

Volume I Technical Proposal

Albemarle Intersection Bundling, Design-Build

Contract ID Number: C00111814DB103



Submitted by

In Association With



April 23, 2019

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

Attachment 4.0.1.1 Technical Proposal Checklist and Contents

ATTACHMENT 4.0.1.1
ALBEMARLE INTERSECTION BUNDLING
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	Vol I Tab 1
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.7 (Form C-78-RFP)	Sections 3.7, 4.0.1.1	no	Vol I Tab 2
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
Unique Milestone Date(s)	NA	Section 4.1.7	yes	1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.8	no	Vol I Appendix
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.9	no	Vol I Appendix
Written statement of percent DBE participation	NA	Section 4.1.10	yes	1

ATTACHMENT 4.0.1.1
ALBEMARLE INTERSECTION BUNDLING
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
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 4.2.2	yes	3
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	N/A
Design Concept	NA	Section 4.3		
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	Vol I 4 – 14 Vol II 54 – 73
Project Approach	NA	Section 4.4		
Environmental Management	NA	Section 4.4.1	yes	15 – 19
Utilities	NA	Section 4.4.2	yes	20 – 24
Geotechnical	NA	Section 4.4.3	yes	25 – 28
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	29 – 34
Construction of Project	NA	Section 4.5		
Sequence of Construction	NA	Section 4.5.1	yes	35 – 45

ATTACHMENT 4.0.1.1
ALBEMARLE INTERSECTION BUNDLING
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Transportation Management Plan	NA	Section 4.5.2	yes	46 – 53
Proposal Schedule	NA	Section 4.6		
Proposal Schedule	NA	Section 4.6	no	Vol II
Proposal Schedule Narrative	NA	Section 4.6	no	Vol I Tab 4.6
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.6	no	Inside front cover of Vol I

**Attachment 3.7
Form C-78-RFP
Acknowledgement of Receipt
of RFP and Addenda**

ATTACHMENT 3.7**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**

RFP NO. C00111814DB103
 UPC 111814 (0250-002-956, P101, R201, C501; NHPP-002-7(051));
 UPC 111727 (0029-002-959, P101, C501; HSIP-5104(269));
 UPC 111813 (0029-002-955, P101, R201, C501; NHPP-002-7(050));
 UPC 111730 (0250-002-954, P101, R201, C501; HSIP-002-7(049));
 PROJECT NO.: UPC 111733 (0020-002-953, P101, R201, C501; STP-5104(267));
UPC 109397 (9999-002-941, P101, R201, C501)

ACKNOWLEDGEMENT OF RFP, REVISION AND/OR ADDENDA

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

By signing this Attachment 3.6, 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 27, 2018
(Date)
2. Cover letter of Addendum #1- February 7, 2019
(Date)
3. Cover letter of Addendum #2- March 19, 2019
(Date)
4. Cover letter of Addendum #3- April 10, 2019
(Date)



 SIGNATURE

4/18/19

 DATE

Andrew R. Curtis, Jr.

PRINTED NAME

President

TITLE

4.1 Letter of Submittal



CURTIS CONTRACTING, INC.

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

April 23, 2019

Mr. Bryan W. Stevenson, P.E.
Alternative Project Delivery Division
Virginia Department of Transportation
1401 East Broad Street, Richmond, Virginia 23219

RE: Albemarle Intersection Bundling
Albemarle County, Virginia
Contract ID Number: C00111814DB103
4.1 Letter of Submittal

Dear Mr. Stevenson:

Curtis Contracting Inc. (CCI) is pleased to submit to the Virginia Department of Transportation (VDOT) our response to your Request for Proposals (RFP) for the above-mentioned project. CCI provides exceptional quality in each and every project we construct. Our core values focus on quality above profit and ensure our customer is completely satisfied. With Wallace Montgomery (WM) as our Lead Designer, CCI offers 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, including innovative intersections and interchanges, on time and within budget.

4.1.1 Curtis Contracting, Inc. (7481 Theron Road, West Point, VA 23181) is the legal entity who will execute a contract with VDOT for the Project.

4.1.2 Curtis Contracting, Inc. will enter into a contract with VDOT for the Project.

4.1.3 The offer represented by the Technical and Price Proposals will remain in full force and effect for one hundred twenty (120) days after this Technical Proposal is submitted to VDOT.

4.1.4 Point of Contact:
Stephen L. Ordnung, Vice President
7481 Theron Road, P.O. Box 769
West Point, Virginia 23181
(P) 804.843.4633 (F) 804.843.2545
s.ordnung@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 Curtis Contracting, Inc. commits to a Final Completion date on or before 02/03/2023.

4.1.7 As an enhancement to the Project, Curtis Contracting, Inc. will complete the Project nearly two months earlier than the RFP Final Completion date.

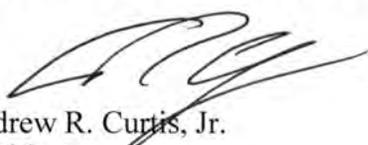
4.1.8 Curtis Contracting, Inc. has included an executed Proposal Payment Agreement in Appendix 9.3.1.

4.1.9 Signed Certification Regarding Debarment Forms for Primary and Lower Tier Covered Transactions are included in Appendix 4.1.8.

4.1.10 Our Team is committed to achieving the 9% DBE participation goal for the entire value of the contract.

The signature below affirms that the information supplied in this proposal is true and accurate to the best of our knowledge. VDOT is hereby authorized to confirm all information contained in this proposal. We are excited for this opportunity and confident that our Team will complete this project on time and within budget.

Sincerely,
CURTIS CONTRACTING, INC.


Andrew R. Curtis, Jr.
President

4.2 Offeror's Qualifications

4.2.1 CONFIRMATION OF SOQ INFORMATION

Curtis Contracting, Inc. (CCI) confirms that the information contained in our Statement of Qualifications (SOQ) remains unchanged, true, and accurate in accordance with Part, Section 11.4 of the RFP. The organizational structure of our Team remains unchanged and the Key Personnel designated remain intact.

4.2.2 ORGANIZATIONAL CHART

Our Team’s organizational chart, which is shown on the following page, illustrates the chain of command and identifies the major functions each Team member will perform. It also identifies and their reporting relationship in managing, designing, and constructing the Project, including their roles in quality control/quality assurance. Since there is no change to any functional relationships among the participants since our SOQ submittal, we don’t require an updated narrative.

Under the leadership of our Design-Build Project Manager (DBPM), Steve Ordnung, the **CCI Team** is structured to effectively manage and deliver the design and construction of this project. Our Team is organized to provide VDOT with a single-source point of contact, responsible for all design and construction activities. We have a straightforward chain of command the clearly identifies individual tasks and functional responsibilities. This organizational chart identifies key personnel and major functions to successfully manage, design, and construct the Project. Though reporting relationships are rigid, the lines of communication within the Team will remain fluid and flexible to meet the requirements of each individual project task. We will prevent unnecessary project delays by allowing other members within the **CCI Team** to communicate directly with their counterparts at VDOT. Steve and the VDOT Project Manager will direct and authorize this communication in advance.

Curtis Contracting, Inc. (CCI) will serve as the Lead Contractor and provide construction quality control. CCI is a Virginia corporation licensed as a Class “A” Contractor since 1985, and is prequalified with VDOT. The company provides a quality product on or ahead of schedule; they focus on customer satisfaction throughout the project. CCI has the expertise, personnel, equipment, and fiscal strength to successfully manage and construct the Albemarle Intersection Bundling DB Project. CCI can self-perform 95% of the construction disciplines necessary to complete the entire project. They offer unique flexibility by quickly mobilizing in-house resources to support simultaneous construction. The firm will also integrate DBEs to achieve and/or exceed the DBE goal of 9% for the project. CCI also invites all stakeholders to take part in the design and execution of every design build project; each stakeholder can incorporate their specific, context-sensitive concerns into successfully completing the job.

Wallace Montgomery (WM) will serve as Lead Designer, providing design and management services. WM is a top-rated, mid-Atlantic-based, multi-disciplined civil engineering firm that specializes in designing highways, including innovative intersections and interchanges, bridges, and traffic facilities. WM offers over 43 years of experience with transportation projects. WM has served as an innovative intersection/ interchange subject matter expert subconsultant for VDOT’s design build delivery of the I-64 at US 15 Zion Crossroads (DDI) and the I-95 at Temple Avenue (Roundabout) projects. WM provided geometric layout designs and developed transportation management plans; the firm also prepared temporary traffic control plans, analyzed traffic operations, and performed public outreach.



Curtis Contracting Inc.
LEAD CONTRACTOR
 (Supported by ECS Mid-Atlantic LLC for QC Lab)



QA Management/Inspectors
 VDOT-certified DBE/SWaM
 (Supported by Froehling & Robertson, Inc. for QA Lab)



WALLACE MONTGOMERY
LEAD DESIGNER



CLARK NEXSEN
 Roadway, Traffic and
 H&H Engineering



Bowman CONSULTING
 Utility Locating/Coordination;
 SUE; Right-of-Way and Land
 Acquisition - VDOT
 prequalified Right-of-Way
 Contracting Consultant
 (Supported by Appraisal
 Review Specialists, LLC)



EPRPC
 Public Relations/
 Stakeholder Outreach
 VDOT-certified DBE/SWaM



GET Solutions, Inc.
 Geotechnical Investigations/
 Testing/Analysis
 VDOT-certified SWaM

Accompong Engineering Group LLC
 MOT Services
 VDOT-certified DBE/SWaM

Project Stakeholders
 UVA, UVA Foundation, UVA Research Park, Martha Jefferson Hospital, Peter Jefferson Office Park, City Neighborhood Association, JAUNT/Paratransit Providers, Nelson Chamber of Commerce, Tourism Sites (wineries/ breweries), Wintergreen Resort/ Destination, Charlottesville Garden Club, Luck Stone Quarry, Regional Commuters, EMS Providers, FHWA

VDOT Culpepper District Office of Communication



Public Relations
 Bill Wuensch, PE, PTOE (EPR)

Design-Build Project Manager
 Steve Ordnung (CCI)

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

Design Manager
 Eric Sender, PE, DBIA (WM)

Construction Manager
 Bill Richards, PE (CCI)

Quality Assurance
 QA Inspectors CES
 QA Lab Froehling & Robertson

Design QA/QC
 Tony Mawry, PE (WM)
 David Bradshaw, PE (CN)

Construction QC
 QC Manager Robert Schowengerdt (CCI)
 QC Inspectors CCI
 QC Lab ECS Mid-Atlantic LLC

DESIGN TEAM	
DDI Design Russ Anderson, PE (WM)	Highway Engineers Mark Ledebur, PE (WM) Ian Johnston, PE (CN)
Roundabout Design Andy Duerr, PE (WM)	Traffic Engineering/TTC Bob Evans, PE, PTOE (WM) Whitney Duffy, PE, PTOE (CN)
Hydraulics/SWM/E&S Diane Durscher, PE (WM) John Keenan, PE (CN)	TMP Manager Larry Marcus (WM)
Landscape Walt Cole, PLA, ASLA (CN)	Traffic Analysis/IMR John Rectanus, PE, PTOE (WM)
Structures Dave Borusiewicz, PE, DBIA (WM)	Utility Locating Justin Lilly (BC)
Geotechnical Camille Kattan, PE (GET)	Utility/Right-of-Way Manager Richard Bennett (BC)
Pavement Roberto Barcena, PE (WM)	Field Surveys Nick Kougoulis, LS (BC)
NEPA/Environmental Ray Moravec, PE (WM)	Environmental Permits Jessica Klinefelter, CEP (WM)

CONSTRUCTION TEAM
Project Managers Steve Stepnowski (CCI) Joseph Wall (CCI)
Roadway/Grading Superintendent Ron Hansford (CCI) Bill Solomon (CCI)
TTC Coordinator Scott Peay (CCI)
Safety Manager Phillip Cole (CCI)
Utility Coordinator Brian Faulkner (CCI)
DBE Compliance Coordinator Crystal Rammell (CCI)
E&S Manager Trent Lamm (CCI)
Environmental Compliance Sam Tavai (CCI)

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

VDOT Right-of-Way Staff

Environmental Agencies
 USACOE, VDEQ, VDHR

LEGEND

- Reporting
- - - - - Communication
- 🔑 Key Personnel
- ★ DBE Subconsultant
- CCI Curtis Contracting, Inc.
- WM Wallace Montgomery
- CN Clark Nexsen
- CES CES Consulting, LLC ★
- BC Bowman Consulting (Supported by Appraisal Review Specialists, LLC)
- GET GET Solutions
- EPR EPR, P.C. ★
- AEG Accompong Engineering Group ★ (MOT Design Support)

4.3 Design Concept

4.3 DESIGN CONCEPT

The Albemarle Intersection Bundling Design-Build Project includes six spot location projects (elements) in Albemarle County, Virginia. The project will improve safety and provide efficient traffic operations at these spot locations to relieve overall traffic congestion and enhance mobility for the City of Charlottesville region, as well as its surrounding communities and supporting businesses. VDOT's project priorities includes providing a cost-effective project with design excellence that meets or exceeds the RFP requirements; integrating safe/efficient construction means and methods that minimize impacts; and partnering with project stakeholders to mitigate and/or limit potential risks.

The **CCI Team** will provide comprehensive design and construction planning, via ongoing coordination and communication between VDOT and project stakeholders. We will design the project in accordance with the RFP by employing innovative solutions that maximize safety and minimize impacts while improving the customer experience and future value for the project stakeholders.

We have identified the following design strategies to maximize safe and efficient traffic operations and minimize impacts during and after construction:

- ✓ Adjust the I-64 Exit 124 at US Route 250 DDI crossover intersections towards I-64 to maintain the existing diamond interchange signalized intersections throughout construction; and increase spacing between the US 250 DDI crossovers and access road connections away from the Exit 124 interchange
- ✓ Widen the US 250 mainline roadway entering and exiting the crossover intersections (beyond the DDI) towards the existing median to minimize ROW, environmental (Culpeper Creek), and existing roadside cut-slope impacts
- ✓ Offset left approach roundabout designs to emphasize speed reduction prior to the roundabout and provide flatter exit geometry to improve driveability for larger vehicles and minimize impacts
- ✓ Vertically bifurcate roundabout intersections to minimize approach roadway reconstruction; maximize construction and staging areas to enhance safety; and minimize impacts
- ✓ Develop road profiles by using minimum and/or maximum grades and minimum vertical curve lengths to adequately tie into existing road ensuring traffic mobility/access and minimize construction limits

Design Approach

As a Designer of Record, **Wallace Montgomery (WM)** has an impressive resume and work history with innovative intersections/interchanges. We will approach design in a collaborative manner to integrate the construction influence and ideas within the design; we encourage open communication because it provides the best possible environment for design excellence to occur.

As with every project, the overall success of the Albemarle Intersection Bundling Project rests within certain specific project items. These items may be on the project critical path or may have interdependence within various key activities. These items may be front and center in the public eye. As we have carefully planned our approach to the six Albemarle Intersection Bundling Project, we view the following items as critical to the project elements.

Effective MOT – MOT is a critical item of work on this project, given the high visibility of the project, the local commercial interests, and the presence of the nearby University of Virginia. The CCI Team has sequenced the project elements to minimize disruption to traffic and accomplish the work in the minimum number of stages. Safety is paramount through the work zone. Our design process for the Traffic Control Plans will include close coordination with the proposed construction sequence. We will develop plans from roadway base plans. These plans will indicate all temporary flagging; signs; arrow boards; VMS boards; lighting; traffic signals; barricades; and channelization devices to maintain traffic through the work areas. More information concerning the CCI Team's approach to the temporary traffic sequencing of each element can be found in the 4.5 MOT Approach section of this proposal.

Minimizing Impacts – We know that minimizing impacts and then clearing impacted environmental resources and utilities and right-of-way acquisitions is a critical item of work for successful delivery of the project elements. The CCI Team desires to systematically construct the elements and ensure that adequate materials; equipment;

work forces; and quality control/assurance are spread out over the duration of the project. More information concerning the CCI Team's approach to clearing impacted environmental resources and utilities at each element can be found in the Environmental and MOT Approach sections of this proposal.

Earthwork Management – VDOT has advised that it is not obligated to authorize the execution of all six elements to the Successful Offeror pursuant to SMART SCALE and other funding requirements. Therefore, the CCI Team will need to view each element's earthwork management independent/exclusively and will eliminate the potential exchange of earthwork waste material for borrow requirements between element sites. We must minimize large cut and embankment slopes, maintain shallow excavations, and fill earthwork areas at each element. Minimizing large cut and fill slopes will reduce impacts to environmental features and right-of-way/easement requirements and promote long-term stability of the roadside areas. This approach will limit on-road hauls, which will minimize exposure and impacts to the traveling public and surrounding businesses/communities.

Stormwater Management – The CCI Team's proposed stormwater management (SWM) design meets the design criteria and is contained within the existing/proposed right-of-way limits shown in the RFP Conceptual Plans. SWM design criteria includes water quality via phosphorus removal, water quantity for channel protection, and flood protection. Our approach is to provide all required water quantity control facilities on-site. If we can provide water quality treatment in combination with those water quantity facilities or in easily maintainable facilities, we will provide it on-site. We will provide any additionally-required water quality treatment by purchasing nutrient credits. All six sites are within the same eight-digit HUC, which means that we can purchase nutrient credits for the entire project from the same bank.

Roadway Geometrics/Layouts – When designing a diverging diamond interchange (DDI), many designers overemphasize the prevention of wrong way traffic, which in turn causes several larger safety issues. The CCI Team's roadway designers will provide the right guidance and proper lane balancing with roadway geometry and curb placements. In addition, a DDI's geometric design should provide adequate distance between the ramps and the crossover intersections for optimal traffic operations. Roundabout design is an iterative process that balances several competing design objectives including vehicular speed control; design vehicle accommodations; and multimodal access. With high crash history intersections, CCI Team's roadway designers will incorporate offset left approach design to emphasize the need for motorists to reduce speed approaching the roundabout.

The CCI Design Team will design the I-64 Exit 124 at US Route 250 DDI in accordance with the RFP's Design Criteria Table, Part 2 Attachment 2.2.1 in conjunction with the criteria recommended by VDOT's *Roadway Design Manual, Appendix A and FHWA's Diverging Diamond Interchange Informational Guide*. Our US Route 250/Route 151 and Route 20/Route 649 roundabout designs will utilize the RFP's Design Criteria Tables, Part 2 Attachments 2.2.4 and 2.2.5 in conjunction with the specific roundabout criteria outlined in VDOT's *Roadway Design Manual, Appendix A and FHWA/NCHRP's Report 672 Roundabouts: An Informational Guide*. We will design the US Route 29 elements (I-64 Exit 118 and Fontaine Ramp) and the new Rio Mills Connector Road in accordance with Design Criteria Tables, Part 2 Attachments 2.2.2, 2.2.3 and 2.2.6, and the criteria outlined in VDOT's *Roadway Design Manual* and AASHTO's *Policy on Geometrics Design of Highways and Streets*. Our intersection geometric-layout designs will incorporate adequate intersection sight lines/distances, auxiliary lanes with queueing assessments, and sufficient deceleration/acceleration lengths. We will ensure the intersections' turning movements accommodate the appropriate RFP noted design vehicles and/or "non-standard" specialized vehicles noted from our stakeholder outreach efforts, such as for emergency responders, businesses, schools, etc.

Wallace Montgomery (WM) is recognized across Virginia for our expertise with innovative intersections and roundabouts. We are one of two or three firms providing roundabout peer review and policy support services for VDOT's Roundabout Committee. Key WM personnel have experience with at least 300 roundabouts nationwide and seven DDIs across the mid-Atlantic Region. This experience includes 30 roundabouts in VA (four in the Culpeper District) and VDOT's first DDI interchange at Zions Crossroads (Culpeper District).

We propose maintaining the RFP Concept Plans 2A(1) through 2A(9) roadway mainline(s) and/or ramp(s) typical sections (lane and shoulder widths, and roadside grading) transitioning from open section roadways with paved outside (generally 8' outside and 4' inside) shoulders at the limits of work to the fully closed section curbed sections at (and between for the DDI) the intersections for each element. We will make some slight variations to the extents of the closed section curbs on the roadway/ramp approaches; this approach will help us pick up and treat more roadway surface water and minimize the construction limits to save on grading and, potentially, the project right-of-way footprint. We will incorporate roadside grading treatment to appropriate design speed clear zone criteria or utilize positive barrier protection in accordance with *AASHTO's Roadside Design Guide*. The CCI Team intends to utilize the RFP-provided minimum pavement sections, subject to validation. We will provide positive drainage systems (i.e. edge drains or underdrains) to adequately drain our constructed pavements.

4.3.1 CONCEPTUAL ROADWAY PLANS

The CCI Team has reviewed the RFP and available project information; visited each of the element sites; read the local news/blogs and public hearing comments; evaluated roadway inventory information and design criteria; and further advanced concept/preliminary designs for each of the project elements. Our design and construction team members have performed assessments of the proposed RFP concept roadway/intersection layouts: roadside clear zone/slope/grading treatments; stormwater management and roadway cross culvert hydraulic requirements; construction/temporary traffic control staging and sequencing; environmental, utility and geotechnical site conditions; and final traffic control/guidance features. The CCI Team will successfully deliver the six elements' proposed improvements by using the following ideas and techniques.

UPC 111814 – I-64 Exit 124 at US Route 250 Diverging Diamond Interchange

This element is the Exit 124 interchange of US Route 250 with Interstate 64, which forms a conventional diamond with traffic signals at the ramp termini with US 250. This element involves reconfiguring this interchange to a diverging diamond interchange (DDI) for safety and congestion relief; it reduces queueing backups.

VDOT's analyses shows that the growth generated by the Pantops area, Sentara Martha Jefferson Hospital, and neighboring communities such as Ashcroft and Westminster-Canterbury will cause the ramps at the existing diamond interchange to fall well below desired levels of service. The DDI geometric concept is an effective way to address safety and capacity needs at the interchange, while minimizing improvement costs. The proposed improvements would alleviate congestion and keep the Level of Service at the desired levels by converting the interchange configuration from the conventional diamond to a DDI. The DDI interchange would allow for two-phase signals, instead of the current configuration with four phases. The proposed DDI would have 14 crossing path conflicts, which is a reduction from the 26 crossing path conflicts in the typical diamond interchange. By shifting vehicles to the opposite side of the road, this design eliminates traditional left turns that crossover oncoming traffic. The DDI improves safety by reducing the number of vehicle conflicts and can handle more than 600 left-turn movements per hour, twice the capacity of a conventional interchange.

Roadway Geometrics – Our design will maintain the RFP Concept's US 250 DDI mainline lane configurations and designations; the entry and exit ramps lane configurations, designations and traffic control measures (i.e. signal/stop or yield control with no downstream acceleration lane) at the DDI cross-over intersections; side street access movements and median cross-overs; and general roadway geometrics/layout. We propose these refinements to the I-64 Exit 124 at US 250 DDI roadway layout (*Figure 4.3.1*):

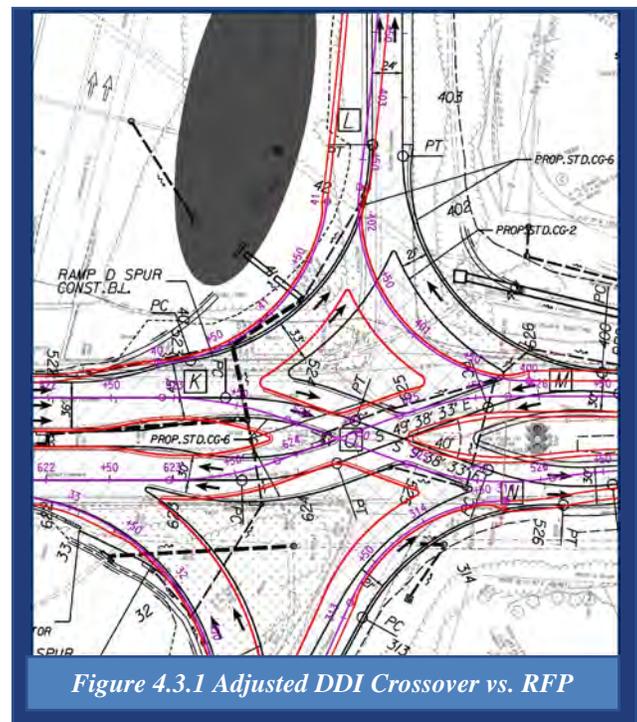


Figure 4.3.1 Adjusted DDI Crossover vs. RFP

- 1) Moving the north/west crossover intersection approximately 35’ and the south/east crossover approximately 50’ towards I-64 and according adjusted the ramps termini connections
- 2) Widening the US 250 Eastbound (EB) three-lane roadway entering and exiting the crossover intersections towards the existing median in lieu of widening into the existing road’s right-side (outside) areas

Our refined crossover locations and US 250 EB widening approach still maintains the RFP Concept’s 40-degree angle tangents with 15-25’ approach and 10’ departure lengths and the 25 mph 200’+ radius reversing curvature alignments. It provides more than sufficient Route 250 queueing length between the DDI crossover intersections. With the refined crossover locations, the ramps generally maintain the RFP work limits towards their I-64 gore areas and were realigned at its US 250 termini for the moved crossover locations by using flat minimum 25 mph normal crown (R=4,000’) curves. The entry and exit ramp terminal intersections at the DDI still maintain the RFP concept’s inside turning radii ranging from 135’ to 175’. Our Concept UPC 111814 Roadway Plans and Ramp Spurs/Arcs Profiles are included in Volume II of this Technical Proposal.

The CCI Team’s refined DDI layout exceeds the Project’s intended scope of work and will benefit end users:

Safety/Operations During Construction	Allows the existing diamond interchange configuration and signalization systems to remain in effect throughout until implementing the DDI switchover
Safety/Operations After Construction	Increases spacing between the DDI crossover intersections and the Hansens Mountain Road, North Hill Drive, and South Lego Farm Drive access points
Minimizes Impacts to Environmental Features	Maintains the existing Culpeper Creek from the I-64 / Ramp D cross culvert to the US 250 cross culvert at the interchange’s northeast quadrant and downstream of the US 250 cross culvert at Ramp C and 250 EB in the southeast quadrant - <i>fully eliminates the RFP’s proposed Culpeper Creek culvert extensions</i>
Minimizes Impacts to Right-of-Way	Minimizes roadside cut-slope requirements along US 250 EB and Ramp B Arc to be contained within the existing I-64 and US Route 250 rights-of-way
Minimizes Future Inspection/ Maintenance	Minimizes the roadside cut-slope along US 250 EB / Ramp B Arc and US 250 WB / Ramp A Arc and preserves long-term stability of the roadside areas

We will develop the DDI pavement footprint primarily through roadway pavement widening and resurfacing of the US 250 and the diamond interchange ramps. With the US 250 resurfacing, we will validate if the existing shoulders are traffic bearing for the final through traffic/auxiliary turn lanes configuration. If required, we will reconstruct the shoulders. We will maintain the vertical clearances with the existing I-64 overpass bridges. The “Arc” and “Spur” connections between the US 250 crossover intersections and the ramps will be developed with 0.5% minimum and 7% max grades and 25 MPH vertical curves. We will upgrade the US 250 roadside protection of the I-64 overpass bridges’ piers/abutments to meet current standards for bridge pier protection systems.

The US Route 250 mainline will utilize 12’ (minimum) lane widths transitioning to 15’ as needed through the crossovers reversing curve alignments. The dual lane and single lane ramps will utilize 12’ and 16’ lane widths, respectively and transition to the required widths (35-37’ for dual lanes and 21’ for a single lane) to accommodate the RFP Addendum 1 noted design vehicles along the Ramp “Arc” and “Spur” connections.

Hydraulics and Stormwater Management – The suggested location for a SWM facility on the RFP Conceptual Plans is in the southeast quadrant of the DDI; it would be above an existing cross culvert conveying the 150 acre drainage area of Culpeper Creek. The CCI Team investigated alternate locations for BMPs to minimize impacts to this cross culvert and to avoid future maintenance issues for either the BMP or the cross culvert. However, alternative locations evaluated for BMPs proved to be difficult to maintain. We propose multiple BMPs to meet the water quality and quantity requirements. The proposed BMPs are located on the design plans. The largest BMP is a dry basin facility located at the suggested BMP location within the existing right-of-way. This facility will manage flows from the upgrade section of Route 250 and from existing I-64, intercepting an existing drainage way conveying flows down the roadway embankment. Although the facility is located above the existing cross culvert for Culpeper Creek, there will be approximately 10’ of clearance between the BMP and the pipe. Maintenance accessibility to the cross culvert will be maintained since the proposed BMP is a dry facility, without

filter media, underdrains, or special plantings that would be disrupted with potential maintenance. The existing inlet within the proposed BMP footprint will be capped. The facility will outfall across Ramp D into the existing open channel for Culpeper Creek. In this manner, the hydraulics of the existing Culpeper Creek pipe under I-64 will not be impacted.

Dry swales are located along both sides of Ramp D, within the existing right-of-way and easily accessible for maintenance from Ramp D. On the south side, the dry swale is proposed in the area of the existing ramp that was shifted to the north, treating runoff from the relocated ramp. On the north side, the dry swale is proposed in the existing ditch and treats runoff from existing I-64. To avoid too much runoff from reaching the dry swale, a bypass swale is proposed at the lower section that will outfall to the proposed dry basin, like the existing drainage patterns to the cross culvert. These three BMPs will provide the required channel protection according to the energy balance equation and flood protection for the site. Phosphorus removal is provided by the dry swales; approximately 3.0 lbs of phosphorus treatment will be acquired with nutrient credits. All proposed BMPs are located within the right-of-way shown on the RFP plans.

The CCI Team's proposed roadway design is shifted away from Culpeper Creek near the intersection of Ramp D with US 250 to maintain the open section stream in this location and avoid needing to pipe the stream. By maintaining the existing pipe configuration, we will maintain the existing conditions hydraulic condition in the existing Culpeper Creek cross culvert under I-64.

Traffic Signalization and Signing/Marking – We are proposing to reconstruct the existing traffic signals at both ramp junctions to accommodate the new configuration and simplified phasing of the DDI configuration that incorporates the Rhythm Engineering In|Sync adaptive signal system equipment and detection devices with the adjacent signals along US 250. We will provide properly located signal heads that easily navigate drivers through the DDI, whether they are first time or regular users. We will provide mast-arm far-side signal structures for the mainline and ramp approaches. We will provide near-side pedestal-mounted signals along the mainline approaches to establish additional advanced guidance of the unconventional configuration. Signals will be designed in accordance to the VDOT Traffic Engineering Design Manual, Chapter 1. In coordination with the development of our MOT staging and final roadway geometric/drainage collection layouts, we will locate the new mast-arm signals outside of the existing US 250 and diamond ramps paved footprint to maintain the existing interchange operations as needed and allow for the seamless switch-over to the DDI. The pedestal mounted signals located within the existing paved footprint will be installed after the switch-over to the DDI.

The existing I-64 CCTV infrastructure at the interchange will not be impacted and remain in operation throughout and after construction.

In addition, our design will provide adequate signing and lane markings for the correct guidance, but also avoid over signing that can cause driver confusion. We will provide cantilever guide sign structures at the left ramp exits within the DDI configuration and ground-mounted guide signs in advance of the DDI (like the I-64/US 15 DDI advanced guide signing (*Figure 4.3.2*) along US 250 to provide clear and advanced awareness of the proper lane assignments to use to exit. Extensive lane use and ground mounted supplemental guide signs will be used to ensure effective and clear guidance through the DDI. Signing and pavement markings will be designed in accordance to the VDOT Traffic Engineering Design Manual, Chapter 3 and the 2009 MUTCD and Virginia Supplement. Our Conceptual UPC111814 Signing and Pavement Marking Plans are included in Volume II of this Technical Proposal.

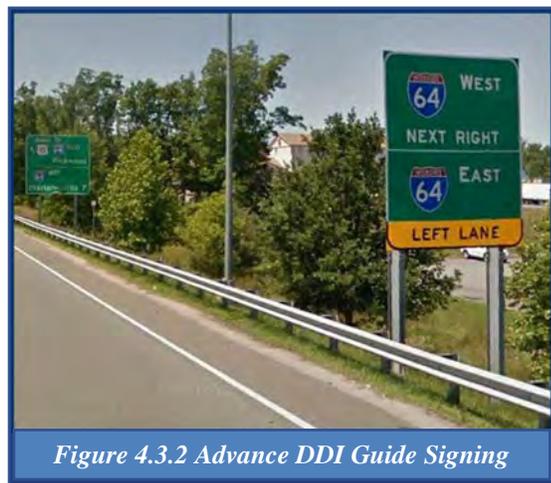


Figure 4.3.2 Advance DDI Guide Signing

UPC 111730 – US Route 250 and Route 151 Roundabout

The existing signalized 3-leg T-intersection of Route 151 (Critzers Shop Road) to US Route 250 (Rockfish Gap Turnpike) in Afton, will be reconstructed as a single-lane roundabout. The project will also involve the replacement of the Route 151 culvert crossing for Stockton creek adjacent to the T-intersection.

In recent years, there have been an increasing number and severity of accidents at this intersection. This project will improve the intersection’s operations and safety through traffic calming and elimination of unprotected direct left-turn movements. A temporary signal and advance warning flashers and in-lane rumble strips along the eastbound US 250 approach were installed as intermediate measures.

Roadway Geometrics – Our design will maintain the RFP Concept’s US 250/Route 151 single lane roundabout and inscribed diameter of 150’. We have refined the RFP concept with the offset left approach design and shifted the roundabout approximately 15’ to the southeast and realigned the Route 151 (Figure 4.3.3) to maintain the existing roadway approach as much as possible. Our design reduces predicted entry speeds compared to the RFP alignment by an average of 4 mph. By shifting the roundabout to the south by 15’, we also improve the overall roundabout composition (i.e. approach angles to the roundabout and the relation of each approach to adjacent entry and exit lanes) while minimizing excavation and shortening the proposed 151 culvert.

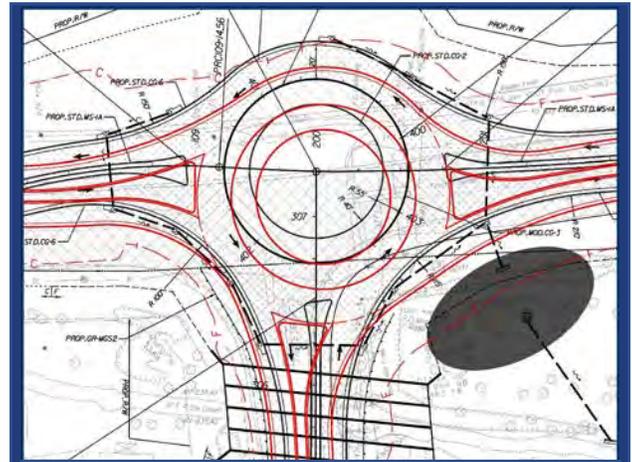


Figure 4.3.3 Shifted 250/151 Roundabout vs. RFP

The CCI Team’s refined roundabout layout exceeds the Project’s intended scope and will benefit users:

Safety/Operations After Construction	Offset left approach design emphasizes speed reduction prior to the roundabout and provides flatter exit geometry to improve driveability for larger vehicles. In addition, shifted roundabout location and realigned Route 151 creates additional clear zone and roadside area for utility, SWM swale and multimodal facilities
Minimizes Impacts to Environmental Features	Minimizes the length of the new Stockton Creek box culvert crossing under Route 151
Minimizes Impacts to Right-of-Way	Eliminates impacts to the existing roadside cut slope/hillside along US 250 westbound
Minimizes Future Inspection/ Maintenance	Minimizes roadside cut-slope along US 250 westbound and preserves long-term stability of the roadside areas

We will maintain the US 250 and Route 151 minimum and maximum grades and appropriate design speed vertical curves along the roadway mainline and entering and exiting the roundabout. Our design, in accordance with FHWA Roundabout guidelines, will maintain the center island apron curb line “sine” curve profile meeting grades ranging from 0.5 to 4% with 20 to 25 mph (matching the fastest path speed) vertical curves and roundabout circulatory roadway cross slopes ranging from 2% to 3% sloping away from the center island. We will ensure clear site lines across the roundabout for vehicles approaching and within the roundabout. Our realigned Route 151 will maintain clearances for the new four-cell 12x6 box culvert. We propose vertically bifurcating the roundabout along the Route 151 profile (Figure 4.3.4) in a way that makes the US 250 eastbound roadway higher than westbound 250 within the roundabout by approximately 2’ to 3’.

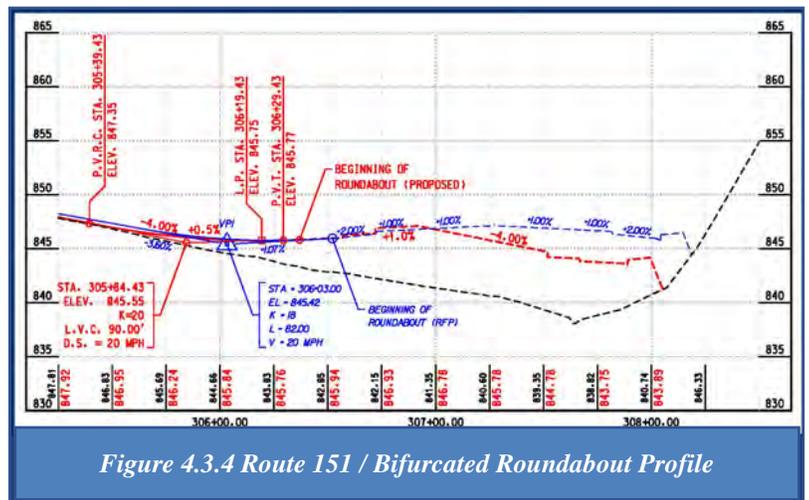


Figure 4.3.4 Route 151 / Bifurcated Roundabout Profile

Our Conceptual UPC 111730 Roadway Plan and Profiles are included in Volume II of this Technical Proposal. We propose vertically bifurcating the roundabout along the Route 151 profile (Figure 4.3.4) in a way that makes the US 250 eastbound roadway higher than westbound 250 within the roundabout by approximately 2’ to 3’.

The CCI Team’s refined approach roadway’s (Route 151) and roundabout (Higher EB US 250 Roadway vs. WB) vertical geometrics exceeds the Project’s intended scope and will benefit users:

Safety/Operations During Construction	Minimizes US 250 roadway reconstruction and maximizes base widening / resurfacing; maximizes construction and staging areas; and enhances safety for the traveling public and construction forces
Minimizes Impacts to Environmental Features	Ensures that the pre-construction Stockton Creek 100-Year storm floodplain surface elevation upstream of Route 151 will remain unchanged

Our roundabout intersection and approach roadways will maintain the RFP Concept’s circulatory and apron widths; approach roadway lane widths; splitter island minimum widths and lengths; and closed section roadside grading. We will apply roadside clear zone criteria for 25 mph at the roundabout intersections and 60 mph criteria beyond the intersection along US 250 and Route 151.

Hydraulics and Stormwater Management – The suggested location for a SWM facility on the RFP Conceptual Plans is within the existing 100-year floodplain. There are few approved BMP types that can be located within the 100-year floodplain and provide phosphorus removal and channel protection. Therefore, the CCI Team investigated alternate locations for SWM facilities that would provide both water quality and quantity control. The proposed BMP is located on our Volume II conceptual plans. The proposed BMP is a bioretention facility that is located outside of the 100-year floodplain on the northeast quadrant of the roundabout. It accepts runoff from the roundabout and the western leg of Route 250. This facility provides most of the phosphorus removal from the site, the required runoff reduction to meet the channel protection requirements according to the energy balance equation, and management for the 10-year storm. Additional BMPs would be required to provide the site’s phosphorus removal on-site. The project site is located between the hillside slope along US 250 westbound and the floodplain. We investigated the area west of Route 151, south of Stockton Creek; however, there is a wetland in this area and the CCI Team wishes to avoid unnecessary wetland impacts. The other locations for BMPs would be located in the floodplain, which would provide limited phosphorus treatment and would be difficult to maintain. Therefore, the CCI Team proposes to obtain the additional phosphorus removal by purchasing approximately 0.6 lbs of nutrient credits.

The RFP Conceptual Plans presented a proposed quadruple 12’ by 6’ box culvert to convey Stockton Creek under Route 151 and a hydraulic design waiver from the 18” freeboard requirement. The CCI Team proposes to utilize this sized box culvert for proposed conditions and the approved design waiver. In the adjustments to the proposed roundabout location and profile, the CCI Team has ensured that the outer edge of the shoulder (including curbing), at its lowest point on the upstream side of the roadway, remains at or above elevation 845.90 to maintain the proposed design waiver freeboard of 6”. The CCI Team will investigate minimizing the length of the proposed culvert for environmental purposes and will make the length as short as possible to accommodate the proposed roadway and the proposed MOT configuration. To reduce the construction duration and minimize impacts to local traffic, the proposed quadruple 12’x6’ box culvert will be a precast structure on a spread foundation.

Lighting and Signing/Marking – We are proposing to install intersection lighting to illuminate the circulating roadway and each approach to improve safety in accordance to NCHRP Report 672, Chapter 8. Standard regulatory, warning, and guide signing and pavement markings for a single lane roundabout will be installed to provide proper and clear guidance in accordance to NCHRP Report 672, Chapter 7 and the 2009 MUTCD and Virginia Supplement. We will incorporate Bicycle Route 76 signs along each roundabout approach roadway.

Landscaping – Located at the base of the Blue Ridge in western Albemarle County’s rural craft beer and wine country, the historic US 250 corridor and intersection with Route 151 is only three miles east of Skyline Drive and the Appalachian Trail. Tourists frequent this area to enjoy all that the region has to offer throughout the year.

As prescribed in RFP Part 2, Section 2.8, and associated Special Provisions, the proposed landscape design (Figure 4.3.5) will complement the inherent vernacular of the region by maintaining the



Figure 4.3.5 250/151 Concept Landscaping

Blue Ridge countryside scenic vistas to the west while adhering to the principles of context sensitive solutions/context sensitive design (CSS/CSD). We will use native/indigenous, low-maintenance, wildlife tolerant planting masses of shrubs and herbaceous materials in the center island and adjacent cut slope to preserve, compliment, and enhance these vistas and the historic US 250 corridor year-round.

UPC 111733 – Route 20 and Route 649 Roundabout

Located approximately six miles northeast of downtown Charlottesville, the existing 4-leg intersection of the uncontrolled Route 20 (Stony Point Road) and the connecting stop sign-controlled Routes 649 (Proffit Road) and 1494 will be reconstructed as a single-lane roundabout to improve safety and traffic flow. This intersection has also experienced a high historical accident rate. The element will also involve the replacement of the Route 20 intersection’s culvert crossing for an unnamed Tributary to the North Fork of the Rivanna River.

Roadway Alignments – We will maintain the approach horizontal roadway alignments, lane widths and splitter island widths/lengths; and the single lane, 130’ inscribed diameter roundabout intersection layout as proposed in the RFP Concept plans. We will investigate refining the RFP concept with an offset left approach design to further reduce entry speeds and further minimize impacts. We will apply RFP Concept’s roadside grading and AASHTO clear zone criteria for 25 mph at the roundabout intersections and 50 mph criteria beyond the intersection along Routes 20 and 649. We will maintain the Routes 20, 649, and 1494 minimum and maximum grades and appropriate design speed vertical curves along the approaching roadways. Our design will reflect the central island apron curblin “sine” curve profile meeting FHWA Roundabout guidelines grades, vertical curves, and circulatory roadway cross slopes. We propose refinements to the Route 1494 profile utilizing the maximum allowable 15% grade, which significantly reduces construction limits, as well as the cut excavation requirements for this connection to the roundabout. We also will investigate refining the Route 649 vertical alignment continuing through the roundabout to be bifurcated such that the Route 20 eastbound roadway will be higher than westbound 20 within the roundabout by approximately 2 to 3’. Our Conceptual UPC111733 Roadway Plan and Profiles are included in Volume II of this Technical Proposal.

The CCI Team’s refined approach road’s (Route 1494 and Route 649) and roundabout (Higher NB Route 20 Roadway vs. SB) vertical geometrics exceeds the Project’s intended scope and will benefit users:

Safety/Operations During Construction	The refined Route 1494 allows for constructing an adequate (25 mph crest curve) tie-in with existing Route 1494 ensuring traffic mobility and access
Minimizes Impacts to Environmental Features	Minimizes the length of the new Tributary to the North Fork of the Rivanna River culvert crossing under the Roundabout, as well as related wetland impacts
Minimizes Impacts to Right-of-Way	Reduces Routes 1494, 649 and the roundabout intersections construction limits and the needed right-of-way limits

Hydraulics and Stormwater Management – We have refined the hydraulics and SWM design presented in the RFP plans to potentially eliminate the proposed SWM basin and the permanent drainage easement located on the western side of the roundabout. All surface waters within, and at the direct approaches to the roundabout are being directed to the proposed basin on the north side of the intersection within the existing right-of-way. This basin will provide the required energy balance and flood protection. The CCI Team will obtain the required phosphorus removal by purchasing approximately 1.7 lbs of nutrient credits. We will confirm our final SWM facility locations in conjunction with meeting the cross culvert hydraulic requirements for the unnamed Tributary to the North Fork of the Rivanna River and minimizing impacts to its waterway and wetlands.

Our hydraulic design for the proposed cross culvert will maintain the existing drainage pattern coming from the east side of the existing intersection, and out-falling into the wetlands area on the west side of the intersection. We are currently proposing to upsize the existing 30”x42” CMP culvert with a twin 42” concrete pipe culvert given the large contributing upstream watershed. We will disregard the existing upstream private property pond’s floodplain storage per the VDOT Drainage Manual storage routing criteria and confirm that a 50-year storm will not create roadway overtopping. The culvert will expand to twin 48” pipe culvert from a junction box located in the center of the roundabout, where additional pipes will tie-in that pick-up the existing Route 20 ditch flows. We

believe it is important to approach the new culvert hydraulic design with developing minimal stormwater impacts on the downstream property owner. We'll revisit the sizing requirements during the design development process and coordinate our full engineering hydraulic analysis with VDOT for the best solution.

Lighting and Signing/Marking – In accordance with the RFP and subsequent follow-up RFP Questions and Answers clarification, no intersection lighting to illuminate the circulating and approach roadways is required. Standard regulatory, warning and guide signing and pavement markings for a single lane roundabout will be installed to provide proper and clear guidance in accordance to NCHRP Report 672, Chapter 7 and the 2009 MUTCD and Virginia Supplement. We will investigate and coordinate with Culpeper District Traffic enhancing signing and pavement markings (i.e. RPMs with the approach roadway markings) for improved headlight illumination and guidance of the vehicles through the roundabout during nighttime use.

Landscaping – The Routes 20 and 649 intersection is located approximately six miles northeast of downtown Charlottesville in rural Albemarle County; it has been the site of a particularly devastating fatal accident, when six-year old Chloe Leong was killed in a head-on collision. Chloe's family maintains a small memorial for their daughter along the northbound lanes of Route 20 just before the intersection.

As prescribed in RFP Part 2, Section 2.8, and associated Special Provisions, the proposed landscape design will both complement the inherent vernacular of the region by maintaining the countryside scenic vistas and respect Chloe's memorial while also adhering to the principles of context sensitive solutions/context sensitive design (CSS/CSD). We will use native/indigenous, low-maintenance, wildlife tolerant planting masses of shrubs and herbaceous materials in the center island and areas north of the roundabout to preserve, compliment, and enhance the vistas and memorial year-round.

UPC 111727 – I-64 Exit 118 Interchange Modifications

This element involves eliminating the loop ramp from southbound (SB) US Route 29 to eastbound (EB) I-64. A new SB Route 29 dual left-turn lanes intersection connection to the existing ramp from northbound (NB) Route 29 to eastbound I-64 will be constructed. This modification will replace the loop ramp and eliminate two weave movements that have been identified as a factor in many crashes.

Roadway Geometrics – We are maintaining the RFP Concept's horizontal roadway alignments/layout for the SB US 29 dual left-turn lanes intersection and connection to the existing ramp from NB US 29 to EB I-64 as proposed in the RFP plans. We will develop the Exit 118 interchange modifications' pavement footprint primarily through roadway pavement widening and resurfacing of the US 29 and the diamond interchange ramp. Our Conceptual UPC 111727 Roadway Plan is included in Volume II of this Technical Proposal.

Hydraulics and Stormwater Management – We are proposing a dry basin in the triangular shaped area between the I-64 EB on and off ramps within the existing right-of-way. In order to meet the energy balance requirements for the project, we are proposing to pick-up the drainage in the existing median ditch between the aforementioned ramps and direct the stormwater flows into the proposed dry basin. To meet water quality, we are planning to purchase 1.2 lb. of nutrient credits from a bank.

Traffic Signalization and Signing/Marking – We are proposing to install a two-phase signal system, utilizing two signal poles with 60' mast arms; one of these mast arms will be installed in the southeast quadrant of the intersection, and the other mast arm installed on the other side of US 29, in the southwest quadrant. The SB US 29 through movement will operate under continuous flow, with only the southbound left turns to I-64 EB being signal controlled. The NB US 29 movement will be signal controlled. We have validated the stopping sight distance with respect to the southbound Route 29 approach to the new signal and have ensured that the I-64 bridge structure beams do not interfere with the approaching traffic line of sight.

The existing CCTV poles and infrastructure along I-64 for the interchange will not be impacted and will remain in place and in operation during and after construction.

Since the design includes eliminating the US 29 SB to I-64 EB ramp movement, the associated existing overhead guide sign located on the north side of the I-64 bridge will be removed and a new ground mounted sign will

be relocated to the median. The I-64 EB and Route 29 SB guide sign panels on the upstream overhead gantry will be swapped to properly align the southbound traffic into the proper lane.

UPC 111813 – Fontaine Avenue Ramp Improvements

This element involves widening the single lane ramp at the Fontaine Avenue exit from northbound (NB) US Route 29 to a dual lane ramp. We will create the dual lane ramp's departure from NB US 29 by maintaining the existing third outside lane drop and providing an option (choice - through/exit) from the second middle lane. The dual ramp will terminate at Fontaine Avenue with a dual right-turn movement. We will provide a left-turn/through movement auxiliary lane at the ramp's intersection with Fontaine Avenue. The element will ease current weaving issues and remove conflict points.

Roadway Geometrics – The CCI Team is maintaining the RFP Concept's horizontal roadway alignments/layout for the NB US 29 dual lane exit ramp and its connection with Fontaine Avenue. We will develop the NB US 29 dual lane exit ramp pavement footprint primarily through roadway pavement widening and resurfacing of US 29 and the existing diamond interchange ramp. With the addition of the new auxiliary/slip lane, we pay attention to the revised gore area grading and pavement transitioning. It is also important in this location to ensure proper pavement rollover transitioning between the existing outside US 29 NB pavement edge and the new slip lane. We have ensured that the design meets the max AASHTO rollover criteria of 4-5%.

For this element, a primary objective of the CCI Team was to avoid the requirement of extending the existing Moray Creek triple box culvert due to the required shoulder improvements on US 29. We are proposing the use of the GR-MGS1 long post guardrail system, which allows for up to 4" of fill behind directly the guardrail post before hinging to the roadside slope. This allows us to tie-in the shoulder improvements without spilling over the existing road embankment. Our Conceptual UPC111813 Roadway Plan and Ramp A Profile are included in Volume II.

Hydraulics and Stormwater Management – Our proposed hydraulic and SWM design includes the creation of a new dry basin at the bottom of the Fontaine Ramp in the southwest corner of the intersection within the existing right-of-way. The dry basin is created by replacing the existing DI-1 structure with a stormwater riser structure, which establishes a dry detention pond. We are also adjusting the existing grading to provide for the necessary stormwater storage. In order to meet the energy balance criteria, we are removing the culvert that drains the existing ramp gore area and are sending the associated flows down a newly expanded ditch on the inside of the off-ramp, which will flow into the dry basin. In order to meet water quality, we are planning to purchase 0.7 lb. of nutrient credits from a bank.

Signing/Marking – As clarified in RFP Addendum 2, we are proposing a new overhead guide sign for the Fontaine Ramp which will notify drivers of the new dual lane off ramp operation. As per MUTCD requirements, the sign structure will be placed directly across from the gore of the new choice/slip lane ramp exit and US 29.

UPC 109397 – Rio Mills Road/Berkmar Drive Connection

This element is located approximately six miles to the north of downtown Charlottesville and entails constructing a quarter-mile, two-lane road to connect the paved Rio Mills Road near the existing Luck Stone Quarry entrance to the recently completed Berkmar Drive Extension and will direct traffic away from Rio Mills Road's unimproved (gravel stone) section. The work will include a sidewalk and shared-use path that connects to the bicycle and pedestrian facilities on Berkmar Drive.

Roadway Alignments – The CCI Team is maintaining the new Rio Mills Road Connector RFP Concept's horizontal roadway alignment/layout with the including the 8' width shared use path and 5' width sidewalk along the connector road's south/west and north/east sides, respectively; and access connection with the existing gravel Rio Mills Road and quarry entrance. We will design the new road's pedestrian accommodations in accordance with ADA requirements and VDOT Traffic Engineering Division TE-376.1 and TE-377 memoranda. We propose refining the new road's profile using an 8% maximum grade with 30 mph vertical curves and accommodating the future Berkmar Drive widening to reduce construction limits, as well as the cut excavation requirements. Our Conceptual UPC109397 Roadway Plan and Profile is included in Volume II of this Technical Proposal.

The CCI Team's refined vertical geometrics exceeds the Project's intended scope and will benefit users:

Safety/Operations During Construction	Allows for constructing an adequate (30 mph crest curve) tie-in with existing Rio Mills Road ensuring traffic mobility and access throughout construction.
Minimizes Impacts to ROW	Reduces the Connector’s construction limits and ensures the project stays within the VDOT and the Developer’s agreed ROW / easement limits.

Hydraulics and Stormwater Management – The RFP Concept plans provide an area of right of way (ROW) available for SWM along the southern end of the roadway connection. Runoff from the proposed closed section roadway will be directed to a proposed bioretention Level 2 facility at this provided ROW location. No additional ROW is required for this SWM facility. Runoff from the off-site area north of the project will be directed to a drainage swale along the northern edge of the proposed Rio Mills Road, collected in a storm drain system at the swale’s low point, and piped around the proposed bioretention area. The proposed bioretention facility provides the required phosphorus removal, channel protection according to the energy balance equation, and flood protection for the project site. This facility will outfall to an existing drainage swale south of the project that flows through the proposed ROW for the facility. The facility shown on the design plans is proposed with an approximate 15’ offset from the drainage swale. At final design, the facility will be designed with an appropriate offset from the drainage swale as required by the environmental agencies. This project proposes no impacts to the existing VDOT bioretention facility adjacent to Berkmar Drive. Based on natural grading in the vicinity, the proposed bypass storm drain system outfall may flow through the existing VDOT ROW for the bioretention facility adjacent to Berkmar Drive; however, with appropriate outfall protection at the storm drain system outfall, there will be no adverse impacts to this property.

Landscaping – Just south of the recent Hollymead Town Center retail development, the proposed connector road will connect Rio Mills Road to the recently extended Berkmar Drive. Parallel to the heavily travelled US 29 corridor, the recently extended Berkmar Drive provides a safer, more pedestrian/bicycle friendly, multimodal design that features dedicated bike lanes and a separated concrete sidewalk and asphalt shared use path (SUP).

The proposed landscape design for the new Rio Mills Connector road, as prescribed in Part 2, Section 2.8, and associated Special Provisions, will feature canopy trees to either side of the proposed connector road, behind the sidewalk and shared use path between the quarry and Berkmar Drive. Tree species will be evaluated and selected to require minimal maintenance and pruning to maintain safe vertical clearance for vehicles, pedestrians, and bicyclists; this approach will also maintain clear horizontal sight lines. We will design planting clear zones in accordance with Guidance for Planting in the Clear Zone and Landscaping for VDOT Projects memorandum, dated October 31, 2000.

Concept Design Summary

The **CCI Team**’s proposed designs will meet or exceed the RFP requirements and supporting VDOT, FHWA and/or AASHTO criteria including the horizontal curves/super-elevation; design speed sight lines/distances; vertical grades/curves; traffic speed control; crossing angles, tapers and inscribed diameters; and entrance/exit radii with lane, ramp, and apron widths for adequate turning movements. We are proposing roadway geometrics; hydraulic culvert crossings; SWM; and traffic layouts that meet or exceed the RFP requirements and match or reduce the RFP concept design’s construction limits and stay within the RFP Concept’s ROW limits.

We propose several key changes to roadway geometrics that are minor in principal, meet criteria and are fully consistent with the project RFP—but allow for additional traffic speed control/calming; perform MOT/construction staging; minimize ROW and environmental resources impacts; and provide element independent efficient earthwork management. Our stream hydraulic culvert crossings at the roundabout intersections will align with the RFP’s approved design waiver for the Route 151 crossing of Stockton Creek and per the VDOT Drainage Manual with no consideration of the existing upstream floodplain storage at the Route 20 crossing with the Tributary to the North Fork of the Rivanna River. Our SWM designs will provide all required quantity control (channel protection and flood protection) within facilities on-site and quality treatment in combination with those quantity facilities and nutrient credits. Finally, our signalization systems and signing/pavement markings in coordination with the development of the roadway geometry and curb placements will provide the proper lane balancing, correct guidance without over signing to avoid driver confusion, and offer adequate connection spacing/distances for optimal traffic operations.

4.4 Project Approach

4.4.1 ENVIRONMENTAL MANAGEMENT

The **CCI Team** will ensure environmental compliance for the project and support VDOT to meet all regulatory requirements. Our proposed design includes measures to minimize the project's environmental impacts through reasonable design avoidance. In partnership with VDOT and permitting agencies, we will implement an environmental management program that fulfills the following requirements:

- ✓ Promotes joint parallel C-107 inspections with VDOT, QA, and ESC inspection staff; and documents corrective actions
- ✓ Reduces stream impacts below the mitigation requirements and reduces wetland impacts by 3,200 acres, which saves VDOT from purchasing additional wetland credits
- ✓ Meets all commitments of the NEPA and SERP documentation completed and approved by VDOT and the Federal Highway Administration (FHWA) for all six transportation projects in 2018
- ✓ Monitors and documents compliance with all commitments, considerations, permit conditions, and approval requirements for design and construction
- ✓ Incorporates activities into the project schedule that develops work products required to obtain applicable permits and to meet key environmental commitments
- ✓ Avoids invasive species infestation by minimizing the area of disturbance and revegetating the project site with desirable species
- ✓ Educates/trains employees to conduct activities in an environmentally responsible manner

Approach to Environmental Management

Managing the environmental process throughout the duration of the contract will be critical for ensuring the timely and successful completion of the six elements associated with the Albemarle Bundle. The CCI Team has reviewed the RFP documents, including all previously established environmental commitments. We have performed site visits to further familiarize our team members on the requirements, constraints, and development of strategies for avoidance and minimization.

We have reviewed the permit requirements for each element, as well as the timing for providing all environmental clearance documentation to VDOT. Our scheduling includes time to review the design plans versus the identified environmental resources. We have also planned for the necessary permitting and agency reviews.

The following information demonstrates our understanding and approach for each project when considering the environmental commitments and permitting requirements:

Interdisciplinary Team of Qualified Professionals – Our Team is made up of environmental staff and design engineers who will ensure that environmental constraints are accounted for—eliminating rework during later stages of design. Our Team will hold over-the-shoulder reviews and hold bi-weekly meetings to discuss any issues encountered and upcoming.

Early Coordination with Agencies – The CCI Team will coordinate with USACE and obtain Jurisdictional Determination for all resource boundaries soon after kick-off of the project. We will hold formal pre-application reviews and will review multiple elements concurrently, if feasible. Since the UPC 111730 and UPC 111733 require wetland mitigation, we have already identified several mitigation banks that can accomplish the required wetland mitigation.

Avoid and Minimize Impacts during Design – We will minimize and avoid impacts to natural resources by using design optimization methods such as shifts and steeper slopes. Our design will remain within the NEPA footprint and we will look for restoration opportunities on-site.

Environmental Areas of Concern

Table 4.4.1.1 illustrates the environmental resources of concern we have identified for each element.

Table 4.4.1.1: Resource Considerations – RFP vs. Design

	Environmental Consideration	RFP Concept	Design Refinements
UPC 111727 I-64 Exit 118	NEPA/SERP Clearance	PCE 7/9/18	No changes
	Section 4F	None	
	Cultural	None	
	Water Quality	None	
	Mitigation Required	No	
	Agricultural/Open Space	None	
	T&E Species	None	
	Hazardous Materials	None	
Agency Coordination			
UPC 111813 US 29/ Fontaine Avenue Ramp	NEPA/SERP Clearance	PCE 7/18/18	No changes; however based on design refinements, we have determined that the box culvert extension is not required. Therefore, we have 0 lf of impact to Morey Creek and eliminate the need for a water quality permit.
	Section 4F	None	
	Cultural	None	
	Water Quality	50lf of Morey Creek	
	Mitigation Required	No	
	Agricultural/Open Space	None	
	T&E Species	NLEB 4D Rule	
	Hazardous Materials	None	
Agency Coordination			
UPC 109397 Rio Mills Road	NEPA/SERP Clearance	SERP Cleared	No Changes
	Section 4F	N/A	
	Cultural	None	
	Water Quality	None	
	Mitigation Required	No	
	Agricultural/Open Space	None	
	T&E Species	Cleared-no federal nexus	
	Hazardous Materials	None	
Agency Coordination			
UPC 111814 I-64 Exit 124 DDI	NEPA/SERP Clearance	PCE 9/6/18	No changes; however, based on design refinements, we can maintain the existing Culpeper Creek channels; this fully eliminates the need for culvert extensions. Therefore, we have 0 lf of impact to Culpeper Creek and eliminate the need for a water quality permit.
	Section 4F	None	
	Cultural	No Effect	
	Water Quality	100 lf Culpeper Creek	
	Mitigation Required	No	
	Agricultural/Open Space	None	
	T&E Species	NLEB 4D Rule; Green Floater	
	Hazardous Materials	Cleared if excavation < 30 feet	
Agency Coordination	VADGIF and USFWS for TOY Restrictions for T&E		
UPC 111733 VA 20/649 Roundabout	NEPA/SERP Clearance	PCE 8/28/18	No changes
	Section 4F	<i>De minimis</i>	
	Cultural	Conditional No Adverse Effect; Southwest Mountain Rural HD; Riggory; Curlo Colombini House/Minor Farm; 60% Plans to VDHR for Review	
	Water Quality	1,600 sf wetland; 300 lf of UT to North Fork Rivanna	
	Mitigation Required	Yes	
	Agricultural/Open Space	VOF Coordination Required	
	T&E Species	NLEB 4D Rule Loggerhead Shrike	
	Hazardous Materials	None	
Agency Coordination	VADGIF and USFWS for impacts and TOY Restrictions for T&E		

	Environmental Consideration	RFP Concept	Design Refinements
UPC 111730 US 250/ VA 151 Roundabout	NEPA/SERP Clearance	PCE 8/20/18	No changes; however, based on design refinements and shifting the roundabout, we now have 0 SF of permanent wetland impact (3,200 SF reduction) and 100 lf of Stockton Creek impact (20 lf reduction). Eliminating the wetland impact means that we no longer require mitigation.
	Section 4F	<i>De minimis</i>	
	Cultural	No Adverse Effect: Greenwood-Afton Rural HD Maximum allowable impact of 1.29 acres	
	Water Quality	3,200 sf wetland; 120 lf Stockton Creek	
	Mitigation Required	Yes	
	Agricultural/Open Space	None	
	T&E Species	NLEB 4D Rule	
Hazardous Materials	None		
Agency Coordination			

Note: There are no air/noise concerns at any of the six elements.

The CCI Team understands that the elements have already received NEPA clearance; we know that initial coordination has occurred with agencies about threatened and endangered species and cultural resources effects. Our Team is committed to maintaining the footprint of disturbance from the RFP or reducing it to avoid/minimize impacts, if possible. The design team has already taken steps to modify the design, where appropriate, to avoid and minimize potential impacts:

UPC 111814 – I-64/Exit 124 Interchange: The design provided in the RFP documents indicate an impact to 100 lf of creek bottom associated with a box culvert extension at Culpeper Creek. The CCI Team has refined the concept design to maintain the existing Culpeper Creek channels from the I-64 and Ramp D cross culvert to the Route 250 cross culvert at the interchange’s northeast quadrant and downstream of the Route 250 cross culvert at Ramp C and Route 250 EB in the southeast quadrant; this **fully eliminates the RFP’s proposed Culpeper Creek culvert extensions.**

There are potential impacts to the Northern Long Eared Bat (NLEB) and Green Floater. In compliance with the USFWS 4(d) Rule, we will adhere to time of year restrictions on forest clearing during construction to minimize potential impact to the NLEB. For the Green Floater, we will coordinate with USFWS and VDGIF.

The hazardous materials reports indicate that a potential problem may be encountered if the contractor excavates to depths of 30-feet. CCI does not anticipate performing excavations to this depth.

The project has No Effect to cultural resources and our Team will stay within the limits as previously established by VDOT during their coordination with VDHR.

UPC 111727 I-64 Exit 118 Partial Cloverleaf Modification: The RFP documents indicate that this element should not require water quality permits, or any coordination for cultural resources impacts or T&E species.

UPC 111813 Fontaine Avenue Ramp Improvements at U.S. Route 29 Bypass: The RFP documents show the potential for 50-feet of stream impact associated with the box culvert extension on Morey Creek. Based on design development, we have determined that the box culvert extension is not required; we will not require an SPGP.

There are potential impacts to the NLEB. In compliance with the USFWS 4(d) Rule, we will adhere to time of year restrictions on forest clearing during construction to minimize potential impact to the NLEB.

UPC 111730 – US 250/Route 151 Roundabout: The RFP documents show the potential for 3,200 square feet of emergent wetland impacts that will require mitigation and 120 lf of perennial stream impacts. The CCI Team has refined the concept design to shift the roundabout and minimize impacts to wetlands and streams. The refinements should result in 100 lf of stream impact (20 lf reduction) and 0 sf of permanent impact (3,200 sf reduction). Eliminating the wetland impact means that we no longer have mitigation requirements with this project – which saves considerable time and money.

The element has No Adverse Effect to cultural resources and our Team will stay within the project limits and impacts as previously established by VDOT during their coordination with VDHR.

The Route 250/151 Roundabout also has a 4f *de minimis* impact finding for the Greenwood-Afton Historic District as well, with a maximum allowable impact of 1.29 acres. The CCI Team will evaluate the impacts at all stages of the design development to ensure conformance with *de minimis* finding.

There are potential impacts to the NLEB. In compliance with the USFWS 4(d) Rule, we will adhere to time of year restrictions on forest clearing during construction to minimize potential impact to the NLEB.

UPC 111733 – Route 20/649 Roundabout: The RFP documents show the potential for 1,600 sf of wetland impacts associated with the roundabout footprint which will require mitigation. There may also be up to 300 lf of perennial stream impacts, which may require stream mitigation. We will continue to evaluate and refine the design to minimize the impacts to the wetlands. **Note:** Our calculations of the wetland shape provided by VDOT is 2,600 sf, not the 1,600 sf reported in the RFP. Our Team will complete a detailed wetland delineation to confirm the size of the wetland that will be removed for this roundabout.

There are potential impacts to the NLEB and Loggerhead Shrike. In compliance with the USFWS 4(d) Rule, we will adhere to time of year restrictions on forest clearing during construction to minimize potential impact to the NLEB. For the Loggerhead Shrike, we need additional with USFWS and VDGIF.

The project has a Conditional No Adverse Effect to cultural resources; however, the 60% plans will be required for submission to the VDHR to ensure that the project is consistent with the previous findings. As required by the RFP, we will establish a 45-day review period for the VDHR to provide confirmation. We have shown the submission date in the project schedule.

A portion of the required right-of-way is encumbered by an Open Space easement granted to the Virginia Outdoor Foundation (VOF). The necessary project right-of-way or easement will require converting or diverting existing easement be converted or diverted for road improvement purposes. Our Team will meet with representatives of VOF to discuss the project requirements and potential equivalent sites that would qualify as replacement for the area to be converted. With those possibilities, the land required for the road project and the possible conversion properties would be appraised and provided to the VOF for their review and determination of equivalency. When the appropriated replacement property is approved, the land acquisitions would be included in the right-of-way plan approval submission. When right-of-way plan is approved and notice to proceed for acquisitions is authorized the Team would acquire the replacement site. After the replacement site has been acquired, the land transfer agreement between VDOT and VOF would be finalized and closed with the recordation of documents.

The Route 20/649 Roundabout also has a 4f *de minimis* impact finding for the Southwest Mountains Rural Historic District, with a maximum allowable impact of 2.00 acres. The CCI Team will evaluate the impacts at all stages of the design development to ensure conformance with *de minimis* finding.

UPC 109391 – Rio Mills Road and Berkmar Drive Connector: The RFP documents indicate that this element should not require water quality permits, cultural resources impacts or T&E species coordination. This project is not federally-funded.

Schedule Integration

The schedule we have developed (see Volume II) accounts for finalizing NEPA re-evaluations before PS&E Authorization, securing the environmental permits prior to construction and construction time of year restrictions. The time of year restrictions include tree clearing to protect T&E species and stream closure periods. We have included environmental milestones such as submission of permit applications and permit acquisition.

Approach During Construction

Our environmental staff's involvement in, and management of, the environmental process doesn't end upon approval of the environmental permits. In some respects, the real environmental work is just beginning once permits and construction plans are approved. Our environmental staff has great relationships with the permitting agency staff, since they recognize that we have the best interests of the environment and the agencies in mind throughout construction. We work closely with field staff before and during construction to ensure permit requirements are adhered to, monitoring is completed as required and necessary, and documentation is kept up-to-date at all times. We have successfully completed multiple design build projects with involvement from all possible permitting agencies; our Team has developed the following approach during construction to ensure environmental compliance:

Pre-Construction Coordination – Following plan approval and prior to any construction activities being initiated, environmental staff will return to the field and reflag all wetland and water locations to ensure limits are easily

identified by construction staff and can be properly protected with silt fence and/or temporary construction fence to ensure avoidance of impacts to non-permitted areas. Permit plates – which were submitted and approved as part of the permit applications – will be shared with construction staff to identify allowable limits of work. Stop work mechanisms shall be set in place should a resource be disturbed inadvertently.

Training – A pre-construction constraints and commitment training meeting will be led by environmental staff and attended by construction and inspection staff to discuss permit requirements, time of year restrictions (see table below) and environmental constraints which must be adhered to during construction. Orange fencing will be placed around resource boundaries to alert the workers that it is off-limits. Workers will adhere to sequence of construction and LOD.

Table 4.4.1.2: Construction Period Restrictions

Time of Year Restrictions	UPC 111814 I-64 Exit 124 DDI	UPC 111727 I-64 Exit 118	UPC 111813 US 29/ Fontaine Avenue Ramp	UPC 111730 250/151 Roundabout	UPC 111733 20/649 Roundabout	UPC 109397 Rio Mills Road
Tree Clearing	June 1 – July 31	None	June 1 – July 31	June 1 – July 31	June 1 – July 31	None
In-Stream Work	March 15 – June 30	None	March 15 – June 30	March 15 – June 30	March 15 – June 30	None

E&S Manager – The CCI Project Element Superintendent will appoint an E&S Foreman during all construction activities for each of the project elements. They will be on-site continuously during construction to ensure E&S measures are appropriately taken.

Bi-Weekly Construction Visits – Our Team recognizes that additional scrutiny is being placed on environmental protection. Accordingly, our Team commits to conducting bi-weekly construction visits to ensure permit requirements are being adhered to, erosion control measures are properly installed and functioning appropriately, and to identify areas which may require additional attention before they become a deficiency on a formal log or C-107 review. These visits will also provide an opportunity for environmental staff to review upcoming field activities and discuss sensitive or critical areas which will be within the work area in the upcoming construction activities. This process has proven very effective on recent projects and has given additional assurances to agency staff that our Team is taking an aggressive approach to environmental and permit compliance.

C-107 Compliance Checks – Completed on a twice-weekly basis, these field inspections will be completed by QA, QC, and construction staff to identify deficiencies in erosion control measures and areas where additional attention is necessary. These C-107 reviews will be combined with the bi-weekly construction visits as necessary so that specific details related to environmental requirements can be discussed directly with environmental staff involved in the initial permitting process.

On-Call Assistance – During construction, we recognize that conditions will arise that require immediate attention. Our environmental staff will always remain available during construction to meet on-site to address specific concerns or provide specific recommendations for enhancements to address challenging areas. Our approach is to use the same environmental staff during both design and construction, so that feedback properly accounts for commitments and restrictions identified during design without resulting in additional impacts or further complicating critical areas.

Regular Permit Reporting – For permit compliance, our environmental staff will complete the monthly and/or quarterly reporting to document construction progress and timing of impacts for all permitted areas. Reports will be submitted simultaneously to each permitting agency, VDOT, as well as QA/QC and construction staff.

Compliance Reporting – Despite best efforts by environmental permitting and construction staff, we recognize that undesired impacts may occur during construction. Examples include excessive rain events which result in non-permitted downstream impact, or construction sequencing changing beyond the expectations during permit document development. In these situations, we are up-front with the permitting agencies, provide timely reporting, and quickly identify and implement appropriate corrective measures. While our Team constantly aims to avoid non-compliance issues, should they arise, we will be proactive with reporting the event to the agency as well as identifying remediation efforts which will be quickly implemented in the field.

4.4.2 UTILITIES

From a utility coordination or relocation standpoint, the **CCI Team** has determined that the six elements do not need to be sequenced in any particular manner. Each location is adequately separated so that any required utility relocation can be constructed without consideration of other elements' work impacting the schedule except for the utility owners' relocation resources.

Approach to Utility Coordination, Adjustments, and Relocations

The CCI Utility Relocation Coordination Team will be proactive from the beginning of the contract by establishing contacts with the utility companies and developing continuous positive working relationships through the design, conflict analysis, utility relocations, and construction of the elements.

Our Utility Relocation Coordination Team is led by Richard Bennett of Bowman Consulting, who has more than 50 years of experience in transportation project design; development; utility coordination; and project construction. He worked with VDOT for 37 years; for part of his tenure, he served as VDOT's State Utilities Engineer responsible for the utility relocation program and interactions with utility companies.

During the validation phase, Bowman will assemble all previous utility information and prepare a Utility Investigation Plan to ensure all utilities are identified, contacted, and advised of the project status. The information will include any utility company's planned capital improvements that may need to be coordinated with the proposed roadway improvements.

In implementing the Utility Investigation Plan, we will contact each utility owner with facilities in the area to secure more detailed information about the size of the facilities and any extraordinary relocation requirements. Information obtained during the additional SUE work and the original data will be verified so that we can prepare a status report. At the end of this Phase, Bowman will have verified the existing utility information with the utility companies for completeness.

Using this additional information about the potentially affected utility facilities, the Utility Relocation Coordination Team will work with our DBPM, Steve Ordnung, and our Construction Manager, Bill Richards, PE, to adjust the overall project schedule to reflect the utility adjustment or relocation construction schedule. The Utility Relocation Coordination Team will monitor the utility adjustment or relocation schedule, providing the affected utility companies with advance notices about the available right-of-way or easements needed to start their work. The Team will use the Utility Status Report to ensure the work is proceeding as scheduled.

During the preliminary design phase, the Utility Relocation Coordination Team will work with the Design Engineers to evaluate potential utility conflicts and possible solutions. The Team will also evaluate the need for test holes to complete the conflict analysis and relocation design. Early interactions between the Design and Utility Teams will avoid some conflicts and help to establish utility easements that may be required.

There are many situations where telecommunication cables of different owners are bundled, either on a pole line or in underground conduits. It is possible that fiber optic cables owned by the following companies are included in some of the described utility facilities:

- ▶▶ AT&T
- ▶▶ Level 3
- ▶▶ Lightowner Fiber
- ▶▶ County School Board
- ▶▶ Qwest
- ▶▶ UVA Fiber

Using the field inspection design plans for each project, Bowman will distribute the plans to the utility companies and schedule a Utility Field Inspection (UFI) for the project. The Utility Relocation Coordination Team will conduct the UFI by reviewing the utility conflicts and potential areas for relocation. A UFI report and other customary documents will be prepared and distributed. Schedules for the utility companies' submission of easements and plans, specifications and estimates (PS&E) for the relocations will be established.

Table 4.4.2.1 Utilities Located as Each Element Site

Utility Owner	UPC 111727 I-64 Exit 118	UPC 111813 Fontaine Ave	UPC 109397 Rio Mills	UPC 111814 I-64 Exit 124	UPC 111730 151/250 Roundabout	UPC 111733 20/649 Roundabout
Comcast			UG	UG		
Dominion Energy			OV and UG	UG	OV and UG	
City of Charlottesville				UG		
Albemarle County Service Authority		UG		UG		
AT&T						UG
Century Link		UG	OV and UG	UG	UG	OV and UG
Lumos Network					UG	UG
Verizon Business (MCI)				UG		
Lighttower Fiber					UG	
Quest				UG		
Verizon Virginia				OV and UG	OV and UG	
VDOT	OV					
UVA Fiber					UG	
Riviana River Water and Sewer Authority		UG				

KEY: OV = Overhead UG = Underground

We will confirm with the City’s and County’s Utility Departments the extent that the water and sanitary sewer facilities are affected by the roadway improvements. Together, we will determine the adjustments and relocations to be included in the highway contract. We will also determine the potential betterment of these facilities and include it in the scope of the utility adjustment plan design. Using the City’s and County’s water and sanitary sewer standards, our Utility Design Engineer will prepare Preliminary Utility Adjustment/Relocation Plans (50%) and submit those to VDOT and the City’s or County’s Utility Department for review and comments.

Our Utility Relocation Coordination Team will continue to work with each utility owner to ensure that any utility easement requirements are submitted and that their PS&Es are progressing on schedule to resolve any issues between the project plans and the utility plans. The Team will also coordinate the proposed water and sanitary sewer adjustment plans with the proposed utility company’s relocations, ensuring that there are no potential conflicts. We will review any required replacement utility easement, and if we determine that they are appropriate, we will provide them to Eric Sender, PE, DBIA, the Design Manager, to be incorporated into the right-of-way plan submission.

Our Utility Design Engineer will incorporate any changes required to the 50% utility adjustment/relocation plans and finalize the utility plans when the final roadway plans are also ready. A pre-final (95%) set of the utility adjustment/relocation plans will be submitted to the City of County’s Utility Department for final review and approval. Should any minor changes be needed, they will be made and the final plans will be incorporated into the roadway contract plans. An agreement covering any betterment will be prepared and submitted to the City or County.

As the utility company’s plan and estimates are submitted, our Utility Relocation Coordination Team will review them in accordance with federal and state regulations and procedures; finalize the cost responsibility determination; and recommend approving the requested reimbursement. We will prepare a utility relocation agreement, which will be executed by the utility company and submitted to VDOT as part of the PS&E assembly. Once VDOT has approved the PS&E and the acquisition of the right-of-way or easements required for the relocation, the utility owner will be authorized to proceed with the utility relocation construction. Our Utility Relocation Coordination Team will continue to monitor the utility relocation construction progress to ensure utility companies are actively completing the work in accordance with the approved schedule.

The Utility Relocation Coordination Team will be available to review and implement solutions to any utility facility-related issues that arise during the road construction. The Utility Relocation Coordination Team, the Design, and Construction Team personnel will all be involved in reviewing the issues and agreeing to the solution, which will be implemented in a timely manner.

As the utility adjustments or relocations are completed the Utility Relocation Coordination Team will prepare the as-builts drawings, secure final billings, and see that the utility owners receive any applicable land use permits. We will obtain close out letters from all the affected utility owners.

Potential Utility Conflicts and Solutions

The following *Table 4.4.2.2* outlines the utility conflicts we have identified within each Element site.

Table 4.4.2.2 – Initial Utility Conflict Evaluation				
	ID	Owner	Facility in Conflict	Proposal Relocation/ Adjustment
UPC 111727 I-64 Exit 118	No Utility Facilities in Element Area			
UPC 111813 US 29/Fontaine Avenue	No Utility Conflicts Anticipated			
UPC 109397 Rio Mills Road	E01	Dominion Energy	OV Pole Line Rt. Station 99+95	Replace Pole with deeper bury depth
	T01	Century Link	UG Tel Line Rt Station 98+50 to 102+10	Relocate cables and pedestal
	T02	Century Link	UG Tel Line Lt Station 98+50 to 100+60	Relocate cables and pedestal
	T03	Century Link	UG Tel Line Lt Station 98+50 to 100+60	Relocate cables and pedestal
	T04	Comcast	UG TV Cable Rt Station 98+50 to 101+00	Relocate TV cable
UPC 111814 I-64 Exit 124 DDI	E21	Dominion Energy	OV Pole Line Lt. Rte. 250 & Rte. 1107 - Station 525+75	Relocate Pole and line
	E22	Dominion Energy	UG Service Line Lt. Rte. 250 Station 521+30 to 526+90	Relocate Cables
	E23	Dominion Energy	UG Line Lt. Rte. 250 & Hansen Mtn. Rd. Station 613+90 to 615+80	Relocate Cables
	T21	Century Link	UG Tel Line Lt WB Station 603+30 to 604+20	Relocate cables and pedestals
	T22	Century Link	UG Tel Line Lt WB & Hansen Mtn. Rd Stations 504+20 to 504+90 604+90 to 612+60	Relocate cables and pedestals
	T23	Century Link	UG Tel Line Rt WB & Rte. 1107 Station 628+90	Relocate cable crossing
	T24	Century Link	UG Tel Line Lt EB Station 529+30	Relocate cable crossing
	T25	Century Link	UG Tel Line Rt EB Station 529+30 to 539+00	Relocate cables and pedestals
	T26	Century Link	UG Tel Line Rt EB Station 535+20	Relocate cable crossing
	T27	Century Link	UG Tel Duct Rt EB Station 509+50 to 537+25	Relocate duct and cables
	T28	Qwest	UG FO Line Lt WB Station 602+50 to 631+25	Relocate FO Cables
	T29	Verizon Business (MCI)	UG FO Line Rt EB Station 509+50 to 539+00	Relocate FO Cables
	T30	Lumos	UG Line Rt. EB Rte. 250 & Hansen Mtn. Rd. Station 509+50 to 513+20	Relocate FO Cables
T31	Comcast	UG CATV Line Lt WB Station 521+30 to 526+90	Relocate TV Cables	
G21	Columbia Gas	UG Gas Line Rt EB Station 509+50 to 537+25	Relocate sections of gas line	

Table 4.4.2.2 – Initial Utility Conflict Evaluation (Continued)

	ID	Owner	Facility in Conflict	Proposal Relocation/ Adjustment
UPC 111814 I-64 Exit 124 DDI (Continued)	G22	Columbia Gas	UG Gas Line Rte. 250 & Hansen Mtn. Rd. Station 612+70	Relocate gas line crossing
	G23	Columbia Gas	UG Gas Line Rte. 250 & Rte. 1107 Station 628+15	Relocate gas line crossing
	S21	ACSA	San. Sewer Line Lt. Rte. 250 Station 602+50 to 612+60	Relocate Sewer Line
	W21	ACSA	Water Main Lt. WB Rte. 250 Station 602+50 to 631+25	Relocate sections of Water Main
	W22	ACSA	Water Main Rte. 250 & Rte. 1109 Station 602+90	Relocate water main crossing
	W23	ACSA	Water Main Rte. 250 & Rte. 1140 Station 603+60	Relocate water main crossing
	W24	ACSA	Water Main Rte. 250 & Rte. 1107 Station 628+25 to 629+00	Relocate water main
	W25	ACSA	Water Main Rte. 250	Relocate Fire Hydrants
UPC 111733 VA 20/649 Roundabout	T11	Century Link	OV Tel Line Rt Rte. 20 Station 105+05 to 203+35	Relocate poles and cables
	T12	Century Link	OV Tel Line Rt Rte. 649 Station 304+25 to Lt Rte. 20 Station 201+65	Relocate poles and cables
	T13	Century Link	UG Tel Line Lt Rte. 1494 Station 401+25 to 404+20	Relocate cable and pedestal
	T14	AT&T	UG FO Line Lt Rte. 649 Station 301+40 to Rte. 20 Station 204+30	Relocate duct & cables
UPC 111730 US 250/VA 151 Roundabout	E41	Dominion Energy	OV Pole Line Rt. Rte. 250 Station 105+65 to 205+75	Relocate several poles
	E42	Dominion Energy	OV Pole Line Lt. Rte. 250 Station 107+00 to 107+85 Rt	Relocate overhead crossing
	E43	Dominion Energy	OV Pole Line Rt. Rte. 250 Station 200+25 to 200+70	Remove Service to Traffic Signal
	T41	Verizon Virginia	OV Pole Line Lt. Rte. 250 Station 102+15 to 206+15	Relocate several poles and attached cables
	T42	Verizon Virginia	UG Tel Line Rt Rte. 151 Station 301+60 to 305+50	Relocate cables and pedestals
	T43	Verizon Virginia	UG Tel Line Rt Rte. 151 Station 301+60 to 303+75	Relocate cables and pedestals
	T44	Verizon Virginia	UG Tel Line Lt Rte. 151 Station 301+60 to 302+30	Relocate cable
	T45	Verizon Virginia	UG Tel Line Lt Rte. 151 Station 302+00 to 302+30	Relocate cable
	T46	Verizon Virginia	UG FO Line Lt Rte. 250 Station 109+15 to 206+00	Relocate Duct and FO Cables
	T47	Verizon Virginia	UG FO Line Lt Rte. 250 Station 103+75 to 200+25	Relocate sections of Duct and FO Cables
	T48	Verizon Virginia	UG FO Line Lt Rte. 250 Station 103+75 to 105+50	Relocate Duct and FO Cables
	T49	Verizon Business (MCI)	UG Tel Line Rt Rte. 151 Station 301+60 to 307+60	Relocate Duct and FO Cables
	T50	Lumos	UG Tel Line Rt Rte. 151 Station 301+60 to 307+50	Relocate cables
	T51	Lumos	UG FO Line Rt Rte. 250 Station 103+75 to 206+00	Relocate Duct and FO Cables

KEY: OV = Overhead UG = Underground

Mitigation Strategies

The CCI Team will schedule numerous opportunities to review and mitigate the impact to existing utility facilities located within the limits of the various projects.

- ▶▶ The first opportunity will be in preparing and implementing our Utility Investigation Plan, which will validate the information provided by VDOT; it will also determine designation level locations for existing utilities. We will confirm this survey data with the various utility owners' representatives. This should ensure that there are no non-located utility facilities that could be affected by the proposed construction.
- ▶▶ Early communications and contacts with the utility owner's representatives will also provide an opportunity to determine proposed capital improvements and discuss how to complete these improvements without impacting the project.
- ▶▶ During the preliminary road design phase, the Design and Utility Teams will meet frequently to review roadway items that typically have an impact on utility facilities (such as storm drainage and grading), to discuss alternatives within the design criteria that may eliminate or minimize a potential utility conflict and relocation requirement. All alternatives that are justified will be included in the roadway design that is advanced to the UFI stage.
- ▶▶ At the UFI, we will discuss the utility conflicts that could not be eliminated. This will be an opportunity for the utility companies' representative to offer possible solutions from their perspective. Following the meeting, the suggestions will be evaluated, and any justified changes incorporated into the plans. Timeframes will be established to design the utility relocation; acquire any required easement; and perform the actual utility relocation construction.
- ▶▶ To mitigate the possibility of schedule delay, the Utility Coordination Team will monitor the progress of the utility developed plan and estimates for the required relocation. They will provide continuous coordination to ensure the plans and estimates are processed and authorized in accordance with the schedule. This effort will include status reports circulated for the Team's review and meeting as necessary
- ▶▶ Lastly, the Utility Coordination Team and the Construction Manager will work with the utility companies to see that their utility relocation construction is advancing as planned and it coordinated with any road construction occurring at the same time. The Team will monitor the utility relocation construction to ensure it is on schedule. The Utility Coordination Team will be available to coordinate with the utility company, should any field issues with differing conditions arise that need resolution. All parties will meet to agree upon the solution in a timely manner.

Schedule Integration

The necessary interactions with utility companies that have facilities located on the various projects have been integrated into both the pre-construction and construction schedules. The schedules reflect the fact that the utility companies need certain information before they can evaluate the impact and the actions that must occur to relocate a utility facility. This process includes acquiring any utility easement necessary to accomplish the relocation. The schedule includes the following major activities:

- ▶▶ **Preliminary Engineering Phase**
 - Utility Investigations
 - Conflict Evaluations
 - Utility Field Inspection
 - Utility Relocation Design and Plans and Estimates
- ▶▶ **Right-of-Way Phase**
 - Utility Easements Requirement
 - Schedule for Easement Acquisition
 - Agreements and Authorization of Utility Relocations
- ▶▶ **Construction Phase**
 - Utility Relocation Construction by Owner
 - Utility Relocation Construction by Design Builder (City Gas, Water, and Sanitary Sewer)

4.4.3 GEOTECHNICAL

The **CCI Team** is comprised of geotechnical professionals with many years of experience in designing and constructing VDOT projects within the unique geologic setting of this project. We have studied the project site, identified the risks, and presented our mitigation strategy for each risk. As with any project similar to this one, unforeseen conditions are typically encountered during construction activities. If this should occur, CCI's Geotechnical Lead will notify the designers and recommend scope alternations. All scope alternations will be reviewed for compliance with the VDOT *Manual of Instructions* (MOI) prior to execution. If the project is delayed due to an unforeseen condition, our Team has the capability to deploy multiple geotechnical field crews to expedite the investigation and recover any resulting schedule lag.

Geotechnical Approach

The project sites are located within the Blue Ridge Anticlinorium and Basement Complex Physiographic Provinces of Virginia. The project sites are underlain by metamorphic, igneous and sedimentary formations. Based on our review of the Geotechnical Data Reports (GDR) provided in the project's RFP, we determine that the soils above the bedrock formations generally consisted of Silty SAND (SM) Clayey SAND (SC); CLAY (CL); and SILT (ML and MH). Additionally, numerous borings indicated varying thicknesses of FILL materials at the project sites. Intermediate Geomaterial (IGM) was encountered at each project site at depths as shallow as 2' below the existing site grades. The material is characterized as the transition between soil and rock with Standard Penetration Test (SPT) N-values greater than 50 blows per 6" of penetration. Unsuitable soils, as defined by the project's RFP, will include organic CLAY (OL and OH); high plasticity soils (CH and MH); soils with an organic content greater than 5%; and soils exhibiting a swell of greater than 5%, as determined by the California Bearing Ratio (CBR) test. As an exception, high plasticity soils may be suitable at the embankment foundation and pavement subgrade level in cut and shallow fill areas. This approach will work if the soil is stable (passes proofroll inspections) and has an adequate resilient modulus and low swell potential.

Geotechnical Risks and Challenges

The unknowns of subsurface conditions place financial and schedule risk on the project. We determined the following geotechnical design-related risks by reviewing the provided GDRs and leveraging our experience with similar site conditions and construction.

1 RISK: Potentially Unsuitable Soils: Based on the geographic location of the project alignment and the boring logs from the GDR, the subgrade soils could be unsuitable for roadway embankment and pavement subgrades. Subgrade soils classifying as highly-plastic clays and silts (CH and MH) and soils with natural moisture contents well in excess of optimum moisture contents are initially classified as unsuitable (in accordance with the project's RFP). The soils must exhibit stable conditions at the time of construction to remain in place beneath the embankment foundations and pavement subgrades. If the soils are found unsuitable/unstable during construction, they must be modified in place via chemical stabilization (lime or cement treatment) or removed to sufficient depths (as indicated in the project's RFP). These soils pose a risk to the project due to the additional time required to delineate the extent of these soils, as well as the time required to modify or remove and replace these soils with suitable fill. We expect four of the project elements to encroach upon existing emergent wetland areas. These wetland areas are likely to be comprised of unsuitable organic laden soils that will require over excavation to provide a suitable embankment foundation and pavement subgrade.

MITIGATION – To mitigate the potential for unsuitable soils to negatively affect the project schedule, the DBT will comprehensively review and evaluate all available data and information regarding the project areas and subsurface soils – including the USGS geologic maps and Soil Survey reports, existing GDRs, and associated laboratory data. We will use this information, in addition to early design phase laboratory testing of the in-situ soils (including natural moisture contents; gradation; organic content; Atterberg Limits (VTM-7); Standard Proctor (VTM-1); and California Bearing Ratio (VTM-8) tests), to delineate the lateral extent and depth of potentially unsuitable soils. This approach will facilitate proactive measures in early earthwork construction phases.

We provide a summary of potentially unsuitable subgrade soils (as determined by the available GDR data) in Table 4.4.3.1 below.

Table 4.4.3.1 – Potential Unsuitable Subgrade Soils			
Project	Location	Risk	Remediation Options
UPC 111727 I-64 Exit 118	Station 200+00± to 202+00±	Elastic SILT (MH) subgrade soils	Undercut 3’ below pavement subgrade level and replace with compacted suitable fill
			Chemically stabilize soils within 3’ of the pavement subgrade level
UPC 111813 US 29 / Fontaine Avenue Ramp	Station 1021+00± to 1024+00±	Potential loose, otherwise suitable, subgrade soils	Compact subgrade soils in place
	Station 2021+00± to 2024+00±		Stabilize subgrade soils with geotextile fabric
			Chemically stabilize loose soils
			Undercut loose soils and replace with compacted suitable fill
UPC 109397 Rio Mills Road	Station 103+00± to 107+00±	Elastic SILT (MH) subgrade soils	Undercut 3’ below pavement subgrade level and replace with compacted suitable fill
	Station 109+00± to 110+50±		Chemically stabilize soils within 3’ of the pavement subgrade level
UPC 111814 I-64 Exit 124 DDI	Station 20+00± to 20+50± and 21+50± to 22+50±	Elastic SILT (MH) subgrade soils	Undercut 3’ below pavement subgrade level and replace with compacted suitable fill
	Station 31+50± to 32+00±		Chemically stabilize soils within 3’ of the pavement subgrade level
	Station 41+50± to 42+00±		
	Station 52+00± to 52+75±		
	Station 529+00± to 530+00±		
UPC 111733 VA 20/649 Roundabout	Station 105+50± to 105+75±	Organic laden subgrade soils	Undercut organic laden soils a minimum 3’ below pavement subgrade level and replace with compacted suitable fill
	Station 302+50± to 303+50±		
	Station 400+00± to 402+50±	Elastic SILT (MH) subgrade soils	Undercut 3’ below pavement subgrade level and replace with compacted suitable fill
UPC 111730 US 250/VA 151 Roundabout	Station 302+00± to 305+00±	Elastic SILT (MH) subgrade soils	Undercut 3’ below pavement subgrade level and replace with compacted suitable fill
	Station 400+00± to 401+50±		Chemically stabilize soils within 3’ of the pavement subgrade level

2 RISK: Settlement of Embankment Fill: We will require up to 10’ of fill to achieve the design grade elevations at three elements (UPC 111730, UPC 111733, and UPC 109397). The CCI Team will evaluate the fill induced settlement prior to construction. The settlement of the new embankments could lead to global stability problems. We will perform settlement monitoring of the deeper fill areas, since they could impact the project schedule if we do not account for them early-on in the construction process.

MITIGATION –To help mitigate and plan for the settlement risk, we can perform in-situ testing consisting of Cone Penetrometer Testing (CPT), including pore pressure dissipation testing; Dilatometer Testing (DMT); and/or Pressure Meter Testing (PMT) at deep fill locations to compliment traditional Standard Penetration Testing (SPT) and laboratory consolidation testing. The test results will determine settlement rates and magnitudes. The results will also provide anticipated settlement monitoring durations that we can include in the project schedule.

We will use the design parameters developed from the laboratory and field-testing programs, settlement, and global stability analyses for the embankments. If the results of the testing indicate excessive settlements and/or

unacceptable global stability safety factors, we will implement ground improvement strategies will be implemented. The following ground improvement techniques would be investigated:

- ▶▶ Surcharge (with and/or without Wick Drains)
- ▶▶ Lightweight Aggregate
- ▶▶ Expanded Polystyrene Foam Blocks (Geofoam)
- ▶▶ Aggregate Piers
- ▶▶ Pile Supported Embankments
- ▶▶ Rigid Inclusions (controlled modulus columns)
- ▶▶ Geo-reinforced Embankments
- ▶▶ Monitoring Programs (settlement plates, vibrating wire piezometers and extensometers)

3 **RISK: Maintaining Existing Foundations and Structures:** Fills and cuts will be required at the project element sites. The required fills and cuts are expected adjacent to existing site features/structures. Accordingly, new embankment fill-induced settlement could lead to problems with the existing structure foundations; these problems would be caused by imposing downdrag on the foundations as well as the settlement of existing pavements. The problems would impact the levelness and “rideability” of the existing travel lanes and approaches. Also, new embankment settlements could lead to global stability issues within existing embankments. Removing soil (cuts) adjacent to existing foundations and structures could weaken the bearing capacity and/or lateral support. Our Team has reviewed the GDR and do not anticipate requiring a deep foundation for the quadruple 12’ x 6’ box culvert that conveys Stockton Creek under Route 151. To reduce the construction duration and minimize impacts to local traffic, we have designed the proposed quadruple 12’ x 6’ box culvert as a precast structure on a spread foundation.

MITIGATION – The CCI Team will extensively review all available information (historic subsurface data and as-built plans) to understand the types, sizes, capacities, and locations of the existing foundation systems. The CCI Team will review the information for the existing site features/structure, the GDRs, and the newly-obtained subsurface information (CCI Team field investigation) to ascertain the current subsurface conditions. We will calculate downdrag forces on the existing foundation elements. If the calculated downdrag forces exceed the structural resistances, we will implement mitigation measures for bridge foundations. In addition to the settlement mitigation measures, we will protect the existing site features/structures during construction by drafting and implementing a construction sequencing plan to ensure stability of the foundations and structures.

4 **RISK: Slope Stability of Cut Slopes:** For elements UPC 111730, UPC 111733, UPC 109397, and UPC 111814 the construction will require roadway cuts to achieve the design grade elevations. These cuts will result in cut slopes of up to 17 feet in height. Additionally, these cut slopes are expected to be partially to fully comprised of Elastic SILT (MH) soils. These soils will require detailed field and laboratory testing to obtain the appropriate design parameters (friction angle; undrained shear strength; soil modulus; consolidation parameters; lateral earth pressure coefficients; unit densities; groundwater table; and stratigraphy).

MITIGATION – The CCI Team will perform a comprehensive review and evaluation of all available data and information regarding the project areas and subsurface soils, including the USGS geologic maps and Soil Survey reports; any available records of slope stability issues in the vicinity, existing GDRs, and associated laboratory data. We will use this information, and the design phase laboratory testing of the in-situ soils (triaxial and consolidation testing), to establish the appropriate design parameters for slope stability analyses. We will consider and analyze the soil type (Elastic SILT) and slope stability for short and long-term stability by using appropriate undrained strength and fully-softened parameters determined from laboratory shear testing.

The CCI Team will shift alignments to alleviate concerns about the existing slopes by minimizing the amount of fill and/or the amount of cut required to achieve the design grade elevations. Where fill is required, the existing slopes will be benched (series of horizontal cuts beginning at the intersection with original ground and continuing at each vertical intersection with the previous cut); we will follow this approach by blending the existing slope with the fill material to provide a bond between the old and new material to facilitate keying in the proposed slopes. This method will prevent detrimental slip surfaces between the new and old embankment fills. For slopes greater than 10’ in height, we will perform detailed global stability analyses by using reliability assessment methods based on the soil strength parameters obtained from laboratory tests. We will review the slope stabilization measures, such as geogrid reinforcement and ground improvements including, undercut,

aggregate piers, and deep foundation elements as possible mitigation methods, if required. During construction, we will implement proper field drainage and slope protection measures to reduce the potential for excessive slope erosion and softening of the sloped soils. See *Table 4.4.3.2*.

Table 4.4.3.2 – Slope Stabilization Approach

Risk Description	Project Element Found	Construction Approach
Unsuitable Subgrade Soils	Potentially unsuitable/unstable subgrade soils	Minimize disturbance of exposed subgrade soils by limiting construction traffic, maintaining proper site drainage, and protecting exposed moisture sensitive soils Remove and replace unsuitable soils In-place soil remediation by means of chemical stabilization Stabilization by compacting loose materials and/or using geotextile fabrics.
Settlement	Project sites UPC 111730, UPC111733 and UPC109397 will require fills of up to 10' to achieve design grade elevations	Expanded field and laboratory test program to accurately characterize any potentially compressive soils Implement a settlement monitoring program during construction to capture any settlement and to ensure compliance before moving to subsequent construction phases. Careful field control will contribute substantially towards minimizing the settlements.
Maintaining Existing Structures	Fills and cuts located adjacent to existing structures (bridges, utilities, and pavements)	Design phase will confirm and establish areas of risk by extensively reviewing all available information (historic subsurface data, current subsurface data, and as-built plans) to understand the relationship between the existing soils and the existing foundation systems. Existing site features/structures will be protected during construction by means of drafting and implementing a construction sequencing plan to ensure stability of the foundations and structures during construction.
Slope Stability of Cut Slopes	Project sites UPC 111730, UPC111733, UPC 109397 and UPC 11814 will require roadway cuts of up to 17' in height to achieve design grade elevations.	Design phase will analyze the cut slopes in temporary and permanent conditions to ensure the slopes can maintain proper factors of safety. High risk areas will be stabilized to prevent slope failure. Proper field drainage and slope protection measures will be implemented during construction to reduce the potential for excessive slope erosion and softening of the sloped soils.
Maintaining Existing Slopes	Existing slopes may be altered or encroached upon during construction.	Design phase will analyze existing slopes that will be altered or encroached upon to ensure the slopes can maintain proper factors of safety. High risk areas will be stabilized to prevent slope failure. Proper field drainage and slope protection measures will be implemented during construction to reduce the potential for excessive slope erosion and softening of the sloped soils.

Permits and Scope Revisions

The elements will require both municipal and State permitting to facilitate the subsurface investigation. The CCI Team’s experience with the permitting process will expedite the overall project schedule. Our Team can provide in-house clearing (clearing of trees); traffic control; drill rigs; and associated repair measures (asphalt core patching and site restoration). Our Geotechnical Field Engineer will monitor all field investigation activities to manage unforeseen situations in the field with little to no delay in the project’s schedule. If, during the site investigation, we encounter an unknown condition, the Field Engineer will contact Geotechnical Project Engineer. At that time, the Geotechnical Project Engineer will work with the design team to implement any necessary scope revisions. Our in-house capabilities will ensure that scope revisions in the field will not require delays to obtain approval. Scope revisions in the field are common and should be expected. Scope revisions typically consist of moving boring locations due to obstructions; drilling additional footage to obtain sufficient subsurface information; performing core drilling due to unexpected shallow refusal; and obtaining additional soil samples for laboratory testing.

4.4.4 QUALITY ASSURANCE / QUALITY CONTROL

The **CCI Team** has a long-standing history of providing quality services to design and construct transportation facilities. Our QA/QC team members have reviewed project designs; evaluated construction sequencing from an efficiency, constructability, and safety standpoint; as well as developed and implemented corrective plans and measures. An effective QA/QC program empowers us to successfully deliver transportation improvement projects: We have assigned highly experienced and technically knowledgeable senior staff to these important QA/QC team positions.

Approach to QA/QC

Our approach to providing an optimal QA/QC process begins with the understanding that all design and construction activities must be executed in strict accordance with the **Quality Plan**. As the Design-Build Project Manager, **Steve Ordnung** will be responsible for ensuring that all deliverables and processes meet VDOT's quality requirements. The **CCI Quality Plan** is comprised of two sections – the **Design Quality Plan**, and the **Construction Quality Plan**. Both plans will be discussed, agreed to and signed off on by all team members at project initiation. To continue with our process improvement initiatives, our Team will closely monitor both plans and update them whenever we receive new information.

Design Quality Plan

Our Design Manager, **Eric Sender, PE, DBIA**, is responsible for ensuring the quality of all design deliverables. Eric has over 28 years of experience in delivering complex transportation improvement projects, including over five design-build projects. Eric will review each design submittal/package to ensure that it conforms with all appropriate applicable codes, standards and specifications, while still providing flexibility to help the construction team expedite construction. Except for the Rio Mills Connector, the construction team will construct all elements directly adjacent to existing traffic. We will provide a quality design that will allow the CCI Team to move methodically and expeditiously to minimize impacts and delays to the traveling public and provide safety to the public and construction forces.

We will evaluate each intersection project through the Design Quality Plan, and tailor a checklist for all applicable and required design elements. The checklist will be comprised of the VDOT LD-436 form, as well as other internal checklists that our design team will utilize. Our Team will use the following approach for QA/QC during the design process:

- ▶▶ Recording and signing off on project design criteria for the design team and agree upon all design assumptions. This process starts with the criteria documentation that VDOT provided during the RFP stage of the procurement. We will closely monitor our adherence to the established RFP design criteria during the design development process.
- ▶▶ Developing the appropriate checklist for the project by using LD-436 as the basis and supplementing this checklist with additional checklists for hydraulic design and erosion and sediment control design.
- ▶▶ Having our independent Senior Engineers check design sub-packages as they are completed. The Senior Engineers will review these design elements expeditiously so that the project Team can make any corrections and revisions without delaying the overall design and project schedule. The reviewed design sub-packages include (but are not limited to) horizontal and vertical alignments; geometric layouts, including laneage, curb and gutter, and sidewalk layouts, cross sections, signing and pavement marking plans, signal and ITS layouts, storm drainage lines and inlet locations, cross sections, as well as guardrail and terminal layouts; erosion and sediment control plans; and public

Supporting Eric Sender in the design quality plan process will be Tony Mawry, PE a partner with Wallace Montgomery; and David Bradshaw, PE, Transportation Principal with Clark Nexsen. Wallace Montgomery and Clark Nexsen have committed to providing independent technical reviews of each other's deliverables, leveraging our respective firm strengths and staff experience.

utility designs, such as water and sewer offsets. The senior review staff will sign off on each package before progressing to the next stage of development. We will provide reviews for each sub-package to ensure the quality of all deliverables when it’s time to provide VDOT with the overall design submittals.

- ▶▶ Ensuring that our Independent Reviewer reviews and signs off on all design calculations such as horizontal and vertical alignment data; superelevation transitions and lane transitions; hydraulic computations; and lighting calculations. The reviewer will ensure that the calculations match the information shown on the current plans.
- ▶▶ Performing design reviews of the proposed maintenance of traffic and sequence of construction plans early in the project design, and at every milestone submittal. See the Design QA/QC for Maintenance of Traffic and Sequence of Construction for more information.
- ▶▶ Conducting reviews to ensure that the proposed design elements align with the 2016 Road and Bridge Specifications and the listing of Special Provisions and Special Provision Copied Notes (as referenced in the project Request for Proposals). Senior engineering staff will review any required special provisions for project elements that are not covered by the 2016 VDOT Road and Bridge Specifications and the SPCNs.
- ▶▶ At each scheduled plan submission to VDOT, independent design reviews will be provided by Clark Nexsen and Wallace Montgomery. Clark Nexsen will review Wallace Montgomery’s design of Rio Mills Road, the Route 250/151 Roundabout, and the I-64/Exit 124 and Route 250 Diverging Diamond Interchange. Wallace Montgomery will review the Route 20/649 Roundabout, the I-64/Exit 118 Interchange modifications, and the Route 29/Fontaine Ave Ramp modifications. These independent reviews will provide another level of Quality Assurance before the plan submission goes to the client.

Design quality reviews will also emphasize our adherence to the identified right-of-way limits as outlined in the RFP documents. These reviews also ensure that our work conforms with any environmental restrictions and/or commitments as outlined in the RFP documents and as determined through the permitting process for each project. We will review any modifications to the design during the construction process by using the QA/QC process.

Design QA/QC for Maintenance of Traffic and Constructability

The construction team will construct five of the six elements directly adjacent to existing traffic. During the design development process, we will evaluate the anticipated construction phasing and constructability requirements ensure the safety of construction personnel and the traveling public. The CCI Team has committed the following members to perform all future maintenance of traffic and constructability reviews:

Steve Ordnung Design-Build Project Manager	Eric Sender, PE, DBIA Design Manager
Bill Richards, PE Construction Manager	Avtar Singh, PE, DBIA Quality Assurance Manager
Public Relations Bill Wuensch, PE, PTOE	Larry Marcus TMP Manager

This Team will bring perspectives from the design, construction, traffic analysis, and public relations departments to develop a comprehensive, safe, and efficient sequencing. We will evaluate each project MOT design for materials and equipment placement and staging; proper traffic barrier placement (in accordance with the *Virginia Work Area Protection Manual*); construction sign placement; adequate clear zones and sight distances; and adequate detour signing (where required). The Team will also “ground truth” the proposed MOT and sequencing plans to ensure that there are no new developments or changed traffic conditions that may impact the proposed plan for each project.

Construction Quality Plan

The QA and QC Team, with the full support of the Project Construction Team, is responsible for ensuring the quality of each Design-Build project. The Construction Quality Assurance Team consists of **Steve Ordnung**, the DBPM; **Avtar Singh**, the QAM; and the supporting inspectors and lab personnel from CES Consulting, LLC and

Froehling & Robertson. The Quality Control Team consists of Construction Quality Control Manager (QCM) **Robert Schowengerdt**, his supporting inspectors from CCI, and lab testing staff from ECS Mid-Atlantic LLC. The QC staff will follow the approved Project Quality Management Plan (PQMP) that details the processes and procedures for managing, inspecting, testing, and documenting all the construction planning and production work on-site. The plan will include processes and procedures for independent testing and periodic auditing of the documentation; this approach ensures that the QA/QC staff is implementing the approved PQMP.

The PQMP will define a concise and well-defined management structure to implement proactive and detailed oversight of the work items; provide a clear and defined approach to inspecting the six elements separately; and establish a clear process of maintaining project documentation for each individual element. The PQMP will include project-specific documentation for all IDRs; monthly pay application checklists; a materials book; C-107; SWPPPs; work zone checklists; frequency of testing matrices; materials testing reports; deficiency and NCR logs; as well as hold points and witness points.

Our QA Team, led by Avtar Singh, will report directly to the DBPM and VDOT. He will coordinate directly with the QCM. In accordance with VDOT guidelines for design build projects, Avtar will have full authority to stop construction and/or withhold payment if the project is not proceeding according to contract. The QCM, in consultation with the QAM and CM, will establish the testing plan based on actual materials quantities for each project before the Team starts work. The testing plans will adhere to VDOT’s Minimum Requirements for QA/QC on Design Build and the PPTA Projects guidance document, dated July 2018; VDOT’s *Materials Manual of Instructions*; VDOT’s new Materials Division Memorandum MD 407-17 (which is specifically issued to provide guidance about materials documentation on Design-Build projects); and VDOT’s Road and Bridge Standards and Specifications. VDOT’s decision to carry out CQIP reviews on design build projects means that the QA Team will use VDOT’s CQIP checklists; our Team’s QAM is thoroughly familiar with the VDOT materials book and CQIP processes and has consistently delivered VDOT projects with CQIP scores that exceed the District’s goals.

The QAM will execute plans, instructions, procedures, and improvements to the QC process. The QAM will also have a detailed Quality Assurance Auditing and Nonconformance Recovery Plan to that ensure all subcontractors and suppliers are adhering to the project’s PQMP plan. Since the project requires concurrent construction on multiple elements, the QA Team will ensure that we have assigned one Lead QA Inspector and additional QA staff as needed (along with the associated QC personnel) to each project element. We will use the approved overall project schedule to determine the staffing plan and submit it to VDOT for their review and approval.

The CCI Team has planned to construct the elements in the following sequence:

1	UPC 111727 I-64 Exit 118	Construction duration of seven months
	UPC 111813 Fontaine Avenue Ramp	Construction duration of seven months
	UPC 109397 Rio Mills Road	Constructed duration of 11 months
2	UPC 111814 I-64 Exit 124 Diverging Diamond Interchange	Constructed duration of 22 months
3	UPC 111730 Route 250 and 151 Roundabout	Construction duration of 19 months
4	UPC 111733 Route 20 and 649 Roundabout	Construction duration of 12 month

The QA Team will provide three Lead Inspectors to inspect the first three elements being built consecutively, and one Lead Inspector to the subsequent elements. The QC inspection staff assignments will also be planned accordingly. The QA Team has previously staffed three large design build projects (bundled under the Route 29 Solutions \$116.7 million contract) concurrently. We have successfully delivered those projects under the IA/IV supervision of VDOT’s Charlottesville residency. The QA Team has the experienced and certified inspection

resources (day and night operations) to staff this contract; we will use our experience and lessons learned from the 29 Solutions contract.

Prior to actual field work, the QAM (and his Team) will set up the preparatory inspection meetings (PIM) for each new item of work at each project. At the PIM, the Team will discuss work means and methods; specifications and standards; approved C-25s; approved shop drawings; manufacturer's recommendations; safety concerns; MOT setups; production rates; materials testing and sampling methods and frequencies; coordination with IA/IV testing; and hold points.

Our Team will have a central field office to coordinate the work for each project element; the QA/QC staff will work at this office when they are not on-site. The QA/QC inspection staff will attend the daily construction staff meeting where the superintendents and foremen will discuss the day's operations. At this meeting, the QA inspectors will brief the field personnel about the QA/QC/IA/IV testing to be carried out and discuss any special inspection items or hold points (based on special provisions and shop drawings) that apply to the work at hand. They will also discuss any deficiencies in the previous installed work and the necessary corrections. The Team's two week lookahead schedule for each element will provide the names of the QA/QC inspectors assigned to the specific planned work items; the QAM will review the two-week schedule and adjust staff to cover all operations. Our Team will assign staff that who are available to do the testing and inspections.

As part of the project communication with all stakeholders, the QAM will lead the weekly QA/QC/VDOT meeting to discuss any open items and upcoming work related to QA/QC. This meeting will discuss discrepancies; NCRs; MOT; safety; E&S; RFIs; and project documentation. The meeting will be broken out by element to ensure that the Team discusses each element's issues and open items. This discussion will help identify responsible parties to handle issues. The meeting minutes will reflect all project decisions and action item ownership.

The QA/QC inspectors will test the material at the required frequency and record the tests in the testing tabs incorporated in the VDOT Materials Division's materials book. The inspectors will ensure that QA is testing at a minimum rate of 10% of the actual QC testing in the field. We will keep the QA/QC inspection documentation (diaries; testing logs; materials book; project photos; NCR logs; deficiency logs; MOT work zone checklists; C-107s; up-to-date SWPPP) in a cloud-based electronic format so that VDOT review and audit it at any time (either at the project or remotely). We will follow the VDOT guidance for testing and inspection, as well as directions from the Team's approved PQMP, to provide VDOT with the information to perform the necessary audits and alleviate their need to expend additional effort on the construction administration of the project. The QA team will work with the CCI Team and their subcontractors to come up with a plan to properly identify and keep all materials, shop drawings, C-25, DBT Nos., materials certifications, and other relevant documentation separate for each project. The Team will be following a project specific Documentation Control Plan to ensure that we can successfully close out each project individually to the satisfaction of VDOT.

All deficiencies will be corrected and will not be part of the permanent work; these deficiencies will be immediately relayed (verbally to foreman/superintendent) and documented within 24 hours (via email and daily work report) to the Quality Control team (QA/QC/IA/CM) to address. The resolution of the deficient item will be witnessed and inspected by the QC/QA inspector and documented (daily work reports, before and after photos or testing as needed) as well as the IA team as needed.

We recognize that our Team must maintain the current traffic operations and movements to minimize disruptions and inconveniences to the travelling public. We will ensure that the MOT setups adhere to the approved TMP plans and that we establish the MOT setups in the field to alleviate any unexpected movements or delays. We will relay any observed issues to the contractor/design engineer/VDOT for further consultation to help mitigate any potential hazards or delays. CES Consulting has in-house expertise in traffic signal and ITS construction inspection; they have fully-qualified IMSA Signal Inspectors on staff to assist with any signal related issues.

The QAM is experienced and recognizes the differences between deficiencies and Non-Conforming Reports generated by the construction work in the field and has extensive experience in coming up with solutions to resolve these items expeditiously. All deficiencies will be corrected and will not be part of the permanent work;

these deficiencies will be immediately relayed (verbally to foreman/superintendent) and documented within 24 hours (via email and daily work report) to the Quality Control team (QA/QC/IA/CM) to address. The resolution of the deficient item will be witnessed and inspected by the QC/QA inspector and documented (daily work reports, before and after photos or testing as needed) as well as the IA team as needed.

Critical Design QA/QC Procedures for Unique Project Element – DDI Sight Distance

We have closely evaluated each of the six elements during the preliminary design development process. Our Team has identified providing adequate sight distance at the I-64/Exit 124 Diverging Diamond Interchange as the one of the most critical items to successfully deliver this contract.

The CCI Team has DDI experts with knowledge and experience in DDI design and implementation. Our DDI experts identified “sight distance” as the most critical design and construction-related project element. Designers tend to over-emphasize “wrong-way-movements” during their design development process, which causes critical sight distance issues. Sight distance stands out as the most critical element of other currently operating DDI designs. We can’t rely on standard SSD tables alone. Other DDIs suffered shortcomings because designs did not focus on sight distance safety needs (due to standard practice) and did not apply innovative designs that considered site specific driver habits and tendencies. Our design and construction approaches recognize the DDI’s twists and turns and prioritize sight distance. During each construction phase, we will check that sight distance; our review will include material placement, temporary barriers, and guardrails. We will add large sign structures with panels to the 3D model to verify that they do not impact proper sight distance throughout the project. We will implement the following quality control checks of sight distance during design and construction:

Wallace Montgomery (WM) is a recognized expert in developing DDI geometric and final and temporary traffic feature designs. WM is currently serving as a subject matter expert on the PennDOT I-83 Exit 4 and US 322/US 222 DDIs. WM is providing guidance and reviews to develop the DDI design and working closely with the roadway and TTC designers to ensure that the DDIs are constructible and achieves all the performance goals (turn movements, sight distances); and maximizes safety/operations.

Intersection Sight Distance (ISD): Facilitating better visibility between opposing traffic is essential to creating safer crossover movements at intersections. Since the intersections are signalized and specific DDI sight distance is not technically required, improved ISD reduces driver confusion and red-light infractions. It also minimizes the impacts of potential signal operation outages during events such as power failures.

Stopping Sight Distance (SSD): Improving SSD is a design priority for intersections and curves. Drivers approaching an intersection should be able to observe other vehicles, obstructions, or other dangers in time to stop safely. If a design moves traffic in an unfamiliar configuration, that design needs to consider the additional reaction time when calculating the appropriate SSD.

Decision Sight Distance (DSD): We will check that the DSD is met at all diverging and converging points.

Signal Head Sight Distance: We will ensure that signal heads will be clearly visible from a sufficient distance and not blocked by other roadway elements, such as poles, guardrails, signs, or other roadside elements. We will also ensure that signal heads are not clearly visible from incorrect travel lanes, which will reduce driver confusion.

Sign Placement Sight Distance: Sight distance will not be blocked by improper sign placement. We have determined that additional distance to the decision point is appropriate for this unconventional intersection. We will place signs in a location that is easily visible from an appropriate distance.

Construction and temporary elements should not obstruct proper sight distance. For example, whenever we must place a temporary jersey barrier is placed between the construction workers and travel lanes, we will maintain proper sight distance. The CCI Team’s Lead Design Firm, Wallace Montgomery, was a part of the design team for Virginia’s first DDI interchange under the I-64/Route 15 (Zion Crossroads) Interchange Improvement Design-

Build project in Louisa County. Similar to the Zion Crossroads Interchange, our Team will deliver a safe and high functioning alternative intersection at this important interchange.

Critical Construction QA/QC Procedures for Unique Project Element – US 250/Route 151 Roundabout Construction

We have reviewed the six elements and have determined that constructing the US Route 250/Route 151 roundabout is critical. The roundabout facilitates the proposed phasing of the box culvert construction on Stockton Creek while maintaining traffic on Route 151. The proposed design calls for placing a quad box-culvert for the Route 151 crossing of Stockton Creek, which will replace the existing 16'x4' box-culvert. We will adhere to the following construction sequencing approach and QA/QC items to ensure that our design maintains two lanes of traffic at all times during construction:

Stage 1: While maintaining traffic on existing US 250 and Route 151, we will construct a temporary road to the south of US 250 and east of Route 151. This corridor includes the eastern-most segments of the new quad box. We will establish temporary signalization.

Critical QA/QC Items for Stage 1

- 1) Establishing and verifying adequate construction clear zones for traveling public and construction personnel; maintaining traffic barrier service and barrels
- 2) Placing proper subgrade compaction/stabilization for new embankment fills for temporary roads
- 3) Ensuring quality placement of quad-box foundation
- 4) Installing and inspecting erosion and sediment control measures, particularly due to the Route 250 temporary road's proximity to Stockton Creek
- 5) Verifying adequate sight distance for temporary signalization

Stage 2, 3, and 4: Once we have set the eastern segment of the quad box and constructed the US 250/ Route 151 temporary roads, we will switch traffic over to the temporary roads. We will then construct the new US 250 approaches, the western segment of the quad-box culvert, and the associated western section of Route 151. We will construct an ultimate northern portion of roundabout, and then construct the southern portion of roundabout via an off-peak hour single lane closure or minimal full closure.

Critical QA/QC Items for Stage 2, 3, and 4

- 1) Establishing and verifying adequate construction clear zones for traveling public and construction personnel; maintaining traffic barrier service and barrels
- 2) Ensuring quality placement of quad-box foundation
- 3) Verifying smooth transition grades between existing roadway and temporary roadways
- 4) Ensuring proper subgrade compaction/stabilization for new embankment fills for permanent roads
- 5) Providing accurate construction layout for new/ultimate edges of pavement, roundabout geometrics, and finished grading

Stage 5: After we complete the box culvert, we will add new Route 151 and Route 250 roadway segments, switch traffic from temporary road onto new pavements, and remove temporary roadways. We will remove temporary signalization; construct the center of the roundabout; perform landscaping; and finalize approach islands.

Critical QA/QC Items for Stage 5

- 1) Establishing and verifying adequate construction clear zones for traveling public and construction personnel; maintaining traffic barrier service and barrels
- 2) Verifying the final grading and maintain proper erosion and sediment controls
- 3) Ensuring proper sign spacing and placement to alert drivers of new traffic operation

Before opening the new traffic operation at the proposed roundabout, the CCI Team will meet with VDOT personnel onsite to ensure that all work items are complete and ready for safe implementation. Once all the stakeholders have agreed on it and signed off on the opening, the CCI Team will provide any necessary information to VDOT Public Communications.

4.5 Construction of the Project

4.5.1 SEQUENCE OF CONSTRUCTION

The **CCI Team** approach to sequencing construction is focused on VDOT's objectives to expedite construction of the road improvements and anticipate/mitigate potential schedule delays. Our approach and sequence of construction supports these objectives by:

- ✓ Expediting Final Completion to 02/03/2023 – nearly two months ahead of the required date
- ✓ Developing designs for each project element concurrently to create flexibility to allow for the contractor to pull design from shelf and begin construction at any of the elements at any time
- ✓ Combining work zones to mobilize resources and avoid traffic displacement to the travelling public
- ✓ Accounting for cold weather with no permanent paving from December 16th – March 15th

Construction operations are organized logically and systematically into five project areas for the six elements, each with established stages of work. Each area is specifically established to achieve, without delay, our Final Completion Date of 02/03/2023. Dividing the project into strategically-defined areas allows the CCI Team to effectively coordinate our construction elements and efficiently manage the resources required for environmental permitting; ROW; stakeholder coordination; safety; and utility relocations.

As identified in the SOQ, maintaining traffic safely through our work zones is essential and critical to project schedules and stakeholders. We are committed to open communication with all stakeholders and will provide current project information through websites, partnering meetings, and advance warning signs. We will coordinate with VDOT and stakeholders to schedule traffic shifts and/or closures. There will be advance notice with detailed information regarding any impacts to routes, dates, and times. We will discuss schedule constraints with stakeholders to minimize impacts.

Management and Sequencing of Resources for Multiple Element Sites

Managing each project element will require sufficient resources that allow for concurrent construction in multiple locations. We anticipate that construction will be ongoing on at least three locations from the beginning of site mobilization until completion of the project.

Steve Ordnung, the DBPM will be the sole point of contact for all project elements and will manage all disciplines of the design build team. During the construction phase, the Construction Manager (Bill Richards, PE) will report directly to the DBPM and be responsible for managing construction for the project elements. Each individual project element will be assigned a Project Element Superintendent (PES) who will report directly to the Construction Manager and will be responsible for implementing the construction plan that addresses safety, operations, staging and storage for that given Element. The PES will be supported by trade-designated Foremen to perform MOT; ESC; grading/earthwork; paving; guardrail; signs and signals; structural concrete; and storm drainage. The PES will also be responsible for equipment requisitions, material deliveries, and subcontractor coordination. The PES will coordinate his work with input from the CCI Team Environmental, Safety, Utility, QA/QC, Public Relations, and the DBPM administrative staff. The Trade Foremen will be supported by all necessary labor and equipment required for the item of work associated with their discipline. The individual's crews associated with each Trade Foreman will be shared across project Elements as needed within the sequence of construction. CCI currently employs over 40 Trade Foreman and crews of every discipline, with over 200 tradesmen. In addition, CCI maintains a fleet of equipment valued in excess of \$20 million that will support multiple concurrent operations daily.

Approach to Construction Phasing

The CCI Team sees the six elements of the project as really five separate standalone work areas. We believe the I-64 Exit 118 and US 29/Fontaine Avenue ramp elements would best be constructed as a combined work area and we anticipate completing work at this location prior to beginning work at the remaining four locations. With UVA entrance nearby, we will coordinate their events with MOT. No right-of-way and utility conflicts are anticipated, which gives our Team the flexibility to start construction to avoid UVA events. The work at I-64 Exit 118 and US 29/Fontaine Avenue does not require any right-of-way acquisition or significant utility

relocation. We anticipate that the Rio Mills Road Extension will be the next Element, to be followed shortly thereafter by the Exit 124 Interchange Improvements. While Rio Mills Extension has a right-of-way acquisition, the property will be donated by the developer to facilitate an accelerated acquisition timeline. Exit 124 Interchange Improvements don't require any right-of-way acquisition; however, substantial utility relocation is required. The remaining two project elements (Route 250/151 and 649/20 Roundabouts) will require acquiring right-of-way and relocating utilities. Accordingly, the two roundabout project elements will be the last locations constructed prior to overall final project completion.

The benefits of constructing I-64 Exit 118 and US 29/Fontaine Avenue ramps concurrently are:

- ▶▶ *Continuous management of construction*
- ▶▶ *Share work zone operations*
- ▶▶ *Traveling public has a single work zone to drive through*

This sequencing of the work ensures that the CCI Team will meet the final completion of the project by the date included in its Letter of Submittal. CCI's decision to team with a Joint Venture of two design firms allows for design plans to be completed, submitted, and approved for construction in an expeditious manner that supports the intended sequence of construction. For further detail related to construction sequencing, please refer to our CPM schedule.

Expediting Project Completion

CCI will assign multiple work crews to cover several elements simultaneously to deliver all the elements before the March 2023 deadline. CCI can self-perform almost all the work activities needed for completing the elements including electrical (signals and lighting) and final signing. CCI has 35 contracts ongoing with over 40 available crews, which allows us to mobilize and expedite work as needed, mitigating delays due to subcontractor scheduling and resource constraints. This flexibility ensures that we will be able to complete elements on schedule and within budget.

Anticipating and Mitigating Potential Delays

Critical elements for the schedule milestones include reducing schedule risks by optimizing the alignment; limiting temporary measures; minimizing right-of-way acquisition; incorporating geotechnical elements into the schedule; and avoiding utility conflicts. These elements allow us to get an early start on construction activities. Once construction has commenced, optimization of the alignment allows opportunity for schedule gains due to our ability to work simultaneously at multiple locations. An earlier start, coupled with a large work zone, increases productivity, compresses the schedule and reduces the overall project duration.

Our design minimizes the amount of temporary pavement for the VA 20/649 and US 250/VA 151 roundabout projects.

Sequence of Construction

The project elements will each require specific scope of work and unique sequences. However, each project element will experience a similar general construction approach:

- ▶▶ Initial site mobilization
- ▶▶ Confirmation of utility markings
- ▶▶ Establishment of survey controls
- ▶▶ Establishment of temporary MOT
- ▶▶ Site clearing
- ▶▶ Relocation of utilities
- ▶▶ Installation of ESC measures
- ▶▶ Select demolition

- ▶▶ Installation of storm drain pipe and structures in conjunction with rough grading to control stormwater
- ▶▶ Fine grade of subgrade and placement of aggregate base material
- ▶▶ Installation of incidental concrete and/or asphalt depending upon sequencing requirements
- ▶▶ Installation of permanent signs and signals
- ▶▶ Roadside Development – topsoil, seed, fertilizer, and amendments
- ▶▶ Placement of surface asphalt and permanent pavement markings
- ▶▶ Remove all construction signs, temporary MOT and ESC measures

111727-I-64 Exit 118 Partial Cloverleaf Modification

Preliminary: Establish erosion and sediment control measures and construction signing.

Stage 1: Construct new Ramp A location and adjacent stormwater management (SWM) basin and piping while maintaining existing capacity using full-time shoulder closures.

Stage 2: Initiate construction of the new dual left turn lanes in Route 29 median while maintaining existing capacity using full-time shoulder closures. Construct new signal and signing on Route 29 using shoulder and off-peak and lane closures.

Stage 3: Use off-peak/night-time ramp detours to construct new pavement/repaving efforts within confines of existing Ramp A. Place final signing, striping, and landscaping by using shoulder and off-peak lane closures.

Based on the proposal schedule in Section 4.6, the project completion is scheduled for **03/25/2021**.

111813-US 29/Fontaine Avenue Ramp

Preliminary: Establish erosion and sediment control measures and construction signing.

Stage 1: Perform grading and drainage work and full depth asphalt pavement construction in the gore area. Simultaneously complete construction/modification of SWM basin at bottom of Ramp A while maintaining existing capacity using full-time shoulder closures.

Stage 2: Install temporary pavement markings, shift traffic to the west and install temporary barrier service. Perform grading work and full depth asphalt placement on east side of Ramp A while maintaining existing capacity using full-time shoulder closures. Use off-peak/night-time ramp detours to construct new pavement/repaving efforts within confines of existing Ramp A. Install permanent guardrail and remove temporary barrier service.

Stage 3: Place final signing, mill and overlay of asphalt, place permanent pavement markings, and landscaping by using lane shifts and/or night-time ramp detours.

Based on the proposal schedule in Section 4.6, the project completion is scheduled for **03/31/2021**.

109397-Rio Mills Road

All work on this project element will be completed within a single stage:

- ▶▶ Establish erosion and sediment control measures and construction signing.
- ▶▶ Build off-alignment ultimate roadway, drainage and roadside features while maintaining full capacity along existing Rio Mills Road and Berkmar Drive.
- ▶▶ Build tie-ins for the Rio Mills Road connection and driveway at the Rockydale Charlottesville Quarry entrance and intersection at Berkmar Drive by using shoulder closures and/or off-peak single lane closure flagging operations.

Based on the proposal schedule in Section 4.6, the project completion is scheduled for **12/15/2021**.

111814-I-64 Exit 124 Diverging Diamond Interchange

Stage 1: Once we have relocated existing utilities, we will perform the work to obtain approval of the TTC, erosion and sediment control, and roadway plans and permits:

- ▶▶ Installing erosion and sediment controls
- ▶▶ Performing clearing and grubbing
- ▶▶ Rough grading
- ▶▶ Installing drainage infrastructure
- ▶▶ Removing the center median of US Route 250 to immediately begin working on the lighting and traffic signals

Medians: TTC will be provided with barrels for the roadway construction areas along the medians. Each area will be excavated and backfilled the same day to avoid drop offs. This stage includes removing the existing center median and repaving the center to maintain traffic during future stages. Two 11' minimum lanes will be maintained on Route 250 as feasible. Temporary off-peak lane closures will be utilized as necessary for safety during the median removal, deliveries, and access. Special care will be given to sight distance through the work zones, including temporary storage, staging areas, guardrails, and temporary traffic barriers.

All work will be completed while maintaining existing traffic configurations with full-time shoulder closures and off-peak lane closures.

Stage 2: Construction of Ramp B, and Ramp B Spur; Eastbound widening west of bridges and Pier Protection

- ▶▶ Installing erosion and sediment controls
- ▶▶ Performing clearing and grubbing
- ▶▶ Rough grading
- ▶▶ Installing drainage infrastructure
- ▶▶ Adding aggregate base, incidental concrete and base and intermediate asphalt. Incidental concrete will not be placed on Spur islands and Splitter islands to allow for uninterrupted two-lane traffic on Route 250.

We will maintain existing traffic configurations with traffic shifted inside with full-time shoulder closures and off-peak lane closures.

Stage 3: Construction of Ramp C, Ramp C Spur; Eastbound widening east of bridges

- ▶▶ Installing erosion and sediment controls
- ▶▶ Performing clearing and grubbing
- ▶▶ Rough grading
- ▶▶ Installing drainage infrastructure
- ▶▶ Adding aggregate base, incidental concrete and base and intermediate asphalt. Incidental concrete will not be placed on Spur islands and Splitter islands to allow for uninterrupted two-lane traffic on Route 250.

We will maintain existing traffic configurations with traffic shifted inside with full-time shoulder closures and off-peak lane closures.

Stage 4: Construction of Ramp A, Ramp A Spur, Westbound widening west of bridges and Pier Protection

- ▶▶ Installing erosion and sediment controls
- ▶▶ Performing clearing and grubbing
- ▶▶ Rough grading

- ▶▶ Installing drainage infrastructure
- ▶▶ Adding aggregate base, incidental concrete and base and intermediate asphalt. Incidental concrete will not be placed on Spur islands and Splitter islands to allow for uninterrupted two-lane traffic on Route 250.

We will maintain existing traffic configurations with traffic shifted inside with full-time shoulder closures and off-peak lane closures.

Stage 5: Construction of Ramp D and Ramp D Spur; reconstruct entrance to Route 1107 and Westbound widening east of bridges

- ▶▶ Installing erosion and sediment controls
- ▶▶ Performing clearing and grubbing
- ▶▶ Rough grading
- ▶▶ Installing drainage infrastructure
- ▶▶ Adding aggregate base, incidental concrete and base and intermediate asphalt. Incidental concrete will not be placed on Spur islands and Splitter islands to allow for uninterrupted two-lane traffic on Route 250.

Stage 6: Completing new signal installation and shift traffic to new DDI pattern

- ▶▶ Eradicating existing pavement markings
- ▶▶ Installing temporary pavement markings for new DDI pattern
- ▶▶ Opening all roadways, ramps and spurs in permanent configuration
- ▶▶ Placing incidental concrete for islands on intermediate asphalt
- ▶▶ Infilling all island areas

We will maintain the new DDI traffic configurations with full-time shoulder closures and off-peak lane closures.

Switch Over: Switching the traffic pattern into the final DDI configuration will require detouring traffic off of Route 250 within the interchange (closed area between the ramps). *Table 4.5.1.1* depicts guidelines for our DDI Switch Over. We will plan the Switch Over when traffic is at the lowest volumes, likely night-time during a non-holiday weekend. As shown in *Figure 4.5.1.1*, we will detour traffic approaching the interchange onto the outer ramps (Ramps B and D), to the adjacent interchanges at CO 616 to the east and east and VA 20 to the west, turn around using their ramp system, and back to Route 250.

Our layout and geometric design does not impact the existing signals, where the new essential far-side traffic signal poles will be constructed outside the existing roadway to simplify MOT.

Once the pavement markings and signals are set for the DDI configuration, one lane of traffic in each direction is placed into the DDI configuration. We use extreme precautions and quality checks monitor the accuracy of DDI movements before fully using the new pattern. During the Switch Over, we will perform detailed quality checklists to check sight distance elements; ensure that signals are functioning properly; and determine that signs are correctly placed. After the roadway is in its final DDI configuration, existing excess pavement will be removed, and median islands and signals will be completed.

Table 4.5.1.1 – DDI Switch Over Guidelines			
Switch Over	Before	During	After
Striping	<ol style="list-style-type: none"> 1. Remove existing striping that conflicts with DDI 2. Add DDI striping 	<ol style="list-style-type: none"> 1. Use drums to guide drivers in one lane for movements 	<ol style="list-style-type: none"> 1. Stripe crossover and lane markings 2. Open traffic to multi-lanes
Signing	<ol style="list-style-type: none"> 1. Have DDI signs covered in place 2. Place notices for new traffic pattern 	<ol style="list-style-type: none"> 1. Cover/remove existing signs 2. Uncover DDI signs 	<ol style="list-style-type: none"> Alert drivers of new traffic pattern
Signals	<ol style="list-style-type: none"> Have signals covered in place 	<ol style="list-style-type: none"> 1. Switch power from ex. to DDI signals 2. Have portable stop and yield signs as an extra precaution 3. Remove existing signal heads 	<ol style="list-style-type: none"> Remove existing arm spans/poles
Pavement	<ol style="list-style-type: none"> Have DDI pavement ready 	N/A	<ol style="list-style-type: none"> Add curb to replace drums

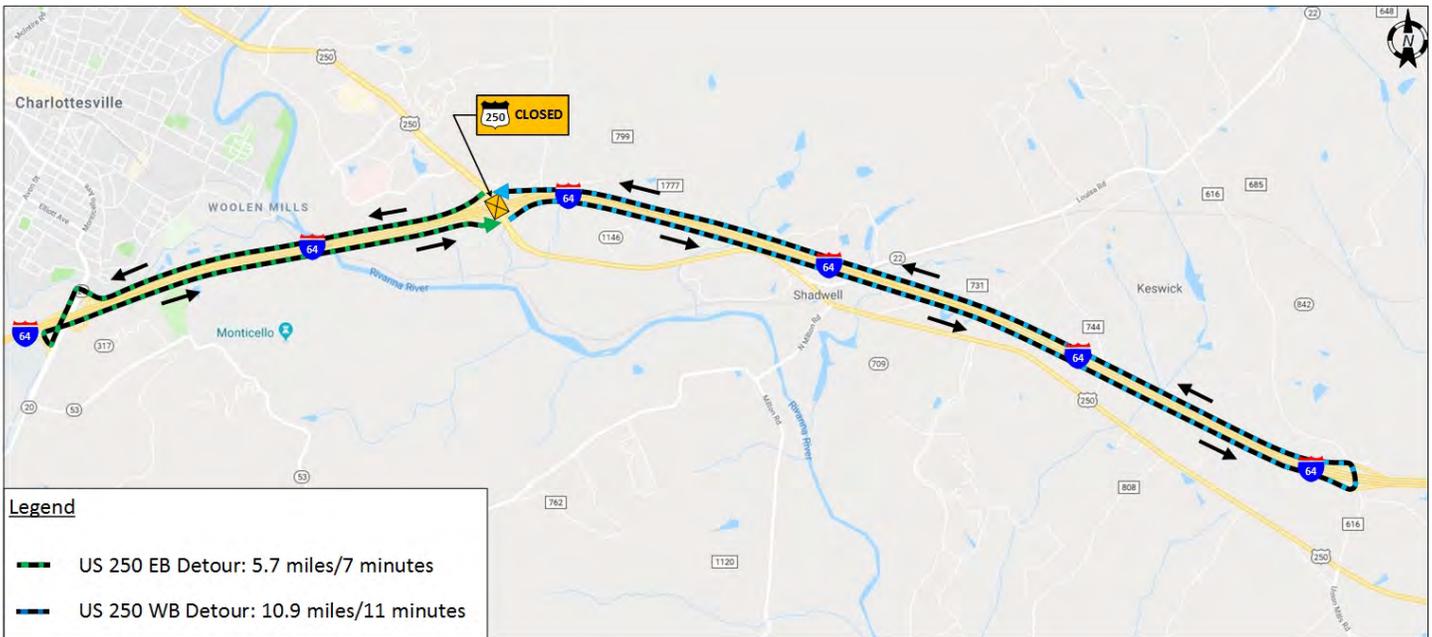


Figure 4.5.1.1: DDI Switch Over Detour Map

Stage 7: We will perform milling, build-up, and overlay with permanent striping. We will install final center medians along EB and WB Route 250 with drums and temporary lane closures. We will also perform the final surface and striping of mainline Route 250 and the spur ramps to minimize motorist disruption.

MOT concept plans are provided at the end of this section. Based on the proposal schedule in Section 4.6, the project completion is scheduled for **07/08/2022**.

111733-VA 20/649 Roundabout

Stage 1: Preliminary Construction

- ▶▶ Maintain traffic on existing Route 20, 649, and 1049 using off-peak single lane closure flagging operations as needed
- ▶▶ Establish erosion and sediment control measures
- ▶▶ Construction signing
- ▶▶ Clearing and grubbing
- ▶▶ Complete storm drain installation from the outfall to the existing edge of pavement.
- ▶▶ Construct SWM basins

Stage 2: Construction of the western portion of roundabout

- ▶▶ Maintain traffic on existing Route 20, 649, and 1049 using off-peak single lane closure flagging operations as needed
- ▶▶ Initiate grading work for the new roundabout on the west side Route 20
- ▶▶ Place fill as required to meet design elevations
- ▶▶ Place aggregate base, incidental concrete, base and intermediate asphalt
- ▶▶ Temporary striping

Stage 3: Construction of the eastern portion of roundabout

- ▶▶ Shift traffic to newly constructed west side of roundabout
- ▶▶ Place the new storm drain crossings under the existing roadways.
- ▶▶ Initiate grading work for the new roundabout on the east side Route 20 and Riggory Ridge Road
- ▶▶ Cut/fill as required to meet design elevations
- ▶▶ Place aggregate base, incidental concrete, base and intermediate asphalt
- ▶▶ Temporary striping

Stage 4: Roundabout Tie In

- ▶▶ Shift MOT to allow for traffic at roundabout perimeter
- ▶▶ Complete final tie ins to four legs of roundabout.
- ▶▶ Complete west portion of raised median
- ▶▶ Obscure existing roadways

Stage 5: Install the final surface, signing, pavement markings, landscaping, and roadside features by using off-peak single lane closure flagging operations.

MOT concept plans are provided at the end of this section (see *Figure 4.5.1.4*). Based on the proposal schedule in Section 4.6, the project completion is scheduled for **06/20/2022**.

111730-US 250/VA 151 Roundabout

Stage 1: Establish erosion and sediment control measures; clear and grub; install construction signing. Maintain existing capacity, alignments, and intersection configuration and close shoulders by using temporary traffic barrier. Build temporary road, off-alignment northbound (east) side of VA 151 and eastbound (south) side of US Route 250 and adjust the existing span-wire signal (or remove existing and install temporary signal) to accommodate future stages of construction. Build temporary eastern portion of the culvert along VA 151.

Stage 2: Move traffic onto the temporary alignments, controlled by the realigned temporary span-wire signal. Build the ultimate approach (includes splitter island) and western portion of the culvert along VA 151.

Stage 3: Install temporary barrier service along north side of Route 250. Install wire basket retaining wall along existing north side of Route 250 to allow for placement of fill to meet design elevations. Maintain traffic along the temporary Route 250 alignments by utilizing temporary span signal. Build the ultimate northern portion of the roundabout along Route 250 (includes splitter islands and northern portion of center circle).

Stage 4: Continue to maintain traffic along the temporary alignments and signal. Build the ultimate southern portion of the roundabout along Route 250 and VA 151 in increments using off-peak single lane closure flagging operations and a temporary detour of VA 151 to construct the ultimate base pavement grade. Install roundabout traffic control devices.

Stage 5: Move traffic onto the final roundabout alignment and configuration and remove the temporary signal. Remove the temporary roadway and complete the southern portion of the center circle and remaining curb/gutter and guardrail on eastern side of Route 151. Install the final surface; signing; pavement markings; landscaping; and roadside features by using off-peak single lane closure flagging operations.

MOT concept plans are provided at the end of this section. Based on the proposal schedule in Section 4.6, the project completion is scheduled for **01/11/2023**.

Safety and Operations

Vehicular Traffic – The Team understands that drivers, residents, and the community must be well informed of impending traffic changes, and that fewer temporary traffic changes correlates to decreased crash rates. We understand that under the peak times of current traffic conditions, drivers use the local roadways through Charlottesville to avoid the long queues; this creates a nuisance to residents and business owners. Our temporary traffic control plan reduces delays through the work area. The CCI Team will coordinate traffic patterns with VDOT well in advance of the change. Once traffic patterns are in place, we will coordinate with VDOT NWRO to adjust signal timing and warning signage to keep traffic moving safely. At times during each construction phase, there will be need for temporary use of "slow roll" traffic control or off-peak lane closures, these instances will be scheduled well in advance, coordinated with VDOT, and notice will be provided on PCMS signs in advance of the work zone prior to implementation.

Pedestrian Traffic - There are very few pedestrians using the project locations today; however, once the shared use path is complete, it is likely that residents will use it. The CCI Team will use barricades to keep pedestrians and bicyclists safely out of active work zones. There is also the potential for the shared use path to lack a "logical terminus" on its northern end, as the trail construction in the Arrington development is not scheduled to be underway until after the interchange work is complete. We will direct trail users to utilize the shoulder of US 15/17/29 Business on the northern end of the project until this work can be completed.

Safety Commitment – The CCI Team is committed to create an existence absent of incident and injury. Our Team will treat safety as an inseparable element of our approach to constructing the project. During construction, daily morning and end-of-shift huddles provide a forum to address any safety concerns. We will hold safety meetings with each subcontractor to orient them to the site, and to review project and operation-specific safety hazards.

Staging and Storage Areas

Providing project staging and storage areas near the work zones keeps project costs down, improves safety, and reduces traffic impacts from work vehicles hauling materials to/from off-site locations. We have identified potential staging and storage areas within the project limits. Following initial design efforts and work area assessments, we will select and secure a preferred site in advance of construction.

Figure 4.5.1.2 – UPC 111814 – I-64 Exit 24 Diverging Diamond Interchange MOT Staging

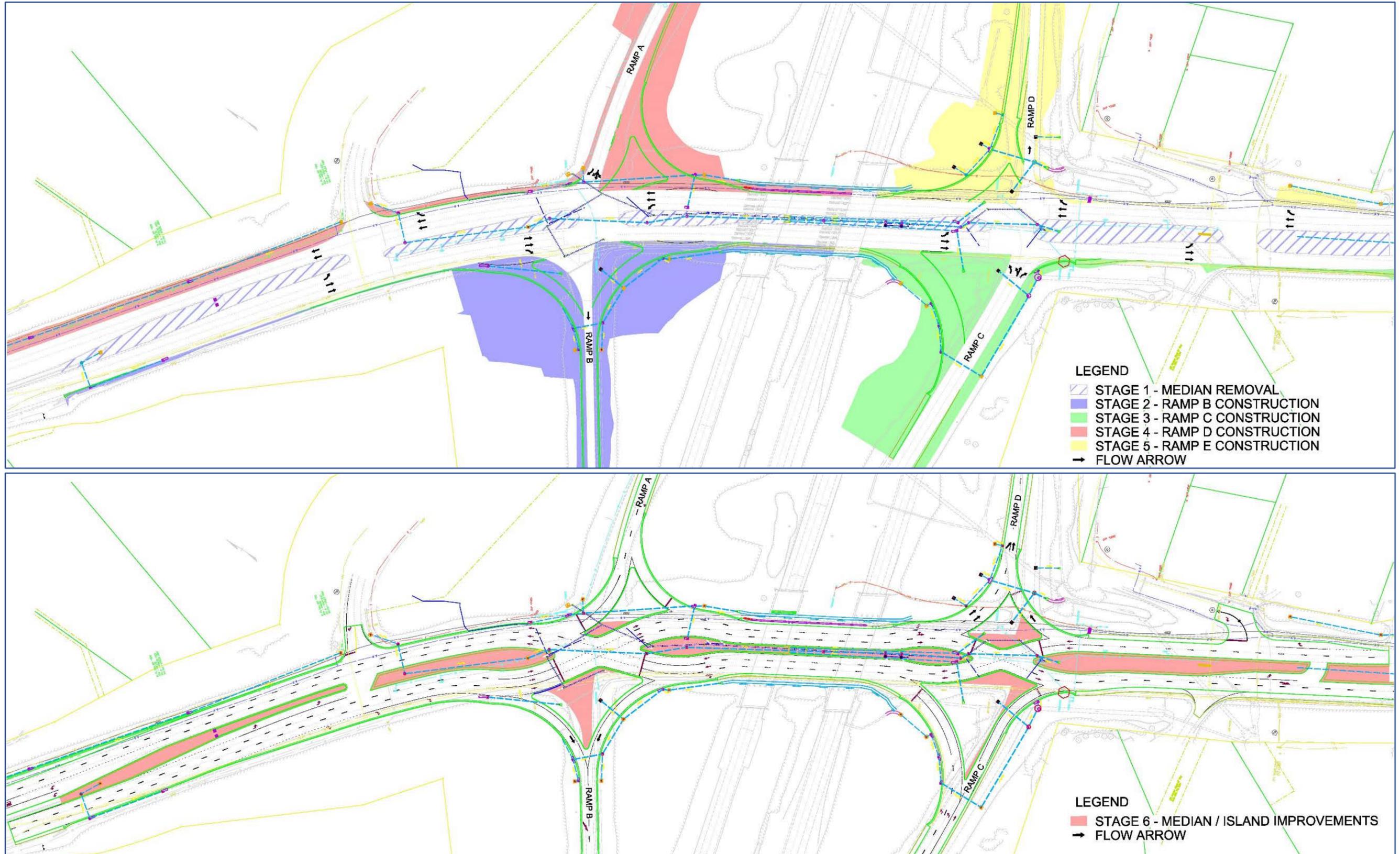


Figure 4.5.1.3 – UPC 111730 – US 250 at VA 151 Roundabout MOT Staging

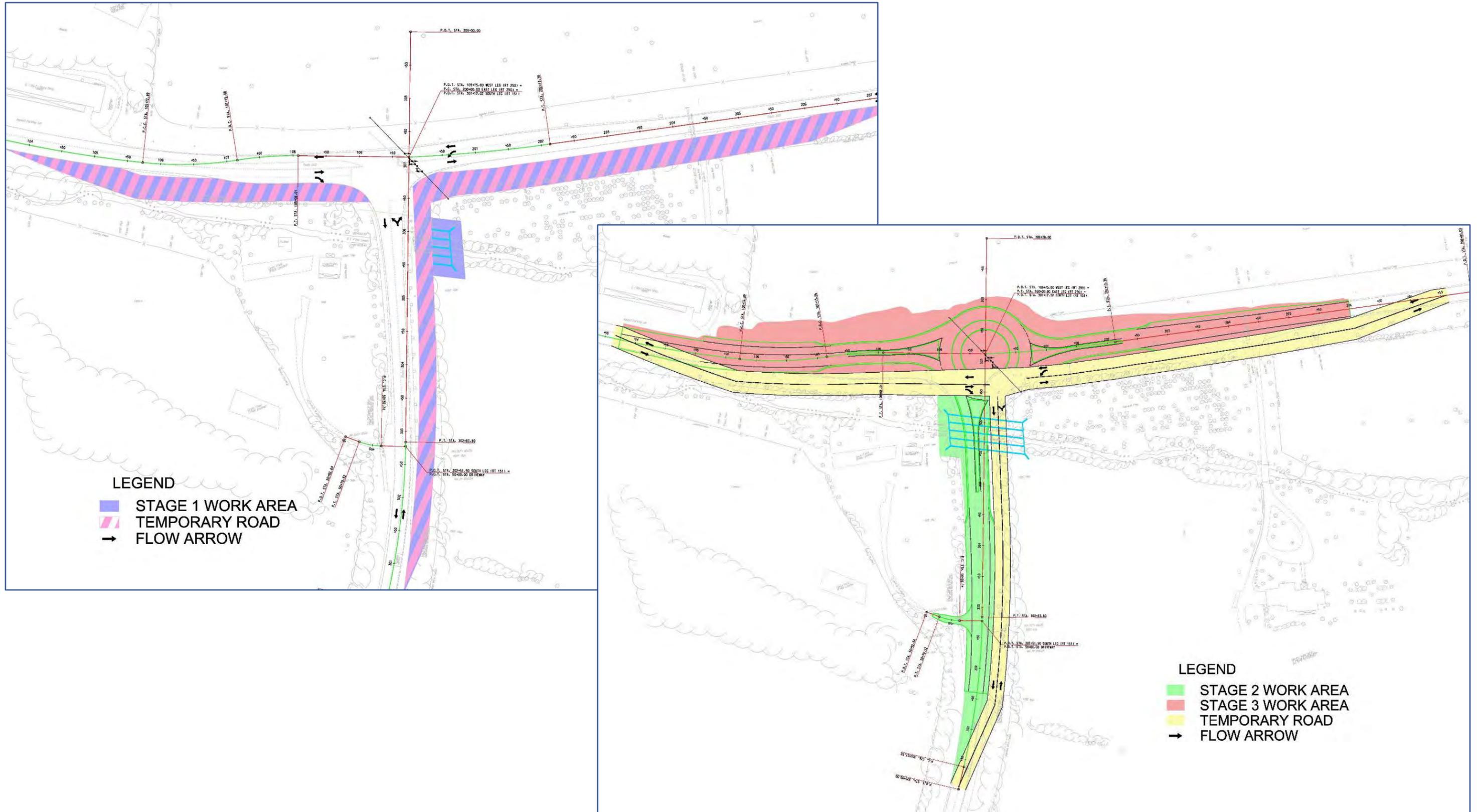


Figure 4.5.1.4 – UPC 111733 – VA 20/649 Roundabout MOT Staging



4.5.2 TRANSPORTATION MANAGEMENT PLAN

The **CCI Team** recommends that this effort warrants a two tier TMP: element level TMPs scalable to the disruption caused by individual elements; and (2) an umbrella TMP that coordinates / optimizes resources for all the elements within the bundle. Each project element will possess a TMP that links the temporary traffic control (TTC) plans; traffic operations and incident management; sequence of construction (SOC); and public outreach for the life of each project element. The MOT sections describe each element's varying amount of traffic impacts and our proposed strategy to maximize safety and minimize delays to travelers within the work zones.

The bundle TMP will track the planning and implementation of the individual TMPs and monitor several elements. The bundle TMP will consolidate the program's activities, closures, and potential risks into a weekly summary for VDOT; optimize resources such as public outreach and MOT devices / equipment; and review programmatically across the plans to maximize safety in the work zones and minimize delays to people traveling to, from, and through the program's cumulative study area. The bundle TMP will also monitor special events, seasonal peak demands unique to this area, and potential conflicts in parallel MOT plans.

Communication with residents, seasonal and special event visitors, and commuters will occur on three levels:

- 1 Program/project level communication to educate the communities on the purpose of the construction and value of the improvements
- 2 Proactive, advance notice of large-scale/long-term closures
- 3 Daily, routine communication regarding all small- and large-scale transportation network closures and access restrictions via VDOT's resources, earned media, and strategically located VMSs

The TMP program will conduct routine communication between the District; NWRO; construction manager; MOT managers; and VDOT/CCI public outreach staff.

CCI shares the District's passion for safety. CCI is committed to travelers and workers alike—so they get home safely to their families.

Maintenance of Traffic

The CCI Team has developed a MOT plan for each project element that consists of multiple construction stages as described in the Sequence of Construction in Section 4.5. Our plan will minimize disruptions to the traveling public and place traffic on permanent roadway early while minimizing temporary lane closures. We will use the following methods:

- ▶▶ Providing clear and safe access for traffic through the project
- ▶▶ Minimize temporary lane closures as allowed by RFP
- ▶▶ Coordinating lane closures and traffic shifts with adjacent construction projects
- ▶▶ Completing the project ahead of the schedule required by the RFP
- ▶▶ Providing detailed work plans to all construction crews, to include subcontractors, for every step and construction phase

MOT inspections will occur seven days a week and will be documented in the project files. Team members will be on-call 24 hours a day, seven days a week to assist with any traffic-related issues along the corridor.

- ▶▶ All new MOT patterns will be videotaped immediately after installation and verified for conformity and operational acceptance
- ▶▶ All MOT will be videotaped at the end of the work week for documentation

Our recommended traffic management strategy for this project centers around minimizing traffic restrictions by maximizing maintaining existing capacity. Our TMP will describe and explain the assessment of the construction impacts, an assessment of the shoulder(s)/lane closure strategy, and the required collaboration needed to ensure this strategy is successful and acceptable to the public. It will describe the proposed shoulder(s)/lane closures and estimated impacts; special signing and the Temporary Traffic Control (TTC) layout, transportation operations strategies, incident management, and public communication strategies.

The key to ensuring more than adequate MOT for each element is to develop a detailed TMP coordinated closely with traffic operations, incident management, and public relations. We will identify "red flags" or constraints for developing the TTC plans and analyze several alternative staging plans to determine which plan minimizes traffic impacts while facilitating safe and efficient completion of the work. The CCI Team will develop a detailed TTC plan and SOC for each stage of work on each element with a focus on the safe passage of vehicular, pedestrian, and bicycle traffic while maintaining access for residents and businesses. For the DDI and roundabout elements, where the final configuration requires lower speeds, we will complete work zone speed limit requests. We will prepare barrier analyses for each stage of work to ensure that workers are protected to the maximum extent practicable. Both the WZSL and barrier analyses will be prepared under the supervision of and sealed by John Rectanus, a Virginia licensed PE and PTOE. The WZSL and barrier analysis for the Zion Crossroads DDI was completed under John’s supervision.

We will perform operational analyses (VISSIM, Synchro/SimTraffic, HCS) for each stage of work where existing capacity is not maintained to ensure traffic flows are at an acceptable LOS during peak hours, on weekends, and special events. Signal coordination with the NWRO TOC will be an important part of the TTC plan to ensure that existing and proposed traffic signals within, and adjacent to, the project limits are properly timed and could be adjusted "on the fly" in the event of incidents. SOC phasing will be structured so that traffic pattern changes will be minimized during construction, with a change to the final configuration as quickly as possible. We will provide adequate lighting for night work to maintain a safe working environment for the CCI Team and our subcontractors, and to assist motorists as they navigate through the work zone. Drainage systems will be shown on TTC plans and evaluated to ensure there is no standing water in travel lanes, and that runoff during each phase of construction is adequately captured and conveyed. We will develop detailed incident management plans and maintain signage and materials on-site for each element that could be implemented quickly to minimize impacts to travelers and provide space for emergency services to work.

The I-64 Exit 124 project poses a unique challenge; changing the interchange from the diamond to the DDI crossover configuration. We will develop a step-by-step process for completing this shift as quickly as possible. On the Zion Crossroads project, WM identified a method that incorporated a temporary detour as well as one that used a pilot car for the work. Ultimately the temporary detour was selected, as it required half the time as the pilot car, caused fewer overall delays, and allowed work to commence out-of-traffic.

Table 4.5.2.1 – Work Zone Element Summary

Work Zone Elements	UPC 111727 I-64 Exit 118	UPC 111813 US 29/ Fontaine Ave Ramp	UPC 109397 Rio Mills Rd	UPC 111814 I-64 Exit 124 DDI	UPC 111733 VA 20/ 649 Roundabout	UPC 111730 US 250/ VA 151 Roundabout
Lane/Ramp Closures	Yes	Yes	Yes	Yes	Yes	Yes
Temporary Detours	No	No	No	No	Yes	Possible
Time of Day Restrictions	Yes	Yes	Yes	Yes	Yes	Yes
Flagging Operations	No	No	Yes	No	Yes	Yes
Minimum Lane Widths	Yes	Yes	Yes	Yes	Yes	Yes
Work Zone Speed Reductions	No	No	No	Possible	Possible	Possible
Construction Entrances	Yes	Yes	Yes	Yes	Yes	Yes

Temporary lane and ramp closures, including flagging operations, will be limited to off-peak hours during week days (i.e. Monday thru Friday) and/or night-time period. Detours will be limited to less than 24 hours and will include advanced signing and well-marked. All closures will be planned months in advance and will be

communicated to the public well in advance. Detour routes will be addressed in a contingency plan should any unforeseen conditions present themselves within the work zone. We will use flagmen when any construction traffic or adjacent/overhead work could pose a potential safety hazard on the project and to the traveling public.

The CCI Team will adhere to the RFP requirements for the time of day restrictions for allowable lane and short-term shoulder closure times. This will be included in the Public Communication and Incident Management Plan, along with updates to VDOT’s Regional Traffic Operations Center. The CCI Team plans to conform to the RFP and will strive to provide 12’ wide travel lanes while also maintaining a minimum of 11’ travel lanes. We will maintain a 2’ minimum offset to the barrier throughout each project.

We will minimize the need to request any work zone speed reductions. We will design all temporary lane shifts and merges for the posted speed limit and all temporary geometry and shifts will meet the standards for the full posted speed limit. We will incorporate temporary pavement widening as needed to accommodate the temporary geometry/shifts. Our temporary pavement designs for roadway mainline or ramp pavements will include a minimum six inches of asphalt concrete and will meet a design life for the proposed length of MOT staging of its required use or a minimum of six months minimum.

The CCI Team will maintain access to the existing locations during construction. The construction ingress and egress points are strategically placed within the project limits prioritizing safety and operations. These access points will include advance warning notification and acceleration/deceleration lanes outside of the through lanes to reduce construction traffic’s impact on the traveling public.

Major Stakeholders

The CCI Team will use a context-sensitive approach to engage the major stakeholders from design through project completion. Our stakeholder outreach/public relations during the design, right-of-way acquisition, and construction will in accordance with the requirements outlined in RFP Part 2, Section 2.11. This project includes the following stakeholders:

- UVA
- UVA Foundation
- UVA Research Park
- Martha Jefferson Hospital
- Peter Jefferson Office Park
- City Neighborhood Assoc.
- JAUNT/Paratransit
- Nearby Businesses/Residents
- Nelson Chamber of Commerce
- City of Charlottesville
- Wintergreen Resort/Destination
- Charlottesville Garden Club
- Luck Stone Quarry
- Regional Commuters
- Emergency Responders
- Albemarle County Staff
- CA-MPO
- Charlottesville Area Transit (CAT)
- Albemarle Historic Preservation
- Tourism Sites (wineries/breweries)
- Utility Providers
- FHWA

Stakeholder Impacts and Coordination

Table 4.5.2 illustrates how stakeholders will be impacted during each stage of our Sequence of Construction along with our mitigation strategy for each.

Table 4.5.2 – Mitigation Strategy for Stakeholder Impacts		
Project Element	Major Stakeholders Impacted	Impact Mitigation Strategy
UPC 111727 I-64 Exit 118	<ul style="list-style-type: none"> • Commuters • EMS Providers 	<ul style="list-style-type: none"> • We will coordinate resources with VDOT’s communications staff to reach out to the traveling public through VDOT message boards and other portals such as 511, news releases via web, email, and news media; and strategically locate roadside PCMS to alert commuters of delays. • The CCI Team will meet directly with EMS providers to coordinate access during construction. We will periodically meet with them to discuss upcoming changes to traffic patterns throughout the construction period.

<p>UPC 111813 US 29/Fontaine Avenue Ramp</p>	<ul style="list-style-type: none"> • UVA Research Park • Jefferson Park Ave neighborhoods • EMS Providers • Recreational Users of the Reservoir and Trails • Commuters 	<ul style="list-style-type: none"> • The CCI Team will coordinate directly with UVA and provide news releases directly to UVA Research Park representatives. • We will coordinate with City staff – neighborhood development series. • For park users, we will post notifications at the Kiosk located at the reservoir parking lot. • The CCI Team will meet directly with EMS providers to coordinate access during construction. We will periodically meet with them to discuss upcoming changes to traffic patterns throughout the construction period. • We will reach out to the traveling public through the news media; VDOT message boards / ITS; our VMSs; and a City VMS sign(s) on Fontaine Avenue by the Fire Station.
<p>UPC 109397 Rio Mills Road</p>	<ul style="list-style-type: none"> • Luck Stone Quarry • EMS Providers • Residents along Rio Mills (and roads with access from Rio Mills) and Millers College Lane • Recreational Users of the River (Boaters launch just below the Dam) 	<ul style="list-style-type: none"> • The CCI Team will coordinate directly with Luck Quarry and will periodically (construction / MOT milestone based) meet with them to discuss upcoming changes to traffic patterns throughout the construction period. • We will meet directly with EMS providers to coordinate access during construction. We will periodically meet with them to discuss upcoming changes to traffic patterns throughout the construction period. • We will reach the local residents through VDOT resources, news media, direct mailers, and roadside PCMS to alert residents of detour periods and routes. • The CCI Team will directly coordinate with the Rivanna River Company and post notifications at the launch site.
<p>UPC 111814 I-64 Exit 124 DDI</p>	<ul style="list-style-type: none"> • Martha Jefferson Hospital • EMS Providers • Residents along Hansons Mountain Park • Commuters 	<ul style="list-style-type: none"> • We will coordinate directly with Martha Jefferson Hospital and will periodically meet with them to discuss upcoming changes to traffic patterns throughout the construction period. • The CCI Team will meet directly with EMS providers to coordinate access during construction. We will periodically meet with them to discuss upcoming changes to traffic patterns throughout the construction period. • We will coordinate resources with VDOT’s communications staff to reach out to the traveling public through VDOT message boards and other portals such as 511, news releases via web, email, and news media; and also strategically locate roadside PCMS to alert commuters of delays.
<p>UPC 111733 VA 20/649 Roundabout</p>	<ul style="list-style-type: none"> • Commuters along Route 20 • Residents along Route 600 in Stony Point (detour) • EMS Providers 	<ul style="list-style-type: none"> • The CCI Team will meet directly with EMS providers to coordinate access during construction. We will periodically (construction / MOT milestone based) meet with them to discuss upcoming changes to traffic patterns throughout the construction period. • We will reach the local residents and commuters through news media, direct mailers, and roadside PCMS to alert residents of detour periods and routes.
<p>UPC 111730 US 250/VA 151 Roundabout</p>	<ul style="list-style-type: none"> • Commuters • Nelson County Route 151 Businesses • Wintergreen • Local Residents • EMS Providers 	<ul style="list-style-type: none"> • We will reach out to the traveling public through news releases via web, email, and news media; and also station roadside PCMS to alert commuters of delays and detours. • We will reach out to local businesses through mailings and an open house meeting prior to project kickoff. • The CCI Team will coordinate directly with Wintergreen HOA providing notifications and updates for their residents.

Approach to Public Outreach

Well-planned outreach and education before, during, and after construction is key to securing buy-in and ultimately project success. Our strategic public involvement plan will have defined goals, objectives and key messaging to raise awareness, develop public support, and ensure safety for motorists and project crews, as well as cyclists and pedestrians. We will inform, educate, and engage the public and stakeholders for the following concerns:

- ▶▶ Accepting alternative intersections (DDI and Roundabouts)
- ▶▶ Impacts to travel time during construction
- ▶▶ Traffic detours/diversion impacts during construction
- ▶▶ Adjacent site and multimodal access and safety during/after construction

We will implement the following strategies through our strategic public involvement plan:

- ▶▶ Provide advance notice for each construction phase through media and PCMS signs regarding changes in traffic patterns.
- ▶▶ Provide VDOT's District Office of Public Affairs weekly written updates to post on their website. At a minimum, this includes project overview, plan of work, schedule, potential impacts to traffic (i.e. temporary lane closures, ramp reconstruction, milling), current photos, and contact information
- ▶▶ Appoint our Public Relations Manager, Bill Wuensch as the liaison between VDOT and CCI's Construction Manager to maintain communication with stakeholders, media, and the general public during design and construction.
- ▶▶ Have the Public Relations Manager or an on-site representative accessible through a hotline (800 telephone number) for the public to request information and/or express concerns.
- ▶▶ Invite key stakeholders (motorists; local schools and institutions; affected local businesses; and County service providers including police, fire, and EMS) to our kick-off partnering meeting prior to construction and monthly meetings as needed. Agenda items include up-to-date MOT plans and interim and final configuration to keep interested parties apprised on the design and construction phases. If appropriate, individual meetings will also be held with key stakeholders. A Citizen Information Meeting will be held for the public prior to commencing construction. Mailers, informational flyers, press releases, local TV and/or radio ads, social media, and websites will advertise these meetings and serve as a source of information for those who cannot attend.
- ▶▶ Offer a DDI and roundabout training session at the large facilities to alert and educate their drivers about upcoming changes and enhanced operational characteristics.
- ▶▶ Provide education and outreach programs to teach drivers about traveling safely through DDI and roundabouts. Easy-to-understand materials, such as video presentations demonstrating DDI configuration and operations, will be developed and utilized (modified versions of the same materials will be used for commercial operators described above)
- ▶▶ Providing an emergency personnel contact list during construction in case of an onsite emergency, including work zone incidents.

The community's lack of awareness about the project elements and their impacts, benefits, and right-of-way issues may cause negative perception. During construction, the project elements will create traffic disruptions and new traffic patterns for motorists; transit; emergency responders; service providers; adjacent businesses; residents; non-motorized users; and others. Even after the project is completed, new roadway configurations may confuse motorists or increase travel times for select users.

Our public outreach plan will involve multiple public workshops as we complete certain phases and enter the next phases. We will conduct a public meeting prior to breaking ground. We will share design drawings and renderings to illustrate what the completed project will look like. And we will discuss what motorists and stakeholders should expect during construction—outlining the traffic shifts and patterns (detours if applicable).

As we near completion of Phase 1 of the SOC, we will hold another public meeting to discuss any public concerns and to inform the public of any traffic pattern changes during Phase 2. During this meeting, we will share interactive models of the completed element to show what it will look like and how to navigate through it.

Three of the elements include innovative intersection designs (DDI and two roundabouts). Stakeholders must be educated on how to navigate them; otherwise, they may have future safety concerns, which will cause public opposition. During construction, the public must understand how to safely navigate the work zones to reduce frustration and understand the project's benefits. First responders must be directly advised of traffic shifts to ensure timely response to calls; it is essential to maintain communication with the local fire station, rescue squad, and police precincts near each element. The CCI Team will address specific public affairs risks:

- ▶ Motorists from out of the region and unfamiliar with the project, such as new UVA students and people attending sporting events or taking historic or winery tours must be given adequate wayfinding signs.
- ▶ With only about 100 DDIs in the nation, and few roundabouts on high speed rural roadways in the area, lack of awareness and education of new traffic patterns may be confusing and lead to safety concerns.
- ▶ The permanent access change at Hansens Mountain Road and US 250 near Exit 124 requires that residents wishing to get to I-64, now, to make a right turn and then a U-turn at the nearby Peter Jefferson Parkway signal. They may not see the added travel time as a good trade-off for improved safety.
- ▶ Communication with property owners where the CCI Team must acquire right-of-way is key, as there is potential for complaints, delays, and legal proceedings. The US 250/VA 151 roundabout requires partial acquisition of an adjacent property to the north owned by Graves Homes LLC. The VA 20/649 roundabout could impact up to four properties. The Rio Mills Connector requires coordination with the Horne Lane Corporation to maximize its developable land and maintain safe access to the development and the quarry.

Messaging will focus on safety and benefits. The CCI Team will develop a brand for outreach materials and engage stakeholders via transparent communication strategies.

Public unease with accepting alternative intersections (DDI or Roundabout)

As transportation professionals, we know the benefits and proven performance and safety record of innovative intersections. However, the public is often skeptical of these designs. Users must be educated about these elements' improvements to safety and congestion relief. The CCI Team will proactively engage the public through the stakeholder organizations as these designs are being implemented, using renderings and head-to-head video simulations of existing versus new conditions to show operations improvements and build consensus.

Impacts to travel time during construction/ Traffic detour or diversion impacts during construction

The traveling public responds quite differently to known / advertised construction delays versus unexpected / unplanned delays. Commuters choose routes in part based on travel time reliability. When travel times increase, drivers seek different routes. Our outreach campaign will clearly and honestly show the expected (worst case) levels of congestion and travel time impacts during the various stages of construction. We will advise of any detours or suggested alternate routes using multiple methods that include direct communication with major employers and neighborhood associations in proximity to the project, such as website, email, media outlets, and variable message signing. If traffic detours or diversions are necessary, the CCI Team will ensure routes can accommodate all vehicles and modelled traffic conditions for detour routes. Direct communications with the TOC and City will be critically important so that signal timings can minimize delays. The public involvement plan is an integral part of the TMP.

Summary of Communication Strategies to be Employed

- ▶ Educational outreach materials (brochures, videos)
- ▶ Frequent updates to the project website
- ▶ Conduct public and community level meetings
- ▶ Provide roadside information message boards
- ▶ Close coordination with local media
- ▶ Presentations to BOS and City Council
- ▶ Traffic control communiques (changes, shifts)
- ▶ Direct communication via e-mail, flyers

Adjacent site and multimodal access and safety during/after construction

The six project elements are on several of the major routes into Charlottesville, and we will adjust the construction schedule to minimize the number of impacted routes at a given time. The CCI Team will maintain access to businesses and sustains routes to UVA (especially during sporting events, graduation), as well as provide guidance to access the many craft breweries, wineries, and resorts. Establishing clear communication with motorized and non-motorized roadway users, about how to traverse the work zone and what to expect from day to day will maximize safety. The CCI Team will use a targeted and multi-faceted approach to disseminate information to stakeholders.

Where right-of-way is required, engaging the property owners in the design process and communicating the needs and potential "betterments" that can be included in the work may help to secure "buy-in" and avoid delays. We anticipate four of the six projects will require partial acquisition or easements on adjacent properties, and many require reconstruction of driveway entrances. We will proactively work with the property owners to identify "betterments" to demonstrate goodwill and reinforce positive perception of VDOT and the project. At the I-64 Exit 124 DDI, the CCI Team will explain the safety benefits of the change at Hansens Mountain Road and identify potential alternatives to reduce travel time impacts; proactively communicate traffic shifts and timelines for access changes; and maintain three-way communication between us, the community, and VDOT.

Safety of Roadway Users and Workers

The CCI Team understands the importance of a TMP that links the temporary traffic control (TTC) plans; traffic operations and incident management; sequence of construction (SOC); and public outreach for the life of the project. Drivers are more reliant on navigation systems, and as a result, temporary traffic shifts and even the new configurations (such as ramp locations and posted speed changes) need to be clearly communicated to motorists. Reducing the number of traffic shifts – while ideally keeping the existing configuration and then shifting to the new one with no intermediate shifts – helps reduce driver confusion and the potential for crashes. Minimizing conflict between roadway users and trucks/equipment accessing the work zone is an essential part of the TMP as well. The CCI Team wants everyone—motorists and workers alike—to get home safely to their families, and we will ensure that there are adequate temporary barriers, signage, PCMS, and incident management resources.

Construction zones require heightened driver awareness, lower speeds, and clear lines of sight. The TMP must adequately address the safe movement of motorists, non-motorized roadway users, and construction equipment within and around the work zone.



The CCI Team has used work zone speed limits on similar DDI and rural roundabout projects to not only improve safety for all, but to also "condition" drivers to the speeds required for the final designs. We strive to limit the number of traffic shifts and incorporate the final traffic pattern as soon as possible.

- ▶ **Safety** – Vehicles being led into or through an active work zone must be protected from one another and from construction activities. If there isn't adequate sight distance and decision time for motorists, there is greater rear-end, angle, and sideswipe crash risk. The TTC plans for the Fontaine Avenue, Exit 118, and Exit 124 elements must ensure that backups do not occur onto the I-64 or US 29 mainlines, and that speed differentials in adjacent lanes are kept to a minimum. Mainline queuing results in increased rates of rear-end and sideswipe crashes. Although pedestrian and bicycle traffic are not significant at each location, safe passage must be considered for these vulnerable users when developing the TMP.
- ▶ **Mobility** – Safe movement of traffic through the work zone is essential. Delays that drivers perceive as avoidable, such as improperly timed signals, could result in negative feedback or worse, road rage on the project. Roadway users want consistent travel times, and incidents result in lost production.

Ultimately, there are several costs involved if the TMP does not adequately address the safe movement of users, and construction forces within and around the work zone. Delay costs due to inadequate work zone management

negatively affect overall productivity and quality of life. Crashes have direct costs, including repair costs, delay costs, and the medical costs and loss of earnings due to injuries.

Transportation Management Plan Summary

The **CCI Team** emphasizes public involvement when developing the TMP and will develop a defined program for public outreach. Also, we will systematically implement the TTC and SOC plans, clearly defining each traffic movement and construction phase for each project element individually. The TMP will document how traffic will be managed during the construction of the Project and each element. The UPC 111814 DDI element's TMP classification will be Type C, Category V. The UPC 111730 and 111733 roundabouts and the UPC 111727 and 111813 US 29 elements' TMP classification will be Type B, Category III. The UPC 109397 Rio Mills Connector element's TMP classification will be Type B, Category II. Stakeholder/public outreach will be in accordance RFP Part 2, Section 2.11. We foresee creating five site-specific TMPs, one for each project element, with the I-64 Exit 118 and Fontaine Avenue ramp improvements proceeding as a combined "element." The TMP for this project will include the following consideration:

- ▶ Access to major destinations, such as UVA, Scott Stadium, and Fontaine Research Park; major roadways and interstates, such as I-64, US 29, and US 250; and schools, neighborhoods and businesses along each project corridor will be affected during construction. The CCI Team will ensure that the thousands of affected motorists are aware of the changes and duration of impacts.
- ▶ TMP stakeholder input: Our strategy includes having a draft TMP prepared at scoping for each element that includes conceptual TTC, incident management, and public outreach/communication plans. We envision partnering with VDOT; City of Charlottesville; Albemarle County; UVA; businesses; and homeowner associations to get input on access, TTC alternatives, and communication methods.
- ▶ Temporary wayfinding signs will also be an important part of ensuring that access to businesses and points of interest within the work zone and beyond is clear and defined. Wayfinding signs during construction are a proven method for helping motorists and visitors find their way through construction zones and helps improve the "bottom line" for businesses impacted by construction.
- ▶ Temporary lane shifts and turning movements will be designed by using a WB-67 design vehicle to accommodate truck traffic traveling along the I-64 interchange ramps, US 29, and US 250, as well as for work trucks accessing the Luck Stone quarries and active sites on Route 649. We will provide temporary guide signs, including PCMS, channelizing devices, and pavement markings consistent with the WAPM along all temporary travel ways. We check them frequently for visibility and proper placement.
- ▶ TTC Monitoring: The CCI Team will evaluate the implemented TTC plan for each stage, as well as queues and signal operations to determine if adjustments are needed. TTC Coordinator Scott Peay will be responsible for driving the work zone multiple times daily to ensure that temporary measures are in place and functioning as designed. He will have the authority to make changes in the field to accommodate unforeseen traffic conditions or unexpected situations.
- ▶ Pardon Our Dust Meetings: The CCI Team has had great success raising public awareness of impacts and traffic pattern changes via "Pardon Our Dust" meetings, geared to the public or smaller-scale stakeholder groups (e.g., homeowner associations), and scheduled to occur a few weeks prior to a major traffic switch.
- ▶ Speed Management: The CCI Team uses portable speed trailers on projects and has partnered with the Virginia State Police to perform passive management, as well as active "hunters" to ticket violators in work zones.
- ▶ Safety Awareness Campaigns: CCI implemented a "Orange Cones No Phones" campaign on the I-264 Rehabilitation Design Build project to increase motorist awareness of the upcoming work zone and reduce distracted driving within. We placed "Orange Cones No Phones" roadway signage at the project limits.

4.6 Proposal Schedule

4.6.1 PROPOSAL SCHEDULE

The **Curtis Contracting, Inc. (CCI) Team's** proposal schedule is provided in Volume II of this Technical Proposal.

4.6.2 PROPOSAL SCHEDULE NARRATIVE

CCI has reviewed in detail the project and schedule requirements of the RFP and has developed a proposal schedule outlining our plan to successfully manage all phases of this bundling project. This schedule has been optimized to deliver the project in the shortest amount of time possible while meeting the requirements of the RFP, minimizing impacts to road users and local stakeholders; protecting the environment; and ensuring motorist's and worker's safety. Our Team plans to execute and deliver this Project by the March 30, 2023 Final Completion deadline. A summary of this contract and schedule milestones is in *Table 4.6.2.1*.

Sequence of Work Construction Impacts

Table 4.6.2.1 Contract and Schedule Milestones

Element	Milestone	Schedule
UPC 111814 – I-64 Exit 124 Interchange Improvements	Complete ROW Acquisitions	N/A
	Complete Design	9/3/2020
	Begin Construction	9/3/2020
	Complete Construction	7/8/2022
UPC 111727 – I-64 Exit 118 Partial Cloverleaf Modification	Complete ROW Acquisitions	N/A
	Complete Design	5/15/2020
	Begin Construction	8/12/2020
	Complete Construction	3/25/2021
UPC 111813 Fontaine Avenue Ramp Improvements at US Route 29 Bypass (NB)	Complete ROW Acquisitions	N/A
	Complete Design	3/24/2020
	Begin Construction	8/12/2020
	Complete Construction	3/31/2021
UPC 111730 US Route 250 and Route 151 Roundabout	Complete ROW Acquisitions	4/23/2021
	Complete Design	9/11/2020
	Begin Construction	6/5/2021
	Complete Construction	1/11/2023
UPC 111733 Route 20 and Route 649 Roundabout	Complete ROW Acquisitions	4/23/2021
	Complete Design	9/11/2020
	Begin Construction	6/5/2021
	Complete Construction	6/20/2022
UPC 109397 Rio Mills Road Extension	Complete ROW Acquisitions	11/11/2020
	Complete Design	5/15/2020
	Begin Construction	1/19/2021
	Complete Construction	12/15/2021

Work Breakdown Structure

CCI has developed a detailed proposal schedule in accordance with the RFP requirements. The Team has organized the schedule into a hierarchical Work Breakdown Structure (WBS) to demonstrate the relationships and activity durations among the milestones; scope; validation period; design; public involvement; environmental permitting; right-of-way acquisition; utility relocation; construction; and project management disciplines. All elements of the design-build process are captured under these Level 1 tasks and are described below.

- A Schedule Milestones:** This area is reserved for easy review of the project status. The Scope Validation Period has also been included in this section.
- B Design Phase:** This section includes preliminary engineering services; geotechnical work; plan development; design QA/QC reviews; submittal milestones; and VDOT and FHWA reviews and approvals. This section includes a second level WBS structure to group design activities by roadway element.
- C Public Involvement:** This section of the schedule includes activities and milestones for developing the planned public involvement process including communication plans; public information meetings; first responder meetings; and updates to the Office of Public Affairs for major traffic shifts and the VDOT website.
- D Environmental:** This section includes wetland and stream delineations; jurisdictional determinations; permit management and preparation; mitigation; permit submissions; and reviews from the authorities having jurisdiction. It also contains hazardous material surveys, as well as threatened and endangered species identification and assessment.
- E Right-of-way Acquisition:** This section of the schedule is used to outline and monitor the acquisition of ROW and easements for the Project including title searches, appraisals and reviews, offers, negotiations, and settlements.
- F Utility Relocations:** This section includes activities for utility relocation such as UFI meetings; preparation of plans and estimates (P&E); approval of plans and estimates; utility relocation design by the utility owner; approval of the utility design; and utility relocation. The utility relocations are separated into second level WBS groups based on utility owner. We have ties for each utility to its associated Project Element.
- G Construction:** This section includes all components of roadway construction including Project Management and the Quality Assurance/Quality Control processes. The Construction section includes a WBS for the individual Project Elements; stages of work; and activities for the major portions of work such as grading, drainage, signals, box culvert or paving activities. This strategy and grouping of work packages allow easy and clear tracking of activity progress by each Project Element to ensure on-time completion.

Work Breakdown Structure

A	SCHEDULE MILESTONES
AA	GENERAL OVERALL PROJECT
AB	UPC 111727 I-64 EXIT 118 PARTIAL CLOVERLEAF
AC	UPC 111813 FONTAINE AVE RAMP / US RTE 29
AD	UPC 109397 RIO MILLS ROAD EXTENSION
AF	UPC 111814 I-64 EXIT 124 INTERCHANGE IMPROVEMENT
AG	UPC 111730 US RTE 250 & 151 ROUNDABOUT
AH	UPC 111733 ROUTE 20 & 649 ROUNDABOUT
B	PRELIMINARY ENGINEERING
BA	GENERAL PROJECT
BA.A	QA/QC PLAN
BA.B	PROPERTY ACCESS
BA.C	MISS UTILITY LOCATES
BA.D	VERIFICATION SURVEY
BA.E	GEOTECHNICAL REPORT
BA.F	UTILITY INVENTORY ID/SURVEY
C	PUBLIC INVOLVEMENT
D	DESIGN
DA	UPC 111727 I-64 EXIT 118 PARTIAL CLOVERLEAF
DB	UPC 111813 FONTAINE AVE RAMP / US ROUTE 29
DC	UPC 109397 RIO MILLS ROAD EXTENSION

DD	UPC 111814 I-64 EXIT 124 INTERCHANGE IMPROVEMENT
DE	UPC 111730 US RTE 250 & 151 ROUNDABOUT
DF	UPC 111733 RTE 20 & RTE 249 ROUNDABOUT
E	ENVIRONMENTAL COMPLIANCE
EA	GENERAL PROJECT
EA.A	JOINT WETLANDS AND WATERS PERMITTING
EA.B	LD-445 / STORM WATER PERMIT
EA.C	THREATENED AND ENDANGERED SPECIES
F	RIGHT OF WAY ACQUISITIONS
G	UTILITY RELOCATION
GA	GENERAL PROJECT
GB	DOMINION VIRGINIA POWER
GC	VERIZON
GD	CENTURY LINK
GE	AT&T
GF	ALBEMARLE COUNTY SERVICE AUTHORITY
GG	COMCAST
GH	LUMOS
GI	VERIZON BUSINESS MCI
GJ	QWEST
GK	COLUMBIA GAS
H	CONSTRUCTION
HA	GENERAL PROJECT
HB	QUALITY CONTROL PROCESS
HC	UPC 111727 I-64 EXIT 118 PARTIAL CLOVERLEAF
HC.A	PHASE 1
HC.B	PHASE 2
HC.C	PHASE 3
HD	UPC 111813 FONTAINE AVE RAMP / US RTE 29
HD.A	PHASE 1
HD.B	PHASE 2
HD.C	PHASE 3
HE	UPC 109397 RIO MILLS ROAD EXTENSION
HF	UPC 111814 I-64 EXIT 124 INTERCHANGE IMPROVEMENT
HF.A	PHASE 1
HF.B	PHASE 2
HF.C	PHASE 3
HF.D	PHASE 4
HF.E	PHASE 5
HF.F	PHASE 6
HF.G	PHASE 7
HF.H	PHASE 8
HG	UPC 111730 US RTE 250 & RTE 151 ROUNDABOUT
HG.A	PHASE 1
HG.B	PHASE 2
HG.C	PHASE 3
HG.D	PHASE 4
HG.E	PHASE 5

HG.F	PHASE 6
HH	UPC 111733 RTE 20 & RTE 649 ROUNDABOUT
HH.A	PHASE 1
HH.B	PHASE 2
HH.C	PHASE 3
HH.D	PHASE 4
HH.E	PHASE 5

Schedule Calendars

Below, we include a description of the calendars used for this project.

1 – “Five Day” w/ Holiday: “Five-Day with Normal Anticipated Weather” – This calendar is used for most construction activities. It includes holidays as inserted in the ‘5 HOL’ calendar as well as the ‘block out’ days for the anticipated normal weather in the region. The basis of the weather calendar was developed using an USACOE/NOAA-based weather day assumption for this area, then modified to anticipate that the contractor and subcontractors are responsible for making up normal weather days as part of their contractual requirements.

2- “Seven Day”: “Seven-Day Calendar” – Assigned to activities that have durations based on calendar days instead of work days. Activities such as VDOT’s 21 calendar day submittal review, Concrete curing activities and monthly maintenance items are included in this calendar.

3 – “Winter” / Weather Restricted: “Winter Shutdown Calendar” – Assigned to activities that should not be performed from mid-December through mid-March due to cold weather. Activities such as surface asphalt, pavement markings, and landscape plantings are included in this restricted calendar.

Plan to Accomplish the Work/Means and Methods

The narrative below describes our Team’s overall plan and sequence of operations grouped by the Level I WBS Project disciplines. These include design; public involvement; environmental permitting; right-of-way acquisition; utility relocation; construction; and project management. We developed the sequencing of all disciplines by considering the construction phasing of operations and determining the longest path to project completion. We considered all factors including manpower; subcontractors; materials; design; environmental constraints; and most importantly, public safety and safety of the workforce. We developed the project phasing based on the constraints shown in the RFP. We further refined and developed it based on the individual project Element’s conceptual design; right-of-way acquisitions; utility impacts; and constructability necessary to meet the MOT requirements and critical elements of work. We divided the design and construction schedule into the six individual project elements to track and manage each one during design and construction while meeting the overall project completion date.

DESIGN

This section of the schedule includes activities necessary for preliminary design; geotechnical work; and third-party coordination, including engineering plan preparation and approvals. It also includes time for the necessary design QA/QC reviews at the multiple steps in the design process. As specified in the RFP, we have included a 21-calendar day activity for VDOT review after each submission. The design phase also included non-critical activities for the completion of surveys, test pits, H&HA studies, and geotechnical investigations, including a 90-calendar day activity for VDOT’s review of the geotechnical report prior to submission of the final roadway plans.

Critical path activities in the design phase of the proposal schedule include the 15-day property owner notification timeline; establishment of survey controls; verification; and surveys necessary to start the design process. The preparation, review, and submission of the first submission (60%) roadway plans are next on the critical path in this phase, since that is a prerequisite for submission of the JPA to DEQ and the USACE. Critical path then shifts to designing the two roundabouts and developing the right-of-way plan set. Following the plan set for right-of-way, the critical path continues through the right-of-way acquisition associated with the two roundabout project elements.

Public Involvement

The public involvement schedule includes submitting our emergency contact list upon NTP, assisting VDOT with development of the Public Information and Communication Plan (PICP), and holding Public Information Meetings in incremental stages during construction. This includes providing regular updates to the Office of Public Affairs. The schedule includes the major milestone activities for the Design Public Information Meetings which will include local businesses; local homeowner associations; local government representatives; and community groups. We will also provide information for regular construction updates on weekly lane closures to VDOT for use on its website.

Environmental Permitting

The environmental permitting process will begin at NTP with gaining access to, and surveying the impacts for, each project element to begin the required Phase I environmental surveys. Our Team will immediately perform wetland delineations, obtain jurisdictional determinations and prepare the Joint Wetlands and Water Permit Application. Following completion and submission of the 60% roadway plans for impacted areas, we will submit the necessary permit applications to the authorities having jurisdiction (AHJ). We anticipate that the Individual Permits for USACE, as well as the Virginia Water Protection Permit from DEQ, will require a four-month approval time frame. Our Team will also complete the requisite VDOT forms LD-445, Stormwater Pollution Prevention Plans (SWPPP) and related information for inclusion on the VDOT SWPPP General Information sheets. The LD 445/VSMP permit will be acquired by Oct 24, 2019, with the completion of all permitting by Aug 12, 2020.

Right-of-Way Acquisition

The acquisition of property rights is required to obtain permanent right-of-way as well as permanent and temporary easements. Our Team is very familiar with the right-of-way process as shown on the proposal schedule. We have used the historical average time frames that we anticipate for acquisition of property rights either by agreed negotiation or by certificate of take. We anticipate that the property right-of-way acquisition will become critical on this project since right-of-way acquisitions are required for the start and completion of the project element US Route 250/151 Roundabout. We will dedicate the necessary resources to ensure that schedule dates are adhered to and this process does not impact the project completion.

Utility Relocations

Table 4.4.2.2 in Section 4.4 (page 22) of our Technical Proposal lists the proposed utility impacts for the project. To simplify and track the utility relocations, we created a WBS that groups the utility relocation activities by utility owner and project element location. This further allows us to coordinate the work with utility relocations using the construction sequencing. Within each utility owner group, we have included activities for holding the Utility Field Investigation (UFI) meeting; preparing the plans and estimates (done by the utility owner); approving the plans and estimates; designing the utility relocation; and relocating the utility. The utility relocation schedule starts with formal UFI meetings following the completion of all utility test pits and continues through the progression of design documents. This enables our Team to confirm and adjust out list of utility conflicts based on the field test pit data obtained prior to holding the formal UFI meetings. We continue this early coordination of utilities throughout the design phase of the project to ensure that right-of-way and roadway plans are coordinated with the utility relocation plans. Currently, we are projecting that the facilities of Dominion Virginia Power; Virginia Natural Gas; Albemarle County Service Authority; Century Link; Lumos Network; Comcast; AT&T; Verizon; and Qwest may be impacted. These relocation dates are identified in our Proposal Schedule and linked to the appropriate construction activities. Utility relocations will not be critical activities on this Project.

CONSTRUCTION

Project Management

In this section of the schedule, we identified early construction activities such as schedule preparation; mobilization; submittals; subcontractor and major material procurement; as well as production of shop drawings and fabrication of critical long lead time items such as signals and poles, overhead signs, and box culvert items – like the ones required for the US Route 250 and Route 151 Roundabout.

Quality Assurance and Quality Control

In a separate WBS group, we identified the QA/QC activities for the project. These include the submission and approval of the QA/QC plan and the Preparatory Meetings (Hold Points) that are required prior to commencing with construction activities. The overall Level of Effort for the QA/QC process is represented by a bar spanning all construction activities until final punch-out of the project.

Critical Path

Below, we include a description of the project's critical path as depicted in the proposal schedule. The critical path runs directly through the design, right-of-way acquisition, and construction activities associated with the Route 250/151 Roundabout.

For a detailed breakdown of the project critical path please see the attached Exhibit 4.6.2.1

Key Scheduling Assumptions

- Utility companies will coordinate their relocations in accordance with our project schedule
- There are no hazardous materials; threatened and endangered species; or unforeseen environmental constraints, other than those identified in the RFP, that could delay the project schedule
- Crew leveling has been developed through crew-flow relationships between like activities
- Crews are based on an eight-hour workday and five-day per workweek calendar. A detailed description of the calendars are included in this narrative
- Generally, the schedule was built with work in certain areas of the project starting when access is available (either via availability, property rights, or utility access) and/or at the completion of a prior stage of work
- Generally, Finish-Start relationships are primarily used as much as possible to create logical flow of the work in one area

Project Controls

Through our Team's experience delivering major design build projects ahead of schedule, we have developed scheduling protocols to govern the development, implementation, progress tracking, and recovery of the CPM schedule through all the project stages.

Schedule Development

To develop the overall detailed CPM schedule, each discipline manager is responsible for producing a schedule to govern his own work and providing insight into how his schedule activities affect and are affected by activities in other disciplines. Once each manager has prepared their individual schedule, we hold schedule development meetings run by Steve Ordnung, our DBPM, and attended by all discipline managers to review the individual schedules and integrate them into the overall CPM schedule. These meetings ensure that we adhere to the following standards:

- Work packages within each discipline are comprehensive and define the work with no activities omitted
- Work packages are integrated within each discipline and between disciplines to generate a clearly defined project critical path, confirm the critical path makes sense, and the schedule shows that the project will complete on-time or ahead of schedule
- Each discipline manager understands the schedules of the other disciplines and how their work interrelates with the other disciplines
- Each discipline manager understands how his work affects the critical path and the priorities of the DBPM and other discipline managers
- The schedule meets or exceeds the requirements of the contract

These meetings enable our Team to create a detailed CPM schedule that is jointly prepared by and agreed to by all the discipline managers. It provides realistic expectations of the schedule of work to be completed by all team members and third parties.

Throughout the design phase of the project as more detailed plans are developed and utility conflicts are verified through test pitting, these meetings will further develop the CPM schedule into the more detailed baseline CPM

schedule. This schedule can then be utilized by all Team members to plan and track the progress of their work. It is submitted to VDOT for review and approval and utilized during the planning phases for utilities; permitting; right-of-way; design; and subcontractor/supplies scope and purchasing. Specific milestone dates from the CPM schedule will be written into subcontracts and purchase orders, making subcontractors contractually responsible for meeting schedule deadlines.

Mitigation of Major Delay Risks

Timely Review and Approval of Submittals

Upon notice of award, the Team will prepare a submittal schedule identifying all submittals that are required for the project. This schedule identifies the individual responsible for preparing the submittal, the anticipated submittal date, the parties responsible for reviewing and approving, the anticipated review durations, and a list of the individuals that must receive a copy of the approved submittal. At a minimum, the following submittals will be included in the package:

- Design Submissions
- Permits
- QA/QC Plan
- CPM Schedule and Updates
- MOT and TMP Plans
- Materials Documentation, including Source of Supply and Shop Drawings

Submittals deemed critical to the success of the project, including design and permitting submissions and major material submissions (such as structural steel shop drawings), will be included in the project CPM schedule where the progress can be monitored concurrently with the affected construction activity. Each submittal includes a transmittal cover sheet identifying the submittal's priority level. For submittals between the contractor and design firm, normal priority submittals will be returned within four weeks; high priority submittals within two weeks; and urgent submittals within three days. This also allows the Team to prioritize multiple submittals that are turned in concurrently. For submittals to government agencies and utilities, we include adequate review time frames in the CPM schedule for approval of environmental permits and utility submissions as applicable.

We also maintain a submittal log showing the status of all submittals. We will update the log with the submission and return of each submittal and will show the submission date, anticipated response date, priority and status. The submittal log is reviewed at the weekly Design Coordination, Owner Progress, and Construction Progress meetings. It can easily be sorted to distribute lists of active and overdue submittals. We discuss issues affecting the times completion of submittal reviews with the responsible party and a plan for resolving them are agreed to.

This process, along with diligent assessment of the CPM schedule, ensures that timely review of submittals will be constantly monitored and managed ensuring that no construction activities are delayed by the submittal process.

Utility Relocations

Some of the biggest risks to a design build schedule involve public/private utility companies who do not have a vested interest in the project and are not necessarily compelled to complete their work within the scheduled time constraints. To combat this risk, we have started our planning and coordination process for these utilities by meeting with each affected utility and discussing the project; the utility impacts; potential relocation options; and ways to accelerate the utility relocations after the award is issued.

This early coordination enables us to identify opportunities to advance the utility relocations and minimize the risk for utility delays after NTP. The early personal contact with each utility enables us to manage their issues and concerns and allows us to build float time into the utility relocation activities on the project.

Appendix

Attachment 3.6.7 List of Approved ATCs

Attachment 9.3.1 Proposal Payment Agreement

Attachment 11.8.6(a) Certification Regarding Debarment Primary Tier

Attachment 11.8.6(b) Certification Regarding Debarment Lower Tier

**Attachment 3.6.7 List of
Approved ATCs**

ATTACHMENT 3.6.7
LIST OF APPROVED ATCs INCLUDED IN TECHNICAL PROPOSAL

OFFEROR:

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

ATC ID Number	ATC Name Description	Date ATC Approved	Technical Proposal Reference Page(s) #
	NO ATCs HAVE BEEN PROPOSED		

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

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


 [Signature: Offerors POC or Principal Officer]

Andrew R. Curtis, Jr.
 [Printed Name]

President
 [Title]

DATE: 4/19/2019

**Attachment 9.3.1 Proposal
Payment Agreement**

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this “Agreement”) is made and entered into as of this **23rd** day of **April, 2019**, by and between the Virginia Department of Transportation (“VDOT”), and **Curtis Contracting, Inc.** (“Offeror”).

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications (“SOQs”) pursuant to VDOT’s July 11, 2018 (last addendum on August 2, 2018) Request for Qualifications (“RFQ”) and was invited to submit proposals in response to a Request for Proposals (“RFP”) for the Albemarle Intersection Bundling, Project Nos. UPC 111814 (0250-002-956, P101, R201, C501; NHPP-002-7(051)); UPC 111727 (0029-002-959, P101, C501; HSIP-5104(269)); UPC 111813 (0029-002-955, P101, R201, C501; NHPP-002-7(050)); UPC 111730 (0250-002-954, P101, R201, C501; HSIP-002-7(049)); UPC 111733 (0020-002-953, P101, R201, C501; STP-5104(267)); UPC 109397 (9999-002-941, P101, R201, C501) (“Project”), under a design-build contract with VDOT (“Design-Build Contract”); and

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

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

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

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

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

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

3. **Proposal Payment.** VDOT agrees to pay Offeror the lump sum amount of **thirty thousand and 00/100 Dollars (\$30,000.00)** ("Proposal Payment"), which payment constitutes payment in full to Offeror for the conveyance of Offeror's Intellectual Property to VDOT in accordance with this Agreement. Payment of the Proposal Payment is conditioned upon: (a) Offeror's Proposal being, in the sole discretion of VDOT, responsive to the RFP; (b) Offeror complying with all other terms and conditions of this Agreement; and (c) either (i) Offeror is not awarded the Design-Build Contract, or (ii) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror.

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

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

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

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

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

9. **Miscellaneous.**

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

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

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

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

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

of the Commonwealth of Virginia.

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

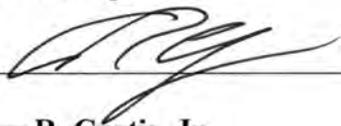
VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

[Insert Offeror's Name]

By:  _____

Name: **Andrew R. Curtis, Jr.**

Title: **President**

**Attachment 11.8.6(a)
Certification Regarding
Debarment Primary Tier**

**Attachment 11.8.6(b)
Certification Regarding
Debarment Lower Tier**

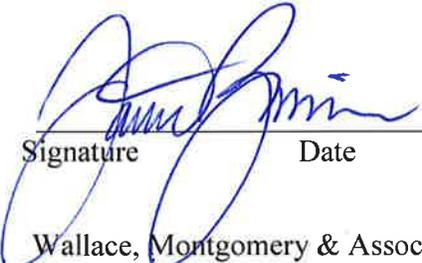
ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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

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

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

	4/22/19	Partner
Signature	Date	Title
Wallace, Montgomery & Associates, LLP		
Name of Firm		

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

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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 _____ Signature	<u>3/21/19</u> _____ Date	<u>President</u> _____ Title
---	---------------------------------	------------------------------------

CES CONSULTING LLC

Name of Firm

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

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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	03/21/2019	Principal
Signature	Date	Title

Clark Nexsen, Inc.
Name of Firm

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

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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Shel R Bennett *4/17/2019*
Signature Date

Director of Right of Way & Utilities
Title

Bowman Consulting Group Ltd.
Name of Firm

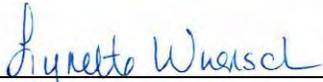
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS
(To be completed by a Sub-consultant)

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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Signature

03/21/2019

Date

President

Title

EPR, P.C.

Name of Firm

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

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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



3/21/2019

President

Signature

Date

Title

GET Solutions, Inc.

Name of Firm

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

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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 _____
Signature Date 3/21/19 Title President

Acompong Engineering Group LLC
Name of Firm

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

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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

	03/21/2019	Managing Partner
Signature	Date	Title

Appraisal Review Specialists, LLC
Name of Firm

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

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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

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

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



Signature

March 21, 2019

Date

Vice President

Title

Froehling & Robertson, Inc.

Name of Firm

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

Project No.: UPC 111814 (0250-002-956, P101, R201, C501); UPC 111727 (0029-002-959, P101, C501); UPC 111813 (0029-002-955, P101, R201, C501); UPC 111730 (0250-002-954, P101, R201, C501); UPC 111733 (0020-002-953, P101, R201, C501); UPC 109397 (9999-002-941, P101, R201, C501)

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

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

	03/21/2019	Sr. Vice President
Signature	Date	Title

ECS Mid-Atlantic, LLC

Name of Firm

Submitted By:



Curtis Contracting Inc.

In Association With:



Volume II Technical Proposal

Albemarle Intersection Bundling, Design-Build

Contract ID Number: C00111814DB103



Submitted by

In Association With



April 23, 2019

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

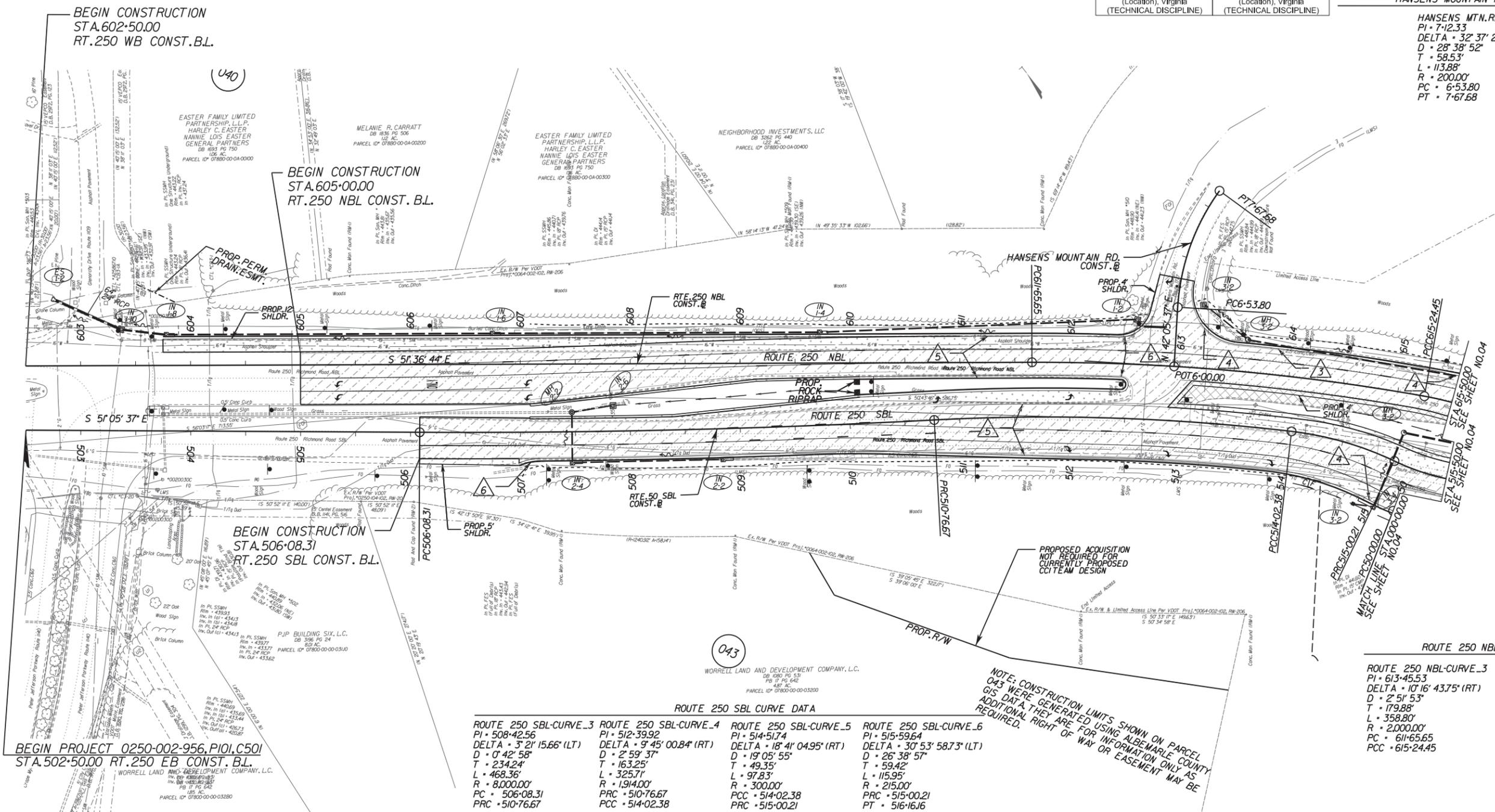
4.3.1 Conceptual Roadway Plans

UPC 111814 - I-64 EXIT 124 @ US 250 DDI CCITEAM CONCEPT

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	I-64/ RTE 250		0250-002-956 P101,C501,R201	
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT					
VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)			VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)		

HANSENS MOUNTAIN ROAD CURVE DATA

HANSENS MTN. RD - CURVE-1
 PI - 7+12.33
 DELTA - 32° 37' 22.56" (RT)
 D - 28' 38" 52"
 T - 58.53'
 L - 113.88'
 R - 200.00'
 PC - 6+53.80
 PT - 7+67.68



ROUTE 250 SBL CURVE DATA					
ROUTE 250 SBL-CURVE_3	ROUTE 250 SBL-CURVE_4	ROUTE 250 SBL-CURVE_5	ROUTE 250 SBL-CURVE_6		
PI • 508+42.56	PI • 512+39.92	PI • 514+51.74	PI • 515+59.64		
DELTA • 3° 21' 15.66" (LT)	DELTA • 9° 45' 00.84" (RT)	DELTA • 18° 41' 04.95" (RT)	DELTA • 30° 53' 58.73" (LT)		
D • 0' 42' 58"	D • 2' 59' 37"	D • 19' 05' 55"	D • 26' 38' 57"		
T • 234.24'	T • 163.25'	T • 49.35'	T • 59.42'		
L • 468.36'	L • 325.71'	L • 97.83'	L • 115.95'		
R • 8,000.00'	R • 1,914.00'	R • 300.00'	R • 215.00'		
PC • 506+08.31	PRC • 510+76.67	PCC • 514+02.38	PT • 515+00.21		
PRC • 510+76.67	PCC • 514+02.38	PT • 515+00.21			

ROUTE 250 NBL CURVE DATA	
ROUTE 250 NBL-CURVE_3	ROUTE 250 NBL-CURVE_4
PI • 613+45.53	PI • 615+83.96
DELTA • 10° 16' 43.75" (RT)	DELTA • 24° 25' 14.15" (RT)
D • 2' 5' 53"	D • 20' 50' 05"
T • 179.88'	T • 59.51'
L • 358.80'	L • 117.21'
R • 2,000.00'	R • 275.00'
PC • 611+65.65	PCC • 615+24.45
PCC • 615+24.45	PT • 616+41.66

CONCEPTUAL PLANS

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

LEGEND

- DENOTES PROPOSED RIGHT OF WAY
- - - - DENOTES PERMANENT DRAINAGE EASEMENT
- · - · - DENOTES TEMPORARY CONSTRUCTION EASEMENT
- C · · · · DENOTES CONSTRUCTION LIMITS IN CUT
- F · · · · DENOTES CONSTRUCTION LIMITS IN FILLS
- [X] DENOTES DEMOLITION OF PAVEMENT
- [//] DENOTES MILL & OVERLAY PAVEMENT
- [.] DENOTES NEW FULL DEPTH ASPHALT PAVEMENT
- [■] DENOTES NEW CONCRETE PAVEMENT

INCIDENTAL LEGEND

- ① ST'D CG-2 REQ'D
- ② RAD. CG-2 REQ'D
- ③ ST'D CG-6 REQ'D
- ④ RAD. CG-6 REQ'D
- ⑤ ST'D CG-7 REQ'D
- ⑥ RAD. CG-7 REQ'D

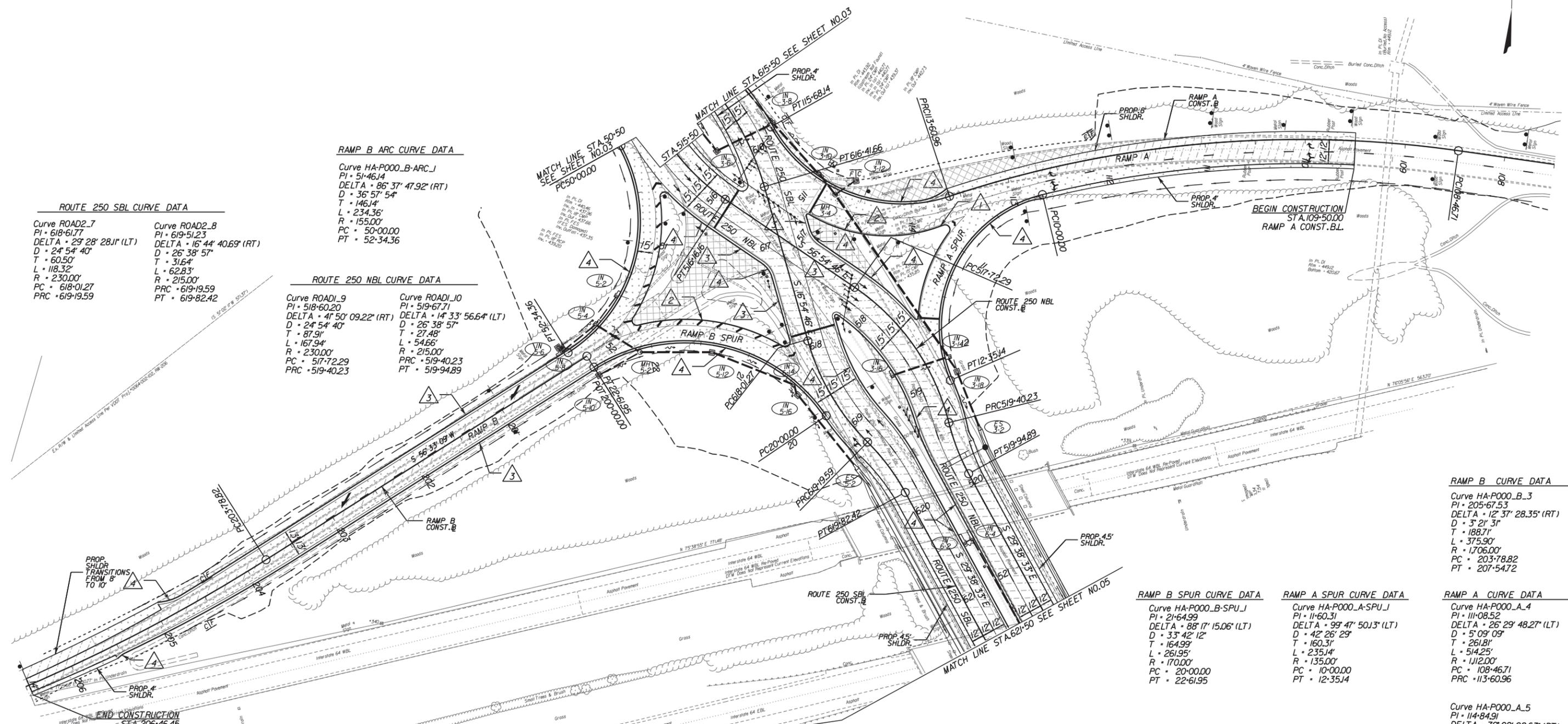
REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile
 Drainage Descr.

SCALE 0 50' 100'	PROJECT 0250-002-956	SHEET NO.
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UPC 111814 - I-64 EXIT 124 @ US 250 DDI CCITTEAM CONCEPT

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	I-64/ RTE 250	0250-002-956 P101,C501,R201	
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT				
VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)		VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)		



ROUTE 250 SBL CURVE DATA

Curve ROAD2_7 PI • 618-61.77 DELTA • 29° 28' 28.11" (LT) D • 24' 54" 40" T • 60.50' L • 118.32' R • 230.00' PC • 618-01.27 PRC • 619-19.59	Curve ROAD2_8 PI • 619-51.23 DELTA • 16° 44' 40.69" (RT) D • 26' 38' 57" T • 31.64' L • 62.83' R • 215.00' PC • 619-19.59 PT • 619-82.42
--	--

RAMP B ARC CURVE DATA

Curve HA-P000_B-ARC_1 PI • 51-46.14 DELTA • 86° 37' 47.92" (RT) D • 36' 57' 54" T • 146.14' L • 234.36' R • 155.00' PC • 50-00.00 PT • 52-34.36

ROUTE 250 NBL CURVE DATA

Curve ROAD1_9 PI • 518-60.20 DELTA • 41° 50' 09.22" (RT) D • 24' 54" 40" T • 87.91' L • 167.94' R • 230.00' PC • 517-72.29 PRC • 519-40.23	Curve ROAD1_10 PI • 519-67.71 DELTA • 14° 33' 56.64" (LT) D • 26' 38' 57" T • 27.48' L • 54.66' R • 215.00' PC • 519-40.23 PT • 519-94.89
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RAMP B CURVE DATA

Curve HA-P000_B_3 PI • 205-67.53 DELTA • 12° 37' 28.35" (RT) D • 3' 21' 31" T • 188.71' L • 375.90' R • 1706.00' PC • 203-78.82 PT • 207-54.72
--

RAMP B SPUR CURVE DATA

Curve HA-P000_B-SPU_1 PI • 21-64.99 DELTA • 88° 17' 15.06" (LT) D • 33' 42' 12" T • 164.99' L • 261.95' R • 170.00' PC • 20-00.00 PT • 22-61.95

RAMP A SPUR CURVE DATA

Curve HA-P000_A-SPU_1 PI • 11-60.31 DELTA • 99° 47' 50.13" (LT) D • 42' 26' 29" T • 160.31' L • 235.14' R • 135.00' PC • 10-00.00 PT • 12-35.14

RAMP A CURVE DATA

Curve HA-P000_A_4 PI • 111-08.52 DELTA • 26° 29' 48.27" (LT) D • 5' 09' 09" T • 261.81' L • 514.25' R • 112.00' PC • 108-46.71 PRC • 113-60.96
--

Curve HA-P000_A_5

PI • 114-84.91 DELTA • 79° 08' 02.63" (RT) D • 38' 11" 50" T • 123.95' L • 207.17' R • 150.00' PC • 113-60.96 PT • 115-68.14

CONCEPTUAL PLANS

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

LEGEND

- DENOTES PROPOSED RIGHT OF WAY
- - - - DENOTES PERMANENT DRAINAGE EASEMENT
- · - · - DENOTES TEMPORARY CONSTRUCTION EASEMENT
- C DENOTES CONSTRUCTION LIMITS IN CUT
- F DENOTES CONSTRUCTION LIMITS IN FILLS
- ⊗ DENOTES DEMOLITION OF PAVEMENT
- ▨ DENOTES MILL & OVERLAY PAVEMENT
- DENOTES NEW FULL DEPTH ASPHALT PAVEMENT
- DENOTES NEW CONCRETE PAVEMENT

INCIDENTAL LEGEND

- 1 ST'D CG-2 REQ'D
- 2 RAD. CG-2 REQ'D
- 3 ST'D CG-6 REQ'D
- 4 RAD. CG-6 REQ'D
- 5 ST'D CG-7 REQ'D
- 6 RAD. CG-7 REQ'D

REFERENCES

(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile
Drainage Descr.

SCALE 0 50' 100'	PROJECT 0250-002-956	SHEET NO.
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UPC 111814 - I-64 EXIT 124 @ US 250 DDI CCI TEAM CONCEPT

ROUTE 250 SBL CURVE DATA

Curve ROAD1_13 PI • 523-41.61 DELTA • 20° 00' 00.00" (RT) D • 19' 45" 26" T • 51.3' L • 101.23' R • 290.00' PC • 522-90.47 PT • 523-91.70	Curve ROAD1_16 PI • 525-52.21 DELTA • 29° 09' 18.42" (LT) D • 24' 54" 40" T • 59.8' L • 117.04' R • 230.00' PC • 524-92.39 PT • 526-09.43	Curve ROAD1_17 PI • 526-49.46 DELTA • 9° 09' 18.42" (RT) D • 11' 27" 33" T • 40.03' L • 79.89' R • 500.00' PC • 526-09.43 PT • 526-89.32
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REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	I-64/ RTE 250	0250-002-956 P101,C501,R201	
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT				
VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)	VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)			

RAMP C SPUR CURVE DATA RAMP D SPUR CURVE DATA

Curve HA-P000_C-SPU_J PI • 32-86.53 DELTA • 117° 10' 11.79" (LT) D • 32' 44" 26" T • 286.53' L • 357.88' R • 175.00' PC • 30-00.00 PT • 33-57.88	Curve HA-P000_D-SPU_J PI • 41-19.49 DELTA • 78° 59' 00.88" (LT) D • 39' 30" 52" T • 119.49' L • 199.89' R • 145.00' PC • 40-00.00 PT • 41-99.89
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ROUTE 250 NBL CURVE DATA

Curve ROAD2_11 PI • 623-41.62 DELTA • 20° 00' 00.00" (LT) D • 22' 55" 06" T • 44.08' L • 87.27' R • 250.00' PC • 622-97.53 PT • 623-84.80	Curve ROAD2_14 PI • 625-32.23 DELTA • 20° 00' 00.00" (RT) D • 22' 55" 06" T • 44.08' L • 87.27' R • 250.00' PC • 624-88.15 PT • 625-75.41
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RAMP C CURVE DATA

Curve HA-P000_C_5 PI • 313-99.99 DELTA • 65° 42' 16.97" (DELTA • 4° 31' 18.01" (LT) D • 42' 26" 29" T • 87.18' L • 154.81' R • 135.00' PC • 313-12.81 PT • 314-67.63	Curve HA-P000_C_4 PI • 311-43.39 DELTA • 4° 31' 18.01" (LT) D • 20' 01" T • 169.60' L • 339.03' R • 4,296.00' PC • 309-73.78 PT • 313-12.81
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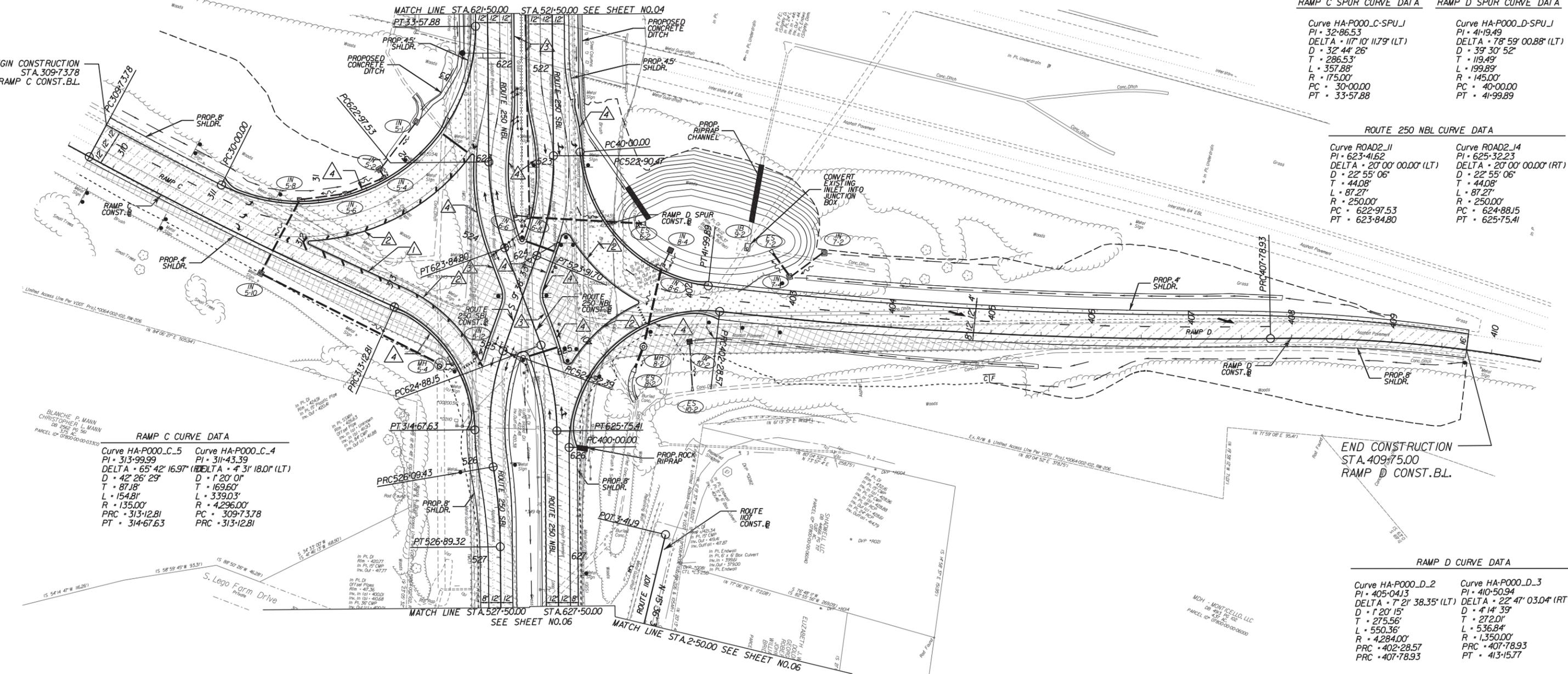
RAMP D CURVE DATA

Curve HA-P000_D_2 PI • 405-04.13 DELTA • 7° 21' 38.35" (LT) D • 4' 20" 15" T • 275.56' L • 550.36' R • 4,284.00' PC • 402-28.57 PT • 407-78.93	Curve HA-P000_D_3 PI • 410-50.94 DELTA • 22° 47' 03.04" (RT) D • 4' 14" 39" T • 272.01' L • 536.84' R • 1,350.00' PC • 407-78.93 PT • 413-15.77
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Curve HA-P000_D_1 PI • 401-52.61 DELTA • 97° 00' 30.20" (RT) D • 42' 26" 29" T • 152.61' L • 228.57' R • 135.00' PC • 400-00.00 PT • 402-28.57
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REFERENCES
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile
Drainage Descr.



CONCEPTUAL PLANS

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

LEGEND

- DENOTES PROPOSED RIGHT OF WAY
- DENOTES PERMANENT DRAINAGE EASEMENT
- - - - DENOTES TEMPORARY CONSTRUCTION EASEMENT
- C DENOTES CONSTRUCTION LIMITS IN CUT
- F DENOTES CONSTRUCTION LIMITS IN FILLS
- ⊠ DENOTES DEMOLITION OF PAVEMENT
- ▨ DENOTES MILL & OVERLAY PAVEMENT
- DENOTES NEW FULL DEPTH ASPHALT PAVEMENT
- DENOTES NEW CONCRETE PAVEMENT

INCIDENTAL LEGEND

- ① ST'D CG-2 REQ'D
- ② RAD. CG-2 REQ'D
- ③ ST'D CG-6 REQ'D
- ④ RAD. CG-6 REQ'D
- ⑤ ST'D CG-7 REQ'D
- ⑥ RAD. CG-7 REQ'D

SCALE 0 50' 100'	PROJECT 0250-002-956	SHEET NO.
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UPC 111814 - I-64 EXIT 124 @ US 250 DDI CCITTEAM CONCEPT

ROUTE 250 SBL CURVE DATA

Curve ROAD1_20 PI • 533•81.45 DELTA • 28° 36' 50.20" (LT) D • 4' 54' 20" T • 297.87' L • 583.31' R • 1,168.00' PC • 530•83.58 PCC • 536•66.89	Curve ROAD1_21 PI • 537•97.06 DELTA • 6° 32' 58.55" (LT) D • 2' 31' 07" T • 130.17' L • 260.06' R • 2,275.00' PCC • 536•66.89 PT • 539•26.94
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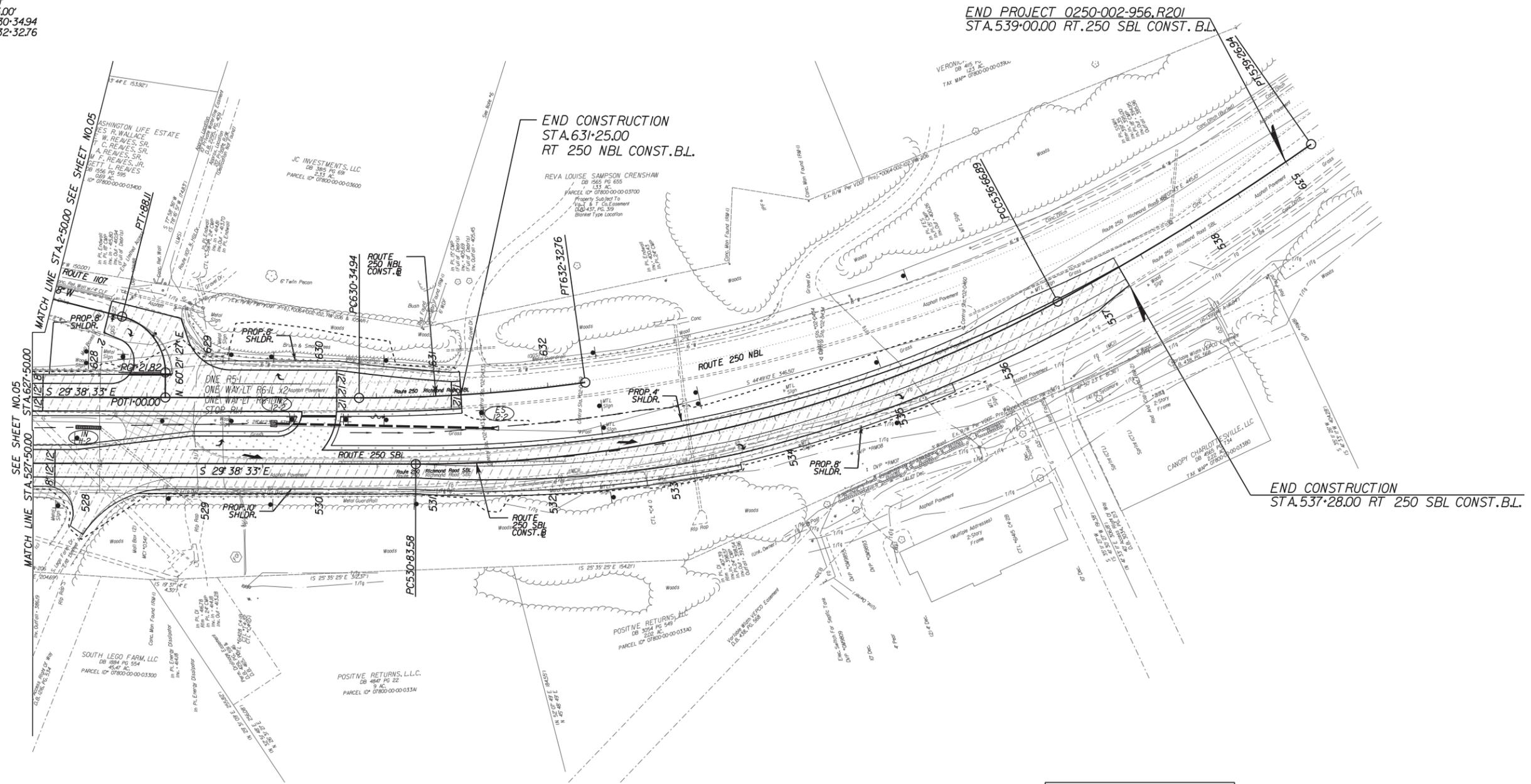
REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	I-64/ RTE 250		0250-002-956 P101,C501,R201	
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT					
VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)			VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)		

ROUTE 1107 CURVE DATA

Curve HA-P000_RT110_3 PI • 1•60.86 DELTA • 75° 58' 04.66" (LT) D • 114' 35' 30" T • 39.04' L • 66.29' R • 50.00' PC • 1•21.82 PT • 1•88.11
--

ROUTE 250 NBL CURVE DATA

Curve ROAD2_17 PI • 631•34.01 DELTA • 8° 01' 16.04" (LT) D • 4' 03' 18" T • 99.07' L • 197.81' R • 1,413.00' PC • 630•34.94 PT • 632•32.76
--



CONCEPTUAL PLANS

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LEGEND

- DENOTES PROPOSED RIGHT OF WAY
- - - - DENOTES PERMANENT DRAINAGE EASEMENT
- · - · - DENOTES TEMPORARY CONSTRUCTION EASEMENT
- C - - - DENOTES CONSTRUCTION LIMITS IN CUT
- F - - - DENOTES CONSTRUCTION LIMITS IN FILLS
- ⊗ DENOTES DEMOLITION OF PAVEMENT
- ▨ DENOTES MILL & OVERLAY PAVEMENT
- DENOTES NEW FULL DEPTH ASPHALT PAVEMENT
- ▨ DENOTES NEW CONCRETE PAVEMENT

INCIDENTAL LEGEND

- 1 ST'D CG-2 REQ'D
- 2 RAD. CG-2 REQ'D
- 3 ST'D CG-6 REQ'D
- 4 RAD. CG-6 REQ'D
- 5 ST'D CG-7 REQ'D
- 6 RAD. CG-7 REQ'D

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile
Drainage Descr.

SCALE 0 50' 100'	PROJECT 0250-002-956	SHEET NO.
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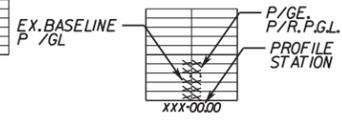
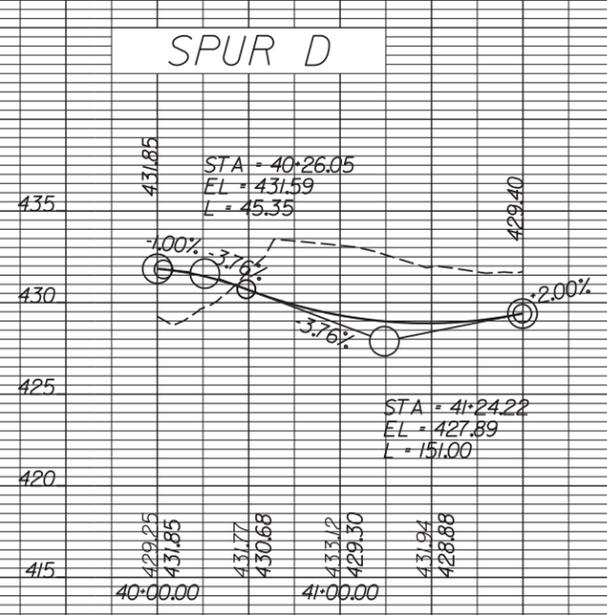
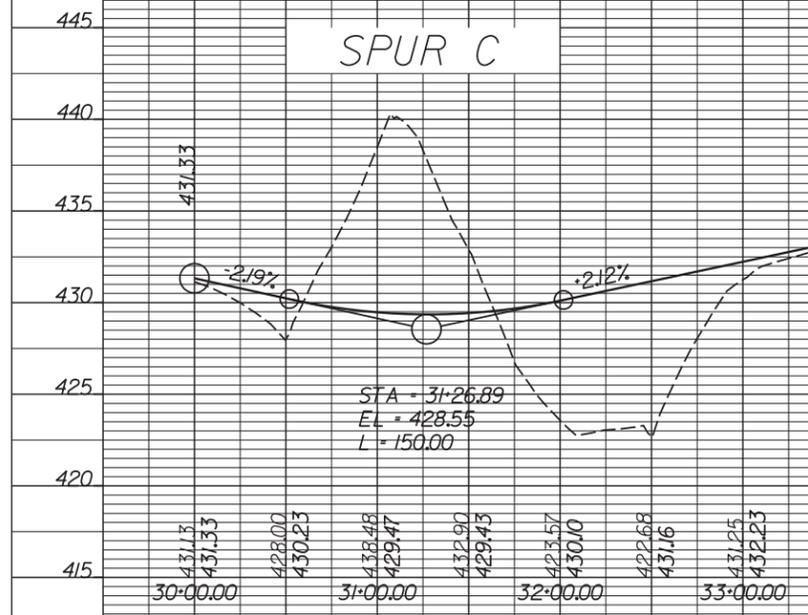
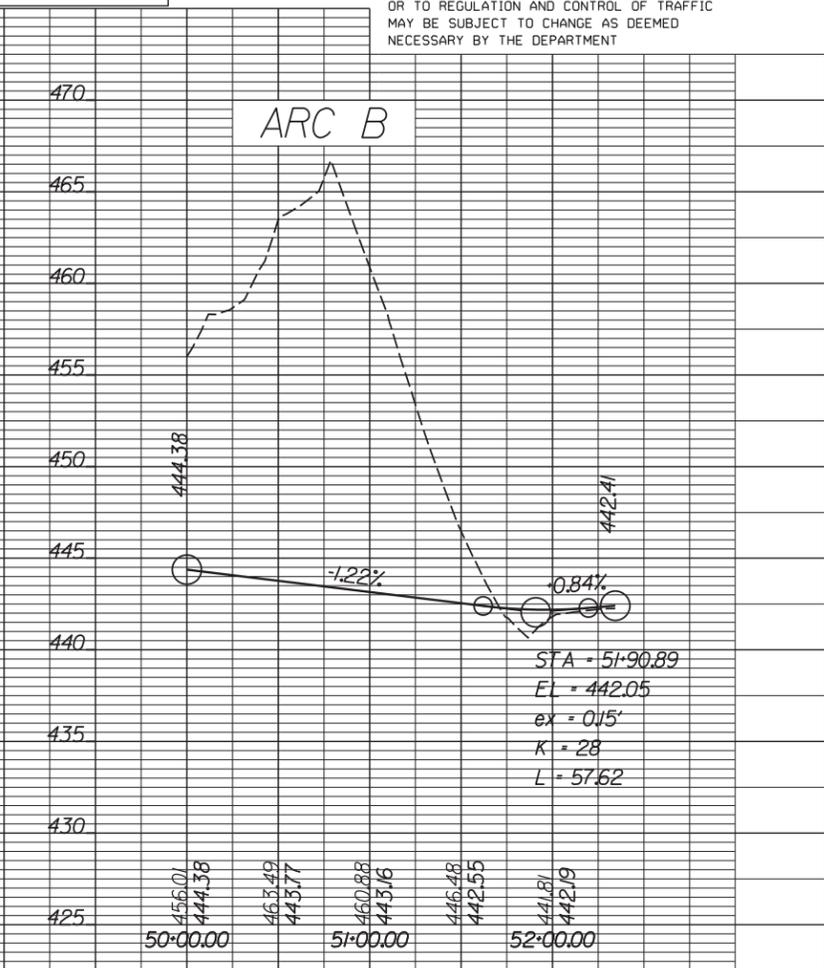
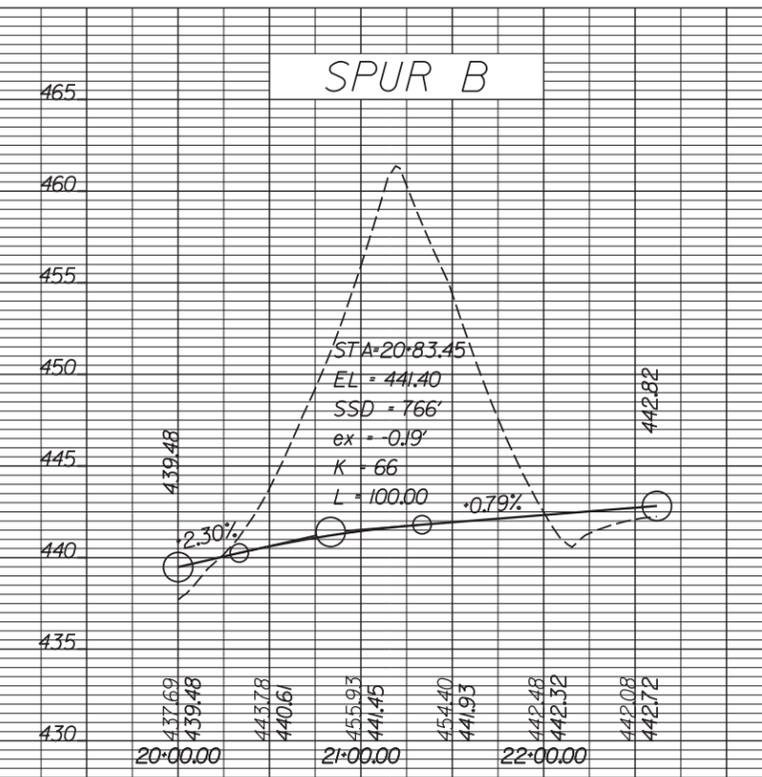
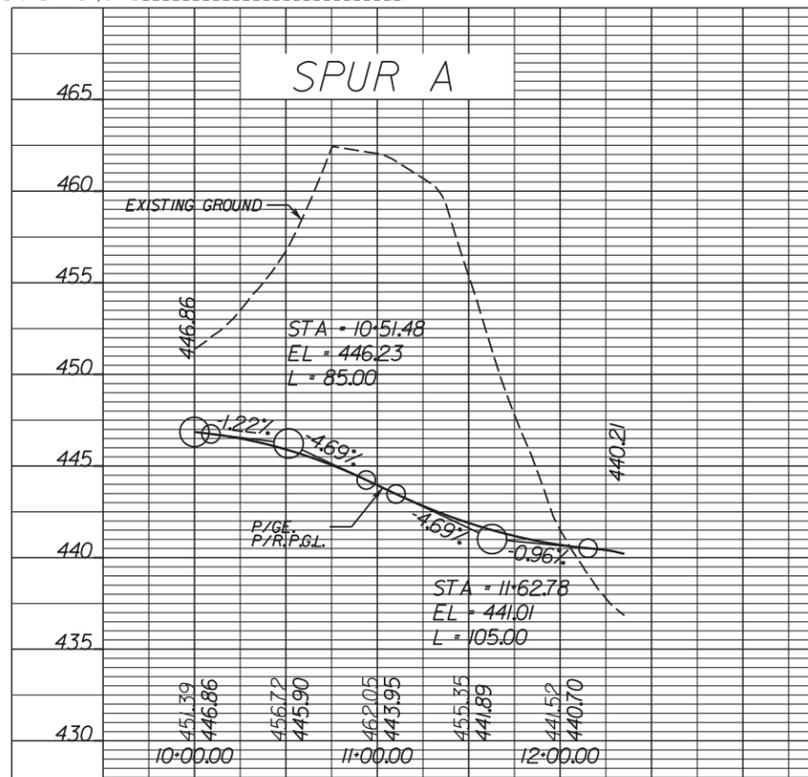
PROJECT MANAGER _____
 SURVEYED BY, DATE _____
 DESIGN BY _____
 SUBSURFACE UTILITY BY, DATE _____

CONCEPTUAL PLANS

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

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	250	0250-002-956,C501	

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



1" = 5' VERT
 SCALE 1" = 50' HORZ.

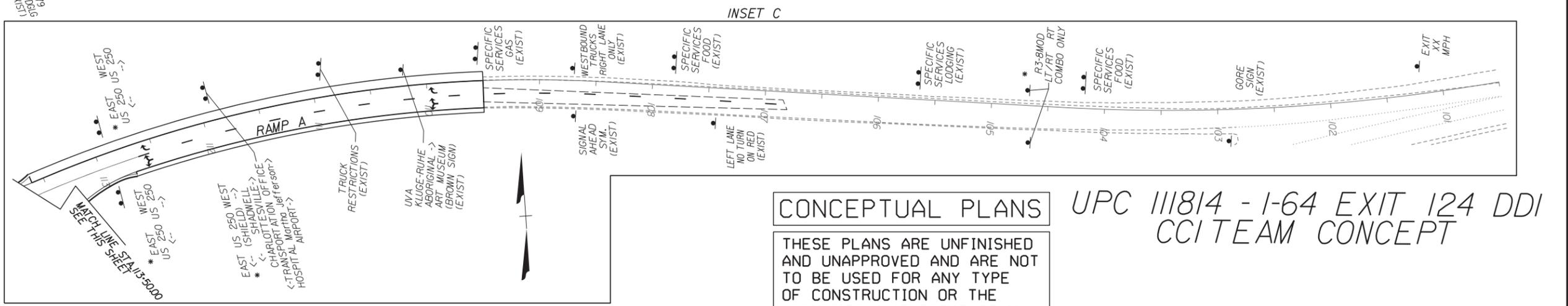
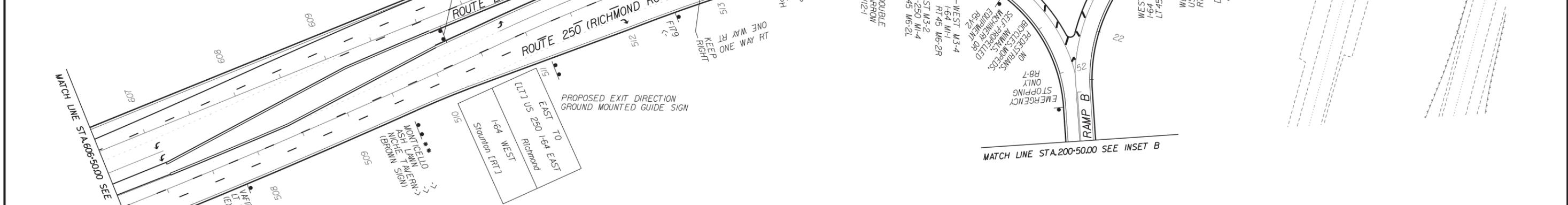
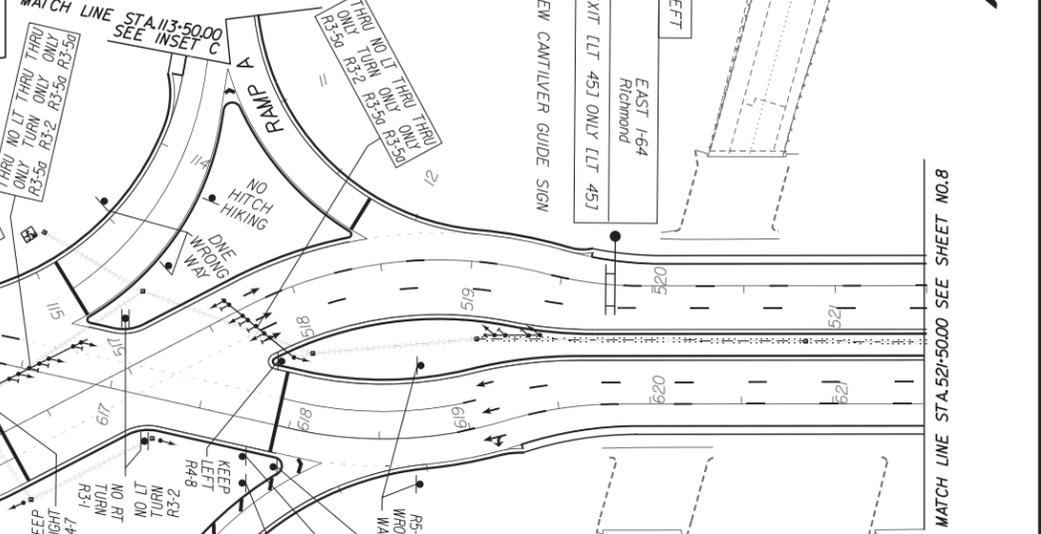
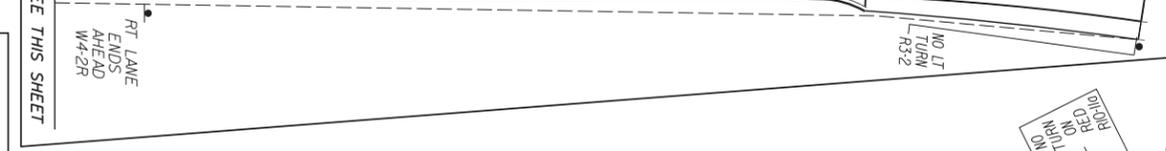
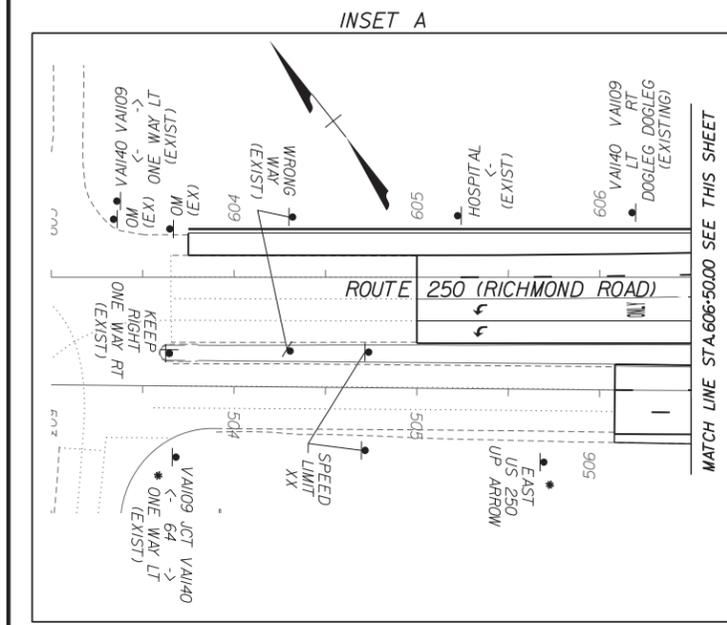
PROJECT MANAGER xxxxxxxx (xxxxxx) xxx-xxxx (CULPEPER)
SURVEYED BY, DATE BICE ASSOCIATES, 07/31/98-3200
DESIGN BY xxxxxxxxxx LxxxLxxx-BDO WALLACE, MONTGOMERY
SUBSURFACE UTILITY BY, DATE ACCUMARK, INC. (804) 550-7740

*GUIDE SIGN TO MATCH RFP CONCEPTUAL SIGNING, MARKING, AND TRAFFIC SIGNAL PLAN
**GUIDE SIGN TO MATCH THE I-64/US 15 DDI APPROACH GUIDE SIGN DESIGN

Table with project details: STATE (VA), ROUTE (I-64/RTE 250), PROJECT (0250-002-956 P101,C501,R201), SHEET NO.

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

VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)



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

UPC 111814 - I-64 EXIT 124 DDI
CCI TEAM CONCEPT

Scale bar (0, 50, 100) and Project/Sheet information: PROJECT 0250-002-956, SHEET NO.

UPC 111730 - 250/151 ROUNDABOUT CCI TEAM CONCEPT

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	250/151	0250-002-954, P101, R201, C501	
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT				
VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)		VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)		

BEGIN PROJECT
0250-002-954, R201
STA. 102+50.00 RT. 250 WEST
CONST. BL.

BEGIN PROJECT 0250-002-954, P101, C501
STA. 103+75.00 RT. 250 WEST CONST. BL.
BEGIN CONSTRUCTION
STA. 103+75.00 RT. 250 WEST CONST. BL.

ROUTE 250 WEST CURVE DATA

Curve WEST250_4 PI • 106+44.78 DELTA • 14° 53' 37.7" (LT) D • 10' 25' 03" T • 71.89' L • 142.97' R • 550.00' PCC • 105+72.89 PRC • 107-15.86	Curve WEST250_5 PI • 107+62.04 DELTA • 9° 35' 58.68" (RT) D • 10' 25' 03" T • 46.18' L • 92.15' R • 550.00' PCC • 107-15.86 PT • 108-08.01
--	--



END PROJECT 0250-002-954, P101, C501
STA. 206+00.00 RT. 250 EAST CONST. BL.
END CONSTRUCTION
STA. 206+00.00 RT. 250 EAST CONST. BL.

END PROJECT 0250-002-954, R201
STA. 207+00.00 RT. 250 EAST CONST. BL.

ROUNDABOUT CURVE DATA

Curve ROUND_1 DELTA • 180° 00' 00.00" (LT) D • 143' 14' 22" T • Undefined L • 125.66' R • 40.00' PC • 0+00.00 PCC • 1+25.66	Curve ROUND_2 DELTA • 180° 00' 00.00" (LT) D • 143' 14' 22" T • Undefined L • 125.66' R • 40.00' PCC • 1+25.66 PT • 2+51.33
--	--

DRIVEWAY CURVE DATA

Curve HASDRIVEWAY_3 PI • 50+53.79 DELTA • 19° 21' 05.62" (RT) D • 57' 17' 45" T • 17.05' L • 33.77' R • 100.00' PC • 50+36.74 PT • 50+70.52

ROUTE 151 CURVE DATA

Curve RT151_2 PI • 306+45.10 DELTA • 12° 23' 51.25" (RT) D • 2' 25' 03" T • 257.41' L • 512.82' R • 2,370.00' PCC • 303+87.69 PT • 309+00.51
--

ROUTE 250 WEST CURVE DATA

Curve EAST250_1 PI • 201+06.76 DELTA • 5° 25' 59.81" (LT) D • 2' 32' 47" T • 106.76' L • 213.36' R • 2,250.00' PC • 200+00.00 PT • 202+13.36
--

BEGIN CONSTRUCTION
ST A. 301+60.00
RT. 151 CONST. B.L.

ARTHUR H. & JOANN F. FREEMAN
DB 840, PC 057
47729 AC
TAX MAP 06900-00-00-05080

CONCEPTUAL PLANS

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

LEGEND

—	NOTES PROPOSED RIGHT OF WAY	⊠	NOTES DEMOLITION OF PAVEMENT
----	NOTES PERMANENT DRAINAGE EASEMENT	▨	NOTES MILL & OVERLAY PAVEMENT
-----	NOTES TEMPORARY CONSTRUCTION EASEMENT	⬢	NOTES NEW FULL DEPTH ASPHALT PAVEMENT
┌-----┐	NOTES CONSTRUCTION LIMITS IN CUT	⬢	NOTES NEW CONCRETE PAVEMENT
└-----┘	NOTES CONSTRUCTION LIMITS IN FILLS		

INCIDENTAL LEGEND

1	ST'D CG-2 REQ'D
2	RAD. CG-2 REQ'D
3	ST'D CG-6 REQ'D
4	RAD. CG-6 REQ'D
5	ST'D CG-7 REQ'D
6	RAD. CG-7 REQ'D
8	RAD. CG-3 REQ'D

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile 3A
Drainage Descr.

SCALE 0 50' 100'	PROJECT 0250-002-954	SHEET NO.
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PROJECT MANAGER _____
 SURVEYED BY, DATE _____
 DESIGN BY _____
 SUBSURFACE UTILITY BY, DATE _____

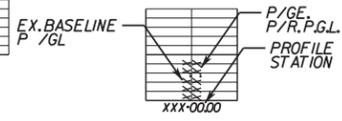
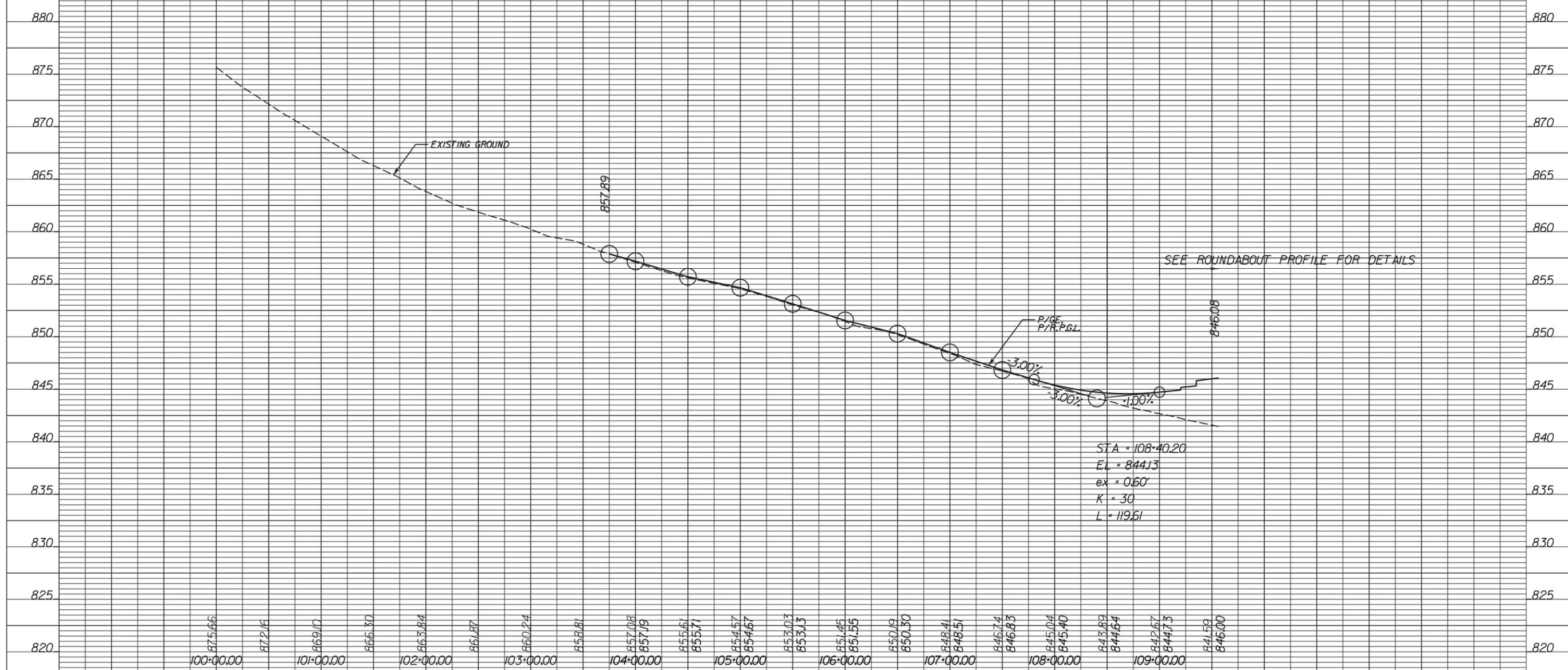
CONCEPTUAL PLANS

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 ACQUISITION OF RIGHT OF WAY.

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-941, P101, R201, C501	

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

WEST APPROACH RT 250 TO ROUNDABOUT



SEE ROUNDABOUT PROFILE FOR DETAILS

STA = 108+40.20
 EL = 844.13
 ex = 0.60'
 K = 30
 L = 119.61

1" = 5' VERT
 SCALE 1" = 50' HORZ.

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

CONCEPTUAL PLANS

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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-941, P101, R201, C501	

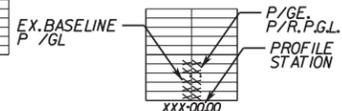
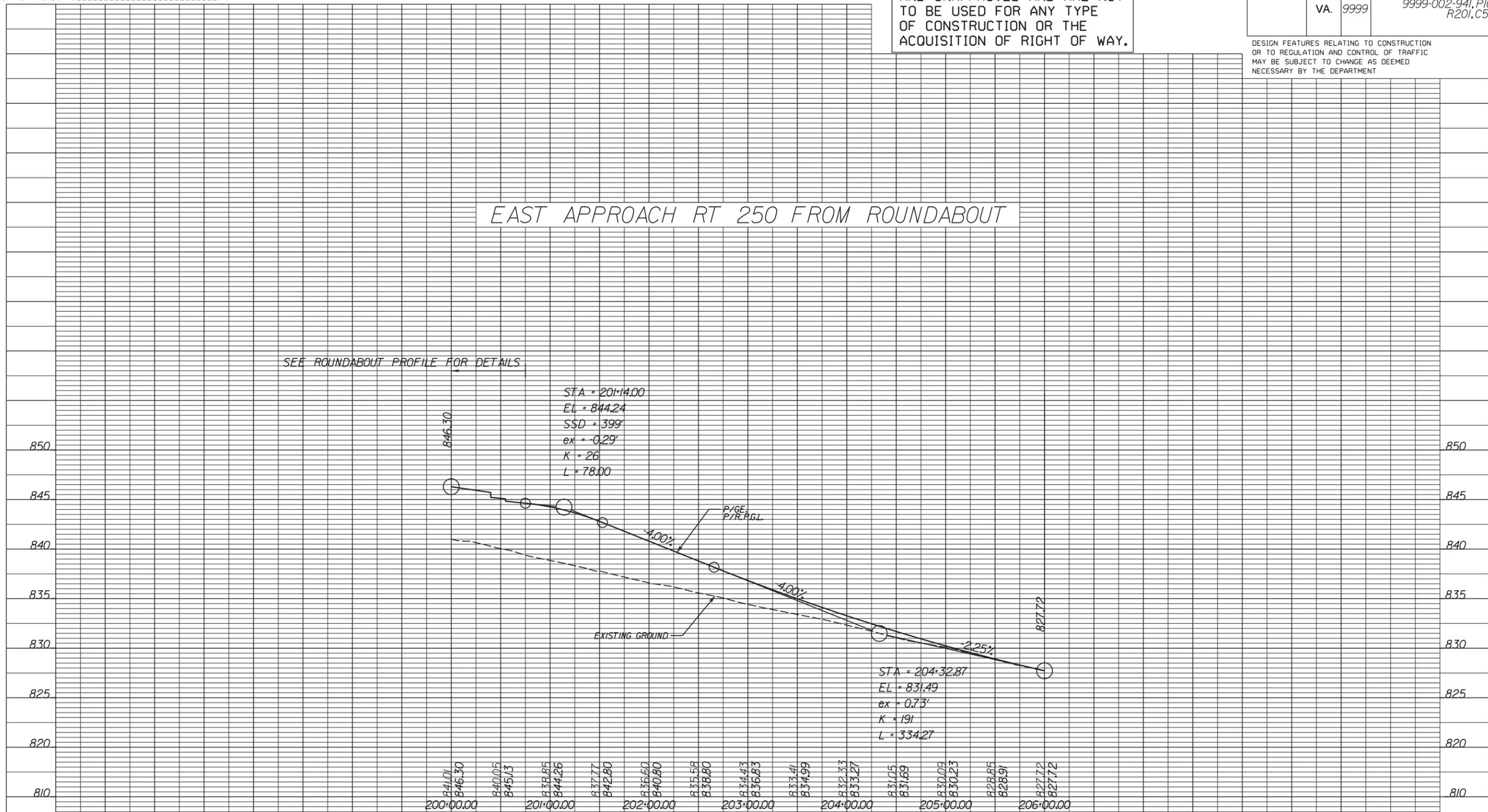
DESIGN FEATURES RELATING TO CONSTRUCTION
 OR TO REGULATION AND CONTROL OF TRAFFIC
 MAY BE SUBJECT TO CHANGE AS DEEMED
 NECESSARY BY THE DEPARTMENT

EAST APPROACH RT 250 FROM ROUNDABOUT

SEE ROUNDABOUT PROFILE FOR DETAILS

STA = 201+14.00
 EL = 844.24
 SSD = 399'
 ex = 0.29'
 K = 26
 L = 78.00

STA = 204+32.87
 EL = 831.49
 ex = 0.73'
 K = 191
 L = 334.27



1" = 5' VERT
 SCALE 1" = 50' HORZ.

PROJECT
 9999-002-941

SHEET NO.

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

CONCEPTUAL PLANS

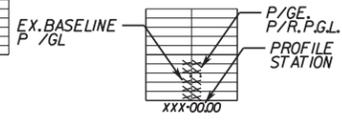
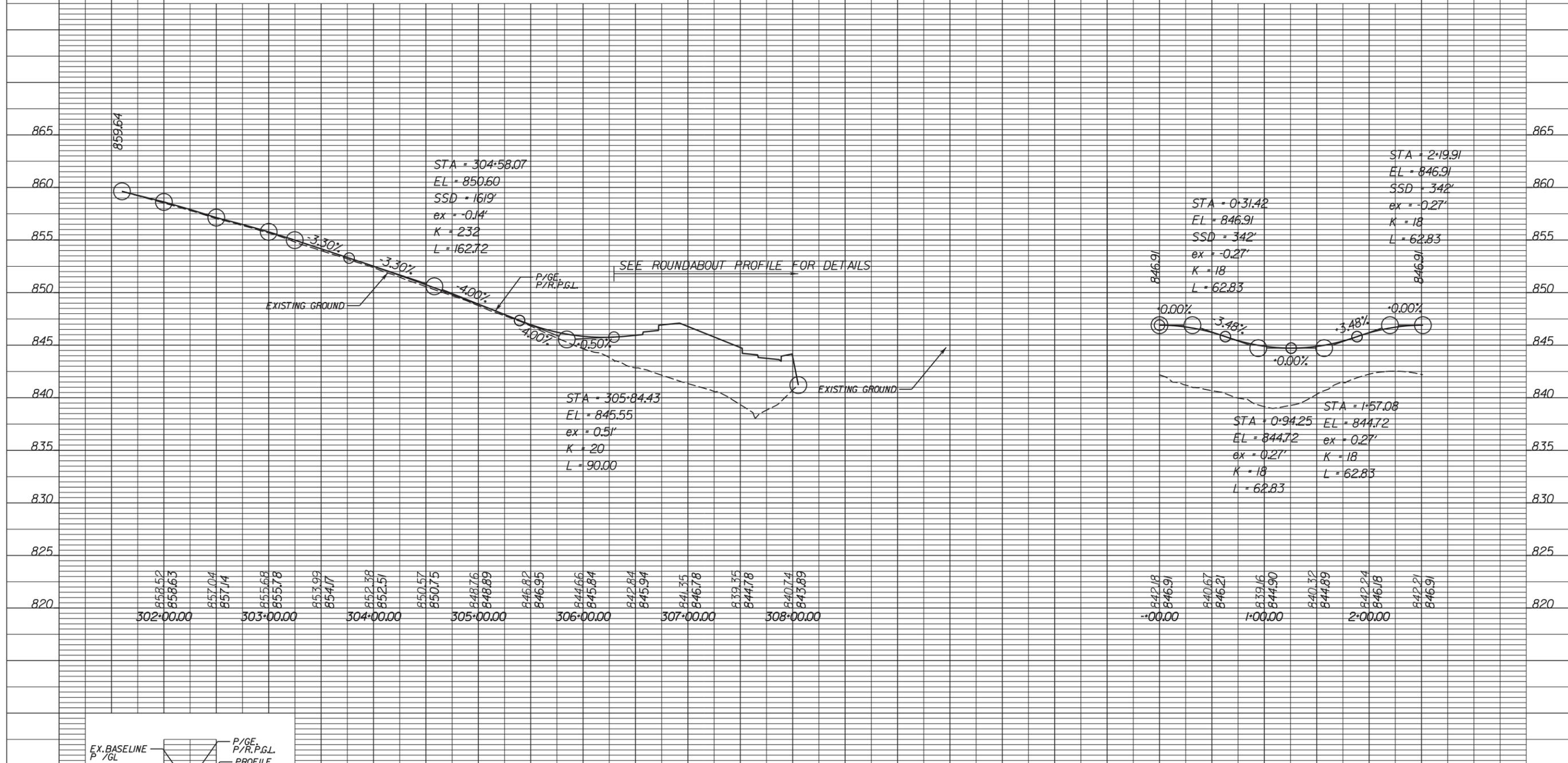
THESE PLANS ARE UNFINISHED
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 ACQUISITION OF RIGHT OF WAY.

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	9999		9999-002-941, P101, R201, C501	

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

SOUTH APPROACH RT 151 TO ROUNDABOUT

ROUNDABOUT



1" = 5' VERT
 SCALE 1" = 50' HORZ.

PROJECT 9999-002-941 SHEET NO.

PROJECT MANAGER _____
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY _____

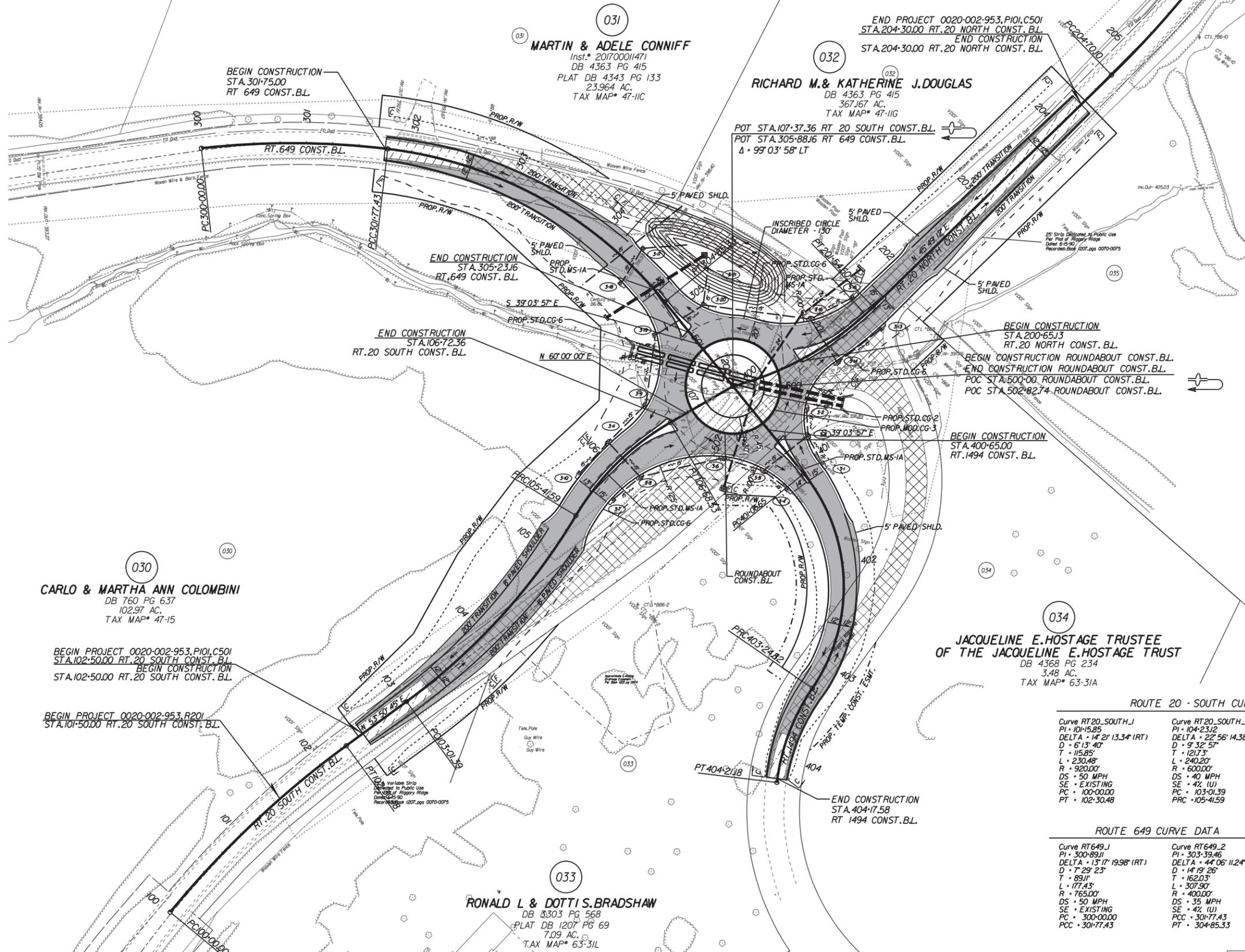
UPC 111733 - 20/649 ROUNDABOUT CCITTEAM CONCEPT

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	20		0020-002-953 P101, R201, C501	

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

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CONCEPTUAL PLANS



030
CARLO & MARTHA ANN COLOMBINI
 DB 760 PG 637
 102.97 AC.
 TAX MAP* 47-15

BEGIN PROJECT 0020-002-953, P101, C501
 STA. 102+50.00 RT. 20 SOUTH CONST. B.L.
 BEGIN CONSTRUCTION
 STA. 102+50.00 RT. 20 SOUTH CONST. B.L.

BEGIN PROJECT 0020-002-953, R201
 STA. 101+50.00 RT. 20 SOUTH CONST. B.L.

031
MARTIN & ADELE CONNIFF
 Inst.* 201700011471
 DB 4363 PG 415
 PLAT DB 4343 PG 133
 23,964 AC.
 TAX MAP* 47-11C

END PROJECT 0020-002-953, P101, C501
 STA. 204+30.00 RT. 20 NORTH CONST. B.L.
 END CONSTRUCTION
 STA. 204+30.00 RT. 20 NORTH CONST. B.L.

032
RICHARD M. & KATHERINE J. DOUGLAS
 DB 4363 PG 415
 367,167 AC.
 TAX MAP* 47-11G

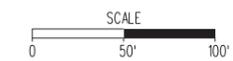
POT STA. 107+37.36 RT 20 SOUTH CONST. B.L.
 POT STA. 305+88.16 RT 649 CONST. B.L.
 $\Delta = 99^{\circ} 03' 58''$ LT

035
MARTIN & ADELE M. CONNIFF
 DB 4119 PG 512
 PLAT DB 1742 PG 32
 30.72 AC.
 TAX MAP* 47-16A

034
**JACQUELINE E. HOSTAGE TRUSTEE
 OF THE JACQUELINE E. HOSTAGE TRUST**
 DB 4368 PG 234
 3.48 AC.
 TAX MAP* 63-31A

033
RONALD L & DOTTI S. BRADSHAW
 DB 3303 PG 568
 PLAT DB 1207 PG 69
 7.09 AC.
 TAX MAP* 63-31L

ROUTE 20 - SOUTH CURVE DATA			ROUTE 20 - NORTH CURVE DATA		
Curve RT20_SOUTH_1 PI • 104+15.85 DELTA • 14° 21' 13.34" (RT) D • 6' 13' 40" T • 15.85' L • 230.48' R • 920.00' DS • 50 MPH SE • EXISTING PC • 100+00.00 PT • 102+30.48	Curve RT20_SOUTH_2 PI • 104+23.12 DELTA • 22° 56' 14.38" (LT) D • 9' 32' 57" T • 121.73' L • 240.20' R • 600.00' DS • 40 MPH SE • 4% (U) PC • 103+01.39 PT • 105+41.59	Curve RT20_SOUTH_3 PI • 106+06.46 DELTA • 29° 05' 29.93" (RT) D • 22' 55' 06" T • 64.67' L • 125.94' R • 250.00' DS • 25 MPH SE • NC (ULS) PC • 105+41.59 PT • 106+68.53	Curve RT20_NORTH_1 PI • 200+80.19 DELTA • 29° 03' 45.59" (LT) D • 19' 05' 55" T • 77.76' L • 126.41' R • 300.00' DS • 25 MPH SE • NC (ULS) PC • 200+02.43 PT • 201+54.60	Curve RT20_NORTH_2 PI • 205+73.73 DELTA • 12° 42' 58.89" (LT) D • 6' 09' 39" T • 103.63' L • 206.41' R • 930.00' DS • 50 MPH SE • EXISTING PC • 204+70.10 PT • 206+76.51	
ROUTE 649 CURVE DATA			ROUTE 1494 CURVE DATA		
Curve RT649_1 PI • 300+89.11 DELTA • 13° 17' 19.98" (RT) D • 7' 29' 23" T • 89.11' L • 177.43' R • 765.00' DS • 50 MPH SE • EXISTING PC • 300+00.00 PT • 301+77.43	Curve RT649_2 PI • 303+39.46 DELTA • 44° 06' 11.24" (RT) D • 14' 19' 26" T • 162.03' L • 307.90' R • 400.00' DS • 35 MPH SE • EXISTING PC • 301+77.43 PT • 304+85.33	Curve RT1494_1 PI • 403+33.66 DELTA • 73° 31' 48.64" (RT) D • 33' 42' 12" T • 127.01' L • 218.17' R • 170.00' DS • 20 MPH SE • 2% (ULS) PC • 401+06.65 PT • 403+24.82	Curve RT1494_2 PI • 403+73.96 DELTA • 27° 36' 25.37" (LT) D • 28' 38' 52" T • 49.14' L • 96.37' R • 200.00' DS • 25 MPH SE • 3.9% (U) PC • 403+24.82 PT • 404+21.8	Curve ROUNDABOUT PI • 500+00.00 DELTA • 360° 00' 00.00" (LT) D • 127' 19' 26" T • 0.00' L • 282.74' R • 45.00' PC • 500+00.00 PT • 502+82.74	



PROJECT	SHEET NO.
0020-002-953	

PROJECT MANAGER _____
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY _____

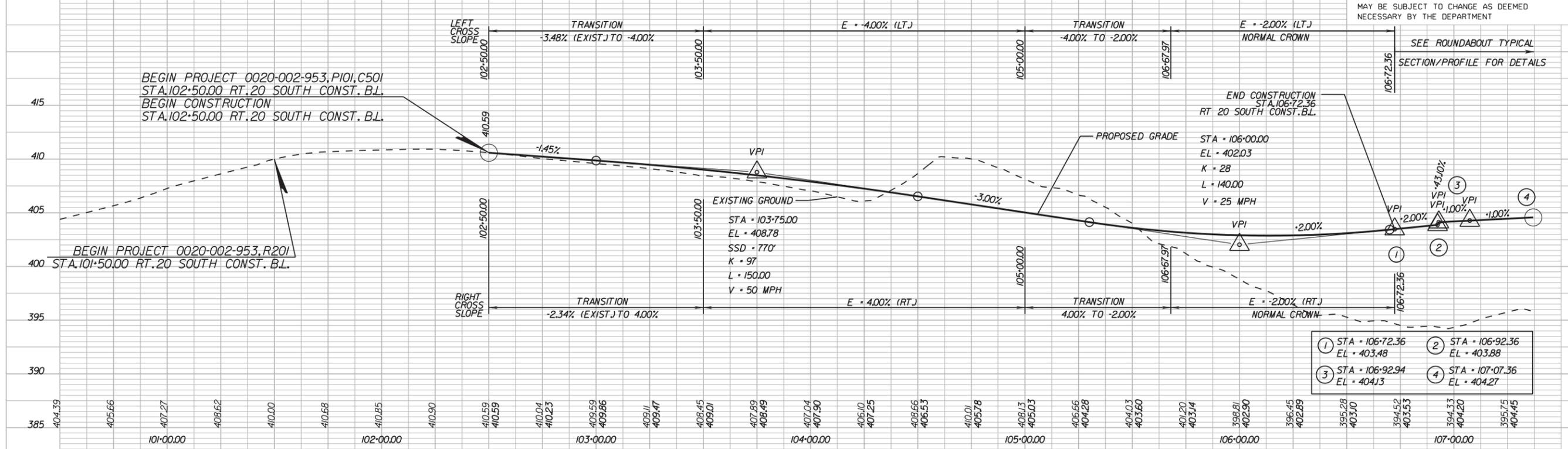
CONCEPTUAL PLANS

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 ACQUISITION OF RIGHT OF WAY.

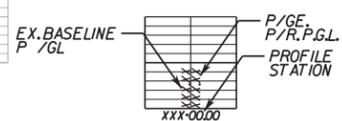
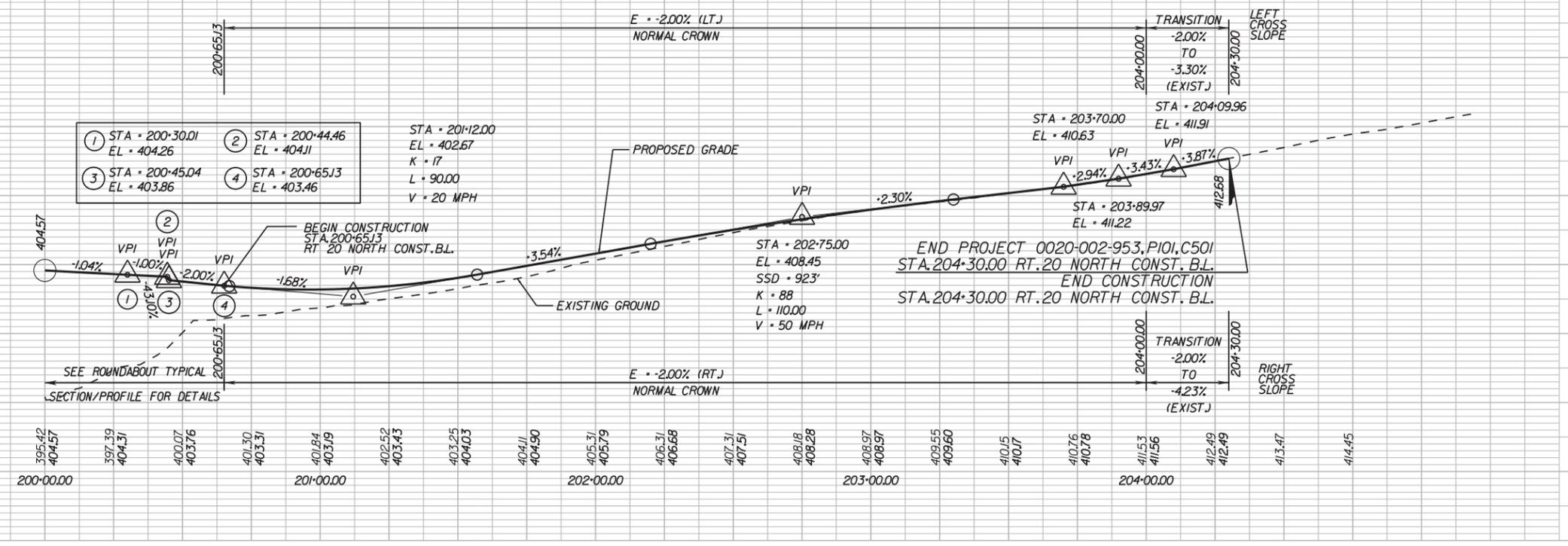
REVISED	STATE		PROJECT	SHEET NO.
	STATE	ROUTE		
	VA.	20	0020-002-953 P101, R201, C501	

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

ROUTE 20 SOUTH PROFILE



ROUTE 20 NORTH PROFILE



1" = 10' VERT
 SCALE 1" = 50' HORZ.

PROJECT MANAGER _____
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY _____

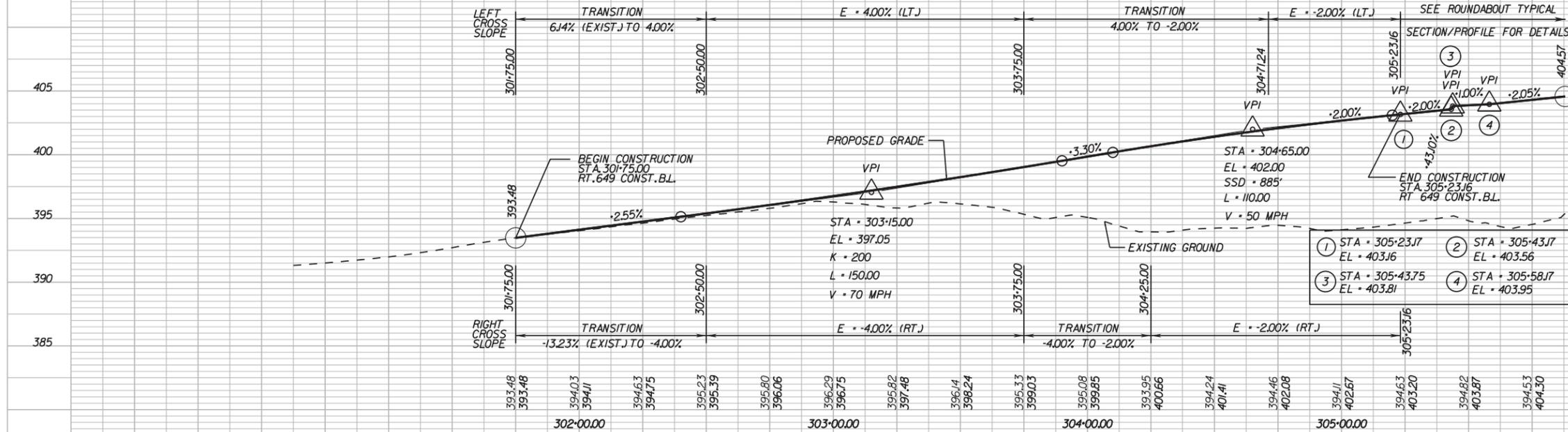
CONCEPTUAL PLANS

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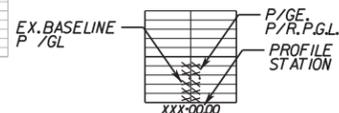
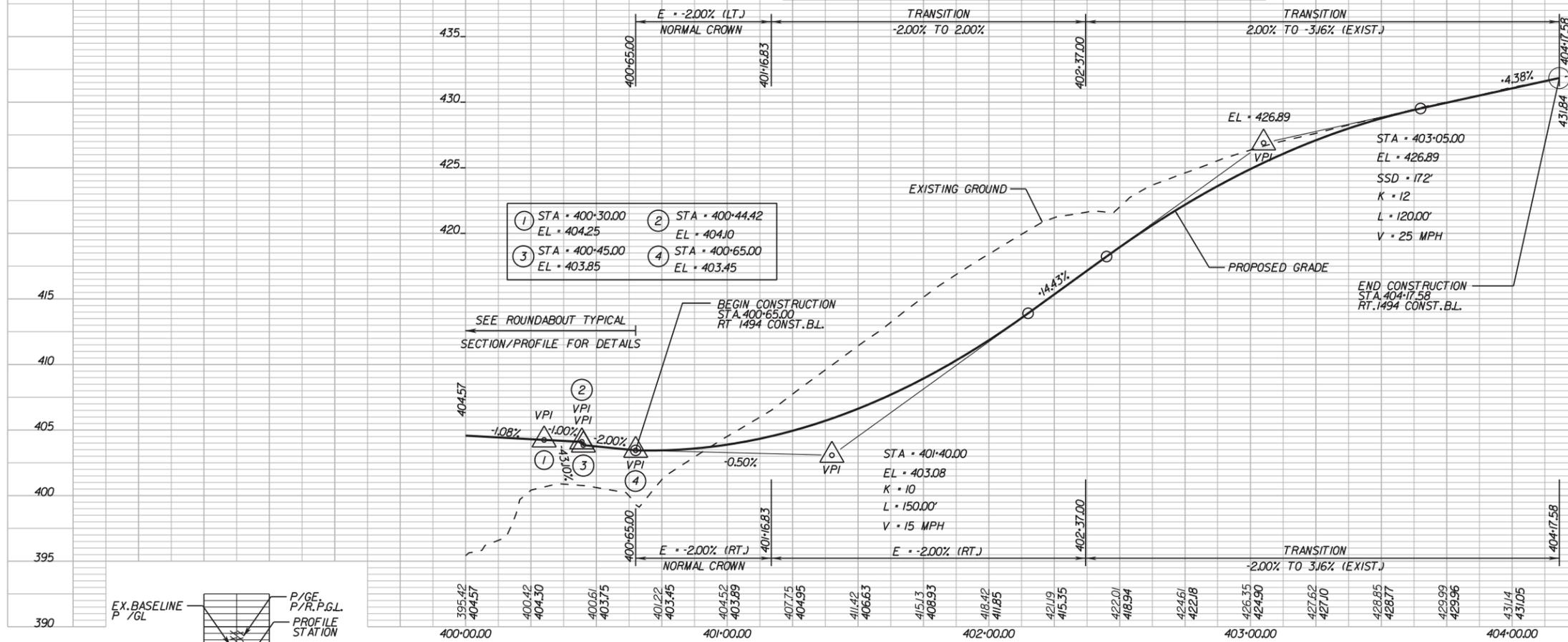
REVISED	STATE		PROJECT	SHEET NO.
	STATE	ROUTE		
	VA.	20	0020-002-953 P101, R201, C501	

DESIGN FEATURES RELATING TO CONSTRUCTION
 OR TO REGULATION AND CONTROL OF TRAFFIC
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 NECESSARY BY THE DEPARTMENT

ROUTE 649 PROFILE



ROUTE 1494 PROFILE



1" = 10' VERT
 SCALE 1" = 50' HORZ.

PROJECT
 0020-002-953

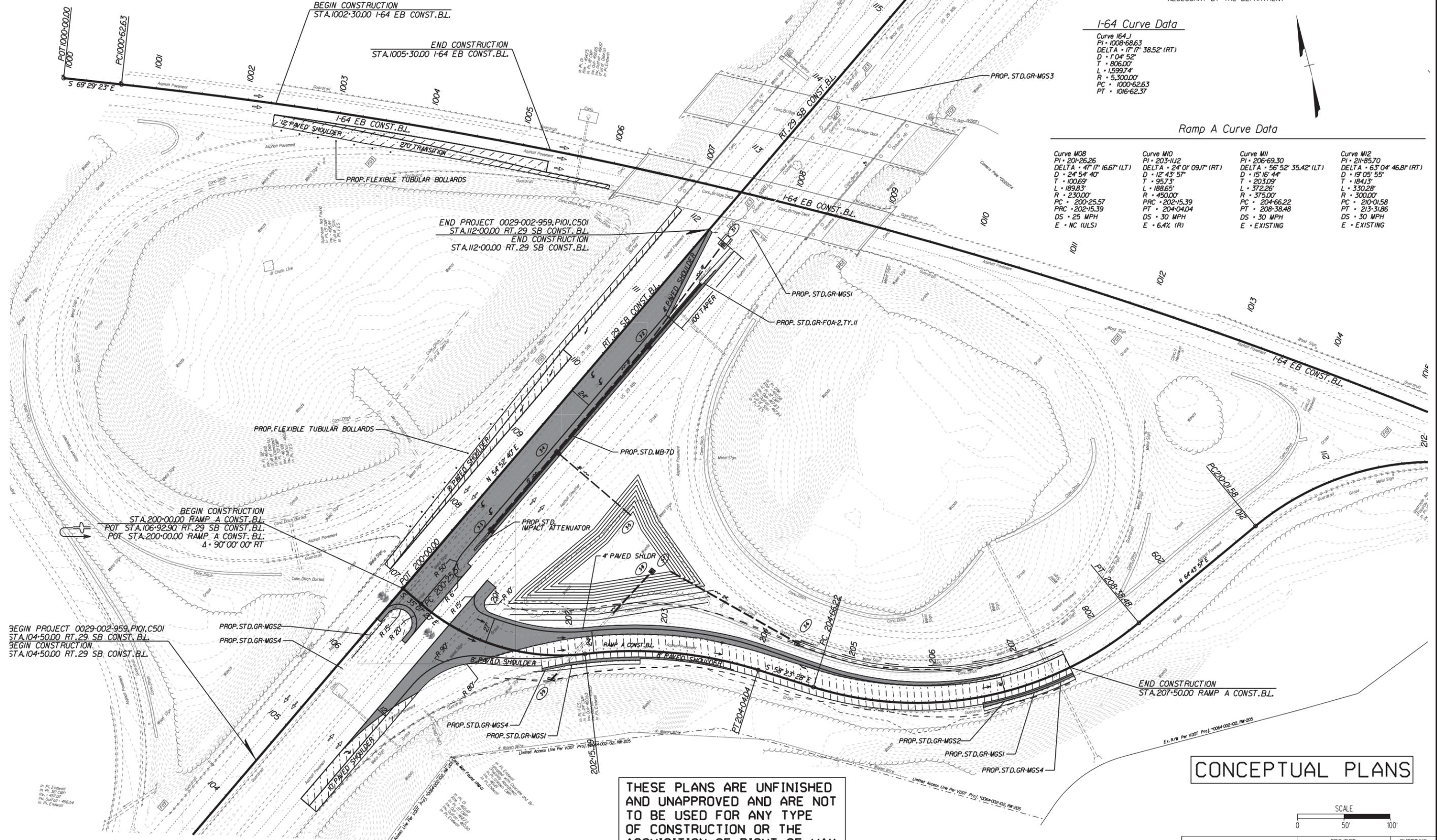
SHEET NO.

PROJECT MANAGER _____
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY _____

UPC 111727 - US 29, I-64 EXIT 118 CCITTEAM CONCEPT

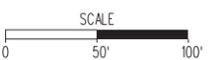
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-959 P101, C501	

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



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CONCEPTUAL PLANS



PROJECT	SHEET NO.
0029-002-959	

PROJECT MANAGER _____
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY _____

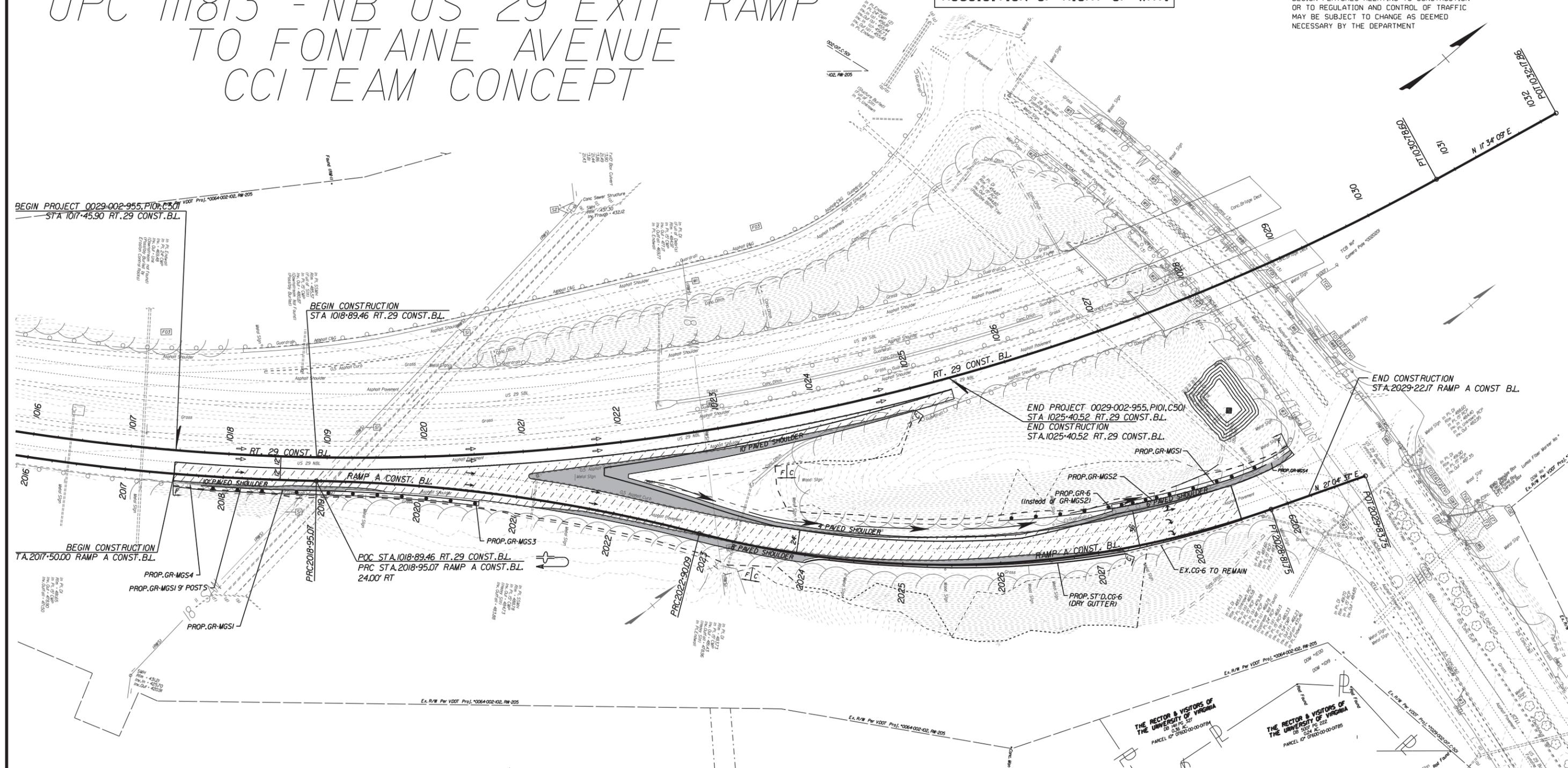
CONCEPTUAL PLANS

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 ACQUISITION OF RIGHT OF WAY.

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	0029-002-955 P101, C501	

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

UPC 111813 - NB US 29 EXIT RAMP TO FONTAINE AVENUE CCITEAM CONCEPT



BEGIN PROJECT 0029-002-955, P101, C501
 STA 1017+45.90 RT. 29 CONST. B.L.

BEGIN CONSTRUCTION
 STA 1018+89.46 RT. 29 CONST. B.L.

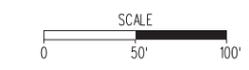
END PROJECT 0029-002-955, P101, C501
 STA 1025+40.52 RT. 29 CONST. B.L.
 END CONSTRUCTION
 STA 1025+40.52 RT. 29 CONST. B.L.

END CONSTRUCTION
 STA 1029+22.17 RAMP A CONST. B.L.

BEGIN CONSTRUCTION
 TA 2017+50.00 RAMP A CONST. B.L.

POC STA 1018+89.46 RT. 29 CONST. B.L.
 PRC STA 2018+95.07 RAMP A CONST. B.L.
 24.00' RT

RAMP A CURVE DATA			RT. 29 CURVE DATA		
Curve RAMP_A_3	Curve RAMP_A_4	Curve RAMP_A_5	Curve NB_RT_29_3		
PI • 2016+27.41	PI • 2020+93.49	PI • 2025+94.86	PI • 1022+61.46		
DELTA • 13° 23' 48J3" (LT)	DELTA • 13° 28' 18.80" (RT)	DELTA • 33° 53' 58.85" (LT)	DELTA • 43° 19' 55.59" (LT)		
D • 2' 29' 28"	D • 5' 43' 46"	D • 5' 43' 46"	D • 2' 31' 03"		
T • 270J2'	T • 198.42'	T • 304.77'	T • 904J7'		
L • 537.78'	L • 395.02'	L • 591.66'	L • 1721.31'		
R • 2,300.00'	R • 1,680.00'	R • 1,000.00'	R • 2,276.00'		
PC • 2013+57.29	PRC • 2018+95.07	PRC • 2022+90.09	PC • 1013+57.29		
PRC • 2018+95.07	SE • 2.8%	PT • 2028+81.75	PT • 1030+78.60		
SE • EXISTING	DS • 30 MPH	SE • 4.2%	SE • EXISTING		
DS • 30 MPH		DS • 30 MPH	DS • 60 MPH		



PROJECT 0029-002-955	SHEET NO.
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PROJECT MANAGER _____
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY _____

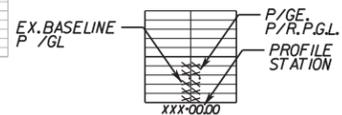
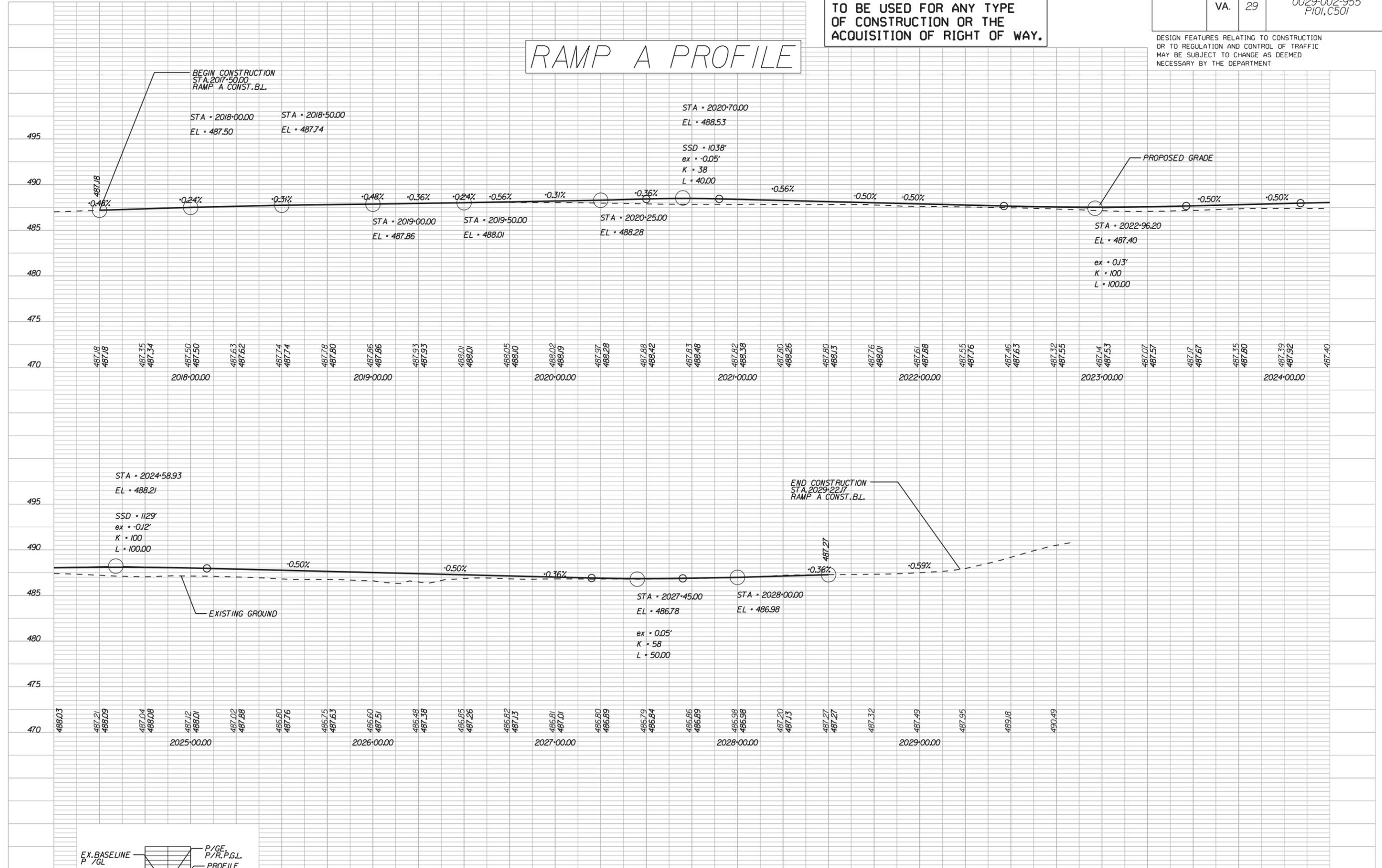
CONCEPTUAL PLANS

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REVISED	STATE		PROJECT	SHEET NO.
	STATE	ROUTE		
	VA.	29	0029-002-955 P101, C501	

DESIGN FEATURES RELATING TO CONSTRUCTION
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 NECESSARY BY THE DEPARTMENT

RAMP A PROFILE



SCALE 1" = 10' VERT
 1" = 50' HORZ.

PROJECT
 0029-002-955

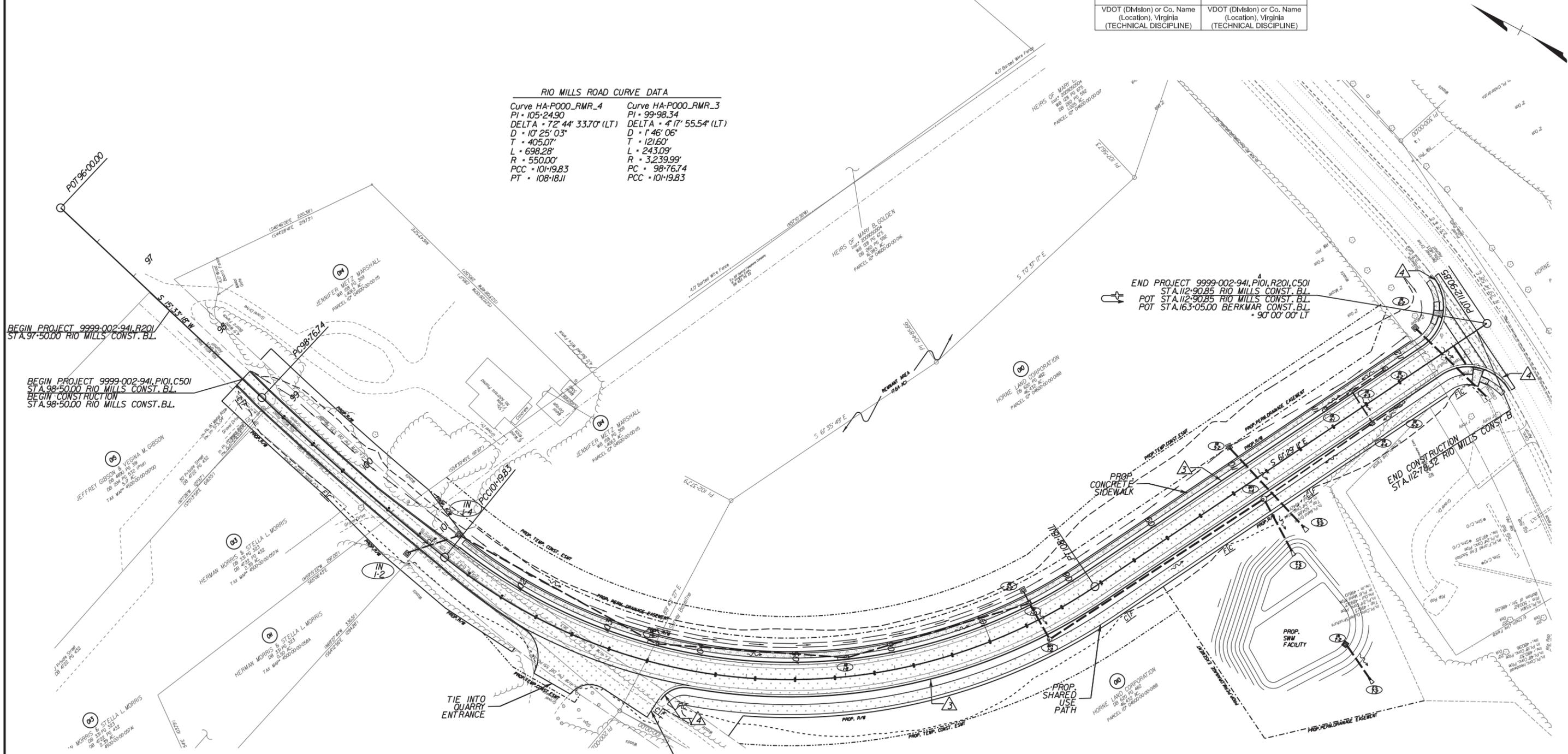
SHEET NO.

UPC 109397 - RIO MILLS CONNECTOR CCITeam CONCEPT

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	9999		9999-002-941, P101, R201, C501	
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT					
VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)			VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)		

RIO MILLS ROAD CURVE DATA

Curve HA-P000_RMR_4 PI • 105-24.90 DELTA • 72° 44' 33.70" (LT) D • 10' 25' 03" T • 405.07' L • 698.28' R • 550.00' PCC • 101-19.83 PT • 108-18.11	Curve HA-P000_RMR_3 PI • 99-98.34 DELTA • 4' 17' 55.54" (LT) D • 1' 46' 06" T • 121.60' L • 243.09' R • 3,239.99' PCC • 98-76.74 PCC • 101-19.83
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CONCEPTUAL PLANS

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LEGEND

- DENOTES PROPOSED RIGHT OF WAY
- - - - DENOTES PERMANENT DRAINAGE EASEMENT
- · - · - DENOTES TEMPORARY CONSTRUCTION EASEMENT
- C - - - DENOTES CONSTRUCTION LIMITS IN CUT
- F - - - DENOTES CONSTRUCTION LIMITS IN FILLS
- Ⓢ DENOTES DEMOLITION OF PAVEMENT
- ▨ DENOTES MILL & OVERLAY PAVEMENT
- · · DENOTES NEW FULL DEPTH ASPHALT PAVEMENT
- DENOTES NEW CONCRETE PAVEMENT

INCIDENTAL LEGEND

- ① ST'D CG-2 REQ'D
- ② RAD. CG-2 REQ'D
- ③ ST'D CG-6 REQ'D
- ④ RAD. CG-6 REQ'D
- ⑤ ST'D CG-7 REQ'D
- ⑥ RAD. CG-7 REQ'D

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile 3A
Drainage Descr.

SCALE 0 50' 100'	PROJECT 9999-002-941	SHEET NO.
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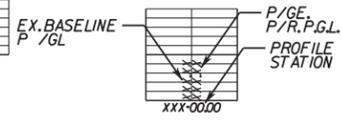
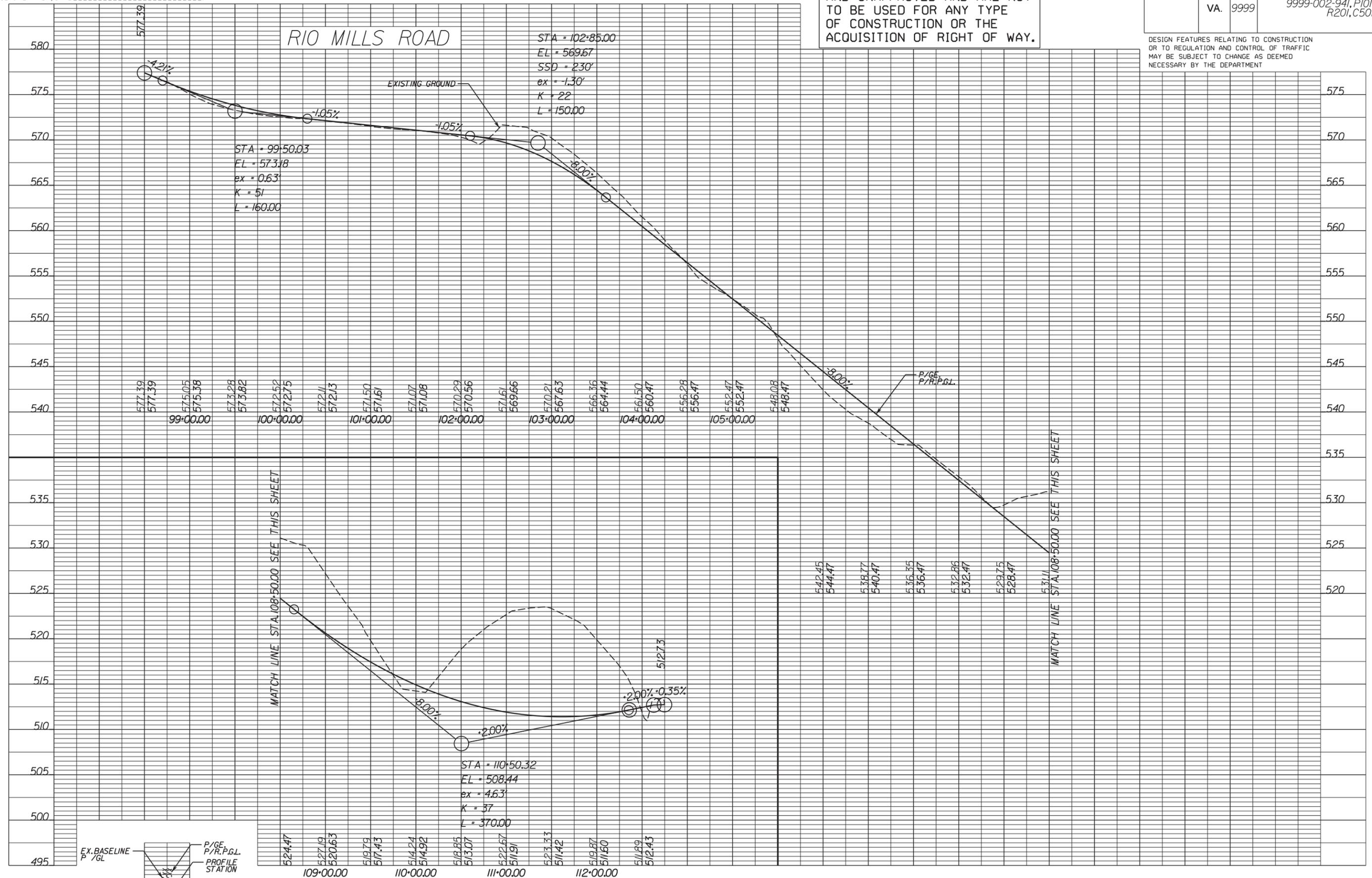
PROJECT MANAGER _____
 SURVEYED BY, DATE _____
 DESIGN BY _____
 SUBSURFACE UTILITY BY, DATE _____

CONCEPTUAL PLANS

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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-941, P101, R201, C501	

DESIGN FEATURES RELATING TO CONSTRUCTION
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 NECESSARY BY THE DEPARTMENT



1" = 5' VERT
 SCALE 1" = 50' HORZ.

4.6.1 Proposal Schedule

Activity ID	Description	Original Duration	Calendar	Early Start	Early Finish	Late Start	Late Finish	Total Float	2019												2020												2021												2022												2023																																																																																																																															
									M				J				J				A				S				O				N				D				J				F				M				A				M				J				J				A				S				O				N				D				J				F				M				A				M				J				J				A				S				O				N				D				J				F				M				A				M				J				J				A				S				O				N				D			
									M				J				J				A				S				O				N				D				J				F				M				A				M				J				J				A				S				O				N				D				J				F				M				A				M				J				J				A				S				O				N				D																																																			
MILE - SCHEDULE MILESTONES																																																																																																																																																																																								
GEN - GENERAL PROJECT																																																																																																																																																																																								
A-1010	NOTICE OF INTENT TO AWARD	1	2	28MAY19*	28MAY19	20JUL19	20JUL19	52d	NOTICE OF INTENT TO AWARD																																																																																																																																																																															
A-1020	CTB AWARD	1	2	19JUN19*	19JUN19	15JUL19	15JUL19	25d	CTB AWARD																																																																																																																																																																															
A-1030	PROVIDE PAYMENT & PERFORMANCE BONDS / INSURANCE	5	2	20JUN19	24JUN19	16JUL19	20JUL19	25d	PROVIDE PAYMENT & PERFORMANCE BONDS / INSURANCE																																																																																																																																																																															
A-1040	DESIGN BUILD CONTRACT EXECUTION	1	2	19JUL19*	19JUL19	21JUL19	21JUL19	2d	DESIGN BUILD CONTRACT EXECUTION																																																																																																																																																																															
A-1050	NOTICE TO PROCEED	1	2	22JUL19*	22JUL19	22JUL19	22JUL19	0	NOTICE TO PROCEED																																																																																																																																																																															
A-1055	SCOPE VALIDATION PERIOD (120 DAYS)	120	2	23JUL19	19NOV19	23JUL19	19NOV19	0*	SCOPE VALIDATION PERIOD (120 DAYS)																																																																																																																																																																															
A-1180	ALL ELEMENTS COMPLETE FOR PUNCHLIST INSPECTIONS	1	2	12JAN23	12JAN23	12JAN23	12JAN23	0	ALL ELEMENTS COMPLETE FOR PUNCHLIST INSPECTIONS																																																																																																																																																																															
A-1185	FINAL WALKTROUGH PUNCHLIST COMPLETE	15	1	13JAN23	02FEB23	13JAN23	02FEB23	0	FINAL WALKTROUGH PUNCHLIST COMPLETE																																																																																																																																																																															
A-1190	FINAL COMPLETION / ACCEPTANCE	1	2	03FEB23	03FEB23	03FEB23	03FEB23	0	FINAL COMPLETION / ACCEPTANCE																																																																																																																																																																															
118 - UPC 111727 - I-64 EXIT 118 PARTIAL CLOVERLEAF																																																																																																																																																																																								
A-1060	BEGIN CONSTRUCTION I-64 EXIT 118 PARTIAL CLOVER	1	2	12AUG20	12AUG20	21JUN22	21JUN22	673d	BEGIN CONSTRUCTION I-64 EXIT 118 PARTIAL CLOVER																																																																																																																																																																															
A-1120	COMPLETE CONSTRUCTION I-64 EXIT 118 PARTIAL CLOV	1	2	25MAR21	25MAR21	12JAN23	12JAN23	652d	COMPLETE CONSTRUCTION I-64 EXIT 118 PARTIAL CLOV																																																																																																																																																																															
29 - UPC 111813 - FONTAINE AVE RAMP / US RTE 29																																																																																																																																																																																								
A-1070	BEGIN CONSTRUCTION FOUNTAIN RAMP US 29 BYPASS	1	2	12AUG20	12AUG20	18OCT21	18OCT21	429d	BEGIN CONSTRUCTION FOUNTAIN RAMP US 29 BYPASS																																																																																																																																																																															
A-1130	COMPLETE CONSTRUCTION FONTAINE RAMP US 29 BYPASS	1	2	31MAR21	31MAR21	12JAN23	12JAN23	646d	COMPLETE CONSTRUCTION FONTAINE RAMP US 29 BYPASS																																																																																																																																																																															
RIO - UPC 109397 - RIO MILLS ROAD EXTENSION																																																																																																																																																																																								
A-1080	BEGIN CONSTRUCTION RIO MILLS EXTENSION	1	2	19JAN21	19JAN21	26JAN22	26JAN22	369d	BEGIN CONSTRUCTION RIO MILLS EXTENSION																																																																																																																																																																															
A-1140	COMPLETE CONSTRUCTION RIO MILLS EXTENSION	1	2	15DEC21	15DEC21	11JAN23	11JAN23	387d	COMPLETE CONSTRUCTION RIO MILLS EXTENSION																																																																																																																																																																															
124 - UPC 111814 - I-64 EXIT 124 INTERCHANGE IMPROV																																																																																																																																																																																								
A-1090	BEGIN CONSTRUCTION I-64 EXIT 124 DDI	1	2	03SEP20	03SEP20	29APR21	29APR21	236d	BEGIN CONSTRUCTION I-64 EXIT 124 DDI																																																																																																																																																																															
A-1150	COMPLETE CONSTRUCTION I-64 EXIT 124 DDI	1	2	08JUL22	08JUL22	11JAN23	11JAN23	185d	COMPLETE CONSTRUCTION I-64 EXIT 124 DDI																																																																																																																																																																															
250 - UPC 111730 - US RTE 250 & RTE 151 ROUNDABOUT																																																																																																																																																																																								
A-1110	BEGIN CONSTRUCTION ROUTE 250 / ROUTE 151	1	2	05JUN21	05JUN21	06JUN21	06JUN21	1d	BEGIN CONSTRUCTION ROUTE 250 / ROUTE 151																																																																																																																																																																															
A-1170	COMPLETE CONSTRUCTION ROUTE 250 / ROUTE 151	1	2	11JAN23	11JAN23	11JAN23	11JAN23	0	COMPLETE CONSTRUCTION ROUTE 250 / ROUTE 151																																																																																																																																																																															
20 - UPC 111733 - RTE 20 & RTE 649 ROUNDABOUT																																																																																																																																																																																								
A-1100	BEGIN CONSTRUCTION ROUTE 20 / ROUTE 649	1	2	05JUN21	05JUN21	06FEB22	06FEB22	243d	BEGIN CONSTRUCTION ROUTE 20 / ROUTE 649																																																																																																																																																																															
A-1160	COMPLETION CONSTRUCTION ROUTE 20 / ROUTE 649	1	2	20JUN22	20JUN22	11JAN23	11JAN23	202d	COMPLETION CONSTRUCTION ROUTE 20 / ROUTE 649																																																																																																																																																																															
PENG - PRELIMINARY ENGINEERING																																																																																																																																																																																								
GEN - GENERAL PROJECT																																																																																																																																																																																								
B-1010	PREPARE, SUBMIT QA/QC PLAN	15	1	22JUL19	09AUG19	26JUL19	15AUG19	4d	PREPARE, SUBMIT QA/QC PLAN																																																																																																																																																																															
B-1020	PRESENT QA/QC PLAN / KICK OFF MEETING	1	1	12AUG19	12AUG19	16AUG19	16AUG19	4d	PRESENT QA/QC PLAN / KICK OFF MEETING																																																																																																																																																																															
B-1030	VDOT REVIEW QA/QC PLAN	25	2	13AUG19	06SEP19	18AUG19	11SEP19	5d	VDOT REVIEW QA/QC PLAN																																																																																																																																																																															
B-1040	QA/QC PLAN APPROVED	1	1	09SEP19	09SEP19	12SEP19	12SEP19	3d	QA/QC PLAN APPROVED																																																																																																																																																																															
B-1050	DISTRIBUTE ACCESS LETTERS	1	1	23JUL19	23JUL19	23JUL19	23JUL19	0	DISTRIBUTE ACCESS LETTERS																																																																																																																																																																															
B-1060	PROPERTY ACCESS (HOLD POINT)	15	2	24JUL19	07AUG19	24JUL19	07AUG19	0	PROPERTY ACCESS (HOLD POINT)																																																																																																																																																																															

Start date	28MAY19
Finish date	03FEB23
Data date	28MAY19
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■ Early bar
■ Critical bar

Activity ID	Description	Original Duration	Calendar	Early Start	Early Finish	Late Start	Late Finish	Total Float	Gantt Chart																																																											
									2019												2020												2021												2022												2023											
									M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D				
B-1070	FIELD VERIFICATION SURVEY	18	1	08AUG19	02SEP19	08AUG19	02SEP19	0	■ FIELD VERIFICATION SURVEY																																																											
B-1080	BOUNDARY SURVEY/ SET CORNERS	18	1	15AUG19	09SEP19	15AUG19	09SEP19	0	■ BOUNDARY SURVEY/ SET CORNERS																																																											
B-1090	FILE MISS UTILITY TICKETS	7	1	22AUG19	30AUG19	22AUG19	30AUG19	0	■ FILE MISS UTILITY TICKETS																																																											
B-1100	PERFORM SOIL BORINGS	12	1	02SEP19	17SEP19	02SEP19	17SEP19	0	■ PERFORM SOIL BORINGS																																																											
B-1110	ROADWAY AND STRUCTURE GEOTECHNICAL FIELD INVESTI	40	2	07SEP19	16OCT19	25SEP19	03NOV19	18d	■ ROADWAY AND STRUCTURE GEOTECHNICAL FIELD INVESTI																																																											
B-1120	PERFORM PAVEMENT ANALYSIS	20	1	18SEP19	15OCT19	18SEP19	15OCT19	0	■ PERFORM PAVEMENT ANALYSIS																																																											
B-1130	LAB SAMPLING AND FIELD DATA COMPILATION	40	2	25SEP19	03NOV19	25SEP19	03NOV19	0	■ LAB SAMPLING AND FIELD DATA COMPILATION																																																											
B-1140	PREPARE AND SUBMIT GEOTECHNICAL REPORT	15	1	04NOV19	22NOV19	04NOV19	22NOV19	0	■ PREPARE AND SUBMIT GEOTECHNICAL REPORT																																																											
B-1150	VDOT REVIEW FINAL GEOTECHNICAL REPORT	90	2	23NOV19	22FEB20	25NOV19	24FEB20	2d	■ VDOT REVIEW FINAL GEOTECHNICAL REPORT																																																											
B-1160	PERFORM UTILITY DESIGNATIONS	30	1	08AUG19	18SEP19	07FEB20	19MAR20	129d	■ PERFORM UTILITY DESIGNATIONS																																																											
B-1170	EXISTING DRAINAGE INVENTORY SURVEY	20	1	19SEP19	16OCT19	20MAR20	16APR20	129d	■ EXISTING DRAINAGE INVENTORY SURVEY																																																											
B-1180	UTILITY TEST PITS	20	1	17OCT19	13NOV19	17APR20	14MAY20	129d	■ UTILITY TEST PITS																																																											
PUB - PUBLIC INVOLVEMENT																																																																				
GEN - GENERAL PROJECT																																																																				
C-1010	SUBMIT EMERGENCY CONTACT LIST	10	1	10SEP19	23SEP19	13SEP19	26SEP19	3d	■ SUBMIT EMERGENCY CONTACT LIST																																																											
C-1020	MEET W/ DISTRICT PUBLIC AFFAIRS TO DISCUSS PLANS	15	1	24SEP19	14OCT19	27SEP19	17OCT19	3d	■ MEET W/ DISTRICT PUBLIC AFFAIRS TO DISCUSS PLANS																																																											
C-1030	ASSIST VDOT to DEVELOP PUBLIC INFO/COMM PLAN	45	1	15OCT19	16DEC19	18OCT19	19DEC19	3d	■ ASSIST VDOT to DEVELOP PUBLIC INFO/COMM PLAN																																																											
C-1040	DESIGN PUBLIC INFO MTG #1 - EARLY COORDINATION	1	1	17DEC19	17DEC19	20DEC19	20DEC19	3d	■ DESIGN PUBLIC INFO MTG #1 - EARLY COORDINATION																																																											
C-1050	VDOT REVIEW PICP WITH TEAM AND MODIFY	21	2	18DEC19	09JAN20	21DEC19	12JAN20	3d	■ VDOT REVIEW PICP WITH TEAM AND MODIFY																																																											
C-1060	FIRST RESPONDER MEETING # 1	1	1	10JAN20	10JAN20	13JAN20	13JAN20	1d	■ FIRST RESPONDER MEETING # 1																																																											
C-1065	FINAL PICP APPROVED	1	1	13JAN20	13JAN20	14JAN20	14JAN20	1d	■ FINAL PICP APPROVED																																																											
C-1070	DESIGN PUBLIC MEETING # 2 -START OF CONSTRUCTION	1	1	14JAN20	14JAN20	15JAN20	15JAN20	1d	■ DESIGN PUBLIC MEETING # 2 -START OF CONSTRUCTION																																																											
C-1080	FIRST RESPONDER MEETING # 2	1	1	15JAN20	15JAN20	16JAN20	16JAN20	1d	■ FIRST RESPONDER MEETING # 2																																																											
C-1090	PUBIC INVOLVEMENT - ONGOING COORDINATION	1105	2	16JAN20	02FEB23	17JAN20	03FEB23	1d	■ PUBIC INVOLVEMENT - ONGOING COORDINATION																																																											
C-1100	CONSTRUCTION - PUBLIC OUTREACH MTG # 1	1	1	16JAN20	16JAN20	03JUN21	03JUN21	358d	■ CONSTRUCTION - PUBLIC OUTREACH MTG # 1																																																											
C-1110	CONSTRUCTION - PUBLIC OUTREACH MTG # 2	1	1	02JUN21	02JUN21	04JUN21	04JUN21	2d	■ CONSTRUCTION - PUBLIC OUTREACH MTG # 2																																																											
DES - DESIGN																																																																				
118 - UPC 111727 - I-64 EXIT 118 PARTIAL CLOVERLEAF																																																																				
D-1010	PREPARE ROADWAY PLANS - 1ST SUBMISSION	35	1	04NOV19	20DEC19	03AUG21	20SEP21	452d	■ PREPARE ROADWAY PLANS - 1ST SUBMISSION																																																											
D-1020	DESIGN QA/QC PLANS (1ST SUBMISSION)	5	1	23DEC19	30DEC19	21SEP21	27SEP21	452d	■ DESIGN QA/QC PLANS (1ST SUBMISSION)																																																											
D-1030	SUBMT ROADWAY PLANS 1ST SUBMISSION	1	1	31DEC19	31DEC19	28SEP21	28SEP21	452d	■ SUBMT ROADWAY PLANS 1ST SUBMISSION																																																											
D-1040	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (1ST)	21	2	02JAN20	22JAN20	29SEP21	19OCT21	632d	■ VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (1ST)																																																											
D-1050	PREPARE ROADWAY PLANS - 2ND SUBMISSION	20	1	23JAN20	19FEB20	20OCT21	16NOV21	452d	■ PREPARE ROADWAY PLANS - 2ND SUBMISSION																																																											
D-1060	DESIGN QA/QC ROADWAY PLANS - 2ND SUBMISSION	5	1	20FEB20	26FEB20	17NOV21	23NOV21	452d	■ DESIGN QA/QC ROADWAY PLANS - 2ND SUBMISSION																																																											
D-1070	SUBMIT ROADWAY PLANS - 2ND SUBMISSION	1	1	27FEB20	27FEB20	24NOV21	24NOV21	452d	■ SUBMIT ROADWAY PLANS - 2ND SUBMISSION																																																											
D-1080	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (2ND)	21	2	28FEB20	19MAR20	25NOV21	15DEC21	632d	■ VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (2ND)																																																											
D-1090	PREPARE FINAL ROADWAY PLANS	15	1	20MAR20	09APR20	16DEC21	05JAN22	452d	■ PREPARE FINAL ROADWAY PLANS																																																											
D-1100	DESIGN QA/QC FINAL ROADWAY PLANS	3	1	10APR20	14APR20	06JAN22	10JAN22	452d	■ DESIGN QA/QC FINAL ROADWAY PLANS																																																											
D-1110	SUBMIT FINAL ROADWAY PLANS	1	1	15APR20	15APR20	11JAN22	11JAN22	452d	■ SUBMIT FINAL ROADWAY PLANS																																																											
D-1120	VDOT/FHWA REVIEW COMMENT FINAL ROADWAY PLANS	21	2	16APR20	06MAY20	23MAY22	12JUN22	761d	■ VDOT/FHWA REVIEW COMMENT FINAL ROADWAY PLANS																																																											

Start date 28MAY19
 Finish date 03FEB23
 Data date 28MAY19
 Run date 19APR19
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■ Early bar
 ■ Critical bar

Activity ID	Description	Original Duration	Calendar	Early Start	Early Finish	Late Start	Late Finish	Total Float	2019												2020												2021												2022												2023																																																																																																																															
									M				J				J				A				S				O				N				D				J				F				M				A				M				J				J				A				S				O				N				D				J				F				M				A				M				J				J				A				S				O				N				D				J				F				M				A				M				J				J				A				S				O				N				D			
D-1130	RFC PLANS ISSUED FOR CONSTRUCTION	7	1	07MAY20	15MAY20	13JUN22	21JUN22	545d	RFC PLANS ISSUED FOR CONSTRUCTION																																																																																																																																																																															
29 - UPC 111813 - FONTAINE AVE RAMP / US RTE 29																																																																																																																																																																																								
D-2010	PREPARE ROADWAY PLANS - 1ST SUBMISSION	35	1	03SEP19	21OCT19	12SEP19	30OCT19	7d	PREPARE ROADWAY PLANS - 1ST SUBMISSION																																																																																																																																																																															
D-2020	DESIGN QA/QC PLANS (1ST SUBMISSION)	5	1	22OCT19	28OCT19	31OCT19	06NOV19	7d	DESIGN QA/QC PLANS (1ST SUBMISSION)																																																																																																																																																																															
D-2030	SUBMT ROADWAY PLANS 1ST SUBMISSION	1	1	29OCT19	29OCT19	07NOV19	07NOV19	7d	SUBMT ROADWAY PLANS 1ST SUBMISSION																																																																																																																																																																															
D-2040	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (1ST)	21	2	30OCT19	19NOV19	08NOV19	28NOV19	9d	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (1ST)																																																																																																																																																																															
D-2050	PREPARE ROADWAY PLANS - 2ND SUBMISSION	20	1	20NOV19	17DEC19	29NOV19	27DEC19	7d	PREPARE ROADWAY PLANS - 2ND SUBMISSION																																																																																																																																																																															
D-2060	DESIGN QA/QC ROADWAY PLANS - 2ND SUBMISSION	5	1	18DEC19	24DEC19	30DEC19	06JAN20	7d	DESIGN QA/QC ROADWAY PLANS - 2ND SUBMISSION																																																																																																																																																																															
D-2070	SUBMIT ROADWAY PLANS - 2ND SUBMISSION	1	1	26DEC19	26DEC19	07JAN20	07JAN20	7d	SUBMIT ROADWAY PLANS - 2ND SUBMISSION																																																																																																																																																																															
D-2080	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (2ND)	21	2	27DEC19	17JAN20	08JAN20	28JAN20	11d	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (2ND)																																																																																																																																																																															
D-2090	PREPARE FINAL ROADWAY PLANS	15	1	20JAN20	07FEB20	29JAN20	18FEB20	7d	PREPARE FINAL ROADWAY PLANS																																																																																																																																																																															
D-2100	DESIGN QA/QC FINAL ROADWAY PLANS	3	1	10FEB20	12FEB20	19FEB20	21FEB20	7d	DESIGN QA/QC FINAL ROADWAY PLANS																																																																																																																																																																															
D-2110	SUBMIT FINAL ROADWAY PLANS	1	1	13FEB20	13FEB20	24FEB20	24FEB20	7d	SUBMIT FINAL ROADWAY PLANS																																																																																																																																																																															
D-2120	VDOT/FHWA REVIEW COMMENT FINAL ROADWAY PLANS	21	2	23FEB20	14MAR20	25FEB20	16MAR20	2d	VDOT/FHWA REVIEW COMMENT FINAL ROADWAY PLANS																																																																																																																																																																															
D-2130	RFC PLANS ISSUED FOR CONSTRUCTION	7	1	16MAR20	24MAR20	17MAR20	25MAR20	1d	RFC PLANS ISSUED FOR CONSTRUCTION																																																																																																																																																																															
RIO - UPC 109397 - RIO MILLS ROAD EXTENSION																																																																																																																																																																																								
D-6010	PREPARE ROADWAY PLANS - 1ST SUBMISSION	20	1	25NOV19	20DEC19	06AUG21	02SEP21	440d	PREPARE ROADWAY PLANS - 1ST SUBMISSION																																																																																																																																																																															
D-6020	DESIGN QA/QC PLANS (1ST SUBMISSION)	5	1	23DEC19	30DEC19	03SEP21	09SEP21	440d	DESIGN QA/QC PLANS (1ST SUBMISSION)																																																																																																																																																																															
D-6030	SUBMT ROADWAY PLANS 1ST SUBMISSION	1	1	31DEC19	31DEC19	10SEP21	10SEP21	440d	SUBMT ROADWAY PLANS 1ST SUBMISSION																																																																																																																																																																															
D-6040	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (1ST)	21	2	02JAN20	22JAN20	13SEP21	03OCT21	616d	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (1ST)																																																																																																																																																																															
D-6050	PREPARE ROADWAY PLANS - 2ND SUBMISSION	20	1	23JAN20	19FEB20	04OCT21	29OCT21	440d	PREPARE ROADWAY PLANS - 2ND SUBMISSION																																																																																																																																																																															
D-6060	DESIGN QA/QC ROADWAY PLANS - 2ND SUBMISSION	5	1	20FEB20	26FEB20	01NOV21	05NOV21	440d	DESIGN QA/QC ROADWAY PLANS - 2ND SUBMISSION																																																																																																																																																																															
D-6070	SUBMIT ROADWAY PLANS - 2ND SUBMISSION	1	1	27FEB20	27FEB20	08NOV21	08NOV21	440d	SUBMIT ROADWAY PLANS - 2ND SUBMISSION																																																																																																																																																																															
D-6080	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (2ND)	21	2	28FEB20	19MAR20	09NOV21	29NOV21	616d	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (2ND)																																																																																																																																																																															
D-6090	PREPARE FINAL ROADWAY PLANS	15	1	20MAR20	09APR20	30NOV21	20DEC21	440d	PREPARE FINAL ROADWAY PLANS																																																																																																																																																																															
D-6100	DESIGN QA/QC FINAL ROADWAY PLANS	3	1	10APR20	14APR20	21DEC21	23DEC21	440d	DESIGN QA/QC FINAL ROADWAY PLANS																																																																																																																																																																															
D-6110	SUBMIT FINAL ROADWAY PLANS	1	1	15APR20	15APR20	24DEC21	24DEC21	440d	SUBMIT FINAL ROADWAY PLANS																																																																																																																																																																															
D-6120	VDOT/FHWA REVIEW COMMENT FINAL ROADWAY PLANS	21	2	16APR20	06MAY20	27DEC21	17JAN22	615d	VDOT/FHWA REVIEW COMMENT FINAL ROADWAY PLANS																																																																																																																																																																															
D-6130	RFC PLANS ISSUED FOR CONSTRUCTION	7	1	07MAY20	15MAY20	18JAN22	26JAN22	441d	RFC PLANS ISSUED FOR CONSTRUCTION																																																																																																																																																																															
124 - UPC 111814 - I-64 EXIT 124 INTERCHANGE IMPROV																																																																																																																																																																																								
D-5010	PREPARE ROADWAY PLANS - 1ST SUBMISSION	70	1	25NOV19	03MAR20	20JUL20	23OCT20	168d	PREPARE ROADWAY PLANS - 1ST SUBMISSION																																																																																																																																																																															
D-5020	DESIGN QA/QC PLANS (1ST SUBMISSION)	15	1	04MAR20	24MAR20	26OCT20	13NOV20	168d	DESIGN QA/QC PLANS (1ST SUBMISSION)																																																																																																																																																																															
D-5030	SUBMT ROADWAY PLANS 1ST SUBMISSION	1	1	25MAR20	25MAR20	16NOV20	16NOV20	168d	SUBMT ROADWAY PLANS 1ST SUBMISSION																																																																																																																																																																															
D-5040	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (1ST)	21	2	26MAR20	15APR20	17NOV20	07DEC20	235d	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (1ST)																																																																																																																																																																															
D-5050	PREPARE ROADWAY PLANS - 2ND SUBMISSION	30	1	16APR20	27MAY20	08DEC20	20JAN21	168d	PREPARE ROADWAY PLANS - 2ND SUBMISSION																																																																																																																																																																															
D-5060	DESIGN QA/QC ROADWAY PLANS - 2ND SUBMISSION	7	1	28MAY20	05JUN20	21JAN21	29JAN21	168d	DESIGN QA/QC ROADWAY PLANS - 2ND SUBMISSION																																																																																																																																																																															
D-5070	SUBMIT ROADWAY PLANS - 2ND SUBMISSION	1	1	08JUN20	08JUN20	01FEB21	01FEB21	168d	SUBMIT ROADWAY PLANS - 2ND SUBMISSION																																																																																																																																																																															
D-5080	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (2ND)	21	2	09JUN20	29JUN20	02FEB21	22FEB21	235d	VDOT/FHWA REVIEW COMMENT ROADWAY PLANS (2ND)																																																																																																																																																																															
D-5090	PREPARE FINAL ROADWAY PLANS	20	1	30JUN20	27JUL20	23FEB21	22MAR21	168d	PREPARE FINAL ROADWAY PLANS																																																																																																																																																																															

Start date 28MAY19
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 Run date 19APR19
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Curtis Contracting Inc.
Albemarle Intersection Bundling D-B

 Early bar
 Critical bar

Submitted By:



Curtis Contracting Inc.

In Association With:

