25	36	Stand 5 Day Workweek, US
A1110	CG-2, CG-6, CG-12	8	20-Aug-25	02-Sep-25	35	Stand 5 Day Workweek, VDOT
A2690	Erect Light Poles	2	20-Aug-25	21-Aug-25	50	Stand 5 Day Workweek, US
A1100	Base/Intermediate Asphalt	3	03-Sep-25	05-Sep-25	45	Stand 5 Day Workweek, VDOT
A1120	Concrete Sidewalk	8	03-Sep-25	12-Sep-25	35	Stand 5 Day Workweek, VDOT
A1160	Topsoil/Seed/EC-2	5	15-Sep-25	19-Sep-25	35	Stand 5 Day Workweek, VDOT
A1140	Mill and Overlay Surface Asphalt	12	10-Oct-25	27-Oct-25	21	Stand 5 Day Workweek, VDOT
A1150	Pavement Markings	4	28-Oct-25	31-Oct-25	21	Stand 5 Day Workweek, VDOT
Element C		376	06-Nov-23	15-Apr-25	167	
Phase 2		170	06-Nov-23	01-Jul-24	187	
A1180	Initial MOT Signing	3	06-Nov-23	09-Nov-23	233	Stand 5 Day Workweek, VDOT
A1190	Erosion and Sediment Controls	3	09-Nov-23	14-Nov-23	233	Stand 5 Day Workweek, VDOT
A1210	Clearing	4	15-Nov-23	20-Nov-23	147	Stand 5 Day Workweek, US
A1200	Temporary Service Barrier Median NB/SB 29	2	20-May-24	22-May-24	109	Stand 5 Day Workweek, VDOT
A1220	Miscellanious Demolition	4	22-May-24	30-May-24	176	Stand 5 Day Workweek, VDOT
A1230	Curb Removal	5	30-May-24	06-Jun-24	176	Stand 5 Day Workweek, VDOT
A1240	Asphalt Demolition	3	06-Jun-24	11-Jun-24	176	Stand 5 Day Workweek, VDOT
A1250	Storm Drainage	8	11-Jun-24	21-Jun-24	176	Stand 5 Day Workweek, VDOT
A1260	Storm Structures	6	21-Jun-24	01-Jul-24	176	Stand 5 Day Workweek, VDOT
Phase 3		81	14-Aug-24	12-Dec-24	239	Stand 5 Day Workweek, VDOT
A1270	Drilled Shafts	20	14-Aug-24	13-Sep-24	52	Stand 5 Day Workweek, VDOT
A1280	Column Center Pier	7	13-Sep-24	24-Sep-24	52	Stand 5 Day Workweek, VDOT
A1320	Abutment 29 West	20	13-Sep-24	11-Oct-24	53	Stand 5 Day Workweek, VDOT
A1290	Cap Center Pier	14	24-Sep-24	14-Oct-24	52	Stand 5 Day Workweek, VDOT
A2120	Abutment 29 East	20	11-Oct-24	08-Nov-24	53	Stand 5 Day Workweek, VDOT
A2130	Ramp Abutment West	12	11-Oct-24	29-Oct-24	55	Stand 5 Day Workweek, VDOT
A1300	Bridge Pier Protection Median	10	14-Oct-24	28-Oct-24	264	Stand 5 Day Workweek, VDOT
A1330	Ramp Piers West	20	14-Oct-24	11-Nov-24	52	Stand 5 Day Workweek, VDOT
A1310	GR-MGS-1 and GR-MGS-2	5	28-Oct-24	04-Nov-24	264	Stand 5 Day Workweek, VDOT
A2140	Ramp Abutment East	12	29-Oct-24	14-Nov-24	55	Stand 5 Day Workweek, VDOT
A1340	Ramp Piers East	20	11-Nov-24	12-Dec-24	52	Stand 5 Day Workweek, VDOT
A2810	Light Pole Foundations	5	14-Nov-24	21-Nov-24	244	Stand 5 Day Workweek, VDOT
Phase 4		57	14-Nov-24	03-Feb-25	218	
A1350	Bridge Assembly 29 East	7	14-Nov-24	25-Nov-24	55	Stand 5 Day Workweek, VDOT
A1360	Bridge Assembly 29 West	7	25-Nov-24	09-Dec-24	55	Stand 5 Day Workweek, VDOT



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A1370	Bridge Erection	3	12-Dec-24	17-Dec-24	52	Stand 5 Day Workweek, VDOT
A1380	Form/Pour Deck Main Span	5	17-Dec-24	26-Dec-24	52	Stand 5 Day Workweek, VDOT
A1390	Erect Ramp Spans	4	26-Dec-24	03-Jan-25	52	Stand 5 Day Workweek, VDOT
A1400	Install Ramp Railings	10	03-Jan-25	17-Jan-25	214	Stand 5 Day Workweek, VDOT
A1410	Grading for Ramp East	3	03-Jan-25	08-Jan-25	52	Stand 5 Day Workweek, VDOT
A1420	Aggregate Base Ramp East	2	08-Jan-25	10-Jan-25	192	Stand 5 Day Workweek, VDOT
A1480	Grading for Ramp West	3	08-Jan-25	13-Jan-25	52	Stand 5 Day Workweek, VDOT
A1430	Slab on Grade Ramp East	7	10-Jan-25	22-Jan-25	192	Stand 5 Day Workweek, VDOT
A1490	Aggregate Base Ramp West	2	13-Jan-25	15-Jan-25	52	Stand 5 Day Workweek, VDOT
A1500	Slab on Grade Ramp West	7	15-Jan-25	27-Jan-25	52	Stand 5 Day Workweek, VDOT
A2150	Bridge Safety Inspection	3	17-Jan-25	23-Jan-25	216	VDOT 5 Day Workweek, VDOT
A1440	Curbing East	5	22-Jan-25	29-Jan-25	192	Stand 5 Day Workweek, VDOT
A1510	Curbing West	5	27-Jan-25	03-Feb-25	52	Stand 5 Day Workweek, VDOT
Phase 5		103	21-Nov-24	15-Apr-25	167	
A3130	Erect Light Poles	5	21-Nov-24	02-Dec-24	252	Stand 5 Day Workweek, US
A1450	Asphalt East	5	17-Mar-25	21-Mar-25	160	Stand 5 Day Workweek, VDOT
A1520	Asphalt West	5	17-Mar-25	21-Mar-25	23	Stand 5 Day Workweek, US
A1460	Sidewalk/CG-12 East	10	24-Mar-25	04-Apr-25	160	Stand 5 Day Workweek, VDOT
A1530	Sidewalk/CG-12 West	10	24-Mar-25	04-Apr-25	21	Stand 5 Day Workweek, VDOT
A1560	Pavement Markings	1	24-Mar-25	24-Mar-25	172	Stand 5 Day Workweek, VDOT
A1470	Topsoil/Seed/EC-2 East	3	07-Apr-25	09-Apr-25	160	Stand 5 Day Workweek, VDOT
A1540	Topsoil/Seed/EC-2 West	3	07-Apr-25	09-Apr-25	160	Stand 5 Day Workweek, VDOT
A1550	Bus Shelter Erection w/ Bench	7	07-Apr-25	15-Apr-25	156	Stand 5 Day Workweek, VDOT
Element D		519	06-Nov-23	31-Oct-25	24	
Phase 2		183	06-Nov-23	18-Jul-24	0	
A1750	Initial MOT Signing	3	06-Nov-23	09-Nov-23	1	Stand 5 Day Workweek, VDOT
A1760	Erosion and Sediment Controls	4	09-Nov-23	15-Nov-23	1	Stand 5 Day Workweek, VDOT
A1770	Demo MS-1 East Leg Hydraulic	4	15-Nov-23	21-Nov-23	1	Stand 5 Day Workweek, VDOT
A1780	Deep Mill/Place Base and IM Asphalt	4	21-Nov-23	29-Nov-23	1	Stand 5 Day Workweek, US
A1790	Demo MS-1 West Leg Hydraulic	5	29-Nov-23	06-Dec-23	1	Stand 5 Day Workweek, VDOT
A1800	Deep Mill / Place Base IM Asphalt	5	06-Dec-23	13-Dec-23	1	Stand 5 Day Workweek, VDOT
A1810	Storm Drain West Leg RAB	12	01-Feb-24	19-Feb-24	1	Stand 5 Day Workweek, VDOT
A1820	Temp Signal SE Corner RAB, Remove Existing Pole	5	19-Feb-24	26-Feb-24	1	Stand 5 Day Workweek, VDOT
A1830	Demo Curb/Sidewalk, Install Storm SE Corner RAB	10	26-Feb-24	11-Mar-24	1	Stand 5 Day Workweek, VDOT
A1840	Demo Curb/Sidewalk, Install Storm NE Corner RAB	8	11-Mar-24	21-Mar-24	1	Stand 5 Day Workweek, VDOT
A1850	Storm Drain Center Truck Apron	10	21-Mar-24	08-Apr-24	1	Stand 5 Day Workweek, VDOT
A1860	Demo Curb/Sidewalk, Install Storm NW Corner RAB	5	08-Apr-24	15-Apr-24	1	Stand 5 Day Workweek, VDOT
A1870	REM/RECONST Grass Median to IM at Hillsdale Rd	5	15-Apr-24	22-Apr-24	1	Stand 5 Day Workweek, VDOT
A1880	Temp Mark, Signal, Sifht Traffic Median Hillsdale	2	22-Apr-24	24-Apr-24	1	Stand 5 Day Workweek, VDOT
A1890	Demo all Misc Concrete Around RAB Perimeter	6	25-Apr-24	03-May-24	0	Stand 5 Day Workweek, VDOT
A1900	Construct NW Quadrant Demo/Excavation/Curb	20	03-May-24	04-Jun-24	0	Stand 5 Day Workweek, VDOT
A1910	Construct NW Quadrant Sidewalk/Ramp/Topsoil	10	04-Jun-24	18-Jun-24	0	Stand 5 Day Workweek, VDOT
A1920	Temporary Mark/Shift Traffic to Temp Pavement Median Hillsdale	1	18-Jun-24	19-Jun-24	0	Stand 5 Day Workweek, VDOT
A1930	Construction NE Quadrant Demo/Excavation/Curb	10	19-Jun-24	03-Jul-24	0	Stand 5 Day Workweek, VDOT
A1940	Construct NE Quadrant Sidewalk/Ramp/Topsoil	10	03-Jul-24	18-Jul-24	0	Stand 5 Day Workweek, VDOT
Phase 3 Detour		32	08-Jul-24	21-Aug-24	1	
A1980	Advanced Message Signs	10	08-Jul-24	18-Jul-24	0	Stand 7 Day Workweek, US



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A1990	Establish Detour Signing	1	18-Jul-24	19-Jul-24	0	Stand 7 Day Workweek, US
A2000	Deep Mill to Subgrade All Full Depth Pavement	2	19-Jul-24	21-Jul-24	1	Stand 7 Day Workweek, US
A2010	Shallow Mill For Mill/Overlay Areas	2	21-Jul-24	23-Jul-24	1	Stand 7 Day Workweek, US
A2020	Aggregate Base/Fine Grading	4	23-Jul-24	27-Jul-24	1	Stand 7 Day Workweek, US
A2030	Adjust All Drain Inlets/Manholes	8	27-Jul-24	04-Aug-24	1	Stand 7 Day Workweek, US
A2040	Construct SW Quadrant Demo/Exc/Stone/Curb	5	27-Jul-24	01-Aug-24	4	Stand 7 Day Workweek, US
A2060	MS-1 East and North Legs Hydraulic	4	04-Aug-24	08-Aug-24	2	Stand 7 Day Workweek, US
A2070	MS-1/2 West Leg Hydraulic	5	04-Aug-24	09-Aug-24	1	Stand 7 Day Workweek, US
A2080	Curb/Sidewalk SW Quadrant RAB	5	08-Aug-24	13-Aug-24	2	Stand 7 Day Workweek, US
A2090	Concrete Center Truck Apron RAB	5	09-Aug-24	14-Aug-24	1	Stand 7 Day Workweek, US
A3380	Erect Light Poles	2	13-Aug-24	15-Aug-24	5	Stand 5 Day Workweek, US
A2050	Base Asphalt At All Full Depth Pavement Areas	3	14-Aug-24	17-Aug-24	1	Stand 7 Day Workweek, US
A2100	Pave All Areas to Intermediate	3	17-Aug-24	20-Aug-24	1	Stand 7 Day Workweek, US
A2110	Temporary Striping	1	20-Aug-24	21-Aug-24	1	Stand 7 Day Workweek, US
Phase 5		312	21-Aug-24	31-Oct-25	24	
A1950	Landscaping	3	21-Aug-24	26-Aug-24	309	Stand 5 Day Workweek, VDOT
A1960	Roughened Concrete Finish Areas	2	28-Oct-25	29-Oct-25	22	Stand 5 Day Workweek, US
A1970	Surface Asphalt and Permanant Pavement Markings	2	30-Oct-25	31-Oct-25	21	Stand 5 Day Workweek, VDOT
Element E		503	17-Nov-23	21-Oct-25	32	
Phase 2		8	17-Nov-23	28-Nov-23	349	
A1580	Erosion and Sediment Controls	3	17-Nov-23	21-Nov-23	328	Stand 5 Day Workweek, VDOT
A1590	Clearing	3	22-Nov-23	28-Nov-23	177	Stand 5 Day Workweek, US
Phase 4		79	21-Aug-24	10-Dec-24	173	
A1570	Inital MOT Signing	3	21-Aug-24	26-Aug-24	163	Stand 5 Day Workweek, VDOT
A2640	Miscellanious Demolition	2	26-Aug-24	28-Aug-24	169	Stand 5 Day Workweek, US
A2650	Demolition of Pavement	1	28-Aug-24	29-Aug-24	169	Stand 5 Day Workweek, US
A2660	Aggregate Base	1	22-Nov-24	25-Nov-24	169	Stand 5 Day Workweek, US
A1660	MS-1	6	25-Nov-24	06-Dec-24	162	Stand 5 Day Workweek, VDOT
A2670	Base and Intermediate Asphalt	2	06-Dec-24	10-Dec-24	106	Stand 5 Day Workweek, US
Phase 5		73	11-Jul-25	21-Oct-25	32	
A1600	Miscellanious Demolition	10	11-Jul-25	24-Jul-25	21	Stand 5 Day Workweek, VDOT
A1610	Demolition of Curb	5	25-Jul-25	31-Jul-25	21	Stand 5 Day Workweek, VDOT
A1620	Demolition of Pavement	5	01-Aug-25	07-Aug-25	21	Stand 5 Day Workweek, VDOT
A1630	Storm Drainage	7	08-Aug-25	18-Aug-25	21	Stand 5 Day Workweek, VDOT
A1670	Grading	5	19-Aug-25	25-Aug-25	21	Stand 5 Day Workweek, VDOT
A1680	Aggregate Base	3	26-Aug-25	28-Aug-25	21	Stand 5 Day Workweek, VDOT
A3390	Light Pole Foundations	5	26-Aug-25	02-Sep-25	63	Stand 5 Day Workweek, US
A1640	CG-2, CG-6, CG-12	15	29-Aug-25	22-Sep-25	21	Stand 5 Day Workweek, VDOT
A3400	Erect Light Poles	2	03-Sep-25	04-Sep-25	63	Stand 5 Day Workweek, US
A1650	Concrete SIdewalk	8	23-Sep-25	02-Oct-25	42	Stand 5 Day Workweek, VDOT
A1690	Base and Intermediate Asphalt	5	23-Sep-25	29-Sep-25	21	Stand 5 Day Workweek, VDOT
A1710	Shared Use Path Asphalt	3	30-Sep-25	02-Oct-25	21	Stand 5 Day Workweek, VDOT
A1700	GR-MGS-1, GR-MGS-2	3	03-Oct-25	07-Oct-25	39	Stand 5 Day Workweek, VDOT
A1720	Topsoil/Seed/EC-2	5	03-Oct-25	09-Oct-25	21	Stand 5 Day Workweek, VDOT
A1730	Mill and Overlay Surface Asphalt	5	10-Oct-25	16-Oct-25	21	Stand 5 Day Workweek, VDOT
A1740	Pavement Markings	3	17-Oct-25	21-Oct-25	29	Stand 5 Day Workweek, VDOT



Appendix

Submitted by

Curtis Contracting Inc.

In Association With

WALLACE MONTGOMERY

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		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	1

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		2-3
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2.1	yes	2
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.1	yes	3
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.1	yes	2
Design Concept	NA	Section 4.3		4-15
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	4-10; 44-55
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	11-12; 56-60
Project Approach	NA	Section 4.4		16-24
Environmental Management	NA	Section 4.4.1	yes	16-18
Utilities	NA	Section 4.4.2	yes	18-21
Geotechnical	NA	Section 4.4.3	yes	21-22
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	22-24
Construction of Project	NA	Section 4.5		25-43

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	25-37
Transportation Management Plan	NA	Section 4.5.2	yes	37-43
Proposal Schedule	NA	Section 4.6		Section 4.6
Proposal Schedule	NA	Section 4.6	no	Volume II
Proposal Schedule Narrative	NA	Section 4.6	no	Section 4.6
Proposal Schedule in electronic format	NA	Section 4.6	no	

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	1/24/2023
	DATE
Stephen L. Ordung, DBIA	Vice President
PRINTED NAME	TITLE

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this "Agreement") is made and entered into as of this ____ day of _____, 20__, by and between the Virginia Department of Transportation ("VDOT"), and _____ ("Offeror").

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's 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 acknowledged by the parties, the parties agree as follows:

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

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

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

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

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

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

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

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

9. Miscellaneous.

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

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

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

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

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

of the Commonwealth of Virginia.

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

VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

CURTIS CONTRACTING, INC.

By: _____

Name: Steven L. Ordung, DBIA

Title: Vice President

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.

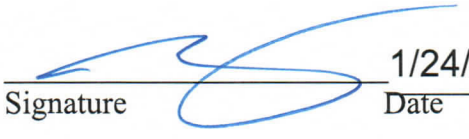
b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under 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.



1/24/2023
Signature Date

Vice President
Title

Curtis Contracting, Inc.
Name of Firm

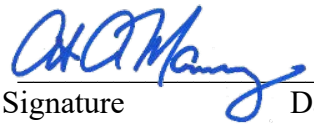
ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

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.



Signature	1/17/2023 Date	Partner Title

Wallace, Montgomery & Associates, LLP
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.

Signature	Date	Title
	Dec. 8, 2022	Principal

Bowman Consulting
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.

Signature	11/10/2022 Date	President Title

CES CONSULTING 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.

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

12/09/2022	Principal
Signature Date	Title

Clark Nexsen, Inc.

Name of Firm

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

Project No.: 0029-M03-371

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Signature	November 10, 2022 Date	Senior Vice President Title

DMY Engineering Consultants Inc.
Name of Firm

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

Project No.: 0029-M03-371

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

	11/11/2022	Vice President
Signature	Date	Title

ECS Mid-Atlantic, LLC

Name of Firm

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

Project No.: 0029-M03-371

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

Lynette Wuensch _____ President

Signature Date Title

EPR, PC

Name of Firm

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

Project No.: 0029-M03-371

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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.

Gary Allen Bruce -- F&R
I have reviewed this document
2022-11-10 10:59-05:00

11/10/2022	Regional Vice President
Signature Date	Title

Froehling & Robertson, Inc.
Name of Firm

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

Project No.: 0029-M03-371

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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	11/9/2022 Date	Partner Title

Floura Teeter Landscape Architects, Inc.
Name of Firm

ATTACHMENT 4.2.1

DEPUTY KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.

a. Name & Title:
William "Bill" Richards, PE
Construction Engineer

b. Project Assignment:
Deputy Design-Build Project Manager

c. Name of the Firm with which you are employed at the time of submitting Technical Proposal:
Curtis Contracting, Inc.

d. Employment History: With this Firm *22* Years With Other Firms *15* 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):

Curtis Contracting, Inc.
Start Date: 2000 **End Date**: Present **Position**: Construction Engineer/Design Build Construction Manager
Responsibilities: Bill manages all aspects of daily field construction activities; coordinates with the project design team and stakeholders; coordinates and manages and subcontractors; and oversees construction activities to ensure that the project team follows quality standards, specifications, and schedules. Bill communicates directly with the Lead Designer; provides construction means and methods input; participates in over-the-shoulder reviews; and shares innovative design ideas. Bill has spent the last 20 years managing a variety of interchange improvements, including multiple successful design-build (DB) projects. His clients have included Chesterfield County, VDOT, the Department of Defense, General Services Administration, and Federal Highway Administration.

e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:
Virginia Polytechnic Institute and State University, Blacksburg, Virginia / BS / 1984 / Civil Engineering

f. Active Registration: Year First Registered/ Discipline/VA Registration #:
1998 / Professional Engineer / VA #0402027950 (Exp. 1/31/2024)
Virginia DCR Responsible Land Disturber Certification / #RLD11383 (Exp. 1/14/2025)
VDOT Erosion and Sediment Control Contractor Certification / #1-01053 (Exp. 6/21/2024)
VDOT Advanced Work Zone Traffic Control / #11422106 (Exp. 1/31/2026)

g. Document the extent and depth of your experience and qualifications relevant to the Project.
1. *Note your role, responsibility, and specific job duties for each project, not those of the firm.*
2. *Note whether experience is with current firm or with other firm.*
3. *Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.*

(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.

VDOT – Albemarle Intersection Improvements Bundling Design-Build, Albemarle County, VA	
Project Role: Construction Manager	**With Current Firm?** Yes
Beginning Date: 09/2019	**End Date**: Present

Responsibilities and Job Duties: Bill is directly responsible for construction public relations; utility coordination; quality control (QC); environmental compliance; safety; scheduling; and ensuring that construction conforms with the approved plans and specifications on this $28M DB project. The contract is a bundle of six separate intersection and interchange safety/operations improvements projects around the City of Charlottesville. Improvements include a diverging diamond interchange (DDI) at I-64 (Exit 124) and US Route 250; a new Rio Mills Road to Berkmar Drive connector roadway; interchange ramp improvements along US 29 at I-64 (Exit 118) and Fontaine Avenue; and converting the three-leg US 250 with Route 151 intersection and the four-leg Route 20 with Routes 649 and 1494

intersection into single lane roundabouts. Work efforts include the replacements of hydraulically deficient structural stream crossings of Route 151 at Stockton Creek with a 4-cell 6'x12' box culvert and Route 20 at an unnamed Tributary to North Fork Rivanna River with a dual 42" concrete pipes. Bill is managing multiple simultaneous construction activities for the project's intersections/interchange modifications; and overseeing construction crews and subcontractors. Bill is communicating and coordinating daily with VDOT; QC staff; the QA Manager; Albemarle and Nelson County stakeholders; permitting agencies; the City of Charlottesville; and adjacent property owners/businesses.

Similarities with the Hydraulic Road and US 29 Design-Build Project:

Design-Build Delivery	On-Time or Early Delivery	Developed Urban Corridors
Innovative Design/Construction	Mitigating Congestion During CN	Communicated with Businesses
Multiple/Bundled Project Elements	Fast Track Schedule	Complex MOT
Commercial ROW Impacts	Pedestrian & ADA Compliance	Significant Utility Impacts

Project Successes: Bill's design and construction experience enabled the Team to improve many of the planned MOT phases to allow for work to flow more expeditiously and remain in compliance with all MUTCD and Work Area Protection Manual requirements. With continuous design input/coordination and leading the construction team, Bill helped expedite the schedule to substantially complete the construction of three of the six project elements within half of the time that was originally scheduled for this major portion of the work. ***The overall completion of these elements will be completed almost 22 months ahead of the required contract completion date.***

Owner Contact: VDOT, William Stowe, 540.827.7287

Chesterfield County – Midlothian Turnpike (Route 60) Widening Design-Build

Project Role: Construction Manager	**With Current Firm?** Yes
Beginning Date: 03/2015	**End Date**: 06/2016

Responsibilities and Job Duties: Bill managed the construction of this $8.5M DB project to include supporting public relations; utility coordination; QA/QC; environmental protection; safety; and schedule for this 1.25-mile 4-to-6 lane widening of Route 60 in Chesterfield County. Construction efforts also included a bridge widening, guardrail/barrier installations, and drainage systems and stormwater facilities. Bill served in a full-time capacity and was at the site every day overseeing multiple simultaneous construction activities.

Similarities with the Hydraulic Road and US 29 Design-Build Project:

Design-Build Delivery	On-Time or Early Delivery	Developed Urban Corridors
Mitigating Congestion During CN	Communicated with Businesses	Multiple/Bundled Project Elements
Fast Track Schedule	Commercial ROW Impacts	Significant Utility Impacts

Project Successes: Within one month of receipt of the Notice to Proceed (NTP), Bill established erosion and environmental controls and started construction work. Bill coordinated CCI's field resources and subcontractors to fast-track the completion of the entire Phase I construction within nine months of the receipt of NTP. Bill was instrumental in the coordination and expediting of significant utility relocations, including Dominion Virginia Power and others in order to support the extremely aggressive schedule. He was heavily involved in the development of the baseline schedule and maintaining project controls. ***The Route 60 widening project was one of the first successfully completed Locally Administered design-build projects in the Commonwealth and was completed within 14 months without a single recordable accident or injury.***

Owner Contact: Chesterfield County; Jesse Smith, 804.748.1037

VDOT Hampton Roads – I-264 Roadway Rehabilitation Design-Build Project

Project Role: Construction Manager	**With Current Firm?** Yes
Beginning Date: 11/2013	**End Date**: 11/2015

Responsibilities and Job Duties: Bill was directly responsible for successfully completing this $73M DB project for roadway, drainage, and guardrail/barrier rehabilitation improvements along 10-miles of I-264. As CM, Bill was responsible for day-to-day construction operations; monitoring the CPM schedule; construction public relations; utility coordinating; environmental compliance; traveling public and workers safety; and ensuring that construction conformed with the approved plans. He communicated daily with the QA/QC inspection staff to schedule inspections of work operations. Bill served in a full-time capacity and was at the site every day. He communicated and coordinated daily with VDOT, City of Virginia Beach, permitting agencies, and stakeholders. Bill supported On Point Transportation PR in the development of the project's public outreach program. VDOT Hampton Road District has continued using the CCI/On Point public outreach plan as a template on their future DB/major projects.

Similarities with the Hydraulic Road and US 29 Design-Build Project:

Design-Build Delivery	On-Time or Early Delivery	Developed Urban Corridors
Innovative Design/Construction	Mitigating Congestion During CN	Fast Track Schedule
Complex MOT	Utility Coordination	

Project Successes: Within two months, Bill was instrumental in expediting the schedule to advance design, permitting, and start construction work. Bill adjusted sequence and scheduling to overcome a potentially schedule delay and the project was completed within the original contract duration.

Owner Contact: VDOT Hampton Roads; James Utterback, 757.802-0005

ATTACHMENT 4.2.1

DEPUTY KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.

a. Name & Title:
Beau Gutridge, PE, PMP, DBIA
Project Engineer

b. Project Assignment:
Deputy Quality Assurance Manager

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 *5* Years With Other Firms *<1* 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
Start Date: 04/2021 **End Date**: Present **Position**: Project Engineer
Responsibilities: Manages daily QA and QC field inspection, testing, and project records management services and facilitates solutions to field issues for design-build projects. Conducts constructability reviews; develops contract time determination reports and CPM schedules; reviews baseline schedules and schedule updates; and analyzes schedule impacts.

CES Consulting, LLC
Start Date: 05/2016 **End Date**: 07/2018 **Position**: Construction Inspector
Responsibilities: Conducted construction inspections and testing including critical operations such as mass concrete pours, girder erections, and drilled shaft and driven steel pile foundations, and more. He monitored MOT; conducted ESC inspections; and updated the SWPPP.

e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:
University of Virginia, / 2020 / Civil Engineering

f. Active Registration: Year First Registered/ Discipline/VA Registration #:
2022 / Professional Engineer / VA # 0402065687
Certifications: Soils & Aggregate Compaction / 12/2026; Asphalt Field Levels I & II / 12/2026; Pavement Marking / 12/2026; Surface Treatment / 12/2026; Slurry Treatment / 12/2026; ACI Concrete Field / 02/2026/ Intermediate Work Zone & Flagger / 02/2024; Nuclear Gauge Safety / 11/2025; DEQ ESC Inspector / 11/2024; DEQ SWM Inspector / 12/2024; OSHA 30-Hour for Construction

g. Document the extent and depth of your experience and qualifications relevant to the Project.
1. *Note your role, responsibility, and specific job duties for each project, not those of the firm.*
2. *Note whether experience is with current firm or with other firm.*
3. *Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.*

(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.

VDOT – Albemarle County Intersection Improvements, Albemarle County, VA

Project Role: Lead QA Project Inspector	**With Current Firm?** Yes
Beginning Date: 08/2019	**End Date**: 03/2023

Responsibilities and Job Duties: Beau supervises daily QA inspections, testing, and documentation to support the construction of six intersection improvements projects that were combined into one DB contract with combined construction value of $28.5M. Projects include I-64 at Exit 118 Interchange Modifications; I-64 at Exit 124 DDI; Fontaine Avenue Ramp Improvements; Route 250 and Route 151 Roundabout; Route 20 and Route 649 Roundabout; and Rio Mills Road/Berkmar Drive Connection. Beau approved, rejected, and recommended alternatives to materials based on analyses of proposed use, type of material, supplier, and manufacturer. He analyzed and monitored contracts, specifications, standards, special provisions, construction plans, schedule, and estimated quantities. Beau maintained the

QA/QC plan, which involved creating inspection and testing plans and writing project decision-making and documentation processes. He conducted C-107 P.I and P.II inspections to monitor compliance with the Construction General Permit, USACE Nationwide Wetland Permits, and individual permits. He facilitated solutions to many challenges. For example, for the Fontaine Avenue Ramp Improvements, Beau suggested alternative pavement structures in areas of shoulder repair, which was approved by the Engineer. This resulted in improved pavement strength for VDOT and cost savings by the contractor. When field conditions did not allow for penetration of grounding rods for signal electrical service, Beau suggested an alternative grounding design, which was approved by the Engineer. This alternative resulted in electrical resistance values that met specifications and prevented delays to the schedule's critical path. The QC team was minimally staffed and unqualified at times to inspect the work, so Beau conducted additional testing and inspection and trained QC staff. He provided feedback on QC reports and inspection documentation.

Similarities with the Hydraulic Road and US 29 Design-Build Project:

Design-Build Delivery	Innovative Design/Construction	Multiple/Bundled Project Elements
Fast Track Schedule	Complex MOT	

Owner Contact: VDOT, Gregory Cooley, District Construction Engineer, 540.829.7510

VDOT – Route 29 Solutions, Charlottesville, VA

Project Role: QA Construction Inspector	**With Current Firm?** Yes
Beginning Date: 02/2015	**End Date**: 07/2017

Responsibilities and Job Duties: Beau conducted QA inspection and testing services for the simultaneous construction of three projects along the Route 29 corridor: (1) accelerated bridge construction of a grade-separated intersection at Route 29 and Rio Road; (2) widening of a 3-mile segment of Route 29 from 4 to 6 lanes; (3) a 2.3-mile extension of Berkmar Drive including a new 715-foot-long bridge crossing over the Rivanna River. Beau monitored QC testing frequency; filled out testing forms; updated the materials notebook; reviewed QA and QC daily diaries; and updated SWPPP book. He performed C-107 P.I and P.II inspections to monitor environmental compliance with the Construction General Permit, USACE Nationwide Wetland permits, and individual permits. He approved redline as-built E&S and SWM controls plans. Beau also worked with the QC team to generate and maintain punch list and deficiency checklists. He helped to resolve discrepancies between the plans and the subcontractor's signal and lighting material quantities by performing quantity takeoffs based on the approved plan set. When a subcontractor continuously struggled to install CG12 ramps according to federal and state maximum slope standards, Beau was assigned to directly work with the subcontractor and used a smart level to check the slope while the concrete was still wet so adjustments could be made.

Similarities with the Hydraulic Road and US 29 Design-Build Project:

Design-Build Delivery	On-Time or Early Delivery	Innovative Design/Construction
Mitigating Congestion During CN	Communicated with Businesses	Multiple/Bundled Project Elements
Fast Track Schedule	Complex MOT	Commercial ROW Impacts
Pedestrian & ADA Compliance		

Owner Contact: VDOT, Gregory Cooley, PE, VDOT Culpeper District Construction Engineer, 434.906.7979

VDOT – Jones Branch Connector, Fairfax County, VA

Project Role: Project Engineer	**With Current Firm?** Yes
Beginning Date: 12/2016	**End Date**: 08/2020

Responsibilities and Job Duties: Beau inspected the construction of a new connector road from the I-495 Express Lanes/Jones Branch Drive interchange to Scotts Crossing Road and improvements along the access road from Jones Branch Drive to the I-495 Express Lanes and along Scotts Crossing Road. The project included two travel lanes along with on-street bike lanes in each direction; three bridges over the I-495 Express and general-purpose lanes, and more. Beau supervised inspection of bridge and roadway construction including critical operations such as mass concrete pours; girder erections over a busy interstate; and drilled shaft and driven steel pile foundations. He independently coordinated inspections with the contractor; tested materials; resolved field issues (including field engineering to resolve many unknown utility conflicts); reconciled daily pay quantities; conducted C-107 P.I and P.II inspections to monitor compliance with the Construction General Permit, USACE Nationwide Wetland Permits, and individual permits. He conducted ESC inspections and updated the SWPPP. The contractor was not incentivized to maintain environmental controls. Therefore, Beau met with the contractor several times per week to make sure ESCs were properly maintained and participated in conflict resolution meetings between VDOT and the contractor. As a result of Beau's careful monitoring, the project's environmental score went from an 'orange' to a 'green' score within six months.

Similarities with the Hydraulic Road and US 29 Design-Build Project:

Design-Build Delivery, On-Time	Developing Urban Corridors	Mitigating Congestion during CN
Multiple/Bundled Project Elements	Fast Track Schedule	Complex MOT
Commercial ROW Impacts	Pedestrian & ADA Compliance	Significant Utility Impacts

Owner Contact: Chan Basnayake, PE, PMP, Area Construction Engineer; 703.259.2947

h. For Key Personnel required to be on-site full-time for the duration of construction, provide a current list of assignments, role, and the anticipated duration of each assignment. Albemarle County Intersection Improvements will end in March 2023

ATTACHMENT 4.2.1

DEPUTY KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.

a. Name & Title:
Simone Champaigne, PE
Project Engineer

b. Project Assignment:
Deputy Design Manager

c. Name of the Firm with which you are employed at the time of submitting Technical Proposal:
Wallace Montgomery

d. Employment History: With this Firm *8* Years With Other Firms *1* 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):

Wallace Montgomery
Start Date: 02/2014 **End Date**: Present **Position**: Project Engineer
Responsibilities: Simone has been designing innovative intersections, roundabouts, and complete streets projects since the beginning of her career. Her areas of expertise includes geometric optimization; pedestrian and motorist safety; public involvement; and project scheduling. Simone has worked on projects directly for the Virginia Department of Transportation (VDOT) and also on Locally Administered Projects (LAPs) in Virginia. She has been involved in the planning, study, and design of urban single-lane roundabouts; two-lane and hybrid roundabouts; and roundabout interchanges. She routinely participates in public hearing meetings, and task force meetings, and working with project stakeholders.

e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:
University of Maryland, College Park, MD / BS / 2013 / Civil Engineering

f. Active Registration: Year First Registered/ Discipline/VA Registration #:
2022 / Professional Engineer / VA #0402066048
2019 / Professional Engineer / MD #45442

g. Document the extent and depth of your experience and qualifications relevant to the Project.
1. *Note your role, responsibility, and specific job duties for each project, not those of the firm.*
2. *Note whether experience is with current firm or with other firm.*
3. *Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.*

(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.

VDOT – Albemarle Intersection Improvements Bundling Design-Build, Albemarle County, VA

Project Role: Roadway Engineer	**With Current Firm?** Yes
Beginning Date: 07/2020	**End Date**: Present

Responsibilities and Job Duties: Simone is performing roadway design for the Route 250/Route 151 intersection improvements element of the bundled design-build project. The three-leg signal controlled US 250 (Rockfish Gap Turnpike) and Route 151 (Critzer Shop Road) intersection is being reconstructed as a 150' inscribed diameter single-lane roundabout. The project also incorporates the replacement of an existing two-cell box culvert with a four-cell 12'x6' VDOT standards precast box culvert on a spread foundation to convey Stockton Creek under Route 151 at the US 250/Route 151 roundabout. Simone developed the final roundabout layout with an offset left approach design, shifting the roundabout approximately 15' to the southeast. The shifting of the roundabout also improved the approach angles to the roundabout and the relation of each approach to adjacent entry and exit lanes. To improve the proposed roundabout's drivability for larger vehicles, the roundabout layout incorporates outside fillet return mountable aprons, which was verified with turning movements analysis using WB-67 design vehicle for both Routes 250 and 151. Simone developed the roundabout intersection's vertical geometrics maintaining minimum/maximum grades and appropriate design speed

vertical curves along the Routes 250, and 151 approaching roadways as well as a center island apron curb line "sine" curve profile with grades from 0 to 3% and circulatory roadway cross slopes ranging from 2% to 3% sloping away from the center island. The final intersection geometrics vertically bifurcated the roundabout along the Route 151 alignment connection by a difference of 2.4'.

Similarities with the Hydraulic Road and US 29 Design-Build Project:

Design-Build Delivery	On-Time Delivery	Complex MOT
Innovative Design/Construction	Mitigating Congestion During CN	Significant Utility Impacts
Multiple/Bundled Project Elements	Fast Track Schedule	SMART Scale Funding

Project Successes: The success of the project and efficiencies realized by the design team was recently highlighted in the Spring 2022 Edition ASHE Scanner, a publication that has been around since 1965 to highlight transportation accomplishments by the American Society of Highway Engineers.

Owner Contact: VDOT, William Stowe, 540.827.7287

Loudoun County DTCI – Route 9/Route 287 Intersection Improvements (Roundabout), Loudoun County, VA

Project Role: Roadway Engineer	**With Current Firm?** Yes
Beginning Date: 10/2020	**End Date**: Present

Responsibilities and Job Duties: Simone is responsible for developing design for eight single-lane, multi-lane and hybrid roundabout concepts. The designs were developed using economical and context-sensitive solutions for replacing a high-accident, signalized intersection with a one-lane/two-lane hybrid roundabout with single-lane approaches on Route 287 and two-lane approaches on Route 9. Assisted with the development of traffic memos and concept plans to document study findings. Responsible for continuing to refine the roundabout geometrics during final design and developing the construction plans for the project. Balanced geometric challenges with the grades, design constraints (the bridge), and design process to create an ultimate build out of the roundabout to handle future traffic volumes. Developed the roundabout geometrics to achieve an alternative that minimized impacts while providing safe and efficient travel through the roundabout.

Similarities with the Hydraulic Road and US 29 Design-Build Project:

Roundabout Design	Complex MOT	Significant ROW Impacts
Mitigating Congestion During CN	Communicated with Businesses	Significant Utility Impacts

Project Successes: To reduce costs and not impact the recently reconstructed Route 9 bridge over the North Branch of the Catoctin Creek, received a design waiver associated with the cross slop of the roundabout itself. This allows the roundabout to be designed and constructed on a tilted horizontal plane that better matches the topography of Route 9. In addition to the cost savings realized by the design waiver, the offset roundabout design minimizes full-depth roadway reconstruction, expedites project construction, and reduces temporary pavement requirements.

Owner Contact: Loudoun County DTCI, Marie Caraballo, 703.771.5905

VDOT – Route 311 at Route 419 Intersection Improvements (Roundabout) Project, Roanoke County, VA

Project Role: Roadway Engineer	**With Current Firm?** Yes
Beginning Date: 12/2016	**End Date**: 12/2021

Responsibilities and Job Duties: Simone was responsible for performing a roundabout feasibility study for the Route 311/Route 419 intersection. Reviewed SIDRA traffic analyses and developed alternative alignments to improve operations and safety at the existing intersection and a closely spaced adjacent intersection using SIDRA, Synchro, and HCM software. Following the study phase, VDOT extended a second task order specifically for **WM** to provide traffic engineering and roadway design for the roundabout to take it from the preferred alternative concept to final design. The project is funded by Smart Scale.

Similarities with the Hydraulic Road and US 29 Design-Build Project:

Roundabout Design	Mitigating Congestion During CN	Developed Urban Corridor
Innovative Design/Construction	Complex MOT	SMART Scale Funding

Project Successes: Due to limited Smart Scale funding and right-of-way impacts, the original roundabout concept could not be implemented, worked hand-in-hand with VDOT's Salem District staff to identify ways to reduce the scale of the project. Ultimately, the scope was reduced to only focus on the roundabout improvements and optimize the location of the roundabout to minimize right-of-way impacts.

Owner Contact: VDOT; Brian Blevins, 540.387.5497

Submitted by

Curtis Contracting Inc.

In Association With

WALLACE MONTGOMERY

P.O. Box 769
West Point, VA 23181
Phone: 804.843.4633
Fax: 804.843.2545


Albemarle Route 20/Route 649/
Route 1494 Intersection

Transportation Improvements at Hydraulic Road and US 29

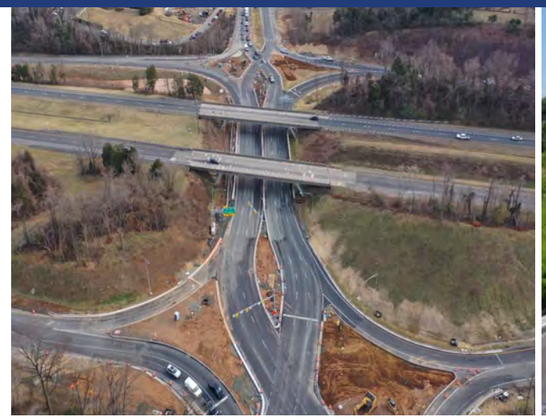
Design-Build

City of Charlottesville and
Albemarle County, VA

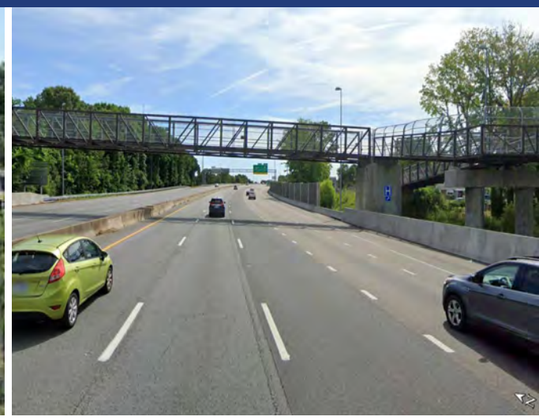
Technical Proposal - Volume II

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

Submission Due: January 24, 2023 at 4:00 PM


Albemarle Bundle
Albemarle County, VA


Midlothian Turnpike Widening DB
Chesterfield County, VA


MLK Pedestrian Bridge
City of Portsmouth, VA

Submitted by
Curtis Contracting Inc.

In Association With
WALLACE MONTGOMERY

P.O. Box 769
West Point, VA 23181
Phone: 804.843.4633
Fax: 804.843.2545

4.3.1

Conceptual Roadway Plans

1/23/2023
3:42:29 PM

dll88802all.dgn
Plotted By: lwestbrook

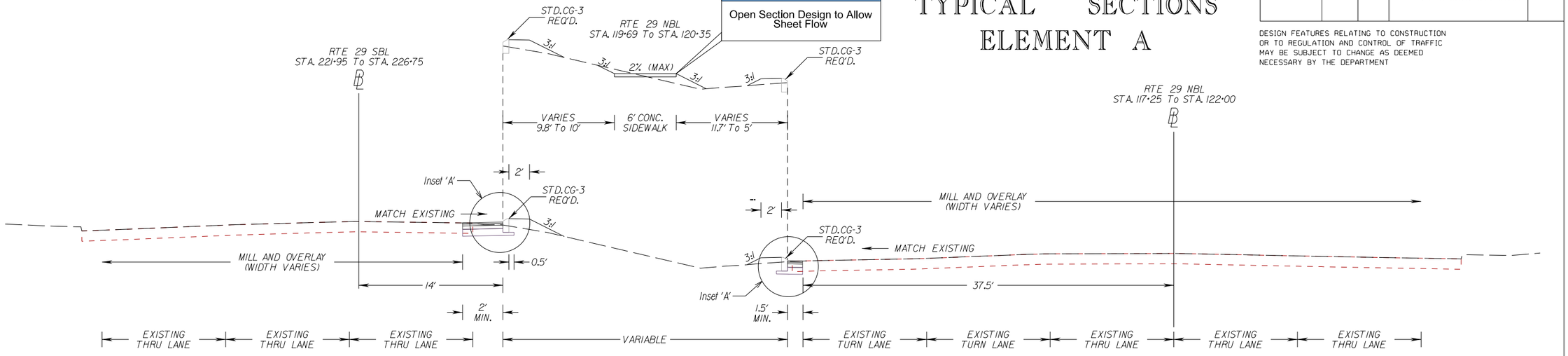
PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

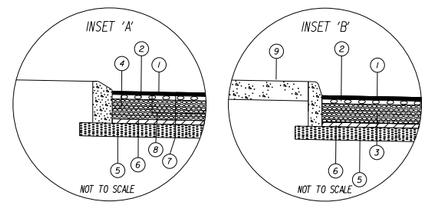
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	2A(1)

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

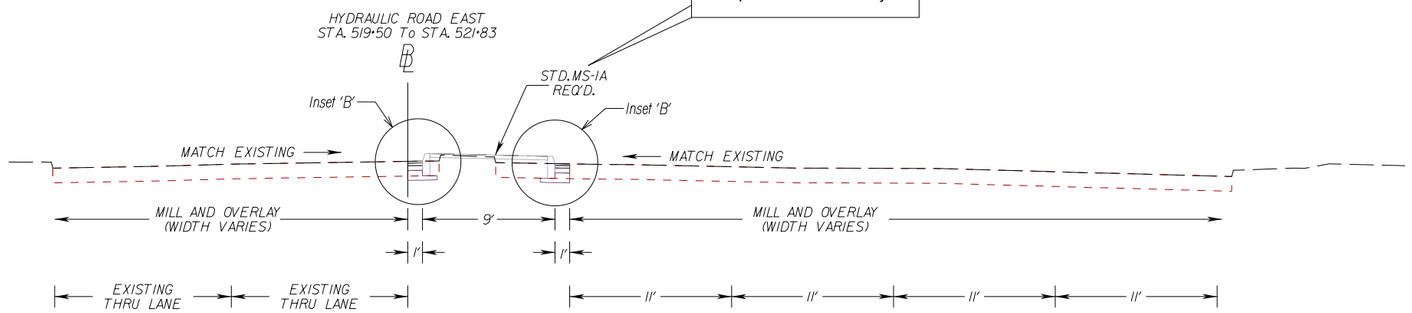
TYPICAL SECTIONS ELEMENT A

DESIGN ENHANCEMENT D1
Open Section Design to Allow Sheet Flow

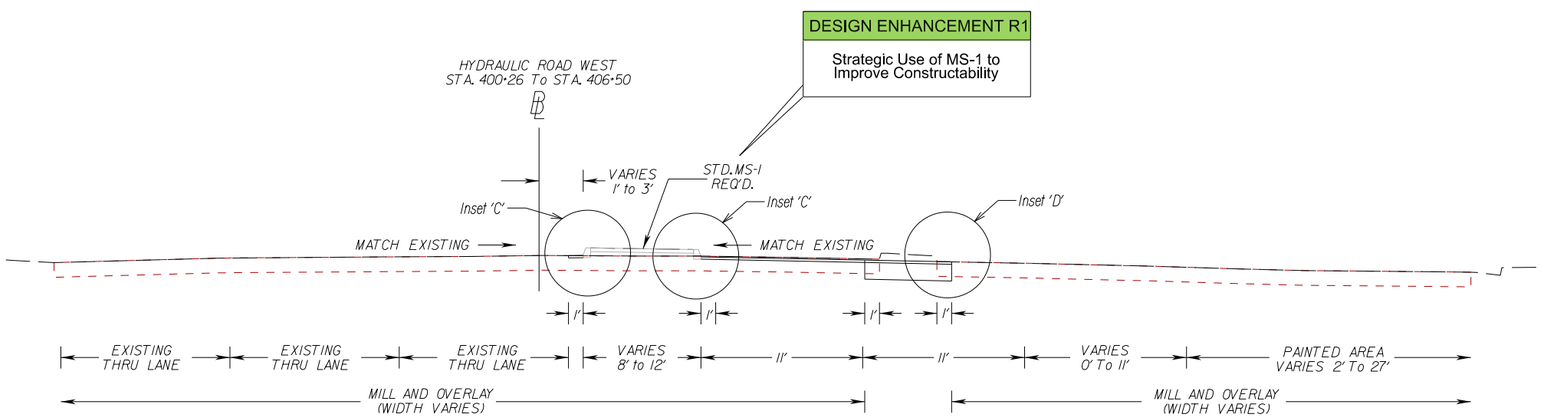




DESIGN ENHANCEMENT R1
Strategic Use of MS-1 to Improve Constructability



DESIGN ENHANCEMENT R1
Strategic Use of MS-1 to Improve Constructability



① 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5D

② 2.0" ASPHALT CONCRETE TYPE IM-19.0A

③ 8.5" ASPHALT CONCRETE TYPE BM-25.0A

④ 9.0" ASPHALT CONCRETE TYPE BM-25.0A

⑤ 6" CEMENT TREATED AGGREGATE (CTA)

⑥ 2.0" OPEN GRADED DRAINAGE LAYER ASPHALT OR CEMENT STABILIZED

⑦ SAWCUT ASPHALT CONCRETE (FULL DEPTH)

⑧ EXISTING PAVEMENT

⑨ 4" CLASS A3 CONCRETE

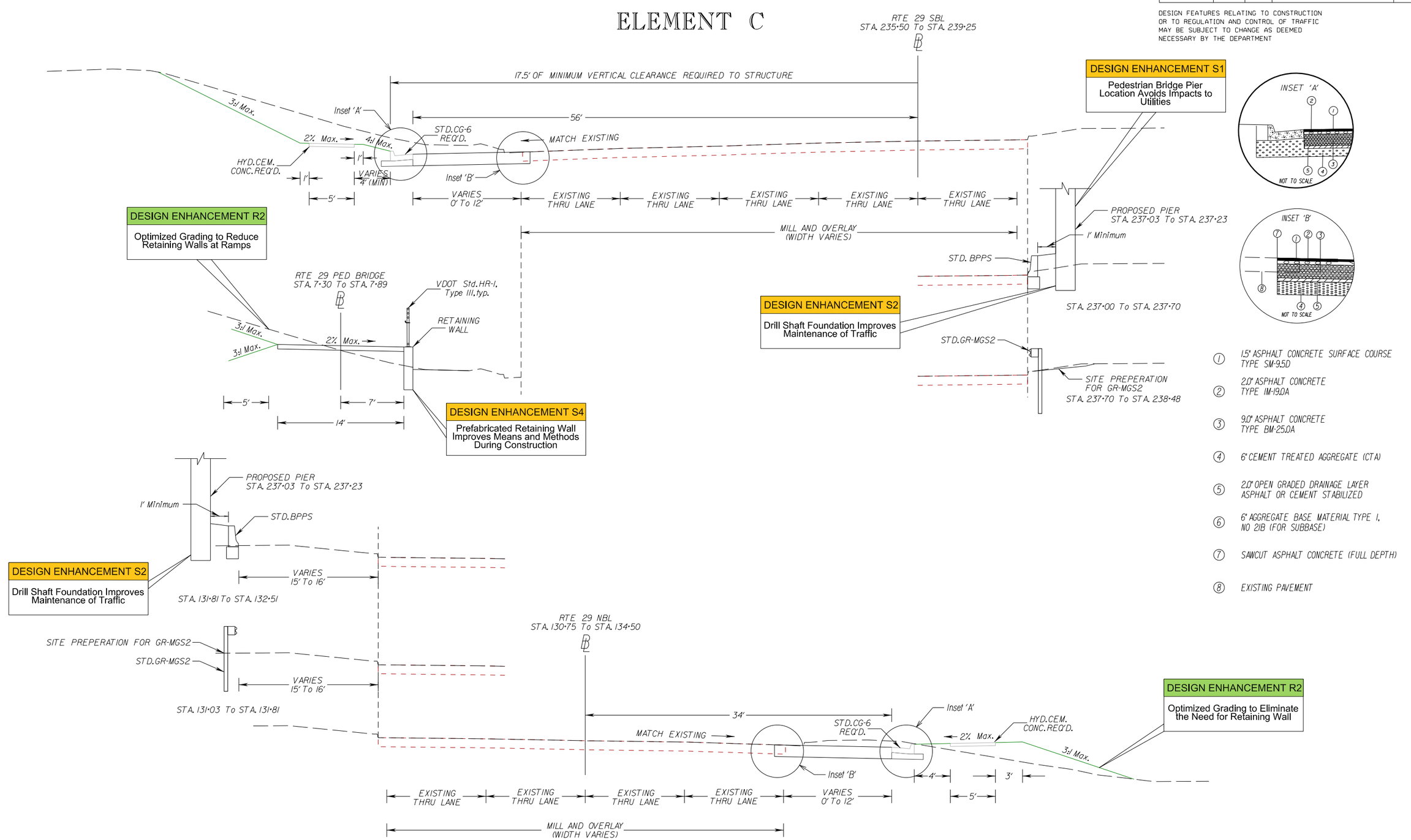
SCALE	PROJECT	SHEET NO.
0 50' 100'	0029-M03-371	2A(1)

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	2A(2)

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

TYPICAL SECTIONS
ELEMENT C



① 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5D

② 2.0" ASPHALT CONCRETE TYPE IM-19.0A

③ 9.0" ASPHALT CONCRETE TYPE BM-25.0A

④ 6" CEMENT TREATED AGGREGATE (CTA)

⑤ 2.0" OPEN GRADED DRAINAGE LAYER ASPHALT OR CEMENT STABILIZED

⑥ 6" AGGREGATE BASE MATERIAL TYPE I, NO 21B (FOR SUBBASE)

⑦ SAWCUT ASPHALT CONCRETE (FULL DEPTH)

⑧ EXISTING PAVEMENT

SCALE	PROJECT	SHEET NO.
0 50' 100'	0029-M03-371	2A(2)

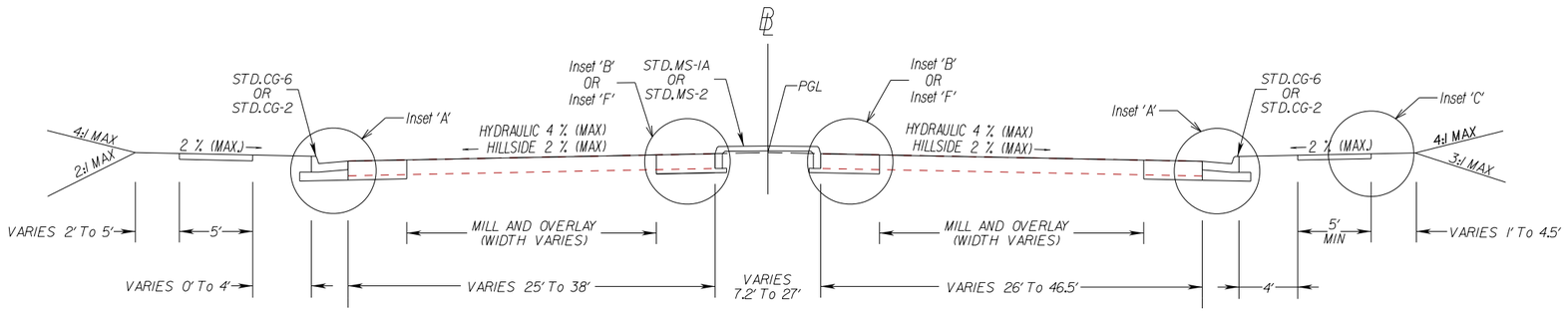
PROJECT MANAGER _
SURVEYED BY, DATE _
DESIGN BY _ .
SUBSURFACE UTILITY BY, DATE _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ .

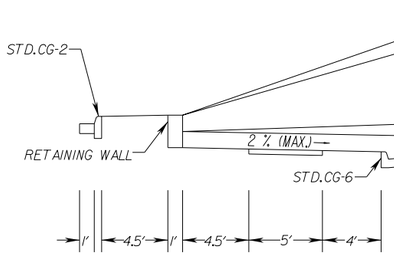
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	2A(3)

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

TYPICAL SECTIONS
ELEMENT D

HYDRAULIC ROAD EAST
STA. 508+34.93 To STA. 512+86.89
STA. 514+15.29 To STA. 519+50.00
HILLSDALE DRIVE
STA. 70+74.80 To STA. 74+75.00

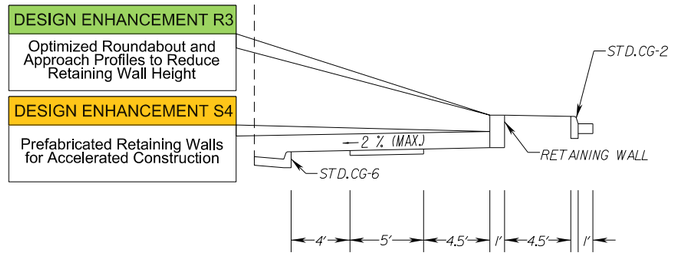




STA. 70+74.80 To STA. 71+45.00

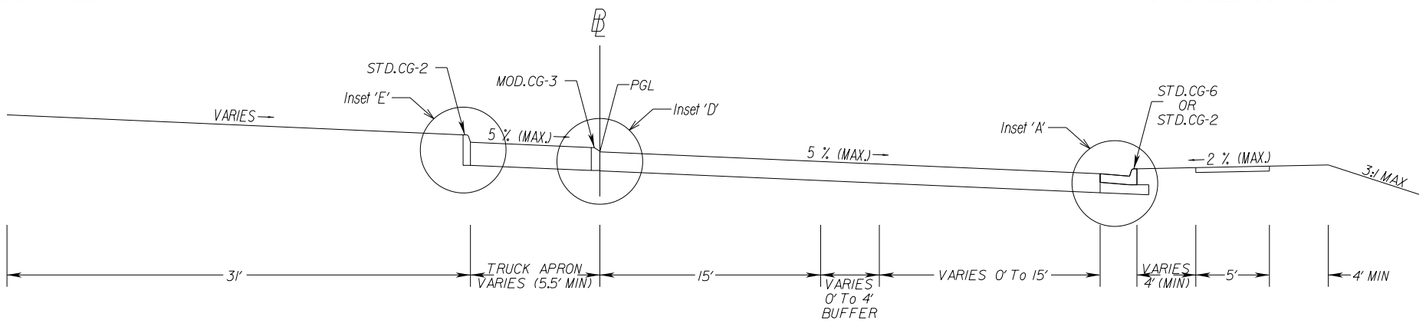
DESIGN ENHANCEMENT R3
Optimized Roundabout and Approach Profiles to Reduce Retaining Wall Height

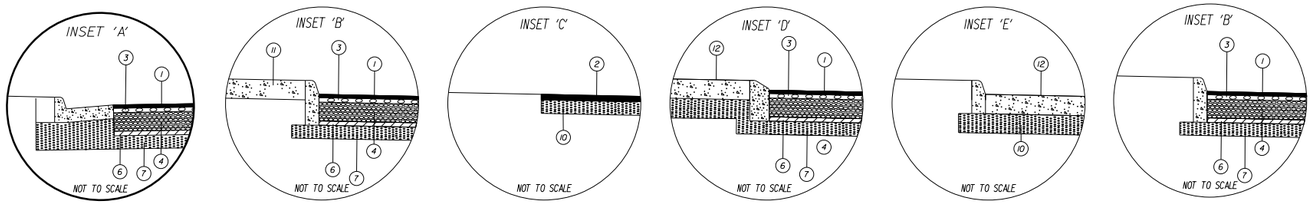
DESIGN ENHANCEMENT S4
Prefabricated Retaining Walls for Accelerated Construction



STA. 514+15.29 To STA. 514+90

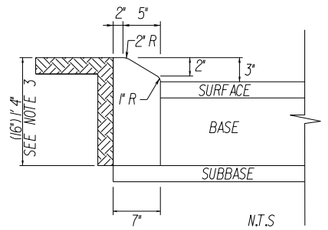
ROUNDABOUT
STA. 40+00.00 To STA. 42+81.57





CG-3 MODIFIED

FOR USE ON ROUNDABOUT TRUCK APRONS ONLY



NOTES:

1. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
2. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.
3. THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (13" DEPTH) OR INCREASED AS MUCH AS 3" (19" DEPTH) IN ORDER THAT THE BOTTOM OF THE CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENTS SUBSTRUCTURE. OTHERWISE, THE DEPTH IS TO BE 16" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR AN INCREASE IN DEPTH.
4. THE MODIFICATION TO THE STANDARD CG-3 IS TO REDUCE THE EXPOSED HEIGHT OF THE CURB AS SHOWN. MODIFIED CURB SHALL BE PAID FOR AS STANDARD CG-3.

(1) 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5D

(2) 2.0" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5D

(3) 2.0" ASPHALT CONCRETE TYPE IM-19.0A

(4) 8.5" ASPHALT CONCRETE TYPE BM-25.0A

(5) 9.0" ASPHALT CONCRETE TYPE BM-25.0A

(6) 2.0" OPEN GRADED DRAINAGE LAYER ASPHALT OR CEMENT STABILIZED

(7) 6" CEMENT TREATED AGGREGATE (CTA)

(8) SAWCUT ASPHALT CONCRETE (FULL DEPTH)

(9) EXISTING PAVEMENT

(10) 6" AGGREGATE BASE MATERIAL TYPE 1, NO 21B (FOR SUBBASE)

(11) 4" CLASS A3 CONCRETE

(12) SURFACE 12" HYDRAULIC CEMENT CONCRETE STAMPED COLORED & REINFORCED

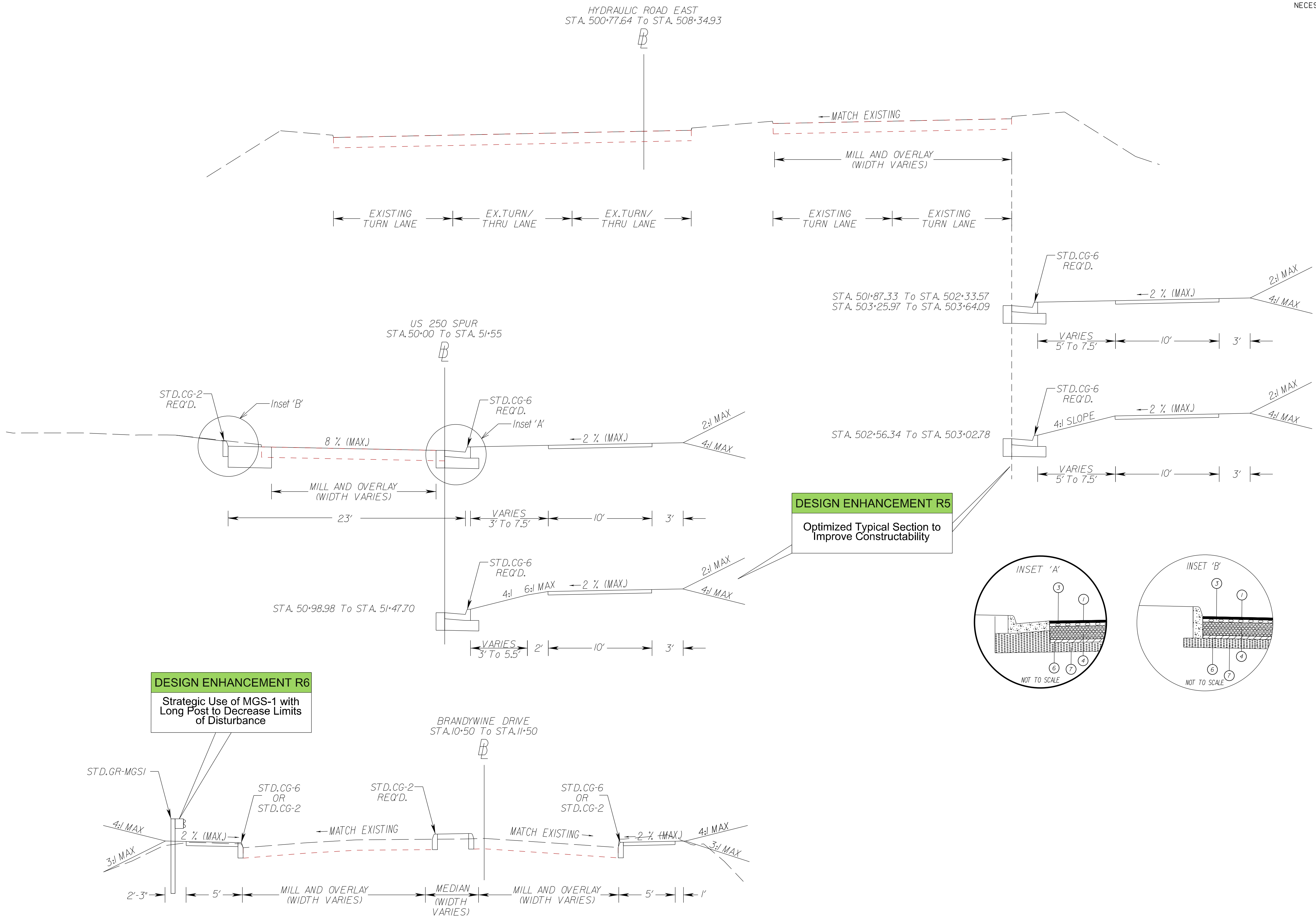
SCALE	PROJECT	SHEET NO.
0 50' 100'	0029-M03-371	2A(3)

PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	2A(4)

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

TYPICAL SECTIONS
ELEMENT E



1. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5D
2. 2.0" ASPHALT CONCRETE SURFACE COURSE TYPE SM-9.5D
3. 2.0" ASPHALT CONCRETE TYPE IM-19.0A
4. 8.5" ASPHALT CONCRETE TYPE BM-25.0A
5. 9.0" ASPHALT CONCRETE TYPE BM-25.0A
6. 2.0" OPEN GRADED DRAINAGE LAYER ASPHALT OR CEMENT STABILIZED
7. 6" CEMENT TREATED AGGREGATE (CTA)
8. SAWCUT ASPHALT CONCRETE (FULL DEPTH)
9. EXISTING PAVEMENT
10. 6" AGGREGATE BASE MATERIAL TYPE I, NO 21B (FOR SUBBASE)
11. 4" CLASS A3 CONCRETE

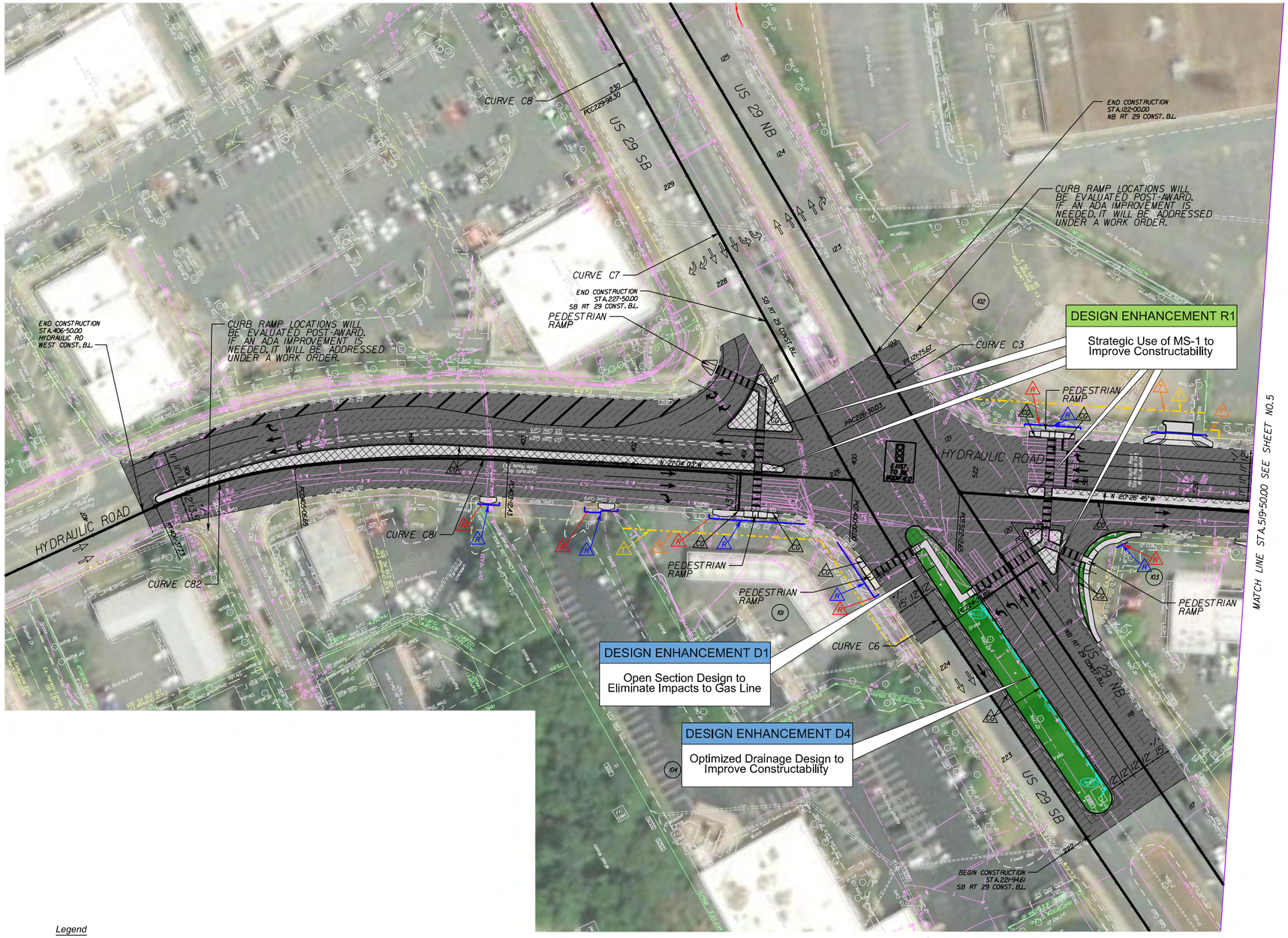
SCALE	PROJECT	SHEET NO.
0 50' 100'	0029-M03-371	2A(4)

PROJECT MANAGER _
SURVEYED BY, DATE _
DESIGN BY _ .
SUBSURFACE UTILITY BY, DATE _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ .

ELEMENT A

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	3

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



SB ROUTE 29

Curve C6
PI = 225+29.55
DELTA = 5° 45' 43.85" (RT)
D = 2° 51' 53"
T = 100.65'
L = 201.14'
R = 2,000.00'
PC = 224+28.89
PRC = 226+30.03

Curve C7
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

Curve C8
PI = 230+64.55
DELTA = 1° 31' 05.06" (LT)
D = 1° 08' 45"
T = 66.24'
L = 132.48'
R = 5,000.00'
PCC = 229+98.30
PT = 231+30.78

HYDRAULIC WEST

Curve C81
PI = 404+09.79
DELTA = 10° 06' 59.80" (LT)
D = 5° 12' 31"
T = 97.37'
L = 194.22'
R = 1,100.00'
PC = 403+12.43
PCC = 405+06.65

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

HYDRAULIC EAST

Curve C80
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

NB ROUTE 29

Curve C3
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

Legend

- Denotes Full Depth Pavement
- Denotes Mill & Overlay
- Denotes Demolition of Pavement
- Denotes Concrete Median/Island/Sidewalk/Driveway
- Denotes Grass/Landscaping
- Denotes Prop. R/W (RFP)
- Denotes Temporary Easement (RFP)
- Denotes Prop. R/W (DBT Design)
- Denotes Temporary Easement (DBT Design)
- Denotes Permanent Easement (DBT Design)
- Denotes Exist. Utilities
- Denotes Exist. R/W
- Denotes Exist. Easement
- Denotes Exist. Property Line
- Denotes Exist. City of Charlottesville Boundary
- Denotes Prop. Travel Lane
- Denotes Prop. Guardrail
- Denotes Proposed Lighting
- Denotes Proposed Pedestrian Lighting
- Denotes Proposed Drainage/SWM
- Denotes Potential Retaining Wall
- Denotes Prop. Curb/Curb and Gutter
- Denotes Prop. Temporary Construction Easement (DBT Design)
- Denotes Prop. Temporary Construction Easement (RFP)
- Denotes Prop. Right of Way (DBT Design)
- Denotes Prop. Right of Way (RFP)

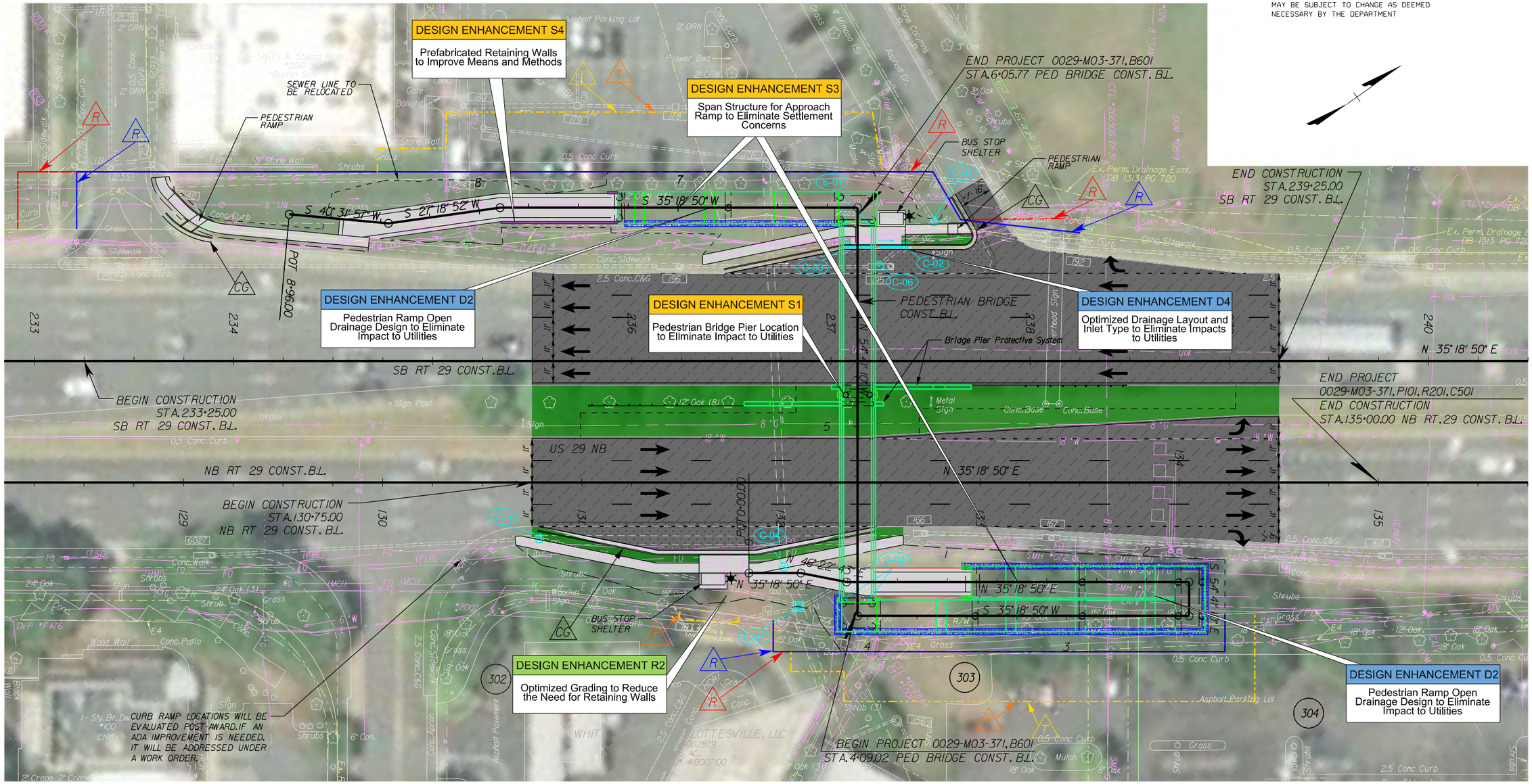
SCALE	PROJECT	SHEET NO.
0 100' 200'	0029-M03-371	3

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

ELEMENT C

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	4

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



Legend

- Denotes Full Depth Pavement
- Denotes Mill & Overlay
- Denotes Demolition of Pavement
- Denotes Concrete Median/Island/Sidewalk/Driveway
- Denotes Grass/Landscaping
- Denotes Prop. R/W (RFP)
- Denotes Temporary Easement (RFP)
- Denotes Prop. R/W (DBT Design)
- Denotes Temporary Easement (DBT Design)
- Denotes Permanent Easement (DBT Design)
- Denotes Exist. Utilities
- Denotes Exist. R/W
- Denotes Exist. Easement
- Denotes Exist. Property Line
- Denotes Exist. City of Charlottesville Boundary
- Denotes Prop. Travel Lane
- Denotes Prop. Guardrail
- Denotes Proposed Lighting
- Denotes Proposed Pedestrian Lighting
- Denotes Proposed Drainage/SWM
- Denotes Potential Retaining Wall
- Splash Pad
- Denotes Prop. Curb/Curb and Gutter
- Denotes Prop. Temporary Construction Easement (DBT Design)
- Denotes Prop. Temporary Construction Easement (RFP)
- Denotes Prop. Right of Way (DBT Design)
- Denotes Prop. Right of Way (RFP)

SCALE	PROJECT	SHEET NO.
0 50' 100'	0029-M03-371	4

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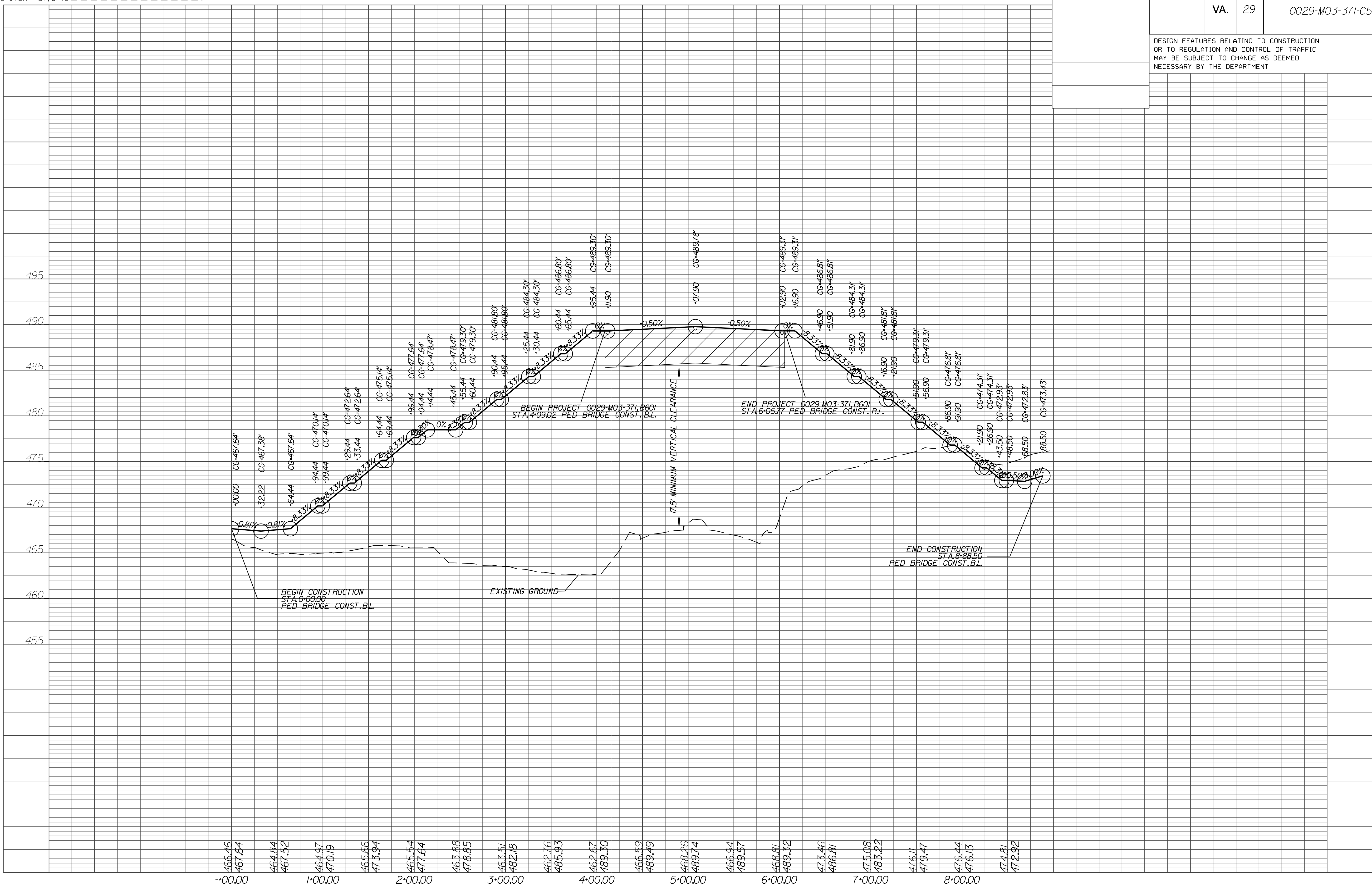
Plotted By: 1westbrook

PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	4A

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



Pedestrian Bridge and Ramp Profile

PROJECT	SHEET NO.
0029-M03-371	4A

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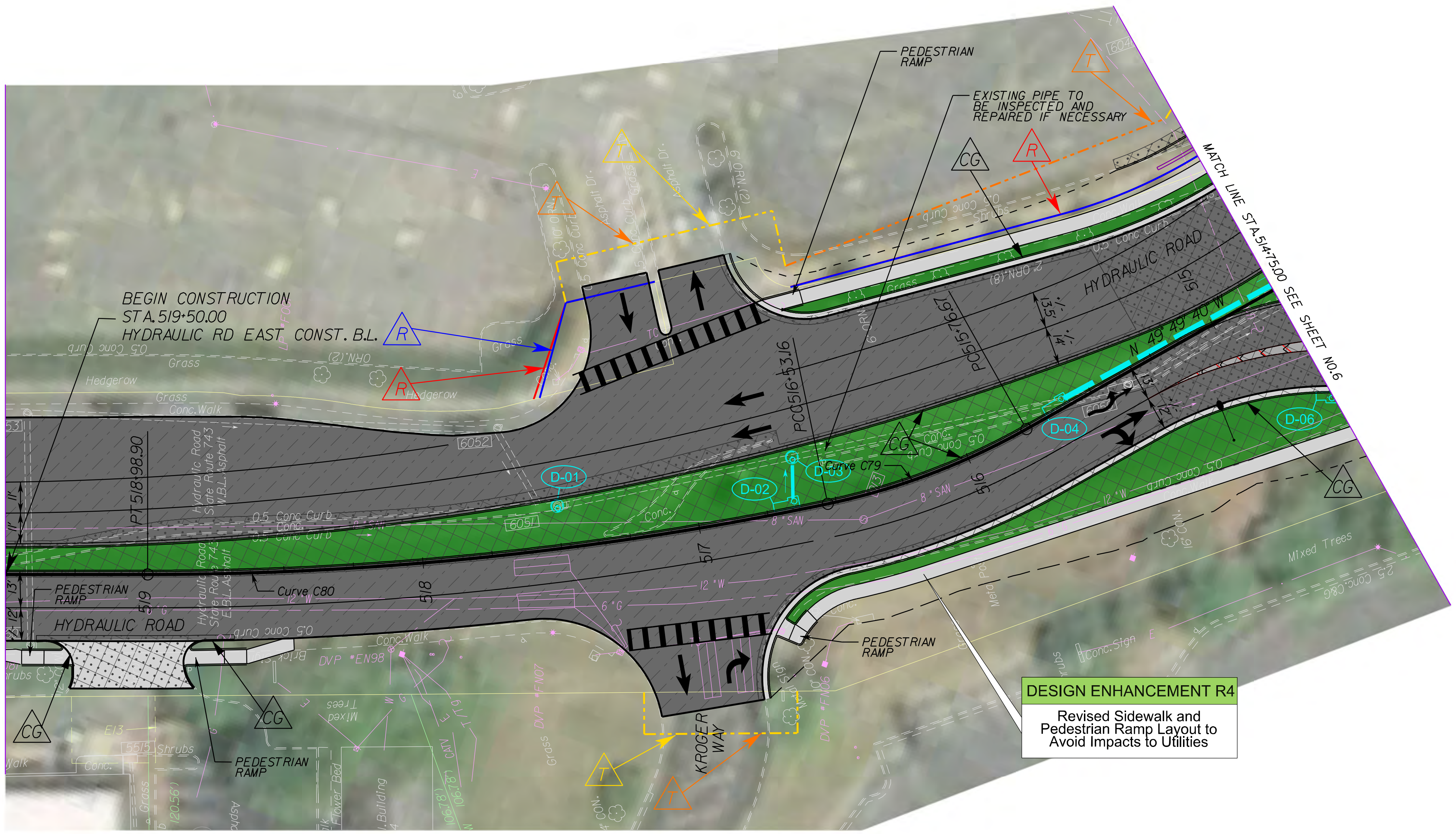
Plotted By: iwestbrook

PROJECT MANAGER
SURVEYED BY, DATE
DESIGN BY
SUBSURFACE UTILITY BY, DATE

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	5

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

ELEMENT D



DESIGN ENHANCEMENT R4

Revised Sidewalk and Pedestrian Ramp Layout to Avoid Impacts to Utilities

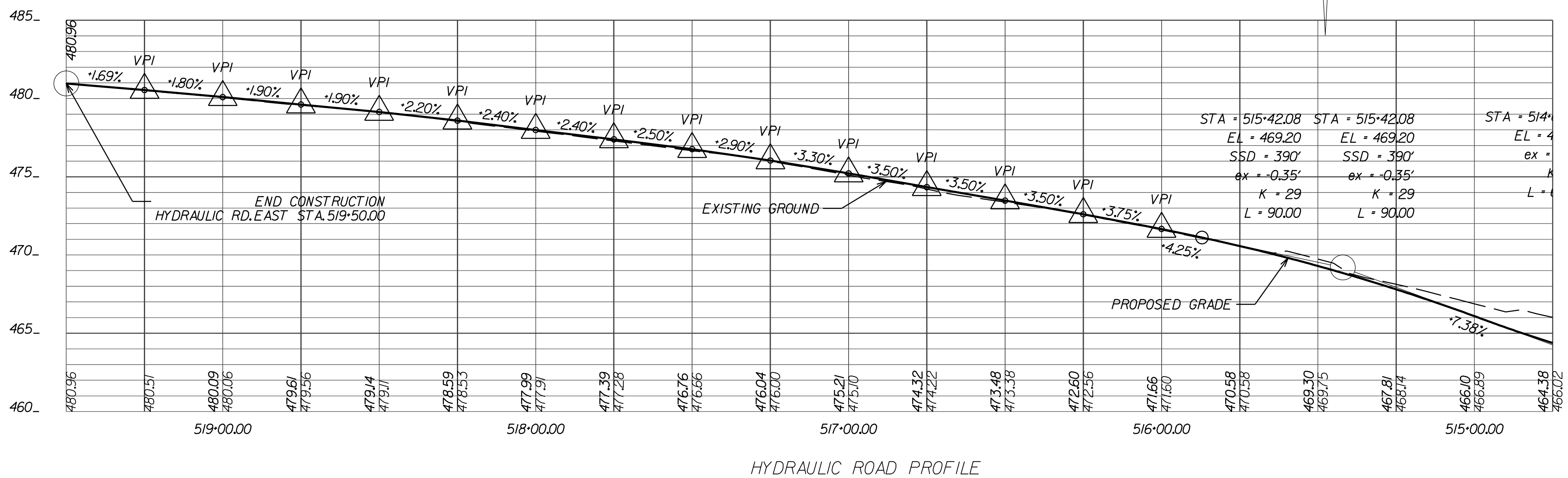
HYDRAULIC EAST

Curve C79
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

Curve C80
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

DESIGN ENHANCEMENT R3

Optimized Approach Profiles to Reduce Excavation



HYDRAULIC ROAD PROFILE

Legend

- Denotes Full Depth Pavement
- Denotes Mill & Overlay
- Denotes Demolition of Pavement
- Denotes Concrete Median/Island/Sidewalk/Driveway
- Denotes Grass/Landsacaping
- Denotes Roundabout Central Island
- Denotes Concrete Colored and Textured Vein (buffer)
- Denotes Prop. R/W (RFP)
- Denotes Temporary Easement (RFP)
- Denotes Prop. R/W (DBT Design)
- Denotes Temporary Easement (DBT Design)
- Denotes Permanent Easement (DBT Design)
- Denotes Exist. Utilities
- Denotes Exist. R/W
- Denotes Exist. Easement
- Denotes Exist. Property Line
- Denotes Exist. City of Charlottesville Boundary
- Denotes Prop. Travel Lane
- Denotes Prop. Guardrail
- Denotes Proposed Lighting
- Denotes Proposed Pedestrian Lighting
- Denotes Proposed Drainage/SWM
- Denotes Potential Retaining Wall
- CG Denotes Prop. Curb/Curb and Gutter
- T Denotes Prop. Temporary Construction Easement (DBT Design)
- T Denotes Prop. Temporary Construction Easement (RFP)
- R Denotes Prop. Right of Way (DBT Design)
- R Denotes Prop. Right of Way (RFP)

SCALE	PROJECT	SHEET NO.
	0029-M03-371	5

PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

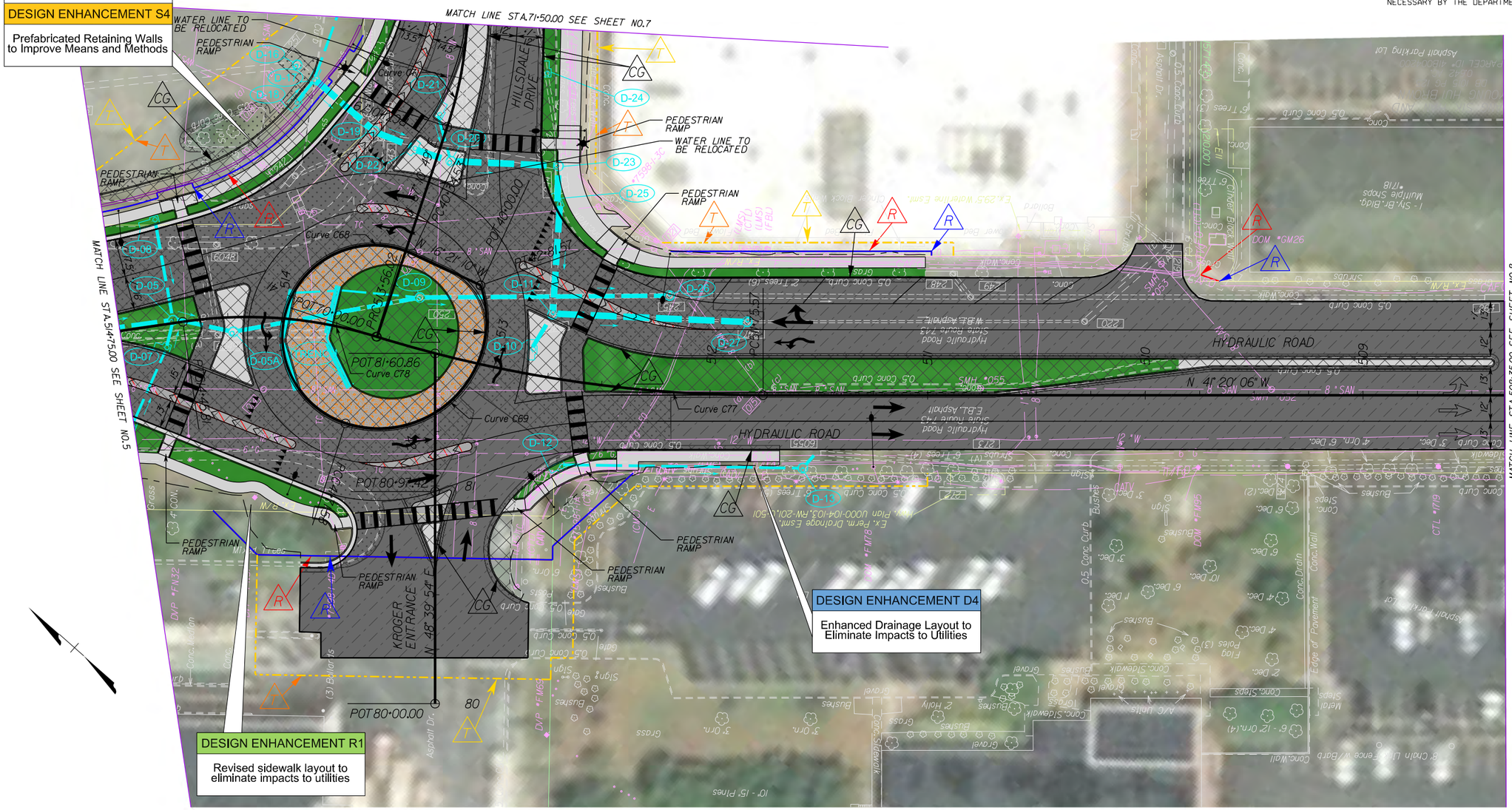
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	6

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

ELEMENT D

DESIGN ENHANCEMENT R3
Optimize profiles reduces the length and height of retaining wall

DESIGN ENHANCEMENT S4
Prefabricated Retaining Walls to Improve Means and Methods



Curve C77
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

Curve C78
PI = 514+01.68
DELTA = 25° 43' 24.87" (LT)
D = 28° 38' 52"
T = 45.67'
L = 89.79'
R = 200.00'
PRC = 513+56.02
PT = 514+45.81

ROUNDABOUT

Curve C68
PI = 47+25.39
DELTA = 186° 57' 28.67" (LT)
D = 136° 25' 07"
T = 690.85'
L = 137.05'
R = 42.00'
PC = 40+34.53
PCC = 41+71.58

Curve C69
PI = 42+71.55
DELTA = 127° 18' 56.33" (LT)
D = 115° 44' 57"
T = 99.97'
L = 109.99'
R = 49.50'
PCC = 41+71.58
PT = 42+81.57

HILLSDALE

Curve C71
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

Legend

- Denotes Full Depth Pavement
- Denotes Mill & Overlay
- Denotes Demolition of Pavement
- Denotes Concrete Median/Island/Sidewalk/Driveway
- Denotes Grass/Landscaping
- Denotes Roundabout Central Island
- Denotes Concrete Colored and Textured Vein (buffer)
- Denotes Prop. R/W (RFP)
- Denotes Temporary Easement (RFP)
- Denotes Prop. R/W (DBT Design)
- Denotes Temporary Easement (DBT Design)
- Denotes Permanent Easement (DBT Design)
- Denotes Exist. Utilities
- Denotes Exist. R/W
- Denotes Exist. Easement
- Denotes Exist. Property Line
- Denotes Exist. City of Charlottesville Boundary
- Denotes Prop. Travel Lane
- Denotes Prop. Guardrail
- Denotes Proposed Lighting
- Denotes Proposed Pedestrian Lighting
- Denotes Proposed Drainage/SWM
- Denotes Potential Retaining Wall
- Denotes Prop. Curb/Curb and Gutter
- Denotes Prop. Temporary Construction Easement (DBT Design)
- Denotes Prop. Temporary Construction Easement (RFP)
- Denotes Prop. Right of Way (DBT Design)
- Denotes Prop. Right of Way (RFP)

SCALE	PROJECT	SHEET NO.
0 50' 100'	0029-M03-371	6

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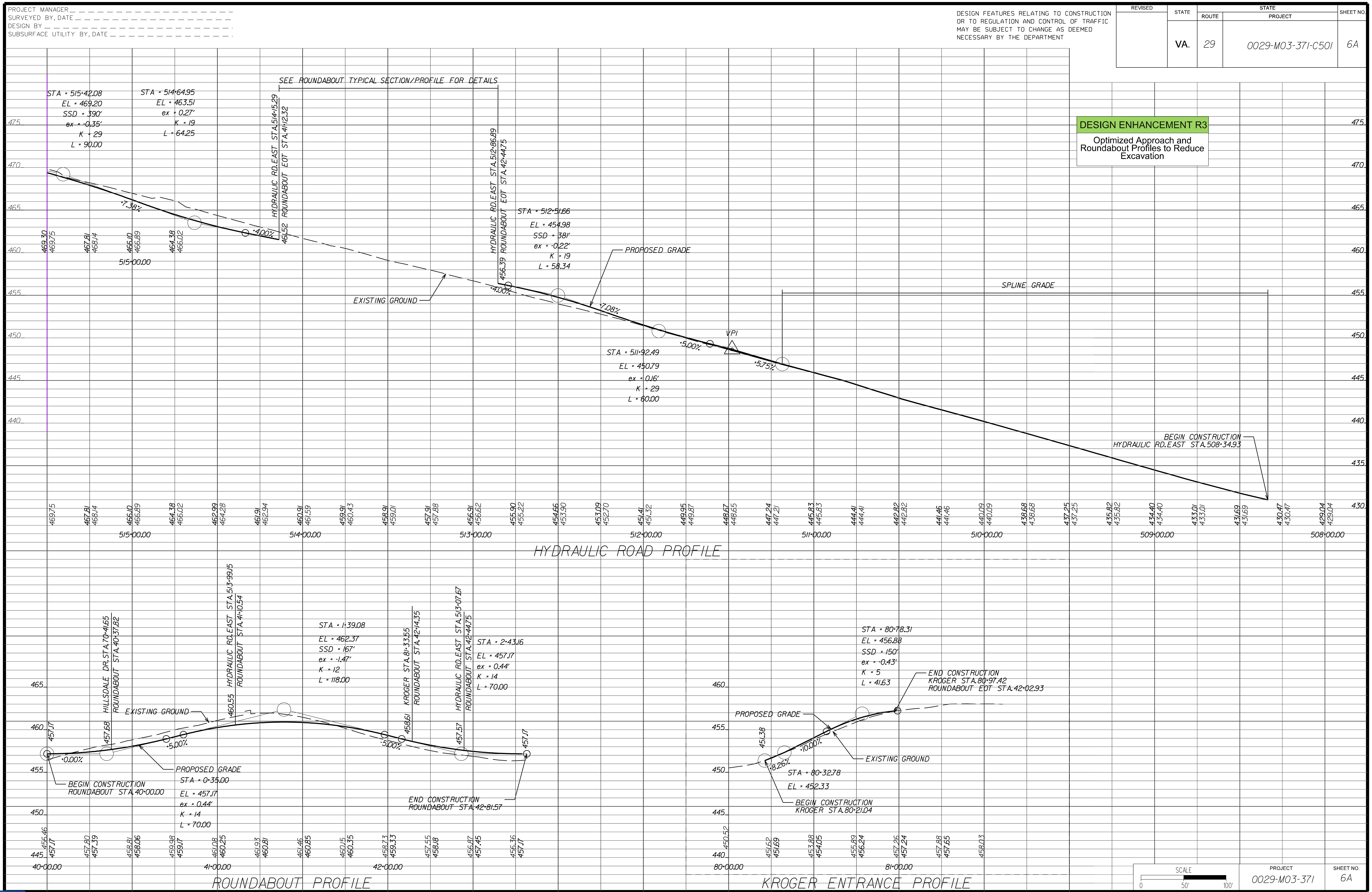
Plotted By: lwestbrook



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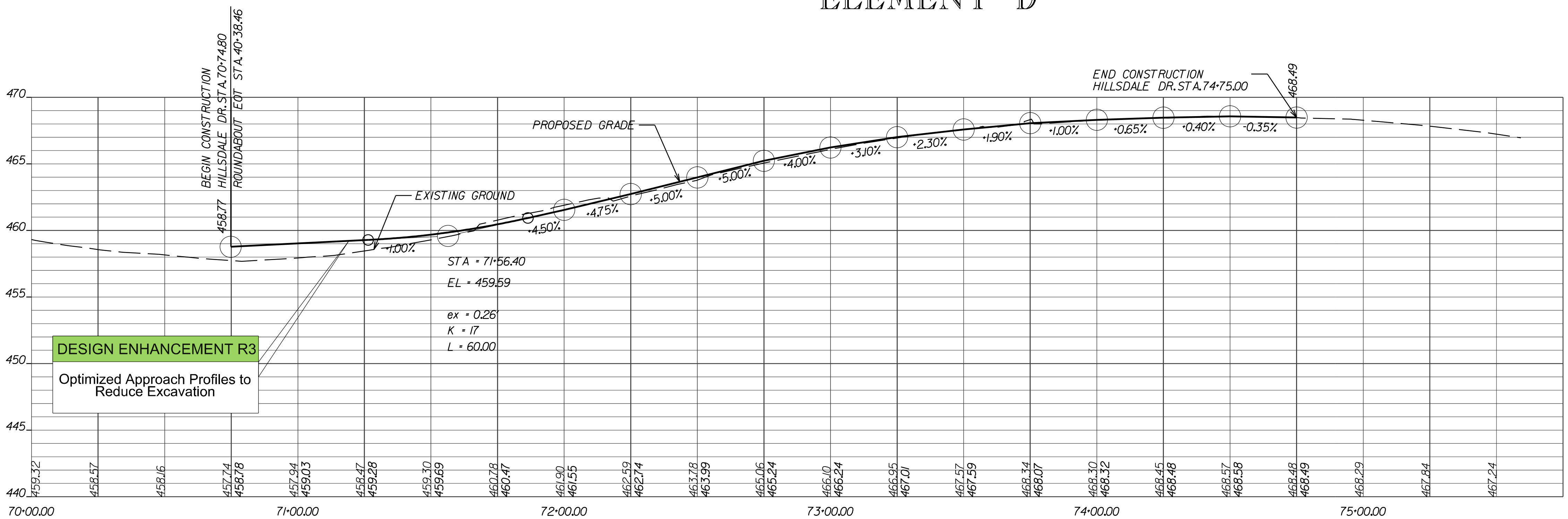
Plotted By: lwestbrook

PROJECT MANAGER _ _ _ _ _ _ _ _ _ _
SURVEYED BY, DATE _ _ _ _ _ _ _ _ _ _
DESIGN BY _ _ _ _ _ _ _ _ _ _
SUBSURFACE UTILITY BY, DATE _ _ _ _ _ _ _ _ _ _

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	7

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

ELEMENT D



HILLSDALE DRIVE PROFILE

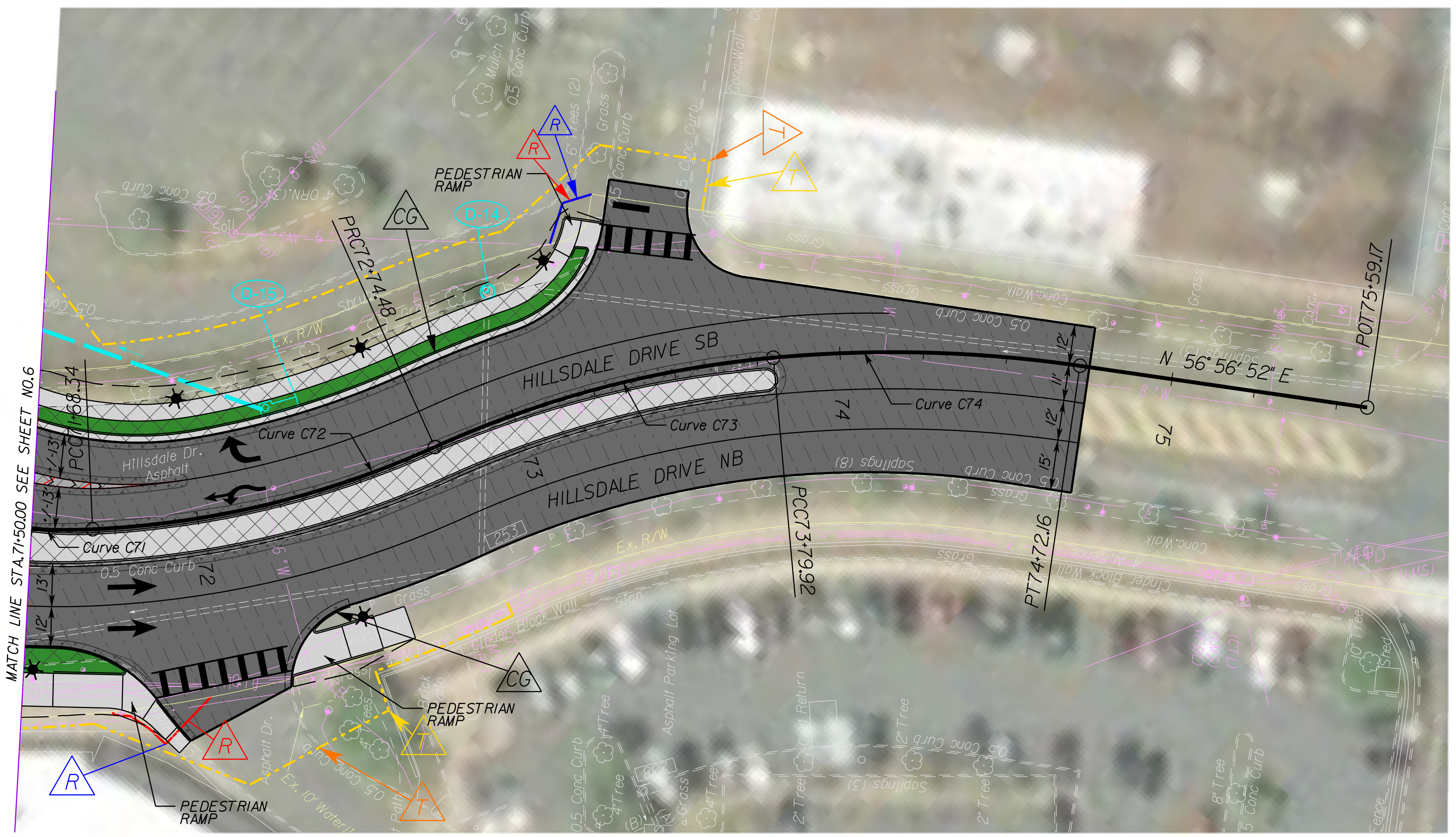
HILLSDALE

Curve C71
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

Curve C72
PI = 72+22.06
DELTA = 21° 43' 05.32" (LT)
D = 20° 27' 46"
T = 53.71'
L = 106.13'
R = 280.00'
PCC = 71+68.34
PRC = 72+74.48

Curve C73
PI = 73+27.69
DELTA = 19° 07' 05.87" (RT)
D = 18° 07' 54"
T = 53.22'
L = 105.44'
R = 316.00'
PRC = 72+74.48
PCC = 73+79.92

Curve C74
PI = 74+26.26
DELTA = 13° 32' 21.83" (RT)
D = 14° 40' 41"
T = 46.34'
L = 92.24'
R = 390.35'
PCC = 73+79.92
PT = 74+72.16



Legend

Denotes Full Depth Pavement
Denotes Mill & Overlay
Denotes Demolition of Pavement
Denotes Concrete Median/Island/Sidewalk/Driveway
Denotes Grass/Landsacaping
Denotes Roundabout Central Island
Denotes Concrete Colored and Textured Vein (buffer)
Denotes Prop. R/W (RFP)
Denotes Temporary Easement (RFP)
Denotes Prop. R/W (DBT Design)
Denotes Temporary Easement (DBT Desi
Denotes Permanent Easement (DBT Desi
Denotes Exist. Utilities
Denotes Exist. R/W
Denotes Exist. Easement
Denotes Exist. Property Line
Denotes Exist. City of Charlottesville Boundary
Denotes Prop. Travel Lane
Denotes Prop. Guardrail
Denotes Proposed Lighting
Denotes Proposed Pedestrian Lighting
Denotes Proposed Drainage/SWM
Denotes Potential Retaining Wall
Denotes Prop. Curb/Curb and Gutter
Denotes Prop. Temporary Construction Easement (DBT Design)
Denotes Prop. Temporary Construction Easement (RFP)
Denotes Prop. Right of Way (DBT Design)
Denotes Prop. Right of Way (RFP)

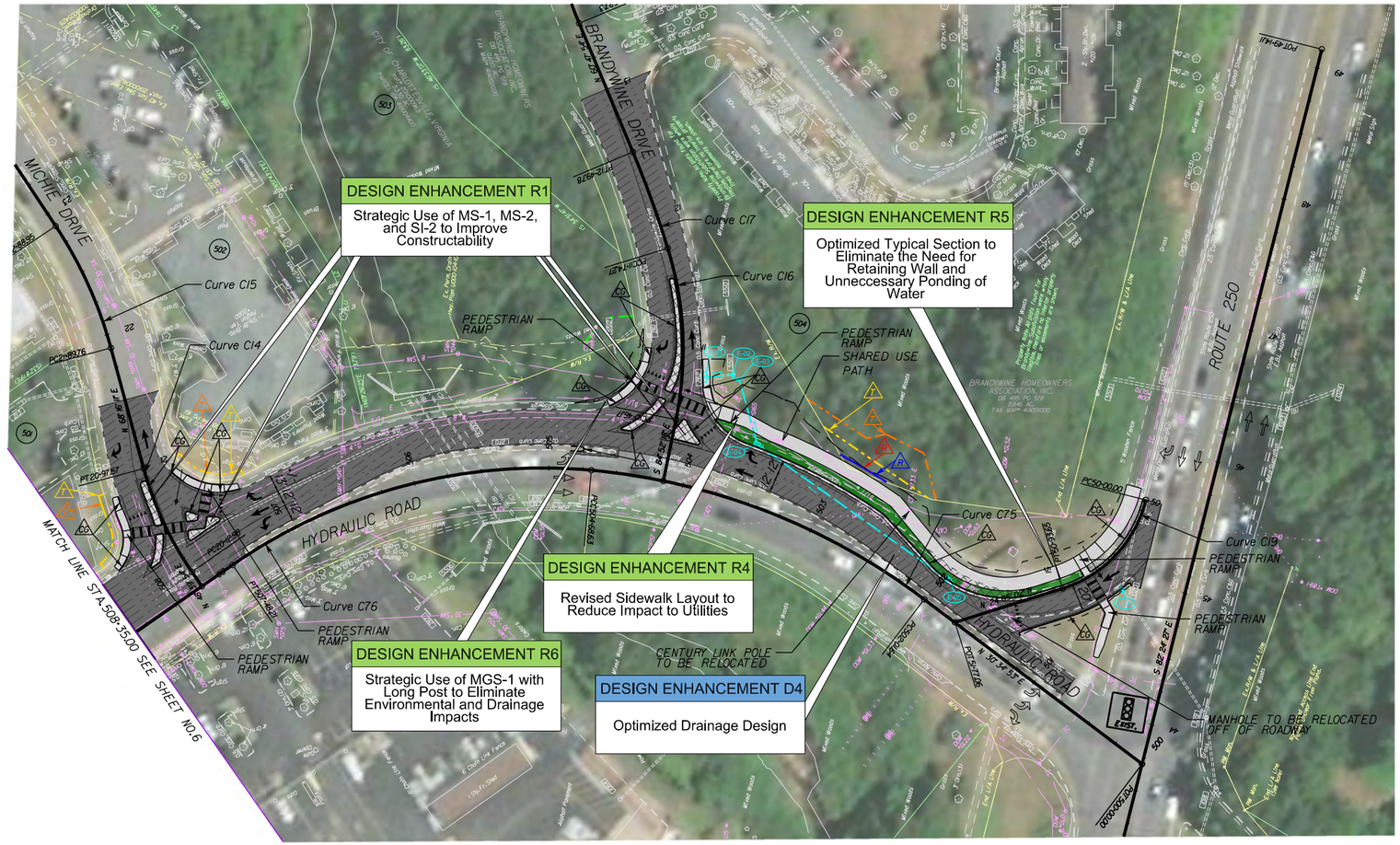
SCALE	PROJECT	SHEET NO.
0 50' 100'	0029-M03-371	7

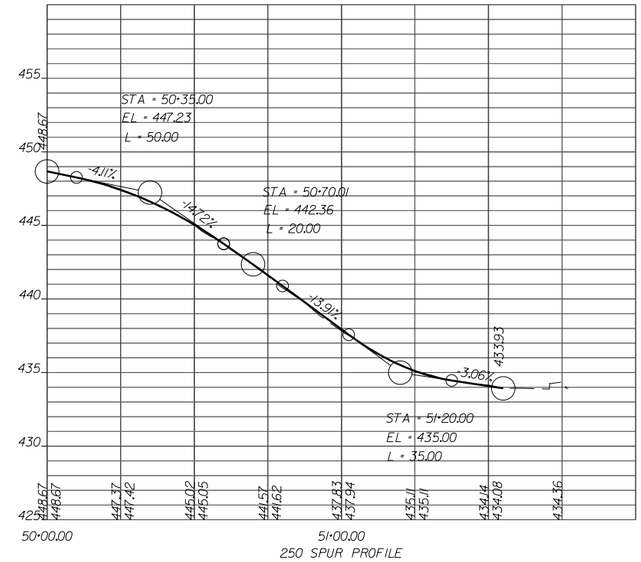
PROJECT MANAGER _____
SURVEYED BY, DATE _____
DESIGN BY _____
SUBSURFACE UTILITY BY, DATE _____

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-M03-371-C501	8

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

ELEMENT E





250 SPUR PROFILE

HYDRAULIC EAST

Curve C75
PI = 503+38.69
DELTA = 31° 52' 10.07" (LT)
D = 11° 56' 12"
T = 137.05'
L = 266.99'
R = 480.00'
PC = 502+01.64
PCC = 504+68.63

Curve C76
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

BRANDYWINE

Curve C16
PI = 11+11.60
DELTA = 28° 47' 00.09" (LT)
D = 22° 28' 08"
T = 65.43'
L = 128.10'
R = 255.00'
PC = 10+46.17
PCC = 11+74.27

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

MITCHIE

Curve C14
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

Curve C15
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

RT 250 SPUR

Curve C19
PI = 50+51.34
DELTA = 58° 19' 24.62" (RT)
D = 62° 16' 41"
T = 51.34'
L = 93.65'
R = 92.00'
PC = 50+00.00
PT = 50+93.65

Legend

- Denotes Full Depth Pavement
- Denotes Mill & Overlay
- Denotes Demolition of Pavement
- Denotes Concrete Median/Island/Sidewalk/Driveway
- Denotes Grass/Landscaping
- Denotes Prop. R/W (RFP)
- Denotes Temporary Easement (RFP)
- Denotes Prop. R/W (DBT Design)
- Denotes Temporary Easement (DBT Design)
- Denotes Permanent Easement (DBT Design)
- Denotes Exist. Utilities
- Denotes Exist. R/W
- Denotes Exist. Easement
- Denotes Exist. Property Line
- Denotes Exist. City of Charlottesville Boundary
- Denotes Prop. Travel Lane
- Denotes Prop. Guardrail
- Denotes Proposed Lighting
- Denotes Proposed Pedestrian Lighting
- Denotes Proposed Drainage/SWM
- Denotes Potential Retaining Wall
- Denotes Prop. Curb/Curb and Gutter
- Denotes Prop. Temporary Construction Easement (DBT Design)
- Denotes Prop. Temporary Construction Easement (RFP)
- Denotes Prop. Right of Way (DBT Design)
- Denotes Prop. Right of Way (RFP)

SCALE	PROJECT	SHEET NO.
0 100' 200'	0029-M03-371	8

4.3.2

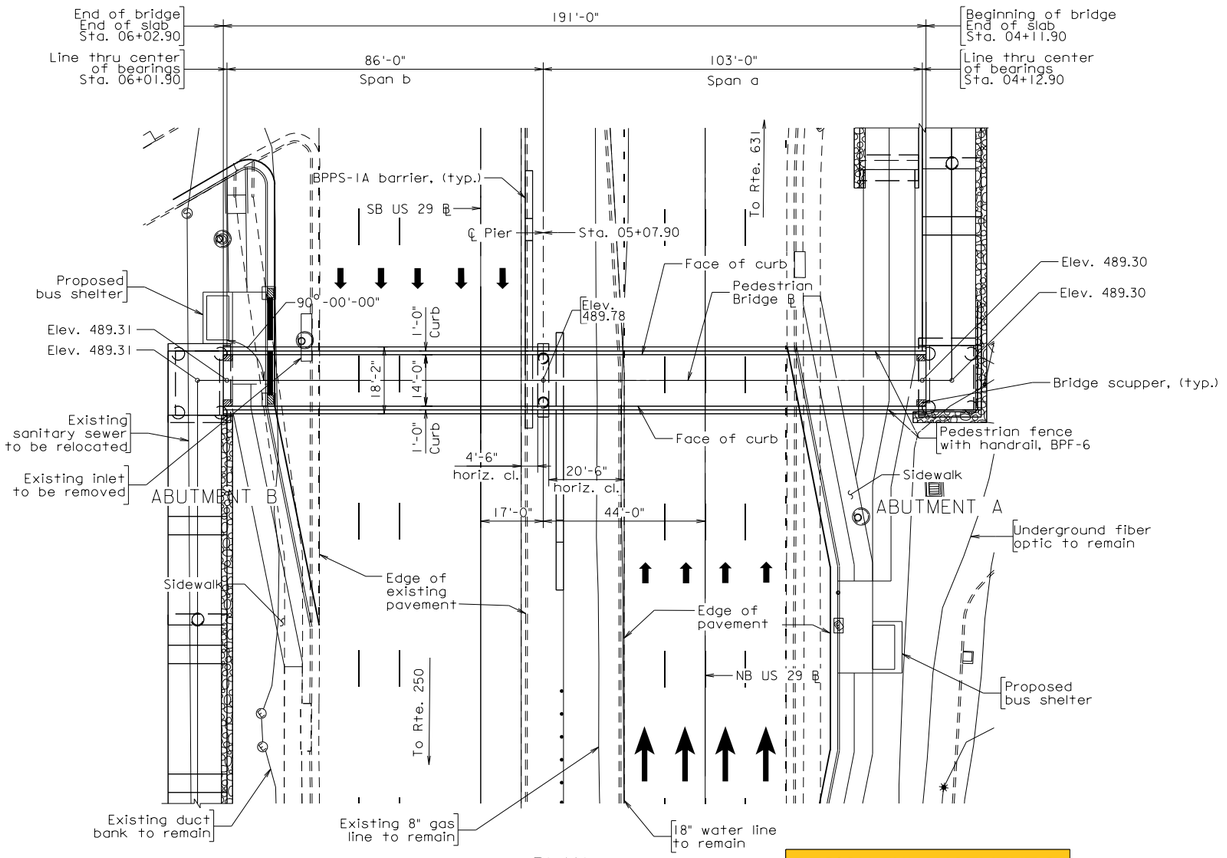
Conceptual Structural Plans

Curtis Contracting Inc.

WALLACE MONTGOMERY

FHWA-534 DATA -----

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	STP-5104(299)	29	0029-M03-371, B601	1
Federal Structure No. 000000000000XXXX			FHWA Construction and Scour Code: XXXX-SX		
Federal Oversight Code:			UPC No. 118880		



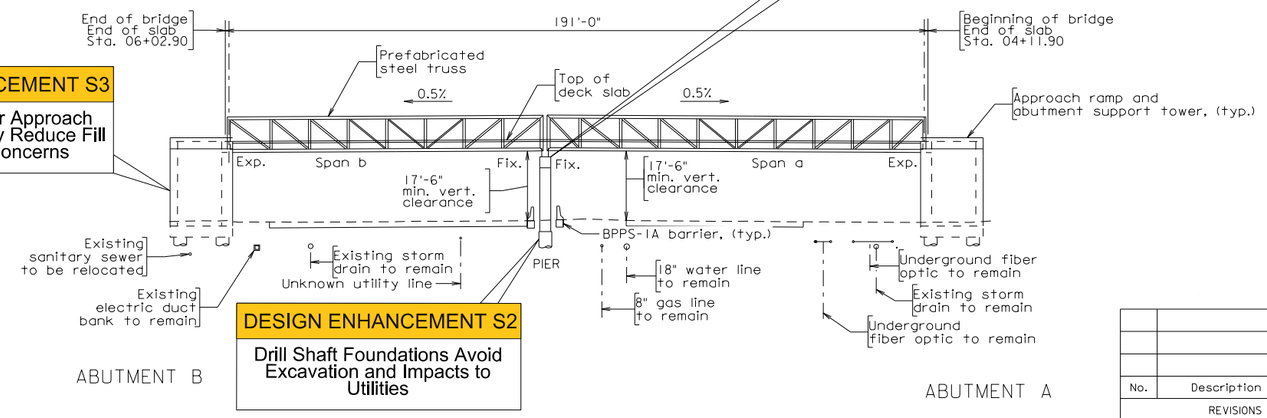
PLAN

DESIGN ENHANCEMENT S1

Pedestrian Bridge Pier Location Avoids Impacts to 8" Gas Line & 10" Cast-Iron Water Main

DESIGN ENHANCEMENT S3

Structure Span for Approach Ramps Significantly Reduce Fill & Settlement Concerns



DESIGN ENHANCEMENT S2

Drill Shaft Foundations Avoid Excavation and Impacts to Utilities

DEVELOPED SECTION ALONG ℄

Scale: 1"=20'-0"

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

The original approved sheet, including original signatures, is filed in the VDOT Central Office. Any misuse of electronic files, including scanned signatures is illegal. Violators will be prosecuted to the full extent of the applicable laws.

Width: 14'-0" face-to-face of curb.

Span layout: 86'-0"-103'-0" steel truss spans simply supported with continuous deck for pedestrian loading.

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 Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications.

LRFD Guide Specifications for the Design of Pedestrian Bridges, 2009 with 2015 Interim Revisions, 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 loading includes 90 psf for pedestrian loading and H10 live load.

B118800_01.dgn

WALLACE MONTGOMERY
RICHMOND, VA
STRUCTURAL ENGINEER

PLANS BY:	WALLACE MONTGOMERY
COORDINATED:	MED
SUPERVISED:	ALC
DESIGNED:	NTM/MED
DRAWN:	CGA
CHECKED:	

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

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED PEDESTRIAN BRIDGE

US 29 NORTH OF HYDRAULIC ROAD
ALBEMARLE COUNTY
PROJECT 0029-M03-371, B601

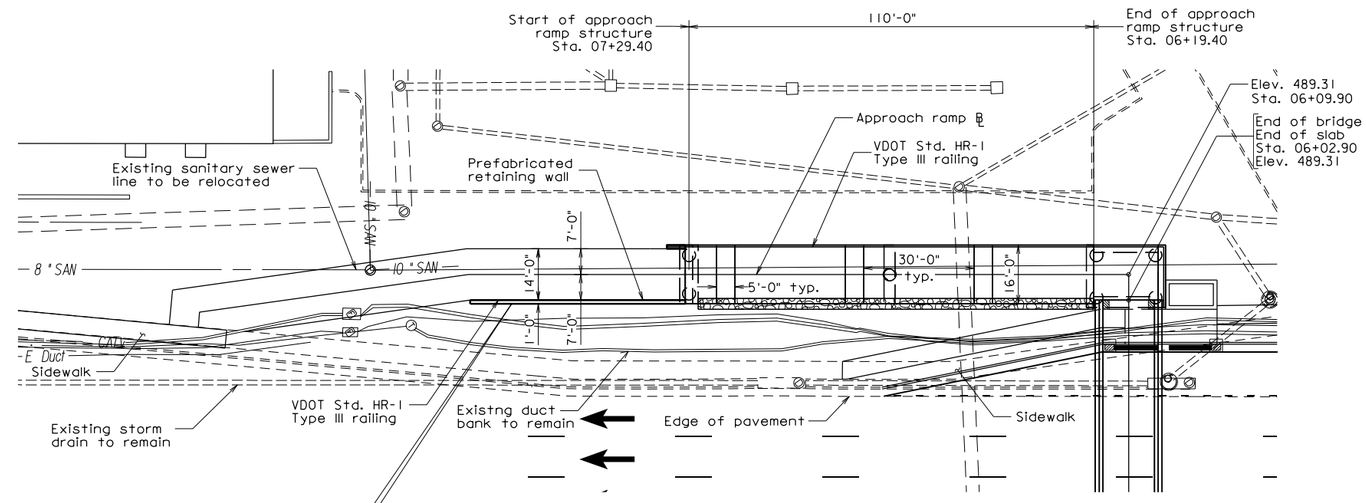
Recommended for Approval: _____ (Developer) Date

Approved: _____ Chief Engineer Date

Date: Jan. 2023

Sheet 1 of 5

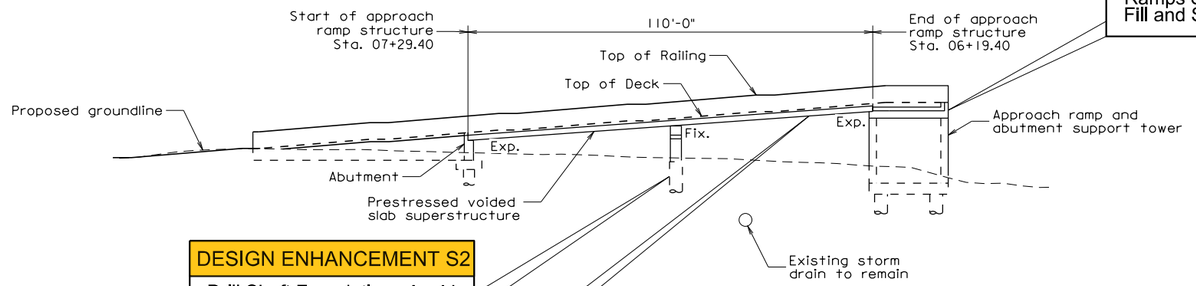
STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	——		29	0029-M03-371, B601	2



PLAN

DESIGN ENHANCEMENT S4

Prefabricated Retaining Walls Improve Means and Methods and Accelerate Constuction



DESIGN ENHANCEMENT S3

Span Structure for Approach Ramps Signigicantly Reduce Fill and Settlement Concerns

DESIGN ENHANCEMENT S2

Drill Shaft Foundations Avoid Excavation and Reduce Utility Impacts

DESIGN ENHANCEMENT S5

Precast Prestressed Beams for Pedestrian Ramps Provide Low Maintenance Alternative and Accelerate Construction

DEVELOPED SECTION ALONG ℄

Scale: 1"=20'-0"

B118800_02.dgn

WALLACE MONTGOMERY
Richmond, VA
STRUCTURAL ENGINEER

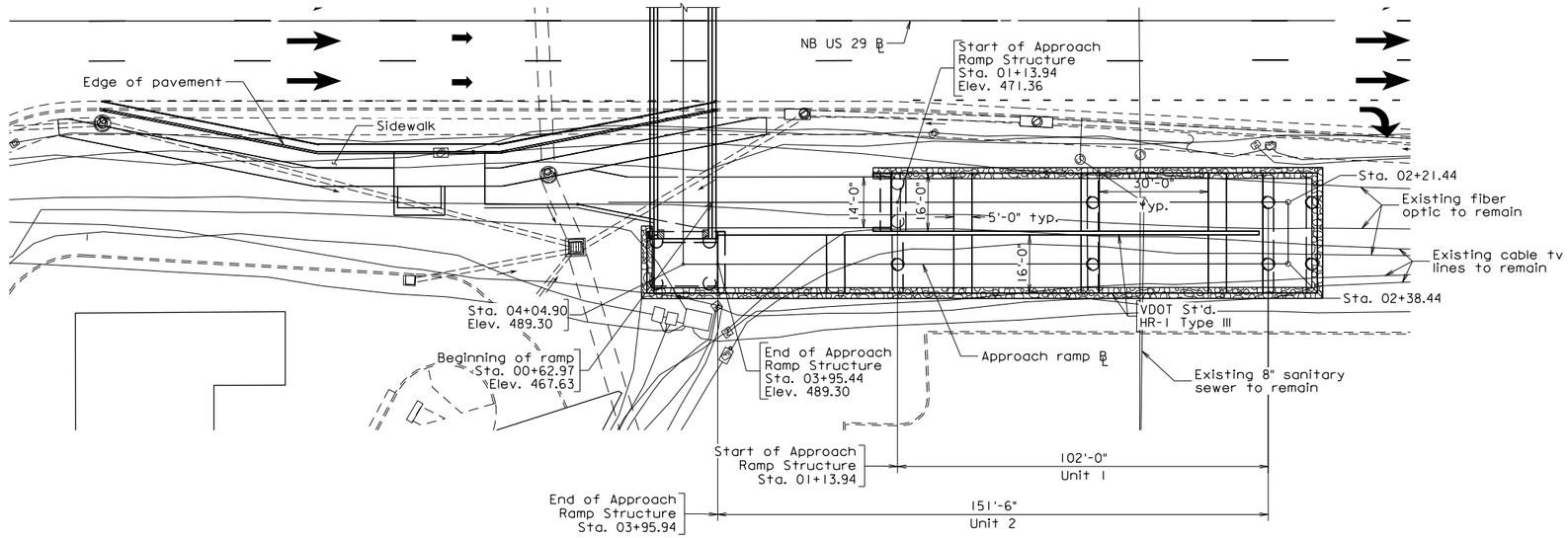
No.	Description	Date
Revisions		

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

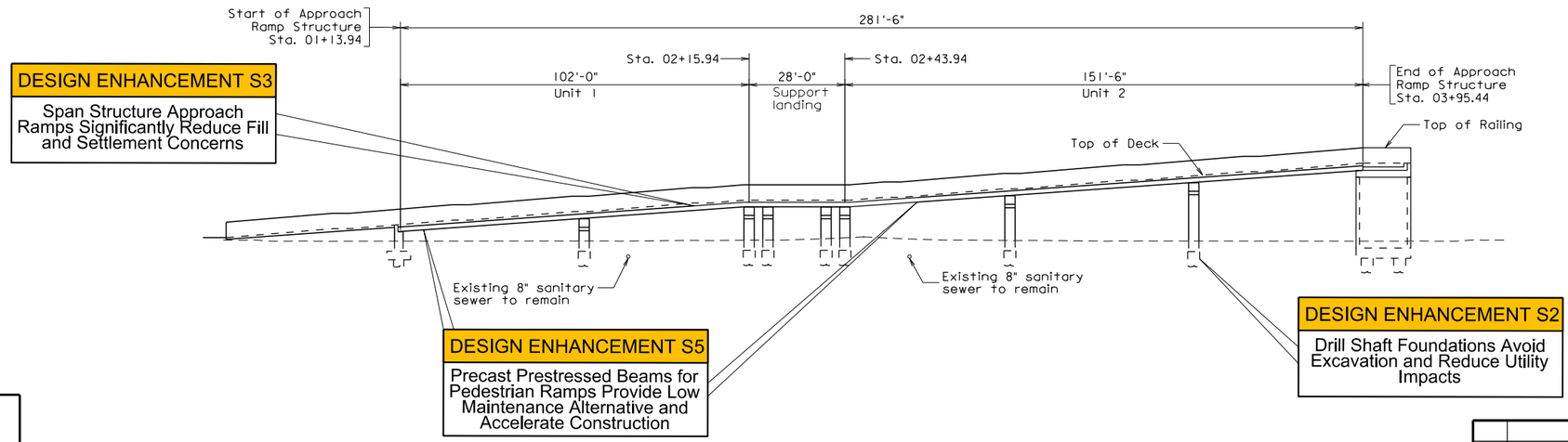
WEST APPROACH RAMP PLAN AND ELEVATION

Designed: NTM	Date	Plan No.	Sheet No.
Drawn: CDA	Jan. 2023		2 of 5
Checked: MED			

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		29	0029-M03-371, B601	3



PLAN



DESIGN ENHANCEMENT S3

Span Structure Approach Ramps Significantly Reduce Fill and Settlement Concerns

DESIGN ENHANCEMENT S5

Precast Prestressed Beams for Pedestrian Ramps Provide Low Maintenance Alternative and Accelerate Construction

DESIGN ENHANCEMENT S2

Drill Shaft Foundations Avoid Excavation and Reduce Utility Impacts

DEVELOPED SECTION ALONG ℄

Scale: 1"=20'-0"

B118800_03.dgn

Wallace Montgomery
Richmond, VA
STRUCTURAL ENGINEER

No.	Description	Date
	Revisions	

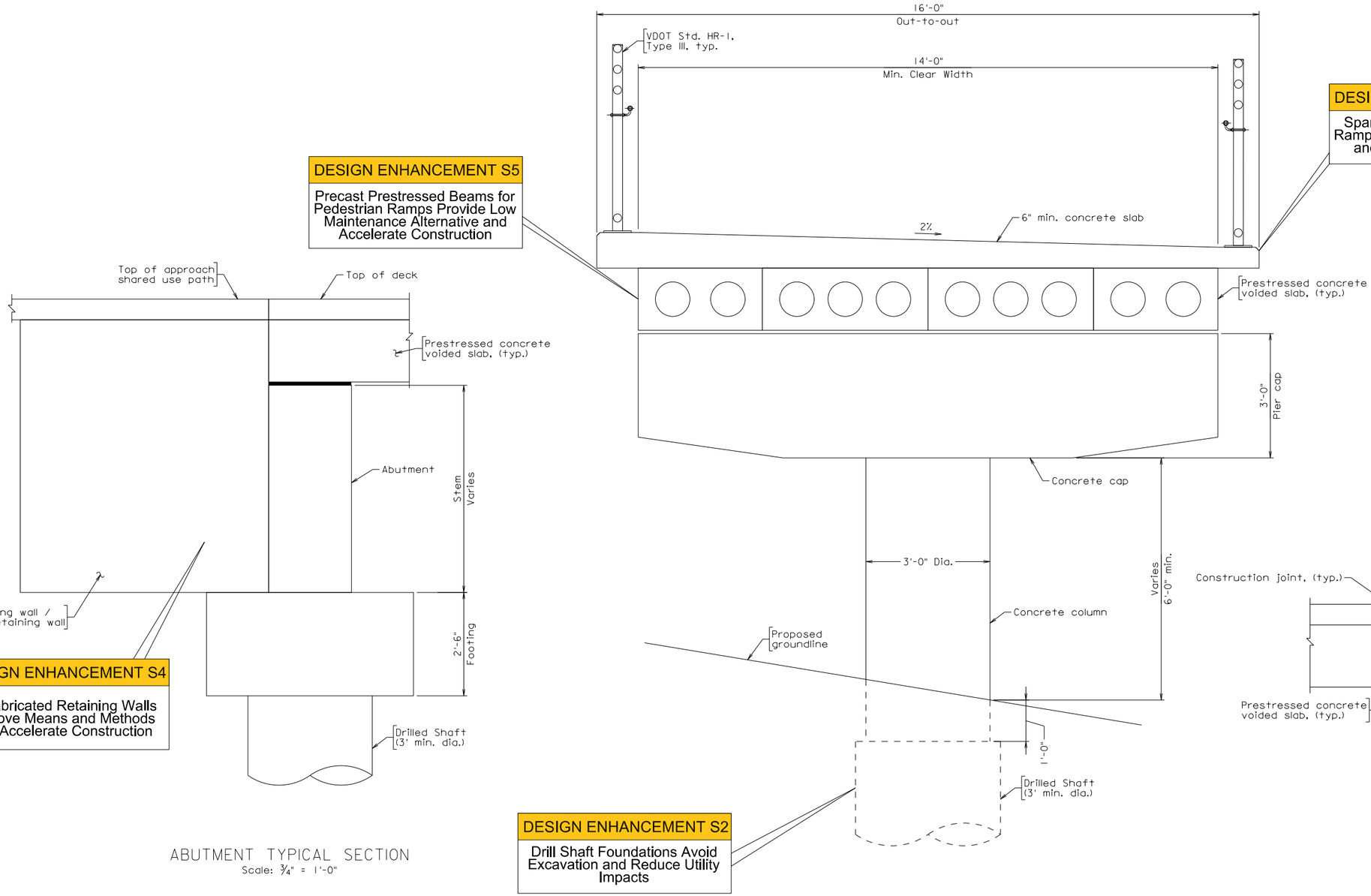
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

EAST APPROACH RAMP PLAN AND ELEVATION

Designed: NTM	Date	Plan No.	Sheet No.
Drawn: CRA	Jan. 2023		3 of 5
Checked: MED			

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		29	0029-M03-371, B601	4



DESIGN ENHANCEMENT S5

Precast Prestressed Beams for Pedestrian Ramps Provide Low Maintenance Alternative and Accelerate Construction

DESIGN ENHANCEMENT S3

Span Structure for Approach Ramps Significantly Reduce Fill and Settlement Concerns

DESIGN ENHANCEMENT S4

Prefabricated Retaining Walls Improve Means and Methods and Accelerate Construction

DESIGN ENHANCEMENT S2

Drill Shaft Foundations Avoid Excavation and Reduce Utility Impacts

ABUTMENT TYPICAL SECTION
Scale: ¾" = 1'-0"

PIER & SUPERSTRUCTURE TYPICAL SECTION
Scale: ¾" = 1'-0"

PIER DETAIL
Scale: ¾" = 1'-0"

B118800_04.dgn

WALLACE MONTGOMERY
RICHMOND, VA
STRUCTURAL ENGINEER

Scale: As shown.

No.	Description	Date
Revisions		

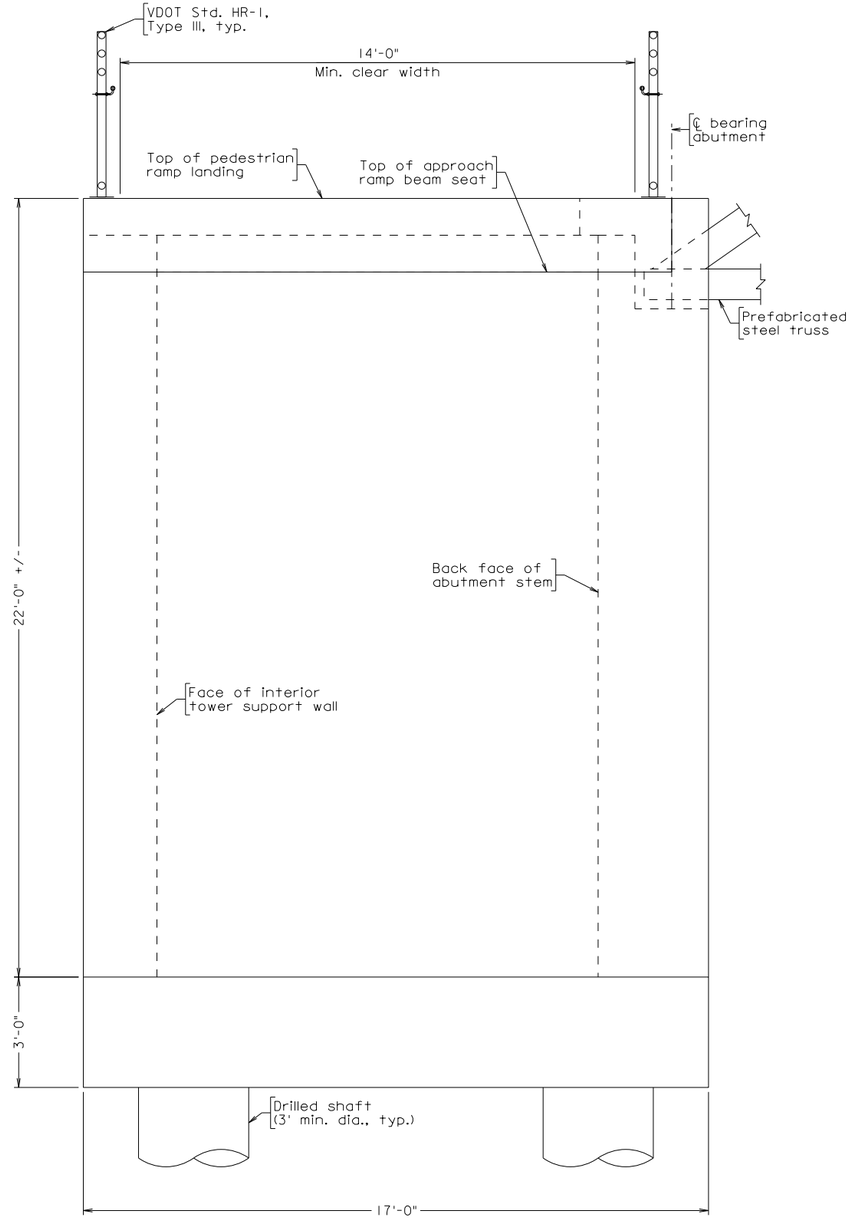
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

PEDESTRIAN RAMP TYPICAL SECTIONS

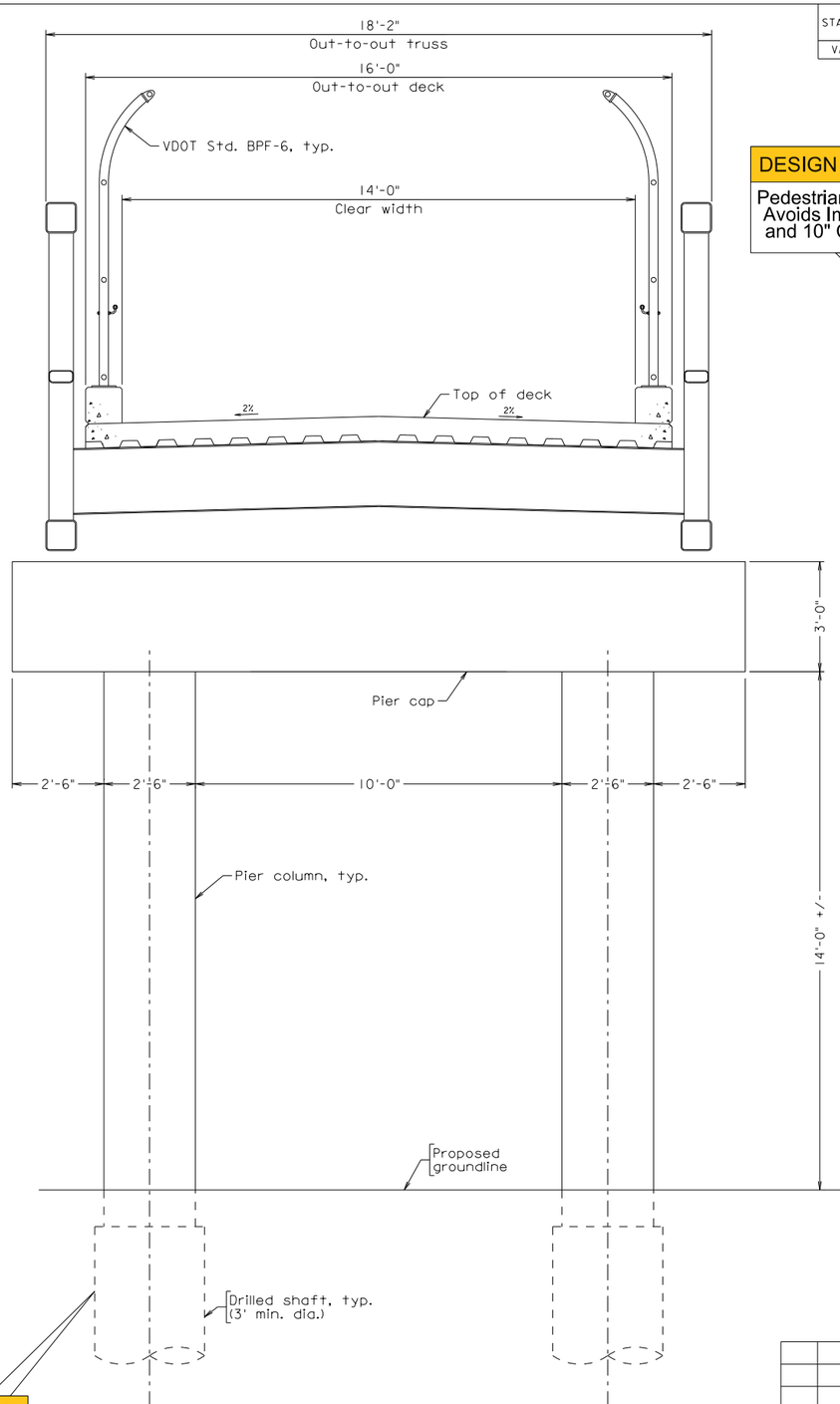
Designed: NTM
Drawn: LBA
Checked: MED

Date	Plan No.	Sheet No.
Jan. 2023		4

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		29	0029-M03-371, B601	5



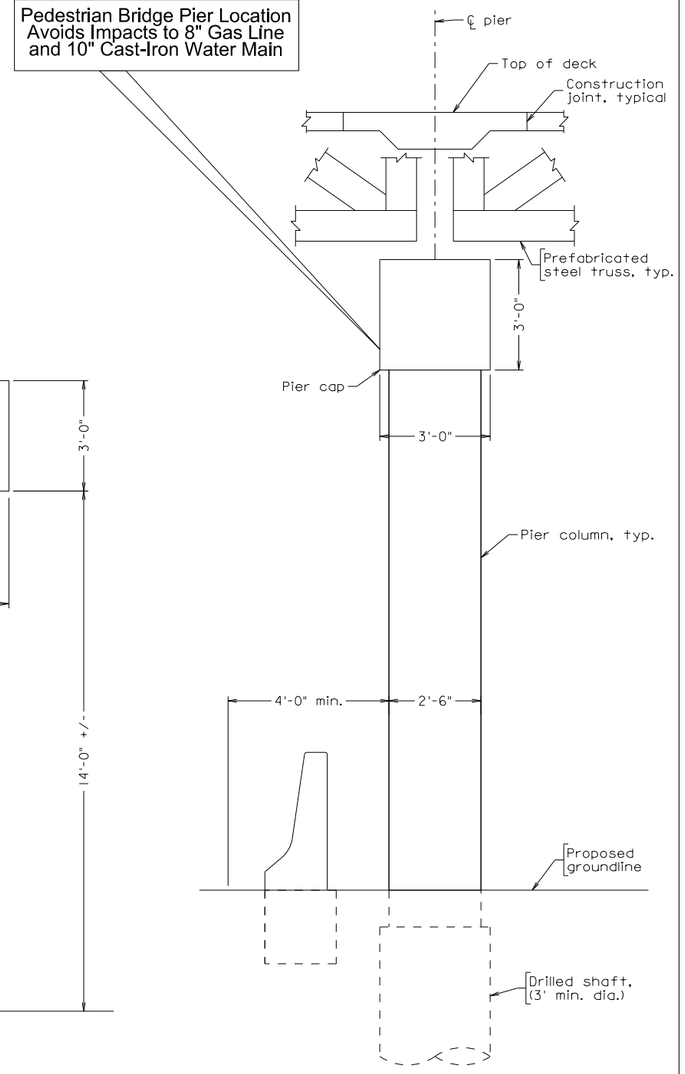
ABUTMENT TYPICAL SECTION
Scale: ½" = 1'-0"



PIER ELEVATION
Scale: ½" = 1'-0"

DESIGN ENHANCEMENT S1

Pedestrian Bridge Pier Location Avoids Impacts to 8" Gas Line and 10" Cast-Iron Water Main



PIER TYPICAL SECTION
Scale: ½" = 1'-0"

DESIGN ENHANCEMENT S2

Drill Shaft Foundations Avoid Excavation and Reduces Utility Impacts

Scale: As shown.

WALLACE MONTGOMERY
RICHMOND, VA
STRUCTURAL ENGINEER

No.	Description	Date
Revisions		

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

PEDESTRIAN BRIDGE TYPICAL DETAILS

Designed: NTM	Date	Plan No.	Sheet No.
Drawn: CGA	Jan. 2023		5
Checked: MED			

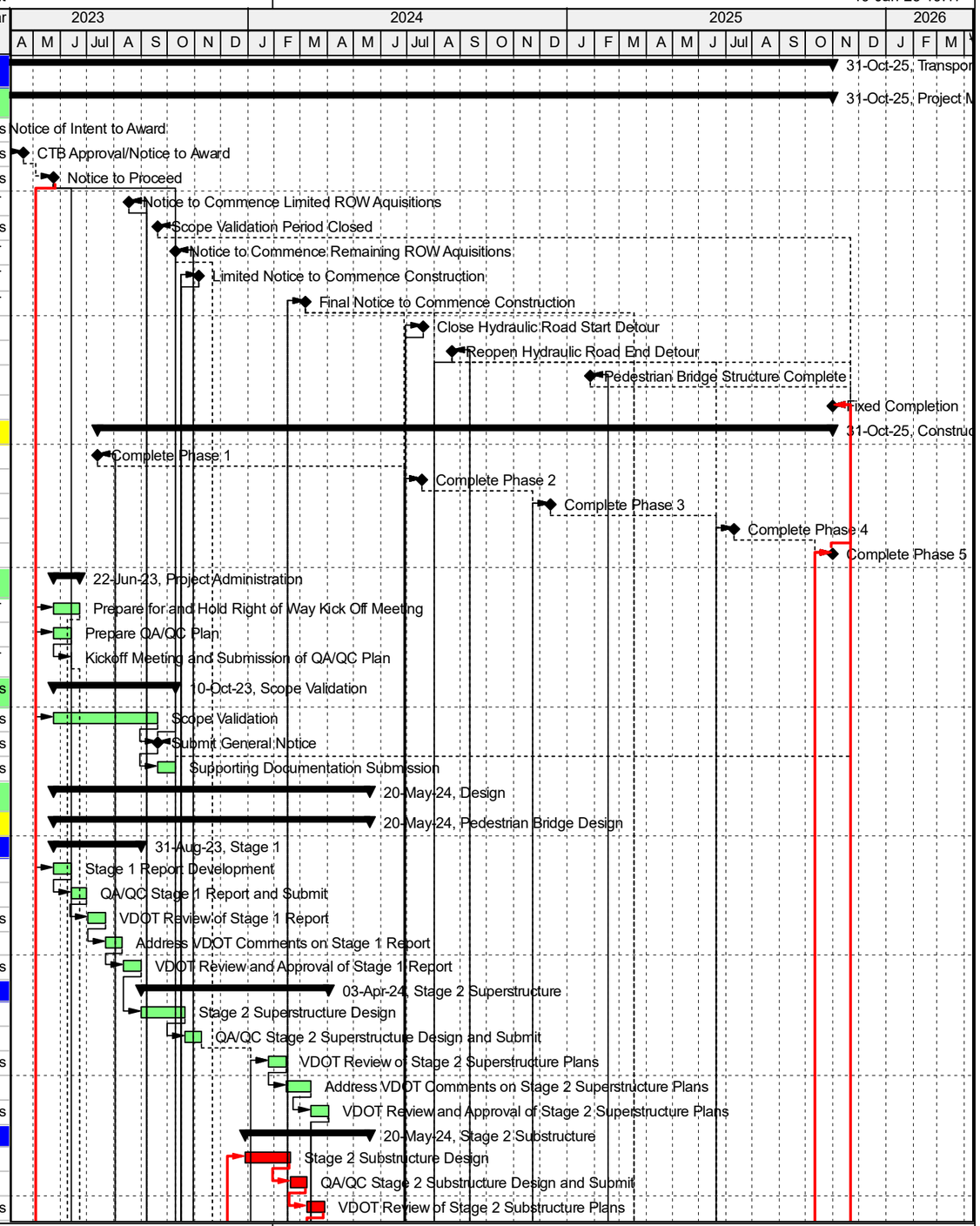
B118800_05.dgn

4.6.1

Proposal Schedule

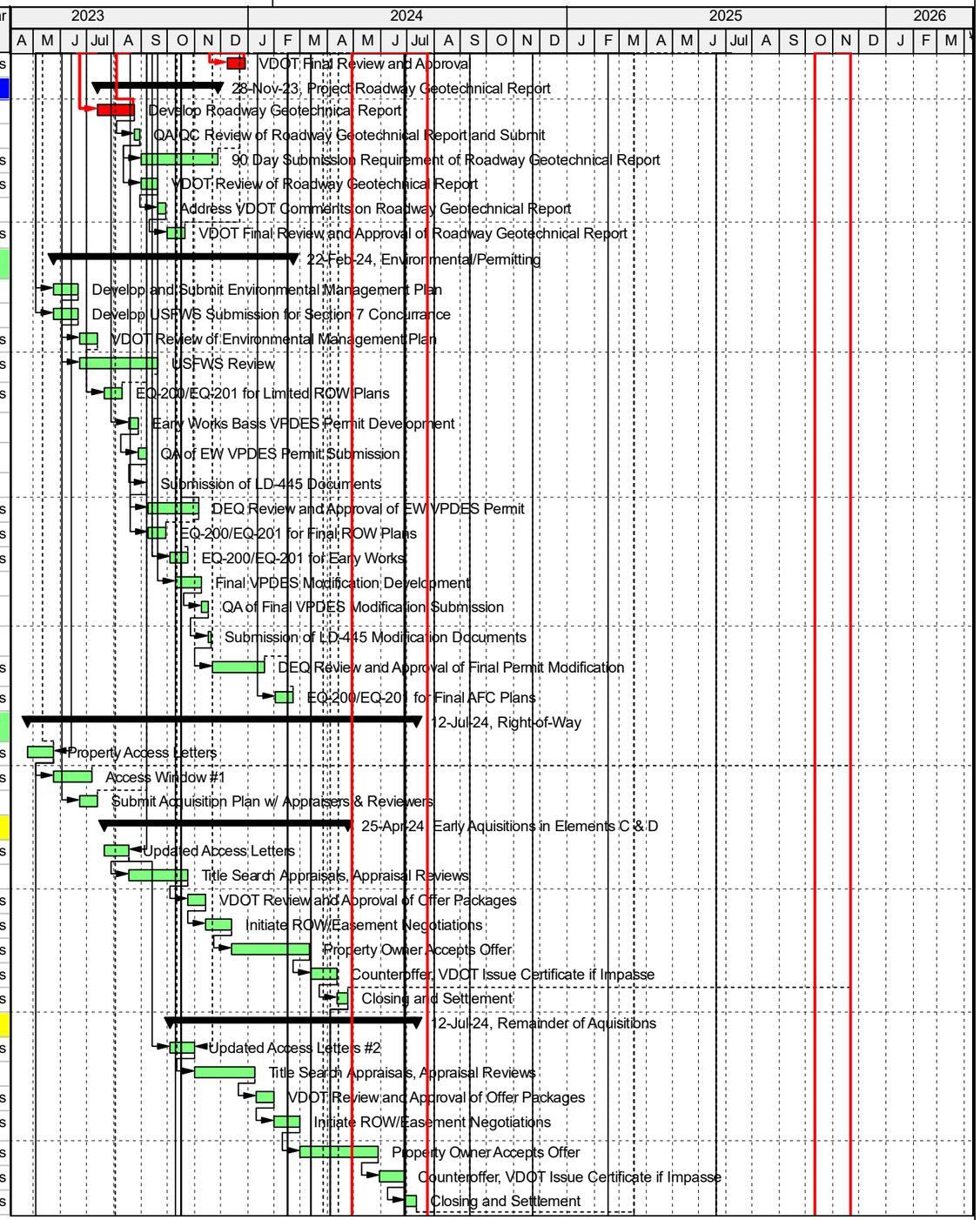
Curtis Contracting Inc.
WALLACE MONTGOMERY

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
Transportation Improvements at Hydraulic Road and US		686	17-Mar-23	31-Oct-25	24	
Project Milestones		686	17-Mar-23	31-Oct-25	24	
C1150	Notice of Intent to Award	0	17-Mar-23*		0	Calendars Days
C1160	CTB Approval/Notice to Award	0	19-Apr-23*		34	Calendars Days
C1000	Notice to Proceed	0	23-May-23*		0	Calendars Days
C1050	Notice to Commence Limited ROW Aquisitions	0		18-Aug-23	0	VDOT 5 Day Workweek, VDOT
C1090	Scope Validation Period Closed	0		20-Sep-23*	0	Calendars Days
C1060	Notice to Commence Remaining ROW Aquisitions	0		10-Oct-23	211	VDOT 5 Day Workweek, VDOT
C1070	Limited Notice to Commence Construction	0	06-Nov-23		1	VDOT 5 Day Workweek, VDOT
C1080	Final Notice to Commence Construction	0	07-Mar-24		92	VDOT 5 Day Workweek, VDOT
C1010	Close Hydraulic Road Start Detour	0	19-Jul-24*		0	Stand 5 Day Workweek, US
C1020	Reopen Hydraulic Road End Detour	0		21-Aug-24*	1	Stand 5 Day Workweek, US
C1030	Pedestrian Bridge Structure Complete	0		27-Jan-25	218	Stand 5 Day Workweek, US Holidays, No Winter SD
C1040	Fixed Completion	0		31-Oct-25*	22	Stand 5 Day Workweek, US
Construction Phasing		585	12-Jul-23	31-Oct-25	22	Stand 5 Day Workweek, US
C1100	Complete Phase 1	0		12-Jul-23	607	Stand 5 Day Workweek, US
C1110	Complete Phase 2	0		18-Jul-24	349	Stand 5 Day Workweek, US
C1120	Complete Phase 3	0		12-Dec-24	247	Stand 5 Day Workweek, US
C1130	Complete Phase 4	0		10-Jul-25	102	Stand 5 Day Workweek, US
C1140	Complete Phase 5	0		31-Oct-25	22	Stand 5 Day Workweek, US
Project Administration		23	23-May-23	22-Jun-23	15	
C1180	Prepare for and Hold Right of Way Kick Off Meeting	21	23-May-23	22-Jun-23	4	VDOT 5 Day Workweek, VDOT
C1190	Prepare QA/QC Plan	14	23-May-23	12-Jun-23	21	Stand 5 Day Workweek, US
C1170	Kickoff Meeting and Submission of QA/QC Plan	1	13-Jun-23	13-Jun-23	20	VDOT 5 Day Workweek, VDOT Staff Holidays
Scope Validation		141	23-May-23	10-Oct-23	786	Calendars Days
SV1000	Scope Validation	120	23-May-23	19-Sep-23	0	Calendars Days
SV1010	Submit General Notice	0		19-Sep-23	0	Calendars Days
SV1020	Supporting Documentation Submission	21	20-Sep-23	10-Oct-23	786	Calendars Days
Design		260	23-May-23	20-May-24	69	
Pedestrian Bridge Design		260	23-May-23	20-May-24	69	
Stage 1		73	23-May-23	31-Aug-23	155	
A2450	Stage 1 Report Development	14	23-May-23	12-Jun-23	148	Stand 5 Day Workweek, US
A2460	QA/QC Stage 1 Report and Submit	14	13-Jun-23	30-Jun-23	148	Stand 5 Day Workweek, US
A2470	VDOT Review of Stage 1 Report	21	01-Jul-23	21-Jul-23	219	Calendars Days
A2480	Address VDOT Comments on Stage 1 Report	14	21-Jul-23	10-Aug-23	149	Stand 5 Day Workweek, US
A2490	VDOT Review and Approval of Stage 1 Report	21	11-Aug-23	31-Aug-23	217	Calendars Days
Stage 2 Superstructure		154	31-Aug-23	03-Apr-24	102	
A2500	Stage 2 Superstructure Design	35	31-Aug-23	20-Oct-23	149	Stand 5 Day Workweek, US
A2510	QA/QC Stage 2 Superstructure Design and Submit	14	20-Oct-23	09-Nov-23	149	Stand 5 Day Workweek, US
A2520	VDOT Review of Stage 2 Superstructure Plans	21	24-Jan-24	13-Feb-24	142	Calendars Days
A2530	Address VDOT Comments on Stage 2 Superstructure Plans	21	13-Feb-24	13-Mar-24	100	Stand 5 Day Workweek, US
A2540	VDOT Review and Approval of Stage 2 Superstructure Plans	21	14-Mar-24	03-Apr-24	144	Calendars Days
Stage 2 Substructure		102	28-Dec-23	20-May-24	54	
A2550	Stage 2 Substructure Design	35	28-Dec-23	19-Feb-24	53	Stand 5 Day Workweek, US
A2560	QA/QC Stage 2 Substructure Design and Submit	14	19-Feb-24	08-Mar-24	53	Stand 5 Day Workweek, US
A2570	VDOT Review of Stage 2 Substructure Plans	21	09-Mar-24	29-Mar-24	75	Calendars Days

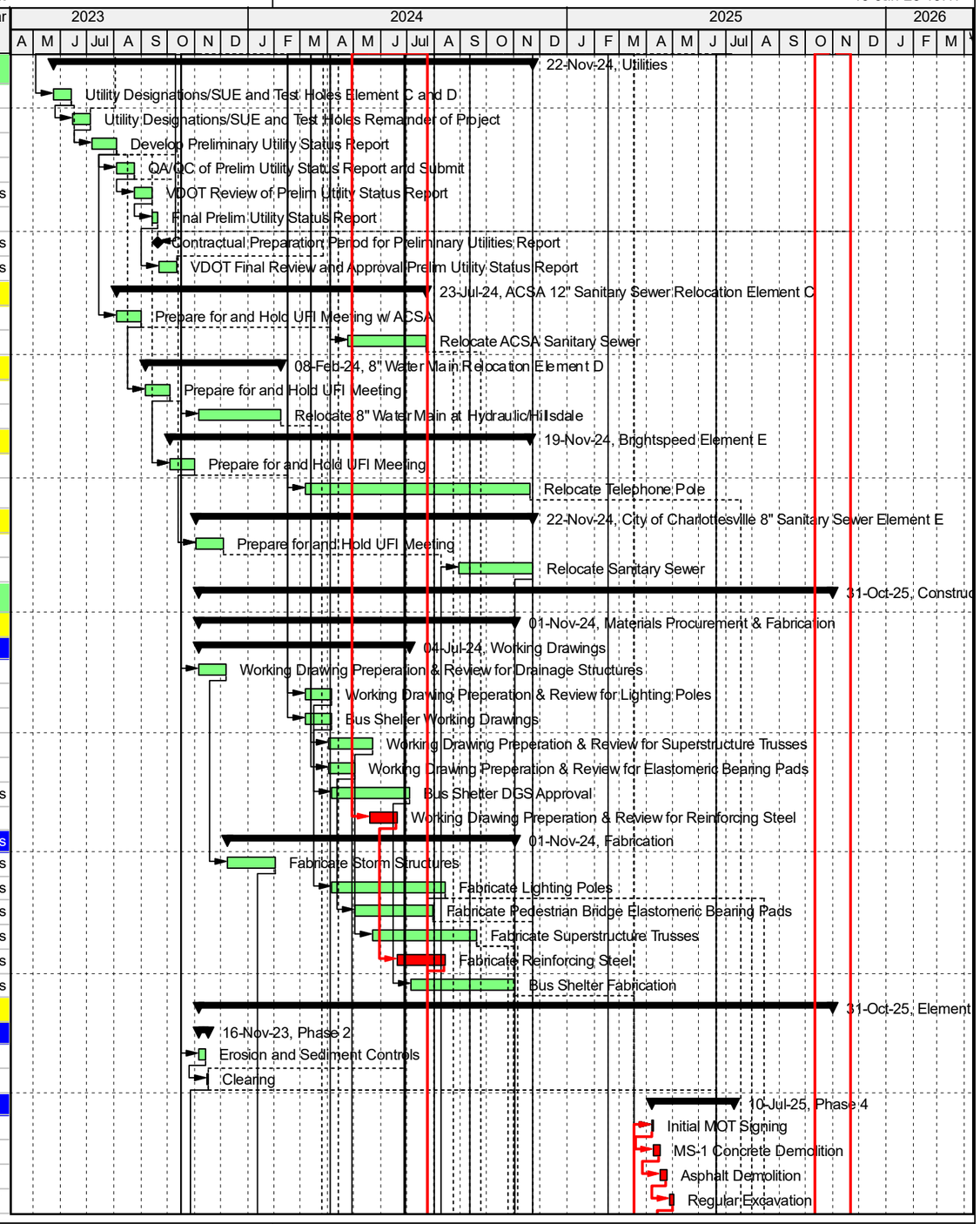


Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A2580	Address VDOT Comments on Stage 2 Substructure Plans	21	29-Mar-24	29-Apr-24	52	Stand 5 Day Workweek, US
A2590	VDOT Review and Approval of Stage 2 Substructure Plans	21	30-Apr-24	20-May-24	76	Calendars Days
Right-Of-Way Plan Submission		101	23-May-23	10-Oct-23	23	
Element C&D ROW		64	23-May-23	18-Aug-23	0	
A2920	Right-Of-Way/Roadway Plan Development	21	23-May-23	21-Jun-23	0	Stand 5 Day Workweek, US
A2930	Develop E&S and Preliminary Drainage Concept/Report	21	23-May-23	21-Jun-23	0	Stand 5 Day Workweek, US
A2940	QA/QC ROW Plans and Submit	5	22-Jun-23	28-Jun-23	0	Stand 5 Day Workweek, US
A2950	VDOT Review of ROW Plans	21	29-Jun-23	19-Jul-23	0	Calendars Days
A2960	Address VDOT Comments on ROW Plan	7	19-Jul-23	28-Jul-23	0	Stand 5 Day Workweek, US
A2970	Final VDOT Review and Approval of Limited ROW Plan & Clearar	21	29-Jul-23	18-Aug-23	0	Calendars Days
Remaining ROW		74	29-Jun-23	10-Oct-23	23	
A3070	Right-Of-Way/Roadway Final Plan Development	21	29-Jun-23	28-Jul-23	25	Stand 5 Day Workweek, US
A3080	FInalize E&S and ROW Level Drainage Concept/Report	21	11-Jul-23	08-Aug-23	25	Stand 5 Day Workweek, US
A3090	QA/QC Remaining ROW Plan	5	09-Aug-23	15-Aug-23	25	Stand 5 Day Workweek, US
A3100	VDOT Review of Remaining ROW Plan	21	19-Aug-23	08-Sep-23	33	Calendars Days
A3110	Address VDOT Comments on Remaining ROW Plan	7	08-Sep-23	19-Sep-23	23	Stand 5 Day Workweek, US
A3120	Final VDOT Review, Approval, and Clearance of Final ROW Plan	21	20-Sep-23	10-Oct-23	33	Calendars Days
Early Works and Utility Relos		120	23-May-23	06-Nov-23	1	
A2700	Early Works Roadway Design	35	23-May-23	12-Jul-23	1	Stand 5 Day Workweek, US
A2710	Early Works Drainage Design	35	23-May-23	12-Jul-23	1	Stand 5 Day Workweek, US
A2720	Early Works MOT Design	35	23-May-23	12-Jul-23	1	Stand 5 Day Workweek, US
A2730	Early Works ESC Design	35	23-May-23	12-Jul-23	1	Stand 5 Day Workweek, US
A2740	QA/QC of Early Works Design Elements	14	13-Jul-23	01-Aug-23	1	Stand 5 Day Workweek, US
A2750	Develop Early Works Plan Submission	14	02-Aug-23	21-Aug-23	1	Stand 5 Day Workweek, US
A2760	QA/QC and Submit Early Works Plan	14	22-Aug-23	11-Sep-23	1	Stand 5 Day Workweek, US
A2770	VDOT Review of Early Works Plan Submission	21	12-Sep-23	02-Oct-23	1	Calendars Days
A2780	Address VDOT Comments on Early Works Plan Submission	10	02-Oct-23	16-Oct-23	1	Stand 5 Day Workweek, US
A2790	VDOT Review and AFC of Early Works Plan Submission	21	17-Oct-23	06-Nov-23	1	Calendars Days
Final Roadway Plans		88	06-Nov-23	07-Mar-24	5	
A2870	Develop Final AFC Plans	30	06-Nov-23	20-Dec-23	4	Stand 5 Day Workweek, US
A2880	QA/QC Final AFC Plans and Submit	14	20-Dec-23	11-Jan-24	4	Stand 5 Day Workweek, US
A2890	VDOT Review of Final AFC Plans	21	12-Jan-24	01-Feb-24	7	Calendars Days
A2900	Address VDOT Comments on Final AFC Plans	10	01-Feb-24	15-Feb-24	5	Stand 5 Day Workweek, US
A2910	VDOT Final Review of Final AFC Plans	21	16-Feb-24	07-Mar-24	7	Calendars Days
Geotechnical		176	23-May-23	23-Jan-24	102	
Preliminary		64	23-May-23	18-Aug-23	22	
A2160	Proposed Boring Location Development	5	23-May-23	30-May-23	8	Stand 5 Day Workweek, US
A2170	Geotechnical Investigation Element D Locations	15	31-May-23	20-Jun-23	8	Stand 5 Day Workweek, VDOT
A2200	Geotechnical Laboratory Testing	28	13-Jun-23	21-Jul-23	8	Stand 5 Day Workweek, US
A2180	Geotechnical Investigation Remaining Location	15	21-Jun-23	12-Jul-23	8	Stand 5 Day Workweek, VDOT
A2210	Logs, Testing, Scope Validation Outline	20	24-Jul-23	18-Aug-23	21	Stand 5 Day Workweek, US
Element C		109	24-Aug-23	23-Jan-24	102	
A2220	Develop Pedestrian Bridge Geotechnical Report	30	24-Aug-23	05-Oct-23	53	Stand 5 Day Workweek, US
A2230	QA/QC Review of Pedestrian Bridge Geotechnical Report and Su	14	06-Oct-23	25-Oct-23	53	Stand 5 Day Workweek, US
A2240	90 Day Submission Requirement of Element C Geotechnical Rep	90	26-Oct-23	23-Jan-24	142	Calendars Days
A2380	VDOT Review of Ped Bridge Geotechnical Report	21	26-Oct-23	15-Nov-23	81	Calendars Days
A2250	Address VDOT Comments on Bridge Geotechnical Report	14	15-Nov-23	07-Dec-23	52	Stand 5 Day Workweek, US

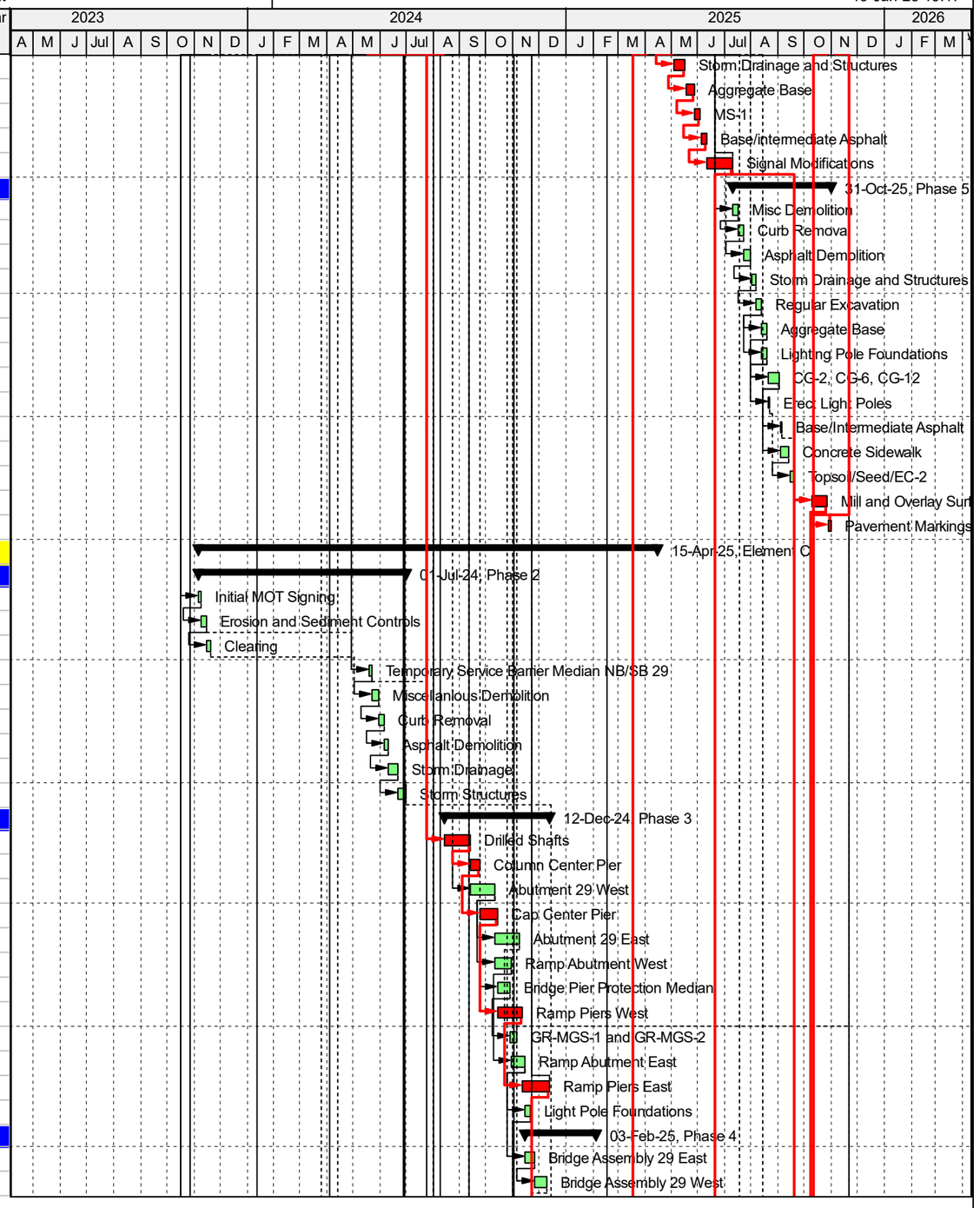
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A2260	VDOT Final Review and Approval	21	08-Dec-23	28-Dec-23	77	Calendars Days
Project Roadway Geotechnical Report		99	13-Jul-23	28-Nov-23	37	
A2270	Develop Roadway Geotechnical Report	30	13-Jul-23	23-Aug-23	36	Stand 5 Day Workweek, US
A2280	QA/QC Review of Roadway Geotechnical Report and Submit	5	24-Aug-23	30-Aug-23	36	Stand 5 Day Workweek, US
A2290	90 Day Submission Requirement of Roadway Geotechnical Repo	90	31-Aug-23	28-Nov-23	51	Calendars Days
A2400	VDOT Review of Roadway Geotechnical Report	21	31-Aug-23	20-Sep-23	89	Calendars Days
A2300	Address VDOT Comments on Roadway Geotechnical Report	7	20-Sep-23	29-Sep-23	61	Stand 5 Day Workweek, US
A2310	VDOT Final Review and Approval of Roadway Geotechnical Repo	21	30-Sep-23	20-Oct-23	90	Calendars Days
Environmental/Permitting		198	23-May-23	22-Feb-24	125	
A3490	Develop and Submit Environmental Management Plan	21	23-May-23	21-Jun-23	11	Stand 5 Day Workweek, US
A3510	Develop USFWS Submission for Section 7 Concurrance	21	23-May-23	21-Jun-23	19	Stand 5 Day Workweek, US
A3500	VDOT Review of Environmental Management Plan	21	22-Jun-23	12-Jul-23	16	Calendars Days
A3520	USFWS Review	90	22-Jun-23	19-Sep-23	28	Calendars Days
A3460	EQ-200/EQ-201 for Limited ROW Plans	21	20-Jul-23	09-Aug-23	9	Calendars Days
A3260	Early Works Basis VPDES Permit Development	7	18-Aug-23	29-Aug-23	1	Stand 5 Day Workweek, US Holidays_No Winter SD
A3270	QA of EW VPDES Permit Submission	5	29-Aug-23	06-Sep-23	1	Stand 5 Day Workweek, US Holidays_No Winter SD
A3280	Submission of LD-445 Documents	1	06-Sep-23	07-Sep-23	1	Stand 5 Day Workweek, US
A3290	DEQ Review and Approval of EW VPDES Permit	60	08-Sep-23	06-Nov-23	1	Calendars Days
A3470	EQ-200/EQ-201 for Final ROW Plans	21	09-Sep-23	29-Sep-23	321	Calendars Days
A3450	EQ-200/EQ-201 for Early Works	21	03-Oct-23	23-Oct-23	15	Calendars Days
A3300	Final VPDES Modification Development	21	10-Oct-23	08-Nov-23	124	Stand 5 Day Workweek, US
A3310	QA of Final VPDES Modification Submission	7	08-Nov-23	17-Nov-23	124	Stand 5 Day Workweek, US Holidays_No Winter SD
A3320	Submission of LD-445 Modification Documents	1	17-Nov-23	20-Nov-23	124	Stand 5 Day Workweek, US Holidays_No Winter SD
A3330	DEQ Review and Approval of Final Permit Modification	60	21-Nov-23	19-Jan-24	181	Calendars Days
A3480	EQ-200/EQ-201 for Final AFC Plans	21	02-Feb-24	22-Feb-24	147	Calendars Days
Right-of-Way		320	23-Apr-23	12-Jul-24	364	
A2320	Property Access Letters	30	23-Apr-23	23-May-23	18	Calendars Days
A2610	Access Window #1	45	23-May-23	06-Jul-23	882	Calendars Days
A2600	Submit Acquisition Plan w/ Appraisers & Reviewers	14	22-Jun-23	12-Jul-23	27	Stand 5 Day Workweek, US
Early Aquisitions in Elements C & D		201	20-Jul-23	25-Apr-24	0	
A2990	Updated Access Letters	30	20-Jul-23	18-Aug-23	2	Calendars Days
A3010	Title Search Appraisals, Appraisal Reviews	45	18-Aug-23	23-Oct-23	0	Stand 5 Day Workweek, US
A3020	VDOT Review and Approval of Offer Packages	21	24-Oct-23	13-Nov-23	0	Calendars Days
A3030	Initiate ROW/Easement Negotiations	30	14-Nov-23	13-Dec-23	0	Calendars Days
A3040	Property Owner Accepts Offer	90	14-Dec-23	12-Mar-24	0	Calendars Days
A3050	Counteroffer, VDOT Issue Certificate if Impasse	30	13-Mar-24	11-Apr-24	0	Calendars Days
A3060	Closing and Settlement	14	12-Apr-24	25-Apr-24	0	Calendars Days
Remainder of Aquisitions		204	03-Oct-23	12-Jul-24	203	
A3250	Updated Access Letters #2	30	03-Oct-23	01-Nov-23	288	Calendars Days
A3150	Title Search Appraisals, Appraisal Reviews	45	01-Nov-23	09-Jan-24	199	Stand 5 Day Workweek, US
A3160	VDOT Review and Approval of Offer Packages	21	10-Jan-24	30-Jan-24	285	Calendars Days
A3170	Initiate ROW/Easement Negotiations	30	31-Jan-24	29-Feb-24	285	Calendars Days
A3180	Property Owner Accepts Offer	90	01-Mar-24	29-May-24	285	Calendars Days
A3190	Counteroffer, VDOT Issue Certificate if Impasse	30	30-May-24	28-Jun-24	285	Calendars Days
A3200	Closing and Settlement	14	29-Jun-24	12-Jul-24	285	Calendars Days



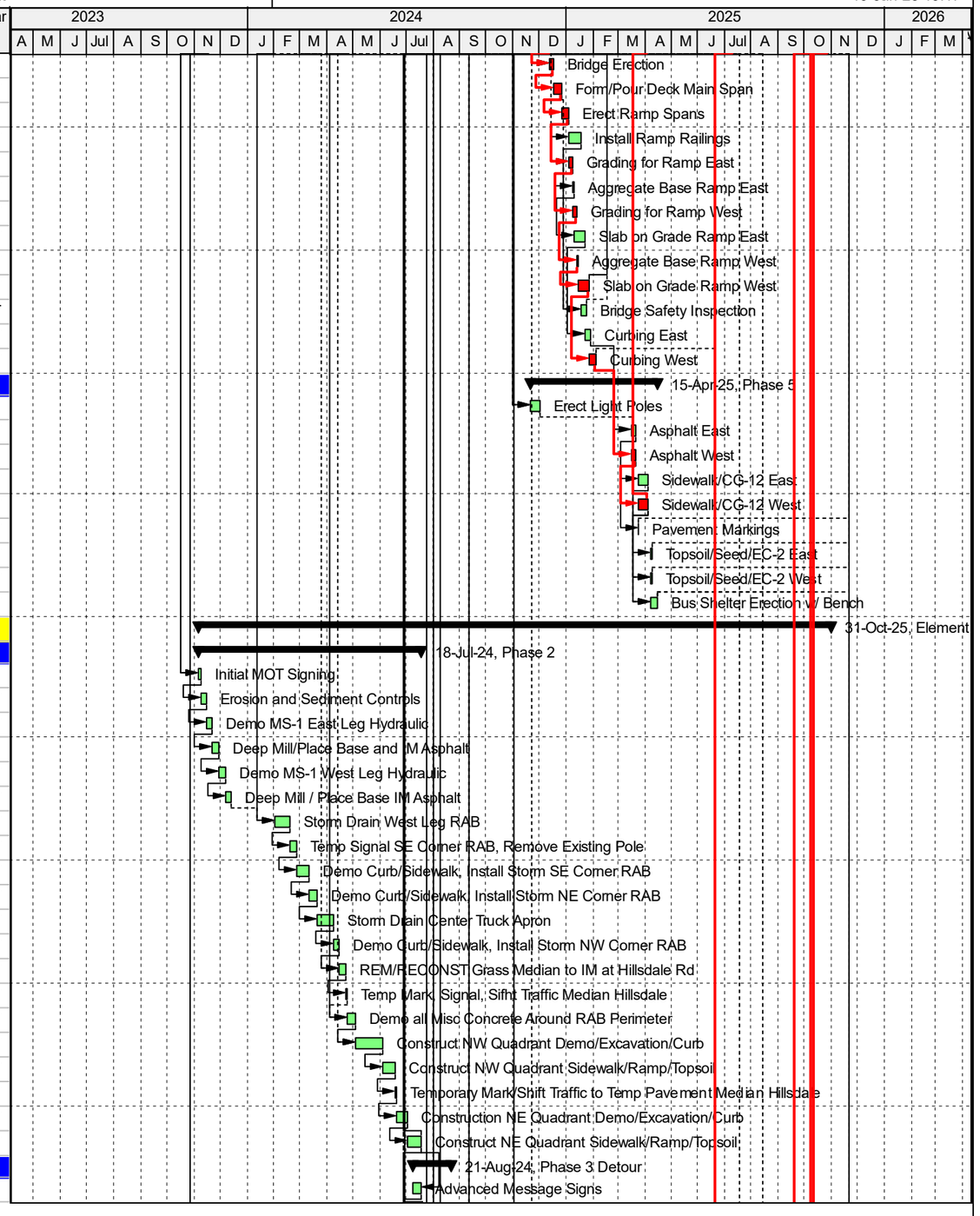
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
Utilities		394	23-May-23	22-Nov-24	269	
A2340	Utility Designations/SUE and Test Holes Element C and D	15	23-May-23	13-Jun-23	73	Stand 5 Day Workweek, US
A2330	Utility Designations/SUE and Test Holes Remainder of Project	15	14-Jun-23	05-Jul-23	73	Stand 5 Day Workweek, US
A2350	Develop Preliminary Utility Status Report	21	06-Jul-23	03-Aug-23	73	Stand 5 Day Workweek, US
A2370	QA/QC of Prelim Utility Status Report and Submit	14	04-Aug-23	23-Aug-23	105	Stand 5 Day Workweek, US
A2390	VDOT Review of Prelim Utility Status Report	21	24-Aug-23	13-Sep-23	155	Calendars Days
A2410	Final Prelim Utility Status Report	5	13-Sep-23	20-Sep-23	106	Stand 5 Day Workweek, US
A2360	Contractual Preparation Period for Preliminary Utilities Report	0		19-Sep-23	807	Calendars Days
A2430	VDOT Final Review and Approval Prelim Utility Status Report	21	21-Sep-23	11-Oct-23	155	Calendars Days
ACSA 12" Sanitary Sewer Relocation Element C		253	04-Aug-23	23-Jul-24	94	
A3210	Prepare for and Hold UFI Meeting w/ ACSA	21	04-Aug-23	01-Sep-23	73	Stand 5 Day Workweek, US
A3220	Relocate ACSA Sanitary Sewer	60	25-Apr-24	23-Jul-24	89	Stand 5 Day Workweek, VDOT
8" Water Main Relocation Element D		113	05-Sep-23	08-Feb-24	48	
A3230	Prepare for and Hold UFI Meeting	21	05-Sep-23	03-Oct-23	73	Stand 5 Day Workweek, US
A3240	Relocate 8" Water Main at Hydraulic/Hillsdale	60	06-Nov-23	08-Feb-24	46	Stand 5 Day Workweek, VDOT
Brightspeed Element E		287	04-Oct-23	19-Nov-24	202	Stand 5 Day Workweek, US
A3410	Prepare for and Hold UFI Meeting	21	04-Oct-23	01-Nov-23	288	Stand 5 Day Workweek, US
A3420	Relocate Telephone Pole	180	07-Mar-24	19-Nov-24	202	Stand 5 Day Workweek, US Holidays, No Winter SD
City of Charlottesville 8" Sanitary Sewer Element E		269	02-Nov-23	22-Nov-24	169	Stand 5 Day Workweek, US
A3430	Prepare for and Hold UFI Meeting	21	02-Nov-23	04-Dec-23	357	Stand 5 Day Workweek, US
A3440	Relocate Sanitary Sewer	60	29-Aug-24	22-Nov-24	169	Stand 5 Day Workweek, US
Construction		519	06-Nov-23	31-Oct-25	24	
Materials Procurement & Fabrication		259	06-Nov-23	01-Nov-24	274	
Working Drawings		173	06-Nov-23	04-Jul-24	274	
A2980	Working Drawing Preperation & Review for Drainage Structures	21	06-Nov-23	07-Dec-23	1	Stand 5 Day Workweek, US
A3140	Working Drawing Preperation & Review for Lighting Poles	21	07-Mar-24	05-Apr-24	5	Stand 5 Day Workweek, US
A3350	Bus Shelter Working Drawings	21	07-Mar-24	05-Apr-24	266	Stand 5 Day Workweek, US
A2860	Working Drawing Preperation & Review for Superstructure Trusse	35	03-Apr-24	22-May-24	100	Stand 5 Day Workweek, US
A3340	Working Drawing Preperation & Review for Elastomeric Bearing P	21	03-Apr-24	02-May-24	148	Stand 5 Day Workweek, US
A3360	Bus Shelter DGS Approval	90	06-Apr-24	04-Jul-24	384	Calendars Days
A3000	Working Drawing Preperation & Review for Reinforcing Steel	21	20-May-24	19-Jun-24	52	Stand 5 Day Workweek, US
Fabrication		330	08-Dec-23	01-Nov-24	384	Calendars Days
A2850	Fabricate Storm Structures	56	08-Dec-23	01-Feb-24	3	Calendars Days
A2820	Fabricate Lighting Poles	130	06-Apr-24	13-Aug-24	7	Calendars Days
A2830	Fabricate Pedestrian Bridge Elastomeric Bearing Pads	90	03-May-24	31-Jul-24	215	Calendars Days
A2800	Fabricate Superstructure Trusses	120	23-May-24	19-Sep-24	145	Calendars Days
A2840	Fabricate Reinforcing Steel	56	20-Jun-24	14-Aug-24	76	Calendars Days
A3370	Bus Shelter Fabrication	120	05-Jul-24	01-Nov-24	384	Calendars Days
Element A		519	06-Nov-23	31-Oct-25	24	
Phase 2		8	06-Nov-23	16-Nov-23	351	
A1010	Erosion and Sediment Controls	5	06-Nov-23	13-Nov-23	329	Stand 5 Day Workweek, VDOT
A1020	Clearing	2	15-Nov-23	16-Nov-23	177	Stand 5 Day Workweek, US
Phase 4		69	07-Apr-25	10-Jul-25	21	
A1000	Initial MOT Signing	3	07-Apr-25	09-Apr-25	21	Stand 5 Day Workweek, VDOT
A1050	MS-1 Concrete Demolition	5	10-Apr-25	16-Apr-25	21	Stand 5 Day Workweek, VDOT
A2420	Asphalt Demolition	5	17-Apr-25	25-Apr-25	21	Stand 5 Day Workweek, VDOT
A2620	Regular Excavation	5	28-Apr-25	02-May-25	21	Stand 5 Day Workweek, VDOT



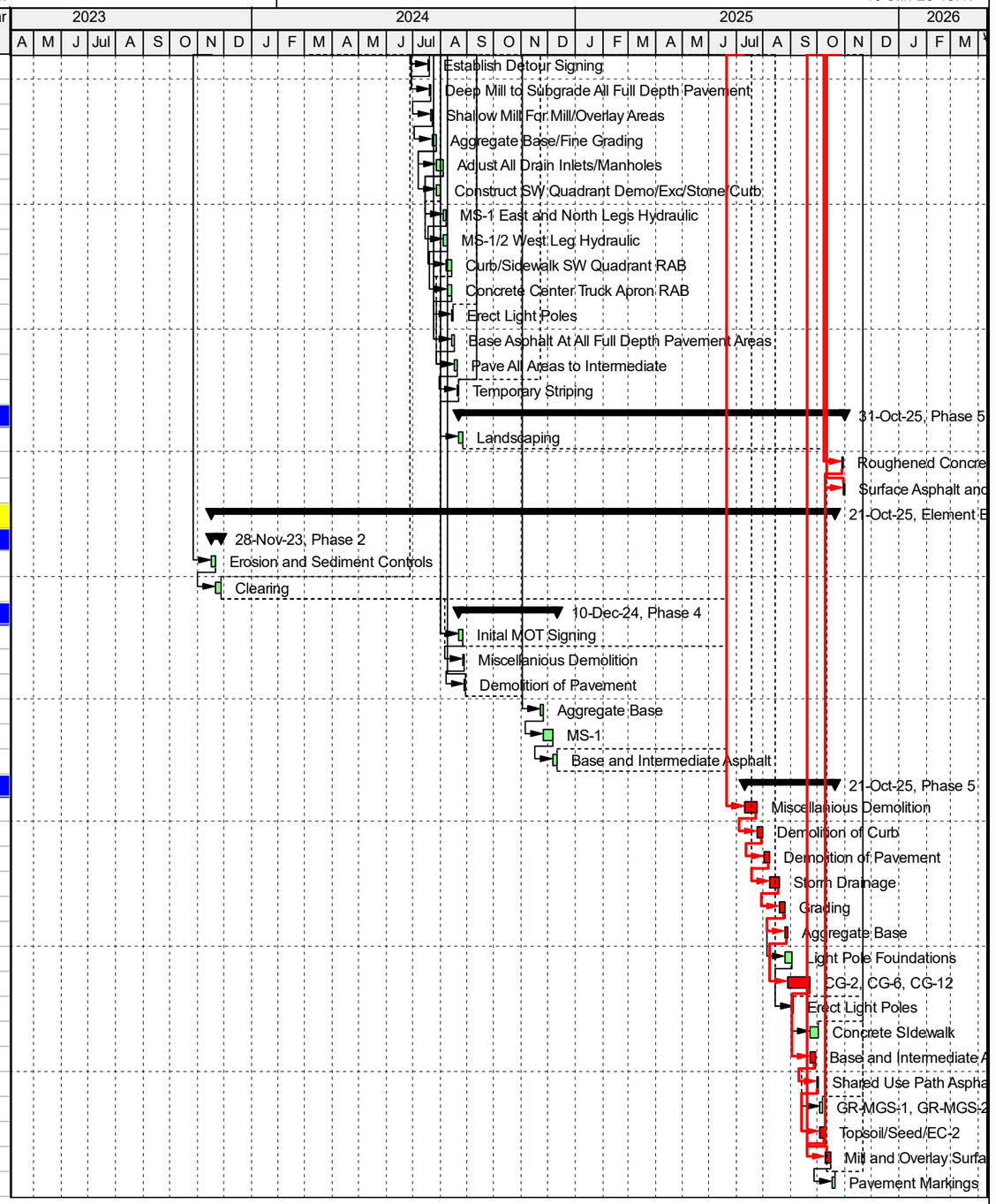
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A2630	Storm Drainage and Structures	10	05-May-25	16-May-25	21	Stand 5 Day Workweek, VDOT
A2190	Aggregate Base	5	19-May-25	27-May-25	21	Stand 5 Day Workweek, VDOT
A1130	MS-1	5	28-May-25	03-Jun-25	21	Stand 5 Day Workweek, VDOT
A2440	Base/intermediate Asphalt	5	04-Jun-25	10-Jun-25	21	Stand 5 Day Workweek, VDOT
A1170	Signal Modifications	20	11-Jun-25	10-Jul-25	21	Stand 5 Day Workweek, VDOT
Phase 5		81	11-Jul-25	31-Oct-25	24	
A1030	Misc Demolition	4	11-Jul-25	16-Jul-25	35	Stand 5 Day Workweek, VDOT
A1040	Curb Removal	5	17-Jul-25	23-Jul-25	35	Stand 5 Day Workweek, VDOT
A1060	Asphalt Demolition	6	24-Jul-25	31-Jul-25	35	Stand 5 Day Workweek, VDOT
A1070	Storm Drainage and Structures	4	01-Aug-25	06-Aug-25	35	Stand 5 Day Workweek, VDOT
A1080	Regular Excavation	4	07-Aug-25	12-Aug-25	35	Stand 5 Day Workweek, VDOT
A1090	Aggregate Base	5	13-Aug-25	19-Aug-25	35	Stand 5 Day Workweek, VDOT
A2680	Lighting Pole Foundations	5	13-Aug-25	19-Aug-25	36	Stand 5 Day Workweek, US
A1110	CG-2, CG-6, CG-12	8	20-Aug-25	02-Sep-25	35	Stand 5 Day Workweek, VDOT
A2690	Erect Light Poles	2	20-Aug-25	21-Aug-25	50	Stand 5 Day Workweek, US
A1100	Base/Intermediate Asphalt	3	03-Sep-25	05-Sep-25	45	Stand 5 Day Workweek, VDOT
A1120	Concrete Sidewalk	8	03-Sep-25	12-Sep-25	35	Stand 5 Day Workweek, VDOT
A1160	Topsoil/Seed/EC-2	5	15-Sep-25	19-Sep-25	35	Stand 5 Day Workweek, VDOT
A1140	Mill and Overlay Surface Asphalt	12	10-Oct-25	27-Oct-25	21	Stand 5 Day Workweek, VDOT
A1150	Pavement Markings	4	28-Oct-25	31-Oct-25	21	Stand 5 Day Workweek, VDOT
Element C		376	06-Nov-23	15-Apr-25	167	
Phase 2		170	06-Nov-23	01-Jul-24	187	
A1180	Initial MOT Signing	3	06-Nov-23	09-Nov-23	233	Stand 5 Day Workweek, VDOT
A1190	Erosion and Sediment Controls	3	09-Nov-23	14-Nov-23	233	Stand 5 Day Workweek, VDOT
A1210	Clearing	4	15-Nov-23	20-Nov-23	147	Stand 5 Day Workweek, US
A1200	Temporary Service Barrier Median NB/SB 29	2	20-May-24	22-May-24	109	Stand 5 Day Workweek, VDOT
A1220	Miscellanious Demolition	4	22-May-24	30-May-24	176	Stand 5 Day Workweek, VDOT
A1230	Curb Removal	5	30-May-24	06-Jun-24	176	Stand 5 Day Workweek, VDOT
A1240	Asphalt Demolition	3	06-Jun-24	11-Jun-24	176	Stand 5 Day Workweek, VDOT
A1250	Storm Drainage	8	11-Jun-24	21-Jun-24	176	Stand 5 Day Workweek, VDOT
A1260	Storm Structures	6	21-Jun-24	01-Jul-24	176	Stand 5 Day Workweek, VDOT
Phase 3		81	14-Aug-24	12-Dec-24	239	Stand 5 Day Workweek, VDOT
A1270	Drilled Shafts	20	14-Aug-24	13-Sep-24	52	Stand 5 Day Workweek, VDOT
A1280	Column Center Pier	7	13-Sep-24	24-Sep-24	52	Stand 5 Day Workweek, VDOT
A1320	Abutment 29 West	20	13-Sep-24	11-Oct-24	53	Stand 5 Day Workweek, VDOT
A1290	Cap Center Pier	14	24-Sep-24	14-Oct-24	52	Stand 5 Day Workweek, VDOT
A2120	Abutment 29 East	20	11-Oct-24	08-Nov-24	53	Stand 5 Day Workweek, VDOT
A2130	Ramp Abutment West	12	11-Oct-24	29-Oct-24	55	Stand 5 Day Workweek, VDOT
A1300	Bridge Pier Protection Median	10	14-Oct-24	28-Oct-24	264	Stand 5 Day Workweek, VDOT
A1330	Ramp Piers West	20	14-Oct-24	11-Nov-24	52	Stand 5 Day Workweek, VDOT
A1310	GR-MGS-1 and GR-MGS-2	5	28-Oct-24	04-Nov-24	264	Stand 5 Day Workweek, VDOT
A2140	Ramp Abutment East	12	29-Oct-24	14-Nov-24	55	Stand 5 Day Workweek, VDOT
A1340	Ramp Piers East	20	11-Nov-24	12-Dec-24	52	Stand 5 Day Workweek, VDOT
A2810	Light Pole Foundations	5	14-Nov-24	21-Nov-24	244	Stand 5 Day Workweek, VDOT
Phase 4		57	14-Nov-24	03-Feb-25	218	
A1350	Bridge Assembly 29 East	7	14-Nov-24	25-Nov-24	55	Stand 5 Day Workweek, VDOT
A1360	Bridge Assembly 29 West	7	25-Nov-24	09-Dec-24	55	Stand 5 Day Workweek, VDOT



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A1370	Bridge Erection	3	12-Dec-24	17-Dec-24	52	Stand 5 Day Workweek, VDOT
A1380	Form/Pour Deck Main Span	5	17-Dec-24	26-Dec-24	52	Stand 5 Day Workweek, VDOT
A1390	Erect Ramp Spans	4	26-Dec-24	03-Jan-25	52	Stand 5 Day Workweek, VDOT
A1400	Install Ramp Railings	10	03-Jan-25	17-Jan-25	214	Stand 5 Day Workweek, VDOT
A1410	Grading for Ramp East	3	03-Jan-25	08-Jan-25	52	Stand 5 Day Workweek, VDOT
A1420	Aggregate Base Ramp East	2	08-Jan-25	10-Jan-25	192	Stand 5 Day Workweek, VDOT
A1480	Grading for Ramp West	3	08-Jan-25	13-Jan-25	52	Stand 5 Day Workweek, VDOT
A1430	Slab on Grade Ramp East	7	10-Jan-25	22-Jan-25	192	Stand 5 Day Workweek, VDOT
A1490	Aggregate Base Ramp West	2	13-Jan-25	15-Jan-25	52	Stand 5 Day Workweek, VDOT
A1500	Slab on Grade Ramp West	7	15-Jan-25	27-Jan-25	52	Stand 5 Day Workweek, VDOT
A2150	Bridge Safety Inspection	3	17-Jan-25	23-Jan-25	216	VDOT 5 Day Workweek, VDOT
A1440	Curbing East	5	22-Jan-25	29-Jan-25	192	Stand 5 Day Workweek, VDOT
A1510	Curbing West	5	27-Jan-25	03-Feb-25	52	Stand 5 Day Workweek, VDOT
Phase 5		103	21-Nov-24	15-Apr-25	167	
A3130	Erect Light Poles	5	21-Nov-24	02-Dec-24	252	Stand 5 Day Workweek, US
A1450	Asphalt East	5	17-Mar-25	21-Mar-25	160	Stand 5 Day Workweek, VDOT
A1520	Asphalt West	5	17-Mar-25	21-Mar-25	23	Stand 5 Day Workweek, US
A1460	Sidewalk/CG-12 East	10	24-Mar-25	04-Apr-25	160	Stand 5 Day Workweek, VDOT
A1530	Sidewalk/CG-12 West	10	24-Mar-25	04-Apr-25	21	Stand 5 Day Workweek, VDOT
A1560	Pavement Markings	1	24-Mar-25	24-Mar-25	172	Stand 5 Day Workweek, VDOT
A1470	Topsoil/Seed/EC-2 East	3	07-Apr-25	09-Apr-25	160	Stand 5 Day Workweek, VDOT
A1540	Topsoil/Seed/EC-2 West	3	07-Apr-25	09-Apr-25	160	Stand 5 Day Workweek, VDOT
A1550	Bus Shelter Erection w/ Bench	7	07-Apr-25	15-Apr-25	156	Stand 5 Day Workweek, VDOT
Element D		519	06-Nov-23	31-Oct-25	24	
Phase 2		183	06-Nov-23	18-Jul-24	0	
A1750	Initial MOT Signing	3	06-Nov-23	09-Nov-23	1	Stand 5 Day Workweek, VDOT
A1760	Erosion and Sediment Controls	4	09-Nov-23	15-Nov-23	1	Stand 5 Day Workweek, VDOT
A1770	Demo MS-1 East Leg Hydraulic	4	15-Nov-23	21-Nov-23	1	Stand 5 Day Workweek, VDOT
A1780	Deep Mill/Place Base and IM Asphalt	4	21-Nov-23	29-Nov-23	1	Stand 5 Day Workweek, US
A1790	Demo MS-1 West Leg Hydraulic	5	29-Nov-23	06-Dec-23	1	Stand 5 Day Workweek, VDOT
A1800	Deep Mill / Place Base IM Asphalt	5	06-Dec-23	13-Dec-23	1	Stand 5 Day Workweek, VDOT
A1810	Storm Drain West Leg RAB	12	01-Feb-24	19-Feb-24	1	Stand 5 Day Workweek, VDOT
A1820	Temp Signal SE Corner RAB, Remove Existing Pole	5	19-Feb-24	26-Feb-24	1	Stand 5 Day Workweek, VDOT
A1830	Demo Curb/Sidewalk, Install Storm SE Corner RAB	10	26-Feb-24	11-Mar-24	1	Stand 5 Day Workweek, VDOT
A1840	Demo Curb/Sidewalk, Install Storm NE Corner RAB	8	11-Mar-24	21-Mar-24	1	Stand 5 Day Workweek, VDOT
A1850	Storm Drain Center Truck Apron	10	21-Mar-24	08-Apr-24	1	Stand 5 Day Workweek, VDOT
A1860	Demo Curb/Sidewalk, Install Storm NW Corner RAB	5	08-Apr-24	15-Apr-24	1	Stand 5 Day Workweek, VDOT
A1870	REM/RECONST Grass Median to IM at Hillsdale Rd	5	15-Apr-24	22-Apr-24	1	Stand 5 Day Workweek, VDOT
A1880	Temp Mark, Signal, Sifht Traffic Median Hillsdale	2	22-Apr-24	24-Apr-24	1	Stand 5 Day Workweek, VDOT
A1890	Demo all Misc Concrete Around RAB Perimeter	6	25-Apr-24	03-May-24	0	Stand 5 Day Workweek, VDOT
A1900	Construct NW Quadrant Demo/Excavation/Curb	20	03-May-24	04-Jun-24	0	Stand 5 Day Workweek, VDOT
A1910	Construct NW Quadrant Sidewalk/Ramp/Topsoil	10	04-Jun-24	18-Jun-24	0	Stand 5 Day Workweek, VDOT
A1920	Temporary Mark/Shift Traffic to Temp Pavement Median Hillsdale	1	18-Jun-24	19-Jun-24	0	Stand 5 Day Workweek, VDOT
A1930	Construction NE Quadrant Demo/Excavation/Curb	10	19-Jun-24	03-Jul-24	0	Stand 5 Day Workweek, VDOT
A1940	Construct NE Quadrant Sidewalk/Ramp/Topsoil	10	03-Jul-24	18-Jul-24	0	Stand 5 Day Workweek, VDOT
Phase 3 Detour		32	08-Jul-24	21-Aug-24	1	
A1980	Advanced Message Signs	10	08-Jul-24	18-Jul-24	0	Stand 7 Day Workweek, US



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Calendar
A1990	Establish Detour Signing	1	18-Jul-24	19-Jul-24	0	Stand 7 Day Workweek, US
A2000	Deep Mill to Subgrade All Full Depth Pavement	2	19-Jul-24	21-Jul-24	1	Stand 7 Day Workweek, US
A2010	Shallow Mill For Mill/Overlay Areas	2	21-Jul-24	23-Jul-24	1	Stand 7 Day Workweek, US
A2020	Aggregate Base/Fine Grading	4	23-Jul-24	27-Jul-24	1	Stand 7 Day Workweek, US
A2030	Adjust All Drain Inlets/Manholes	8	27-Jul-24	04-Aug-24	1	Stand 7 Day Workweek, US
A2040	Construct SW Quadrant Demo/Exc/Stone/Curb	5	27-Jul-24	01-Aug-24	4	Stand 7 Day Workweek, US
A2060	MS-1 East and North Legs Hydraulic	4	04-Aug-24	08-Aug-24	2	Stand 7 Day Workweek, US
A2070	MS-1/2 West Leg Hydraulic	5	04-Aug-24	09-Aug-24	1	Stand 7 Day Workweek, US
A2080	Curb/Sidewalk SW Quadrant RAB	5	08-Aug-24	13-Aug-24	2	Stand 7 Day Workweek, US
A2090	Concrete Center Truck Apron RAB	5	09-Aug-24	14-Aug-24	1	Stand 7 Day Workweek, US
A3380	Erect Light Poles	2	13-Aug-24	15-Aug-24	5	Stand 5 Day Workweek, US
A2050	Base Asphalt At All Full Depth Pavement Areas	3	14-Aug-24	17-Aug-24	1	Stand 7 Day Workweek, US
A2100	Pave All Areas to Intermediate	3	17-Aug-24	20-Aug-24	1	Stand 7 Day Workweek, US
A2110	Temporary Striping	1	20-Aug-24	21-Aug-24	1	Stand 7 Day Workweek, US
Phase 5		312	21-Aug-24	31-Oct-25	24	
A1950	Landscaping	3	21-Aug-24	26-Aug-24	309	Stand 5 Day Workweek, VDOT
A1960	Roughened Concrete Finish Areas	2	28-Oct-25	29-Oct-25	22	Stand 5 Day Workweek, US
A1970	Surface Asphalt and Permanant Pavement Markings	2	30-Oct-25	31-Oct-25	21	Stand 5 Day Workweek, VDOT
Element E		503	17-Nov-23	21-Oct-25	32	
Phase 2		8	17-Nov-23	28-Nov-23	349	
A1580	Erosion and Sediment Controls	3	17-Nov-23	21-Nov-23	328	Stand 5 Day Workweek, VDOT
A1590	Clearing	3	22-Nov-23	28-Nov-23	177	Stand 5 Day Workweek, US
Phase 4		79	21-Aug-24	10-Dec-24	173	
A1570	Inital MOT Signing	3	21-Aug-24	26-Aug-24	163	Stand 5 Day Workweek, VDOT
A2640	Miscellanious Demolition	2	26-Aug-24	28-Aug-24	169	Stand 5 Day Workweek, US
A2650	Demolition of Pavement	1	28-Aug-24	29-Aug-24	169	Stand 5 Day Workweek, US
A2660	Aggregate Base	1	22-Nov-24	25-Nov-24	169	Stand 5 Day Workweek, US
A1660	MS-1	6	25-Nov-24	06-Dec-24	162	Stand 5 Day Workweek, VDOT
A2670	Base and Intermediate Asphalt	2	06-Dec-24	10-Dec-24	106	Stand 5 Day Workweek, US
Phase 5		73	11-Jul-25	21-Oct-25	32	
A1600	Miscellanious Demolition	10	11-Jul-25	24-Jul-25	21	Stand 5 Day Workweek, VDOT
A1610	Demolition of Curb	5	25-Jul-25	31-Jul-25	21	Stand 5 Day Workweek, VDOT
A1620	Demolition of Pavement	5	01-Aug-25	07-Aug-25	21	Stand 5 Day Workweek, VDOT
A1630	Storm Drainage	7	08-Aug-25	18-Aug-25	21	Stand 5 Day Workweek, VDOT
A1670	Grading	5	19-Aug-25	25-Aug-25	21	Stand 5 Day Workweek, VDOT
A1680	Aggregate Base	3	26-Aug-25	28-Aug-25	21	Stand 5 Day Workweek, VDOT
A3390	Light Pole Foundations	5	26-Aug-25	02-Sep-25	63	Stand 5 Day Workweek, US
A1640	CG-2, CG-6, CG-12	15	29-Aug-25	22-Sep-25	21	Stand 5 Day Workweek, VDOT
A3400	Erect Light Poles	2	03-Sep-25	04-Sep-25	63	Stand 5 Day Workweek, US
A1650	Concrete SIdewalk	8	23-Sep-25	02-Oct-25	42	Stand 5 Day Workweek, VDOT
A1690	Base and Intermediate Asphalt	5	23-Sep-25	29-Sep-25	21	Stand 5 Day Workweek, VDOT
A1710	Shared Use Path Asphalt	3	30-Sep-25	02-Oct-25	21	Stand 5 Day Workweek, VDOT
A1700	GR-MGS-1, GR-MGS-2	3	03-Oct-25	07-Oct-25	39	Stand 5 Day Workweek, VDOT
A1720	Topsoil/Seed/EC-2	5	03-Oct-25	09-Oct-25	21	Stand 5 Day Workweek, VDOT
A1730	Mill and Overlay Surface Asphalt	5	10-Oct-25	16-Oct-25	21	Stand 5 Day Workweek, VDOT
A1740	Pavement Markings	3	17-Oct-25	21-Oct-25	29	Stand 5 Day Workweek, VDOT



Submitted by

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