

Design-Build Project for Route 29 Solutions Albemarle County, Virginia

State Project Nos.:

US 29 & Rio Road Grade Separated Intersection (0029-002-091)

US 29 Widening (0029-002-135)

Berkmar Drive Extension (9999-002-900)

Federal Project Nos.:

Design-Build Project for Route 29 Solutions: 5104(230)

Contract ID Number: C00077383DB80



Submitted to:



Submitted by:



In association with:



January 6, 2015



Section 4.1

Letter of Submittal

LANE AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

January 6, 2015

John Daoulas, PE
Alternate Project Delivery Office
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219

RE: Design-Build Project for Route 29 Solutions, Albemarle County, Virginia

State Project Nos.: US 29 Rio Road Grade Separated Intersection (0029-002-091),
US 29 Widening (0029-002-135), and Berkmar Drive Extension (9999-002-900)
Federal Project Nos.: US 29 Rio Road Grade Separated Intersection (NHPP-002-7(045))
US 29 Widening (STP-5104(166))
Contract ID Number: C00077383DB80

Dear Mr. Daoulas:

The LANE/Corman Joint Venture is pleased to present this Technical Proposal for the above referenced project to the Virginia Department of Transportation (VDOT). Our response contains all information requested in the RFP dated October 2, 2014 and Addendum 1 dated November 5, 2014, Addendum 2 dated December 5, 2014 and Addendum 3 dated December 19, 2014. LANE and Corman are transportation and heavy civil construction leaders with established track records in Virginia for successful transportation projects. Our firms, joined together specifically for this endeavor, represent over 215 years of experience; we fully appreciate and understand the value and power of partnership.

The LANE/Corman JV is the Offeror and will be the overall authority on the project. LANE will serve as Lead JV Partner. We have teamed with Rummel, Klepper, & Kahl, LLP (RK&K) as the Lead Designer supported by Whitman Requardt & Associates, LLP (WR&A) and Rinker Design Associates, PC (RDA). Together, we provide VDOT with a reputable team capable of completing this Project including each of the three Project Elements on time and on budget.

4.1.1 Offeror's Full Legal Name and Address:

LANE/Corman JV
c/o The Lane Construction Corporation
90 Fieldstone Court
Cheshire, CT 06410

4.1.2 Declaration of Intent: It is the Offeror's intent, if selected, to enter into a contract with VDOT for the Project in accordance with the terms of this respective RFP.

4.1.3 120 Day Declaration: Pursuant to Part 1, Section 8.2, we declare that the offer represented by the Technical Proposal will remain in full force and effect for one hundred twenty (120) days after the date the Technical Proposal is actually submitted to VDOT.

4.1.4 Offeror's Point of Contact Information: Mr. Richard A. McDonough is the authorized representative and point of contact for the LANE/Corman Team for all matters associated with this submittal.

Richard A. McDonough, Senior National Pursuits Manager
14500 Avion Parkway, Suite 200
Chantilly, VA 20151
Tel: (703) 222-5670 Fax: (703) 222-5960
Email: RAMcdonough@laneconstruct.com

4.1.5 Offeror's Principal Officer Information: Mr. Kirk D Junco will be the principal officer of the LANE/Corman JV and the legal entity with whom a Design-Build contract with VDOT will be written.

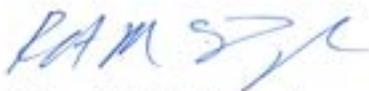
Kirk D Junco, Chief Operating Officer and Executive Vice President
The Lane Construction Corporation
90 Fieldstone Court
Cheshire, CT 06410
Tel: (203) 235-3351 Fax: (203) 237-4260
Email: KDJunco@laneconstruct.com

4.1.6 Proposal Payment Agreement: An executed proposal Payment Agreement in form set forth in Attachment 9.3.1 can be found in the Appendix.

4.1.7 Debarment Forms: Certifications for Debarment for both Primary and Lower Tier Covered Transactions have been completed and executed for the Offeror and all subconsultants, subcontractors, and other entities as identified as members of the LANE/Corman Team and can be found in the Appendix.

4.1.8 Identity and Information of the "Responsible Charge Engineer." The identity and information of the "Responsible Charge Engineer," Mr. Ryan Gorman, PE, is provided in the Appendix on Attachment 4.1.8 Key Personnel Form. Mr. Gorman meets all of the requirements as specified for the "Responsible Charge Engineer." In addition, we acknowledge that Mr. Gorman will exercise the authority and responsibilities of this Key Personnel position as specified in the RFP (Addendum 1). The organizational chart as well as narrative have been updated in Section 4.2.2 to reflect the "Responsible Charge Engineer's" functional relationship to the participants in the updated organizational chart.

Respectfully submitted,



Richard A. McDonough
Senior National Pursuit Manager
The Lane Construction Corporation
Offeror's Point of Contact



Arthur C. Cox, III
Vice President
Corman Construction, Inc.



Section 4.2

Offeror's Qualifications

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4.2 | OFFEROR'S QUALIFICATIONS

4.2.1 Confirmation of SOQ Information

The LANE/Corman Team confirms that all other information presented in the Statement of Qualifications (SOQ) remains true and accurate in accordance with Part 1, Section 11.4. As demonstrated in the organizational chart presented on the following page, the proposed LANE/Corman Team, including but not limited to our organizational structure, lead contractor, lead designer, key personnel, and other individuals identified, will remain intact for the duration of the contract.

4.2.2 Organizational Chart

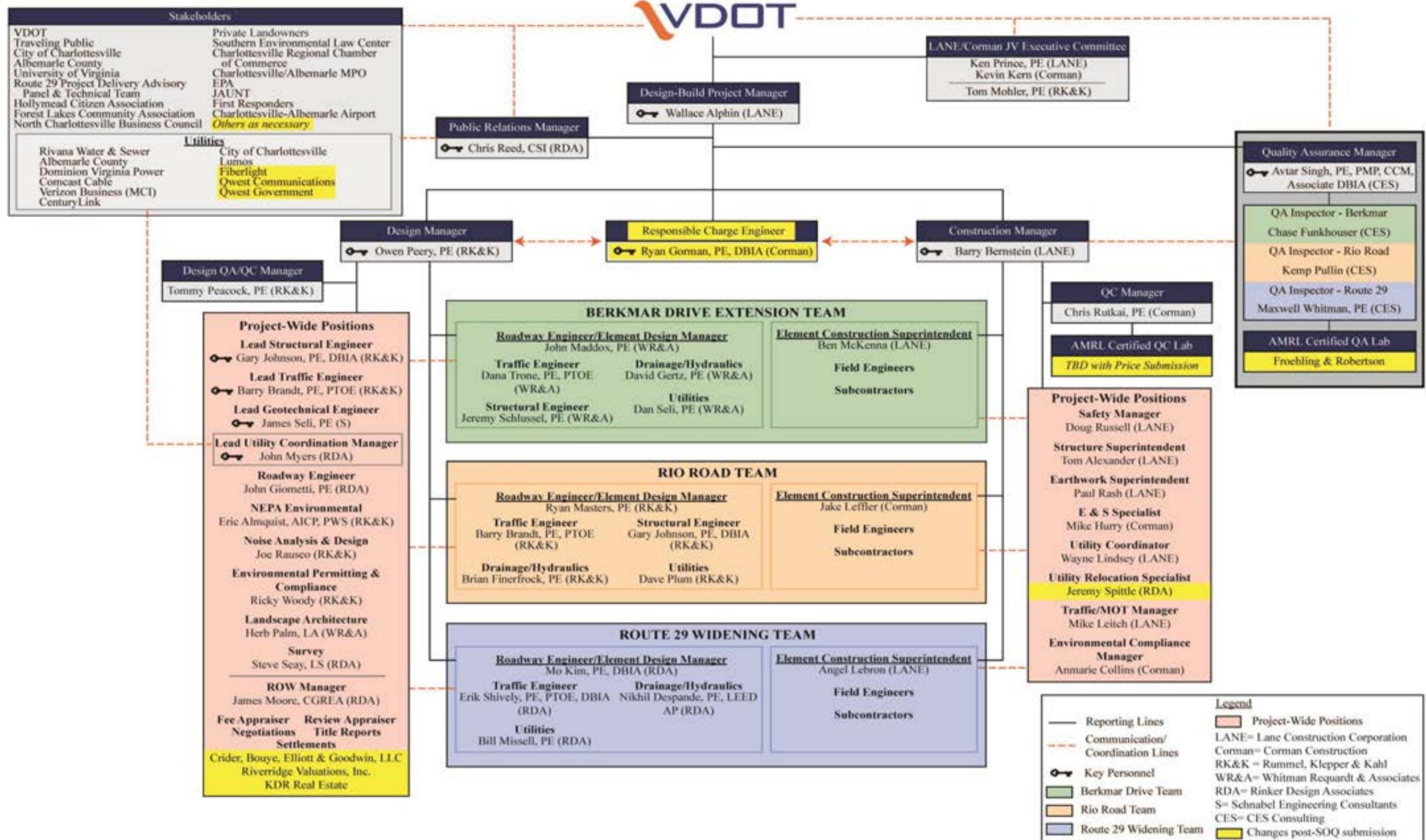
Under the leadership of our Design-Build Project Manager, Mr. Wallace Alphin, the LANE/Corman Team is structured to effectively manage and deliver the design and construction of this project. Mr. Alphin, is responsible for all design and construction activities, construction quality management, and contract administration of the Project. Our team organization has a straightforward chain of command, with individual tasks and functional responsibilities clearly identified. This organizational chart identifies key personnel and major functions to be performed for the successful management, design, and construction of 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 of the Project Elements and their respective tasks. In order to prevent unnecessary project delays, at times it may be prudent for other members within the LANE/Corman Team to communicate directly with their counterparts at VDOT. This will be directed and authorized in advance by Mr. Alphin with the VDOT Project Manager.

Mr. Ryan Gorman, PE, DBIA will fill the role of **Responsible Charge Engineer*** (Key Personnel role required as of Addendum 1) and report directly to the DBPM. As such, he will also communicate directly with both the Design Manager and Construction Manager, as well as with the QAM. He is well acquainted with the responsibilities of this type of role having more than 19 years of experience managing and estimating a wide range of complex transportation construction projects, both design-build and bid-build.

Mr. Gorman has the necessary expertise and experience required to supervise and exercise control of the work and will accept full professional responsibility for the final work product. He will communicate regularly with the Department and has the vested authority to act on behalf of the LANE/Corman Team.

Our team structure provides distinct positive influences on design and constructability. First, the LANE/Corman Team had already identified a Design-Build Integrator position from the onset of this procurement during the SOQ Phase; Ryan Gorman, PE, DBIA synonymously transitions to the integral key personnel role of Responsible Charge Engineer. Second, we have identified leaders in each of the major design disciplines; it is the responsibility of each of these discipline leaders to provide oversight and continuity between the project elements and the three respective design teams.

* The following Organizational Chart reflects both Ryan Gorman in the key personnel position of Responsible Charge Engineer as well as the specific labs to be utilized for Quality Assurance and Quality Control, respectively, and the ROW companies involved. We have also added a project-wide utility relocation specialist position; albeit not a required key personnel, Jeremy Spittle will serve in this important role. All Organizational Chart modifications have been highlighted for easy identification.





Section 4.3

Design Concept

Section 4.3
Design Concept

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4.3 | DESIGN CONCEPT

Introduction of Team Members

Our approach to designing the project begins with the formation of our Team. **The Lane Construction Corporation** and **Corman Construction, Inc.** joint-venture (**LANE/Corman JV**) brings successful, relevant experience delivering complex road and bridge design-build (D-B) projects for VDOT, as well as a solid reputation of strategically aligning teams to meet the specific needs and requirements of a project.

Based on our extensive D-B experience, the **LANE/Corman JV** has carefully chosen a group of the most highly skilled team members, both firms and individuals, to create a Team structure that advantageously utilizes the D-B process and capitalizes on the strongest attributes of each team member's respective capabilities. **Rummel, Klepper & Kahl, LLP (RK&K)** will serve as our Team's Lead Designer and oversee all design activities.

In order to meet the overall Project's aggressive schedule, limit stakeholder impacts/risks while meeting the project objectives, and maintain the highest level of quality, we have enhanced our Team's depth of experience and resources by adding **Whitman Requardt & Associates, LLP (WR&A)** and **Rinker Design Associates, PC (RDA)** to the Team. Our three powerhouse designers have the ability to deliver this entire project on time and on budget. It is no coincidence that we have three designers and three Project Elements. Each design firm will be responsible for a specific design element as shown below:

- **RK&K – Route 29/Rio Road Grade Separated Intersection Project Element**
- **RDA – Route 29 Widening Project Element**
- **WR&A – Berkmar Drive Extension Project Element**

Our Team members have all worked together on numerous projects throughout the region and have developed a dynamic synergy that will provide VDOT tremendous value on this project. We believe our design strategy provides the most experienced, dynamic, and flexible Team to concurrently design all three *Project Elements*, with an integrated design through construction approach that maximizes functionality, quality, and constructability in a timely manner for a successful delivery.

Introduction of Design Strategy

Key to our strategy is to:

- Minimize long-term maintenance of this roadway to VDOT
- Minimize adverse impacts to the community and road users
- Provide constructible designs that meet or exceed all of the criteria specified in the RFP
- Provide designs that can be constructed in the timeframe allowed without additional design waivers

This process begins with our design of the cornerstone *Project Element*, **Route 29/Rio Road Grade Separated Intersection (GSI)**. Our design and approach to the structures on this project are to minimize the size of the bridge and the length of the depressed segment of roadway – **minimizing construction duration and reducing future maintenance costs**. Inherent to this *Project Element* is the highest potential of an accident causing strain on the area roadway network and the cascading impacts to the traveling public. By minimizing these potential impacts through our design, we have made safety and functionality the top priority to reduce the potential for adverse public experience and opinion.

Route 29 Widening Project Element – our design eliminates the need for a significant amount of the RFP design concept retaining walls at the ROW throughout the project alignment. We will do this by re-grading

slopes so that adjacent properties are not adversely impacted by grade differences and retaining walls. This will reduce long-term maintenance required by VDOT and will allow for more flexibility should those properties be developed in the future.

Berkmar Drive Extension Project Element – we have developed an alternative alignment and profile in the vicinity of the bridge crossing of the Rivanna River. This alignment will provide a bridge completely on a tangent, which will simplify construction and maintenance, as well as allow for less complex widening of the bridge in the future.

Project-Wide Design

The Route 29 Solutions Project is composed of three distinct and separate *Project Elements*; however, some disciplines transcend the design elements. Following is a brief summary of these various disciplines:

Public Involvement/Public Relations – Our Public Communications Plan will provide real-time and up-to-date information and widespread outreach to the traveling public, business owners, stakeholders, and first responders. The details of these plans are described in Sections 4.4 and 4.5 of this proposal; however, it should be noted that our plan will be extensive and cover all areas of communication and outreach. We will keep the public informed of our progress, upcoming work, lane closures and potential traffic impacts and other elements of work. This frequent and open communication with the public will instill an environment of trust throughout construction, reducing issues through the use of alternative routes and modes of transportation and reduced traffic impacts during construction.

Hydraulics – The drainage design predominantly functions through closed systems. In developing the drainage concept, our Team has economized the layout and constructability by aligning the design to our MOT approach. Our engineers have inspected the existing drainage conveyances within the project limits and found some to be in good condition. However, in accordance with the RFP, they will only be reused with the permission of VDOT.

Stormwater Management – The stormwater management approach for this project will be to treat each of the three *Project Elements* as separate VSMP permitted areas. The Route 29-Widening project is grandfathered as part of Part IIC of the VSMP requirements and can utilize the performance based criteria for evaluation and determining the water quality and quantity needs. The Berkmar Drive Extension and Route 29/Rio Road GSI *Project Elements* must adhere to the runoff reduction criteria of the VSMP regulations or Part IIB.

Stormwater management facilities are being designed and constructed with maintenance in mind. These facilities will be placed in the areas that provide the most benefit to the project while reducing their numbers which avoids maintenance and ROW costs, plus impacts to private property. (On the Route 29/Rio Road GSI *Project Element* alone, we have eliminated one underground SWM structures as compared to the RFP.) Additionally, above grade facilities are being designed to allow easy access and to be low maintenance through our selection of plantings, grading and design features.

Utilities – One of the keys to any utility relocation project is getting an early start. VDOT has astutely recognized this fact by providing approximately 50% of the utility design and obtaining the required utility easements at the Rio Road GSI, prior to NTP. We will continue to build on VDOT’s advanced efforts utilizing our years of servicing these same utilities as the basis for efficient and timely coordination. We maintain

Design Manager Owen Peery at a McIntire Road Interchange Stakeholder Meeting



Our Public Communications Plan for this Project will be built from our extensive current experience providing these same services in Albemarle County and the City of Charlottesville on the McIntire Interchange project.

existing relationships with the affected utilities personnel, policies, and procedures gained through previous and existing contracts:

- Albemarle County Service Authority – Multiple task order contracts since 2006
- Rivanna Water and Sewer Authority – Multiple task order contracts, including one for water system improvements
- Charlottesville DPU Gas Department - Master Service Agreement
- Dominion Virginia Power – Multiple task order contracts
- Comcast - Multiple contracts
- Onsite communications companies – Multiple respective contracts for underground design

Our Team has performed in-depth conflict analysis on all three *Project Elements* and completed preliminary UT-9 forms to determine cost responsibilities for the “out of plan” utilities. We have developed preliminary running lines as well as potential modifications that we can make to our designs to ensure project success by providing a faster start to the utility relocation process for the project. See Section 4.4 for our detailed analysis and plan for the utility avoidance, relocation and schedule.

Materials, Means and Methods

The LANE/Corman Team will submit the material cut sheets in compliance with VDOT specifications and special provisions. Each submittal will be carefully reviewed for conformance with the RFP prior to delivery. The LANE/Corman Team has an excellent relationship with our vendors, all of whom have a keen understanding of the VDOT specifications. Once the material submittals are approved, we will work with our vendors to expedite delivery. Materials requiring factory acceptance testing will be coordinated by VDOT for offsite testing and documented with the materials shipment.

Throughout this Technical Proposal you will find that the selection of materials as well as our means and methods to design and construction benefit the end user. The summary of these benefits are provided at the end of this Section 4.3.

4.3.1 ROUTE 29 & RIO ROAD GRADE SEPARATED INTERSECTION (DESIGN LEAD - RK&K)

The LANE/Corman Team design concept meets all of the RFP requirements for the Route 29/Rio Road GSI *Project Element*. Our design provides the following enhancements that exceed the RFP requirements:

- Reduction in the transition length/shift at the north and south end along Route 29
 - Minimizes the overall project footprint
 - Reduces impacts to businesses
 - Reduces utility impacts and pavement to be reconstructed
- Reduction in stormwater management facilities from 3 to 2
- Reduction in right-of-way/easements: We will negotiate with 16 owners, reduced from 22 shown on the RFP plans.
- Modified profile of depressed roadway section
- Reduction in the length of this segment of roadway from 1900 lf to 1365 lf (approximately 30%)
 - Expedites the schedule and improves future safety
- Reduction of the bridge width
 - Minimizes “tunnel” feel for the end-user
 - Reduces future maintenance costs

REDUCTION IN ROW EASEMENTS

Assuming that VDOT negotiates and acquires the Joint Use Utility Easements, our design does not require our Team to negotiate with parcels 001, 002, 003, 004, 015 and 016.

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Parcels 001, 002, 003 and 004 only had TCE but 015 and 016 had combinations of each category.

- Maintains three lanes SB on Route 29 to the Rio Road intersection during the 103 day shutdown
 - The RFP calls for maintaining only two lanes
- Utilization of a retaining wall system that is low maintenance, proven and simple, based on common construction techniques used on numerous VDOT projects
 - Simplifies and reduces the time for VDOT reviews
 - Limits potential re-work
 - Requires no special equipment or materials that could delay the *Project Element*
- Installation of structural wall elements prior to the 103 day shutdown
 - Allows excavation of the depressed roadway to proceed immediately upon the commencement of the 103 day shutdown on May 23, 2016.
- Drainage within the depressed highway is conveyed via the storm sewer trunk lines that will not impact the retaining wall design or construction
 - Reduces construction time and delay
 - Avoids any adverse impacts to the retaining walls in the future
 - Eases future maintenance
- Purchase of water quality credits
 - No future maintenance needs related to water quality stormwater management facilities.

4.3.1.1 Conceptual Roadway Plans (Provided in Volume II)

The conceptual plans summarize the individual design elements and conform to all AASHTO, VDOT and RFP requirements, including those listed in Part 2, Attachment 2.2.1. The intersection at Route 29/Rio Road accommodates all required movements and the 95th percentile queue for the design year.

(a) General Geometry Including Horizontal Curve Data and Associated Design Speeds, the Number and Widths of Lanes, Shoulders, and Sidewalks

Table 4.3.1.1.a below summarizes the pertinent geometric features for each roadway. These design elements meet or exceed the specified RFP requirements.

Table 4.3.1.1.a						
Roadway	Geometric Design Standard	Design Speed (mph)	Number and Width of Lanes	Widths of Paved Shoulders	Curb & Gutter Type	Width of Shared Use Paths/Sidewalks
US 29 Local	GS-5 ULS	45	4 - 11'	2' LT	CG-7	5'-5"
US 29 Thru	GS-5 ULS	45	4 - 11'	2' LT 8' RT	N/A	N/A
Rio Road	GS-6 ULS	40	4 - 11'	N/A	CG-6	5'

(b) Horizontal Alignments

The local Route 29 NB and SB baselines utilize reverse curves to transition between the existing roadway and the proposed typical section. These curves meet the design criteria, are large enough that they do not require superelevation or crown reversal, and reduce the overall project footprint. The use of the Urban Low Speed criteria on the Rio Road *Project Element* reduces or eliminates the superelevation requirements throughout the limits of our design. This allows us to correct the cross slope of the roadway without excessive buildup, providing for faster construction, less cost and time in the roadway performing pavement milling and buildup.



Figure 4.3.1.1.b

Based on the RFP requirements in Section 2.2.1, our Team has analyzed the required intersection width to accommodate the design vehicle(s) turning path (**Figure 4.3.1.1.b**). This study shows that the bridge width may be reduced to less than 200 feet while still maintaining simultaneous dual left turns from Rio Road onto Route 29. This allows the intersection stop bars to be closer which minimizes the footprint of the intersection. That improves safety and shortens delay through the intersection. In addition to reducing the bridge area, our Team shortened the length of depressed roadway and reduced the square footage of wall; this results in less future maintenance.

(c) Profile Grade Line for all Segments and Connectors

The profile grade lines for the local Route 29 alignments have been modified to reduce pavement buildup that will occur when the cross slopes are corrected. The modifications also reduce impacts to the surrounding properties and improve entrance profiles. The profile for the depressed Route 29 lanes minimizes total retaining wall area and the overall project footprint while maintaining the required vertical clearances. It also limits disruptions to driveways and cross streets, thereby reducing the time required to adjust the entrances and potential impacts to their access.

(d) Typical Sections with Cross Slopes of the Roadway Segments to Include Ramps, Retaining Walls, and Bridge/Tunnel Structures

In addition to the elements depicted on the typical section in Volume II, the existing pavement on the Route 29 local lanes will be slope corrected to fall between 1.5% and 2.5% within the pavement overlay limits.

(e) Conceptual Hydraulic and Stormwater Management Design

The drainage design for the Rio Road grade-separated interchange will provide separate drainage systems to handle the bifurcated sections being proposed. The Team proposes to utilize the same line and grade of much of the existing storm drain system to ensure utility conflicts are minimized and reduce the need of additional MOT phasing. A sag is located in the depressed Route 29 mainline and will be designed for the 50-year storm in accordance with the drainage manual requirements. We will utilize one main trunk line in the median for the depressed condition. This will require larger diameter pipes but will also minimize construction time, long term maintenance, and our ability to complete the construction of the depressed segment of roadway in a more efficient manner.

To meet the water quality needs of the *Project Element*, the Team proposes to purchase all of the stormwater quality credits required for the project from the CBNLT/Wildwood Farm. The total phosphorus removal needs are 4.3 lbs/year of water quality credits. Currently, CBNLT/Wildwood Farm has 67.05 lbs/year of available credit which is more than adequate for this project's needs. In addition to the purchase of required SWM credits, we will install two underground detention facilities to satisfy the quantity control needs in accordance with Part IIB requirements of the VSMP regulations – fewer than the three stormwater facilities called for in the RFP.

(f) Proposed Right of Way Limits

The LANE/Corman Team is staying within the proposed right of way limits as shown in the RFP Conceptual plans and/or discussed at the preliminary utility field inspection meeting held December 4, 2014. The LANE/Corman Team understands that the Department will be obtaining required utility easements prior to NTP and have planned their proposed utility relocations to utilize the areas currently being pursued. The following **Table 4.3.1.1.f** summarizes the right of way and easements required for the RFP Conceptual Design and the Lane/Corman Design. The design enhancements result in a smaller project footprint and the need to negotiate with six fewer property owners. The overall reductions to right of way and easements result in a substantial savings to VDOT's right of way budget, lower acquisition costs, and an earlier completion date.

Table 4.3.1.1.f			
	RFP Conceptual Plans (SF)	LANE/Corman Design (SF)	Difference (SF)
Right of Way	13,748	11,640	2,108
Permanent Stormwater Easements	71,710	15,586	56,128
Permanent Slope Easements	9,829	12,031	2,202
Temporary Easements	60,197	43,099	73,127

(g) Proposed Utility Impacts

To meet the aggressive completion schedule, our design has and will minimize utility impacts wherever possible. However, there are some unavoidable conflicts that we have identified and developed preliminary plans to address the relocations required to perform the project scope. The utility impacts have been indicated on the Roadway Plans in Volume II. Additional utility mitigation measures are elaborated in Section 4.4.

Our design has eliminated numerous potential utility impacts to minimize construction impacts to the public.

4.3.1.2 Conceptual Structural Plans (Provided in Volume II)

The architectural treatments for the different components of the Rio Road grade separated intersection wall all mesh together to provide one visually cohesive project. All architectural treatments will consist of a Simulated Drystack pattern and will be similar to the nearby McIntire Road Interchange Project (a project designed by RK&K) and referenced in the RFP as the go-by for architectural treatments. On the McIntire Interchange project, our Lead Structural Engineer led the development of the Architectural Special Provision and is overseeing the delivery of the final product, including when to pull the formwork and the inspection of the hand painting.



RK&K's McIntire Road Interchange Project, Charlottesville, VA

The retaining wall fascia will be cast-in-place with a form liner that will seamlessly transition to the BR-27 railing that is located on top of the wall. Vertical pilaster treatments will be cast within the Simulated Drystack pattern and align with the lighting elements. The spacing of these vertical elements will approximately align with construction and control joints in the wall.

The landscape planters located on the bridge structure have been located in the same location as on the RFP conceptual plans. However, during the final design we will work with the Advisory Group for the final detail and location of the planters.

Rio Road Bridge

The Rio Road Bridge has been designed to minimize future maintenance needs as well as allow for Accelerated Bridge Construction (ABC). Extensive coordination has been conducted between the design and construction team in order to arrive at a design that meets the project needs.

As described in RFP Section 2.3.2.1 of Part 2, the Rio Road Bridge is designed for a 100-year service life. Specific details implemented to provide this service life include the following:

- Jointless abutments thereby limiting water infiltration
- Utilizing Corrosion Resistant Reinforcement (CRR) in the deck which will inhibit corrosion
- Designing our beams for no tension which will limit cracking that could take place that would allow water penetration and corrode reinforcing and pre and post tensioning. This also limits fatigue concerns as load reversals and constant tension will not be an issue.
- Implementing adjacent box beams as our superstructure, which means that our deck will not have to span large openings. This limits tension; and therefore, the cracking in the deck for water and salt penetration, reducing corrosion the reinforcing steel and concrete spalling
- Waterproofing over adjacent beam openings will preserve the shear key between beams

Substructure: The Rio Road Bridge will be supported on vertical HP14 piles that will also serve as the retaining wall below. This detail allows for maximum flexibility and minimizes the overall span length.



Proposed Rio Road Bridge Elevation

Abutments: Our design utilizes fully integral abutments. Standard approach slabs are not required as described in Addendum 2 since our excavation from the backwall is less than 10 feet. Select backfill will be utilized to backfill any cuts made in this area.

Superstructure: The superstructure will consist of adjacent concrete box beams for the balance of rapid construction and minimizing future maintenance requirements. The cover on the bottom surface has been increased to 4 inches to provide fire protection of the strands.

In order to account for the slight horizontal curvature, the bridge has been divided into four sections. The beams in these sections will be “normal” to each other and the corresponding abutments will be parallel. This layout will simplify and speed up construction. The horizontal curvature will be accounted for with variable overhangs in the 7 ½ inch cast-in-place concrete deck between the sections. These four sections also provide longitudinal joints that are required to accommodate thermal movements.

Rio Road Underpass Retaining Walls

The walls leading up to the Rio Road Bridge will consist of vertical soldier pile walls with a cast-in-place structural fascia with a Simulated Drystack stone architectural finish.

Tiebacks consisting of temporary helical anchors will be utilized where needed to control deflections until the cast-in-place facing has fully cured. The benefits of helical anchors are that they will be fully located within the right-of-way and allow for rapid construction. These helical anchors will not be part of the overall permanent structural system. Lateral bracing will be installed where needed to temporarily brace the compression flange until the wall facing is cast.

For the taller walls, permanent tiebacks (not helical anchors) will be utilized to control deflection and provide the required structural capacity of the wall. These tiebacks will consist of approximately a 40 foot grouted section. The horizontal length and angle of these tiebacks have been designed to be located fully within the right-of-way. No underground easements are required.

A significant benefit of our retaining wall design is that our cast-in-place method allows for the correction of alignment deviations of the temporary shoring. This allows us to provide a straight, vertical, top quality final product that will be much more aesthetically pleasing than other types of systems.

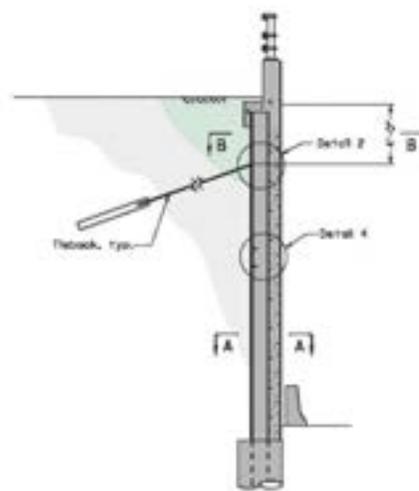
In the area of the bridge, the retaining wall system serves as the bridge substructure. The bridge itself will serve as a compression strut to support the retaining wall in the final condition. Our analysis of this section of wall took into account the constructing phasing to ensure that the structure is stable for all construction phases. This section of wall will receive the same architectural treatment as the approaching walls and will appear seamless to the travelling public.

The LANE/Corman Team will utilize the same class of pile (HP14) throughout the wall construction to simplify the design and construction as well as keep the same diameter of drilling for the entire project. All piles will be encased in concrete within the augered 36-inch shaft. This size shaft provides the required 20% larger size than the pile diagonal size.

After augering and setting of the pile, the void will be filled with concrete up to the elevation just below the proposed elevation of Route 29 in its final condition. The remaining void will be filled with a removable material, such as 57 stone or grout to facilitate the installation of the lagging, and will be installed during the excavation process. The design concept is for the soldier pile wall to be structurally sound without the cast-in-place fascia. This concept allows for the concrete to be installed after traffic has been relocated to the new depressed lanes. To control drainage behind the wall, a drainage board system will be installed prior to the placing of the concrete wall.

The wall system is divided up into the following sections and is detailed in Volume II of this Technical Proposal:

- *Under 3 feet of exposed height:* For this type of wall, a standard MB-8A road barrier will be utilized as a retaining wall and will seamlessly transition into the approaching barrier section.
- *Type A System* - For this type of wall, a soldier pile and lagging wall with a CIP concrete facing will be utilized with an HP14x73 pile spaced at 8 feet for the shorter sections and HP14x117 for the latter sections. The approximate extension below the exposed face will be 1.5 times the exposed height.
- *Type B System* - For this type of wall, a soldier pile and lagging wall with a CIP concrete facing utilized with an HP14x117 pile spaced at 8 feet. A tieback will be utilized approximately 4 feet from the top of the pile to provide stability and minimize deflection. The approximate extension below the exposed face will be 1.5 times the exposed height. Channels will be utilized to provide adequate bracing.
- *Type C System* – This system will be utilized for the wall that will serve as the bridge foundation as well as the wall system. A soldier pile and lagging wall with a CIP concrete facing will be utilized with an HP14x117 pile spaced at 8 feet. The approximate extension below the exposed face will be 1.5 times the exposed height.



Wall System – Type B Shown

A cast-in-place coping with a BR-27 railing will be installed that is integral with the retaining walls; they are designed to accept the impact load imparted on the barrier system. The added benefit of having the barrier and railing system integral with the wall is that a moment slab is not required. Eliminating the moment slab simplifies the wall construction phasing, MOT within the adjacent roadway, and reduces future maintenance.

Rio Road walls will be instrumented according to the requirements of the *Special Provision for Geotechnical Engineering Design, Rio Road Intersection with U.S. Route 29* dated August 2014.

Conformance with National Fire Protection Association (NFPA) 502 Protection Requirements

As outlined in Addendum 2, the Design-Builder is required to conduct an Engineering Analysis for the fire protection and life safety requirements for the Roadway Tunnel. The LANE/Corman Team has conducted a preliminary analysis as part of the proposal process and has incorporated these findings into our Technical Proposal. With respect to NFPA 502 requirements, the Rio Road *Project Element* is divided into two separate sections: the bridge and the depressed roadway leading to the bridge. Specific requirements and details are further described in this section.

Rio Road Bridge Fire Protection

The bridge structure is classified as a “Roadway Tunnel” as outlined in Section 2.3.13 of Part 2 of the RFP. As our proposed bridge is less than 300 feet long, measured along Route 29, it is classified as a Category X tunnel. Our preliminary analysis of this Roadway Tunnel shows that the following design and construction components will be implemented:

Substructure protection for the Peak Fire Heat Release Rate of 100 Megawatts: In the location of the bridge structure, the cast-in-place wall has been designed with an increased concrete cover to provide the heat release protection of the bridge and remain structurally sound. In the event of a heat release, the effected wall area can be safely removed and replaced without adversely affecting the structural performance of the wall system or the bridge substructure located behind the wall.

Superstructure protection for the Peak Fire Heat Release Rate of 100 Megawatts: The bottom cover to pre-stressing strands on our bridge beams has been increased to 4 inches to protect the superstructure from the heat release.

Fire Detection: Our Team will be utilizing CCTV cameras located on the retaining walls and directed into the tunnel section to provide a Fire Detection system. This system will tie into the Northwest Region Traffic Operations Center and required EMS communication network(s).

Traffic Control: To stop/divert traffic that is approaching the tunnel portal, a system that provides for a green arrow or a red “X” will be implemented. This will be a redundant system with the variable message signs being placed on the sign structures before the depressed section as well as being mounted on the bridge fascia above the lanes.



MDSHA ICC Contract C - designed and constructed by RK&K/Corman

Retaining Walls at the Depressed Through Lanes Fire Protection

The retaining walls at the depressed through lanes are classified as a “Depressed Highway” as outlined in Section 2.3.13 of Part 2 of the RFP. The section of retaining wall under the bridge is also classified as a Depressed Highway.

For this entire depressed roadway section, a standpipe fire-fighting system is provided. A 4-inch standpipe connection (FDC) will be located adjacent to the two fire hydrants. A 4-inch FDC is located on each approach near the end of the retaining wall and an additional 2 ½ inch FDC is located along the retaining wall at one half the distance of the 4-inch FDC to the bridge structure. Overall, the fire standpipe, water supply, fire department connections, and hose connections for the retaining walls will follow the specific requirements of the NFPA 502 Code.

4.3.2 DESIGN CONCEPT – ROUTE 29 WIDENING (DESIGN LEAD - RDA)

Our Team has met all of the RFP requirements for this *Project Element*. Our design provides the following enhancements that exceed the RFP requirements:

- Extensive reduction in right-of-way needs
 - Saves VDOT monies for ROW costs
 - Alleviates the turmoil of property takes from landowners
- Elimination of retaining walls
 - Reduces the need for long term maintenance and inspection
 - Increases desirability for future development of adjacent properties
- Reduction in stormwater, drainage, and slope easements
 - Reduces VDOT costs for acquisitions and construction delays
 - Minimizes reconstruction of the SB pavement
 - Increases the speed of construction
 - Reduces disruption to the travelling public
- Shared use path (SUP) designed on independent vertical alignment
 - Utilizes existing NB pavement for SUP
 - Minimizes impacts to adjacent property owners
- SB widened to the outside
 - More separation provided between the proposed and existing NB lanes during construction
 - Increased safety
- SB profile modified
 - Minimized pavement buildup
 - Increased safety during and after construction

4.3.2.1 Conceptual Roadway Plans (Provided in Volume II)

Our proposed conceptual roadway plans incorporate the requisites of the RFP and meet the design criteria table requirements provided in Attachment 2.2 of the RFP, Addendum 2 for all roadways connections. Our plan exhibits provided in Volume II of this submission clearly depict the number of lanes, widths, shoulders, and where the widening occurs along with maximum profile grades for each segment of roadway, location of drainage features (including SWM facilities), sidewalks, and shared use paths. Additionally, typical sections have been included for each direction to provide additional information and roadway features not depicted in the plan view. Each element of the plan as identified in the RFP is discussed in greater detail below.

(a) General Geometry Including Horizontal Curve Data and Associated Design Speeds, the Number and Widths of Lanes, Shoulders, and Sidewalks

Table 4.3.2.1.a below summarizes the pertinent geometric features for each roadway. These design elements meet or exceed the specified RFP requirements.

Roadway	Geometric Design Standard	Design Speed (mph)	Number and Width of Lanes	Width of Shoulders	Curb & Gutter Type	Width of Shared Use Paths/Sidewalks
Route 29	GS-5	45	6 - 12'	N/A	CG-7	5' Sidewalk 10' Shared Use Path
Ashwood Boulevard	GS-7	40	6 – 11'	8'	CG-2 (median only)	N/A
Ridgewood Drive	Private Road	20	2 -11' (12' at 29 intersection)	8'	N/A	N/A

S. Hollymead Drive	GS-7	30	1 – 14' inbound 1 – 12' outbound	8'	N/A	N/A
N. Hollymead Drive	GS-7	30	3-11'	8'	N/A	N/A

(b) Horizontal Alignments (See Volume II)

The SB horizontal alignment generally follows the inside edge of the existing SB pavement. The NB horizontal alignment mostly mirrors the SB alignment except near the project termini and in pedestrian crossing refuge areas.

The horizontal alignments of the connecting roadways generally follow their existing alignments with the exception of Ridgewood Drive which was shifted to the south to avoid the existing cemetery directly north of the existing entrance.

(c) Profile Grade Line for all Segments and Connectors (See Volume II)

The NB vertical profile, aside from meeting the 45 mph design speed, was set to ensure the grades across the raised median do not exceed 4:1.

The proposed shared use path (SUP) has been designed to be on an independent vertical alignment from the NB lanes to minimize the reconstruction of the NB outside slopes. The independent alignment will allow for the SUP to use of the existing NB pavement structure that would otherwise be demolished. The vertical alignment was established so that the slope of the shared use path separation area does exceed 25% (4:1). This independent vertical alignment will provide a more natural feel to the surrounding environment.

The vertical profiles of the connecting roadways generally follow their existing profiles with the exception of Ridgewood Drive which will be reconstructed at a new location with a new vertical profile.

(d) Typical Sections with Cross Slopes of the Roadway Segments to Include Retaining Walls

The pertinent typical sections to construct Route 29 and each connection are contained in Volume II. The typical sections include roadway widths, shared use paths, and retaining walls.

(e) Conceptual Hydraulic and Stormwater Management Design

Hydraulic Design - In accordance with the RFP, all existing pipes within the project limits have been assumed to be unserviceable and replacement systems have been designed. The drainage design is provided predominantly through closed systems intercepting only the roadway project area and out-falling to storm water management facilities described below. Offsite drainage areas will be intercepted by side ditches and conveyed to exiting culvert crossing locations. The existing cross culverts have been abandoned and replaced. Many of the replacement cross culverts are subject to high fills exceeding 20' and have been designed as 60" culverts per the requirements of 8.3.6.6 of the VDOT Drainage Manual.

Stormwater Management Design - This *Project Element* is grandfathered as part of Part IIC of the VSMP requirements and can utilize the performance based criteria for evaluation and determination of the water quality and quantity needs. Our Team has assessed the location of the RFP SWM basin locations and have been able to adjust the proposed locations to minimize earthwork and reduce the amount of SWM easements as compared to the RFP plans. The RFP plans appeared to have a SWM facility on the west side of the road near Station 671+00. Our proposed SWM-5 at this location was moved to the east side in order to reduce the footprint, lessen the grading, and capture more of the roadway pavement drainage than would have been possible if located per the RFP.

Five extended detention basins and one bio-retention basin have been designed to address quantity and 75% of the water quality needs. Water quality nutrient credits for the remaining 25% of the required need (4.61 lbs/yr) will be purchased.

(f) Proposed Right of Way Limits

The majority of the proposed right of way shown on the RFP plans will not be required with the LANE/Corman Team design. As the following **Table 4.3.2.1.f** depicts, the reductions are extensive.

Table 4.3.2.1.f			
	RFP Conceptual Plans (SF)	Lane/Corman Design (SF)	Difference (SF)
Right of Way	44,611	5,832	38,779 (87% reduction)
Permanent Stormwater Easements	378,963	243,241	135,722 (36% reduction)
Permanent Slope Easements	122,265	124,429	-2164 (2% increase)
Temporary Easements	64,789	76,001	-11,212 (17% increase)

**The increase in the temporary easements results from an error in the RFP Concept Plans; the RFP Plans did not show adequate TCE for Ridgewood Drive.*

Our design widens the SB lanes to the outside where there is generally more existing ROW compared to the NB lanes. The SB widening scheme allows us to shift the NB horizontal alignment further towards the median significantly reducing required right of way and permanent slope easements as compared to the RFP plans. **Based on current Albemarle County tax assessment data, these ROW reductions will directly save the Department nearly \$1 million.**

(g) Proposed Utility Impacts

The utility impacts for this *Project Element* are extensive and our Team has expended significant effort to understand and plan for the impacts and solutions. The following **Table 4.3.2.1.g** summarizes our information and plan.

Table 4.3.2.1.g		
Utility Owner	Conflict	Solution
Albemarle County Service Authority	Fill over existing manhole	Adjust manhole
Dominion Virginia Power	Existing poles in cut areas	Taller poles will be set deeper to allow for cut
CenturyLink	Underground west side in drainage Underground east side in drainage	Will relocate to joint duct bank same side of Route 29 Relocate and adjust in same area as existing
Charlottesville Gas	Gas in cut and in proposed lanes	Gas will be relocated to outside lanes and in places outside the roadway in existing right of way
Qwest Government	Conflict with drainage and cut	Will relocate to joint duct bank west side of Route 29
Fiberlight	Conflict with drainage and cut	Will relocate to joint duct bank west side of Route 29
MCI	Conflict with drainage and cut	Will relocate to joint duct bank west side of Route 29
Lumos	Conflict with drainage and cut	Will relocate to joint duct bank west side of Route 29
Comcast	On Dominion Power poles	Will reattach to taller poles
Qwest Business	Conflict with drainage and cut	Will relocate to west side of Route 29
Rivanna Water	Mandated per addendum to relocate	Relocated to east side of Route 29

The existing Dominion Virginia Power distribution poles along the Western side of Route 29 throughout the project limits are able to be worked around and relocations of the poles will not be required. Some poles will be replaced with taller poles set deeper in the same location to allow for cuts, but wires will just be reattached to the new pole and no additional splicing or cable will be necessary. This procedure will be very similar to replacing a damaged pole on the line and will not be relocating the line itself. (Dominion Virginia Power has affirmed that these lines are not transmission lines and therefore, our design is in compliance with the RFP requirements.)

4.3.3 DESIGN CONCEPT – BERKMAR DRIVE EXTENSION (DESIGN LEAD - WR&A)

4.3.3.1 Conceptual Roadway Plans (Provided in Volume II)

Our Team has met all of the RFP requirements for this *Project Element*. Our design provides the following enhancements that exceed the RFP requirements:

- Rivanna River Bridge on a tangent alignment and profile lowered
 - Reduces construction cost for the bridge
 - Reduces construction costs for the future widening to four lanes
 - Allows for the launching of girders to minimize impacts to the river and wetlands
- Rivanna River Bridge shortened by 167 feet
 - Eliminates two piers
 - Saves money and improves constructability
 - Minimizes the overall construction duration
 - Avoids direct impact to the river and wetlands
 - Reduces future maintenance
- Roundabout at Berkmar Drive and Hilton Heights Road
 - Utilizes the existing pavement
 - Improves maintenance of traffic during construction
 - Inherent traffic calming
 - Reduces project cost
- Removal of the crown point between the lanes
 - Designed for the future median by utilizing a CG-2 curb
 - Eliminates the need to reconstruct the median for the future Berkmar Drive widening
 - Enhanced safety and significant cost savings for the future Berkmar Drive widening project.
 - Vehicular and bike lanes can be maintained on the existing roadway during future construction
 - If directed by the Department, we will construct the RFP typical at no additional cost.

(a) General Geometry Including Horizontal Curve Data and Associated Design Speeds, the Number and Widths of Lanes, Shoulders and Sidewalks

Table 4.3.3.1.a below summarizes the pertinent geometric features for Berkmar Drive Extension and the roundabouts at Hilton Heights Road and Town Center Drive. These design elements meet or exceed the specified RFP requirements.

Table 4.3.3.1.a Roadway Geometry					
Roadway	Geometric Design Standard	Design Speed (mph)	Number and Width of Lanes	Curb & Gutter Type	Width of Shared Use Paths And Sidewalks
Berkmar Drive	GS-7	40	Two 11' travel lanes with a 4' bike lane on the NB lane and 5' bike lane on the SB lane	CG-6 curb and gutter on the NB Lane and CG-2 curbing on the SB Lane	5' Sidewalk And 10' Shared Use Path
Existing Berkmar Drive	GS-7	40	Match existing approach lane widths	CG-6 curb and gutter	5' Sidewalk on the SB sides
Existing Hilton Heights Road	GS-7	40	Match existing approach lane widths	CG-6 curb and gutter	10' Shared Use Path

Table 4.3.3.1.a Roadway Geometry (cont)

Roundabouts	Design Vehicle	Design Speed (mph)	Inscribed Circle Diameter	Width of Travel Lane	Curb & Gutter Type	Width of Truck Apron
Berkmar Drive and Hilton Heights Road Intersection	WB-67	20	130'	20'	CG-6 curb and gutter on the outside and CG-3 modified curb for truck apron	16'
Berkmar Drive Extension and Town Center Drive	WB-67	20	128' Existing	22' Existing	Existing CG-6 curb and gutter on the outside and Existing CG-3 modified curb for truck apron	15' Existing

(b) Horizontal Alignments

The LANE/Corman Team proposes using the horizontal alignment provided in the VDOT conceptual plans except for the bridge crossing of the South Branch of the Rivanna River, Rio Mills Road and just south of the roundabout at Berkmar Drive and Hilton Heights Road. The proposed alignment over the South Branch of the Rivanna River has been revised to provide a tangent alignment for the bridge. The bridge length and span arrangement are designed to avoid any direct impacts to the river and wetlands and minimizes the impacts to Archaeological Site 44AB0594. Berkmar Drive alignment was adjusted slightly south of the roundabout to reduce reconstruction of existing Berkmar Drive.

(c) Profile Grade Line for all Segments and Connectors

The profile grades along Berkmar Drive Extension are refined slightly to minimize earthwork, reduce rock excavation and better match existing drainage boundaries improving the design of the storm drainage and stormwater management facilities.

(d) Typical Sections with Cross Slopes of the Roadway Segments to include Roundabout and Bridge Structures

The proposed typical section for each roundabout was evaluated to ensure effective traffic operation and the calming of traffic along the Berkmar Drive Extension. The typical section is designed to handle WB-67 sized trucks allowing the trailer wheels to track onto the center concrete apron to ensure trucks have appropriate access to the Sam’s Club entrance.

(e) Conceptual Hydraulic and Stormwater Management Design

The hydraulic analysis of the proposed bridge over the South Branch of the Rivanna River shows no increase in the 100-year FEMA floodplain elevation; therefore, a revision to the FEMA map is not required. The proposed piers will be located outside of the normal flow channel of the South Branch of the Rivanna River and will be aligned with the direction of the river’s flow to minimize hydraulic impacts to the river by the proposed bridge. Due to the presence of the upstream dam, an Extreme Event II dam break was accounted for in determining the hydraulic forces and scour depths used in conducting the structural analysis of the proposed river crossing bridge.

The large storm drain cross culverts are designed to meet the allowable HW/D limits of 1.5 and to also comply with the limitations for 100-year flood elevation increases. Additionally, they are sized to provide the minimum 60” diameter for maintenance concerns at culverts under high fills.

Our Design Team reviewed the proposed SWM/BMP facility locations as depicted on the RFP concept plans. We have identified the need to increase the number of facilities to provide treatment at additional outfalls in order to capture the necessary amount of project runoff to meet the project removal requirements. Our Team’s SWM approach is to use Bioretention Basins – Level 2 (with 80% volume reduction and 50% EMC phosphorus removal) to provide the water quality control. Instead of single large basins at each outfall, we propose to use two or more, smaller bioretention cells that each intercepts the appropriate small amount of project runoff in order to satisfy the DEQ design criteria of 2.5 acres maximum to each facility. This will also reduce the amount of excavation required since each cell can be fitted to its particular site topography. The smaller BMPs will be located closer to the roadway baseline than the concept plans facilities and will have easier access for ingress and egress from the roadway for maintenance.

The proposed storm drain systems will primarily intercept only the roadway project area, avoiding offsite area, to minimize the pipe sizes and to convey only the required amount of runoff to the Bioretention Basins. The runoff from the large offsite drainage areas will be intercepted in side ditches and conveyed separately to the outfalls. This split system approach will mitigate the need for quantity control since the offsite runoff will be reduced at the outfalls by the amount picked up in the new roadway storm systems and re-directed to the basins. The basins will attenuate the volume and peak flow of the project runoff to the degree that the combined offsite/onsite post-development hydrographs will show the same or less runoff than the pre-developed conditions.

(f) Proposed Right of Way Limits

The LANE/Corman Team design utilizes the RFP ROW except at the proposed bridge over the South Branch of the Rivanna River as allowed under Addendum 1. The proposed plans located in Volume II overlays the difference between the RFP ROW and the Team’s Proposed ROW between Sta. 116+16.58 to Sta. 143+29.54. The overall ROW reduction is 0.4 acres. The permanent and temporary easements required for the construction have also been reflected on the concept plans. The proposed design avoids impacts to the cultural resources identified along the corridor and minimizes impacts to stream and wetlands.

(g) Proposed Utility Impacts

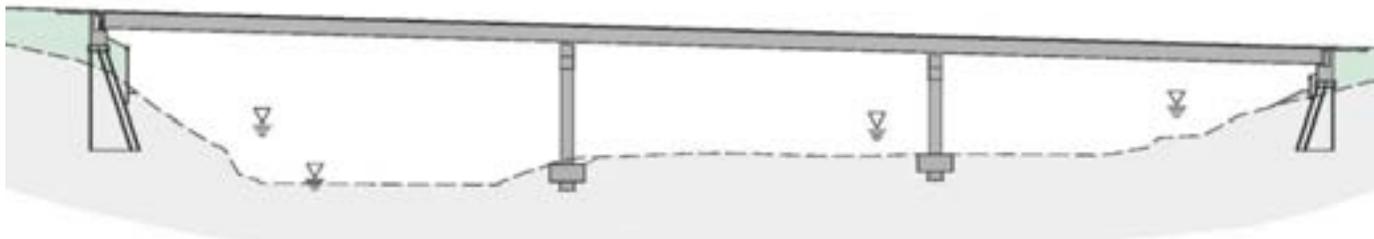
Utility impacts are held to a minimum with most of the impacts being at the intersection of Berkmar Drive and Hilton Heights Road and several utility crossings of the proposed roadway corridor. The following **Table 4.3.3.1.g** summarizes the utility impacts.

Table 4.3.3.1.g		
Utility Owner	Conflict	Solution
Albemarle County Service Authority	Roundabout in conflict with a hydrant and blow-off assembly	Items will be relocated in the same general area outside the limits of the roundabout
	Construction over existing line	Existing line will be relocated and encased for future maintenance
Dominion Virginia Power	Aerial in conflict with bridge construction	Line to be undergrounded for span under bridge
	Aerial crossing of proposed roadway	Taller poles may be needed for clearance of sag
CenturyLink	Underground in conflict with proposed cut	Line will be relocated deeper through limits of cut

4.3.3.2 Conceptual Structural Plans (Provided in Volume II)

The LANE/Corman Team utilizes the transverse section as provided in the RFP plans for the proposed bridge over the South Branch of the Rivanna River and Rio Mills Road with the exception of the cross slope. High-strength weathering steel girders are designed for this bridge and are continuous/jointless span units with a cast-in-place deck.

The proposed bridge is a three-span structure; abutment locations have been selected and set to avoid any impacts below the Sunny Day Dam Breach. Due to the length of the structure, the Virginia Alternate Abutment is utilized to eliminate joints on the bridge.



Proposed Rivanna River Bridge Elevation

The piers are hammerhead piers with racetrack shaped columns skewed 15-degrees to the baseline, located outside of the normal flow channel of the South Branch of the Rivanna River, and aligned with the direction of the river's flow.

The bridge piers will be founded on drilled shafts. The drilled shafts will extend through scourable rock (rock with an RQD<50) to bear on non-scourable rock. The factored resistance contribution of the materials overlying the non-scourable rock is not accounted for in design. Shafts will be designed for a factored end bearing resistance of 100 ksf. Additional shaft factored resistance can be developed by socketing the shaft into non-scourable rock. Sockets will be designed for a factored shaft resistance of 15 ksf. The bridge abutments will be supported on steel H-piles driven to refusal on rock. All piles should be fitted with cast-steel tips.



ROUTE 29 SOLUTIONS PROJECT-WIDE BENEFITS TO THE END USER

In this Design Concept section, we have described the benefits to the end user in terms of safety, operations, construction impacts, and public acceptance. The following are major benefits that the LANE/Corman Team brings to VDOT and the end user:

Safety and Operations

- Extensive MOT planning for safe passage through the construction zones
- Shorter bridge at Route 29/Rio Road GSI – Increased incident response and reduced maintenance
- Fewer retaining walls on Route 29 – reduced maintenance costs
- Straight bridge at Berkmar Drive Extension – reduced maintenance costs
- Utilize VDOT's Adaptive Signal project - allow us to alleviate congestion during construction

Minimized Construction Impacts

- Use of proven tried and true construction methods that reduce the risk of design or delays
- Advance installation of retaining wall structural systems at night under lane closures prior to the scheduled 103 day shut down
- Tried and true construction methods enhance rapid construction and less maintenance
- Modification of crown on Berkmar Drive – saves monies for future widening

Public Acceptance

- Project planning – pre and post work extensively planned for the Route 29/Rio Road GSI
- Installation of the architectural finish on a true vertical wall
- Lessened impacts to businesses along Rio Road with reductions in transition lengths
- Shorter Rio Road Bridge – reduces tunnel effect
- Reduction in retaining walls along Route 29 – promotes future development



Section 4.4

Approach to Construct the US 29 & Rio Road Grade Separated Intersection

Section 4.4
Approach to Construct the US 29 & Rio Road
Grade Separated Intersection

LANE

AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

4.4 | APPROACH TO CONSTRUCT THE US 29 & RIO ROAD GRADE SEPARATED INTERSECTION

4.4.1 SEQUENCE OF CONSTRUCTION – US 29 & RIO ROAD GRADE SEPARATED INTERSECTION PROJECT ELEMENT

Approach to Construction Phasing

Due to the aggressive schedule specified in the RFP for the US Route 29/Rio Road GSI *Project Element*, proper pre-planning, performance monitoring during both the design and construction phases, and assertive management of the *Project Element* are essential for timely on-schedule performance. The LANE/Corman Team will meet this challenge by:

- Co-locating the design, construction, and VDOT key staff in Charlottesville following NTP.
- Utilizing an aggressive P6 schedule (see Section 4.7) detailing the inter-relations of the permitting, design, utility and ROW design and coordination, QA/QC, and external VDOT and stakeholder requirements.
- Establishing strategic advance submission packages to move key design and construction elements through the process to allow for advance construction packages to be permitted, designed, approved and constructed prior to the 103 day shutdown beginning May 23, 2016.
- Aggressively staffing the project during all phases to ensure schedule compliance and minimizing the allowable road closures and restrictive construction sequences.

General Sequence

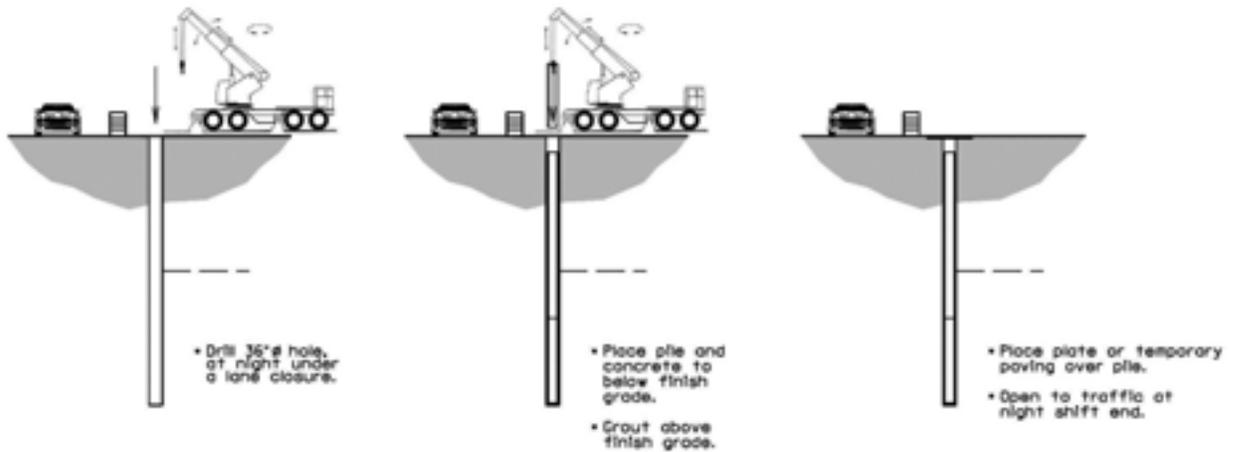
A. Prior to development of advance design and work packages, the following tasks will be completed:

1. Finalize surveys initiated by VDOT.
2. Finalize geotechnical investigations initiated by VDOT and perform geotechnical data analysis.
3. Finalize the utility relocation efforts started by VDOT.
4. Submit 30% plans to show general alignment, typical sections, and major drainage features. Advance design packages including utility relocation plans and structural retaining wall installation will then proceed based upon these 30% submittals.
5. Prepare an element-wide SWM plan for VDOT's review indicating our drainage concepts.
6. Prepare a detailed list of permits to be obtained for each advance package plus the entire *Project Element*.

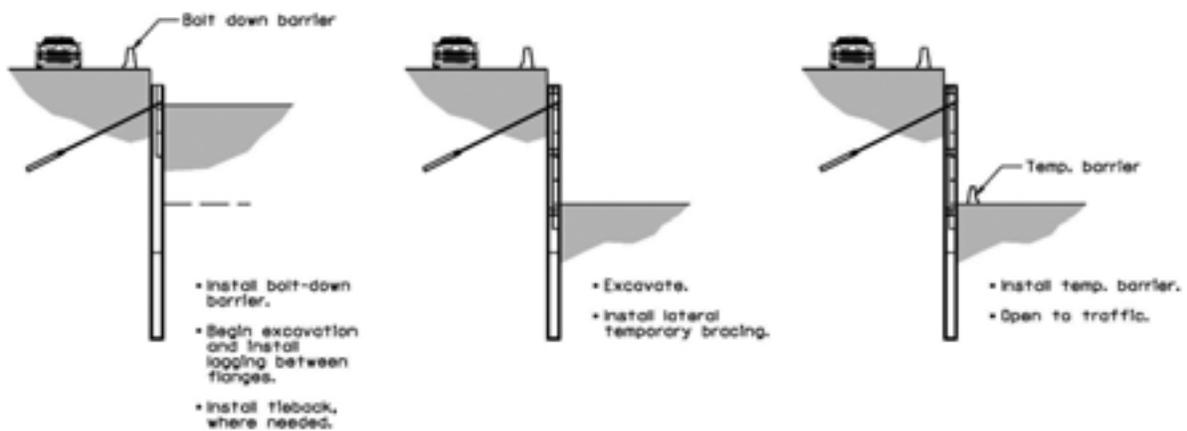
B. Advance Design Packages for Construction will include the following:

1. Establish required E&S and MOT signing/stripping plans.
2. Relocate utilities such as the water and gas mains along the Route 29 alignment that interferes with the installation of the retaining wall support systems and the required widening of Route 29. Install common multi-use dry utility duct banks along Route 29 for all applicable utility companies to utilize in order to expedite relocations and reduce costs. (These will be performed at night when lane closures are required to minimize disruptions to traffic on Route 29 and enhance safety.)
3. Install permanent retaining wall structural systems. Auger and install steel soldier piles for the depressed highway wall foundations and at the Rio Road Bridge. (These will be performed at night or as permitted by the RFP with lane closures to minimize disruption to traffic on Route 29 and enhance safety.) (See **Figure 4.4.1** on the following page.)
4. Widen the outside of Route 29 to provide for the required number and width of lanes specified in the RFP to provide for the flow of traffic during the 103 day closure period. This phase will also

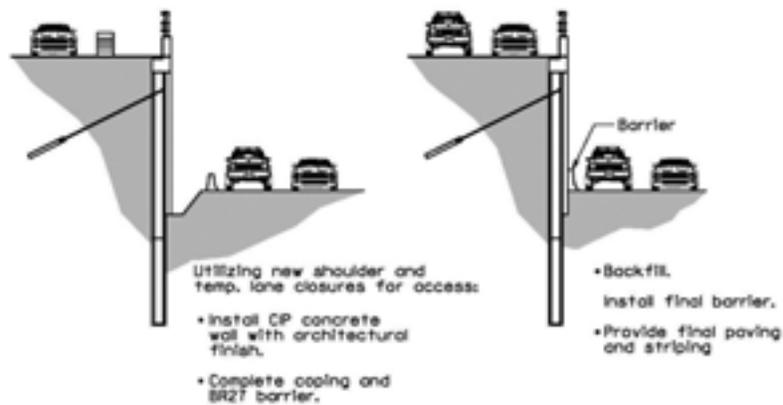
Figure 4.4.1 Wall Construction Sequence



PRIOR TO RIO ROAD CLOSURE



DURING RIO ROAD CLOSURE



AFTER RIO ROAD CLOSURE

include the installation of the three median cross-overs specified, improvements to the Route 29/Berkmar intersection, as well as other miscellaneous road work to minimize disruption to traffic during the nightly closures of Route 29/Rio Road or as permitted by the RFP.

5. Perform other advance work that can be accomplished at night or as permitted by the RFP with lane closures to minimize disruption to traffic on Route 29 during the depressed roadway construction. This additional work could include the installation of abutments or concrete plank beams for Rio Road Bridge, utility relocations, and the installation of underground SWM structures, if ROW can be obtained in time. Otherwise, underground SWM structures will be installed during the allowable closure period.

C. During the allowable closure period and lane reductions on Route 29/Rio Road the following items of work will be performed:

1. Establish temporary signing, detours, lanes, and pedestrian facilities to meet the RFP’s MOT and TMP requirements (Rio Road through movement closed, 3 NB and 2 SB Route 29 lanes remain open). This will entail temporary barriers previously prepared for road widening and required improvements to Berkmar Drive/Route 29 Intersection and the surrounding signals that will be used in our planned detour. Removal of the traffic signals on Albemarle Square and Fashion Center Drive.
2. Establish required E&S measures.
3. Excavate the depressed roadway section including installation of temporary lagging for the soldier pile retaining walls and any required tiebacks and lateral bracing.
4. Install required drainage, tunnel and depressed highway safety systems, traffic signals, and lighting in the depressed section.
5. Install the Rio Road bridge beams, deck, and parapet.
6. Finalize any remaining utility relocations.
7. Install depressed highway roadway to include underdrain, bedding stone, median barriers, lighting, and fire safety systems.
8. Start installation of the composite concrete retaining wall fascia and BR-27 Parapet system.
9. Install the Rio Road Traffic Signals.
10. Completion of the work specified in RFP Part 3, Article 5.
11. Open Rio Road, the Route 29 depressed highway section, and local lanes to its ultimate configuration on or before Sept 2, 2016.



LANE's I-495/Route 7 Interchange - Tunnel Effect Lighting

D. Post the allowed 103 day shutdown, this remaining work will be completed at night with single or double lane closures, as permitted, to minimize disruption to traffic on Route 29 and Rio Road:

1. Re-construct the roadway cross-slopes to bring the finish typical section in the local lanes up to current standards, install outside curbs, sidewalks, and other pedestrian facilities.
2. Complete the composite concrete retaining wall fascia and BR-27 Parapet.
3. Close median openings, remove temp MOT and detours required during the 103 closure period.
4. Complete final landscaping, reestablish affected temporary construction easements, final surface pavement, signing and striping, traffic signals, etc.
5. Complete all work by Dec 2, 2016.

Key elements of the above sequence of construction include:

- Install steel retaining wall soldier piles and bridge abutment piles prior to 103 day shutdown. (This will be performed at night within approved lane closures.) We will install the piles by augering holes, setting the steel pile, and encasing them in concrete utilizing multiple crews. We anticipate, at any one time having, as many as four separate pile installation crews working each evening from the LANE/Corman Team – supplemented as necessary with selected subcontractors. Once the piles are set in place and backfilled with concrete, we will then cover/close off the excavated holes with temporary asphalt patches or skid resistant steel plates at the end of each night's operations.
- Once all piles are installed, either NB or SB, we will excavate to perform the activities of placing the concrete abutment footer for the bridge structure. Once the concrete abutments are in place, they will be wrapped in protective sheeting so as to not damage and/or stain the concrete once temporarily backfilled to maintain traffic until the depressed roadway is excavated and the bridge beams set. Pre-casting as much of this preparatory concrete work will be considered wherever appropriate. These advance installations will be backfilled or steel plated over to maintain the required through traffic lanes.
- On May 23, 2016, we will begin our total shutdown of the area for the **depressed roadway section**. The first priority will be to establish the Route 29 and Rio Road traffic alignments, install temporary, pinned down, concrete barrier around the excavation site and install construction entrances to provide a safe ingress and egress establishing positive traffic separation from the construction work zone.
- Excavation will start from day one and continue on a 24 hour, 7-day per week cycle. As we excavate adjacent to the previously installed retaining wall/bridge piles, we will stage the excavation down in sequential lifts of no more than 4 or 5 feet to allow installation of our lagging and wall bracing. We will continue this methodology until we reach profile grade line for the depressed roadway section. Simultaneously, we will maintain positive drainage away from our work area into erosion control silt basins and outflow devices. Once the excavation nears subgrade, we will begin to install our permanent storm drainage pipe.
- The Rio Road Bridge beams will be installed as a first item of business during the closure period once the excavation is below the bottom of the beams. The remaining bridge features such as post-tensioning the beams, installation of the concrete deck surface, bridge BR-27 parapet, pedestrian facilities, curb and gutter, and drainage will then be installed. Once all remaining bridge elements are finished, we will make operational the previously installed traffic signals and open the Rio Road Bridge to traffic.
- Subsequent to the excavation in the depressed area, installation of the retaining wall concrete fascia with an integral architectural, finishing will commence.
- Once traffic is opened within the depressed through lanes, we will complete the previously initiated retaining wall fascia including any and all aesthetic treatments and top parapet railing utilizing lane closures for access. Upon completion of all wall items and the top BR-27 railings installed, we will remove the temporary barrier and place all traffic lanes into their final configuration.

Assignment of Resources

The above is an aggressive, but achievable construction sequence and schedule made readily possible through the extensive local resources of the LANE/Corman Team. Large projects with complicated schedules is what we do every day. As LANE has demonstrated on the I-95 Express Lanes Project, we completed over \$726 Million of construction early and in only 720 days, and Corman has demonstrated on the recently early completed \$236 Million Telegraph Road/I-95 project that was completed 112 days early, our two firms have the existing manpower, management staff and most importantly, the corporate commitment to VDOT to perform the required work within the aggressive schedule established. This will be accomplished through co-location of our design and operations teams, establishing individual dedicated design teams for each *Project Element*, weekly status meetings involving all disciplines, and a true commitment to actively partner with VDOT and the many stakeholders. We anticipate at the height of construction on this individual *Project Element* alone that we will have over 200 tradesmen, supervisors, quality and scheduling staff working at any one time. With over 5,000 employees between our two firms, 1,500 within driving distance to this project, this staffing represents only a small percentage of our total workforce.

To ensure success, our Team will have a full time on-site Primavera P6 CPM Scheduling Engineer who will be in charge of developing, maintaining, and updating a cost and resource (men, equipment, and materials) loaded schedule. The Scheduling Engineer will develop a Master Project Schedule that will incorporate the three separate *Project Element* CPM schedules to make one unified document to best optimize our time and resources as well as monitor progress. The Master Schedule will be tracked daily to identify critical items of work, labor, and equipment and material needs to ensure no lost time due to improper planning or changed conditions. Further details of our scheduling program can be found in Section 4.7.

Mitigation of Impacts

One overall strategy that has served the LANE/Corman Team well in the past is to clearly identify the risks that might be encountered and develop aggressive mitigation strategies to avoid the risk or to react if the unexpectedly occurs. Risks that have already been identified are:

1. **Structural Risks** – The available toe of the soldier pile is not deep enough due to rock being located higher than shown in the original borings or design plans. To avoid this issue, we will design for additional conditional tiebacks or have available rock drills to ensure the structural capacity of the wall and not impact the overall schedule for the project.
2. **Geotechnical Risks** – We anticipate completing the necessary borings and subsurface investigations to complement what VDOT has performed to comply with the necessary data to validate our design, plus additional bores to identify any potential areas of concern. Our Geotechnical Engineer, Schnabel, is performing independent peer reviews of the analyses made by their engineers assigned to this project. LANE/Corman, RK&K, and WR&A geotechnical engineers will also perform independent peer reviews. This group of specialists have reviewed the geology of the subsurface soils, expected rock levels to be encountered plus stability of temporary and permanent slopes, structure foundations and roadbeds.
3. **Environmental and Permitting** – Our permitting staff have reviewed the RFP data and required permits to ensure the time frames shown in our schedule are obtainable and viable. Critical to the design and construction schedule is securing the required environmental clearances. To facilitate this, the LANE/Corman Team must:
 - Identify/confirm environmental resources within each *Project Element* corridor:
 - Starting at NTP, review the limits of disturbance to confirm these accommodate critical design features and allow reasonable space for construction including erosion and sediment control and stormwater management facilities.

- Environmental field work will take place as soon as access to a project corridor is authorized. This field work and technical services will involve wetland delineations, stream assessments, water quality studies, threatened and endangered species reviews and cultural resource reviews that will be utilized for water quality permitting, and environmental compliance monitoring.
- The environmental resource data will be incorporated into the project preliminary design plans to support the evaluation of avoidance and minimization opportunities.
- Complete Phase I Environmental Assessments for each *Project Element*:
 - Starting at NTP, a Phase I Environmental Site Assessment (ESAs) will be completed in accordance with the most current ASTM standard (ASTM E 1527-13) and Special Provision for Phase I and Phase II Environmental Site Assessments for Design-Build Projects.
 - Within two weeks of completion of the Phase I ESA fieldwork, a summary report will be prepared to support the submission of the EQ201 - Right of Way Reevaluations.
- Secure water quality permits for the advance design work packages:
 - Starting at NTP, coordination with USFWS, DCR, DHR, and DGIF to acquire updated information.
 - Review the environmental resource data incorporated into the project preliminary design plans to assess project effects and direct impacts.
 - Consult with the USACE and VDEQ immediately after NTP to discuss our streamlined permitting approach for each *Project Element's* advanced work packages.
 - Conduct a pre-application meeting with USACE within two months of NTP.
 - Submit permit application to secure nationwide permits for the advanced work packages within 45 days following the pre-application meeting.
- Secure the Virginia Department of Environmental Quality (VDEQ) Virginia Stormwater Management Program (VSMP):
 - Starting at NTP, verify designed erosion and sediment control and stormwater management plans meet the regulatory requirements for the VSMP permit.
 - Consult with the VDEQ immediately after NTP to discuss our streamlined permitting approach for each *Project Element's* advanced work packages.
 - Submit permit application to VDOT to secure VSMP for advanced work packages with VSMP issued within 30 days of submittal.
- Secure water quality permits:
 - Starting at NTP, coordinate with USFWS, DCR, DHR, and VDGIF to acquire updated information.
 - Review the environmental resource data incorporated into the project preliminary design plans to assess project effects and direct impacts.
 - Conduct a pre-application meeting with USACE, VDEQ, and VMRC at 30% design plans
 - Prepare and submit permit application to secure water quality permits from the VMRC. Anticipate the water quality permit issuance within 90 days of application submittal.
 - Secure stream and wetlands compensatory mitigation credits within 30 days of permit acquisition.
- Secure VDOT's Construction Authorization:
 - Submit a final document re-evaluation for ROW Authorization (EQ-201) prior to ROW authorization with right of way plans.
 - Submit the final document re-evaluation for PS&E and Authorization (EQ-200) and a final Environmental Certification/Commitments Checklist (EQ-103) concurrently with the final roadway plans.

4. **Utility Engineering** – That VDOT is taking the lead to coordinate pre-bid the efforts of the multiple utilities involved and performing 50% of the utility engineering including obtaining required utility easements prior to NTP *has significantly reduced the impact of this key risk factor*. Our utility engineers continue to build upon the work VDOT has and is performing. Our utility specialists have gained valuable experience previously working with Rivanna Water and Sewer Authority and Charlottesville Gas, providing us a heads start on understanding the needs, policies and procedures of the majority of the impacted utilities. Should any utility run behind schedule, the LANE/Corman Team will self-perform the required work for that utility.
5. **ROW Acquisition** – The majority of this *Project Element*, including the construction of the depressed highway and bridge, can be constructed on existing VDOT ROW. Should other ROW become critical to properly meet the schedule, our ROW manager, RDA, has 12 ROW specialists readily available to address the needs of the project; specifically, 12 ROW specialists will be assigned to this *Project Element* to expedite the acquisition process. *Having the ability to control our own workload, pace of acquisition, and staffing is an immense benefit to our Team since we will not be subjected to the limited capacities and staffing of outside agencies.*
6. **Public Involvement and Stakeholder Coordination and Outreach** – *We believe that the public involvement process is a risk that the successful Design-Builder cannot ignore.* Interfacing with the many business and commercial establishments that line the corridor, as well as the thousands of individuals that travel the corridor daily, we recognize there must be clear and effective lines of communication. The promises made at the Route 29 Project Delivery Advisory Panel need to be addressed if VDOT and the Design-Builder are to both be successful. To reduce this risk, we have designated Mr. Chris Reed as the Team’s Public Relations Manager. Mr. Reed has been involved in VDOT projects in the Route 29 Corridor dating back to the mid-1990s. He will proactively draw on his past experience with many of the same stakeholders to avoid the pitfalls that could lead to delays. Strategic contacts have already been made and will continue to be maintained throughout the design and construction process. We will recommend that Mr. Reed be our liaison to participate in the Route 29 Project Delivery Advisory Panel meetings. By involving him with the Advisory Panel, accurate communications regarding the project development and stakeholder input will be ensured. The Route 29 Project Delivery Advisory Panel includes the participation of many key stakeholders; we expect their active participation to continue as we coordinate the overall outreach program.

Our Team has proven success working with advisory groups similar to the Route 29 Project Delivery Advisory Panel:

RK&K - Route 250 By-Pass/McIntire Road Interchange Advisory Panel here in Charlottesville

Corman – ICC Community Groups; MDSHA Route 24 Reconstruction ‘Save the Rocks’ Community Groups

LANE– I-495 and I-95 Express Lanes Community Groups; and Route 50 Corridor Task Force

Staging and Storage Areas

The location of our proposed staging and storage areas is of critical importance to the success of the project in this congested area. Key issues that we will address include:

- Safety of the traveling public (both vehicle and pedestrian) as well as security from local residents.
- Safe ingress and egress for construction vehicles, workers, and equipment to/from the construction site and for the huge quantity of material, equipment, and supplies that will require a temporary home.
- Close proximity to the individual work areas for operations efficiency.
- Removal from the travel ways when prohibited during non-work hours.
- Screening/separation from local business and other nearby commercial or residential establishments

- Adequate size to operate efficiently.
- Appropriate Environmental controls as required for the material/equipment stored.

Our intent is to rent existing office space in close proximity to the project for the co-located office facilities. The office facility will be sized to accommodate the required number of construction, design, and owner staff to make the co-location effective and meaningful. Since existing office space will be utilized, adequate parking will already be available as will entrances and exits to local streets or highways. Temporary sanitary facilities will only be required at the actual work areas for the tradesmen constructing the new improvements.

It is assumed that multiple small staging sites will be required near the actual work areas to include:

- Route 29, both south and north of Rio Road, to reduce cross traffic through the intersection.
- Along the Berkmar alignment, both north and south of the river, to preclude the need of construction traffic to add to the already crowded roadways to go from one side of the river to the other.
- Along the Route 29 widening alignment – this site may be combined with Berkmar yard north of river.

All yards will be fenced, screened as required, with a nominal number of temporary trailers or storage containers. Security will be provided as required. Since night work is anticipated, they will also be lighted, preferably by power drops from nearby Dominion Power poles vs. generators that could cause either noise or other nuisances. Existing VDOT or County property will be utilized wherever possible, supplemented with private leases from local landowners. The properties will have stone entrances and parking areas with tire washes when required to eliminate tracking mud onto the public roads. Sediment and Erosion controls will be installed and maintained as required. All properties will be restored upon completion in accordance with the specific lease requirements.

Public Safety and Measures to Limit Public Impacts

The theme of public safety and minimization of adverse impacts to the public is consistently repeated and addressed throughout our proposal, we take it very seriously. All design will be measured against public impacts as well as cost and construction operations. Both LANE and Corman have well-deserved reputations for being good neighbors -- this project will be no exception. Our MOT designs will be continuously evaluated for effectiveness to minimize impacts. An inordinate amount of construction will be going on in a small congested area at the Route 29/Rio Road Intersection *Project Element* area around the clock for an extended period of time; controlling the impacts will permeate all activities from signing to flagging to public outreach as discussed in subsequent sections. Safety training will be required of all workers to include discussions on being good neighbors and the need to minimize impacts whether it be from noise, keeping access open to all commercial and residential facilities, or the simple policing of trash generated on the worksite. Public transportation stops will not be blocked or relocated without prior discussions with the appropriate stakeholders. Offsite parking will be provided for the tradesmen as required to minimize traffic or congestion in public spaces. The busy holiday shopping season will be respected to the greatest extent possible so as to maintain the economic viability of this busy commercial area. "Pardon our Dust" meetings, multi-media and other forms of advertisements will be utilized to alert motorists and residents to the changing traffic patterns. Regular meetings will be held with the appropriate EMS and other public safety, County and/or utility staff to keep them informed of our future traffic shifts as well as to hear their concerns. More details of our public outreach program and stakeholder outreach are explained in section 4.5.1.

Summary

In summary, the LANE/Corman Team, through extensive pre-planning, and establishment of an exceptional Team of highly qualified VDOT-experienced engineers, construction and specialty personnel, will construct the US Route 29/Rio Road GSI *Project Element* on schedule, meeting or exceeding all RFP defined milestones – the depressed roadway constructed between May 23 and September 2, 2016; and the entire segment completed no later than December 2, 2016.

4.4.2 TRANSPORTATION MANAGEMENT PLAN – US 29 & RIO ROAD GRADE SEPARATED INTERSECTION PROJECT ELEMENT

Approach to Maintaining Traffic and Access to Businesses through All Phases

Our Team has the knowledge, understanding, and experience developing complex Transportation Management Plans (TMP) that safely and effectively manage both traffic during construction and communications with the project stakeholders. The TMP will ensure that all construction activities are performed in accordance with the Virginia Work Area Protection Manual (VWAPM), applicable VDOT standards, and Part 2, Section 2.10. Regardless of the type of work activity, safe access for all modes of transportation will be maintained. The TMP will detail all phases of work, road and sidewalk closures, haul routes, construction access, incident management, impact to stakeholders, maintenance of access, and methods to communicate with the stakeholders.

One local example of our Team’s experience with developing a complex TMP is the Route 250 By-Pass Grade Separated Interchange at McIntire Road in Charlottesville. This project constructs an interchange at the same location as the existing intersection while also dealing with multiple utility conflicts including relocation of a gas regulator station and installing a 30” sanitary sewer 25 feet deep. This area also is the site of the Charlottesville-Albemarle Rescue Squad which means maintaining 24/7 emergency access directly through the project site. Many of the stakeholders on that project are also involved with the US Route 29 & Rio Road Grade Separated Intersection *Project Element*. Leading up to the construction of the project, our team took time to understand each group’s interest and specific needs; we integrated their input into the final TMP. This communication has continued throughout the construction. Our Team also developed and maintained the project web site, which is linked to the City’s and VDOT’s web sites for the purpose of relaying project and traffic information. We also used Twitter to provide real-time traffic updates for lane closures and other important information.

Route 250 Bypass/ McIntire Road Interchange Experience and familiarity puts our Team in a unique position on the Route 29/Rio Road Project Element.

- ***The temporary traffic control plan on the McIntire Road Interchange project allowed all elements of construction to progress while maintaining a safe roadway and work zone.***
- ***The operations plan detailing the incident response process has functioned well.***
- ***The communications plan detailed the information needed to be conveyed to the stakeholders and the process has been implemented throughout construction.***

One key aspect of the US Route 29 & Rio Road Grade Separated Intersection *Project Element* TMP is the Work Zone Traffic Impact Analysis (WZTIA). A work zone analysis will be completed for each phase and condition presented in the MOT plans. These analyses will be performed using *Synchro* and methodologies consistent with the Highway Capacity Manual and VDOT Traffic Operation Analysis Tool Guidebook. This analysis will assure that our Team understands how the construction activities will impact traffic and allow us to plan for adjustments or improvements that may be required to optimize safety and mobility. It will also identify areas of congestion and allow them to be addressed before they occur. Measures of Effectiveness (MOE) as part of this analysis will be delays and queues. Queuing will be the primary MOE and the Team will ensure that queues from any one intersection do not spill back to the adjacent upstream intersection. If the queuing exceeds our Team’s goals, adjustments will be made which may range from signal timing modifications to proposed design changes or through public outreach.

Our Team will request a reduction in the posted speed limit within the work zones in accordance with the procedures detailed in TE-350. A reduction in the posted speed will benefit driver and worker safety in the work zones.

Minimum Lane Widths Required to Satisfy the Project Objectives and Completion Dates

The temporary traffic control plan will maintain a minimum lane width of ten feet along Route 29. At least one lane in each direction will be eleven feet wide to accommodate trucks. A minimum one foot offset will be maintained between the edge of travel lane and traffic control devices. Where possible, the LANE/Corman Team will maximize the lane widths to provide more roadway width for vehicles. The TMP will outline the need for and use of Virginia State Police during the temporary traffic control operations.

Modifications to Business Entrances

Additionally, the temporary traffic control plan will detail how proposed improvements to existing entrances will be constructed and how access is maintained during construction. We will identify access agreements and ensure that impacts are closely coordinated with the owners and tenants to reduce driver confusion and complaints. The LANE/Corman Team is accustomed to developing TMPs that address the coordination and advanced notification required. Our Public Relations Manager will facilitate this coordination and ensure the owners understand the plan.

Flagging Operations

The temporary traffic control plan will utilize a number of typical applications ranging from shoulder closures, flagging operations, lane closures and detours. The work zone will be maintained in accordance with the VWAPM. Construction crews will monitor traffic and adjust the operation as required to react to changing conditions in all of the work zones. We will select a traffic control strategy that best meets the needs of all road users while allowing for a safe work zone.

Lane Closures and Time of Day Restrictions

The allowable lane closure periods for the US Route 29 & Rio Road *Project Element* are detailed in Part 2, Section 2.10.3 and further clarified in Attachment 2.10.3 to the Part 2. The WZTIA will verify that these hours are sufficient. That analysis will be provided to VDOT for review and approval. The LANE/Corman Team will comply with the requirements, and ensure that all road, lane, and shoulder closures are coordinated at least seven days in advance with the VDOT Traffic Operations Center (TOC) and the VDOT Project Manager; thus allowing the closures to be coordinated with other projects and communicated to the public. Our Team will maintain access to each business in and around the work area and explain the details to those entities to ensure they understand our construction sequence. Outside the allowable lane closure periods, the following lanes will be maintained:

- Route 29 - Maintain four through lanes in each direction
- Rio Road - Maintain two through lanes in each direction
- Roadway connections and at intersections – Maintain all existing operational movements, capacities, and storage lengths
- Route 29 – Maintain all existing operational movements in each direction

Additional lane closures are allowed from May 23 to September 2, 2016 where the following movements are required to be maintained:

- Through movements on Route 29; 3 lanes NB, 2 lanes SB
- Right turn movements from Rio Road
- Right turn movements from Route 29
- Detour the following:
 - Left turns from Rio Road onto Route 29
 - Left turns from Route 29 onto Rio Road
 - Through movements on Rio Road

The detour routes are detailed below. The accelerated bridge construction and traffic signal installation will be completed before the depressed roadway is completed. *The LANE/Corman Team will endeavor to reopen the intersection at Route 29 and Rio Road before the depressed lanes are completed.* This is a direct benefit to the public that will minimize the length of time that detour routes are required.

The Route 29 & Rio Road Grade Separated Interchange *Project Element* is near a number of adjacent projects including the Route 29 Widening and Berkmar Drive *Project Elements*. Our Team will review the temporary traffic control strategies used at each work/project area to ensure that devices, detours and other element are coordinated and provide clear guidance to the travelling public to enhance safety and prevent public frustration with uncoordinated work zones.

Street or Ramp Closures

No full street or ramp closures are anticipated on the US Route 29 & Rio Road GSI *Project Element* other than the 103 day intersection closure period identified from May 23 to September 2, 2016.

Proposed Alternative Routes and Detours

During the 103 day intersection closure period, the turning movements at the US Route 29 and Rio Road intersection will be restricted. Those movements will be accommodated through the use of detour routes as shown in **Figure 4.4.2** on the following page. Our Team has evaluated the available traffic data and determined that a U-turn or superstreet concept will not provide adequate or acceptable operations based on the turning volumes expected without queue lengths exceeding the requirements in the RFP. We proposed the following detour routes for each restricted movement:

1. Route 29 SB left-turn onto Rio Road will be detoured to Branchlands Blvd (south to Rio Rd, Route 1427);
2. Route 29 NB left-turn onto Rio Road and Rio Road WB Left-turn onto US 29 will be detoured to Berkmar Drive (south to Rio Rd, Route 1403);
3. Rio Road EB Through will be detoured to Berkmar Drive and then Branchlands Blvd;
4. Rio Road EB Left-turn will be detoured to Berkmar Drive;
5. Rio Road WB Through will be detoured to Branchlands Blvd and then Berkmar Drive;
6. Right-turns from both US 29 and Rio Rd will remain open;
7. There will be two (2) lanes open for US 29 SB and three (3) lanes open NB;
8. Both Rio Road EB and WB right-turns will be stop controlled.

A temporary median crossover and signalized intersection will be constructed at the intersection of Route 29 and Berkmar Drive to facilitate these detours. A temporary u-turn signal and median crossover will be constructed at the intersection of Route 29 and Myers Drive to improve Route 29 motorist access to the business on the opposite side of Route 29. Improvements to adjacent signalized intersections may also be required to ensure efficient traffic operations. These detour routes follow logical traffic patterns that exist today and will be re-analyzed in the WZTIA during the design stage, verified, and submitted to VDOT for approval. The stakeholders will be informed of the routes before they are implemented and any feedback will be considered before the plans are finalized. Traffic delays and queue lengths will be monitored during construction and adjustments will be made as necessary.

The detour routes and other construction activities will be coordinated with the stakeholders to ensure that each understands the impacts and how access will be maintained. This includes coordination with the school transportation services, City of Charlottesville and Albemarle County Area Transit, and Jaunt to adjust current routes.

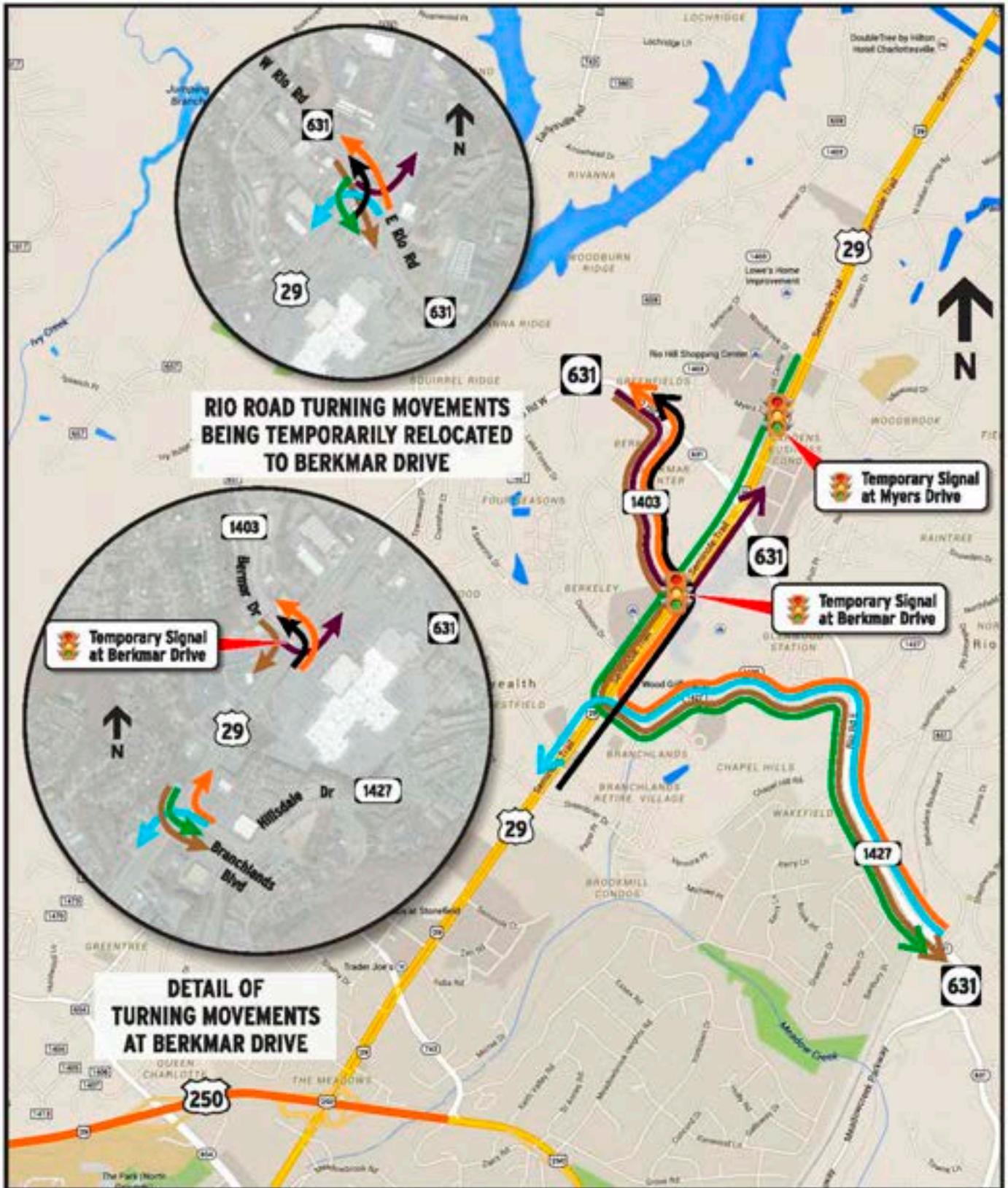


Figure 4.4.2 Detour Routes

Incident Management

The LANE/Corman Team will implement a tiered Incident Management (IM) Plan to detail our response to incidents. The IM Plan will meet the requirements detailed in Part 2, Section 2.10.2 and establish procedures to respond to traffic incidents and a process to review to reduce the frequency and severity. The Plan will be developed with input and coordination from VDOT, City of Charlottesville and Albemarle County, local EMS and other stakeholders. The level of response is based on the length of time and severity of the event.

- A limited incident is one which will take fifteen minutes or less to return to normal operations. In this type of event, expected primarily due to a minor accident or a planned event, response by local response teams would be with support, as necessary, by our Team. This will be classified as a short-term event.
- An incident which will impact traffic between 15 and 60 minutes, but with no required roadway closures or detours, will be considered a minor event. Our Team will respond with traffic control devices, coordinate with VDOT and signal timing adjustments to clear traffic and will support local response teams as necessary. Contact lists will be utilized as necessary and close coordination with first responders and other primary stakeholders will be implemented.
- An incident which will take greater than 60 minutes to clear will be considered a major incident. In this case, detour routes will be implemented as necessary and traffic control devices, signal adjustments and other operational support will be implemented as described in the response to minor incidents, above. In the case of major incidents, contact lists will be fully utilized to notify impacted stakeholders, first responders, local hospitals and other critical facilities.

In all of the above incidents, close coordination with VDOT Northwest Region Traffic Operations Center (NWRO) will be maintained. This tiered system provides an appropriate and efficient response mechanism once an incident occurs. During the design stage, our Team will identify potential detour routes, analyze them in the WZTIA and identify the need for adjustments or modifications along those routes prior to construction.

Accommodations for Safe and Efficient Operation of All Users (EMS, School Buses, Transit Vehicles, Trucks, Pedestrians, and Bicyclists).

Our TMP will be designed to accommodate all users of the Route 29 and Rio Road corridors. Above we have described how our lane widths and offsets will be designed to accommodate trucks and all other vehicles. We will coordinate with the Albemarle County School Transportation System, Charlottesville Area Transit (CAT), and Jaunt to make sure that bus routes are maintained and any disruption to bus stops is mitigated through relocation and communication. Our TMP will detail any sidewalk closures and an accessible route will be maintained through the project at all times. Bicyclists will be accommodated in the through roadway, just as they are today.

Public Communications Plan

The TMP will establish a communications plan to coordinate and communicate with VDOT, project stakeholders and the Project Development Advisory Panel (PDAP). Our Team's local experience working on similar projects in the region benefits both the Department and public greatly. We understand the region and the importance of this corridor, both as a transportation corridor as well as a corridor for commerce and access to major regional and national facilities. The LANE/Corman Team *public involvement strategy* ties the TMP Communication Plan together with all the elements of the Public Outreach Plan. Our Public Outreach Plan is described in more detail in Sections 4.5.1 and 4.5.2 where we have listed some of the key stakeholders for the project and our plan for communication outreach with VDOT, the PDAP, businesses and residents as well as with local government, first responders, regional hospitals, and the University of Virginia.

The LANE/Corman Team understands that construction of the **US 29 Solutions Project** is taking place in a dynamic, active business area, and that the end users – local residents – will be affected daily by this project.

From start of design to project closeout, our Team's goal is to provide constant communication to the public and businesses concerning ongoing activities through our public involvement personnel. Our Team will manage our construction approach to ensure that both public experience and perception of this project are positive. Our Public Communications Plan, a critical component to successfully managing construction and public acceptance, will be managed by Mr. Chris Reed with a direct, independent line of communication to the Design Build Project Manager, LANE/Corman Executive Committee, and VDOT. As the Public Relations Manager, Mr. Reed will manage all aspects of our public communication policy, and will rely on staff and the support of top level managers to comply with all project requirements and to maintain required levels of interaction with VDOT, the PDAP, and local stakeholders.

The TMP for the Route 29 and Rio Road *Project Element* will be part of the overall TMP for the entire Project, but will be specific to the Rio Road construction, as will the communications plan. The overall communications plan for the project is described in Sections 4.5.1 and 4.5.2. However, the TMP for the Rio Road *Project Element* will detail each work segment. This is critical, so that specific communications can be relayed to impacted property owners about the work that is ongoing near their properties and so that any impacts to their specific businesses can be coordinated and mitigated through time of construction or other measures. Utilizing our Public Communications Plan in coordination with VDOT, we will keep adjacent businesses and communities informed of specific impacts with respect to their individual properties. We will work with property owners regarding work that may impact their particular interests and schedule our work to minimize impacts to their access. At no time will any business or community be totally isolated due to our work efforts. This outreach will be specific to each property owner, community or development; involvement will be direct and specific to their respective property. Through this individualized type of outreach, the stakeholders directly adjacent to the project will be knowledgeable regarding what to expect with regard to schedule and construction activities.

Our Team will actively monitor the effectiveness of our coordination efforts and modify the plan as necessary to ensure all stakeholder issues are being addressed and in a timely fashion. The partnering/public involvement process and open lines of communications will enable the Team to identify and resolve problems early.

We have ongoing experience working with many of the stakeholders in the City of Charlottesville and Albemarle County area – this knowledge and understanding enables us to proactively address the needs of each and inform everyone properly. Our Team understands the criticality of the stakeholder involvement required during the development of the TMP and its implementation throughout construction. Direct communication and interaction will help ensure that the project is a success to the public and that all groups are safely accommodated during construction. The LANE/Corman Team will hold quarterly meetings for all stakeholders in addition to the Project Delivery Advisory Panel Meetings.

4.4.3 UTILITIES - US 29 & RIO ROAD GRADE SEPARATED INTERSECTION

Approach for Utility Coordination, Adjustments, and Relocations

The LANE/Corman Team acknowledges VDOT's Partnering commitment taking responsibility for the Route 29 & Rio Road utility coordination to provide approximately 50% of the utility design and obtain all of the ROW/easements by NTP to help facilitate the success of its aggressive *Project Element* schedule. At the time of this Technical Proposal due date, VDOT has not advised as to their progress to meet this commitment. We are assuming if the easements and design are not completed as stated above, that we will complete the process and be compensated for our expenses. To be properly prepared for the utility relocation design and construction work, our utility engineering staff has met with each utility and developed our specific plan and strategy to address the work plan, schedule, and cost. The following narrative is our interpretation of the relocation plans, nature of the work, our schedule, and the utility company needs and cost.

The LANE/Corman Team has held extensive meetings with the utility companies during the proposal preparation period to fully understand the complexity of the utilities within the Route 29 Solutions Project as a whole and specifically within this *Project Element*. We gained extensive knowledge of the magnitude of the utility impacts that this *Project Element* will encounter and also the excessive stress to the *Project Element* schedule that relocations may entail. For this reason, we have designed the *Project Element* to mitigate utility impacts wherever possible, and reached agreement with the communications, cable television and electric companies on the project for utilizing a joint duct bank that would be provided for them by our Team.

For in-plan utilities, our Team has the experience and existing relationships with the various companies that gives us a working knowledge of their standards and specs that enables accelerated design of acceptable relocation plans. Our Team member, WR&A, has a long history of working for the Rivanna Water and Sewer Authority (WRSA) as well as Albemarle County Service Authority (ACSA) and is intimately knowledgeable of their standards, policies, and practices. Our Team member, RK&K, currently has an on-call contract with Charlottesville Gas that will streamline the development and acceptance of their relocation plans.

Additionally, our Team member, RDA, has existing contracts with Dominion Power as well as most of the onsite communications companies for underground design, and multiple contracts with Comcast to perform design services. Having experience with design of the relocation plans will bring an added value in there being no "learning curve" for developing the joint duct bank system and any other relocation design that is needed for the P&E packages to be completed.

Identification of Utilities in Conflict with Design (and the Solutions)

The LANE/Corman Team has performed in depth conflict analysis of all utilities in the corridor, as well as developed strategies to address the conflicts. Due to the limited work area and the scale of the Route 29 & Rio Road GSI *Project Element*, there are few chances to mitigate conflicts; however, we focused on minimizing the conflicts where possible and creating solutions that would best benefit the accelerated schedule of the *Project Element*. Utility Conflicts Summaries are presented below.



Rivanna Water And Sewer Authority – The RWSA has an existing 18" to 24" water main within the excavation area for the depressed roadway and will need to be relocated. We have researched available areas of the alignment and found that the

outside through lane of the intersection is the optimal location. Since these outside lanes stay at their existing grade, it will give us a location to place the new line that will limit easements needed to be purchased, and allow the waterline to be relocated concurrently as right of way is being acquired. This relocation will need to be completed and activated prior to the retaining wall piles being completed and the excavation performed.

The Rivanna waterline will need to be installed and activated prior to the soldier piles installation is able to be completed. It will be one of the first activities the LANE/Corman Team undertakes.



Albemarle County Service Authority – We are able to avoid the majority of the sanitary sewer lines on the project, but there are still some small areas of concern that need to be addressed. Impacted by this *Project Element* is a length of sanitary sewer line along the west side of the project from Station 65+75 to 70+50 where the line resides presently in an easement. During the preliminary UFI meeting, VDOT stated this line would not need to be relocated if it remained within the limitations set forth in the VDOT Utility Manual section 15.2. For this reason, we are only proposing frame and cover adjustments to meet the proposed roadway grade. ACSA will also get two additional hydrants and a dry standpipe system with fire department connections installed on their system on the southeast and northwest corners of the Rio Road and Route 29 intersection as per Addendum #2.

The Albemarle County water relocation will be a bit less critical than the Rivanna line, but will still need to be completed prior to the BMP being constructed in that location.



Albemarle County Public Schools (Telecommunications) – Albemarle County Public Schools as of right now has no conflicts with the Rio Road Intersection *Project Element*. However, they have expressed a desire to participate in the joint duct bank system for facilities they wanted to install but postponed due to this coming road work. We will coordinate with them for the duct bank design and ensure that their needs are met and treat it as a betterment to the project since no facilities exist there today.

Albemarle County Public Schools at this time has no existing facilities in conflict, but desires to install facilities within the project limits. They will be addressed as a betterment.



City Of Charlottesville Gas – Like the RWSA, Charlottesville Gas runs through the depressed roadway excavation area along Route 29 and will need to be relocated prior to the retaining wall piles being completed and the excavation performed. By way of discussions with Phil Garber at the City and analysis of the corridor, we have chosen an alignment down the Western outside through lane of the intersection to relocate the 6” steel gas line. Much like the RWSA water relocation, this relocation in the traffic lanes that are remaining at grade through the intersection will allow us early relocations of the line while right of way is still being negotiated. This will allow the earliest possible solution to the conflict with the proposed excavation and at the same time will limit easements required for the project. Additionally, most of the branches and taps off this line are to the West, so this re-location will limit the amount of additional 6” steel line needed to reconnect the existing taps.

The existing 4” tap that feeds Rio Road to the East of the intersection will need to be relocated to North along Route 29 behind the curb to a point that existing main is kept in place and crosses to tie into the existing main.

Along with the Rivanna waterline, Charlottesville Gas will be one of our first priorities. It, too, will have to be relocated and activated before the soldier pile construction can be completed.



VDOT Northwest Regional Operations – VDOT NWRO has traffic signal infrastructure throughout the project for traffic control. They will be coordinated with during the utility relocation process to ensure the traffic control devices remain operational and new facilities installed with the new signal devices.

VDOT NWRO is the point of contact for the existing signal devices. They will be coordinated with during construction to ensure the traffic control devices remain operational.



Dominion Virginia Power – Dominion Virginia Power (DVP) has an existing single 3 phase aerial circuit crossing the Rio Road/Route 29 intersection along the north side of Rio Road. While the crossing is not physically in conflict with the project, the overhead clearance and required “safe zone” to the power lines will make it impossible to use cranes to construct the bridge and retaining walls. The LANE/Corman Team has discussed outages of the line with DVP and found that it CANNOT be temporarily de-energized whatsoever; therefore, DVP is proposing the crossing be shifted north to a pole outside the cut area near STA 70+66.

The existing DVP poles along the Western side of the northern leg of the intersection are in conflict with the full width sidewalk. Per proprietary meeting #2, these poles will not need to be relocated for the sidewalk; the sidewalk will be built around the poles. This removes the parking capacity impacts to the adjacent businesses.

Dominion Virginia Power will be another key priority. The Lane/Corman Team will begin work on the joint duct bank system in the Northeast Quadrant first, to allow Dominion to install their underground portion. The existing Dominion Line will need to be removed prior to the soldier piles being able to be completed.



CenturyLink Communications – CenturyLink, the local phone company, has multiple copper and fiber optic underground lines running throughout the project. The LANE/Corman Team met with CenturyLink early in the planning phases of the proposal and found that they had done extensive research and development already

for this project. Their management has totally “bought in” to the project, and appears to fully realize the importance of this project to the VDOT, the residents of City of Charlottesville, Albemarle County, and the Commonwealth.

Just off the project limits to the east resides a CenturyLink central office. This location handles local switching traffic for the larger part of the region and has major lines and connections running from there, to the Rio Road/Route 29 intersection and then off in all four directions to connect to other communications hubs. The major conflict is where these lines cross the intersection, just to the north of existing Rio Road, and directly through the depressed roadway excavation. CenturyLink has already done the extensive research and found that there is no feasible way to relocate all the copper cables in this run within the time allotted for the entire roadway project. To help VDOT and the Commonwealth meet its delivery date, they have devised a plan to utilize remote switching machines at the Southern and eastern limits of the project. This will allow a fiber optic line to be placed through the intersection between these two pieces of equipment to transmit the signals from one point to the other. Fiber line is much faster to place and can hold exponentially more signal on smaller lines than the copper. This plan will greatly reduce the relocation time required for CenturyLink and limit the amount of copper placement and splicing.

Originally, CenturyLink’s hope was to have DVP place taller poles at the intersection to utilize them to cross aerially to connect the two remotes. Since DVP has deemed the aerial as unable to be de-energized and thus will have to relocate the crossing, CenturyLink will need to run underground conduits along the East side of the road south from the intersection to a point beyond the excavation and then cross Route 29 to reach the other remote switch location.

Additionally, the existing mid-sized copper CenturyLink lines underground along the western edge of Route 29 South of the intersection will be impacted by storm drain pipes needed to collect and transport the water runoff from the roadway. To relocate these lines (and others discussed later in this document), the LANE/Corman Team is going to design and build a duct bank outside the limits of the roadway along the western side of Route 29. A utility easement will be required for this feature, but it will provide CenturyLink a safe area to relocate their lines. This plan of action was discussed at length with CenturyLink and their engineering department; not only did they approve the placement of their lines in the duct bank, but were very optimistic that this would aide them in accomplishing the relocation time frames required for this project.

Lastly, a small section of the major CenturyLink underground cables could possibly be in conflict with proposed storm drainage at proposed BMP 2. Our Team will perform underground utility investigation and test holes immediately following “Notice to Proceed” to determine the depth of these lines and adjust the proposed drainage around the line if at all possible. If conflicts exist, our Team will work with CenturyLink to adjust the lines vertically in place to facilitate installation of the storm drain pipe.

The LANE/Corman Team will begin construction on the duct bank as soon as possible to allow CenturyLink as early as a start to their relocation as they can. The lines crossing Route 29 and the remote switches they are proposing must be completed prior to the excavation being performed.



Comcast – Like CenturyLink, this area is also very vital to the operation of the Comcast Network. Just off the project limits to the west resides their central office which covers the entire Charlottesville region and disposing connections to Richmond and other surrounding urban areas. Comcast is predominantly aerial on the existing DVP poles. Mr. Wes Parker of Comcast has confirmed that they will in turn do whatever DVP does for the relocation. There is sufficient slack in their fiber lines to make the proposed shift to the poles and they are aware they will need to place new sections of coaxial cable to make up the shifted length. Additionally, Comcast has a line that ties into the existing CenturyLink network to access their Central Office and ties into communication connections. This existing underground line is directly through the center of the Rio Road intersection and will be impacted by the proposed bridge and underpass construction. Additional lines will be added to the existing aerial crossing when the adjustment is made to carry this signal across the intersection and down Rio Road to a point where the lines can safely drop and cross to enter the CenturyLink system, once again beyond the connection to the newly placed CenturyLink line. This line will be relocated in a new duct bank around the limits of the depressed roadway within VDOT acquired utility easements.

The existing Comcast crossing at Route 29 is a secondary priority. While it can be worked around to install the soldier piles, it will need to be relocated prior to bridge construction setting beams.



Lumos Networks – The LANE/Corman Team, through coordination meetings with Mr. Carey Bowman and Mr. Jared Morris of Lumos, have discovered that they have seven smaller fiber optic lines along the existing DVP pole line along the western side of Route 29 and along WB Rio Road. Therefore, they have stated whatever DVP does with the pole line they will follow suit. There is sufficient slack in their lines to make the needed adjustments that are being considered for the DVP poles and their relocation should prove to be very minimal and no risk to the project schedule.

Like Comcast, Lumos is aerial on the DVP poles and a secondary concern at the crossing and will need to be relocated prior to setting bridge beams.



CenturyLink Government (Qwest Government) – Currently, the LANE/Corman Team is awaiting approval and authorization to receive the records for the Qwest facilities due to the sensitive nature of the customers being served. However, we met with Noah Dobbin of CenturyLink/Qwest and were informed they had one single line running the entire length of the project along the western edge of Route 29, with no branches, taps or services. This line is unfortunately going to be impacted several times throughout the project by proposed drainage and other features. Through discussions, they also agreed to enter into a joint duct bank system to be built by the LANE/Corman Team along the western side of the project.

Qwest Government’s relocation will be performed in the joint duct bank. It will need to be in place and active before the drainage elements in the Southwest quadrant are installed.



Fiberlight – Fiberlight is currently leasing CenturyLink/Qwest Government conduit and their lines run together with a single 432 fiber optic line of their own. Like Qwest Government, Fiberlight has agreed to place their cables in the joint duct bank system.

Similar to Qwest Government, Fiberlight will utilize the joint duct bank and their lines need to be moved prior to the drainage items being installed in the Southwest quadrant of the intersection.



Verizon Business (MCI) – Verizon Business (MCI) has existing 24 Fiber running along the Dominion Virginia poles as they enter the project area from the North, and then drops down underground to enter the CenturyLink conduit system. They believe they are going to be able to transfer the cable with the poles, but will need to re-route the underground to avoid the roadway excavation and storm drainage along the eastern edge of the road. They will join the joint duct bank alignment along the western edge of the road and relocate with the CenturyLink line along the eastern edge of Route 29.

Verizon Business currently occupies the Century Link conduit. They will place new cable in the joint duct bank; this needs to be completed prior to the drainage items in the Southwest quadrant being installed.



QWEST COMMUNICATIONS – **Qwest Communications [Business]** – Qwest Communications [Business] has reported that they have a small fiber line serving a government agency through the project from the North and then down Rio Road East of the project. Unfortunately due to the sensitive nature of the data on the line, Qwest will not be joining the joint duct bank system but instead will be installing their own conduits. While this limits the control that the LANE/Corman Team will have over the work, we will focus additional communications and coordination with them to ensure the needed timelines for relocations are met.

*Qwest enters from the North and turns down Rio to the East.
It will need to be relocated prior to the soldier pile construction being completed.
This will be another “First Priority” to get them on the job moving their line.*

Mitigation Strategies to Offset Potential Impacts of Utility Relocations Exceeding Timeframes or Unidentified/Non-Located Utilities Being Discovered During Construction

In Plan Utilities - The first part of our mitigation strategy to protect against utility relocations exceeding the forecasted timeframes is to effectively perform as much of the necessary work out of the utility’s hands so that we control the schedule.

For the in-plan utilities, our Team members’ relationships and experience with the onsite utility companies is a positive impact to our schedule. WR&A and RK&K have already completed much of the preliminary work for the water, sewer, and gas relocations. As Notice to Proceed is granted to our Team, we will mobilize our underground utility investigation partner to gather the last pieces of information we will need to complete the design packages and begin construction of the relocated lines. LANE and Corman both have vast experience installing water and sewer facilities across the Commonwealth and have already begun talks with a gas pipeline installation company that the City of Charlottesville has had successful projects with in the past. For the DVP relocation, our team member Rinker Design Associates (RDA) has on staff a Commonwealth of Virginia certified power designer with close to a decade of experience in aerial power line design. We will supply to them at the UFI a proposed layout for the relocated poles and required guying or supports as well as any needed easement boundaries. This will allow DVP a head start on their design work for the P&E and should minimize the time needed for a design. Additionally, when the easements are purchased and DVP mobilized to the site, the Team will have the easement boundaries and pole locations staked for them, removing the need for their survey crew to become involved with the site what so ever.

For the multiple communications companies, as mentioned earlier in this document, the LANE/Corman Team has proposed and gained consensus for a joint duct bank to be built for the companies to utilize. Our team partner RDA has experience on multiple private, municipal and VDOT projects designing joint duct bank systems and has performed design work for numerous fiber optic companies. RDA designers have already completed much of the preliminary work to provide a design for the duct bank. At notification of intent to award, we will begin meeting again with the communication companies to confirm how many conduits they will require, in what parts of the duct bank, as well as any company specific specifications that are not already known. A final alignment design will be provided to them for their acceptance as the underground investigations are being performed for any and all crossings. With that information, the designs will be complete and construction started as soon as the needed easements are in place. Meanwhile, RDA will continue to work with the companies to help them complete their P&E packages utilizing the supplied duct bank plans for the plans of their packages.

With over a decade of experience and knowledge reviewing plan and estimate packages for the Department, RDA will easily be able to help the smaller fiber companies that usually struggle with the documents required

for a complete, easily reviewable and approvable package that meet all the requirements of the VDOT Utility Manual. As the duct bank construction nears completion, RDA and field staff from the LANE/Corman Team will work together to schedule the multiple companies with windows to pull cable and begin splicing efforts, closely tracking progress to ensure that no company falls behind. The LANE/Corman Team will continue to partner with the communications companies in the field, helping with lane closures and MOT when needed to perform the final stages of work. With this plan of action, it leaves only the pulling and splicing of the cables in the hands of the utilities ... limiting the chances of delays through the biggest bulk of the work entailed. Similarly with Comcast, RDA has experience providing designs for the Manassas Comcast office and is experienced in what design work they need performed for them to have a successful project. Once DVP approves the pole locations, RDA will provide Comcast the designs they need to complete their wire design and assist in assembling a complete P&E package to be submitted for the project. Work by DVP will be closely monitored and as it draws to a close, Comcast and Lumos will be provided a notification of completion date when they will have access to the poles to complete their transfers.

Overall, the key to safeguarding against potential schedule problems with the utility companies is constant ongoing communications. The LANE/Corman Team will continually track and communicate with the companies involved throughout the entire relocation phase. Through our experience coordinating utility relocation projects, we have developed a tracking matrix and spreadsheets that will be updated constantly and allow us to look ahead to prepare for the coming stages.

The tracking begins at the UFI, setting the dates for the easement requests, P&E submissions, start of field work, and the target completion dates for each utility. As the easement requests are completed, the needed parcels will be listed and tracked as they progress through the negotiation process, and the final documentation supplied to the utility(s) needing the easement when received. This allows us to quickly see how many parcels remain and keep close communications with the ROW staff for forecasts on closings to better allow the utilizes involved to start preparing to mobilize to the field and be ready to proceed at the earliest point in time.

As construction begins, the LANE/Corman Team field personnel will track the progress of the relocations as well as communications with the company field supervisors themselves. Progress meetings will be held with all utilities involved onsite on a bi-weekly basis. If it is apparent that a utility is falling behind, meetings will be held more often to partner in solutions to get back on track.

During the proposal phase, we have contacted every utility company we have identified that could possibly be in the corridor and also confirmed that the RFP plans appear to list all the utilities that claim facilities in the corridor. However, if we should encounter an unidentified utility, we will bring in our underground investigation partner as well as Miss Utility to help track the line down to a point of identification (hand-hole, marker post etc.). Once identified, we will immediately contact the company to come to the field and verify it is theirs and if it is active or abandoned.

Lastly, our utility field staff brings 13 years of field utility inspection experience. They have extensive experience in solving field issues and finding quick, easy solutions to complicated problems. Their oversight of the utility relocations in the field will help foresee possible problems and greatly aide in overcoming any unforeseen problems.

Integration of Utility Coordination, Adjustments, and Relocations into the Project Sequencing to Ensure Limited Disruption to Service and Minimization of Possible Schedule Delays

Throughout the other related sections of this proposal, we have identified the pieces of the overall LANE/Corman Team strategy for integrating the utility relocations into the project schedule.

It is essential that the in-plan relocations start as soon as possible following Notice to Proceed, installing the water and gas lines in the proposed outside through lanes of the intersection during night times lane closures.

This work needs to be completed and tied in by the time that the roadway crews are prepared to begin excavation of the depressed roadway. At the same time this work is being performed, the retaining wall pile and tie-back installation can be started for the wall construction.

Also, it is imperative the re-routing of the aerial crossings occur as early as possible. The LANE/Corman Team will need to construct the joint duct bank along the Eastern side of Route 29 immediately so the aerial power line can be moved from the area of augering and crane work. While the augering of piles and support tie-backs can begin prior to the power line being relocated, it must be cleared before the retaining wall work can be completed. This relocation will be performed during the day outside the roadway limits while the water and gas work is being performed at night.

Likewise, the duct bank construction needs to proceed as soon as the required easements are in place so the companies can begin pulling and splicing their lines. CenturyLink is the key to success in this phase, as their line must be installed and spliced before the depressed roadway excavation can be completed. The duct bank construction can be pursued in shifts through the day and night until complete since it is outside the roadway limits. This will allow for the earliest possible delivery of the ducts to the communication companies for them to pull and splice their cables.

As the depressed roadway excavation is being performed, Lumos and Comcast can relocate their lines to the new crossing alignment if not already performed.

Example Strategy to Restore Services if Unscheduled Disturbances Occur

While the LANE/Corman Team intends to work within the Miss Utility laws and regulations, we also know that it is key to plan for the worst. For this reason, we have developed a multi-layer plan to address any unforeseen interruption in utility service.

For water, sewer, and gas, we will have our team of utility contractors on standby for any accidental service disconnections. Twenty-four hour contact information will not only be posted clearly in the field office, but all crew foremen of the onsite work groups will have the contact numbers at all times. This will reduce the time the service is down, as crews can be onsite as quickly as possible to restore the service.

For the private utility companies, onsite emergency contact personnel will be designated by the respective utility and kept on the same 24 hour call sheets as the in-plan utilities. While these companies are very protective of the forces working on their facilities, quick contact to the utility owner to get repair crews mobilized as soon as possible will reduce the outage time.

An onsite safety officer will be assigned to this *Project Element*. This person will not only be the one point of contact for all Miss Utility tickets, but will meet with all utility companies in the field at the start of work in a new area to note the location of active lines and arrange for emergency contact should anything unforeseen happen. Likewise, as relocation work begins, the onsite safety officer will meet with the utility crew(s) onsite to get emergency contact information for the crew itself to help aide in restoration of services in an emergency. This person will also be responsible for posting clearance signs for any overhead lines in the work area as well as flag any sensitive areas, calling attention to the Miss Utility locator of any marks or areas that appear to not be clear or complete in the markings.

For any areas where utilities are being kept in place during work in close proximity, the utility owner will be notified three days in advance and advised to have an emergency repair crew onsite should anything happen. If any service interruption should happen, crews will stop work immediately and work with the repair crews to get the repair made as quickly as possible. This could include but not be limited to... lane closures or MOT to access the area, ceasing work in other areas to shift traffic to access the area, or excavation and shoring to make repairs.



Section 4.5

Approach to Construct the Entire Project

LANE AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

4.5 | APPROACH TO CONSTRUCT THE ENTIRE PROJECT

4.5.1 SEQUENCE OF CONSTRUCTION – ENTIRE PROJECT

Approach to the Coordination and Phasing of all Three Elements of the Project Concurrently (including General Sequence of Activities and Allocation of Resources)

The Route 29 Solutions Project is unique for VDOT in that it combines three separate and unique *Project Elements* into one Design Build Contract. All three *Project Elements*, Rio Road and Route 29 Intersection, Route 29 Widening, and Berkmar Drive Extension, have their own unique issues that must be addressed to be successful. However, common to all three are: ROW acquisition, utility relocation, geotechnical conditions, conformance to VDOT standards, and tight schedules. Common to the Rio Road Intersection and the Route 29 Widening *Project Elements* are MOT due to their full integration into the existing traffic corridor as well as the need for a proactive public outreach program.

Sequence of Construction

General Sequence

Route 29 and Rio Road GSI Project Element – The following is a summary of the key sequence of construction activities for the Rio/Route 29 Element.

- Design submission packages and permits
- ROW acquisition and Utility relocations
- Route 29 North and Southbound Outside permanent work – pavement, curb & gutter, sidewalks, etc.
- Auger holes and installation of the Soldier Pile retaining wall uprights
- Prepare temporary traffic control-MOT cross-overs, side street improvements and traffic signals for the traffic switch to provide access to the depressed roadway section work area
- May 23, 2016, install MOT devices, temporary stripe Route 29 and Rio Road to switch traffic to open the Depressed Roadway Section (DPR) for construction.
- Excavate the DPR and install temporary timber lagging in the previously installed soldier piles for the Retaining Wall
- Install DPR Storm Drainage Pipe and Roadway Bedding Stone
- Construct the Rio Road Bridge and Roadway Improvements
- Form and Pour the Retaining wall Concrete Fascia with Dry Stack Stone Finish
- Install permanent traffic safety devices, Rio Road Traffic Signals, Under-bridge Lighting, Traffic Signs
- Asphalt Pave the DPR and stripe for opening on or before September 2, 2016
- Complete the Rio Road/Route 29 Element on or before December 2, 2016

A more in depth and detailed discussion on this *Route 29 and Rio Road GSI Project Element* Sequence is included in Section 4.4 including the environmental permitting process and schedule and other pertinent approach to construction steps to be taken to expedite the Project Schedule and mitigate other potential impacts.

Route 29 Widening Project Element – Our Sequence of Construction is made up of 6 Phases described below and shown on the attached TMP Phases and Construction Phasing Typical Sections (**Figure 4.5.1**) on the following pages:

Phase 1 includes the reconstruction and ultimate widening of the SB lanes (from Station 2647+00 to Station 2653+00) and NB lanes (from Station 2637+50 to Station 2662+00) to correct the substandard vertical sag curve south of Ashwood Boulevard. Phase 1 will also include the reconstruction and ultimate widening of the SB lanes (from Station 2690+00 to Station 2696+50) and NB lanes (from Station 2685+50 to Station 2699+50) to correct the substandard vertical sag curve and replace the drainage structure at Powell Creek. At both locations the inside two lanes of the ultimate NB pavement will be constructed (Phase 1A) and used temporarily to divert the SB traffic to allow the ultimate SB lanes to be constructed (Phase 1B). Once the ultimate SB lanes are completed, the NB traffic will be diverted to the inside two lanes of the ultimate NB pavement constructed earlier and the remainder of the NB construction at this location will be completed (Phase 1C). Phase 1 will be constructed behind concrete barrier service using TTC-6.0 on the inside and TTC-7.0 on the outside.

Phase 2 includes the pavement build-up of the existing SB lanes to the proposed vertical profile and cross-slopes. Phase 2 also includes the construction of temporary pavement along the inside SB lanes to allow for lane shifts and implementation of TTC-7.0 in Phase 3. Phase 2 construction will be completed using temporary lane closures (TTC-13.0).

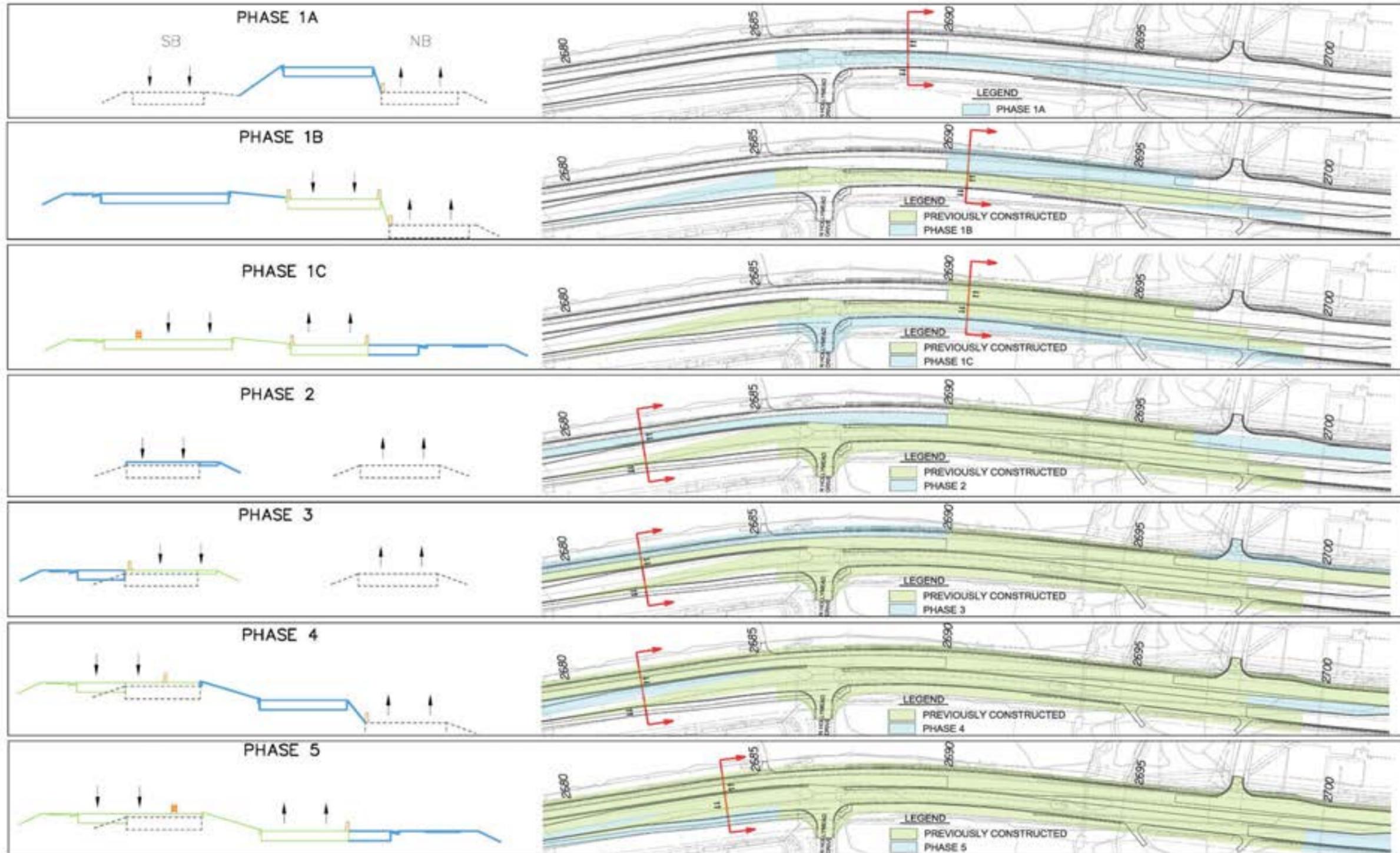
Phase 3 completes the widening of the SB lanes behind concrete barrier service using TTC-7.0 on the outside. The work zones for Phase 3 will be less than 0.75 miles in length to avoid the need for work zone pull-off areas (TTC-8.0).

Phase 4 SB traffic shifts to the newly widened pavement behind concrete barrier service to create room in the median for construction of the inside NB lanes (TTC-7.0). The existing NB inside shoulder will also be closed to create room in the median for construction the new NB lanes. The work zones for Phase 4 will be less than 0.75 miles in length to avoid the need for work zone pull-off areas (TTC-8.0).

Phase 5 shifts the NB traffic to the newly constructed NB lanes and completes the 3rd lane widening of the NB lanes behind concrete barrier service using TTC-7.0. The work zones for Phase 5 will be less than 0.75 miles in length to avoid the need for work zone pull-off areas (TTC-8.0).

Phase 6 includes the final surface pavement for the entire project and will be completed under temporary lane closures using TTC-13.0

4.5.1



Berkmar Drive Extension Project Element – The majority of the *Project Element* will be constructed while current traffic operations are maintained on the existing roadway network. Our Sequence of Construction is made up of 2 Phases described below:

Phase 1 – Build temporary construction entrances at Hilton Heights Road, Rio Mills Road and Town Center Drive under a flagging operation. Then begin construction of this element, which is completely out of traffic, from approximately Sta. 107+00 to Sta. 233+75 including the bridge over the South Branch of the Rivanna River, while maintaining traffic in existing travel patterns. Placement of the bridge beams over Rio Mills Road will be accomplished under temporary closures utilizing a flagging operation.

Phase 2 – The connection to the existing roadways will include the construction of the roundabout at Hilton Heights Road and the tie-in to the existing roundabout at Town Center Drive. The northwest half of the proposed roundabout at Hilton Heights Road will be constructed outside of the existing travel lanes with the remainder of the roundabout being constructed as a mill and overlay operation with short term lane closures and minor traffic shifts. Access to the Sam’s Club and other commercial establishments will be maintained at all times during construction. The center island of the roundabout will be completed as the last element of work. The northern roundabout at Town Center Drive will only require connecting the proposed construction to the existing pavement with short term flagging operations.

Mitigation of Impacts

The LANE/Corman Team is very experienced in delivering high profile, extremely challenging projects on-time and without excuses. Our Team will dissect the scope of work into manageable components, independently staff each *Project Element* and phase of work with appropriate experts in the field, and utilize our expansive resources to handle these aggressive work schedules and successfully complete all three *Project Elements* concurrently.

Our Team has developed specific processes and procedures to control the schedule; we take great pride in the fact that every one of our D-B projects has been completed on-time or ahead of schedule. This all starts with our Teams’ comprehensive and efficient Project Design Manual (PDM) that will enhance and expedite the development of fully integrated project-compliant designs which meet or exceed VDOT’s requirements. The PDM will detail deliverable schedules and products; provide design criteria and design standards; outline document control methods; identify key staff; outline methods for prioritizing resources and assigning staff; list design methods, procedures and submittal guidelines; and provide communication procedures among the Team members and VDOT.

One overall strategy that has served the LANE/Corman partners in the past is to clearly identify the risks that may occur and develop aggressive mitigation strategies to avoid the risk or to react if it materializes. Risks that have already been identified include:

1. Project Staffing and Resources

- Our design team is comprised of three of the top design firms in the Commonwealth (RK&K, WR&A, and RDA) in order to meet the aggressive project schedule. RK&K is the overall Lead Designer and has strategically assigned each *Project Element* to a specific design firm to lead all permitting and design efforts for that specific *Project Element*. This will ensure each *Project Element* receives the highest level of commitment and attention to meet the schedule milestones, while providing additional Team-wide design support/resources as needed. Additionally, each design firm has in-house personnel to address timely permit acquisition to ensure we are in control of our own schedule.

- Assigning the design for the three *Project Elements*, one to each independent engineering firm, for distinct design packages, including the early / advance work packages, enables the design to stay in front of the critical path construction activities many of which will occur concurrently.
 - The Team will submit a Master Plan Submittal schedule early in the process to provide VDOT with proper notice to be able to plan and respond to the aggressive demands that will be placed on them to meet the construction schedule.
 - The Responsible Charge Engineer, Mr. Ryan Gorman, PE, will provide proper coordination of design reviews for constructability, QA/QC, and coordination with VDOT. Mr. Gorman was the Project Manager on a very similar project for VDOT, the \$62 Million Urban Deck Project in Alexandria, VA, where he successfully dealt with numerous active citizen groups.
 - LANE and Corman collectively employ a workforce in Virginia, all within reach of this project, in excess of 1,500 field staff of tradesmen, laborers, and management staff that are available to be assigned to this “High Profile” project as needed to ensure success.
 - Our Team will have on-site a Primavera P6 CPM Scheduling Engineer (employed full-time) who will be in charge of developing, maintaining and updating a cost and resource (men, equipment and materials) loaded schedule. The Scheduling Engineer will develop a Master Project Schedule that will incorporate the three separate *Project Element* CPM schedules to make one unified document to best optimize our time and resources.
2. **Geotechnical Risks** – We anticipate completing the necessary borings and subsurface investigations to complement what VDOT has performed to comply with the necessary data to validate our design, plus additional bores to identify any potential areas of concern. Our Geotechnical Engineer, Schnabel, is performing independent peer reviews of the analyses made by their engineers assigned to this project; LANE/Corman, RK&K, and WR&A geotechnical engineers also will perform independent peer reviews. This group of specialists has reviewed the geology of the subsurface soils, expected rock levels to be encountered plus stability of temporary and permanent slopes, structure foundations and roadbeds.
3. **Environmental and Public Permitting** – Our designers’ permitting staff have reviewed the RFP data and list of required permits to ensure the time frames shown in our schedule to obtain the permits and reviews are doable. Alternate alignments have been discussed should unknown cultural resources be encountered. Critical to the design and construction schedule of each of the *Project Elements* and thus, the overall Project schedule is securing the required environmental clearances. The LANE/Corman Team will take the following steps to ensure that all environmental requirements and obligations are met.

Route 29 Widening Project Element:

- Identify/confirm environmental resources within the *Project Element* corridor:
 - Starting at NTP, review the limits of disturbance to confirm that they accommodate critical design features and allow reasonable room for construction including erosion and sediment control and stormwater management.
 - Environmental field work will take place as soon as access to the *Project Element* corridor is authorized. This field work and technical services may involve wetland delineations, stream assessments, water quality studies, threatened and endangered species reviews; cultural resource reviews, water quality permitting, and set the stage for environmental compliance monitoring.
 - The environmental resource data will be incorporated into the project preliminary design plans to support our evaluation of avoidance and minimization opportunities.
- Complete the Phase I Environmental Assessment:

- Starting at NTP, a Phase I Environmental Site Assessment (ESA) will be completed in accordance with the most current ASTM standard (ASTM E 1527-13) and Special Provision for Phase I and Phase II Environmental Site Assessments for Design-Build Projects.
- Within 2 weeks of completion of the Phase I ESA fieldwork, a summary report will be prepared to support the submission of the EQ201 - Right of Way Reevaluation.
- Complete Phase I Cultural Resources Archaeological Investigations:
 - Complete field work within 2 months of NTP
 - Prepare a summary report within 2 weeks for VDOT to coordinate with DHR
 - Secure DHR concurrence within 45 days of submittal of summary findings report.
 - Use this data for project water quality permit applications
- Secure water quality permits for the advance design work packages:
 - Starting at NTP, coordinate with USFWS, DCR, DHR, and VDGIF to receive updated information.
 - Review the environmental resource data incorporated into the *Project Element* preliminary design plans to assess project effects and direct impacts
 - Consult with the USACE and VDEQ immediately after NTP to discuss our streamlined permit pathway for the *Project Element* and the advance work packages
 - Conduct a pre-application meeting with USACE within 2 months of NTP
 - Submit permit application to secure nationwide permits for the advanced work packages within 45 days following the pre-application meeting.
- Secure the Virginia Department of Environmental Quality (VDEQ) Virginia Stormwater Management Program (VSMP):
 - Starting at NTP, verify that preliminary erosion and sediment control and stormwater management plans meet the regulatory requirements of this permit and have successfully secured these permits from the VDEQ.
 - Consult with the VDEQ immediately after NTP to discuss our streamlined permit pathway for the *Project Element* and the advance work packages.
 - Submit permit application to VDOT to secure VSMP for advanced work packages with VSMP issued within 30 days of submittal.
- Secure water quality permits for the road design:
 - To streamline the permit acquisition process, the LANER/Corman Team will evaluate each jurisdictional project crossing in accordance with the federal definition of single and complete projects for linear projects.
 - Consult with the USACE and VDEQ immediately after NTP to discuss our streamlined permit pathway for the *Project Element* and the advance work packages.
 - Starting at NTP, coordination with USFWS, DCR, DHR, and VDGIF to receive updated information.
 - Review the environmental resource data incorporated into the *Project Element* preliminary design plans to assess project effects and direct impacts
 - Conduct a pre-application meeting with USACE and DEQ at 30% design plans
 - Prepare and submit permit application to secure water quality permits to the DEQ and USACE with 60% design plans.
 - Anticipate the water quality permit issuance within 60 days of application submittal.
 - Secure stream and wetlands compensatory mitigation credits within 30 days of permit acquisition.
- Secure VDOT's Construction Authorization

- Submit a final document re-evaluation for ROW Authorization (EQ-201) prior to ROW authorization with right of way plans
- Submit the final document re-evaluation for PS&E and Authorization (EQ-200) and a final Environmental Certification/Commitments Checklist (EQ-103) concurrently with the final roadway plans.

Berkmar Drive Extension Project Element:

- Identify/confirm environmental resources within the *Project Element* corridor:
 - Starting at NTP, review the limits of disturbance to confirm they accommodate critical design features and allow reasonable space for construction including erosion and sediment control and stormwater management facilities.
 - Environmental field work will take place as soon as access to the *Project Element* corridor is authorized. This field work and technical services will involve wetland delineations, stream assessments, water quality studies, threatened and endangered species reviews and cultural resource reviews that will be utilized for water quality permitting and environmental compliance monitoring.
 - The environmental resource data will be incorporated into the *Project Element* preliminary design plans to support the evaluation of avoidance and minimization opportunities.
- Complete the Phase I Environmental Assessment
 - Starting at NTP, a Phase I Environmental Site Assessment (ESAs) will be completed in accordance with the most current ASTM standard (ASTM E 1527-13) and Special Provision for Phase I and Phase II Environmental Site Assessments for Design-Build Projects.
 - Within two weeks of completion of the Phase I ESA fieldwork, a summary report will be prepared to support the submission of the EQ201 - Right of Way Reevaluation.
- Complete Phase I Cultural Resources Archaeological Investigations:
 - Complete field work within two months of NTP.
 - Prepare a summary report within two weeks for VDOT to coordinate with DHR
 - Secure DHR concurrence within 45 days of submittal of summary findings report.
 - Use this data for *Project Element* water quality permit application.
- Complete Phase III Cultural Resources Archaeological Investigations site 44AB0594:
 - Perform this action independent of the Phase I cultural resource investigations in order to streamline other projects' clearances.
 - Start field work within two weeks of NTP.
 - Prepare a summary report within two weeks after the completion of field work for VDOT to coordinate with DHR.
 - Secure DHR concurrence of summary report within 45 days of coordination so the bridge construction can proceed after the Virginia Marine Resources Commission permit is acquired.
 - Draft Report due within one year following the completion of field work
 - Final Report due 20 days after receipt of final agency comments of draft report
 - Present findings at a professional conference within two years following the completion of field work
 - Provide VDOT with information for Educational Brochure or Interpretative Panel within two weeks of the final report.
- Secure water quality permits for the advance design work packages:
 - Starting at NTP, coordination with USFWS, DCR, DHR, and VDGIF to acquire updated information.

- Review the environmental resource data incorporated into the *Project Element* preliminary design plans to assess project effects and direct impacts
 - Consult with the USACE and VDEQ immediately after NTP to discuss our streamlined permitting approach for the advance work packages.
 - Conduct a pre-application meeting with USACE within two months of NTP
 - Submit permit application to secure nationwide permits for the advanced work packages within 45 days following the pre-application meeting.
 - Secure the Virginia Department of Environmental Quality (VDEQ) Virginia Stormwater Management Program (VSMP):
 - Starting with NTP verify preliminary erosion and sediment control and stormwater management plans meet the regulatory requirements for the VSMP.
 - Consult with the VDEQ immediately after NTP in order to discuss our streamlined permitting approach for the project and the advance work packages.
 - Submit permit application and fee to VDOT to secure VSMP for advanced work packages with VSMP issued within 30 days of submittal.
 - Secure water quality permits:
 - To streamline the permit acquisition process, our team will evaluate each jurisdictional project crossings in accordance with the federal definition of single and complete projects for linear projects.
 - Consult with the USACE, VDEQ, and VMRC immediately after NTP in order to discuss our streamlined permitting approach for the project
 - To expedite bridge construction at the crossing of the South Fork Rivanna River, we will file for the subaqueous bed permit from VMRC separately from the road construction because there are no temporary or permanent federal jurisdictional impacts at the bridge crossing.
 - Starting at NTP, coordination with USFWS, DCR, DHR, and VDGIF to acquire updated information.
 - Review the environmental resource data incorporated into the project preliminary design plans to assess project effects and direct impacts
 - Conduct a pre-application meeting with USACE, DEQ, and VMRC at 30% design plans
 - Prepare and submit permit application to secure water quality permit for bridge at South Fork Rivanna River to the VMRC with 30% design plans. Anticipate the water quality permit issuance within 90 days of application submittal.
 - Prepare and submit permit application to secure water quality permits to the DEQ and USACE with 60% design plans. Anticipate the water quality permit issuance within 60 days of application submittal.
 - Secure stream and wetlands compensatory mitigation credits within 30 days of permit acquisition.
 - Secure VDOT's Construction Authorization:
 - Submit final Environmental Certification/Commitments Checklist (EQ-103) concurrently with the final roadway plans submittal
4. **Construction of the Berkmar Road Bridge over the Rivanna River** – To avoid environmental issues, we have performed substantial internal vetting of the means and methods to construct this major three span structure over the river in accordance with the Contract requirements to include wetland permit limitations. This includes internal reviews by our three major engineering firms as well as Geotechnical and Structural Engineers and LANE/Corman operations staff.
5. **Right of Way Acquisitions – Speed of the Process**

- a. RDA will be the LANE/Corman Team's right of way (ROW) agent; they are staffed with 12 specialists to internally address the needs of the three *Project Elements*. Having the ability to control our own workload, pace of acquisition and staffing is an immense benefit to our Team since we will not be subjected to the staffing, capacities, and scheduling limitations of outside agencies.
- b. To ensure fast, efficient, and accurate appraisals, our Team is procuring the services of several local appraisers to augment our services where needed. For the federally funded elements, local appraisers will perform the appraisals and RDA will perform the appraisal reviews. For the state funded elements, the appraisals will be performed by RDA and local appraisers as schedules dictate. This approach has been successfully implemented on recent projects.

6. Utility Relocations – Utility Company Coordination & Cooperation

- a. *Utility Coordination* –Lead Utility Coordination Manager, Mr. John Myers will handle all pre-construction utility issues. Mr. Myers has 15 years of experience with VDOT on similar projects and will personally address the critical utility coordination process. He will be proactive in identifying potential conflicts; conduct early and frequent meetings with the utilities to obtain easement requirements and agreement on the design approach; and review plans and estimates from the various companies to minimize schedule delays. He will establish and lead our Utility Task Force, a group comprised of utility owner representatives and our design and construction team, to meet on a regular basis to optimize utility avoidance, relocation strategies, and processes. We will build upon the work already performed by VDOT and develop a Utility Conflict Matrix along with required UT-9s to assist with the planning and design of utility relocations, where avoidance cannot be obtained.
- b. *Utility Relocations* – We have also established the position of Utility Relocation Specialist for post-design utility relocation issues to deal directly with utility companies once they are given NTP to relocate. To expedite the overall process, the LANE/Corman Team has prioritized the critical utilities. Our Utility Relocation Specialist, Mr. Jeremy Spittle, will be the unified voice of the Team in expediting our agreements and early design requirements for utility relocations. A significant aspect of our proposal schedule is the prioritized utility relocations component which takes into consideration time of year restrictions where utility owners will not allow interruptions. In addition to the above, utility relocation success will hinge on the following mitigation strategy to lessen or eliminate their impact:
 - Secure buy-in from the utility companies' top management and VDOT in order to establish common ground.
 - Establish a well-defined utility corridor with consideration for future facilities to provide the greatest amount of flexibility as change occurs.
 - Hold regular progress meetings with the utility owners for accountability to aid in dispute resolution.
 - Gain early understanding of the logistics of material acquisition to help maintain the project schedule.
 - Immediately notify owners when unknown utilities are encountered – evaluate potential design revisions versus relocation to weigh against the schedule to establish the most efficient means of resolution.
 - Be prepared to perform the design and/or construction with our own forces, if required.

VDOT on the US Route 29/Rio Road GSI *Project Element* has already started this process coordinating joint utility duct banks and easements, developing UT-9's, performing approximately 50% of the utility design and acquiring all of the necessary utility easements. The LANE/Corman Team will complete the design and utility relocation starting at NTP.

7. **Public Involvement and Stakeholder Coordination and Outreach** - We believe that the public involvement process must be led by a strong leader and integrated into the overall Route 29 Solutions Project and its component *Project Elements* throughout both the design and construction phases. Mr. Chris Reed, the Team's Public Relations Manager, has been involved in VDOT projects in the Route 29 Corridor dating back to the mid-1990s. He will draw on his past experience with many of the same stakeholders here to be proactive and avoid the pitfalls that could lead to delays. Strategic contacts have been made at this time and will continue to be maintained throughout the design and construction process.

VDOT has established a strong presence and dialogue with the Route 29 Project Delivery Advisory Panel. We will recommend that Mr. Reed be a strong resource and trusted advisor to the Advisory Panel. By integrating Mr. Reed on the Panel, accurate communications regarding the project development and stakeholder input can be assured. The Route 29 Project Delivery Advisory Panel includes the participation of many key stakeholders; we expect their participation to continue as we actively coordinate the overall outreach program.

We understand the importance of maintaining and fostering good relations with the project stakeholders and will develop a specialized communications plan to support these efforts. As a broader parallel to the Advisory Panel, our Public Relations Manager will establish contact and identify other stakeholders such as Emergency Responders, transit operators, citizen associations, UVA, the Chamber of Commerce, and Charlottesville-Albemarle Airport to effectively be engaged throughout the project duration. Our Public Involvement Plan will employ many tactics to reach each of these stakeholders both individually and as a group throughout the lifecycle of the project, including:

- Stakeholder Identification
- Stakeholder Engagement
- Media Relations
- Spokesperson Training
- Web/Digital Outreach/Hotlines
- Community Outreach/Public Meetings
- Briefings to Elected Official

Staging and Storage Areas

The location of our proposed staging and storage areas is of critical importance to the success of the project in this congested area. Key issues that we will address include:

- Safety of the traveling public (both vehicle and pedestrian) as well as security for local residents / business.
- Safe ingress and egress for construction vehicles, workers, and equipment to/from the construction site as well as for the huge quantity of material, equipment, and supplies that will require a temporary home.
- Close proximity to the individual work areas for operations efficiency.
- Removal from the travel ways when prohibited during non-work hours.
- Screening/separation from local business and other nearby commercial or residential establishments
- Adequate size to operate efficiently.
- Appropriate Environmental controls as required for the material/equipment stored.

Our intent is to rent existing office space in close proximity to the project for the co-located office facilities. The office facility will be sized to accommodate the required number of construction, design, and owner staff to make the co-location effective and meaningful. Since existing office space will be utilized, adequate

parking will already be available as will entrances and exits to local streets or highways. Temporary sanitary facilities will only be required at the actual work areas for the tradesmen constructing the new improvements.

It is assumed that multiple small staging sites will be required near the actual work areas to include:

- Route 29, both south and north of Rio Road, to reduce cross traffic through the intersection.
- Along the Berkmar alignment, both north and south of the river, to preclude the need of construction traffic to add to the already crowded roadways to go from one side of the river to the other.
- Along the Route 29 widening alignment – this site maybe combined with Berkmar yard north of river.

All yards will be fenced, screened as required, with a nominal number of temporary trailers or storage containers. Security will be provided as required. Since night work is anticipated, they will also be lighted, preferably by power drops from nearby Dominion Power poles vs. generators that could cause either noise or other nuisances. Existing VDOT or County property will be utilized wherever possible, supplemented with private leases from local landowners. The properties will have stone entrances and parking areas with tire washes when required to eliminate tracking mud onto the public roads. Sediment and Erosion controls will be installed and maintained as required. All properties will be restored upon completion in accordance with the specific lease requirements.

Public Safety and Measures to Limit Public Impacts

The theme of public safety and minimization of adverse impacts to the public is consistently repeated and addressed throughout or proposal, we take it very serious. All design will be measured against public impacts as well as cost and construction operations. Both LANE and Corman have well-deserved reputations for being good neighbors; this project will be no exception. Our MOT designs will be continuously evaluated for effectiveness to minimize impacts. An inordinate amount of construction will be going on in a small congested area at the Route 29/Rio Road GSI *Project Element* area around the clock for an extended period of time; controlling the

impacts will permeate all activities from signing to flagging to public outreach as discussed in subsequent sections. Safety training will be required of all workers to include discussions on being good neighbors and the need to minimize impacts be it from noise, to keep access open to all commercial and residential facilities, or the simple policing of trash generated on the worksite. Public transportation stops will not be blocked or relocated without prior discussions with the appropriate stakeholders. Offsite parking will be provided for the tradesmen as required to minimize traffic or congestion in public spaces. The busy holiday shopping season will be respected to the greatest extent possible so as to maintain the economic viability of this busy commercial area. Pardon our Dust meetings, multi-media and other forms of advertisements will be utilized to alert motorists and residents to the changing traffic patterns. Regular meetings will be held with the appropriate EMS and other public safety or City or utility staff to keep them informed of our future traffic shifts as well as to listen to their concerns.

Measures to Limit Disruptions to Vehicular, Pedestrian and Bicycle Traffic through the Project Corridor, including Adjacent Public Transportation Facilities/Roadways and Access to Local Businesses

Our Construction Manager and Public Relations Manager will work collaboratively to communicate impacts to stakeholders and will ensure inquiries and public comments are tracked and responded to within an approved turnaround time. The coordination means identified in *Table 4.5.1 – Stakeholder Coordination* will reduce impacts and address the unique concerns of each stakeholder. Upon award and throughout



LANE Project at Gilberts Corner - MOT during roundabout construction.

construction, our approach will evolve to accommodate specific stakeholder needs, provide solutions to concerns, and effective communication. Accurate and timely information will be disseminated to the public, including a schedule of anticipated traffic impacts provided to each impacted stakeholder prior to implementation of traffic patterns.

Table 4.5.1 – Stakeholder Coordination

Stakeholder	Communication Strategies	Benefits
VDOT	<ul style="list-style-type: none"> ▪ Proactively notify VDOT of construction traffic impacts and work closely with the NWRO TOC and the Culpeper District to keep notifications updated. ▪ Update and assist with the Lane Closure and Maintenance System. 	<ul style="list-style-type: none"> ▪ Increased awareness of significant impacts including lane closures and traffic switched. ▪ Improved public perception.
Route 29 Project Delivery Advisory Panel (PDAP)	<ul style="list-style-type: none"> ▪ Include the PDAP in planning sessions and solicit input into the schedule for construction operations that will impact the region. ▪ Work cooperatively with the PDAP to address impacts on local businesses and property owners, as well as public safety. 	<ul style="list-style-type: none"> ▪ Input from the PDAP into the construction schedule to avoid significant impacts when possible. ▪ Improved public perception of the Project.
Local Residents, Businesses, and the Travelling Public	<ul style="list-style-type: none"> ▪ Communicate and coordinate traffic management plans with local businesses, adjacent residents, and neighborhood associations prior to implementing traffic changes. ▪ Utilize message boards and other means to notify property owners and the traveling public of changes in traffic patterns prior to changes being implemented. ▪ Provide additional signage to inform the public about alternative routes when necessary. ▪ Host “Pardon Our Dust” meetings to provide an additional outreach method for property owners and the general public to obtain progress information. ▪ Update the project website, distribute informative outreach materials, meet with stakeholders, broadcast emails, and make social media announcements. 	<ul style="list-style-type: none"> ▪ Advanced notice of impacts to the public. ▪ Understanding of direct construction impacts for each individual stakeholder. ▪ Improved community awareness of construction progress. ▪ Reduced traffic on Route 29 based on alternate route availability.
EMS/Fire/Police and UVA & Martha Jefferson Hospitals	<ul style="list-style-type: none"> ▪ Organize Incident Management forums to ensure first responders understand alternate routes to avoid construction work zones. ▪ Develop a Traffic Incident Management guidebook that includes contact information for the LANE/Corman Team, VDOT, the City of Charlottesville, Albemarle County, UVA & Martha Jefferson Hospitals, and emergency services. ▪ Provide notification prior to changes in traffic patterns. 	<ul style="list-style-type: none"> ▪ Informed emergency responders. ▪ Accurate contact information for emergency situations. ▪ Improved public safety.

The stakeholders on this project are extensive. They range from regional employers neighborhoods, regional hospitals and local government facilities, numerous utilities, to businesses that are located throughout the corridor. Our Team understands that construction of the US 29 & Rio Road grade separated interchange will impact numerous stakeholders including:

- VDOT
- City of Charlottesville
- University of Virginia
- Hollymead Citizen Association
- North Charlottesville Business Council
- Southern Environmental law Center
- EPA
- First Responders
- Hollymead Elementary School – in Hollymead/Forest Lakes
- Woodbrook Elementary School
- Jack Jouett Middle School – west on Rio
- Albemarle County Transportation – west on Rio
- MedExpress Urgent Care – Seminole Shopping Center
- Seminole Trail Volunteer Fire Dept. – Berkmar Dr. just south of Rio
- Employment Centers: UVA Research Park – Lewis & Clark Drive (about 1 miles north of the Widening), National Ground Intelligence Center – Boulders Road (about 2 miles north of the Widening), Northrup Grumman Sperry Marine – on 29 approx. 1 mile south of Rio
- Martha Jefferson Hospital
- Traveling Public
- Albemarle County
- Route 29 Project Delivery Advisory Panel & Technical Team
- Forest Lakes Community Association
- Private Landowners
- Charlottesville/Albemarle MPO
- JAUNT
- Charlottesville-Albemarle Airport
- Sutherland Middle School – in Hollymead/Forest Lakes
- Albemarle High School – west on Rio
- Greer Elementary School – west on Rio
- Charlottesville-Albemarle Vocational-Technical School (CATEC) – east on Rio
- Hollymead Fire Rescue Station #12 – Innovation Drive (off of Airport Road)
- Senior Center – Pepsi Place just south of Rio off of Greenbrier Dr.
- Adjacent Construction Projects
- Assisted Living – most of these are centered around Hillsdale: Our Lady of Peace, Branchlands, Care Advantage, RoseWood Village, and The Laurels of Charlottesville. Also Commonwealth Assisted Living on Premier Ct.
- University of Virginia Medical Center
- Utility Owners

Summary

Our detailed sequence of construction for the Route 29 Widening and Berkmar *Project Elements* is detailed above. The specific Sequence of Construction for the US Route 29/Rio Road GSI *Project Element* is detailed in section 4.4.2. All three sequences are based upon a detailed review for reasonableness, constructability, and schedule impact to ensure all three *Project Elements* are completed concurrently, on time, and in strict accordance with the RFP requirements. We have identified the potential risks that may be encountered and offered mitigation strategies that have already or will be developed to construct the project both on budget and on schedule.

LANE/Corman, by retaining three prominent and VDOT experience engineering firms, has mitigated the biggest risk of [delayed] late design approvals. We have ample resources to staff the multi-phase, multi-work shift construction requirements, including our best management personnel. These experts will be assigned full time to this project to complete this highly visible and complex project of statewide importance.

4.5.2 TRANSPORTATION MANAGEMENT PLAN – ENTIRE PROJECT

Approach to Maintaining and Coordinating Traffic for all Three Elements of the Project Concurrently through all Phases of Construction

Our Team has the knowledge, understanding, and experience developing complex Transportation Management Plans (TMP) that safely and effectively manage traffic during construction and communications with the project stakeholders. The TMP will ensure that all construction activities are performed in accordance with the Virginia Work Area Protection Manual (VWAPM), applicable VDOT standards, and Part 2, Section 2.10. Regardless of the type of work activity, safe access for all modes of transportation will be maintained. The TMP will detail all phases of work, road and sidewalk closures, haul routes, construction access, incident management, impact to stakeholders, maintenance of access, and methods to communicate with the stakeholders.

The three *Project Elements* of this overall Route 29 Solutions Project must be coordinated not only from a workload and construction standpoint, but also with regard to the traveling public and maintenance of traffic. While these *Project Elements* do not overlap nor tie directly to each other, these three *Project Elements* and the other adjacent projects identified in Part 2, Section 1.7 are all part of the primary north-south transportation corridor in the region. Impacts to any one of the existing roadways in this corridor has a potential to impact the entire region.

Our Team plans to manage and coordinate the work on all three *Project Elements* of the project through the use of a single MOT Task Force established to coordinate the individual MOT plans for each respective *Project Element* and ensure through scheduling of work that the work plans for two or more of these project elements do not severely impact each other or the mobility through the corridor. This MOT Task Force will consist of our DBPM, Responsible Charge Engineer, CM, DM, Lead Traffic Engineer, VDOT PM and VDOT District and/or the Northwest Region Traffic Operations Center (NWRO), and selected EMS personnel.

The MOT Task Force will first be implemented during the design development phase of the project. During this phase, the Task Force will correlate the sequence of construction and construction schedule for each *Project Element*. The task force will look for potential conflicts between construction and MOT operations for the three *Project Elements* included in this contract plus the project elements of the nearby VDOT projects. During this phase of the project, the Task Force will meet at least monthly to review and update project schedules and potential construction sequences so that schedules and work sequences may be revised to alleviate conflicts between the various projects.

As each of the *Project Elements* moves into construction, the MOT Task Force will meet bi-weekly, at a minimum. During this phase of the project, the Task Force will have three primary functions: *Review*, *React*, and *Report*. The role of the Task Force in performing these functions is as follows:

- **Review:** The Task Force will perform an in-depth review of the upcoming two-week schedule look-ahead. This will include a review of potential lane closures, any necessary temporary detours, potential incident management detours or routes and interaction of one Project Element to another.
- **React:** The Task Force will suggest schedule revisions and look for alternatives when the interaction of the two projects has the potential to cause conditions that cannot be allowed. For instance, if lane closures and potentially dangerous or critical work are being performed on Route 29 and the only potential detour should a major incident occur is scheduled for potential closure to install a utility on Berkmar, the work from the two projects will be coordinated and staggered so that a potentially critical situation will not occur. Additionally, the team will look forward toward special events and other situations that could preclude work as stated in Part 2, Section 2.10.3.2. This would include short to no-notice special events such as a dignitary's motorcade.

- **Report:** It will also be the responsibility of the Task Force to consolidate and report upcoming events to the Public Relations Manager for our Team and the NWRO and VDOT 511. This information will include lane closures, temporary detours and other information regarding changes in traffic patterns that are expected to be implemented during the upcoming construction period. The Public Relations Manager can then inform the Advisory Panel, the other stakeholders and the traveling public of upcoming events, prepare updates to the project web site for posting traffic pattern changes or lane closures and draft any necessary press releases regarding upcoming major events. Additionally, construction progress and upcoming work events will be updated on the project web site. This outreach and notification of the public and media will follow the Team’s Public Communication Plan.

This project is a Type C, Category V project, mandating the specific level of detail and outreach that is required. In addition to those requirements, the VDOT RFP Technical Requirements specify numerous elements that must be addressed and managed throughout design and construction of the project due to the vital nature of this key transportation corridor for all stakeholders.

As part of the Team’s regional approach to the MOT on this project, a complete “project-wide” Transportation Management Plan (TMP) will be employed, utilizing FHWA’s guidance for development of TMP documents. The following will be included as part of the Route 29 Solutions Type C, Category V TMP:

- TMP Manager, Stakeholders, TMP Implementation Leaders and Emergency Contacts
- Existing and Future Conditions
- Detailed and Phased Maintenance of Traffic (MOT) Plans for each Project Element
- Work Zone Traffic Impact Analysis (WZTIA)
- TMP Monitoring Requirements
- Incident Management Plans
- Public Communications Plan

For all three Route 29 Solutions *Project Elements*, the LANE/Corman Team will assure that all construction activities are being performed in accordance with the Virginia Work Area Protection Manual (VWAPM), all applicable VDOT standards, and Part 2, Section 2.10.1. For each phase and each *Project Elements*, a (WZTIA) will be performed to ensure that appropriate understanding of expected traffic conditions is occurring. Also, per the RFP, one of the Measures of Effectiveness (MOE) is to ensure that the queues from one intersection and/or merge conditions do not spill back into the preceding intersection; and therefore, queuing will be the primary measure-of-effectiveness analyzed as part of the WZTIA.

In addition to the queues at each intersection are the critically important queues that will occur at the lane reductions along Route 29 both north and south of Rio Road. These areas have the highest potential of developing large backups since they are the only locations along the corridor where daytime hours lane reductions will be in place during the construction of the depressed grade separation.

Our Team will analyze these MOEs using the *Synchro/SimTraffic* files provided by VDOT during the procurement stage updated with the most recent turning movement data. The Team does not anticipate evaluating the diurnal data to expand work hours from those shown within the RFP. Therefore, all scenarios evaluated in the WZTIA will be “with allowable lane closures” and “without allowable lane closures”.

Once implemented, we will be ready to react through our continued monitoring of actual conditions in the field as construction is ongoing. Per Part 2, Section 2.10.6, our Team will monitor traffic conditions on an ongoing basis by using the Portable Closed Circuit Television Cameras (PCCTV) to view the intersections and approaches within the project limits and coordinate this information with NWRO through the regularly scheduled meetings of the MOT Task Force and continued communications with VDOT. We will *React* to

issues in the field, modify our approach as necessary, and keep traffic impacts to the minimum possible while still advancing the construction of the project. In advance of the construction of this project, it is understood that VDOT will have constructed and implemented the “Adaptive Signals” project along the corridor. We will coordinate with VDOT to implement adjustments to the existing traffic network and system to utilize this technology to minimize impacts to traffic while work is ongoing.

Public Communications Plan

The TMP will establish a communications plan to coordinate and communicate with VDOT, project stakeholders and the Project Development Advisory Panel (PDAP). Our Team’s local experience, working on similar projects in the region will benefit the Department greatly. We understand the region and the importance of this corridor for transportation, commerce and access to major regional and national facilities. The plan will meet the requirements detailed in Part 2, Section 2.11. The LANE/Corman Team Public Involvement Strategy will tie the TMP Communications Plan together with all the elements of the public outreach plan. Our Public Outreach Plan is described in more detail in Sections 4.5.1 and above. There you will find a list of some of the key stakeholders for the project and our plan for communication outreach with VDOT, the PDAP, businesses and residents as well as with local government, first responders, regional hospitals, and the University of Virginia.

Our Public Communications Plan, a critical component to successfully managing construction and public acceptance, will be managed by Mr. Chris Reed with a direct, independent line of communication to the Design Build Project Manager, LANE/Corman Executive Committee, and VDOT. As the Public Relations Manager, he will manage all aspects of our public communication policy, and will rely on staff and the support of top level managers to comply with all project requirements and to maintain required levels of interaction with VDOT, the PDAP and local stakeholders. Our outreach plan for the entire project is described in detail in Section 4.5.1.

Implementing our Public Communications Plan in coordination with VDOT, we will keep adjacent businesses and communities informed of specific impacts with respect to their individual properties. We will work with property owners regarding work that may impact their particular interests and schedule our work to minimize impacts to their access. At no time will any business or community be totally isolated due to our work efforts. This outreach will be specific to each property owner, community or development. Involvement will be direct and specific to their individual property or properties. Through this type of outreach, the stakeholders directly adjacent to the projects will be knowledgeable regarding what to expect with regard to schedule and construction activities. Specifically, our public communication methods will include:

- Social Media – Twitter, Facebook
- Project Website
- Media: print, radio, television
- Variable Message Boards strategically located
- “Pardon Our Dust” Meetings
- Portable HAR Radio transmitters
- Announcements/Postings at public facilities (City Hall, public buildings, shopping centers, etc.)

The LANE/Corman Team will acknowledge signal timing complaints within 15 minutes of notification and arrive on site within 2 hours of notification; we will complete repairs within 4 hours of our arrival on site.

A reduction in the posted speed limit usually benefits driver and worker safety in the work areas. Our Team will investigate the benefit of a reduction in the posted speed limit within the work zones along Route 29 in accordance with the procedures detailed in TE-350.

We will also ensure that activities are properly coordinated with contractors at the other nearby construction projects. Part 2, Section 1.7 lists three adjacent projects and requests that we hold joint meetings with the other Contractors on a quarterly basis.

Lane Closures and Time of Day Restrictions

Our proposed construction operations will honor the time of day restrictions specified in Part 2 of the RFP. In these periods, work will take place outside of the existing travel lanes, with the exception of the time allotted for the construction of the grade separation at Route 29 and Rio Road. During the allowable hours, lane closures, ramp closures and temporary detours will be necessary to facilitate construction of the retaining walls and bridge at Rio Road, utility relocations throughout the three *Project Elements* and for other construction activities. These construction activities will be performed utilizing standard lane closure procedures when the time of day restrictions are no longer in place. Traffic control devices will not be implemented until that time.



LANE project and MOT on Beulah Road Bridge

When major work, such as the construction of an underground utility requires a street or ramp closure, temporary detours will be implemented to provide access around the construction location. There are several viable detours and scenarios that may be used on this project, depending on the location of the street or ramp closure. While some of these potential detours may or may not be utilized, we have identified several specific alternative routes that vary with each Project Element when street or ramp closures become necessary. Specific to each project, these are (note that these routes may be used in either direction):

- **Route 29 / Rio Road Project Element Potential Detours:**
 - Once the median is removed to allow for temporary full access to Berkmar Drive from Route 29 south of Rio Road, Berkmar Drive (Route 1403) to Rio Road, local traffic can use Rio Road or continue along Berkmar Drive to Woodbrook Drive, bypassing the entire construction area.
 - An additional alternative route would be to utilize Branchlands Boulevard to Hillsdale Drive (Route 1427), then Hillsdale Drive to Rio Road.
- **Route 29 Widening Project Element Potential Detours:**
 - The most likely detour to be utilized is Airport Road (Route 649) to Dickerson Road (Route 606) to Earlysville Road (Route 743) to Rio Road.
 - Should additional detours be required south of Rio Road, traffic could follow Rio Road to Hydraulic Road to the south of all of the Project Elements or traffic could utilize Berkmar Drive for access back to Route 29.
- **Berkmar Drive Project Element Potential Detours:**
 - Berkmar Drive will primarily impact existing traffic at each end of the project alignment. At these locations it is anticipated that detours will not be required and work will be performed using lane closures and flaggers on existing roadways.

Maintenance of Traffic for the Berkmar Drive Extension will be minimal as outlined herewith. Half of the proposed roundabout at the intersection of Berkmar Drive and Hilton Heights Road will be constructed outside of the travel lanes with the remainder of the roundabout being constructed as a mill and overlay operation with short term lane closures. The northern existing intersection will only require tying the proposed construction to the existing pavement with a short term flagging operations. The placing of the bridge girders over Rio Mills Road will require short term road closures and be controlled by flaggers.

It should be noted that significant outreach and advance notice will be provided prior to utilizing any detour. To the extent practical, traffic will be maintained on the existing roadways and the use of traffic control devices and flaggers will facilitate short-term impacts to traffic on Route 29, Berkmar Drive and adjacent roadways.

Incident Management

Due to the previously stated importance of this corridor with respect to mobility, commerce, and public safety such as the Albemarle County Fire Station located near the Route 29/Rio Road intersection, incident management and implementation will be crucial at all times. Our Team will have an Incident Management (IM) Plan in place for any conceivable occurrence with alternatives available to our Team in response to any type of incident. The Plan will be developed with input and coordination from VDOT, City of Charlottesville, Albemarle County, local EMS, state police and stakeholders. Our Team will meet with VDOT and stakeholders to review the Plan prior to implementation.

IM Plan detour routes will be coordinated with VDOT, Albemarle County, and the City of Charlottesville and will include the potential detour routes described above and/or other routes in the area, depending on the severity, location, and length of time required. With any detour route that is being utilized, a WZTIA along with potential adjustments to signal timing, the use of flaggers and/or police officers will be implemented. The IM Plan will, at a minimum, include:

- Full-time (24/7) point(s) of contact within the Project Team
- Emergency detour routes with necessary signage and traffic control devices in place and at the ready
- A responsibility matrix and checklists for agencies, stakeholders, and the Project Team
- Coordination with First Responders, Martha Jefferson and University of Virginia Hospitals, and stakeholders
- Access at all times for fire and rescue
- Contact lists for stakeholders and response personnel
- Other requirements and equipment as specified in RFP Part 2, Section 2.10.2

Incidents could vary in severity by length of time and warning. Incidents could include natural disasters, snow or floods, traffic accidents, special events, and other occurrences. We propose different levels of response based on the length of time and severity of the event. Our response to these events will be as follows:

- A limited incident is one which will take fifteen minutes or less to return to normal operations. In this type of event, primarily due to a minor accident or a planned event, response by local response teams would be expected with support, as necessary, by our Team. This will be classified as a short-term event.
- An incident which will impact traffic between 15 and 60 minutes but with no required roadway closures or detours will be considered a minor event. Our Team will respond with traffic control devices, coordinate with VDOT and signal timing adjustments to clear traffic, and will support local response teams as necessary. Contact lists will be utilized as necessary and close coordination with first responders and other primary stakeholders will be implemented.
- An incident which will take greater than 60 minutes to clear will be considered a major incident. In this case, detour routes will be implemented as necessary and traffic control devices, signal adjustments and other operational support will be implemented as described in the response to minor incidents, above. In the case of major incidents, contact lists will be fully utilized to notify impacted stakeholders, first responders, local hospitals and other critical facilities.

In all of the above incidents, close coordination with VDOT NWRO will be maintained. This tiered system will provide an appropriate and efficient response should an incident occur. During the design stage, our

Team will identify potential detour routes, analyze them in the WZTIA, and identify the need for adjustments or modifications along those routes before construction begins.

Accommodations for Safe and Efficient Operation of All Users (EMS, School Buses, Transit Vehicles, Trucks, Pedestrians, and Bicyclists)

Throughout construction, the TMP will require safe and efficient access through the project site at all times by all users. Coordination and access through the site for first responders and other emergency personnel has been described above. In addition, our plan will provide continued access for all modes of transportation. Bicycle and pedestrian access will be maintained as they were prior to construction. Coordination will be ongoing with Charlottesville Area Transit (CAT) and Jaunt. Bus stops and access to those locations will be maintained or alternative facilities provided when existing facilities are impacted by construction operations. The school transportation system will be accommodated and maintained.

Summary

Our TMP will provide continuous access through each of the *Project Elements* while minimizing impacts to the traveling public. As has been described in detail herewith, this can only be achieved through a multi-faceted approach that actively manages the work zone. We will utilize our Public Communications Plan to keep all stakeholders up to date with the latest information so that alternative routes and modes of transportation can be implemented when necessary providing a “no surprise” environment surrounding this major project.



Section 4.6

Disadvantaged Business Enterprises (DBE)

LANE

AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

4.6 | DISADVANTAGED BUSINESS ENTERPRISES (DBE)

The LANE/Corman JV Team embraces and supports VDOT's DBE program and is committed to meeting or exceeding the **13% goal** for the design and construction of this project. Furthermore, we will take all necessary and reasonable steps to provide SWaM firms with the maximum opportunity to compete for and perform services on this contract.

DBE Subconsultants. The LANE/Corman Team includes the highly-qualified DBE subconsultant: CES Consulting LLC providing QAM services necessary for the successful completion of this D-B project.

Subcontracting Plan. LANE and Corman, respectively and now collectively, implement a subcontracting plan on all of our projects to confirm the maximum opportunity for DBE and SWaM subcontractors to qualify for and provide services. The first step is source selection. The LANE/Corman JV researches the capabilities of a wide range of subcontractors. This includes an evaluation of past performance, socioeconomic status, financial condition, current availability, and safety performance. Based on this research, a list of potential subcontractors is developed. The second step is the outcome of the proposal process. Once a solicitation for pricing has been set, potential subcontractors have the opportunity to respond with their site-specific worker protection program and best price proposals. The LANE/Corman JV reviews the price proposal to determine price reasonableness. The final selection of the subcontractor is made by combining the results of the safety and price evaluations to determine the proposal that provides the best value to VDOT and the LANE/Corman Team.

Safety is an integral part of any scope of work performed on this project. Accordingly, a subcontractor's safety record and approach are a key component of our evaluation process. All subcontractors must meet our stringent safety requirements to be a member of the Team.

The LANE/Corman Team also conducts a technical evaluation of the qualifications presented in the subcontractor's proposal, as well as an independent review of their past performance. References provided with their price proposal are contacted and questioned regarding the subcontractor's past performance. The topics covered include safety, schedule and cost compliance, and quality of work. If the potential subcontractor has worked for LANE and/or Corman before, their past performance and safety record for LANE and/or Corman will be evaluated. If the potential subcontractor is required to submit a Quality Control Program or Worker Protection Program with their proposal, these documents will also be evaluated. If the subcontractor has not worked for LANE and/or Corman previously, a project interview will be required.

The LANE/Corman Team solicits subcontractor and supplier price proposals and evaluates for award of a subcontract or purchase order based on quality, safety record, resource availability, past performance, and competitiveness. Once these reviews are complete, our evaluation team members discuss the results and select the subcontractors and suppliers that best satisfy the requirements of the contract. Any subcontractor that fails to meet these requirements will be eliminated without further consideration.





Section 4.7

Proposal Schedule

LANE AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

4.7 | PROPOSAL SCHEDULE

The LANE/Corman Team has thoroughly evaluated the RFP documents, performed site visits for each of the three *Project Elements*, attended pre-proposal meetings, participated in two proprietary meeting discussions, and held numerous working sessions amongst our design and construction teams. Through this progression, we have developed a solution to deliver the Project as outlined on or ahead of schedule. This narrative explains how we will deliver a highly successful Project to VDOT and to the satisfaction of all stakeholders.

4.7.1 PROPOSAL SCHEDULE

The Proposal Schedule is located in the last tab of Volume II.

4.7.2 PROPOSAL NARRATIVE

The LANE/Corman Team has developed the Proposal Schedule narrative illustrating our overall plan to successfully execute the work in accordance with the contract documents. The narrative provides an overall description and explanation of the sequencing, proposed means and methods, Critical Path, and assumptions relative to our schedule philosophy.

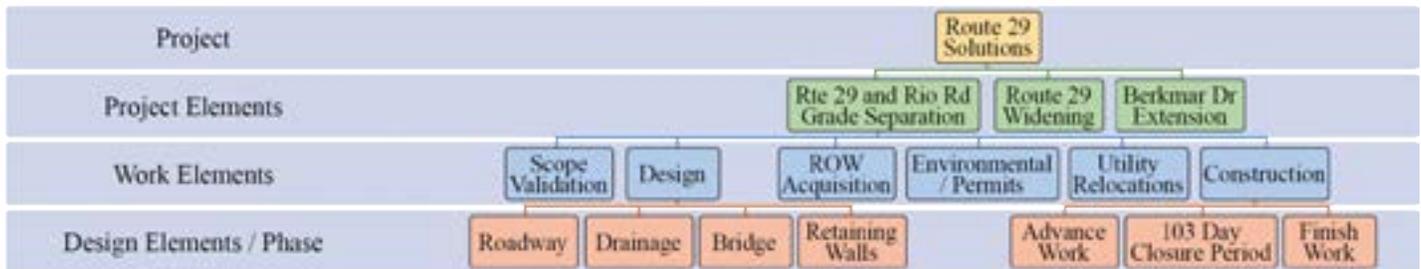
Key Milestones

The LANE/Corman Team is committed to a completion date of October 30, 2017. We have coordinated the scope of all Project/Element-related activities to establish a timely CPM job schedule to ensure on-time completion, identify potential risks, and plan/implement appropriate mitigation measures. The coordination of work among all parties involved in the project will be vital for the overall success of the job. The LANE/Corman Team is committed to working with VDOT and all stakeholders to ensure the work is completed to meet all Project Milestones outlined below:

Key Milestone	Milestone Date
Notice of Intent to Award	January 26, 2015
CTB Approval / Notice of Award	February 18, 2015
Design-Build Contract Execution	March 3, 2015
Notice to Proceed	March 4, 2015
Scope Validation Period Complete	July 1, 2015
Start of Construction	May 13, 2015
Start of Route 29/Rio Rd. 103 Day Closure Grade Separation Traffic Re-alignment & Excavation	May 23, 2016
Interim Milestone – Completion of Route 29/Rio Road GSI	August 5, 2016 (no later than September 2, 2016)
Final Completion – Route 29/Rio Road GSI	December 2, 2016
Final Completion Date	October 30, 2017

Work Breakdown Structure (WBS)

The WBS is a multi-level, hierarchical arrangement of the Work to be performed on the Project. The LANE/Corman Team has laid out the WBS to break down the major phases of the Project by *Project Element* and Type of Work. The Type of Work has been broken down per *Project Element* and components such as respective Element Milestones, Project Management, Scope Validation, Environmental/Permitting, ROW, Design, Public Involvement, Utility Relocation, and Construction.



The WBS Areas for the Project have been developed as a collaborative effort between the design and construction teams by looking at the Project as whole, including Type of Work along the alignment(s), in addition to design considerations and management of the construction efforts. Levels 2 and 3 of the WBS depicted in the Proposal Schedule include the following items for the respective *Project Elements*:

- **Scope Validation Period:** includes the Scope Validation Period activity for the *Project Element*.
- **Environmental/Permitting:** comprises the necessary environmental and permit(s) activities.
- **ROW Acquisition:** details the acquisition process for the ROW required including title research, appraisals, offers, and negotiations.
- **Design:** includes preliminary engineering services, plan development, QA/QC review, VDOT review and approval of the plans. This section includes additional levels to the WBS - grouping the design activities by type of design submission packages including Geotechnical, Structures, and Roadway.
- **Utility ROW Acquisition:** details the acquisition process for the ROW required including title research, appraisals, offers, and negotiations.
- **Environmental/Permitting:** comprises the activities required to obtain the necessary environmental permits such as: Water Quality, stormwater monitoring, and noise evaluations.
- **Utility Coordination and Relocations:** includes the activities for UFI meetings, preparation of preliminary engineering (PE) estimates, approval of PE estimates, utility relocation design by utility owner, approval of the utility design, and relocation of utilities for construction.
- **Construction:** includes all the components of the roadway and bridge construction, including but not limited to: MOT, erosion & sediment controls, QA/QC, stormwater management, signals, drainage, lighting, phase, bridge and roadway improvements. This section has been further subdivided into which segment of the construction by phase.

Calendars

Six project calendars are used in the Schedule and include:

1. **“7-Day”** – Based on seven days per week and is used for review periods and work on the Route 29/Rio Road GSI.
2. **“5-Day Admin”** – Based on five working days per week and includes holiday restrictions. Used for design activities and work not impacted by adverse weather.
3. **“5-Day Typical”** – Based on five working days per week, holiday restrictions, and anticipated weather days. Used for construction activities.
4. **“6-Day”** – Based on six working days per week and includes holiday restrictions. Used for construction activities pre and post Route 29/Rio Road GSI.
5. **“5-Day Asphalt Paving – Base/Interim Courses”** – Based on the 5-Day Typical with non-working periods from December through February.
6. **“5-Day Asphalt Paving - Surface Course”** – Based on the 5-Day Typical with non-working periods from November through March.

Activity Identification

The Proposal Schedule activity identification is based on a ‘smart’ activity identification in which a unique alphanumeric is utilized. Each activity identification is broken down into three parts identifying *Project Element*, *Work Element*, and a unique identifier, described in detail below. An example is 000-MS-9020.

A. *Project Element* - The first three digits in the activity identification number pertain to the *Project Element* with the abbreviation and order as follows:

- 000 = Route 29 Solutions
- 010 = Route 29/Rio Road GSI *Project Element*
- 020 = Route 29 Widening *Project Element*
- 030 = Berkmar Extension *Project Element*

B. *Work Element* - Letters two and three in the activity identification number pertain to the types of work with the abbreviations as follows:

- MS - Milestone
- RW - Right-of-Way
- EV - Environmental
- GD - Geotechnical Design
- RD - Roadway Design
- SD - Structures Design
- P - Public Involvement
- UT - Utility Relocation
- QA - QA/QC Inspection & Testing
- XX - Construction Phase Identification

C. *Unique Identifier* -The last four digits in the activity identification structure are numeric increments starting with ten, and incremented in steps of ten. This is done to leave ample room between activities so that additional activities may be inserted as necessary.

Plan and Strategy

Design

The design phase includes preparation, QA/QC reviews, and submission of Intermediate, Final, and Ready for Construction (RFC) design stages of the three *Project Elements* of the Project. Included are the 9-day periods for VDOT reviews and 14 days for VDOT/FHWA joint reviews. Included to support the plan preparation is survey coordination and mapping, geotechnical investigation, and utility designations. Activities are included for geotechnical investigations, reports, and a 30-day period for VDOT's review of the geotechnical report prior to submitting the final roadway packages. Hold Points such as H&HA approval have been built into the design schedule. The design phase will begin immediately upon Notice of Intent to Award to begin advancing the concept plans to the intermediate stage. Design efforts for each *Project Element* are on the critical path.

Route 29/Rio Road GSI Project Element Design Overview

The key to providing the necessary work zone widths and lane configurations in the summer of 2016 is to provide the widened roadway prior to the summer closure construction period. This requires providing the necessary drainage and stormwater management improvements to be able to facilitate construction of the drainage system for the depressed section. Likewise, this mandates that the right of way acquisition process begin as early as possible. To facilitate this, the Route 29/Rio Road GSI *Project Element* design team must:

- Begin work prior to Notice to Proceed (at our Team's risk) on roadway design, drainage, stormwater management and traffic engineering.
- Prepare advance right of way plans to allow for acquisition immediately following approval of preliminary (30%) roadway design.
- Prepare and submit drainage and stormwater management reports for approval to ensure these elements can be constructed within the proposed right of way.
- Complete the Utility relocation designs (approximately 50% completed by VDOT) and start relocations as soon as the right of way is provided by VDOT at NTP.

Parallel to the above effort to enable the early release of right of way plans is the development of the structure and bridge plans. To facilitate the construction of the depressed segment of roadway in the summer of 2016, our design plans call for the construction of the wall and bridge foundation piles in the 3rd quarter of 2015; our Route 29/Rio Road GSI *Project Element* design team will:

- Utilize the VDOT soil boring information to begin lab work immediately after Notice to Proceed.
- Augment VDOT's soil borings as necessary to provide for the geotechnical report to be completed for the entire *Project Element*.
- Fast track wall and bridge design and associated permitting to allow for construction to begin on the wall in summer or fall of 2015.
- Wall and bridge design will be performed concurrently as a separate package from the roadway plans; these plans will contain their own E&S and permitting details.

Simultaneously, final roadway plans will be advancing so that once right of way is cleared -- pavement widening, traffic signing and signals and other preliminary construction can take place in the 3rd quarter of 2015, setting the stage to be ready for the major excavation and construction of the depressed section beginning May 23, 2016.

Route 29 Widening Project Element Design Overview

There are several key pre-construction components to ensure the successful completion of the Route 29 Widening *Project Element*. These components include:

- Begin work prior to the Contract Notice to Proceed on survey, roadway design, drainage, stormwater management, traffic engineering, and cultural resource investigations.
- The development/approval of an Advance Work Package (AWP) immediately following 30% plan review. The AWP would allow for Phase 2 construction, Phase 4 rough grading, and potentially other items within the existing right of way. A Virginia Stormwater Management Permit and a Nationwide 12 Permit will be necessary for the AWP.
- The design/construction of the joint utility duct bank and related relocations are on the critical path for the Route 29 Widening *Project Element*. The joint duct bank will be located within the existing right of way along the west side of the road. The completion of this component is critical to the start of Phase 1 and Phase 3 construction.
- Also critical to the construction of Phase 1 and Phase 3 will be the additional cultural resource clearance, water quality permits, the NEPA re-evaluation, and ROW acquisition.
- Right of Way Acquisition will be phased to focus on clearing parcels for earlier construction phases and other items like stormwater management ponds and the cross-culvert replacements. Right of way tasks such as title research, appraisals, and appraisal reviews will be completed in advance of the right of way notice to proceed.

Berkmar Drive Extension Project Element Design Overview

The successful delivery of the Berkmar Drive Extension *Project Element* is dependent upon being able to secure the right of way/easements and the necessary permits to allow construction to begin in the Spring of 2016. This project is primarily on new location and we are not anticipating any major alignment shifts during design. In developing the technical proposal, we have advanced a detailed design which will allow our first submission to be at the 60% Plans level -- greatly accelerating the design timeline.

To facilitate delivery of the Berkmar Drive Extension *Project Element* the design team must:

- Begin work prior to Notice to Proceed on roadway design, drainage, stormwater management and the Stage I Bridge Report.
- The submission of a quality plan set and technical reports will ensure that the Right of Way Notice to Proceed schedule of October 2015 is maintained.

The completion and approval of the bridge design for the Berkmar Drive Extension *Project Element* over the South Branch of the Rivanna River is critical to the construction schedule. We will have an advance design submission package for the substructure to allow construction to begin within the existing right of way at Abutment "A". The bridge will require a complex bridge analysis and design to be coordinated closely with the construction means and methods. The Final Approved for Construction roadway and bridge plans will be completed while the right of way for the project is obtained and well ahead of the Spring 2016 construction start.

Environmental/Permitting

Our baseline schedule will contain all necessary environmental and permitting activities as required. All permitted construction activities will be a *hold point* to ensure no work is performed without the appropriate permits in place. In addition to these, hold points will exist for ROW Authorization (EQ-201) and our Stormwater Pollution and Prevention Plan (SWPPP) approval.

The environmental and permitting for the **Route 29/Rio Road GSI Project Element** will begin with identifying/confirming environmental resources within the *Project Element* corridor. We will complete any required Phase I Environmental Assessments for the underground stormwater detention facilities followed by securing water quality permits for the advance design work packages. Prior to any advance work not covered under the Nationwide 12 permit, we will secure the Virginia Department of Environmental Quality (VDEQ) Virginia Stormwater Management Program (VSMP) permit.

The **Route 29 Widening Project Element** environmental permitting process will begin with identifying/confirming the environmental resources within the *Project Element* corridor. We will complete any Phase I Environmental Assessments of areas not performed by VDOT that our design that requires. We will complete any Phase I Cultural Resources Archaeological Investigations required for our proposed right-of-way beyond the APE previously cleared. We will secure water quality permits for the *Project Element* as required. As a hold point, we will secure the Virginia Department of Environmental Quality (VDEQ) Virginia Stormwater Management Program (VSMP) permit prior to any work not covered under the Nationwide 12 permit.

Our **Berkmar Drive Extension Project Element** will begin with identifying/confirming the environmental resources within the *Project Element* corridor. We will complete the Phase I & Phase II Environmental Assessments for our design right of way re-evaluation (EQ-201). We will complete the Phase I Cultural Resources Archaeological Investigations for our design that requires right of way beyond the RFP plans if it extends beyond the 200 foot APE previously cleared. We will complete the Phase III Cultural Resources Archaeological Investigations at site 44AB0594. We will secure the Virginia Department of Environmental Quality (VDEQ) Virginia Stormwater Management Program (VSMP) permit prior to any construction activity. VMRC, VDEQ, & USACE water quality permits will also be secured as required for our design.

ROW Acquisition

Right of way (ROW) activities are critical to the success of all three *Project Elements*. Given the uncertain nature of ROW negotiations, a major focus will be placed on the right of way process early on, beginning at the time of Notice of Intent to Award. There are 71 parcels that include fee taking, permanent, temporary and/or utility easements, over and above the VDOT acquired utility easements for the **Route 29/Rio Road GSI Project Element**. We will prioritize the parcel acquisitions to expedite construction delivery.

Our initial task to advance ROW will involve a property owner check and title research. A separate design package will be prepared for ROW plans following the completion of roadway 30% plans. While the ROW plans are being developed, other ROW activities will advance to include appraisals and appraisal reviews so they can be provided to VDOT for approval. We plan to have all appraisals completed, reviewed, and approved by the time Notice to Commence Right of Way Acquisition is granted. We will identify early refusals and begin the eminent domain process to prevent project delays. Hold Points for Notice to Commence Right of Way Acquisition and Notice to Commence Construction have been built into our proposal schedule.

The following is the template for the Parcel ID Table which will be maintained in the monthly schedule update narrative throughout the Utility Easement acquisition process.

PARCEL ID	COMPANY									RW PHASE		
	RIVANNA	ALBEMARLE	DOMINION POWER	CENTURY LINK	COMCAST	LUMOS	FIBERLIGHT	QWEST GOVERNMENT	MCI	APPRAISAL COMPLETE	OFFER MADE	SETTLED OR CERTIFICATE FILED
PARCEL 01												
PARCEL 02												
PARCEL 03												
PARCEL 04												
PARCEL 05												
PARCEL 06												
PARCEL 07												
PARCEL 08												
PARCEL 09												
PARCEL 10												
* FOR COMPANIES REQUIRING A VDOT UTILITY EASEMENT SHOW THE PARCEL NEEDED IN RED TEXT PLEASE!!!!												

Parcel ID Table TEMPLATE

Utility Relocations

The utility relocations are sequenced to match the required work operations for each *Project Element*. A UFI meeting has already been held for the **Route 29/Rio Road GSI Project Element** and will be held as early as practical for the other two *Project Elements* to advance this process. Due to the extent of utility relocations and the fast-pace construction schedule, we will have some concurrent construction and utility relocation work within the same proximity. Utility relocations are on the critical path for the **Route 29/Rio Road GSI** and **Route 29 Widening Project Elements**.

Route 29/Rio Road GSI Project Element

We will relocate the water and gas mains along the Route 29 alignment as a first order of business. We will install common multi-use dry utility duct banks along Route 29 for all applicable utility companies in order to expedite relocations and reduce costs. These will be performed at night when lane closures are required to minimize disruptions to traffic on Route 29 and to enhance safety.

Route 29 Widening Project Element

We will install common multi-use dry utility duct banks along the Route 29 Widening *Project Element* corridor for all applicable utility companies in order to expedite relocations and reduce costs. Also, several power poles along the Western side of Route 29 will be replaced with taller poles set deeper in the same location to allow for lowering of the new roadway without relocating the utilities. This procedure will be very similar to replacing a damaged pole and does not involve relocating the power lines.

Berkmar Drive Extension Project Element

The utility relocations required for the Berkmar Drive Extension *Project Element* are relatively minor. A Dominion VA Power line will be relocated in the vicinity of the north bridge abutment. There are a few minor ASCA utilities to be moved on the far north end of the project. One Century Link line crossing the new alignment will be lowered.

The following is the template for the Utility Relocation Table that will be maintained in the monthly schedule update narrative throughout the relocation process:

Construction

Construction is scheduled to begin immediately once plans are approved, beginning with the installation of advance warning signs and E&S controls. Construction is anticipated to be taking place concurrently in all three *Project Elements*.

Route 29 & Rio Road Grade Separated Intersection Project Element – The following is a summary of the key sequence of construction activities for this *Project Element*.

- Widen the outside of Route 29 to provide for the required number and width of lanes specified in the RFP to provide for the flow of traffic during the 103 day closure period. This phase will also include the installation of the three median cross-over specified, improvements to the Route 29/Berkmar Drive intersection, as well as other miscellaneous road work to minimize disruption to traffic during the nightly closures of Route 29/Rio Road or as permitted by the RFP.
- Install permanent retaining wall structural systems. Auger and install steel soldier piles for the depressed highway wall foundations at the Rio Road Bridge. (These will be performed at night or as permitted by the RFP with lane closures to minimize disruption to traffic on Route 29 and enhance safety.)
- Perform other advance work that can be accomplished at night or as permitted by the RFP with lane closures to minimize disruption to traffic on Route 29 during the depressed roadway construction. This additional work could include the installation of abutments or concrete plank beams for Rio Road Bridge; parapet moment slabs (if required for the barrier atop the depressed highway retaining walls); utility relocations; and the installation of underground SWM structures, if ROW can be obtained in time. Otherwise, underground SWM structures will be installed during the allowable closure period.
- May 23, 2016: establish temporary signing, detours, lanes, and pedestrian facilities to meet the RFP's MOT and TMP requirements (Rio Road through movement closed, 3 NB and 2 SB Route 29 lanes remain open). Removal of traffic signals on Albemarle Square and Fashion Center Dr.
- Excavate the depressed roadway section including installation of temporary lagging for the soldier pile retaining walls and any required tiebacks and lateral bracing.
- Install required drainage, tunnel and depressed highway safety systems, traffic signals, and lighting in the depressed section.
- Install the Rio Road bridge beams, deck, parapet, approach pavement, and signals.
- Install depressed highway roadway to include underdrain, bedding stone, median barriers, lighting, and fire safety systems.
- Start installation of the composite concrete retaining wall fascia and BR-27 Parapet system.
- Install permanent traffic safety devices, Rio Road Traffic Signals, under-bridge lighting, traffic signs.
- Open Rio Road, the Route 29 depressed highway section, and local lanes to its ultimate 8-lane configuration on or before Sept 2, 2016.
- Complete the composite concrete retaining wall fascia with Dry Stack Stone Finish and BR-27 Parapet.
- Re-construct the roadway cross-slopes to bring the finish typical section in the local lanes up to current standards, install outside curbs, sidewalks, and other pedestrian facilities.
- Close median openings, remove temporary MOT and detours required during the 103 closure period.
- Complete final landscaping, reestablish affected temporary construction easements, final surface pavement, signing and striping, etc.
- Complete the Route 29/Rio Road GSI *Project Element* on or before December 2, 2016.

Route 29 Widening Project Element – Our sequence of construction for this *Project Element* is comprised of the six phases described below:

Phase 1 includes the reconstruction and ultimate widening of the SB lanes (from Station 647+00 to Station 653+00) and NB lanes (from Station 637+50 to Station 662+00) to correct the substandard vertical sag curve south of Ashwood Boulevard. Phase 1 will also include the reconstruction and ultimate widening of the SB lanes (from Station 690+00 to Station 696+50) and NB lanes (from Station 685+50 to Station 699+50) to correct the substandard vertical sag curve and replace the drainage structure at Powell Creek. At both locations the inside two lanes of the ultimate NB pavement will be constructed and used temporarily to divert the SB traffic to allow the ultimate SB lanes to be constructed. Once the ultimate SB lanes are completed, the NB traffic will be diverted to the inside two lanes of the ultimate NB pavement constructed earlier and the remainder of the NB construction will be completed. Phase 1 will be constructed behind concrete barrier service using TTC-6.0 on the inside and TTC-7.0 on the outside.

Phase 2 includes the pavement build-up of the existing SB lanes to the proposed vertical profile and cross-slopes. Phase 2 also includes the construction of temporary pavement along the inside SB lanes to allow for lane shifts and implementation of TTC-7.0 in Phase 3. Phase 2 construction will be completed using temporary lane closures (TTC-13.0).

Phase 3 completes the widening of the SB lanes behind concrete barrier service using TTC-7.0 on the outside. The work zones for Phase 3 will be less than 0.75 miles in length to avoid the need for work zone pull-off areas (TTC-8.0).

Phase 4 SB traffic shifts to the newly widened pavement behind concrete barrier service to create room in the median for construction of the inside NB lanes (TTC-7.0). The existing NB inside shoulder will also be closed to create room in the median for construction the new NB lanes. The work zones for Phase 4 will be less than 0.75 miles in length to avoid the need for work zone pull-off areas (TTC-8.0).

Phase 5 shifts the NB traffic to the newly constructed NB lanes and completes the 3rd lane widening of the NB lanes behind concrete barrier service using TTC-7.0. The work zones for Phase 5 will be less than 0.75 miles in length to avoid the need for work zone pull-off areas (TTC-8.0).

Phase 6 includes the final surface pavement for the entire project and will be completed under temporary lane closures using TTC-13.0.

Berkmar Drive Extension Project Element – The majority of this *Project Element* will be constructed while current traffic operations are maintained on the existing roadway network. Our sequence of construction is comprised of the two phases described below:

Phase 1 – Build temporary construction entrances at Hilton Heights Road, Rio Mills Road, and Town Center Drive under a flagging operation. Next, begin construction of this *Project Element*, which is completely out of traffic, from approximately Sta. 107+00 to Sta. 233+75 including the bridge over the South Branch of the Rivanna River, while maintaining traffic in existing travel patterns. Placement of the bridge beams over Rio Mills Road will be accomplished under temporary closures utilizing a flagging operation.

Phase 2 – The connection to the existing roadways will include the construction of the roundabout at Hilton Heights Road and the tie-in to the existing roundabout at Town Center Drive. The northwest half of the proposed roundabout at Hilton Heights Road will be constructed outside of the existing travel lanes with the remainder of the roundabout being constructed as a mill and overlay operation

with short term lane closures and minor traffic shifts. Access to the Sam's Club and other commercial establishments will be maintained at all times during construction. The center island of the roundabout will be completed as the last element of work. The northern roundabout at Town Center Drive will only require connecting the proposed construction to the existing pavement with short term flagging operations.

Critical Path

The **Route 29 Solutions Project** is unique for VDOT as it combines three separate and distinct *Project Elements* into one Design Build Contract. Each of the *Project Elements* have their own unique critical path(s) which must be monitored respectively to be successful.

Route 29/Rio Road GSI Project Element – Due to the significance of the corridor and impact to the local community, it is essential the design and construction start as soon as possible to accommodate the milestone date to open the through lanes on or before **September 2, 2016**, with the completion of the remaining completed **on or before December 2, 2016**. The critical path for this *Project Element* is as follows:

- Notice to Proceed
- Utility Design and Relocations
- ROW acquisition
- Advanced Early Work
- Traffic Switch – Start of the 103 day Closure
- Construction of the bridge
- Opening Through Lanes to Traffic
- Landscaping
- Final Surface Course Pavement and Pavement Markings

Route 29 Widening Project Element – Due to the corridor's significance and impact to the local community, it is vital the design and construction start as soon as possible to accommodate the milestone date to complete the corridor improvements by **October 30, 2017**.

- Notice to Proceed
- Cultural Resources Clearance
- Water Quality Permit Acquisition
- EQ200 & EQ103
- Construction of Phase 1A between Station 648+28 to 701+50
- Construction of Phase 1B between Station 690+00 to 696+50
- Construction of Phase 1C between Station 637+50 to 662+00
- Construction of Phase 2 between Station 653+00 to 690+00
- Construction of Phase 3 between Station 610+00 to 647+00
- Construction of Phase 4 between Station 611+50 to 637+50
- Construction of Phase 5 between Station 662+00 to 685+50
- Placing traffic into its final configuration
- Landscaping, Signs, and Signals
- Final Paving and Pavement Markings for the entire Route 29 Widening *Project Element*.

Berkmar Extension Element – As part of the Route 29 Solutions Berkmar Drive will be extended parallel with Route 29 to the west and offer an alternative for local traffic traveling north or south between Charlottesville and Albemarle County’s urban ring. To ensure this *Project Element* is completed by October 30, 2017 a majority of the construction will be built off-line, with it being imperative the design and construction start as possible.

- Notice to Proceed
- 60 % Design Complete for the Roadway
- ROW Acquisitions
- Construction of Temporary Construction Entrances
- Construction of the Berkmar Drive Roadway Extension
- Landscaping, Signs, and Signals
- Final Paving and Pavement Markings for the entire Berkmar Drive Extension *Project Element*.

Key Assumptions

The LANE/Corman Team made the following key assumptions upon which the Proposal Schedule is based:

Interaction and Interface with the Owner

Timely and effective communication between Lane/Corman, VDOT, and all other stakeholders will be integral to the successful project throughout design and construction. Co-location of key team members and a structured system of coordination meetings will enhance the ability of the team to make rapid decisions in coordinating with VDOT and identifying issues early through open communication. Also, VDOT and the Lane/Corman Team committing to staff the co-located office with personnel authorized to make decisions without delay will facilitate a successful project.

Interaction and Interface with Utility Owners

Utility Coordination – Lead Utility Coordination Manager, Mr. John Myers, will handle all pre-construction utility issues. He has already been proactive in identifying potential conflicts. He will conduct early and frequent meetings with the utilities to obtain easement requirements and agreement on the design approach and review plans and estimates from the various companies to minimize schedule delays. He will establish and lead our Utility Task Force, a group comprised of utility owner representatives and our design and construction team, to meet on a regular basis to optimize utility avoidance, relocation strategies, and processes. We will build upon the work already performed by VDOT and develop a Utility Conflict Matrix along with required UT-9s to assist with the planning and design of utility relocations, where avoidance cannot be obtained.

Utility Relocations – We have also established the position of Utility Relocation Specialist for post-design utility relocation issues to deal directly with utility companies once they are given NTP to relocate. To expedite the overall process, the LANE/Corman Team has prioritized the critical utilities. Our Utility Relocation Specialist, Mr. Jeremy Spittle, will be the unified voice of the Team in expediting our agreements and early design requirements for utility relocations. A significant aspect of our proposal schedule is the prioritized utility relocations component which takes into consideration time of year restrictions where utility owners will not allow interruptions. In addition to the above, utility relocation success will hinge on the following mitigation strategy to lessen or eliminate their impact:

- Secure buy-in from the utility companies’ top management and VDOT in order to establish common ground.

- Establish a well-defined utility corridor with consideration for future facilities to provide the greatest amount of flexibility as change occurs.
- Hold regular progress meetings with the utility owners for accountability to aid in dispute resolution.
- Gain early understanding of the logistics of material acquisition to help maintain the project schedule.
- Immediately notify owners when unknown utilities are encountered – evaluate potential design revisions versus relocation to weigh against the schedule to establish the most efficient means of resolution.
- Be prepared to perform the design and/or construction with our own forces, if required.

VDOT has already started this process on the Route 29/Rio Road GSI *Project Element*: coordinating joint utility duct banks and easements, developing UT-9's, performing approximately 50% of the utility design and acquiring all of the necessary utility easements. The LANE/Corman Team will complete the design and utility relocation starting at Notice to Proceed.

Work Hours, Overtime Work, and Additional Shifts

The LANE/Corman team will work both single shifts and multiple shifts for various construction activities. For the *Route 29/Rio Road GSI Project Element* portion of the work, we plan to work 6-days per week for both the advance work and finish work, and we will work continually with multiple shifts seven days a week during the 103 day closure period. For both the *Route 29 Widening* and *Berkmar Drive Extension Project Elements*, we will work five days per week.

Assumptions/Acknowledgements

- VDOT will provide Utility Easements and approximately 50% of utility relocation designed at Route 29/Rio Road GSI *Project Element*.
- No construction activities are allowed along the Rio Road corridor adjacent to commercial properties (including easements) that would impede the flow of traffic into or out of these commercial properties during the timeframe beginning the day before Thanksgiving Day of each year and ending on January 1st of the subsequent year.

Schedule Management

Through our experience gained by successfully delivering complicated design-build roadway projects on-time, the LANE/Corman Team has developed scheduling protocols to govern the development, implementation, updating, and recovery of the CPM schedule through each of the *Project Elements*' phases. These methods have proven effective as evidenced by the fact that every design-build project by our Team has finished either on-time or ahead of schedule.

Open and honest communication leads to effective coordination. The Project Schedule is the primary means for the LANE/Corman Team to communicate the design and construction plan to the Team and stakeholders. It includes planned means and methods, sequencing, resource utilization, and timing. The schedule provides the framework for planning and scheduling the day-to-day work. The schedule is the critical tool used to monitor and measure progress for the Project.

Development

For any design-build project it is imperative that the Project Team develops a detailed CPM schedule that considers the interrelationships among all the of the design-build disciplines. This is especially important considering the three separate *Project Elements* that make up the **Route 29 Solutions Project** that must be

integrated into one overall schedule for the design and construction sequencing. The LANE/Corman Team has developed the Proposal Schedule, included as **Exhibit 4.7 in Volume II**, that includes a WBS to clearly delineate the tasks of each discipline manager, including design, environmental permitting, right-of-way, utilities, and construction.

In order to prepare the Baseline Schedule, each *Project Element* team will be responsible for producing a schedule to govern their own work and provide insight into how their schedule activities affect and are affected by activities in other *Project Elements*. Once each *Project Element* team design manager and construction superintendent, in coordination with the Responsible Charge Engineer, has prepared their respective *Project Element* schedule, the Design-Build Project Manager will hold schedule development meetings attended by all disciplines to review the individual schedules and integrate them into the overall project schedule. These meetings ensure that:

- The work packages for each *Project Element* are comprehensive enough to define the work with no activity omitted
- The work packages are integrated within each *Project Element* and between each discipline to generate a clearly defined critical path, confirm that the critical path makes sense, and that the schedule shows that the Project will complete on-time or ahead of schedule
- Each *Project Element* and discipline manager understands the schedule(s) of their counterparts and how their work inter-relates with the other elements
- Each *Project Element* and discipline manager understands how their work affects the critical path of the Project and the priorities of the DB Project Manager and other managers
- The schedule meets the requirements of the Contract.

These meetings enable the LANE/Corman Team to create a Proposal Schedule that has been jointly prepared and agreed to by all of the discipline managers, providing realistic expectations of the schedule of work to be completed by all team members and third parties during the course of concurrent activities on the three *Project Elements*.

Implementation

The Proposal Schedule will be updated and submitted to VDOT within 15 days of Notice to Proceed as our Preliminary Schedule. The Baseline Schedule will be finalized and submitted to VDOT within 90 calendar days of Notice to Proceed. The Baseline Schedule will include cost and resource loading, all submittals required by the Contract Documents as well as a definable critical path. Key personnel representing all disciplines (design, construction, safety, quality, controls, and procurement) will engage and actively begin in-depth planning of the project activities and refinement to the schedule.

Throughout the design phase of the Project, as more detailed plans are developed and utility conflicts are verified, schedule meetings will continue to be held in order to further develop the Baseline Schedule. This schedule will be utilized by all Team members to plan and track the progress of their work. It will be submitted to VDOT for review and approval and employed during the planning phases for utilities, right of way, design, and subcontractor/supplier scope and purchasing.

A three (3) week look ahead schedule will be prepared and weekly meetings conducted with participation from all disciplines to track progress as well as determine areas of work where modifications or re-sequencing need to be developed. Specific milestones dates from the schedule will be written into subcontracts and purchase orders, making these entities contractually responsible for meeting schedule deadlines.

Updating Process

Each month starting with the month following Notice to Proceed, the Preliminary Schedule will be updated as the LANE/Corman Team prepares, submits, and receives approval on the Baseline Schedule. Once the Baseline Schedule is approved, it will be updated and submitted to VDOT for approval monthly until Final Completion of the Project. Each update will be accompanied with a narrative report and tables as prescribed in the Design-Build Project Schedule special provision. The updated schedule and narrative will reflect:

- Activities started or completed during the period
- Actual start and finish dates
- Activities on-going during the period
- Remaining duration for on-going activities
- Modified relationships to correct out-of-sequence progress
- Modified relationships to reflect the LANE/Corman Team's plan for completing the remaining work
- Change Orders
- Relief events
- Compensation events

The Scheduling Engineer under the guidance of the DBPM will coordinate the progress updates each month. Updates will be provided by the engineering, utility coordinator, procurement, permit, quality, and construction managers inclusive of input from the *Project Element* managers and staff engineers. Progress performance will be reviewed and monitored by our Responsible Charge Engineer and reported by him to the DBPM (and VDOT), to identify current or potential schedule problems and identify mitigation measures.

The schedule will be constantly reviewed and maintained as part of the monthly updating process. Systems used to manage the design and construction sequencing will be clear and concise including:

- Weekly design/construction scheduling and coordination meetings during the design phases
- Utility relocation tracking sheets during both the design and construction phases, ROW progress tracking sheets during both the design and construction phases
- Weekly construction scheduling and coordination meetings during the construction phases
- Show drawing status tracking sheets
- Material submittal and delivery schedules
- Non-conformance logs by QC and QA for both design and construction
- RFI logs
- Regular coordination meetings with our Responsible Charge Engineer, Mr. Ryan Gorman, PE with the *Project Element* managers and disciple leaders
- Monthly internal project review meetings by the LANE/Corman Team's Executive Review Committee
- Monthly progress/partnering meetings with the major stakeholders.

Weekly Planning/Coordination Meetings

In addition to the monthly updates, the LANE/Corman Team, at a minimum, will hold weekly Design Scheduling/Coordination Meetings that are run by the DB Project Manager and attended by the Responsible Charge Engineer and both the design and construction team *Project Element(s)* managers. Design Scheduling/Coordination Meetings have been a central tool on our design-build projects to facilitate face-to-face communication between the design and construction managers. For each meeting, the DB Project Manager will review the CPM schedule and identify all activities that were scheduled for completion the previous week or planned for the next two weeks. During these meetings, the Project Team discusses the progress since the last meeting with actual dates for completed activities; critical completion dates for future activities; the

addition or deletion of schedule activities as the design evolves, the impact of revised schedule dates on other activities and disciplines, identification of ways to advance the schedule ahead of the planned completion or to mitigate schedule impacts, and general design review, constructability, and determination of means and methods. In this **Route 29 Solutions Project** comprised of its individual yet integrated *Project Elements*, it is critical that all members of the overall project team have continuous open dialogue and awareness of both the forthcoming as well as real-time respective *Project Element* activities.

After each weekly meeting, the Scheduling Engineer will update the CPM schedule and forward copies of an updated “look-ahead” schedule to the Responsible Charge Engineer and each of the *Project Element* managers identifying the critical dates agreed to during the weekly coordination meeting. This process continues throughout the design process to ensure there is no slippage to the start of utility relocation and construction phases of the Project.

During the utility relocation and construction phases of the Project, the DBPM, CM, Designer of Record, Responsible Charge Engineer, QA Manager, QC Manager, and VDOT will continue to meet weekly for a Construction Scheduling/Coordinating Meeting to coordinate necessary QA, QC, Independent Assurance and Independent Verification inspections. At each meeting the CM will review the work performed during the previous week and outline the schedule activities that will be performed during the following two weeks.

At the internal weekly meetings, issues/concerns will be identified utilizing the tracking aids previously mentioned and action items identified and assigned to the responsible party who can resolve it. Three-week “look-ahead schedules” will be prepared and discussed to analyze schedule and quantity impacts. Similar information will be discussed and action items assigned at the Monthly Progress/Partnering meetings with key stakeholders. Other stakeholders may be invited as required for anticipated issues during the upcoming schedule activities.

Schedule Recovery Process

If during the course of the Project, changes or unforeseen circumstances arise that impact the project schedule, the LANE/Corman Team will immediately notify VDOT (and other appropriate stakeholders) and complete a Time Impact Analysis (TIA) and prepare a schedule recovery plan to recover lost time. This plan may include increasing work shifts, adding crews and resources to construct critical path activities concurrently, changing MOT schemes or modifying the design to remove activities from the critical path. Schedule recovery may require adjustments by any or all of the *Project Element* managers including: design, permitting, right-of-way, utility relocation, and construction. In the event all other design-build disciplines have completed their tasks, re-sequencing the construction schedule by the Construction Manager will be the primary focus in order to mitigate impacts.

Summary

The LANE/Corman Team has developed a Proposal Schedule and Narrative that demonstrates our understanding of the complexities and interrelationships of both the technical elements as well as the distinct *Project Elements* of the Project. Additionally, our Proposal Schedule takes into account: internal plan reviews, VDOT plan reviews and approvals, environmental permitting, ROW acquisitions, utility relocations, and construction activities.

The LANE/Corman Team is committed to continuously improve the enclosed Proposal Schedule to better serve VDOT, associated stakeholders, and the traveling public. Upon issuance of NTP, all Team members will actively work to make this project a success for VDOT and the citizens of Virginia.



Appendix

Appendix

LANE AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

ATTACHMENT 4.0.1.1

Design-Build Project for Route 29 Solutions, C00077383DB80

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	Volume I, A-1 to A-4
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	Volume I, A-5
Letter of Submittal	NA	Sections 4.1		
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	Volume I, Page 1 to 2
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	Volume I, Page 1
Authorized representative's original signature	NA	Section 4.1.1	yes	Volume I, Page 2
Declaration of intent	NA	Section 4.1.2	yes	Volume I, Page 1
120 day declaration	NA	Section 4.1.3	yes	Volume I, Page 1
Point of Contact information	NA	Section 4.1.4	yes	Volume I, Page 2
Principal Officer information	NA	Section 4.1.5	yes	Volume I, Page 2
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.6	no	Volume I, A-6 to A-9
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.7	no	Volume I, A-10 to A-20

ATTACHMENT 4.0.1.1

Design-Build Project for Route 29 Solutions, C00077383DB80

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

<u>Key Personnel Resume Form – Responsible Charge Engineer</u>	<u>Attachment 4.1.8</u>	<u>Section 4.1.8</u>	<u>no</u>	Volume I, A-21 to A-22
Offeror’s Qualifications	NA	Section 4.2		Volume I, Page 3 to 4
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	Volume I, Page 3
<u>Revised</u> Organizational chart <u>that includes the Responsible Charge Engineer</u> with any <u>other</u> updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	Volume I, Page 4
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	Volume I, Page 3
Design Concept	NA	Section 4.3		Volume I, Page 5 to 21
US 29 & Rio Road Grade Separated Intersection	NA	Section 4.3.1		Volume I, Page 7 to 8
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	(Description) Volume I, Page 8 - 10 (Plans) Volume II, Page II-1 to II-10
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	(Description) Volume I, Page 10 to 13 (Plans) Volume II, Page II-11 to II-14

ATTACHMENT 4.0.1.1

Design-Build Project for Route 29 Solutions, C00077383DB80

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

US 29 Widening	NA	Section 4.3.2		Volume I, Page 14 to 16
Conceptual Roadway Plans and description	NA	Section 4.3.2.1	yes	(Description) Volume I, Page 14 to 16 (Plans) Volume II, Page II-15 to II-39
Berkmar Drive Extension	NA	Section 4.3.3		Volume I, Page 17 to 20
Conceptual Roadway Plans and description	NA	Section 4.3.3.1	yes	(Description) Volume I, Page 17 to 19 (Plans) Volume II, Page II-40 to II-52
Conceptual Structural Plans and description	NA	Section 4.3.3.2	yes	(Description) Volume I, Page 20 (Plans) Volume II, Page II-53 to II-56
Approach to Construct the US 29 & Rio Road Grade Separated Intersection	NA	Section 4.4		Volume I, Page 22 to 43
Sequence of Construction	NA	Section 4.4.1	yes	Volume I, Page 22 to 29
Transportation Management Plan	NA	Section 4.4.2	yes	Volume I, Page 30 to 35

ATTACHMENT 4.0.1.1

Design-Build Project for Route 29 Solutions, C00077383DB80

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Utilities	NA	Section 4.4.3	yes	Volume I, Page 36 to 43
Approach to Construct the Entire Project	NA	Section 4.5		Volume I, Page 44 to 62
Sequence of Construction	NA	Section 4.5.1	yes	Volume I, Page 44 to 56
Transportation Management Plan	NA	Section 4.5.2	yes	Volume I, Page 57 to 62
Disadvantaged Business Enterprises (DBE)	NA	Section 4.6		Volume I, Page 63
Written statement of percent DBE participation	NA	Section 4.6	yes	Volume I, Page 63
Proposal Schedule	NA	Section 4.7		Volume I, Page 64 to 79
Proposal Schedule	NA	Section 4.7	no	Volume II, Page 1 to 15
Proposal Schedule Narrative	NA	Section 4.7	no	Volume I, Page 64 to 79
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.7	no	Enclosed



Attachment 3.6

Acknowledgement of RFP, Revision and/or Addenda

LANE

AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

ATTACHMENT 3.6**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**

CONTRACT ID NO.: C00077383DB80
 PROJECT NOS.: 0029-002-091, 0029-002-135, 9999-002-900

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 October 2, 2014 – RFP
(Date)
2. Cover letter of November 5, 2014 – RFP Addendum No. 1
(Date)
3. Cover letter of December 5, 2014 – RFP Addendum No. 2
(Date)
4. Cover letter of December 19, 2014 – RFP Addendum No. 3
(Date)



 SIGNATURE

January 6, 2015

 DATE

Richard A. McDonough

 PRINTED NAME

Sr. National Pursuits Manager

 TITLE



9.3.1

Proposal Payment Agreement

LANE

AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

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

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's July 24, 2014 Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the **Design-Build Project for Route 29 Solutions, Project Nos. 0029-002-091, 0029-002-135, 9999-002-900** ("Project"), under a design-build contract with VDOT ("Design-Build Contract"); and

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

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

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

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

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

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

3. **Proposal Payment.** VDOT agrees to pay Offeror the lump sum amount of **One Hundred Thousand and 00/100 Dollars (\$100,000.00)** ("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: RAMcD

Name: Richard A. McDonough

Title: Sr. National Pursuits Manager



Attachment 11.8.6(a) & (b)

Certification Regarding Debarment Forms

LANE

AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

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

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

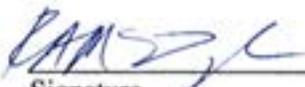
b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under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

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

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

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

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

	<u>1-6-15</u>	<u>Sr. National Pursuits Manager</u>
Signature	Date	Title

The Lane Construction Corporation
Name of Firm

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

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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.

	1/6/14	Vice President
Signature	Date	Title

Corman Construction, Inc.
Name of Firm

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

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

- 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.

	January 6, 2015	Director, Transportation
Signature	Date	Title

Rummel, Klepper and Kahl, LLP (RK&K)
Name of Firm

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

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

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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.

	<u>1/6/2015</u>	<u>Senior Vice President</u>
Signature	Date	Title

Whitman, Requardt & Associates, LLP
Name of Firm

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

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

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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.



Signature

1/6/2015

Date

Director of Transportation/VP of Operations

Title

Rinker Design Associates, P.C.

Name of Firm

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

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

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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.

	01-06-15	Senior Vice President
Signature	Date	Title

Schnabel Engineering Consultants, Inc.
Name of Firm

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

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

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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.

 _____ Signature	<u>6 Jan 2015</u> _____ Date	<u>President</u> _____ Title
--	------------------------------------	------------------------------------

CES CONSULTING LLC

Name of Firm

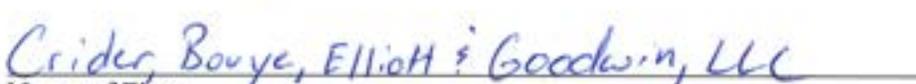
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LOWER TIER COVERED TRANSACTIONS

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 Signature	1/6/2015 Date	 Title
 Name of Firm		

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

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

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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.

	1/6/2015	CEO
Signature	Date	Title

RiverRidge Valuations, Inc.

Name of Firm

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

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

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	1/6/2015	President
Signature	Date	Title

KDR Real Estate Services

Name of Firm

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

Project Name: Design-Build Project for Route 29 Solutions
Contract ID No.: C00077383DB80

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	1/6/2015	
Signature	Date	President

		Title

Froehling & Robertson, Inc.

Name of Firm



Attachment 4.1.8

Key Personnel Resume Form

LANE

AND

 **CORMAN**
CONSTRUCTION

In association with:

RK&K

ATTACHMENT 4.1.8

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title:	Ryan Gorman, PE, DBIA-Sr. Project Manager/Lead Estimator
b. Project Assignment:	Responsible Charge Engineer
c. Name of Firm with which you are now associated:	Corman Construction, Inc.
d. Years experience: With this Firm 18 Years With Other Firms 1 Year	
Please list chronologically (most recent experience first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of experience, please list the experience for those years you have worked. Project specific experience shall be included in Section (g) below):	
Sr. Project Manager / Lead Estimator.....Corman Construction	2012-Present
Manages Corman South's Design-Build, Estimating, and Marketing Departments.	
Operations Manager.....Corman Construction	2009-2012
Oversaw the Corman South office where he provided personnel supervision, assisted in evaluating current/proposed systems, policies and procedures, determined labor requirements, outlined project plans, inspected/reviewed projects for safety and quality compliance and ensured projects are completed on time.	
Project Engineer/Superintendent/Project Manager/Sr. Project Manager..... Corman Construction	1996-2009
Progressed from Project Engineer to Superintendent, Project Manager and Sr. Project Manager assigned to road, road widening, bridge, and combined sewer overflow projects for VDOT, City of Richmond, and Henrico County.	
Board Member / Virginia Transportation Construction Alliance (VTCA)	
Ryan is a Board Member and is currently serving as Vice Chair on the Contractor Leadership Committee.	
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:	
Virginia Tech, Blacksburg, VA/2001/Transportation Construction Management Institute	
Clarkson University, Potsdam, NY/BS/1995/Civil Engineering	
f. Active Registration: Year First Registered/ Discipline/VA Registration #:	
2002/Virginia Professional Engineer/#033522	
2006/VDOT Erosion & Sediment Control Contractor Certification/#3121C	
2012/Designated Design-Build Professional (DBIA)	
g. Document the extent and depth of your experience and qualifications relevant to the Project.	
<ol style="list-style-type: none"> 1. <i>Note your specific responsibilities and authorities for each project, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> 	
(List at least three (3), but no more than five (5) relevant projects* for which you have performed a similar function.)	
Project Name:	Route 1 Tie-In to Woodrow Wilson Bridge Urban Deck VA-4, Alexandria, VA
Name of Firm:	Corman Construction, Inc.
Start Date:	Jan. 2003
End Date:	2007
Project Role/Responsibilities:	As Project Manager , Ryan was responsible for the project, managed design completion and review (formwork, access platforms, support of excavation, utility support systems, temporary bridges, sound walls, value engineering proposals, and erection drawings), ensured timely and accurate completion of office and project engineering requirements, as well as technical supervision of field operations. He managed engineers, superintendents, and subcontractors and was responsible for short/long-range scheduling, purchasing, cost control, safety management, QC oversight, resource management, and troubleshooting. Ryan received a VDOT Commissioner's Award for Outstanding Achievement. This was a \$62.7 Million two-phased, multi-level bridge and roadway demolition/ reconstruction project. Widened ½ mile of the I-495 Beltway from six lanes to the final 14-lane configuration, one mile reconstruction of Washington Street and a new South Washington Street Urban Deck Bridge over I-495. All eight project milestones were met. Client: Virginia Dept. of Transportation
Relevancy:	<i>Design-build elements (specialty noise walls, temporary low-density cementitious fill ramp bridge), fast track, grade-separated interchange, road widening, road extension on a new alignment, MOT, utility relocations, bridge,</i>



eight milestones, incentives, completed ahead of schedule, TMP, public relations.

Project Name: **Design-Build 1-B, Seven Bridges, Five Culverts, Dare/Hyde Counties, NC**

Name of Firm: **Corman Construction, Inc.**

Start Date: **Aug. 2012**

End Date: **April 2015**

Project Role/Responsibilities: As **Design-Build Project Manager**, Ryan is responsible for the \$8.9 million project, develops/reviews designs (bridge, and culvert, roadwork), oversees design/construction, and manages the Design, Construction, and QA Managers. He works with the Construction team and Construction Manager overseeing scheduling, quality, management, contract administration. Project replaces seven bridges and five culverts, including associated widening and tie ins, design substructure and superstructure replacements. **Client: NC Dept. of**

Transportation

Relevancy: Design-Build, fast track, road widening, MOT, utility relocations, seven bridges, milestones, TMP, public relations, permitting

Project Name: **Design-Build I-64 Route 15 (Zion Crossroads) Interchange Improvements, Zion Crossroads, VA**

Name of Firm: **Corman Construction, Inc.**

Start Date: **Sept. 2012**

End Date: **April 2014**

Project Role/Responsibilities: As **Operations Manager**, Ryan was responsible for the project execution. He oversaw construction, quality management and contract administration, managed the Construction, staff, managed procurement and furnishing of materials, equipment, and labor, and developed the Construction Quality Control Plan. This \$6.8 Million project improves the I-64 Interchange on Route 15 at Zion Crossroads and reconstructs the 0.49 mile stretch of Route 15, improving the intersection of Route 15 and Spring Creek Parkway and realigning the existing interchange into a Diverging Diamond Interchange (DDI), enhances motorist safety and included a robust public outreach program involving stakeholders. **Client: Virginia Dept. of Transportation – Culpeper District**

Relevancy: VDOT Design Build, public outreach, MOT, utility relocations, TMP, and permitting.

Project Name: **Design-Build Farmville 3rd Street Over Buffalo Creek, Farmville, VA**

Name of Firm: **Corman Construction, Inc.**

Start Date: **Feb. 2007**

End Date: **Aug. 2008**

Project Role/Responsibilities: As **Design-Build Project Manager**, Ryan was responsible for the project from start up to final close out, oversaw design, construction, quality management and contract administration, managed the Design, Construction, and QA Managers, managed procurement and furnishing of materials, equipment, and labor, developed the Quality Control Plan with the designer and supervised implementation. This \$2.9 Million project designed/constructed a new bridge and approach work on Route 460/15 (Third Street). It is a low maintenance, four-lane, three span integral structure with weathering steel girders constructed in two phases to maintain traffic. **Client: Virginia Dept. of Transportation-Lynchburg District**

Relevancy: VDOT Design-Build, fast track, road widening, MOT, utility relocations, bridge, completed ahead of schedule, TMP, public relations, permitting

Project Name: **Design-Build Multiple Culvert Rehabilitation, Richmond, Fredericksburg, and Northern VA**

Name of Firm: **Corman Construction, Inc.**

Start Date: **March 2009**

End Date: **July 2011**

Project Role/Responsibilities: As **Design-Build Project Manager**, Ryan was responsible for this \$3.1 Million drainage culvert replacement and rehabilitation project at nine locations and three VDOT districts. He oversaw design/construction and managed the Design, Construction, and QA Managers, developed/reviewed designs, QC and QA plans and oversaw selection and contractual terms with the QC and QA testing firms. Ryan was responsible for financial, schedule and production outcomes. He worked daily with the construction team and Construction Manager overseeing scheduling, quality, management, contract administration and coordination of labor, materials, equipment and subcontractors. **Client: Virginia Dept. of Transportation**

Relevancy: VDOT Design-build, MOT, utility relocations, bridge, TMP, public relations, permitting.

* On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.

h. For Key Personnel required to be on-site full-time for the duration of construction, provide a current list of assignments, role, and the anticipated duration of each assignment: Ryan has no current or planned assignments that would preclude his attending to these duties to the extent required.

Design-Build Project for Route 29 Solutions Albemarle County, Virginia

State Project Nos.:

US 29 & Rio Road Grade Separated Intersection (0029-002-091)
US 29 Widening (0029-002-135)
Berkmar Drive Extension (9999-002-900)

Federal Project Nos.:

Design-Build Project for Route 29 Solutions: 5104(230)

Contract ID Number: C00077383DB80



Submitted to:



Submitted by:

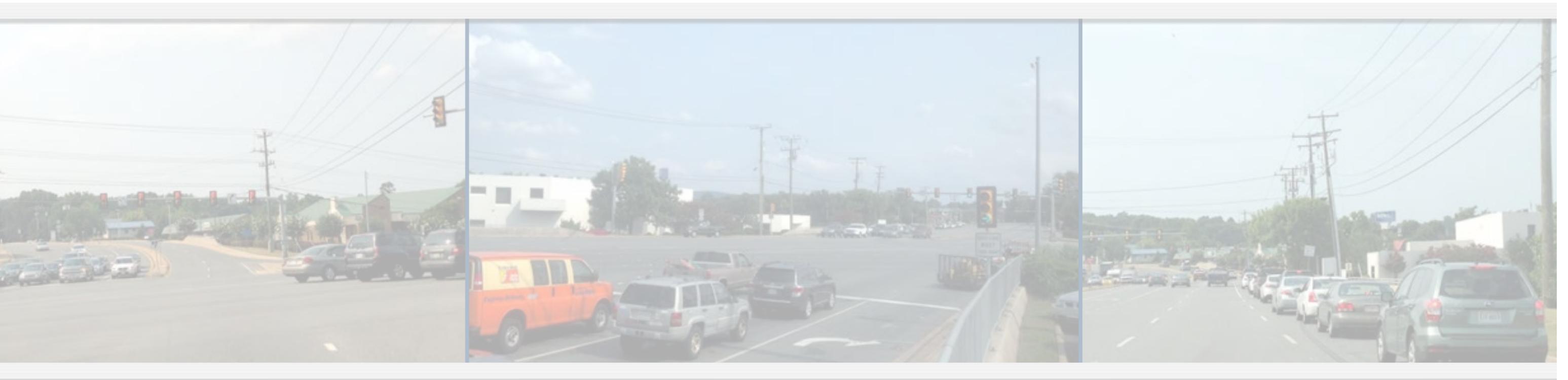


In association with: **RK&K**

January 6, 2015

Section 4.3.1

US 29 & Rio Road Grade Separated Intersection



LANE AND **CORMAN**
CONSTRUCTION

In association with: **RK&K**

Section 4.3.1.1

Conceptual Roadway Plans



LANE AND **CORMAN**
CONSTRUCTION

In association with: **RK&K**

CONCEPTUAL PLANS	
SHEET	INDEX OF SHEETS
1	TITLE SHEET (1)
2	ROADWAY TYPICAL SECTIONS (1)
3-6	ROADWAY PLANS (4)
7-10	ROADWAY PROFILES (4)

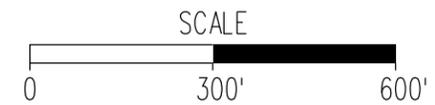
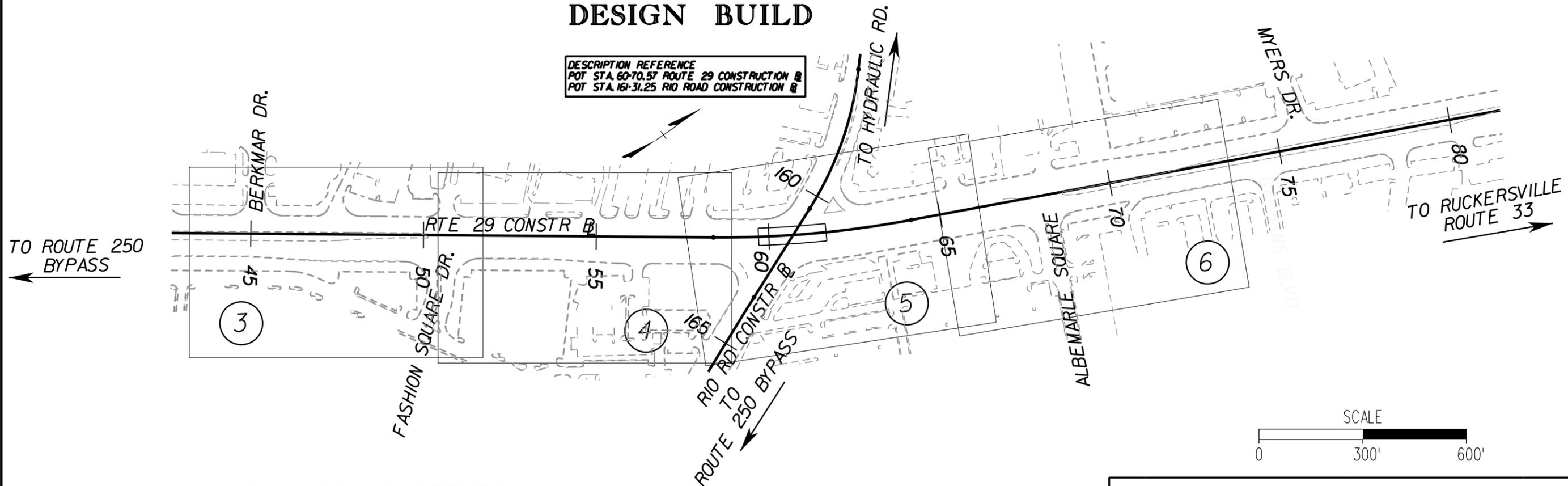


COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

**PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY**
COUNTY OF ALBEMARLE
ROUTE 29 AND RIO ROAD (ROUTE 631)
GRADE SEPARATED INTERSECTION
FROM: ROUTE 851 (DOMINION DRIVE)
TO: ROUTE 1417 (WOODBROOK DRIVE)
DESIGN BUILD

STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	NHPP-002-71045)	29	0029-002-901 PI01	1

ROUTE 29	
URBAN OTHER PRINCIPAL ARTERIAL (GS-5)	
FROM: ROUTE 851 (DOMINION DRIVE)	
TO: ROUTE 1417 (WOODBROOK DRIVE)	
ADT (2014)	32,640
ADT (2018 Interim Year)	
ADT (2040)	39,373
DHV	2,905
D Z (design hour)	56%
T Z (design hour)	3%
V (MPH)	45 mph



Population ALBEMARLE COUNTY 24,286 (2010 Census)

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	PPMS NO.	EQUALITIES		LENGTH INCLUDING BRIDGE(S)		LENGTH EXCLUDING BRIDGE(S)		TYPE PROJECT	DESCRIPTION
					FEET	N/A	FEET	MALES	FEET	MALES		
0029-002-901	PE-101	NHPP-002-71045)		106136							PREL. ENG.	FROM: DOMINION DRIVE (RTE 851) TO: WOODBROOK DRIVE (RTE 1417)
	RW-201	NHPP-002-71045)		106136							RIGHT-OF-WAY	
	C-501	NHPP-002-71045)		106136							CONSTRUCTION	

Project Lengths are based on Route 29 Construction Baseline.

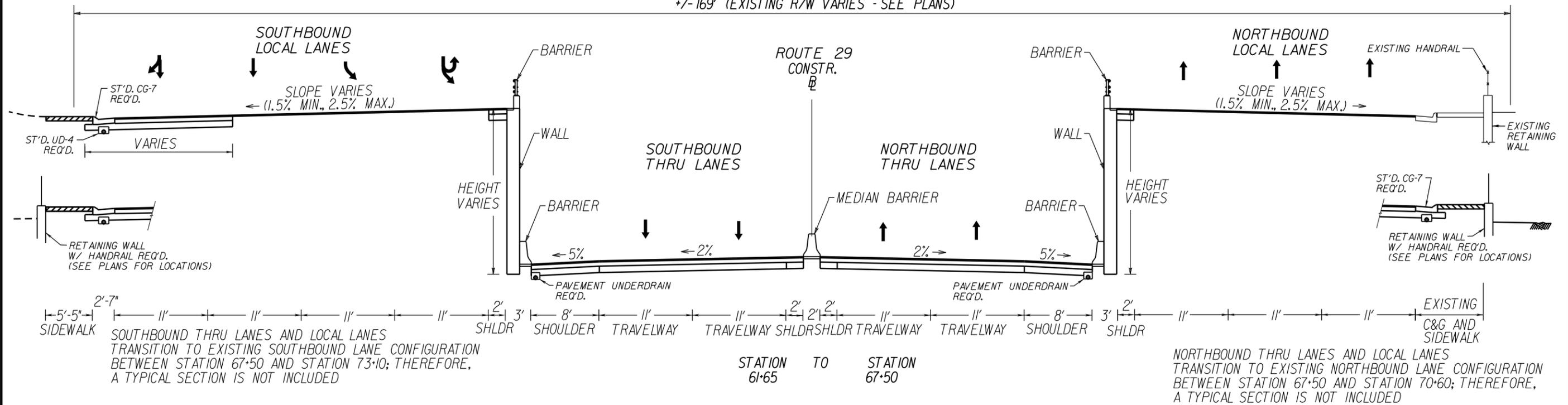
TITLE SHEET
US 29/RIO ROAD
GRADE SEPARATED INTERSECTION

SHEET 1 OF 10

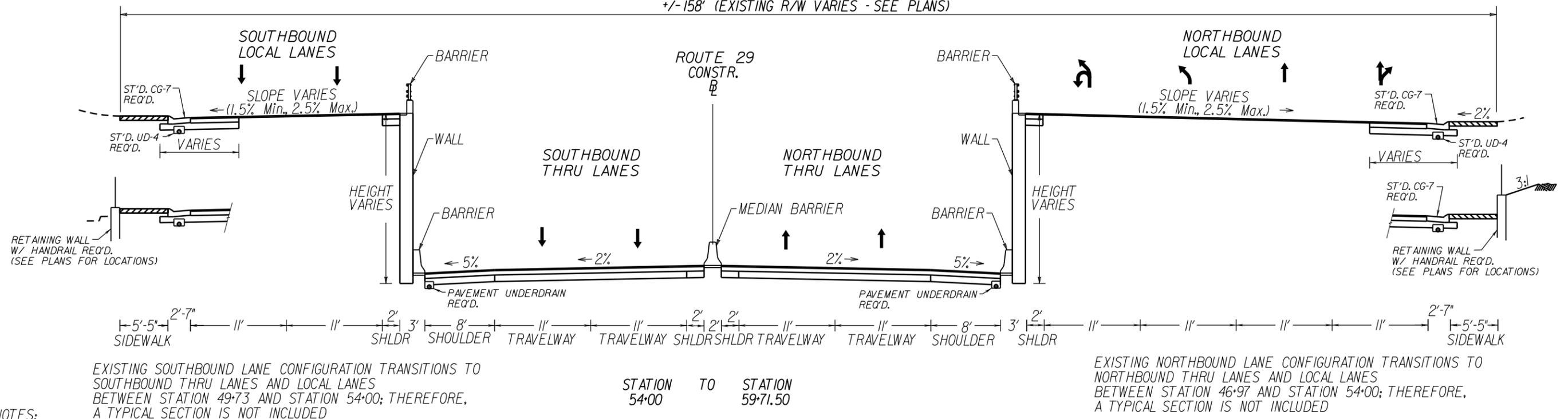


TYPICAL SECTIONS

+/- 169' (EXISTING R/W VARIES - SEE PLANS)



+/- 158' (EXISTING R/W VARIES - SEE PLANS)



NOTES:

1. Refer to the plan sheets for limits of mill and overlay and full depth pavement.
2. Refer to Geotechnical Engineering Data Report for pavement design.
3. Standard Edge Drains (UD-4 and UD-1) and Standard Combination Underdrains (CD-1 and CD-2) will be installed in accordance with the RFP, Section 2.7. They are not depicted on the Conceptual Plans for clarity.
4. Minor retaining wall type to be determined in final design.
5. Rio Road transitions between the intersection with Route 29 and the existing condition. Therefore, a typical section is not included. See plan sheets for details.

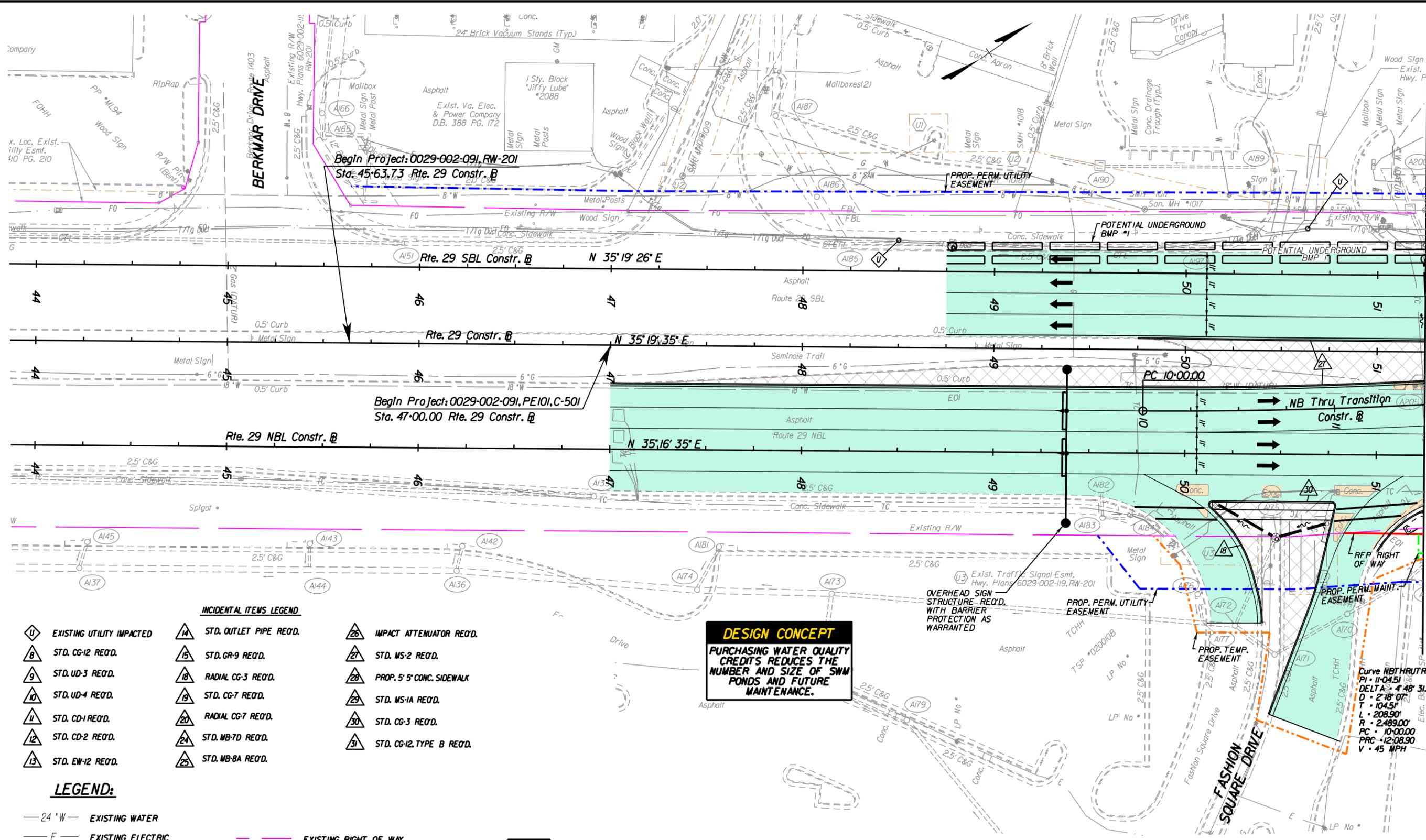
CONCEPTUAL PLANS

**US 29/RIO ROAD
GRADE SEPARATED INTERSECTION**

SHEET 2 OF 10



NOT TO SCALE

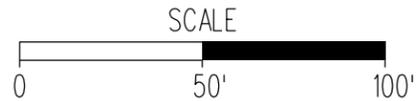


- INCIDENTAL ITEMS LEGEND:**
- | | | | | | |
|---|---------------------------|---|-------------------------|---|----------------------------|
| Ⓛ | EXISTING UTILITY IMPACTED | Ⓐ | STD. OUTLET PIPE REQ'D. | Ⓐ | IMPACT ATTENUATOR REQ'D. |
| Ⓚ | STD. CG-12 REQ'D. | Ⓑ | STD. GR-9 REQ'D. | Ⓛ | STD. MS-2 REQ'D. |
| Ⓜ | STD. UD-3 REQ'D. | Ⓒ | RADIAL CG-3 REQ'D. | Ⓜ | PROP. 5' 5" CONC. SIDEWALK |
| Ⓝ | STD. UD-4 REQ'D. | Ⓓ | STD. CG-7 REQ'D. | Ⓝ | STD. MS-1A REQ'D. |
| Ⓟ | STD. CD-1 REQ'D. | Ⓔ | RADIAL CG-7 REQ'D. | Ⓟ | STD. CG-3 REQ'D. |
| Ⓡ | STD. CD-2 REQ'D. | Ⓕ | STD. MB-7D REQ'D. | Ⓡ | STD. CG-12, TYPE B REQ'D. |
| Ⓢ | STD. EW-12 REQ'D. | Ⓖ | STD. MB-8A REQ'D. | | |

- LEGEND:**
- | | | | | | |
|------------|--------------------------|-----------|---|-------|-------------------------------------|
| — 24" W — | EXISTING WATER | — — — — — | EXISTING RIGHT OF WAY | ■ | MILL AND OVERLAY |
| — E — | EXISTING ELECTRIC | — — — — — | EXISTING EASEMENT | ■ | FULL DEPTH PROPOSED PAVEMENT |
| — FO — | EXISTING FIBER OPTIC | — — — — — | PROPOSED RIGHT OF WAY | ■ | PAVEMENT DEMOLITION |
| — CATV — | EXISTING CABLE TV | — — — — — | PROPOSED TEMPORARY EASEMENT | ■ | CONCRETE SIDEWALK |
| — T/Tg — | EXISTING TELEPHONE | — — — — — | PROPOSED PERMANENT EASEMENT | — C — | DENOTES CONSTRUCTION LIMITS IN CUT |
| — TC — | EXISTING TRAFFIC CONTROL | — — — — — | PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT | — F — | DENOTES CONSTRUCTION LIMITS IN FILL |
| — Unk — | EXISTING UNKNOWN UTILITY | — — — — — | PROPOSED STORMWATER EASEMENT | | |
| — 2" G — | EXISTING GAS | — — — — — | PROPOSED SOUND WALL/RETAINING WALL | | |
| — 6" SAN — | EXISTING SANITARY | | | | |

DESIGN CONCEPT
PURCHASING WATER QUALITY CREDITS REDUCES THE NUMBER AND SIZE OF SWM PONDS AND FUTURE MAINTENANCE.

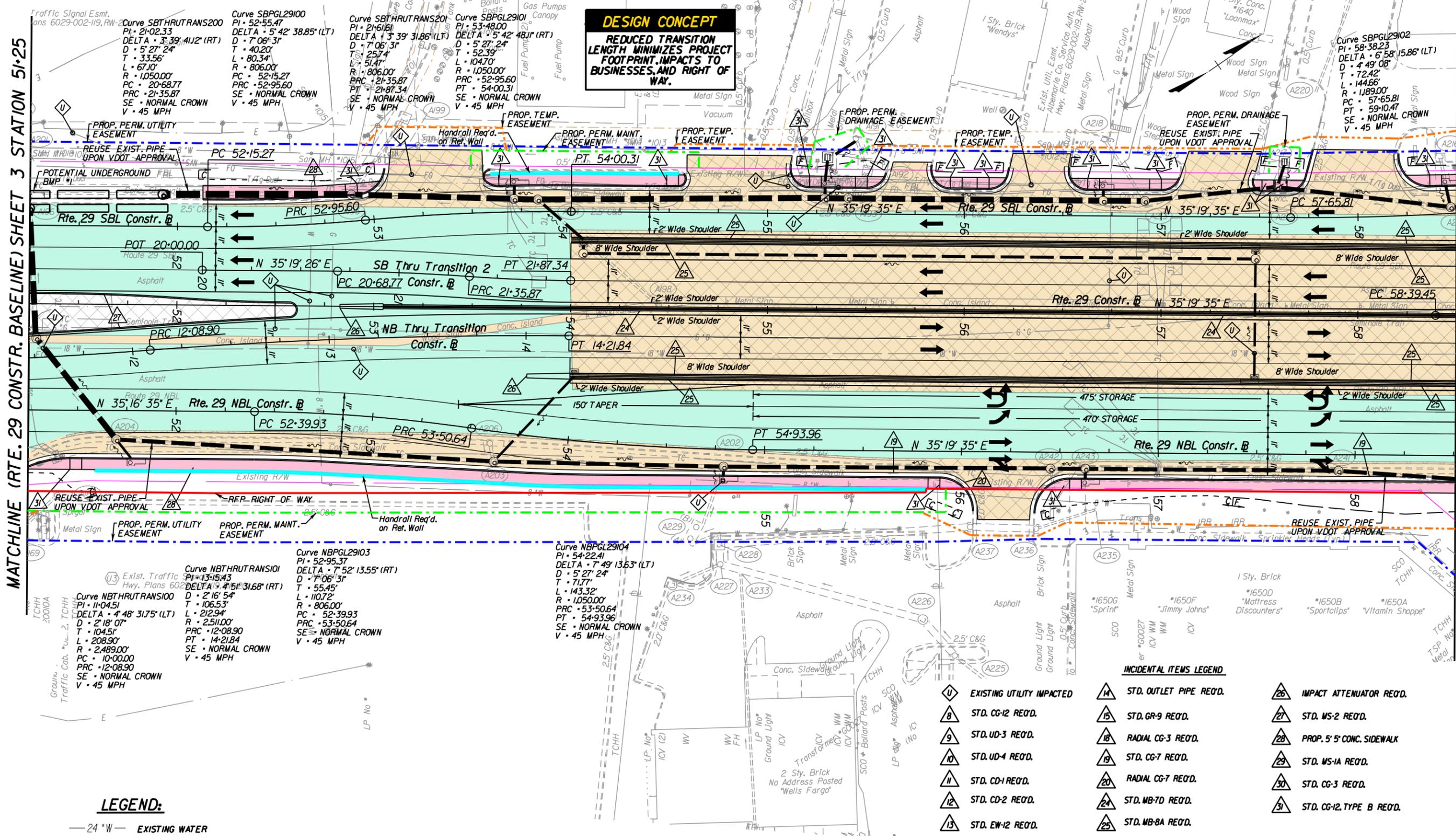
CONCEPTUAL PLANS
US 29/RIO ROAD
GRADE SEPARATED INTERSECTION



MATCHLINE (RTE. 29 CONSTR. BASELINE) SHEET 3 STATION 51+25

MATCHLINE (RTE. 29 CONSTR. BASELINE) SHEET 5 STATION 58+50

DESIGN CONCEPT
 REDUCED TRANSITION LENGTH MINIMIZES PROJECT FOOTPRINT, IMPACTS TO BUSINESSES, AND RIGHT OF WAY.



LEGEND:

- 24" W — EXISTING WATER
- E — EXISTING ELECTRIC
- FO — EXISTING FIBER OPTIC
- CATV — EXISTING CABLE TV
- T/Tg — EXISTING TELEPHONE
- TC — EXISTING TRAFFIC CONTROL
- Unk — EXISTING UNKNOWN UTILITY
- 2" G — EXISTING GAS
- 6" SAN — EXISTING SANITARY
- — EXISTING RIGHT OF WAY
- — EXISTING EASEMENT
- — PROPOSED RIGHT OF WAY
- — PROPOSED TEMPORARY EASEMENT
- — PROPOSED PERMANENT EASEMENT
- — PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
- — PROPOSED STORMWATER EASEMENT
- — PROPOSED SOUND WALL/RETAINING WALL

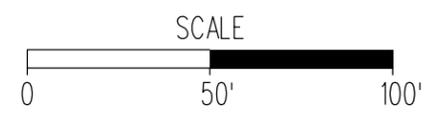
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- PAVEMENT DEMOLITION
- CONCRETE SIDEWALK

- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

- INCIDENTAL ITEMS LEGEND**
- U EXISTING UTILITY IMPACTED
 - B STD. CG-12 REQ'D.
 - 9 STD. UD-3 REQ'D.
 - 10 STD. UD-4 REQ'D.
 - 11 STD. CD-1 REQ'D.
 - 12 STD. CD-2 REQ'D.
 - 13 STD. EW-12 REQ'D.
 - 14 STD. OUTLET PIPE REQ'D.
 - 15 STD. GR-9 REQ'D.
 - 16 RADIAL CG-3 REQ'D.
 - 19 STD. CG-7 REQ'D.
 - 20 RADIAL CG-7 REQ'D.
 - 24 STD. MB-7D REQ'D.
 - 25 STD. MB-8A REQ'D.
 - 26 IMPACT ATTENUATOR REQ'D.
 - 27 STD. MS-2 REQ'D.
 - 28 PROP. 5' 5" CONC. SIDEWALK
 - 29 STD. MS-1A REQ'D.
 - 30 STD. CG-3 REQ'D.
 - 31 STD. CG-12, TYPE B REQ'D.

CONCEPTUAL PLANS
 US 29/RIO ROAD
 GRADE SEPARATED INTERSECTION

SHEET 4 OF 10



DESIGN CONCEPT
 MODIFIED ROUTE 29
 DEPRESSED ROADWAY
 PROFILE, SHORTENS THE
 WALL FROM 1900 FEET TO
 1365 FEET.

DESIGN CONCEPT
 RETAINING WALL ADDED TO
 AVOID PARKING IMPACTS

DESIGN CONCEPT
 RETAINING WALL ADDED TO
 AVOID PARKING IMPACTS

DESIGN CONCEPT
 INTERSECTION GEOMETRY
 DESIGNED TO MINIMIZE
 BRIDGE WIDTH, REDUCING
 FUTURE MAINTENANCE.

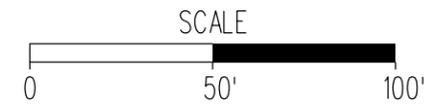
- LEGEND:**
- 24" W — EXISTING WATER
 - E — EXISTING ELECTRIC
 - FO — EXISTING FIBER OPTIC
 - CATV — EXISTING CABLE TV
 - T/Tg — EXISTING TELEPHONE
 - TC — EXISTING TRAFFIC CONTROL
 - Unk — EXISTING UNKNOWN UTILITY
 - 2" G — EXISTING GAS
 - 6" SAN — EXISTING SANITARY
 - — EXISTING RIGHT OF WAY
 - — EXISTING EASEMENT
 - — PROPOSED RIGHT OF WAY
 - — PROPOSED TEMPORARY EASEMENT
 - — PROPOSED PERMANENT EASEMENT
 - — PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
 - — PROPOSED STORMWATER EASEMENT
 - — PROPOSED SOUND WALL/RETAINING WALL

- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- PAVEMENT DEMOLITION
- CONCRETE SIDEWALK
- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

- INCIDENTAL ITEMS LEGEND**
- ⬡ 8 EXISTING UTILITY IMPACTED
 - ⬡ 9 STD. CG-12 REQ'D.
 - ⬡ 10 STD. UD-3 REQ'D.
 - ⬡ 11 STD. UD-4 REQ'D.
 - ⬡ 12 STD. CD-1 REQ'D.
 - ⬡ 13 STD. CD-2 REQ'D.
 - ⬡ 14 STD. EW-12 REQ'D.
 - ⬡ 15 STD. GR-9 REQ'D.
 - ⬡ 16 RADIAL CG-3 REQ'D.
 - ⬡ 17 STD. CG-7 REQ'D.
 - ⬡ 18 RADIAL CG-7 REQ'D.
 - ⬡ 19 STD. MB-TD REQ'D.
 - ⬡ 20 STD. CG-3 REQ'D.
 - ⬡ 21 STD. CG-12, TYPE B REQ'D.
 - ⬡ 22 STD. OUTLET PIPE REQ'D.
 - ⬡ 23 STD. GR-9 REQ'D.
 - ⬡ 24 PROP. 5' 5" CONC. SIDEWALK
 - ⬡ 25 STD. MS-1A REQ'D.
 - ⬡ 26 IMPACT ATTENUATOR REQ'D.
 - ⬡ 27 STD. MS-2 REQ'D.
 - ⬡ 28 PROP. 5' 5" CONC. SIDEWALK
 - ⬡ 29 STD. MS-1A REQ'D.
 - ⬡ 30 STD. CG-3 REQ'D.
 - ⬡ 31 STD. CG-12, TYPE B REQ'D.

CONCEPTUAL PLANS
 US 29/RIO ROAD
 GRADE SEPARATED INTERSECTION

SHEET 5 OF 10



4:54:02 PM Plotted By: locatuser

MATCHLINE (RTE. 29 CONSTR. BASELINE) SHEET 5 STATION 65+75

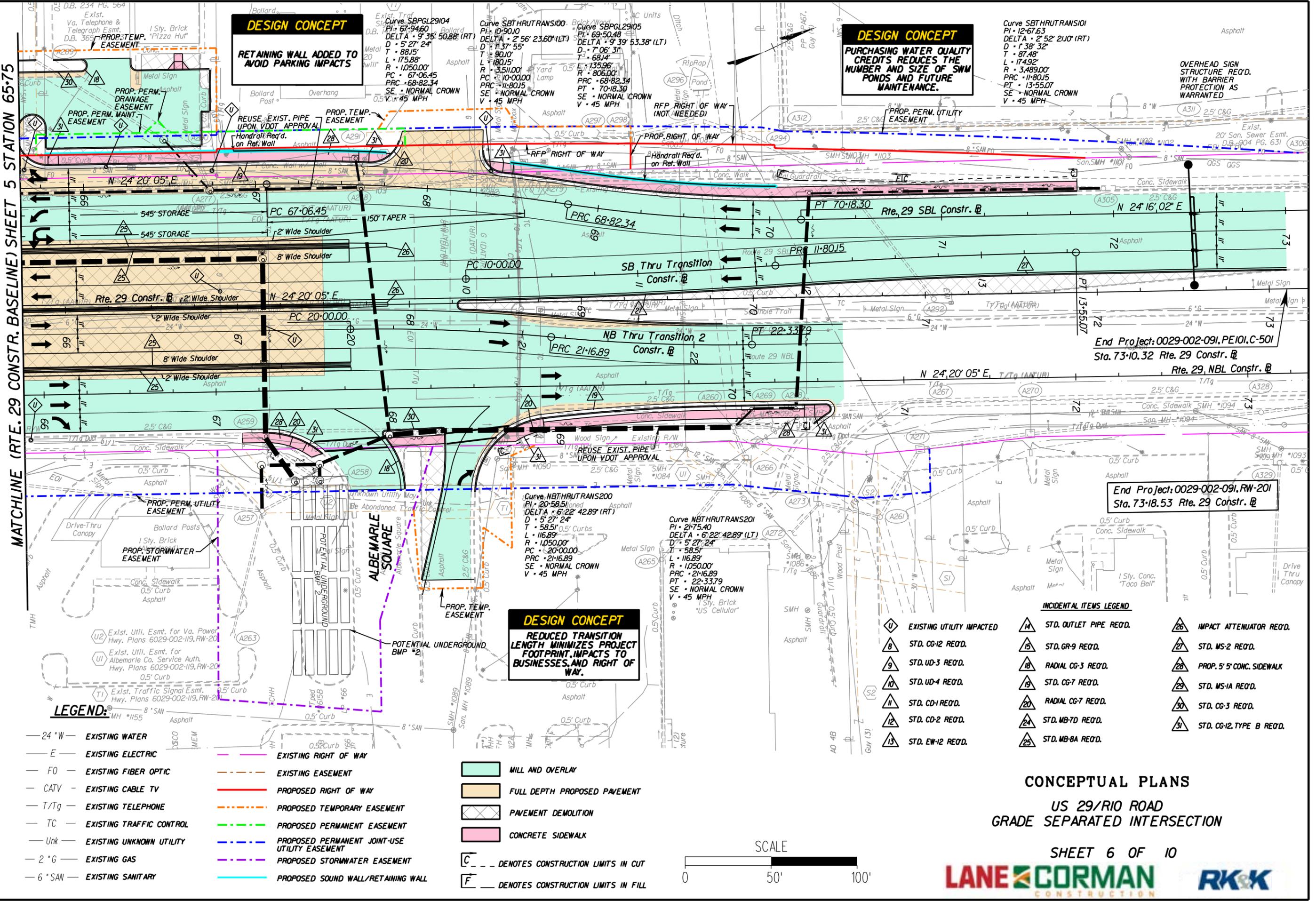
DESIGN CONCEPT
RETAINING WALL ADDED TO AVOID PARKING IMPACTS

DESIGN CONCEPT
PURCHASING WATER QUALITY CREDITS REDUCES THE NUMBER AND SIZE OF SWM PONDS AND FUTURE MAINTENANCE.

DESIGN CONCEPT
REDUCED TRANSITION LENGTH MINIMIZES PROJECT FOOTPRINT, IMPACTS TO BUSINESSES, AND RIGHT OF WAY.

End Project: 0029-002-091, PE101, C-501
Sta. 73+0.32 Rte. 29 Constr. B

End Project: 0029-002-091, RW-201
Sta. 73+8.53 Rte. 29 Constr. B



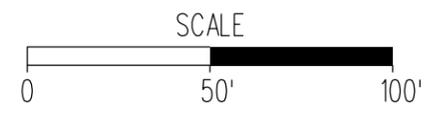
LEGEND:

- 24" W — EXISTING WATER
- E — EXISTING ELECTRIC
- FO — EXISTING FIBER OPTIC
- CATV — EXISTING CABLE TV
- T/Tg — EXISTING TELEPHONE
- TC — EXISTING TRAFFIC CONTROL
- Unk — EXISTING UNKNOWN UTILITY
- 2" G — EXISTING GAS
- 6" SAN — EXISTING SANITARY
- — EXISTING RIGHT OF WAY
- — EXISTING EASEMENT
- — PROPOSED RIGHT OF WAY
- — PROPOSED TEMPORARY EASEMENT
- — PROPOSED PERMANENT EASEMENT
- — PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
- — PROPOSED STORMWATER EASEMENT
- — PROPOSED SOUND WALL/RETAINING WALL
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- PAVEMENT DEMOLITION
- CONCRETE SIDEWALK
- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

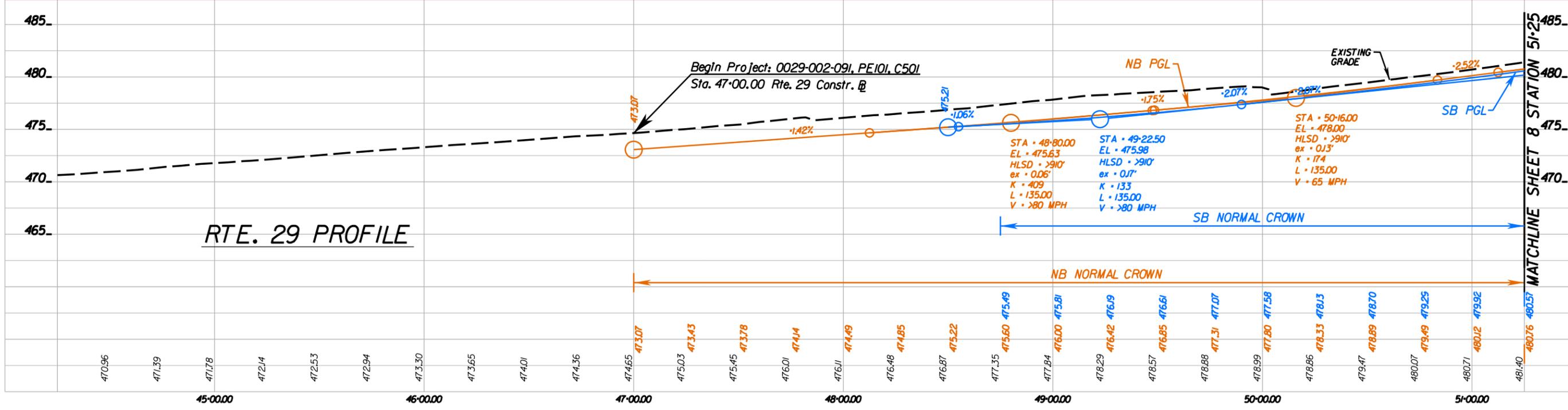
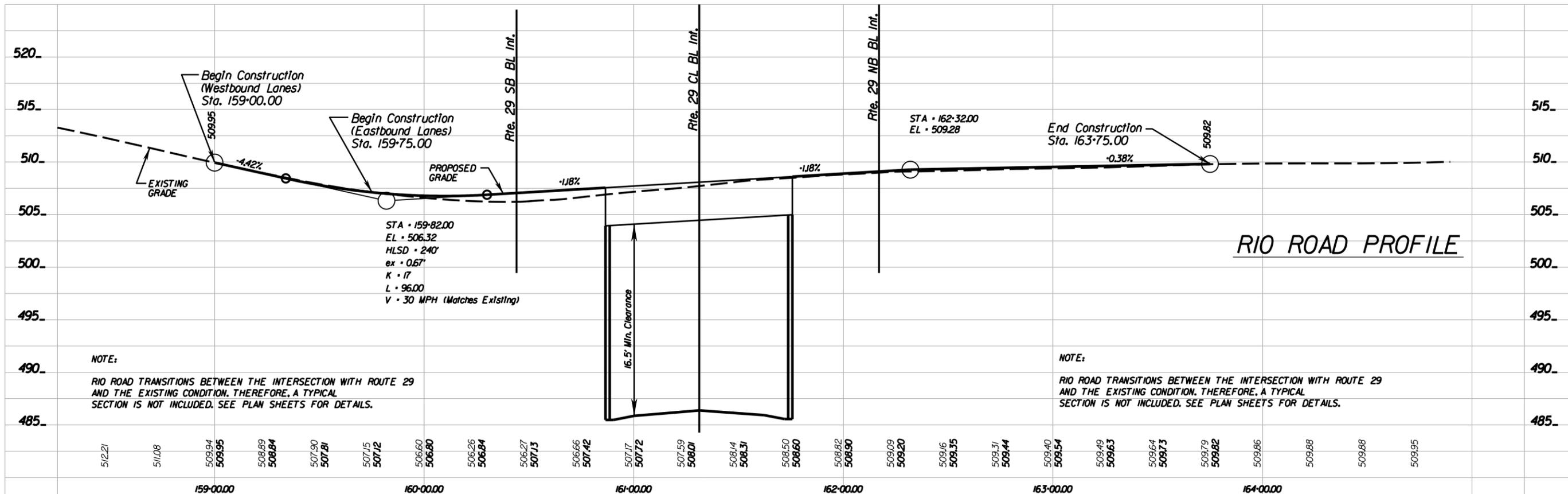
- INCIDENTAL ITEMS LEGEND**
- ⊕ EXISTING UTILITY IMPACTED
 - ⊕ STD. CG-12 REQ'D.
 - ⊕ STD. UD-3 REQ'D.
 - ⊕ STD. UD-4 REQ'D.
 - ⊕ STD. CD-1 REQ'D.
 - ⊕ STD. CD-2 REQ'D.
 - ⊕ STD. EW-12 REQ'D.
 - ⊕ STD. OUTLET PIPE REQ'D.
 - ⊕ STD. GR-9 REQ'D.
 - ⊕ RADIAL CG-3 REQ'D.
 - ⊕ STD. CG-7 REQ'D.
 - ⊕ RADIAL CG-7 REQ'D.
 - ⊕ STD. MB-7D REQ'D.
 - ⊕ STD. MB-8A REQ'D.
 - ⊕ IMPACT ATTENUATOR REQ'D.
 - ⊕ STD. MS-2 REQ'D.
 - ⊕ PROP. 5' 5" CONC. SIDEWALK
 - ⊕ STD. MS-1A REQ'D.
 - ⊕ STD. CG-3 REQ'D.
 - ⊕ STD. CG-12, TYPE B REQ'D.

CONCEPTUAL PLANS
US 29/RIO ROAD
GRADE SEPARATED INTERSECTION

SHEET 6 OF 10



3:41:42 PM Printed By: locatuser



	NORTHBOUND PGL VERTICAL ALIGNMENT
	SOUTHBOUND PGL VERTICAL ALIGNMENT
	RTE. 29 (DEPRESSED) VERTICAL ALIGNMENT

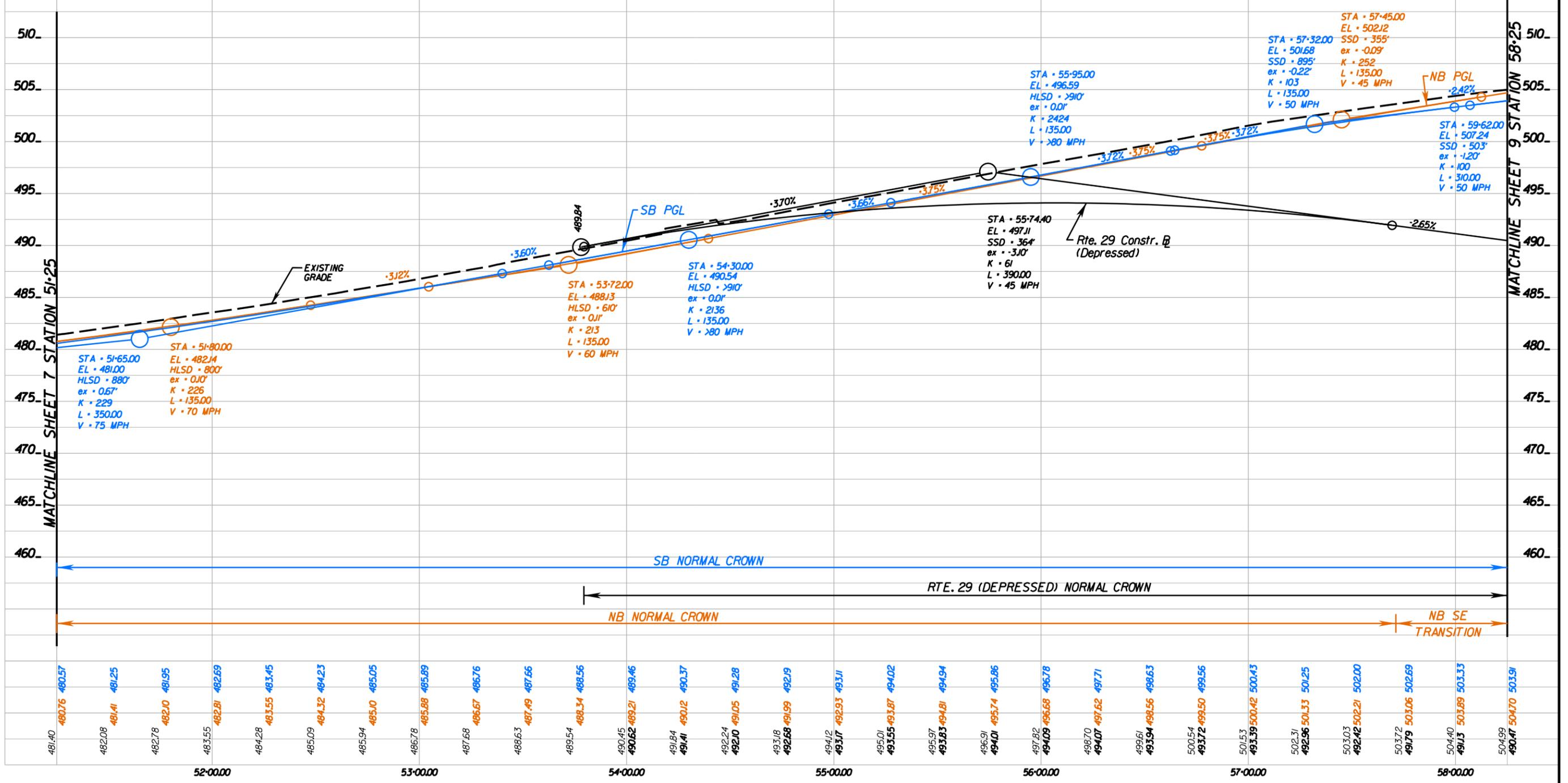
CONCEPTUAL PROFILE
US 29/RIO ROAD
GRADE SEPARATED INTERSECTION

SHEET 7 OF 10



3:48:51 PM Plotted By: locatuser

RTE. 29 PROFILE



	NORTHBOUND PGL VERTICAL ALIGNMENT
	SOUTHBOUND PGL VERTICAL ALIGNMENT
	RTE. 29 (DEPRESSED) VERTICAL ALIGNMENT

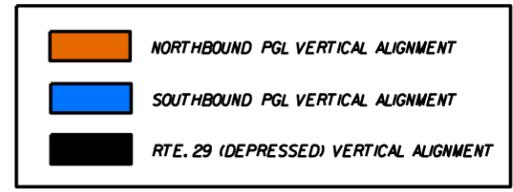
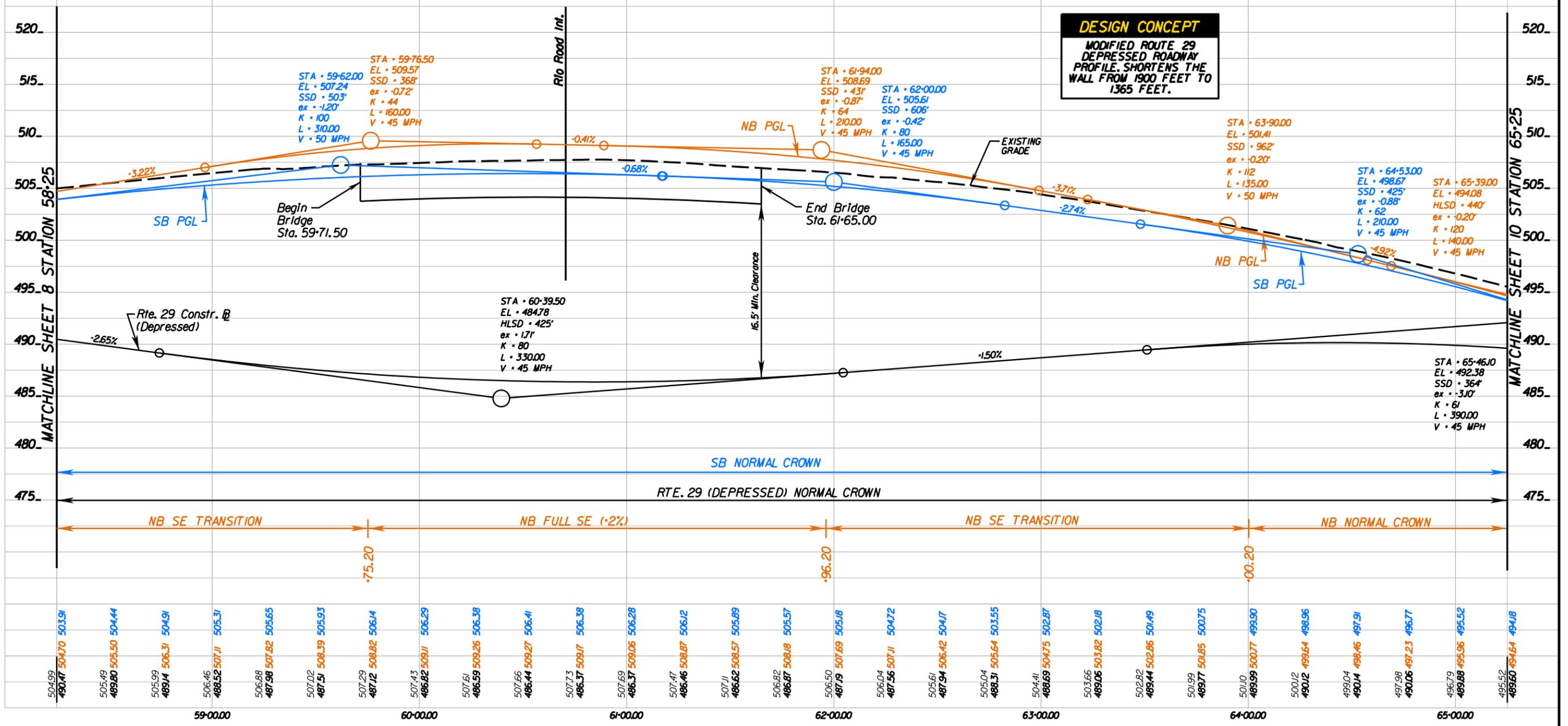
CONCEPTUAL PROFILE
US 29/RIO ROAD
GRADE SEPARATED INTERSECTION

SHEET 8 OF 10



5:37:36 PM Plotted By: locatuser

RTE. 29 PROFILE



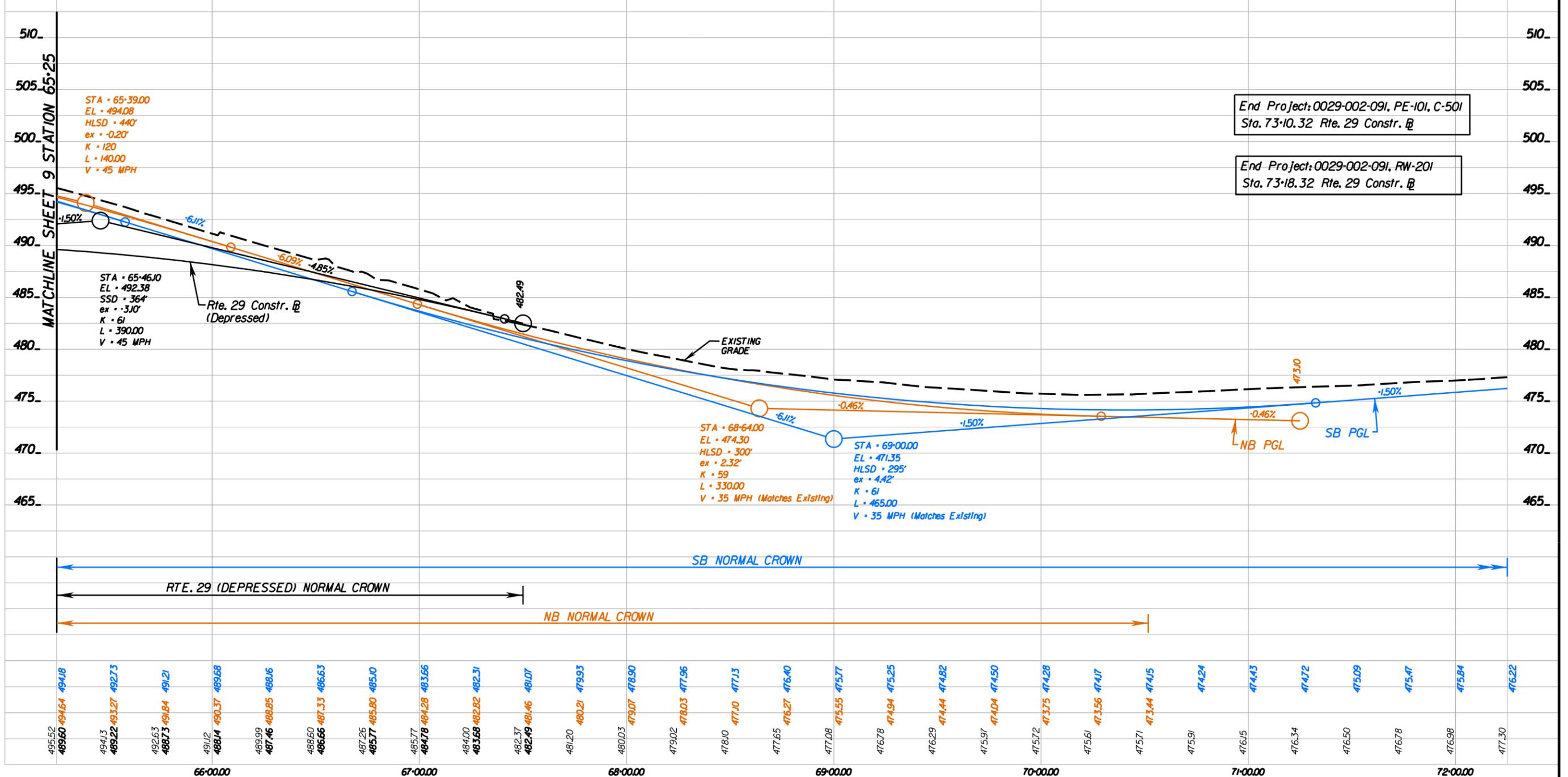
CONCEPTUAL PROFILE
 US 29/RIO ROAD
 GRADE SEPARATED INTERSECTION

SHEET 9 OF 10



3:59:26 PM Plotted By: locatuser

RTE. 29 PROFILE



End Project: 0029-002-091, PE-101, C-501
Sta. 73+10.32 Rte. 29 Constr. @

End Project: 0029-002-091, RW-201
Sta. 73+18.32 Rte. 29 Constr. @

- NORTHBOUND PGL VERTICAL ALIGNMENT
- SOUTHBOUND PGL VERTICAL ALIGNMENT
- RTE. 29 (DEPRESSED) VERTICAL ALIGNMENT

CONCEPTUAL PROFILE
US 29/R10 ROAD
GRADE SEPARATED INTERSECTION

SHEET 10 OF 10



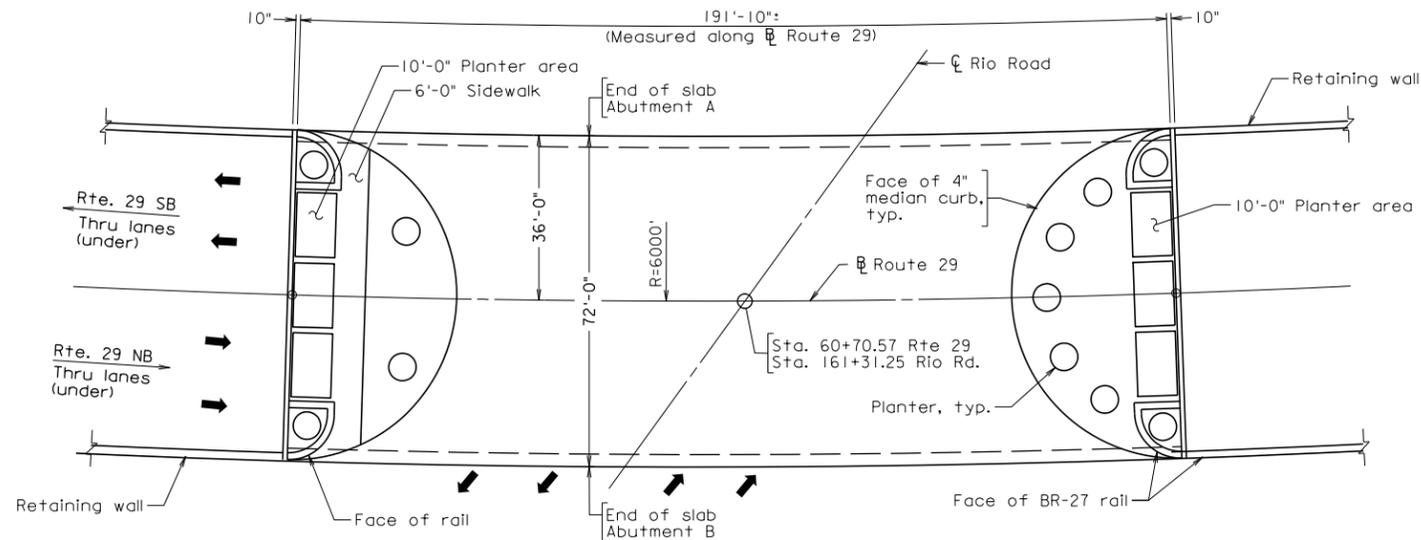
Section 4.3.1.2

Conceptual Structural Plans

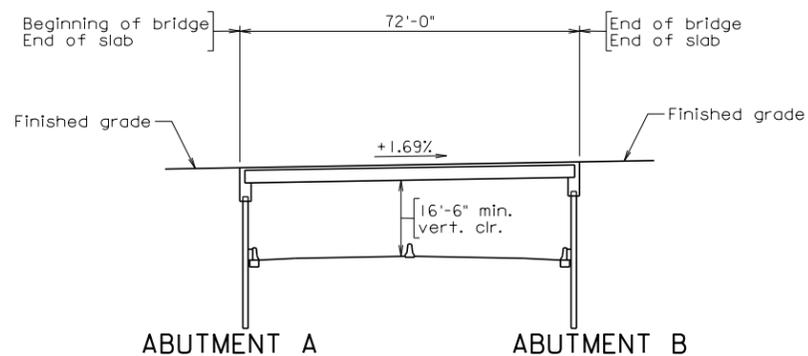


LANE AND **CORMAN**
CONSTRUCTION

In association with: **RK&K**



PLAN



DEVELOPED SECTION ALONG RIO ROAD CONSTR. \perp

STATE	FEDERAL AID		STATE		SHEET NO.
VA.	ROUTE	PROJECT	ROUTE	PROJECT	I
		NHPP-002-7(045)	29	0029-002-091, B651	
NBIS Number:			UPC No. 106136		
Federal Oversight Code: N/A			FHWA Construction and Scour Code: X280-SN		

DESIGN EXCEPTION(S):

None.

GENERAL NOTES:

Width: 10" rail, roadway width 193'-6", 10" rail.

Span layout: 72'-0"

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2007.

Design: AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012; and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2008.

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



COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE ON

RIO ROAD OVER RTE. 29
ALBEMARLE COUNTY

PROJ. 0029-002-901, B651

Recommended for Approval: _____ Date _____
D.B. Project Manager

Approved: _____ Date _____
Chief Engineer

Date: December 2014 © 2014, Commonwealth of Virginia

XXX-XX

Sheet 1 of 4

b01.dgn

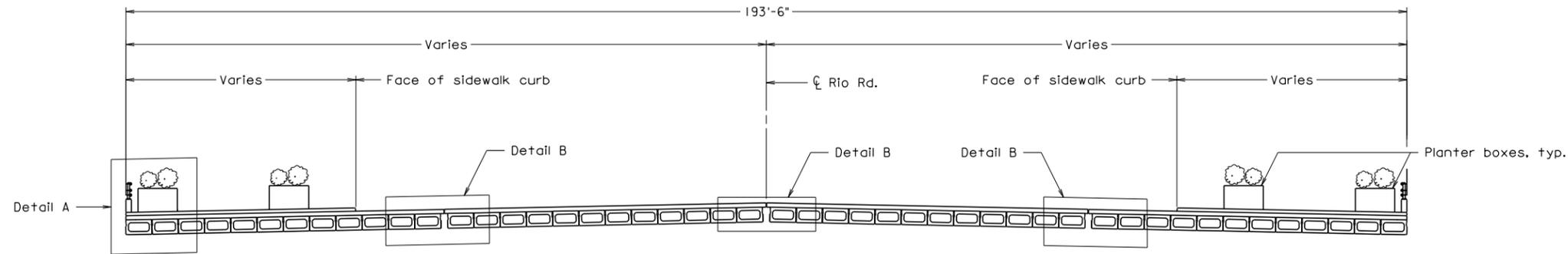
RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION MANAGER
RK&K RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY: RK&K
COORDINATED:
SUPERVISED: Gary S. Johnson
DESIGNED: M. Chris Vaught
DRAWN: Jill R. Boxley
CHECKED: J. Ashley Johnson

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED
FOR CONSTRUCTION

Scale 1" = 20'

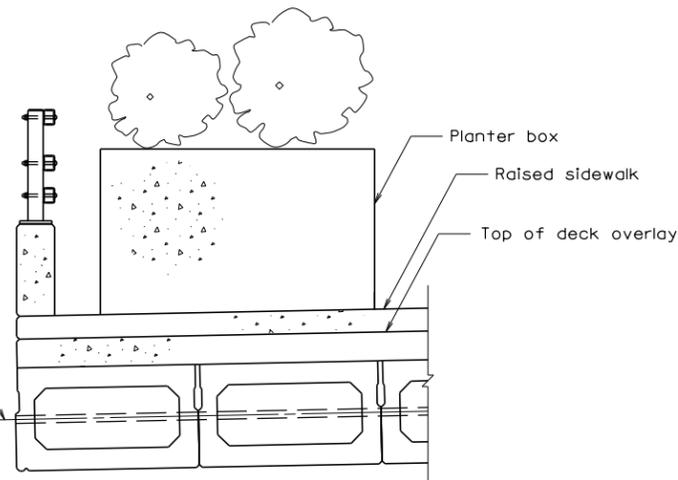
No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 2.		

STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT	NO.
VA.		29		2



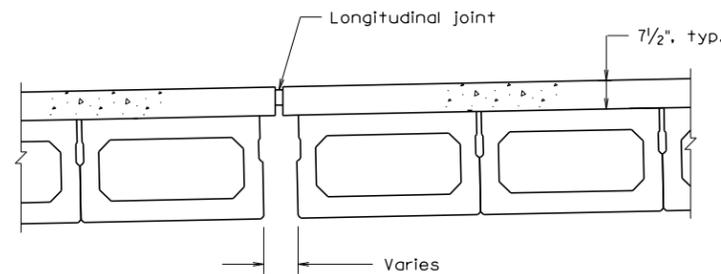
TRANSVERSE SECTION

Scale: 3/32" = 1'-0"



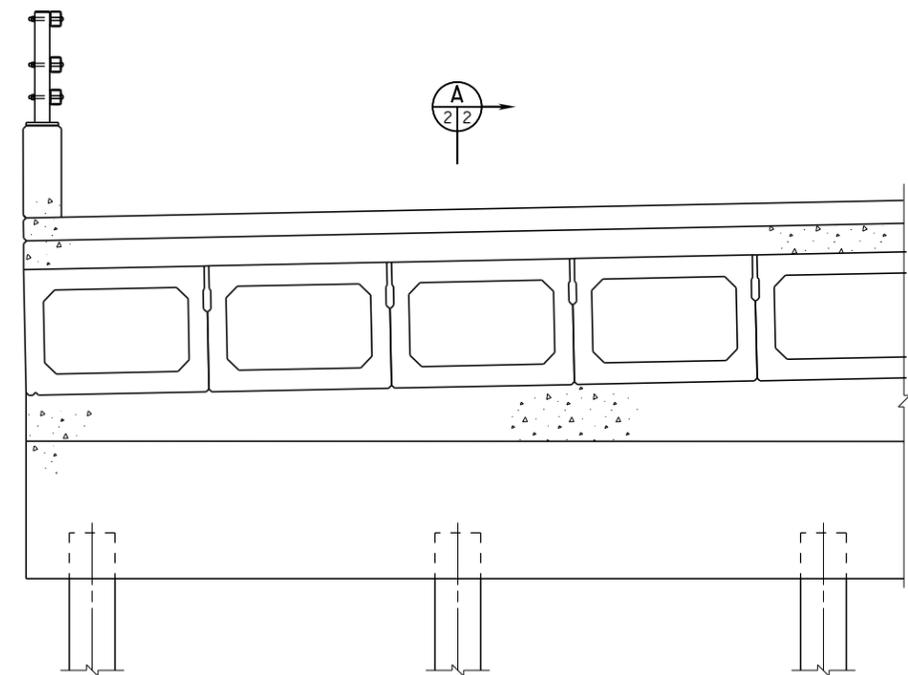
DETAIL A

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



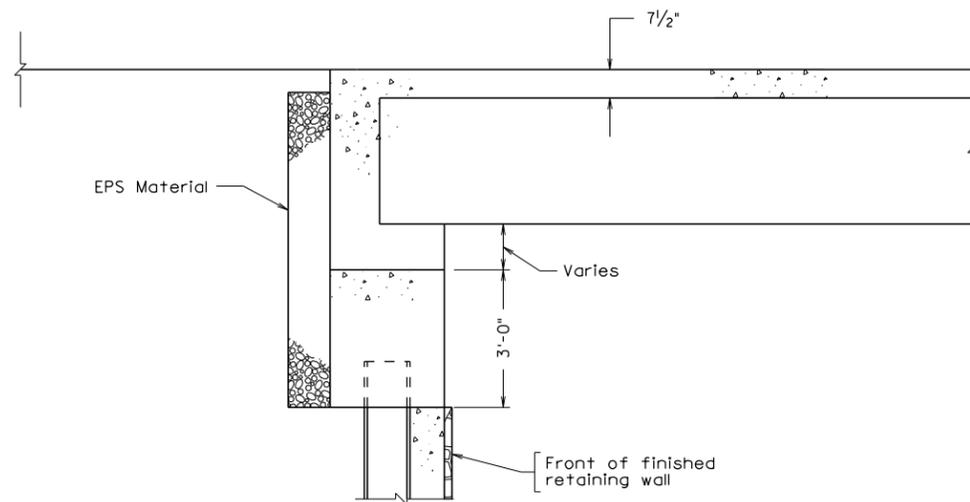
DETAIL B

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



PARTIAL ABUTMENT ELEVATION

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



SECTION A-A

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

PRELIMINARY PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale as noted

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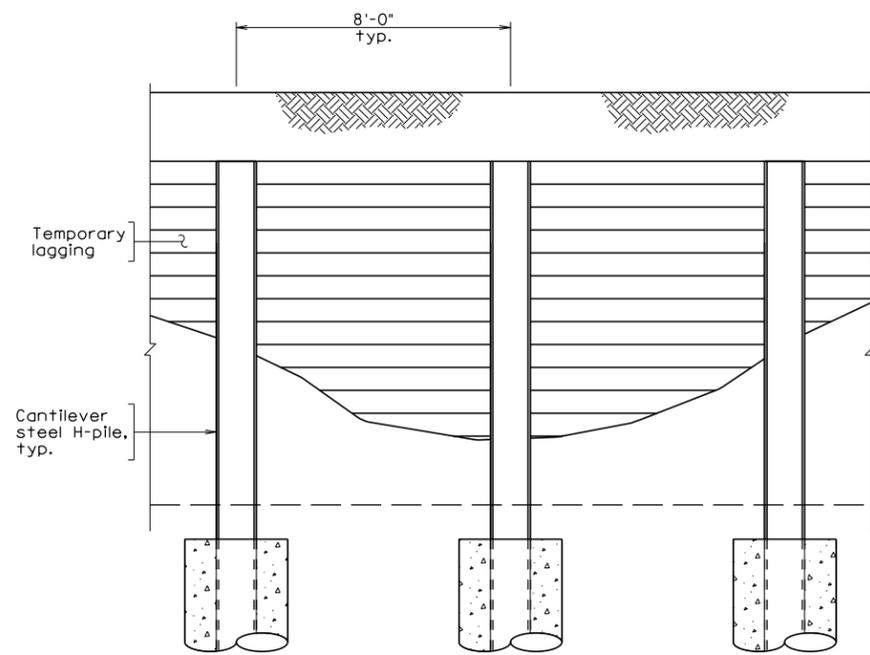


COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
TRANSVERSE SECTION AND ABUTMENT DETAILS			
No.	Description	Date	Sheet No.
	Designed: MCV	Date	Plan No.
	Drawn: JRE	Dec. 2014	2 of 4
	Checked: JJA		
Revisions			

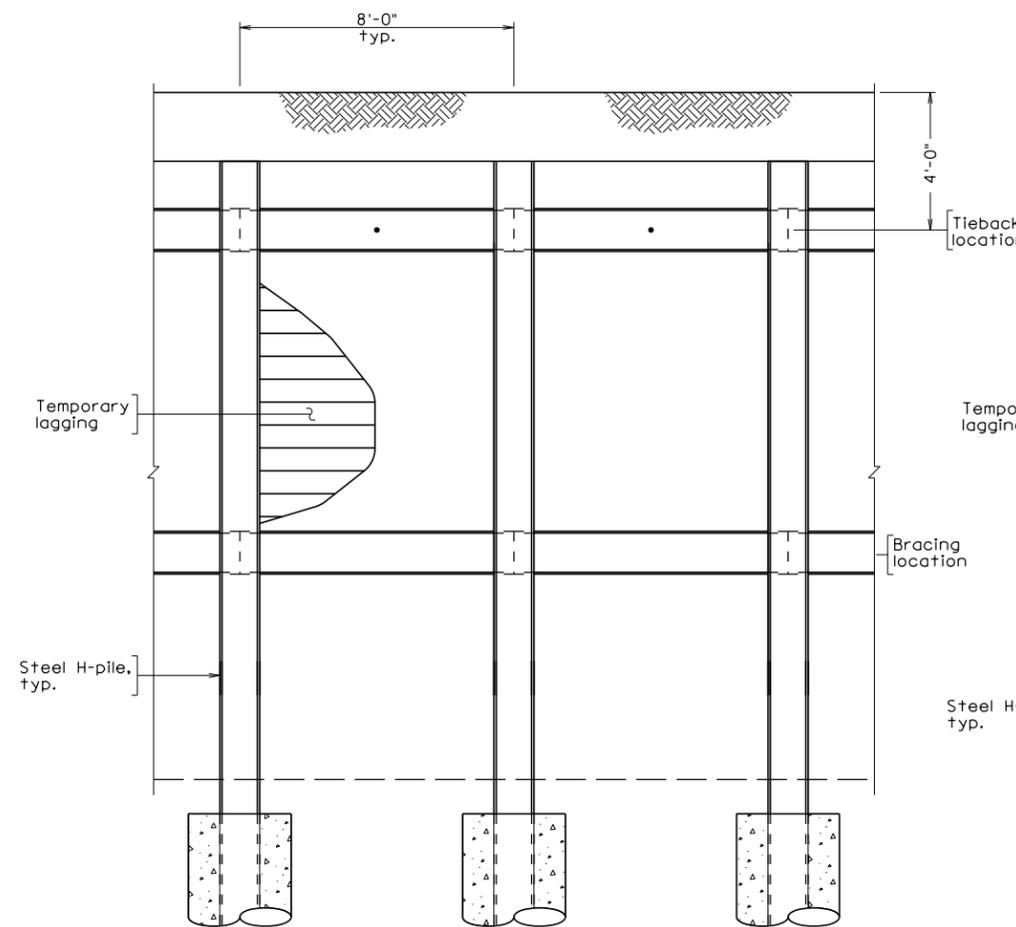
b02.dgn

RK&K
RICHMOND, VA
STRUCTURAL ENGINEER

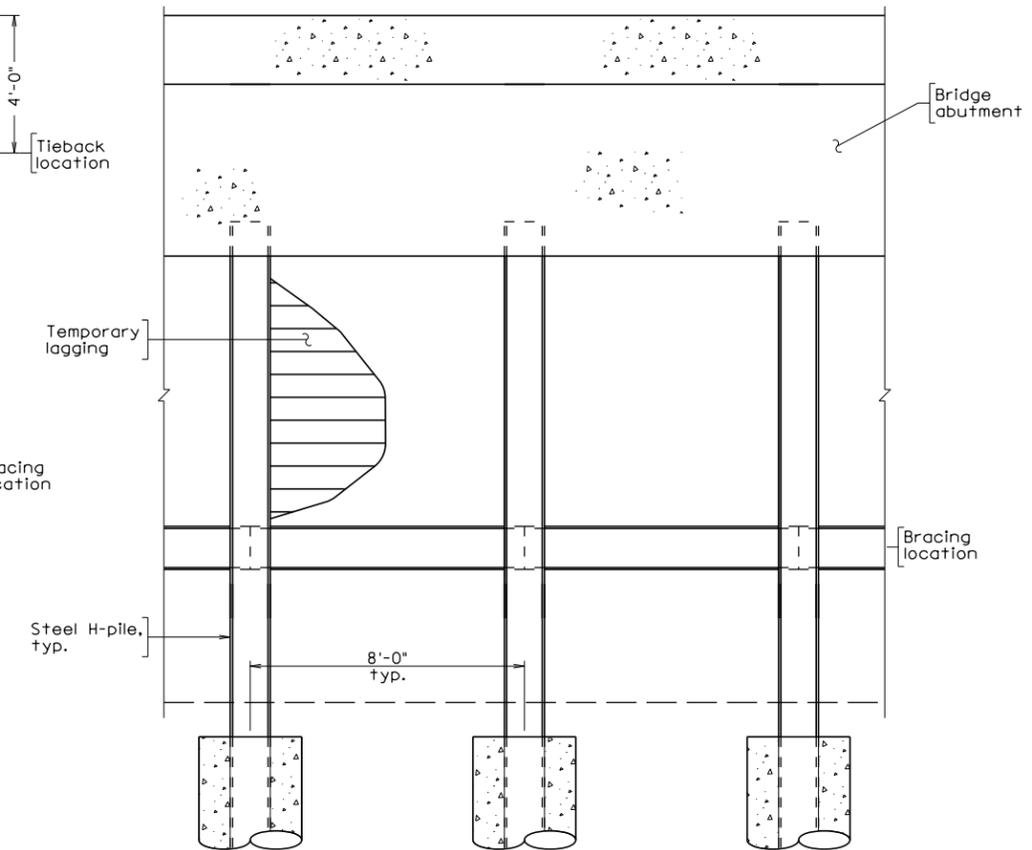
STATE	FEDERAL AID		STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT	NO.
VA.		29		3



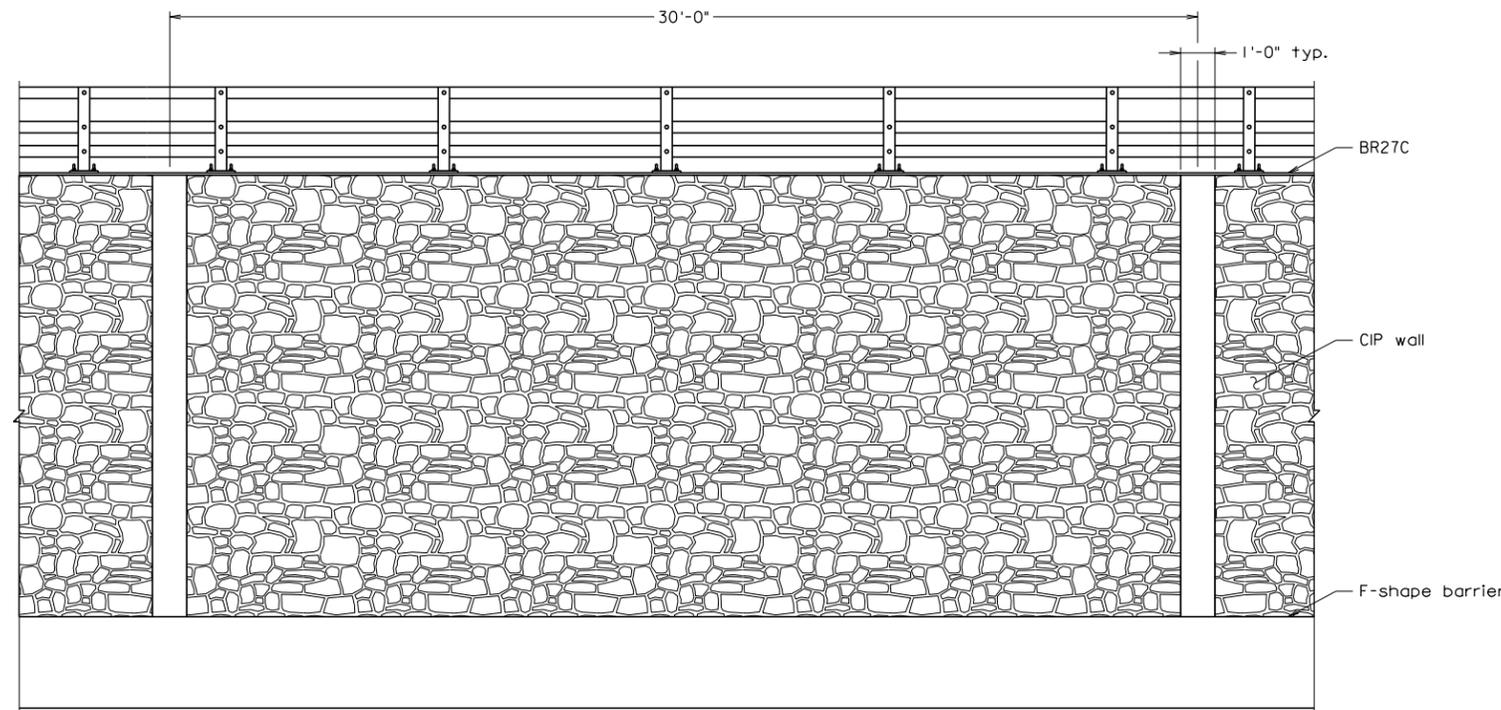
ELEVATION - TYPE A
(Prior to CIP wall placement)



ELEVATION - TYPE B
(Prior to CIP wall placement)



ELEVATION - TYPE C
(Prior to CIP wall placement)



COMPLETED WALL - TYPE A AND B
(Type C will be topped with bridge abutment)

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED
FOR CONSTRUCTION



COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION STRUCTURE AND BRIDGE DIVISION			
RETAINING WALL TYPICAL ELEVATIONS			
No.	Description	Date	Designed: MCV Drawn: JFB Checked: JJA
			Date: Dec. 2014
			Plan No.
			Sheet No. 3 of 4

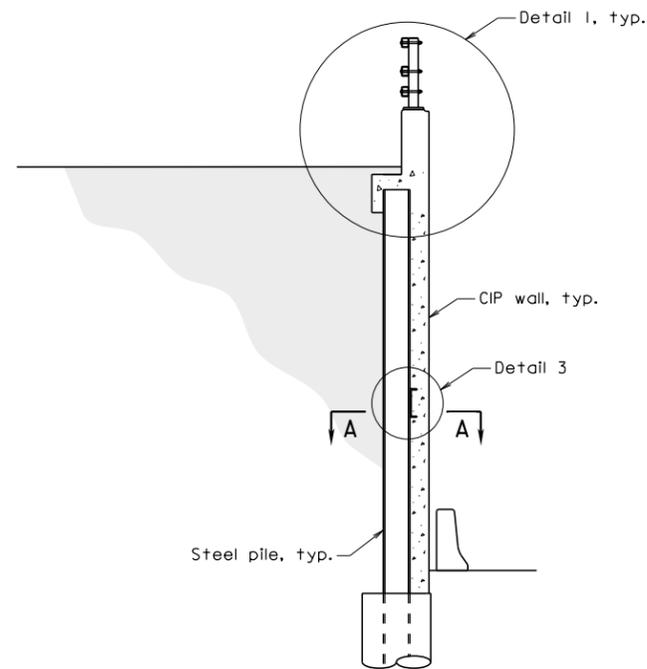
b03.dgn

RK&K
RICHMOND, VA
STRUCTURAL ENGINEER

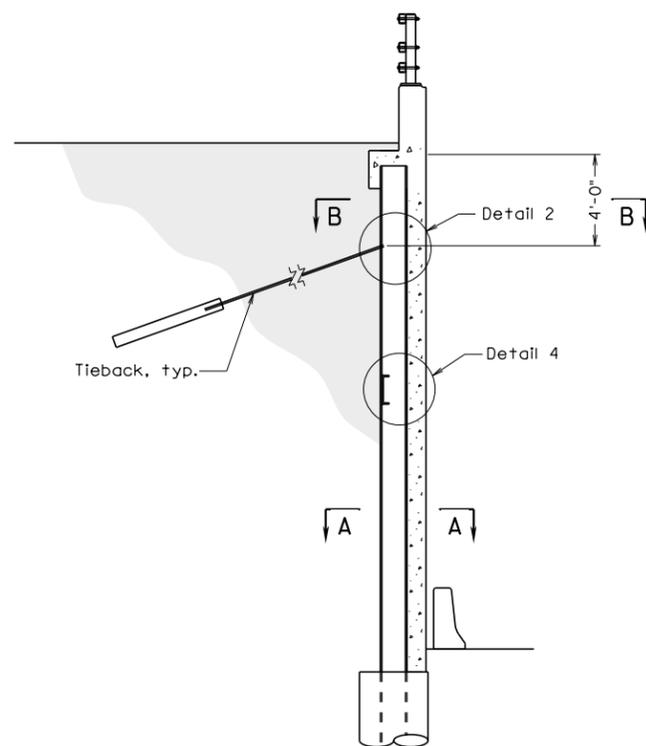
Scale: 3/8" = 1'-0"

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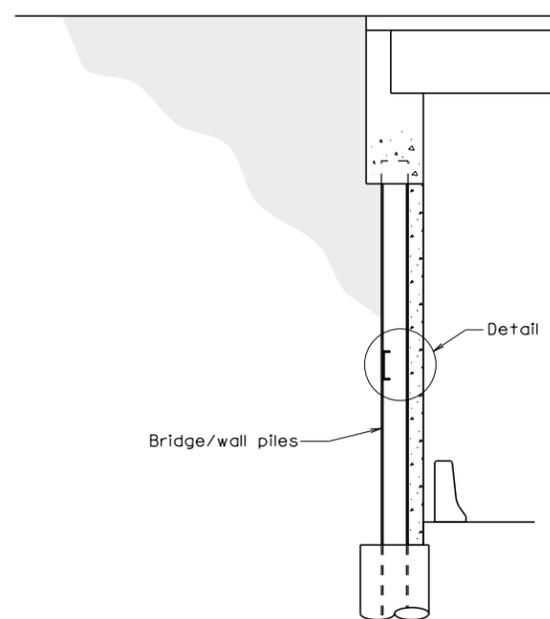
STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	NO.
VA.		29	4



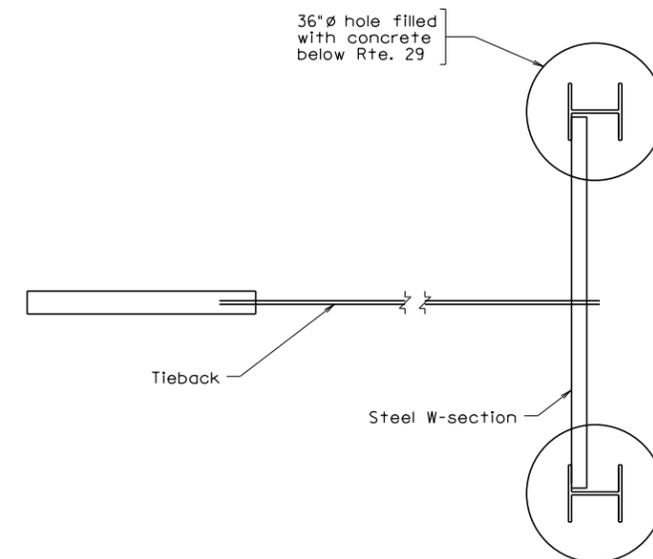
TYPE A



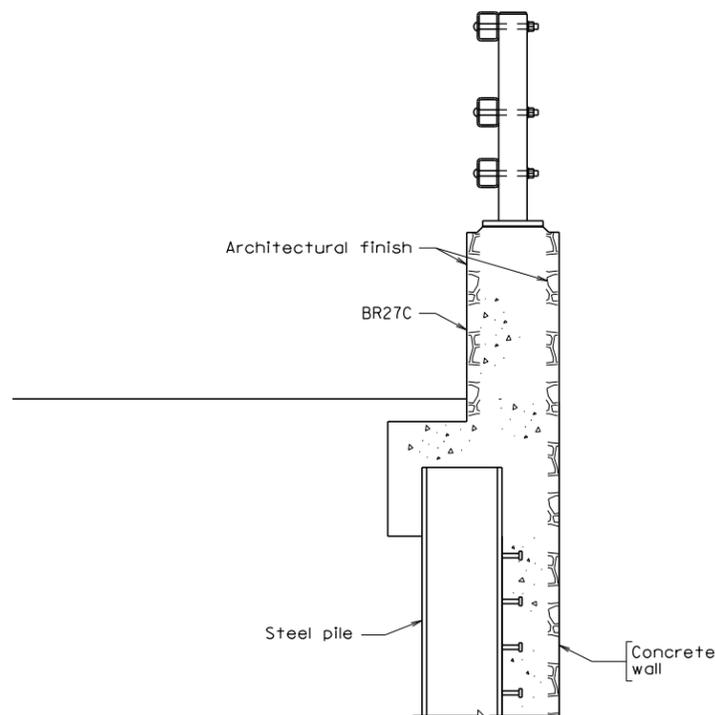
TYPE B



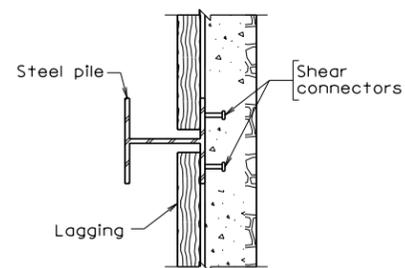
TYPE C



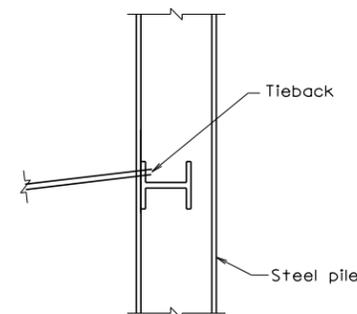
SECTION B-B
(Lagging not shown for clarity)



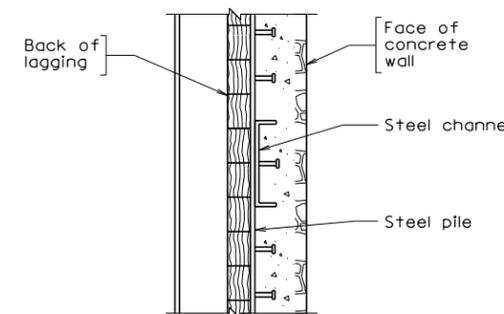
DETAIL I
(Lagging not shown for clarity)



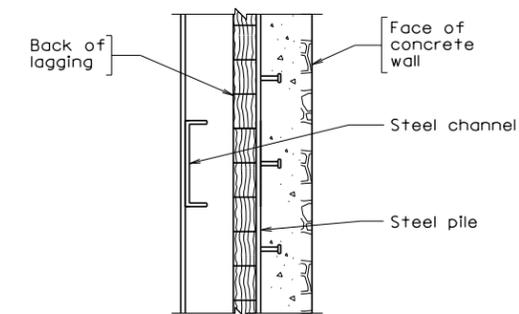
SECTION A-A



DETAIL 2
(Lagging not shown for clarity)



DETAIL 3



DETAIL 4

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED
FOR CONSTRUCTION



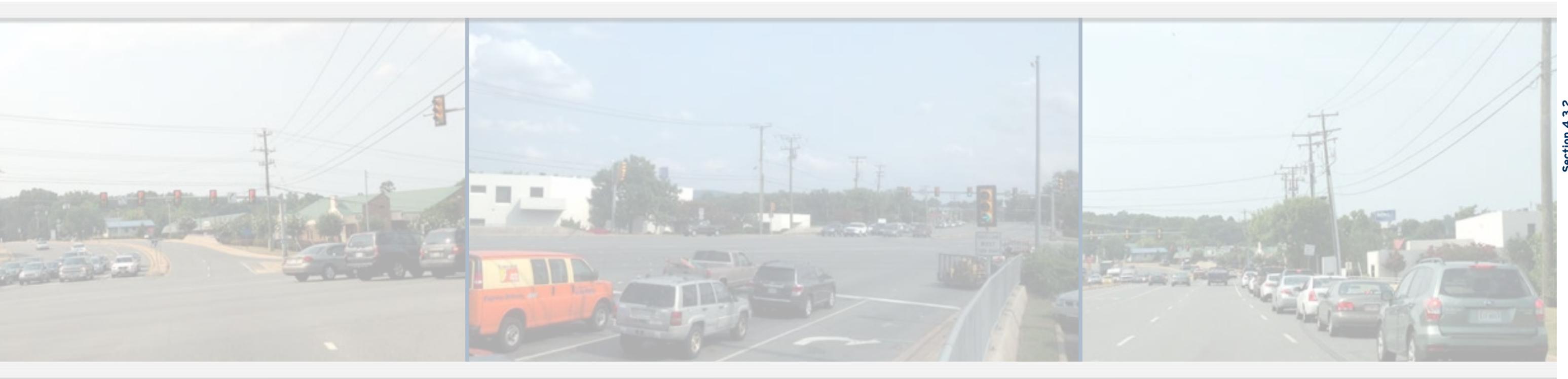
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION	
STRUCTURE AND BRIDGE DIVISION	
RETAINING WALL DETAILS	
No.	Description
Designed: MCV	Date
Drawn: JRE	Plan No.
Checked: JRE	Sheet No.
Revisions	
Dec. 2014	4 of 4

b04.dgn

RK&K
RICHMOND, VA
STRUCTURAL ENGINEER

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Section 4.3.2 US 29 Widening



Section 4.3.2
US 29 Widening

LANE AND **CORMAN**
CONSTRUCTION

In association with: **RK&K**

Section 4.3.2.1

Conceptual Roadway Plans



LANE AND **CORMAN**
CONSTRUCTION

In association with: **RK&K**



COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

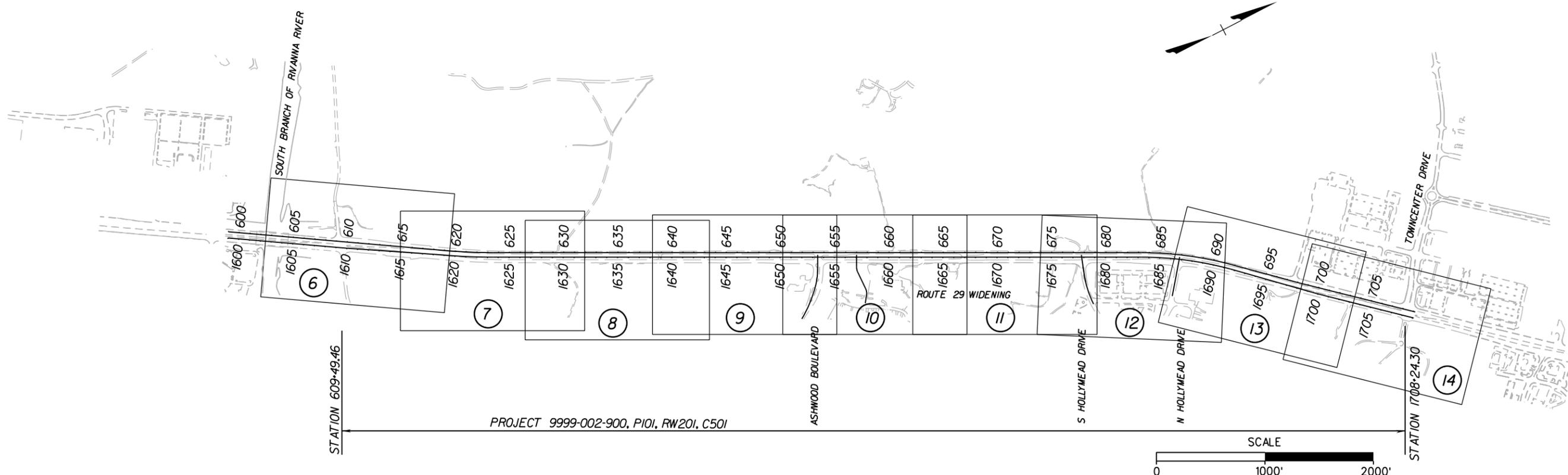
PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY
COUNTY OF ALBEMARLE
U.S. ROUTE 29 (SEMINOLE TRAIL) WIDENING
FROM: POLO GROUNDS DRIVE
TO: TOWNCENTER DRIVE
DESIGN BUILD

CONCEPTUAL PLANS	
SHEET	INDEX OF SHEETS
1	TITLE SHEET (1)
2-6	TYPICAL SECTIONS (5)
7-15	CONCEPTUAL PLANS (9)
16-25	CONCEPTUAL PROFILES (10)

STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.		29	9999-002-900 PI01	1

U.S. ROUTE 29 (SEMINOLE TRAIL)	
URBAN PRINCIPAL ARTERIAL (GS-5)	
FROM: POLO GROUNDS DRIVE	
TO: TOWNCENTER DRIVE	
ADT (2014)	49,000
ADT (2018 Interim Year)	
ADT (2037)	60,000
DHV	4,980
D (%) (design hour)	56%
T (%) (design hour)	6%
V (MPH)	45 MPH+

*50 MPH DESIGN SPEED CRITERIA WAS USED FOR MINIMUM HORIZONTAL RADIUS & STOPPING SIGHT DISTANCE



STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	EQUALITIES	LENGTH INCLUDING BRIDGE(S)		LENGTH EXCLUDING BRIDGE(S)		BRIDGE PROJECT NO.	TYPE PROJECT	DESCRIPTION
					FEET	FEET	MILES	FEET	MILES			
9999-002-900	PE-101		PENG	77383		109,875	20.810	109,875	20.810		PRE./ENG	From: POLO GROUNDS DRIVE To: TOWN CENTER DRIVE
	R-201		ROWA	77383		109,875	20.810	109,875	20.810		R/W	
	C-501		1000	77383		109,875	20.810	109,875	20.810		CONSTR.	

Project Lengths are based on 29 Construction Baseline.

CONCEPTUAL PLANS

ROUTE 29 WIDENING

SHEET 1 OF 25



#USER#
#TIME#

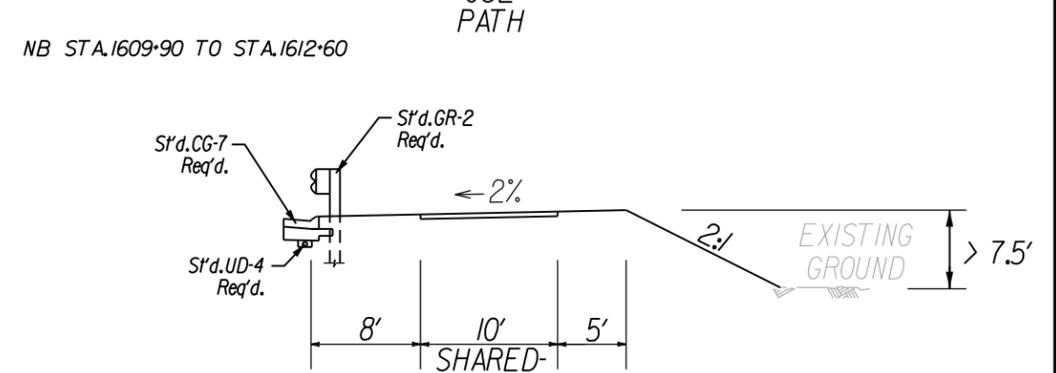
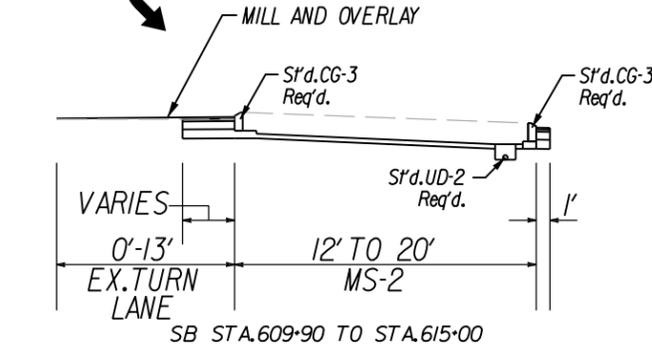
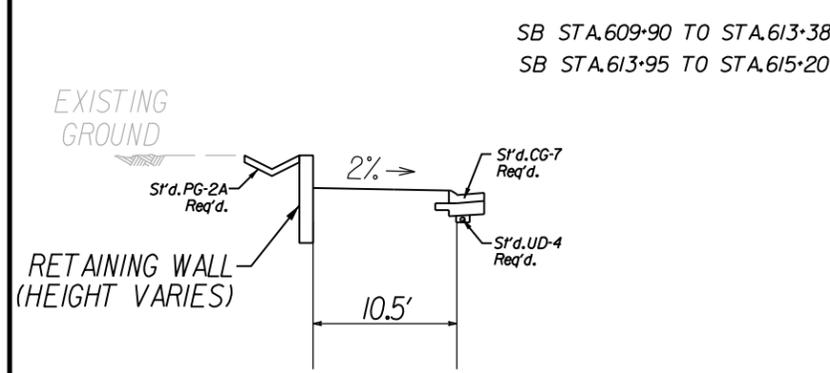
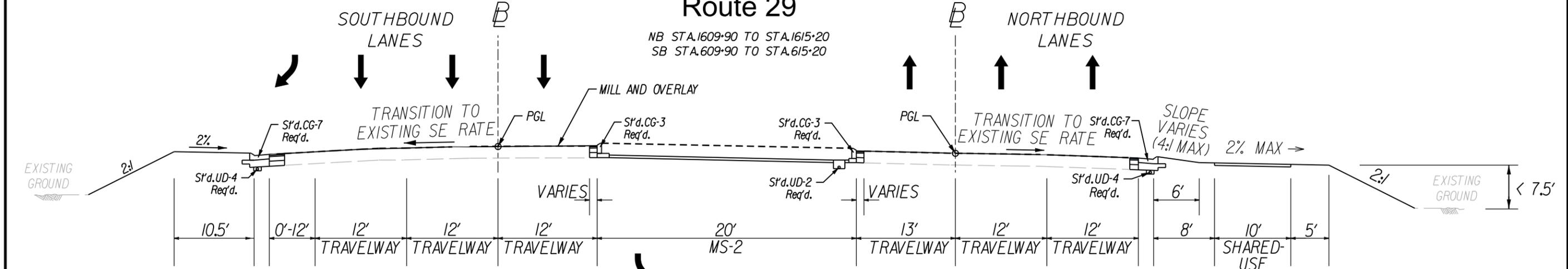
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TYPICAL SECTIONS

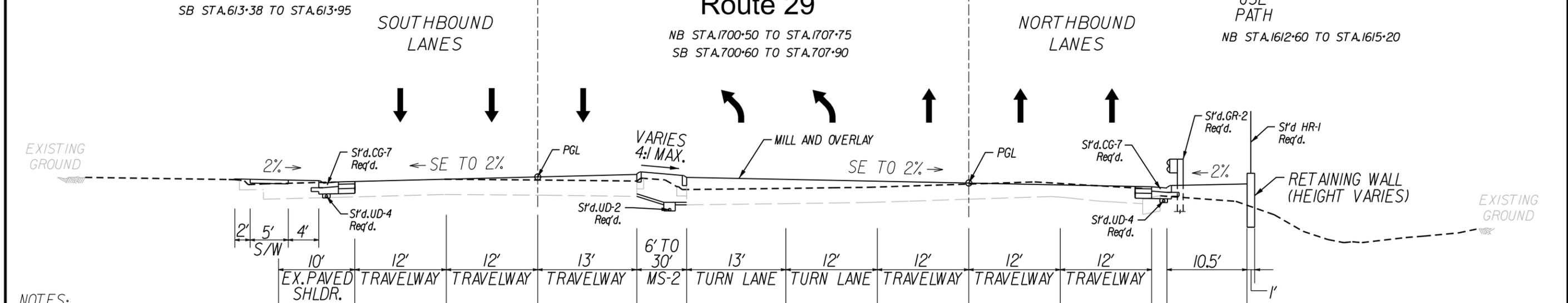
Route 29

NB STA.1609+90 TO STA.1615+20
SB STA.609+90 TO STA.615+20



Route 29

NB STA.1700+50 TO STA.1707+75
SB STA.700+60 TO STA.707+90



NOTES:

1. Refer to the plan sheets for limits of mill and overlay and full depth pavement.
2. Refer to Geotechnical Engineering Data Report for pavement design.
3. Standard Edge Drains (UD-4 and UD-1) and Standard Combination Underdrains (CD-1 and CD-2) will be installed in accordance with the RFP, Section 2.7. They are not depicted on the Conceptual Plans for clarity.
4. Minor retaining wall type to be determined in final design.
5. Existing NB pavement used for shared-use path to be milled & overlaid to ensure proper cross-slope and positive drainage.

CONCEPTUAL TYPICAL SECTIONS

ROUTE 29 WIDENING

SHEET 2 OF 25



NOT TO SCALE

ST/MS/USERS

#DATE# #FILE#

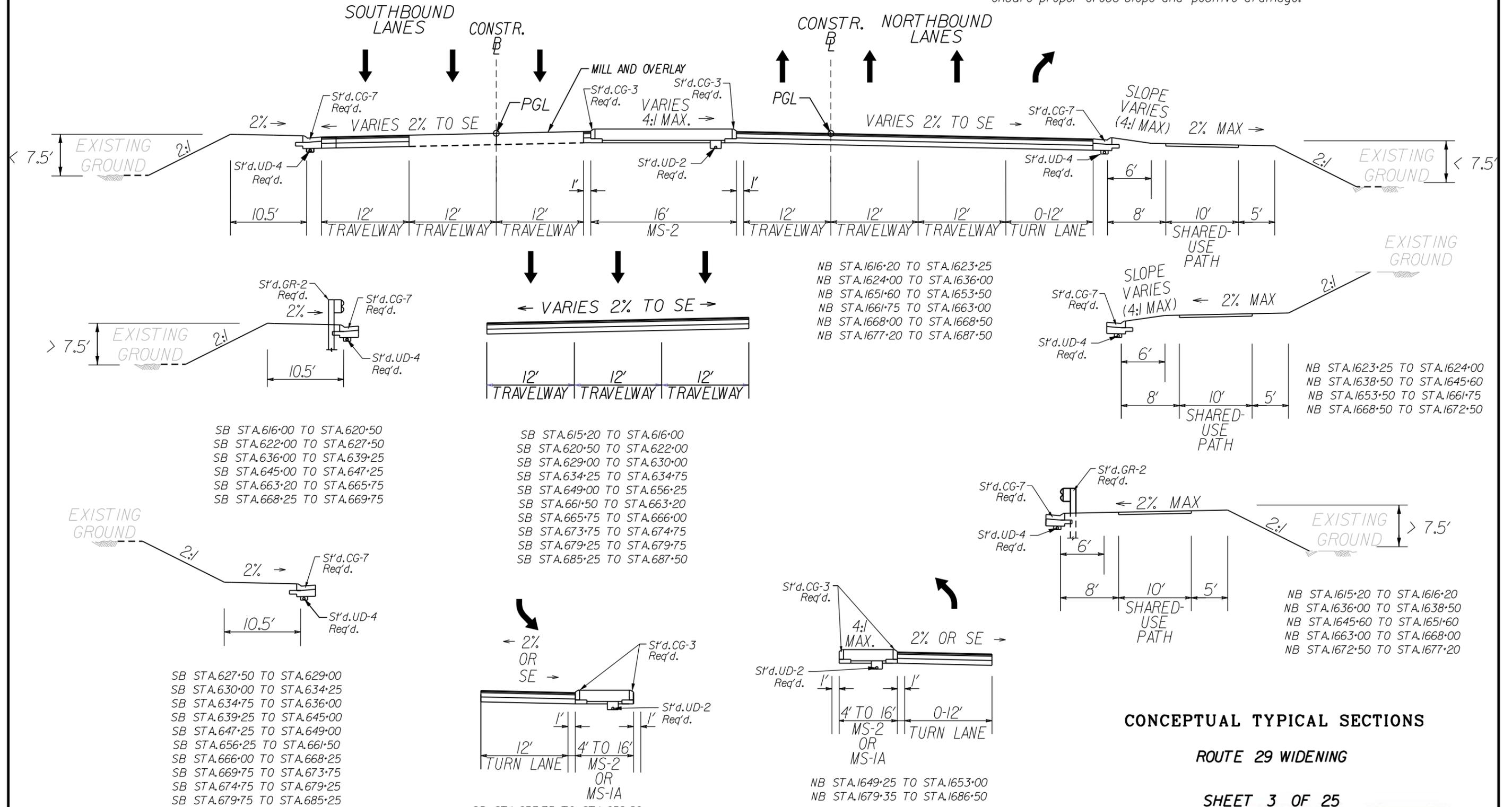
TYPICAL SECTIONS

Route 29

NB STA.1615+20 TO STA.1687+50
SB STA.615+20 TO STA.687+50

NOTES:

1. Refer to the plan sheets for limits of mill and overlay and full depth pavement.
2. Refer to Geotechnical Engineering Data Report for pavement design.
3. Standard Edge Drains (UD-4 and UD-1) and Standard Combination Underdrains (CD-1 and CD-2) will be installed in accordance with the RFP, Section 2.7. They are not depicted on the Conceptual Plans for clarity.
4. Minor retaining wall type to be determined in final design.
5. Existing NB pavement used for shared-use path to be milled & overlaid to ensure proper cross-slope and positive drainage.



CONCEPTUAL TYPICAL SECTIONS

ROUTE 29 WIDENING

SHEET 3 OF 25



NOT TO SCALE

ST/MS/USERS

#DATE# #FILE#

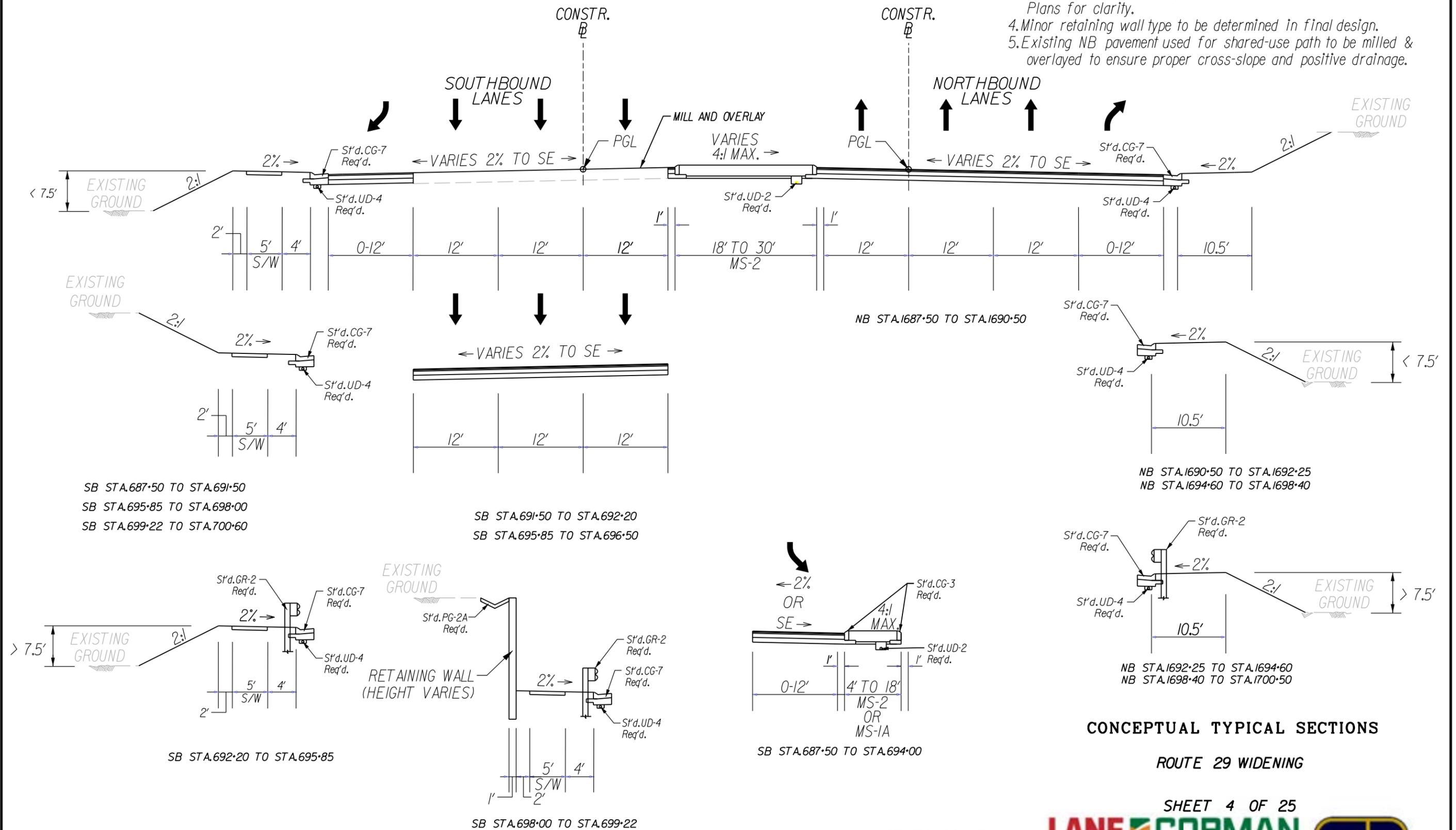
TYPICAL SECTIONS

Route 29

NB STA.1687+50 TO STA.1700+50
SB STA.687+50 TO STA.700+60

NOTES:

1. Refer to the plan sheets for limits of mill and overlay and full depth pavement.
2. Refer to Geotechnical Engineering Data Report for pavement design.
3. Standard Edge Drains (UD-4 and UD-1) and Standard Combination Underdrains (CD-1 and CD-2) will be installed in accordance with the RFP, Section 2.7. They are not depicted on the Conceptual Plans for clarity.
4. Minor retaining wall type to be determined in final design.
5. Existing NB pavement used for shared-use path to be milled & overlaid to ensure proper cross-slope and positive drainage.



CONCEPTUAL TYPICAL SECTIONS

ROUTE 29 WIDENING

SHEET 4 OF 25

NOT TO SCALE

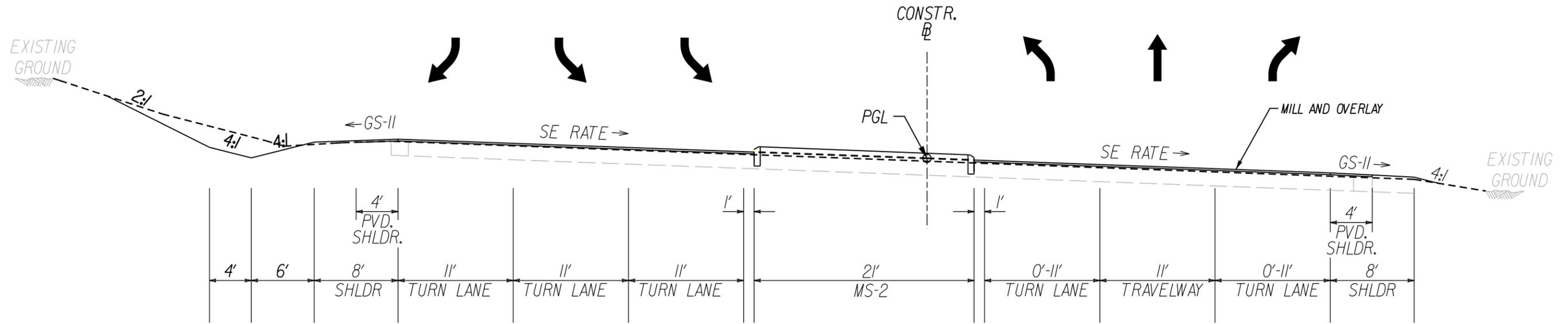


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#TIMES

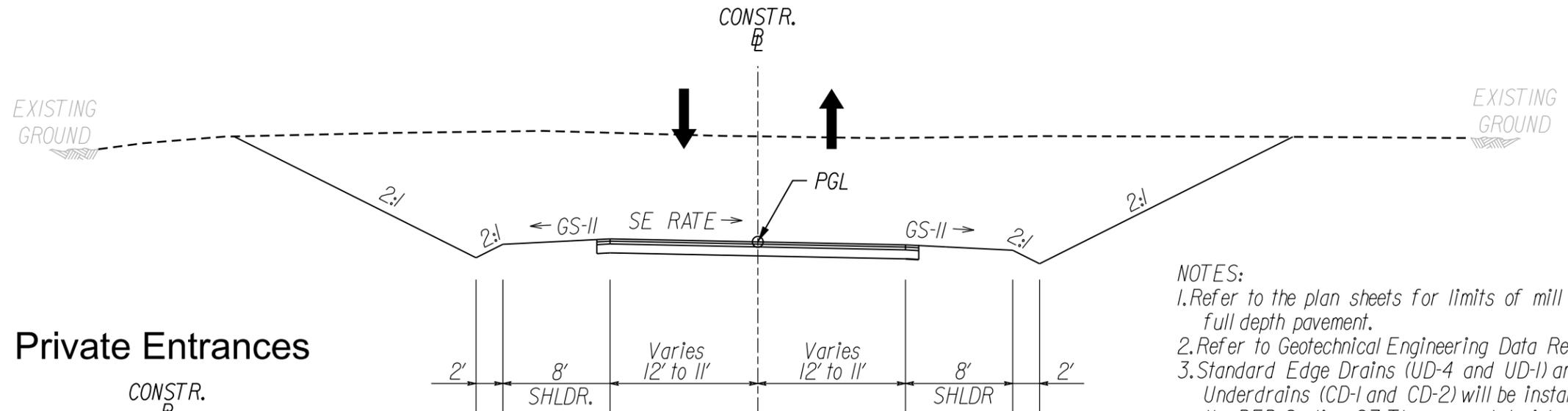
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TYPICAL SECTIONS

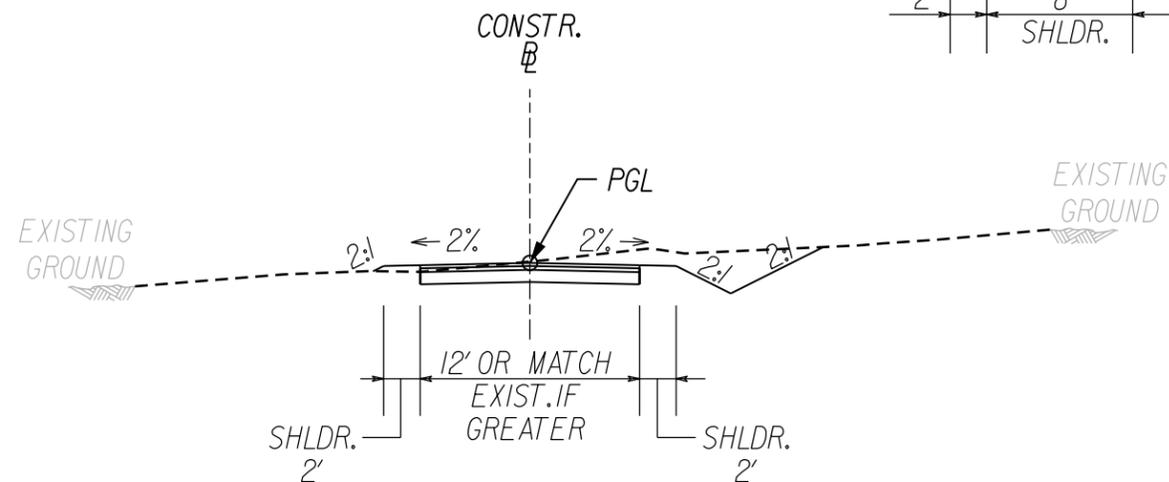
Ashwood Boulevard



Ridgewood Drive



Private Entrances



NOTES:

1. Refer to the plan sheets for limits of mill and overlay and full depth pavement.
2. Refer to Geotechnical Engineering Data Report for pavement design.
3. Standard Edge Drains (UD-4 and UD-1) and Standard Combination Underdrains (CD-1 and CD-2) will be installed in accordance with the RFP, Section 2.7. They are not depicted on the Conceptual Plans for clarity.
4. Minor retaining wall type to be determined in final design.
5. Existing NB pavement used for shared-use path to be milled & overlaid to ensure proper cross-slope and positive drainage.

CONCEPTUAL TYPICAL SECTIONS

ROUTE 29 WIDENING

SHEET 5 OF 25



NOT TO SCALE

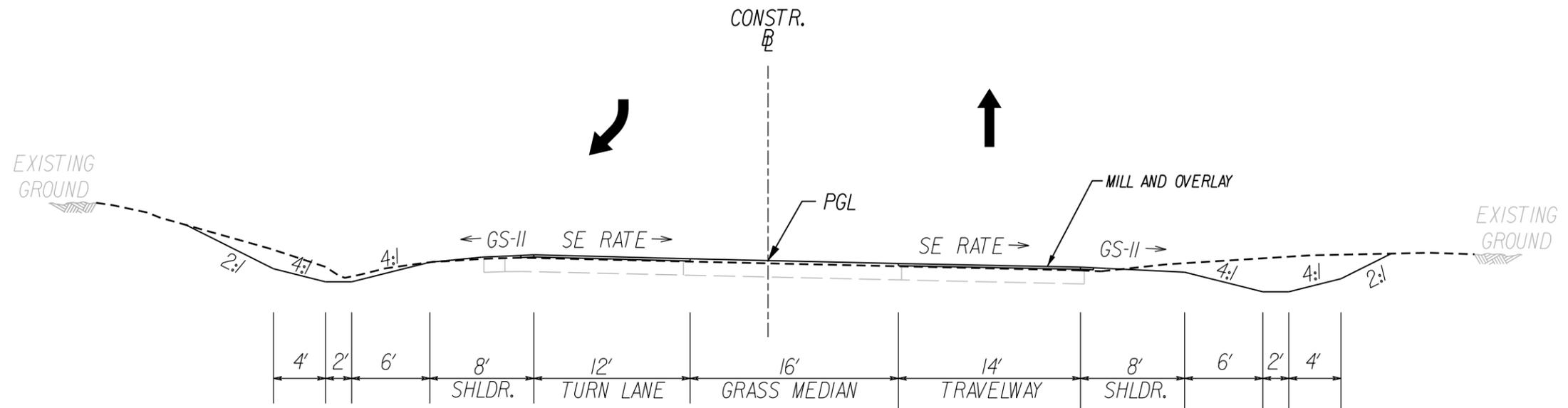
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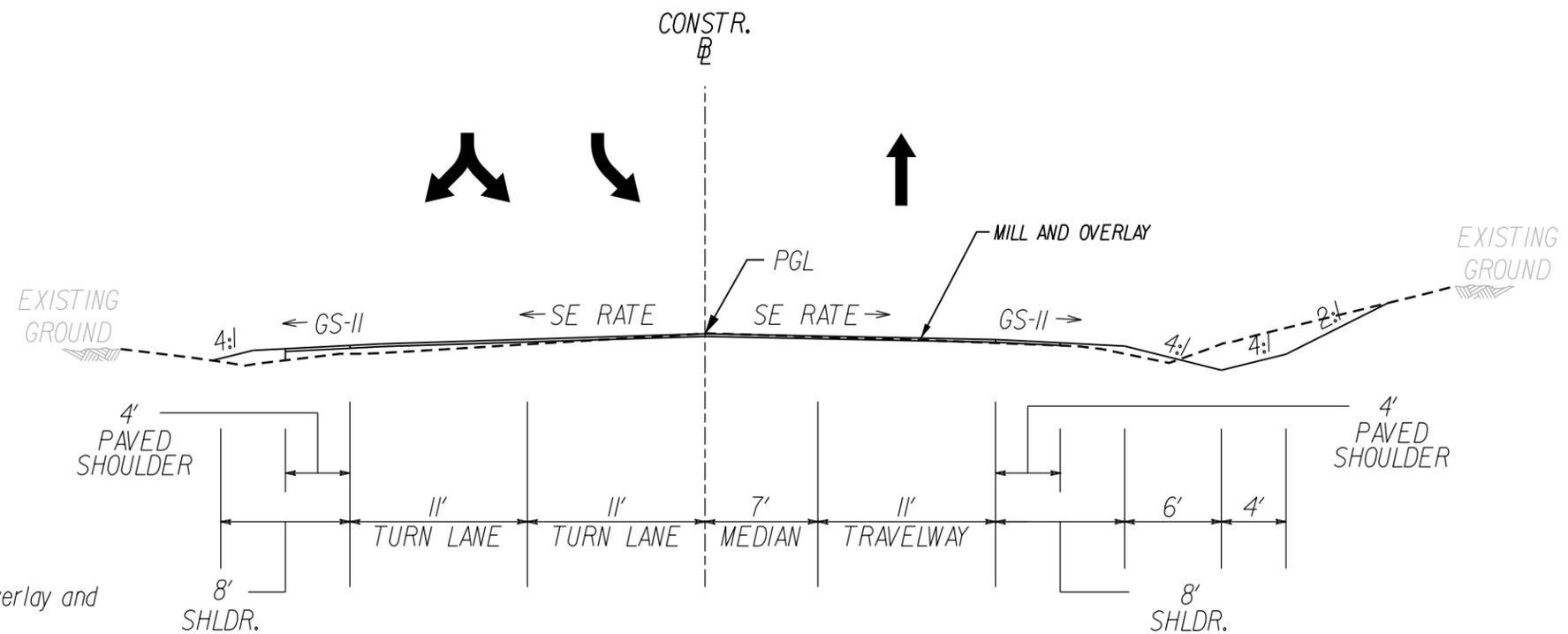
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TYPICAL SECTIONS

South Hollymead Drive



North Hollymead Drive



NOTES:

1. Refer to the plan sheets for limits of mill and overlay and full depth pavement.
2. Refer to Geotechnical Engineering Data Report for pavement design.
3. Standard Edge Drains (UD-4 and UD-1) and Standard Combination Underdrains (CD-1 and CD-2) will be installed in accordance with the RFP, Section 2.7. They are not depicted on the Conceptual Plans for clarity.
4. Minor retaining wall type to be determined in final design.
5. Existing NB pavement used for shared-use path to be milled & overlaid to ensure proper cross-slope and positive drainage.

CONCEPTUAL TYPICAL SECTIONS

ROUTE 29 WIDENING

SHEET 6 OF 25

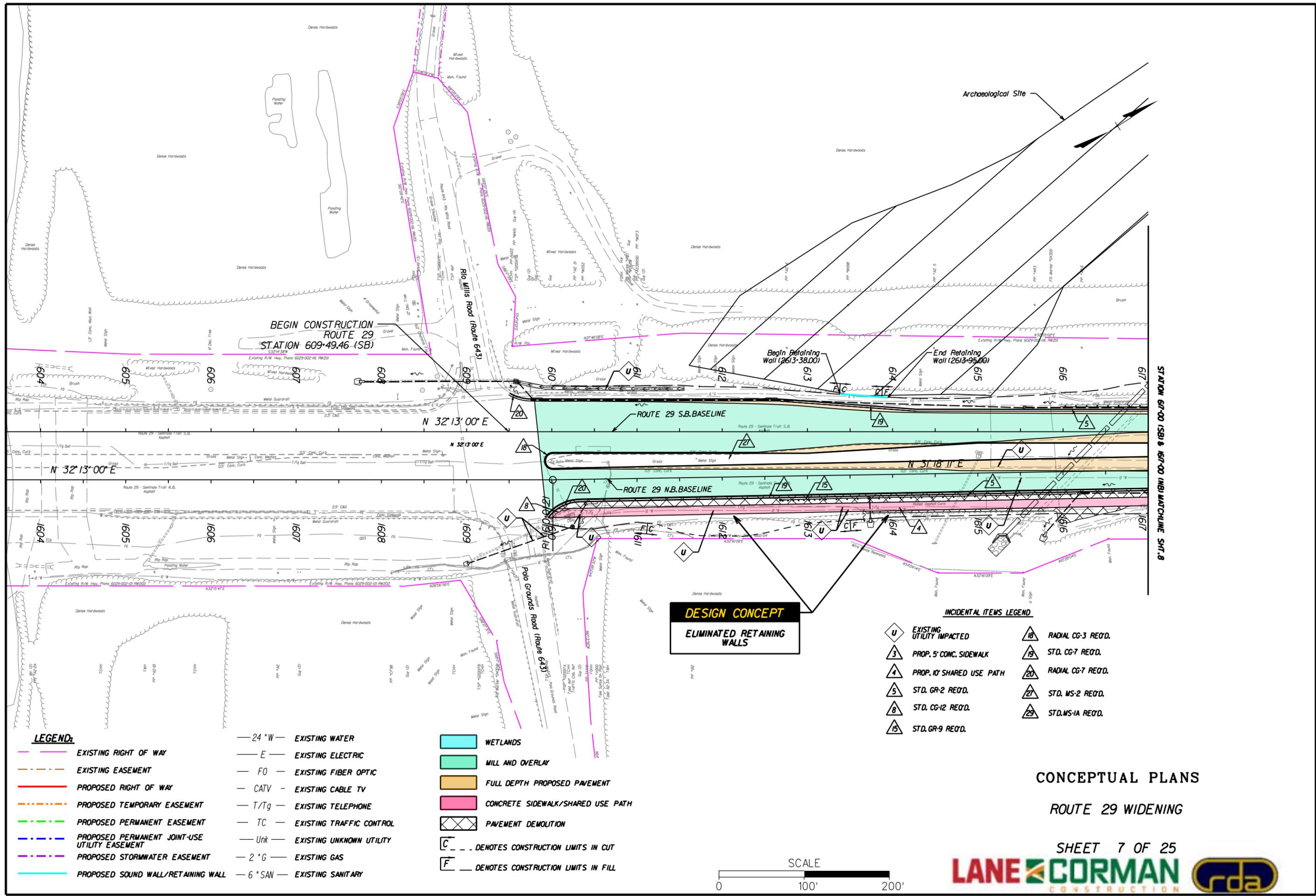
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BEGIN CONSTRUCTION
ROUTE 29
STATION 609+49.46 (SB)

Begin Retaining Wall (2613-38.00)

End Retaining Wall (2613-95.00)

STATION 617+00 (SB) & 617+00 (NB) MATCHLINE SHF-8

DESIGN CONCEPT
ELIMINATED RETAINING WALLS

INCIDENTAL ITEMS LEGEND

- | | | | |
|----|---------------------------|----|--------------------|
| U | EXISTING UTILITY IMPACTED | 18 | RADIAL CG-3 REQ'D. |
| 3 | PROP. 5' CONC. SIDEWALK | 19 | STD. CG-7 REQ'D. |
| 4 | PROP. 10' SHARED USE PATH | 20 | RADIAL CG-7 REQ'D. |
| 5 | STD. GR-2 REQ'D. | 21 | STD. MS-2 REQ'D. |
| 8 | STD. CG-12 REQ'D. | 29 | STD. MS-1A REQ'D. |
| 15 | STD. GR-9 REQ'D. | | |

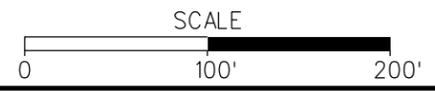
LEGEND:

- | | |
|------------|---|
| — 24" W — | EXISTING WATER |
| — E — | EXISTING ELECTRIC |
| — FO — | EXISTING FIBER OPTIC |
| — CATV — | EXISTING CABLE TV |
| — T/Tg — | EXISTING TELEPHONE |
| — TC — | EXISTING TRAFFIC CONTROL |
| — Unk — | EXISTING UNKNOWN UTILITY |
| — 2" G — | EXISTING GAS |
| — 6" SAN — | EXISTING SANITARY |
| — — | EXISTING RIGHT OF WAY |
| — — | EXISTING EASEMENT |
| — — | PROPOSED RIGHT OF WAY |
| — — | PROPOSED TEMPORARY EASEMENT |
| — — | PROPOSED PERMANENT EASEMENT |
| — — | PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT |
| — — | PROPOSED STORMWATER EASEMENT |
| — — | PROPOSED SOUND WALL/RETAINING WALL |

- | | |
|---------------------|-------------------------------------|
| [Light Blue Box] | WETLANDS |
| [Green Box] | MILL AND OVERLAY |
| [Orange Box] | FULL DEPTH PROPOSED PAVEMENT |
| [Pink Box] | CONCRETE SIDEWALK/SHARED USE PATH |
| [Cross-hatched Box] | PAVEMENT DEMOLITION |
| [C in Box] | DENOTES CONSTRUCTION LIMITS IN CUT |
| [F in Box] | DENOTES CONSTRUCTION LIMITS IN FILL |

CONCEPTUAL PLANS
ROUTE 29 WIDENING

SHEET 7 OF 25



#USERS#

#DATE# #FILE#

STATION 617-00 (SBI) & 167-00 (NBI) MATCHLINE SHT.7

STATION 629-00 (SBI) & 1629-00 (NBI) MATCHLINE SHT.9

Curve 29SB-1
 PI • 621+25.13
 DELTA • 4° 55' 46.83" (LT)
 D • 1' 06' 07"
 T • 223.80'
 L • 447.32'
 R • 5199.00'
 PC • 619+01.34
 PT • 623+48.65
 V • 50 mph

Curve 29NB-1
 PI • 1621+27.06
 DELTA • 4° 55' 46.83" (LT)
 D • 1' 05' 36"
 T • 225.60'
 L • 450.93'
 R • 5241.00'
 PC • 1619+01.45
 PT • 1623+52.38
 V • 50 mph

DESIGN CONCEPT
 REDUCED SWM EASEMENT

DESIGN CONCEPT
 ELIMINATED RETAINING WALL

DESIGN CONCEPT
 USE EXISTING NB PAVEMENT FOR SUP

LEGEND:

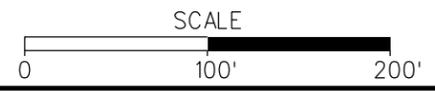
- 24" W — EXISTING WATER
- E — EXISTING ELECTRIC
- FO — EXISTING FIBER OPTIC
- CATV — EXISTING CABLE TV
- T/Tg — EXISTING TELEPHONE
- TC — EXISTING TRAFFIC CONTROL
- Unk — EXISTING UNKNOWN UTILITY
- 2" G — EXISTING GAS
- 6" SAN — EXISTING SANITARY
- — EXISTING RIGHT OF WAY
- — EXISTING EASEMENT
- — PROPOSED RIGHT OF WAY
- — PROPOSED TEMPORARY EASEMENT
- — PROPOSED PERMANENT EASEMENT
- — PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
- — PROPOSED STORMWATER EASEMENT
- — PROPOSED SOUND WALL/RETAINING WALL

- WETLANDS
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- CONCRETE SIDEWALK/SHARED USE PATH
- PAVEMENT DEMOLITION
- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

- INCIDENTAL ITEMS LEGEND**
- U EXISTING UTILITY IMPACTED
 - 3 PROP. 5' CONC. SIDEWALK
 - 4 PROP. 10' SHARED USE PATH
 - 5 STD. GR-2 REQ'D.
 - 8 STD. CG-12 REQ'D.
 - 15 STD. GR-9 REQ'D.
 - 18 RADIAL CG-3 REQ'D.
 - 19 STD. CG-7 REQ'D.
 - 20 RADIAL CG-7 REQ'D.
 - 21 STD. MS-2 REQ'D.
 - 29 STD. MS-1A REQ'D.

CONCEPTUAL PLANS
 ROUTE 29 WIDENING

SHEET 8 OF 25

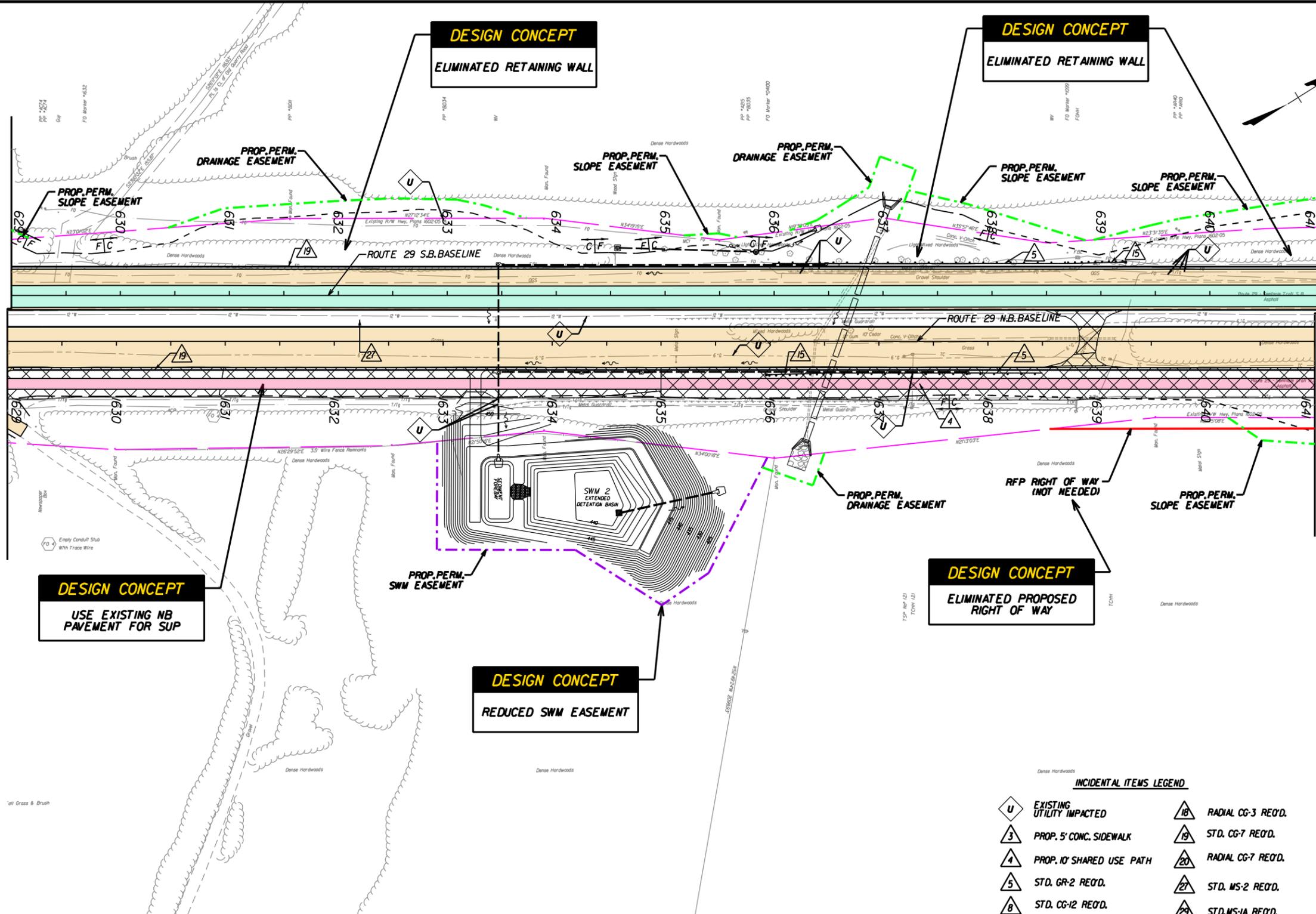


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#DATE# #FILE#

STATION 629+00 (SB) & 1629+00 (NB) MATCHLINE SHT. 8

STATION 64+00 (SB) & 164+00 (NB) MATCHLINE SHT. 10



DESIGN CONCEPT
USE EXISTING NB PAVEMENT FOR SUP

DESIGN CONCEPT
ELIMINATED RETAINING WALL

DESIGN CONCEPT
ELIMINATED RETAINING WALL

DESIGN CONCEPT
REDUCED SWM EASEMENT

DESIGN CONCEPT
ELIMINATED PROPOSED RIGHT OF WAY

LEGEND:

- EXISTING RIGHT OF WAY
- EXISTING EASEMENT
- PROPOSED RIGHT OF WAY
- PROPOSED TEMPORARY EASEMENT
- PROPOSED PERMANENT EASEMENT
- PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
- PROPOSED STORMWATER EASEMENT
- PROPOSED SOUND WALL/RETAINING WALL

- 24" W — EXISTING WATER
- E — EXISTING ELECTRIC
- FO — EXISTING FIBER OPTIC
- CATV — EXISTING CABLE TV
- T/Tg — EXISTING TELEPHONE
- TC — EXISTING TRAFFIC CONTROL
- Unk — EXISTING UNKNOWN UTILITY
- 2" G — EXISTING GAS
- 6" SAN — EXISTING SANITARY

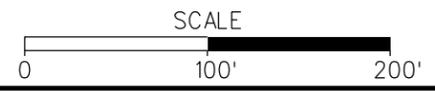
- WETLANDS
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- CONCRETE SIDEWALK/SHARED USE PATH
- PAVEMENT DEMOLITION
- DENOTES CONSTRUCTION LIMITS IN CUT
- DENOTES CONSTRUCTION LIMITS IN FILL

INCIDENTAL ITEMS LEGEND

- U EXISTING UTILITY IMPACTED
- 3 PROP. 5' CONC. SIDEWALK
- 4 PROP. 10' SHARED USE PATH
- 5 STD. GR-2 REQ'D.
- 8 STD. CG-12 REQ'D.
- 15 STD. GR-9 REQ'D.
- 18 RADIAL CG-3 REQ'D.
- 19 STD. CG-7 REQ'D.
- 20 RADIAL CG-7 REQ'D.
- 27 STD. MS-2 REQ'D.
- 29 STD. MS-1A REQ'D.

CONCEPTUAL PLANS
ROUTE 29 WIDENING

SHEET 9 OF 25



#USERS#

#DATE#

#FILE#

STATION 64+00 (SBI) & 1654+00 (NB) MATCHLINE SHT.9

STATION 653+00 (SBI) & 1653+00 (NB) MATCHLINE SHT.11

DESIGN CONCEPT
ELIMINATED RETAINING WALLS

DESIGN CONCEPT
REDUCED PERM. SLOPE EASEMENT

DESIGN CONCEPT
ELIMINATED PROPOSED RIGHT OF WAY

DESIGN CONCEPT
ELIMINATED RETAINING WALL

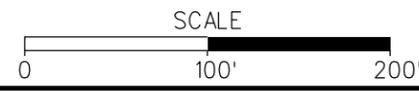
DESIGN CONCEPT
ELIMINATED PROPOSED RIGHT OF WAY

LEGEND:

- 24" W — EXISTING WATER
- E — EXISTING ELECTRIC
- FO — EXISTING FIBER OPTIC
- CATV — EXISTING CABLE TV
- T/Tg — EXISTING TELEPHONE
- TC — EXISTING TRAFFIC CONTROL
- Unk — EXISTING UNKNOWN UTILITY
- 2" G — EXISTING GAS
- 6" SAN — EXISTING SANITARY
- — EXISTING RIGHT OF WAY
- — EXISTING EASEMENT
- — PROPOSED RIGHT OF WAY
- — PROPOSED TEMPORARY EASEMENT
- — PROPOSED PERMANENT EASEMENT
- — PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
- — PROPOSED STORMWATER EASEMENT
- — PROPOSED SOUND WALL/RETAINING WALL

- WETLANDS
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- CONCRETE SIDEWALK/SHARED USE PATH
- PAVEMENT DEMOLITION
- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

- INCIDENTAL ITEMS LEGEND**
- U EXISTING UTILITY IMPACTED
 - 3 PROP. 5' CONC. SIDEWALK
 - 4 PROP. 10' SHARED USE PATH
 - 5 STD. GR-2 REQ'D.
 - 8 STD. CG-12 REQ'D.
 - 15 STD. GR-9 REQ'D.
 - 18 RADIAL CG-3 REQ'D.
 - 19 STD. CG-7 REQ'D.
 - 20 RADIAL CG-7 REQ'D.
 - 21 STD. MS-2 REQ'D.
 - 29 STD. MS-1A REQ'D.



CONCEPTUAL PLANS
ROUTE 29 WIDENING

SHEET 10 OF 25



#USERS#

#DATE#

#FILE#

STATION 653+00 (SBI) & 653+00 (NBI) MATCHLINE SHT.10

STATION 665+00 (SBI) & 665+00 (NBI) MATCHLINE SHT.12

DESIGN CONCEPT
ELIMINATED SWM EASEMENT

DESIGN CONCEPT
ELIMINATED RETAINING WALL

DESIGN CONCEPT
REDUCED ASHWOOD BLVD.
RECONSTRUCTION

DESIGN CONCEPT
ELIMINATED PROPOSED
RIGHT OF WAY

DESIGN CONCEPT
REDUCED PERM.SLOPE
EASEMENT

LEGEND:

- EXISTING RIGHT OF WAY
- EXISTING EASEMENT
- PROPOSED RIGHT OF WAY
- PROPOSED TEMPORARY EASEMENT
- PROPOSED PERMANENT EASEMENT
- PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
- PROPOSED STORMWATER EASEMENT
- PROPOSED SOUND WALL/RETAINING WALL

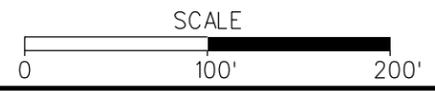
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- E — EXISTING ELECTRIC
- FO — EXISTING FIBER OPTIC
- CATV — EXISTING CABLE TV
- T/Tg — EXISTING TELEPHONE
- TC — EXISTING TRAFFIC CONTROL
- Unk — EXISTING UNKNOWN UTILITY
- 2" G — EXISTING GAS
- 6" SAN — EXISTING SANITARY

- WETLANDS
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- CONCRETE SIDEWALK/SHARED USE PATH
- PAVEMENT DEMOLITION
- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

- INCIDENTAL ITEMS LEGEND**
- EXISTING UTILITY IMPACTED
 - PROP. 5' CONC. SIDEWALK
 - PROP. 10' SHARED USE PATH
 - STD. GR-2 REQ'D.
 - STD. CG-12 REQ'D.
 - STD. GR-9 REQ'D.
 - RADIAL CG-3 REQ'D.
 - STD. CG-7 REQ'D.
 - RADIAL CG-7 REQ'D.
 - STD. MS-2 REQ'D.
 - STD. MS-1A REQ'D.

CONCEPTUAL PLANS
ROUTE 29 WIDENING

SHEET 11 OF 25



STIME#
#USERS#
#DATE#
#FILE#

STATION 665+00 (SBI) & 1665+00 (NB) MATCHLINE SHT. 11

STATION 67+00 (SBI) & 167+00 (NB) MATCHLINE SHT. 13

DESIGN CONCEPT
ELIMINATED
RETAINING WALL

DESIGN CONCEPT
ELIMINATED SWM
EASEMENT

DESIGN CONCEPT
REDUCED PERM.
SLOPE EASEMENT

DESIGN CONCEPT
ELIMINATED PROPOSED
RIGHT OF WAY

LEGEND:

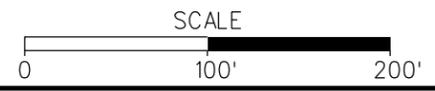
- 24" W — EXISTING WATER
- E — EXISTING ELECTRIC
- FO — EXISTING FIBER OPTIC
- CATV — EXISTING CABLE TV
- T/Tg — EXISTING TELEPHONE
- TC — EXISTING TRAFFIC CONTROL
- Unk — EXISTING UNKNOWN UTILITY
- 2" G — EXISTING GAS
- 6" SAN — EXISTING SANITARY

- WETLANDS
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- CONCRETE SIDEWALK/SHARED USE PATH
- PAVEMENT DEMOLITION
- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

- INCIDENTAL ITEMS LEGEND**
- U EXISTING UTILITY IMPACTED
 - 3 PROP. 5' CONC. SIDEWALK
 - 4 PROP. 10' SHARED USE PATH
 - 5 STD. GR-2 REQ'D.
 - 8 STD. CG-12 REQ'D.
 - 15 STD. GR-9 REQ'D.
 - 18 RADIAL CG-3 REQ'D.
 - 19 STD. CG-7 REQ'D.
 - 20 RADIAL CG-7 REQ'D.
 - 27 STD. MS-2 REQ'D.
 - 29 STD. MS-1A REQ'D.

CONCEPTUAL PLANS
ROUTE 29 WIDENING

SHEET 12 OF 25



STIME#

#USERS#

#DATE#

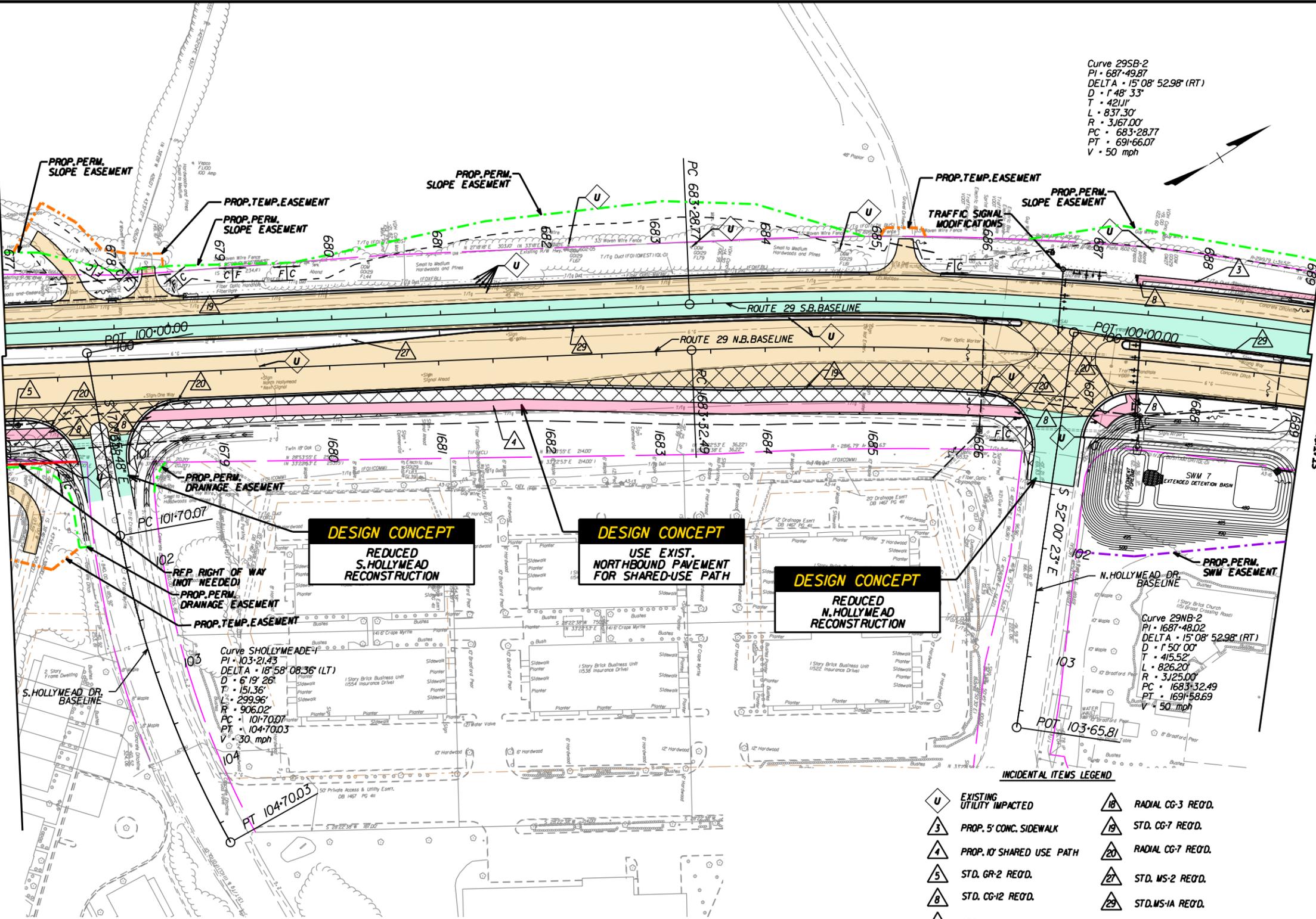
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Curve 29SB-2
 PI - 687+49.87
 DELTA - 15° 08' 52.98" (RT)
 D - 148' 33"
 T - 42.11'
 L - 837.30'
 R - 3,167.00'
 PC - 683+28.77
 PT - 691+66.07
 V - 50 mph



STATION 677+00 (SBI) & 1677+00 (NB) MATCHLINE SHT.12

STATION 689+00 (SBI) & 1689+00 (NB) MATCHLINE SHT.14



DESIGN CONCEPT
 REDUCED
 S. HOLLYMEAD
 RECONSTRUCTION

DESIGN CONCEPT
 USE EXIST.
 NORTHBOUND PAVEMENT
 FOR SHARED-USE PATH

DESIGN CONCEPT
 REDUCED
 N. HOLLYMEAD
 RECONSTRUCTION

Curve SHOLLYMEAD-1
 PI - 103+21.43
 DELTA - 18° 58' 08.36" (LT)
 D - 6' 19' 26"
 T - 151.36'
 L - 299.96'
 R - 906.02'
 PC - 101+70.07
 PT - 104+70.03
 V - 30 mph

Curve 29NB-2
 PI - 1687+48.02
 DELTA - 15° 08' 52.98" (RT)
 D - 150' 00"
 T - 415.52'
 L - 826.20'
 R - 3,125.00'
 PC - 1683+32.49
 PT - 1691+58.69
 V - 50 mph

INCIDENTAL ITEMS LEGEND

U	EXISTING UTILITY IMPACTED	18	RADIAL CG-3 REQ'D.
3	PROP. 5' CONC. SIDEWALK	19	STD. CG-7 REQ'D.
4	PROP. 10' SHARED USE PATH	20	RADIAL CG-7 REQ'D.
5	STD. GR-2 REQ'D.	21	STD. MS-2 REQ'D.
8	STD. CG-12 REQ'D.	29	STD. MS-1A REQ'D.
15	STD. GR-9 REQ'D.		

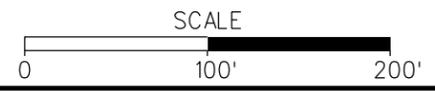
LEGEND:

— 24" W —	EXISTING WATER	— E —	EXISTING ELECTRIC
— — —	EXISTING EASEMENT	— FO —	EXISTING FIBER OPTIC
— — —	PROPOSED RIGHT OF WAY	— CATV —	EXISTING CABLE TV
— — —	PROPOSED TEMPORARY EASEMENT	— T/Tg —	EXISTING TELEPHONE
— — —	PROPOSED PERMANENT EASEMENT	— TC —	EXISTING TRAFFIC CONTROL
— — —	PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT	— Unk —	EXISTING UNKNOWN UTILITY
— — —	PROPOSED STORMWATER EASEMENT	— 2" G —	EXISTING GAS
— — —	PROPOSED SOUND WALL/RETAINING WALL	— 6" SAN —	EXISTING SANITARY

[Light Blue Box]	WETLANDS
[Green Box]	MILL AND OVERLAY
[Orange Box]	FULL DEPTH PROPOSED PAVEMENT
[Pink Box]	CONCRETE SIDEWALK/SHARED USE PATH
[Cross-hatched Box]	PAVEMENT DEMOLITION
[C in Box]	DENOTES CONSTRUCTION LIMITS IN CUT
[F in Box]	DENOTES CONSTRUCTION LIMITS IN FILL

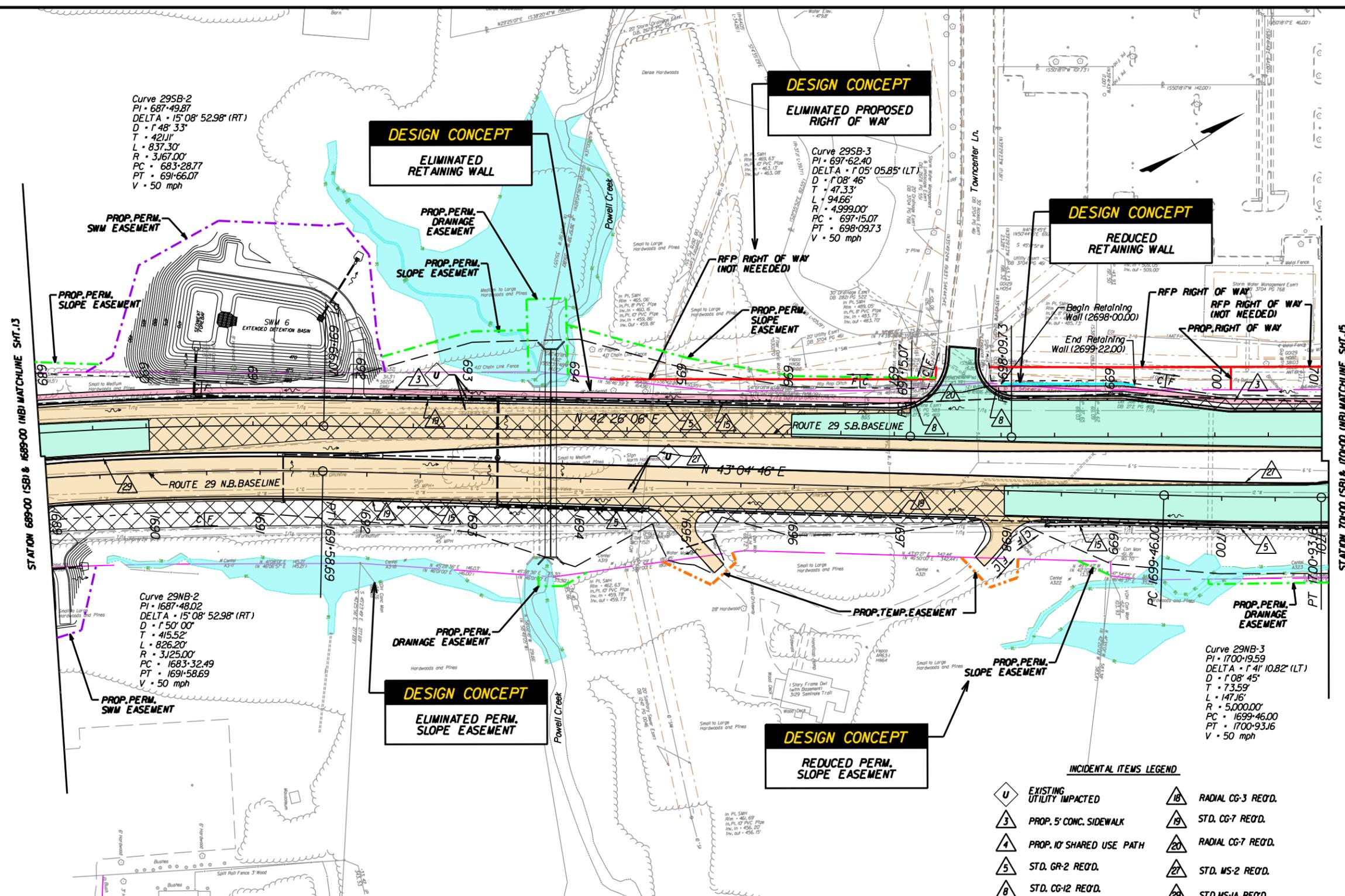
CONCEPTUAL PLANS
 ROUTE 29 WIDENING

SHEET 13 OF 25



#USERS#

#DATE# #FILE#



Curve 29SB-2
 PI • 687+49.87
 DELTA • 15° 08' 52.98" (RT)
 D • 1' 48' 33"
 T • 421.11'
 R • 837.30'
 PC • 683+28.77
 PT • 691+66.07
 V • 50 mph

DESIGN CONCEPT
 ELIMINATED PROPOSED
 RIGHT OF WAY

Curve 29SB-3
 PI • 697+62.40
 DELTA • 1° 05' 05.85" (LT)
 D • 1' 08' 46"
 T • 47.33'
 L • 94.66'
 R • 4999.00'
 PC • 697+15.07
 PT • 698+09.73
 V • 50 mph

DESIGN CONCEPT
 REDUCED
 RETAINING WALL

Curve 29NB-2
 PI • 1687+48.02
 DELTA • 15° 08' 52.98" (RT)
 D • 1' 50' 00"
 T • 415.52'
 R • 826.20'
 PC • 1683+32.49
 PT • 1691+58.69
 V • 50 mph

DESIGN CONCEPT
 REDUCED PERM.
 SLOPE EASEMENT

Curve 29NB-3
 PI • 1700+19.59
 DELTA • 1° 41' 10.82" (LT)
 D • 1' 08' 45"
 T • 73.59'
 L • 147.16'
 R • 5,000.00'
 PC • 1699+46.00
 PT • 1700+93.16
 V • 50 mph

INCIDENTAL ITEMS LEGEND

U	EXISTING UTILITY IMPACTED	18	RADIAL CG-3 REQ'D.
3	PROP. 5' CONC. SIDEWALK	19	STD. CG-7 REQ'D.
4	PROP. 10' SHARED USE PATH	20	RADIAL CG-7 REQ'D.
5	STD. GR-2 REQ'D.	21	STD. MS-2 REQ'D.
8	STD. CG-12 REQ'D.	22	STD. MS-1A REQ'D.
15	STD. GR-9 REQ'D.		

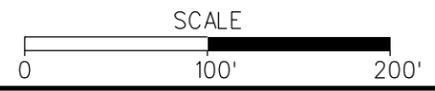
LEGEND:

— 24" W —	EXISTING WATER
— E —	EXISTING ELECTRIC
— FO —	EXISTING FIBER OPTIC
— CATV —	EXISTING CABLE TV
— T/Tg —	EXISTING TELEPHONE
— TC —	EXISTING TRAFFIC CONTROL
— Unk —	EXISTING UNKNOWN UTILITY
— 2" G —	EXISTING GAS
— 6" SAN —	EXISTING SANITARY

[Wetlands Symbol]	WETLANDS
[Mill and Overlay Symbol]	MILL AND OVERLAY
[Full Depth Proposed Pavement Symbol]	FULL DEPTH PROPOSED PAVEMENT
[Concrete Sidewalk/Shared Use Path Symbol]	CONCRETE SIDEWALK/SHARED USE PATH
[Pavement Demolition Symbol]	PAVEMENT DEMOLITION
[C Symbol]	DENOTES CONSTRUCTION LIMITS IN CUT
[F Symbol]	DENOTES CONSTRUCTION LIMITS IN FILL

CONCEPTUAL PLANS
ROUTE 29 WIDENING

SHEET 14 OF 25



DATE#

DATE#

FILE#

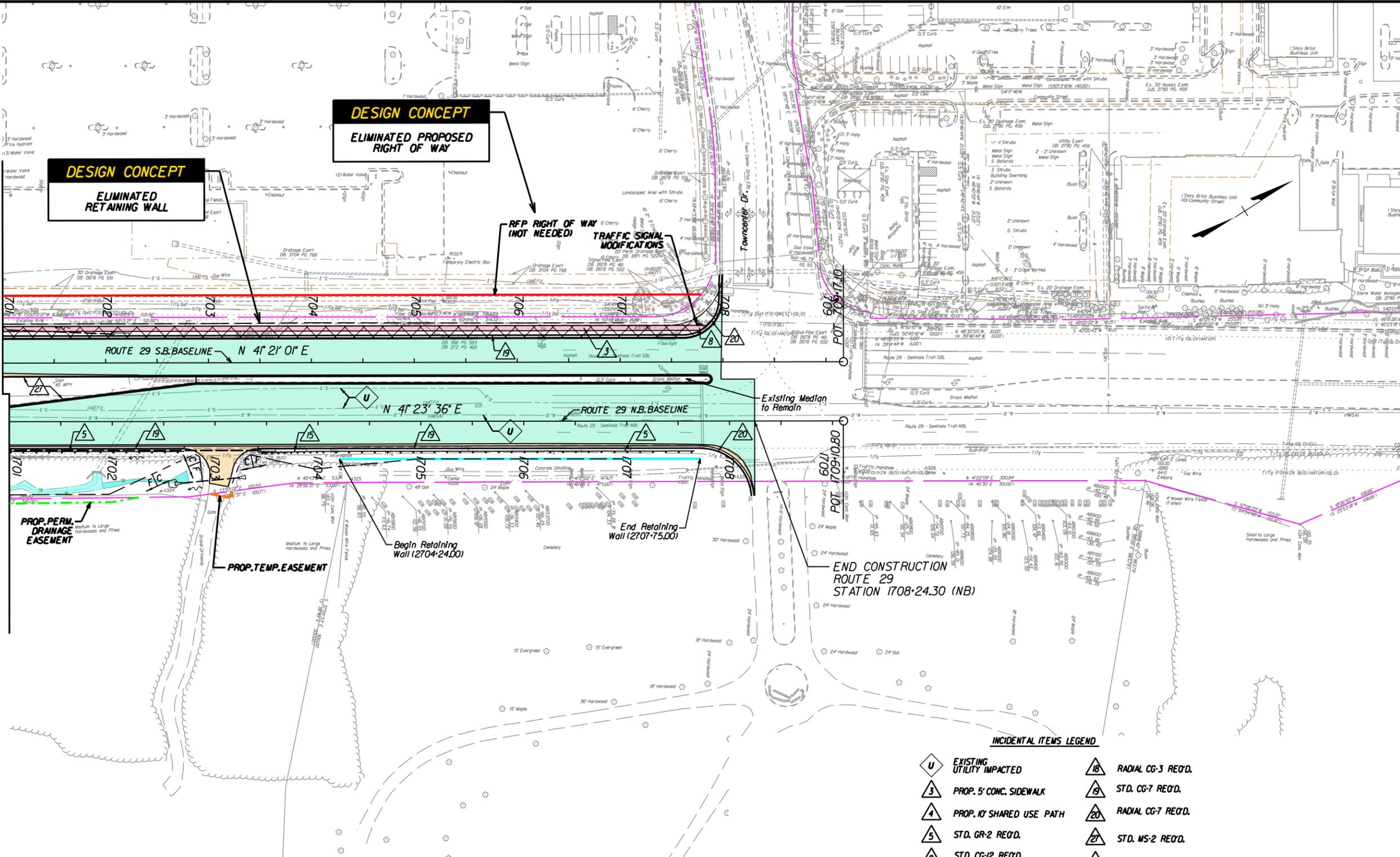
STATION 70+00 (SBI) & 170+00 (NB) MATCHLINE SHT. 14

DESIGN CONCEPT
ELIMINATED
RETAINING WALL

DESIGN CONCEPT
ELIMINATED PROPOSED
RIGHT OF WAY

RFP RIGHT OF WAY
(NOT NEEDED)

TRAFFIC SIGNAL
MODIFICATIONS



Existing Median
to Remain

END CONSTRUCTION
ROUTE 29
STATION 1708+24.30 (NB)

INCIDENTAL ITEMS LEGEND

- | | | | |
|----|---------------------------|----|--------------------|
| U | EXISTING UTILITY IMPACTED | 18 | RADIAL CG-3 REQ'D. |
| 3 | PROP. 5' CONC. SIDEWALK | 19 | STD. CG-7 REQ'D. |
| 4 | PROP. 10' SHARED USE PATH | 20 | RADIAL CG-7 REQ'D. |
| 5 | STD. GR-2 REQ'D. | 21 | STD. MS-2 REQ'D. |
| 8 | STD. CG-12 REQ'D. | 29 | STD. MS-1A REQ'D. |
| 15 | STD. GR-9 REQ'D. | | |

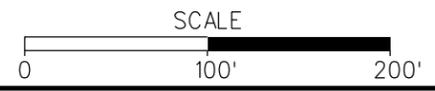
LEGEND:

- | | |
|------------|--------------------------|
| — 24" W — | EXISTING WATER |
| — E — | EXISTING ELECTRIC |
| — FO — | EXISTING FIBER OPTIC |
| — CATV — | EXISTING CABLE TV |
| — T/Tg — | EXISTING TELEPHONE |
| — TC — | EXISTING TRAFFIC CONTROL |
| — Unk — | EXISTING UNKNOWN UTILITY |
| — 2" G — | EXISTING GAS |
| — 6" SAN — | EXISTING SANITARY |

- | | |
|---------------------|-------------------------------------|
| [Blue Box] | WETLANDS |
| [Green Box] | MILL AND OVERLAY |
| [Orange Box] | FULL DEPTH PROPOSED PAVEMENT |
| [Pink Box] | CONCRETE SIDEWALK/SHARED USE PATH |
| [Cross-hatched Box] | PAVEMENT DEMOLITION |
| [C] | DENOTES CONSTRUCTION LIMITS IN CUT |
| [F] | DENOTES CONSTRUCTION LIMITS IN FILL |

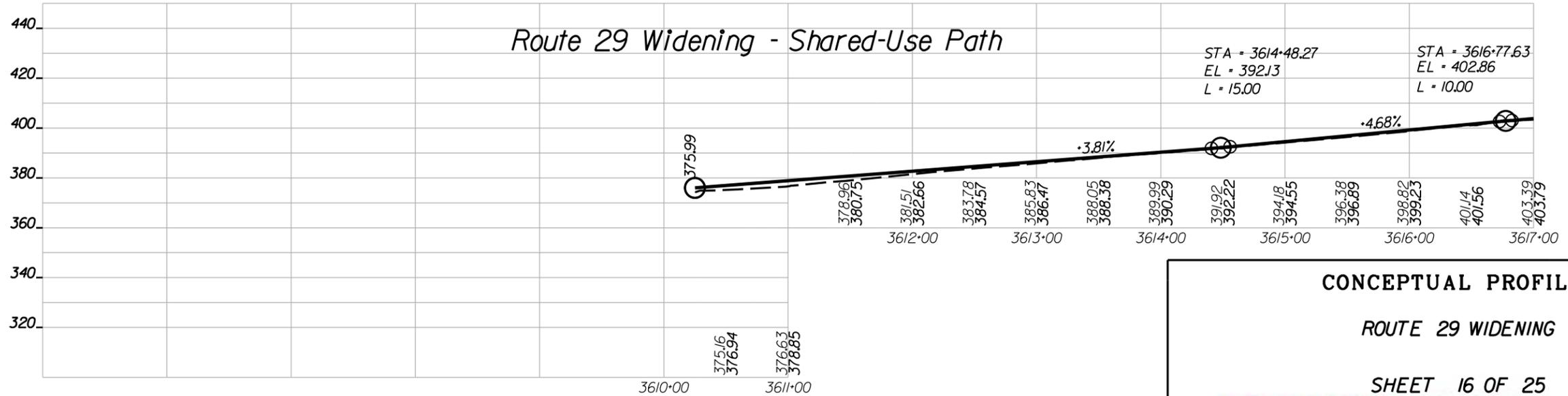
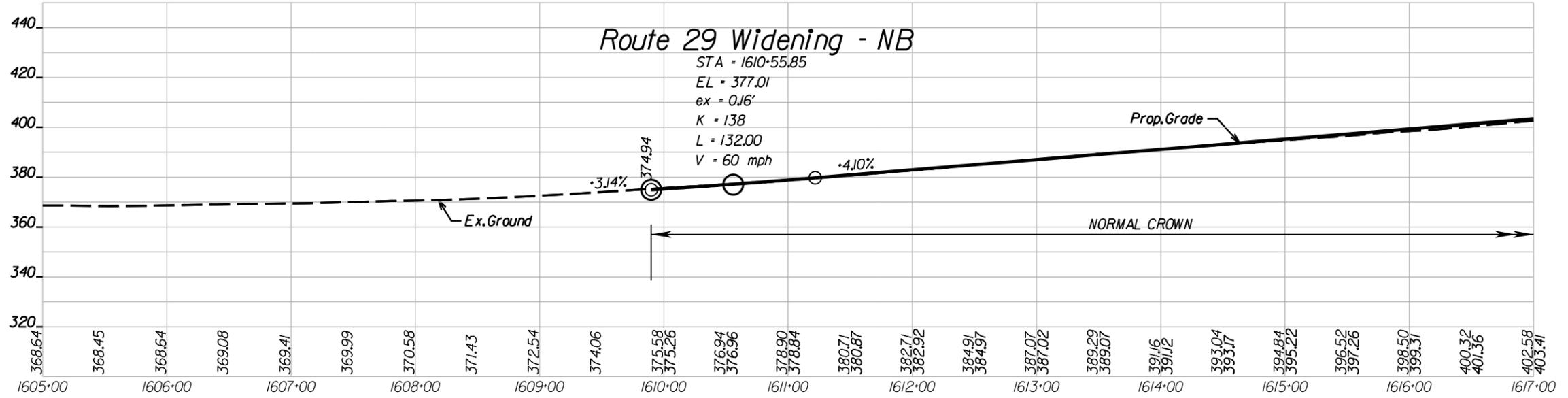
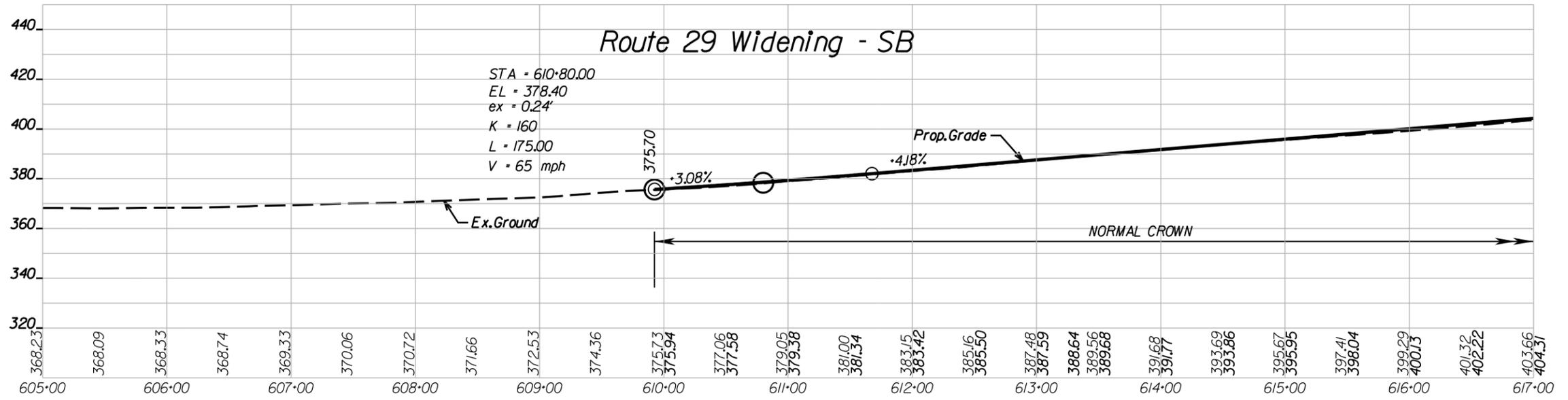
CONCEPTUAL PLANS
ROUTE 29 WIDENING

SHEET 15 OF 25

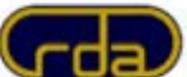


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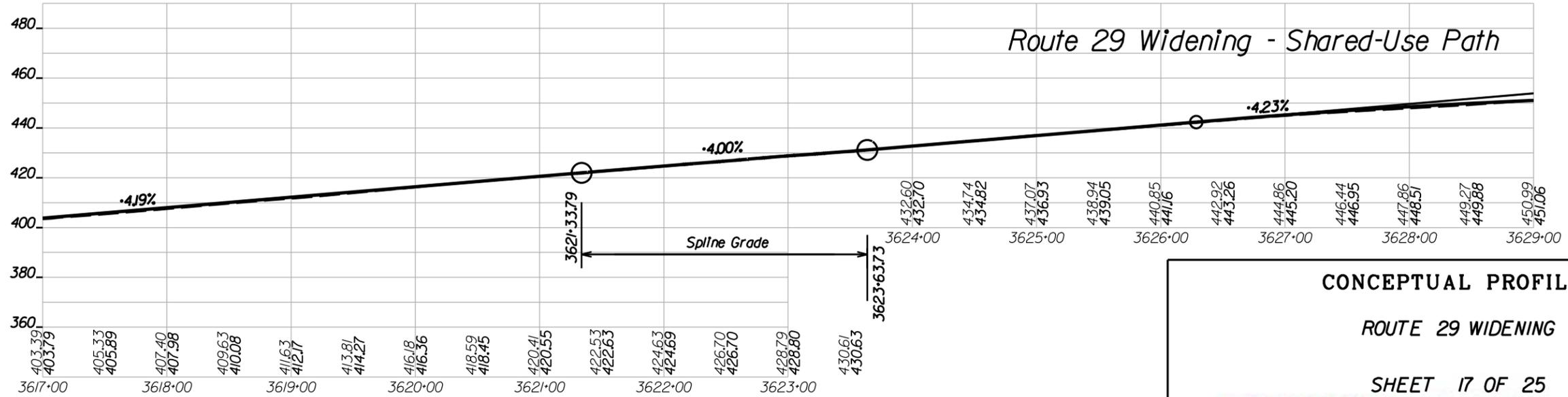
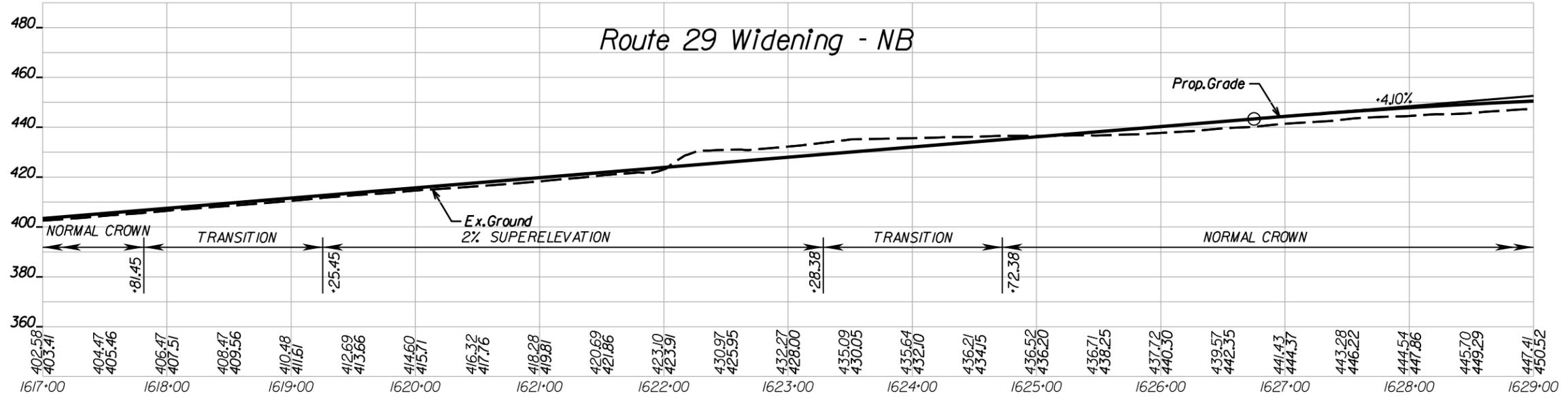
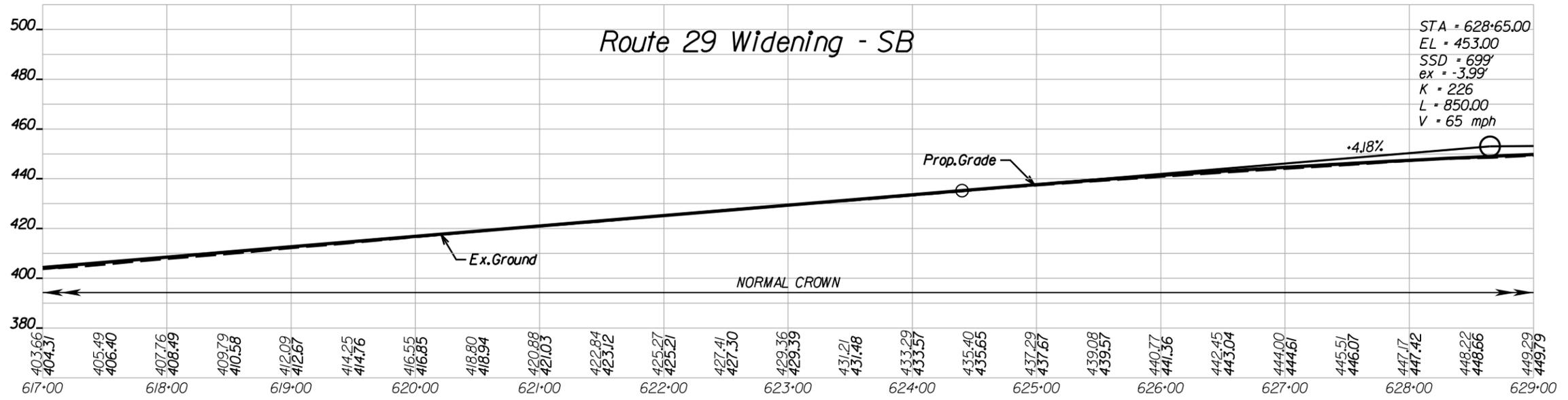
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CONCEPTUAL PROFILES
 ROUTE 29 WIDENING
 SHEET 16 OF 25

#USER#
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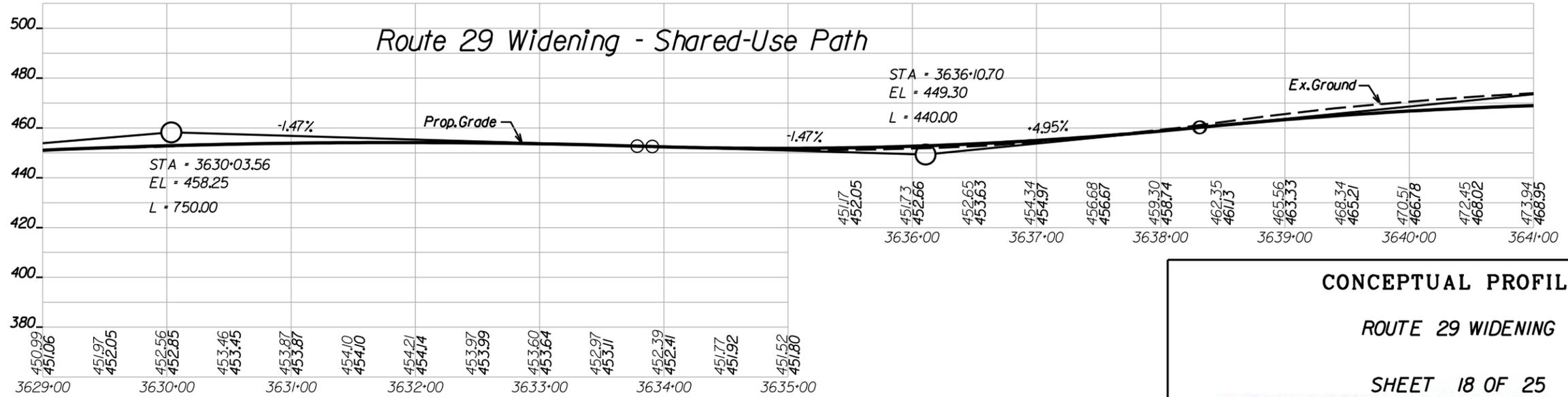
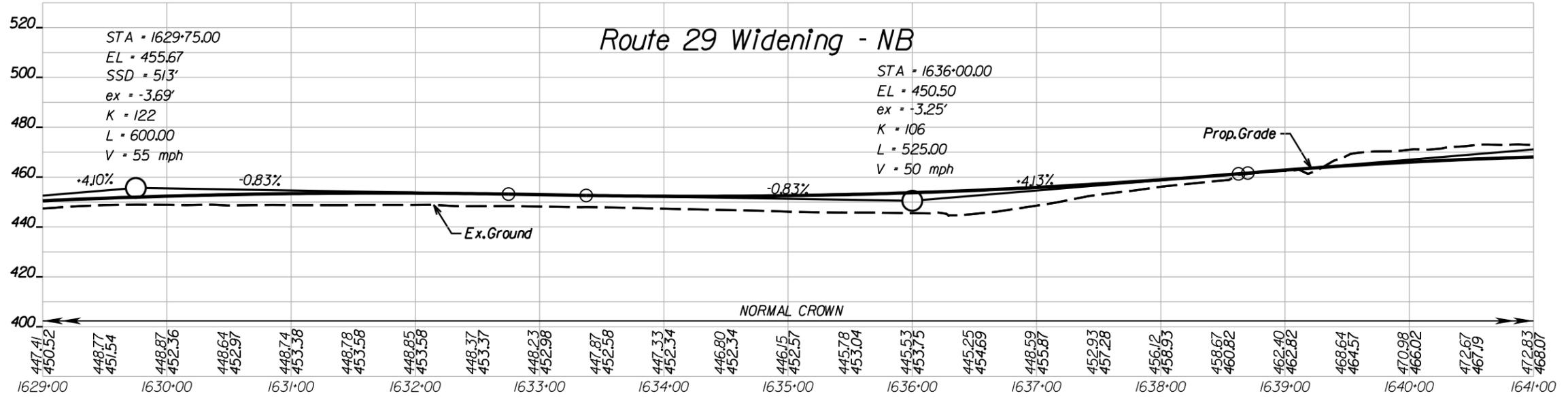
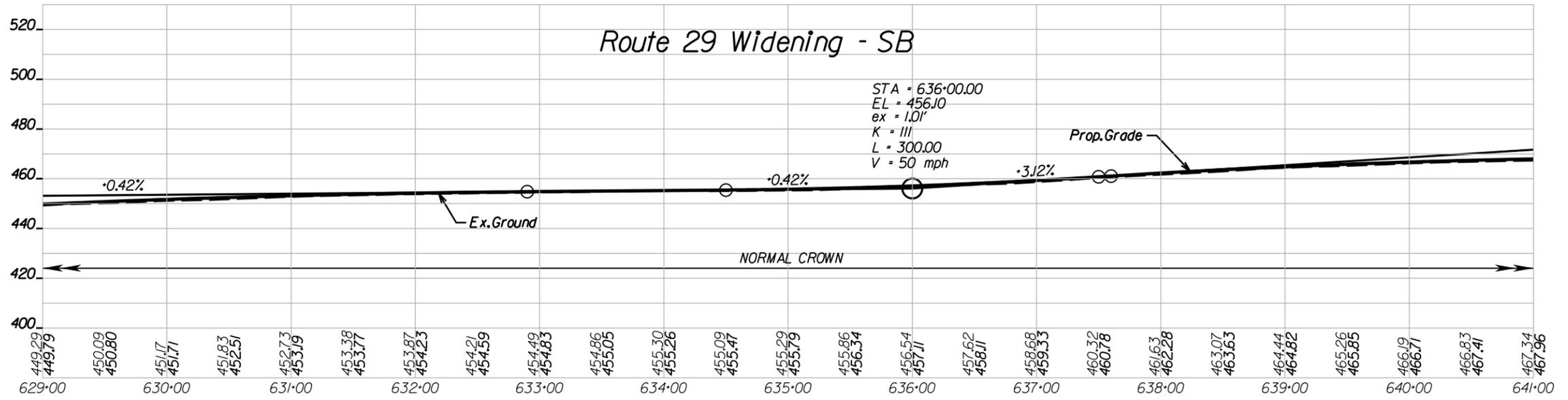


CONCEPTUAL PROFILES

ROUTE 29 WIDENING

SHEET 17 OF 25

#USERS
#DATE#



CONCEPTUAL PROFILES

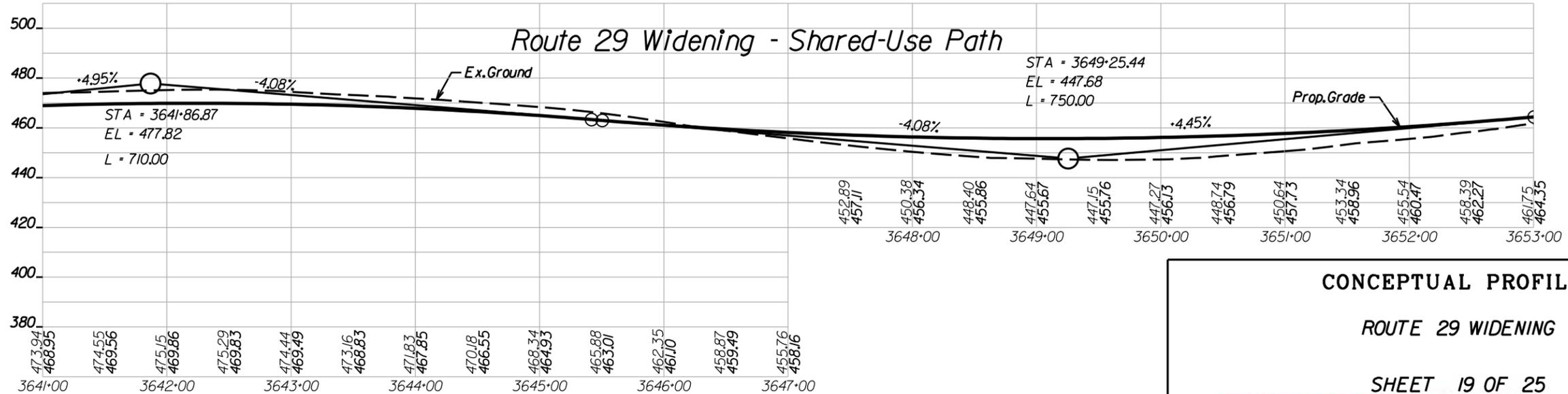
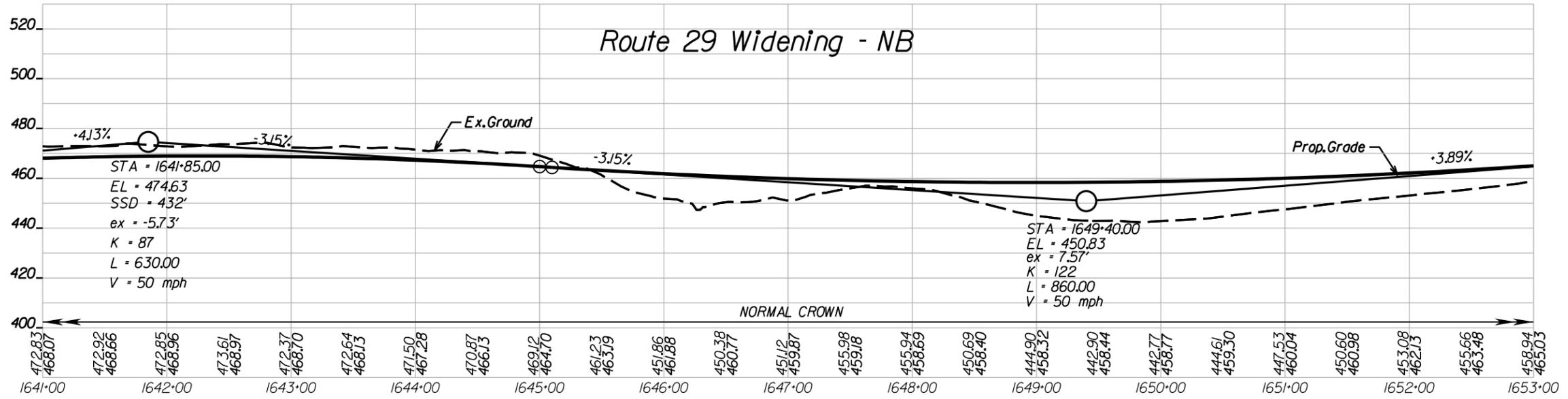
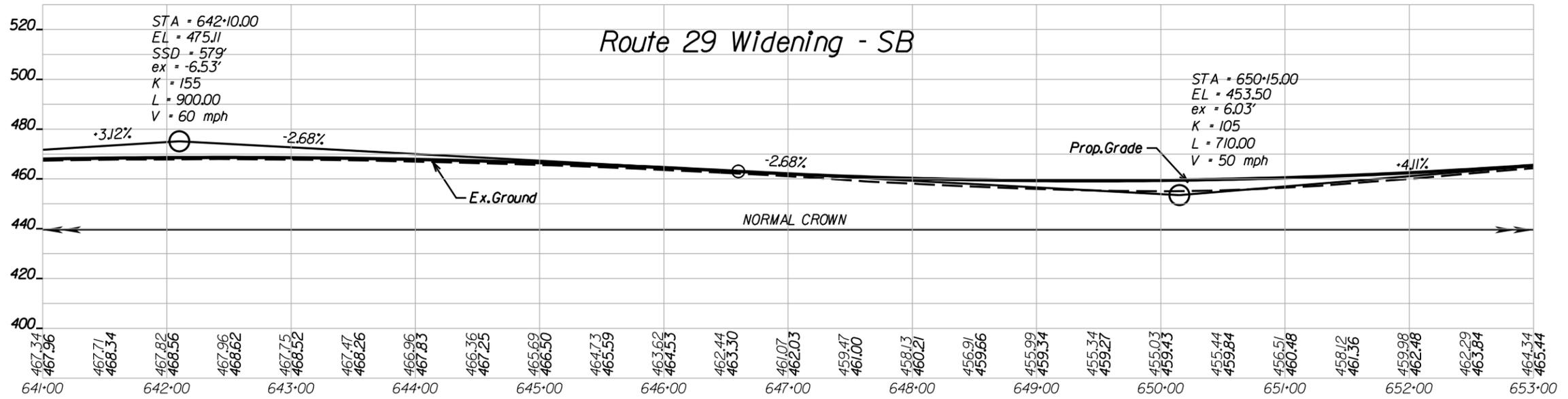
ROUTE 29 WIDENING

SHEET 18 OF 25



#USERS

#DATE#

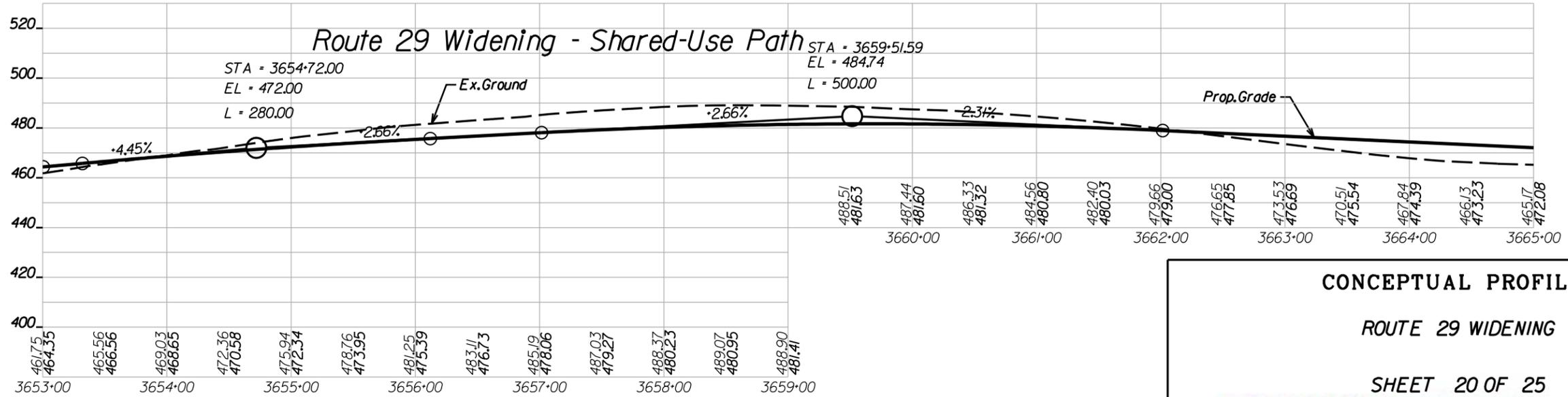
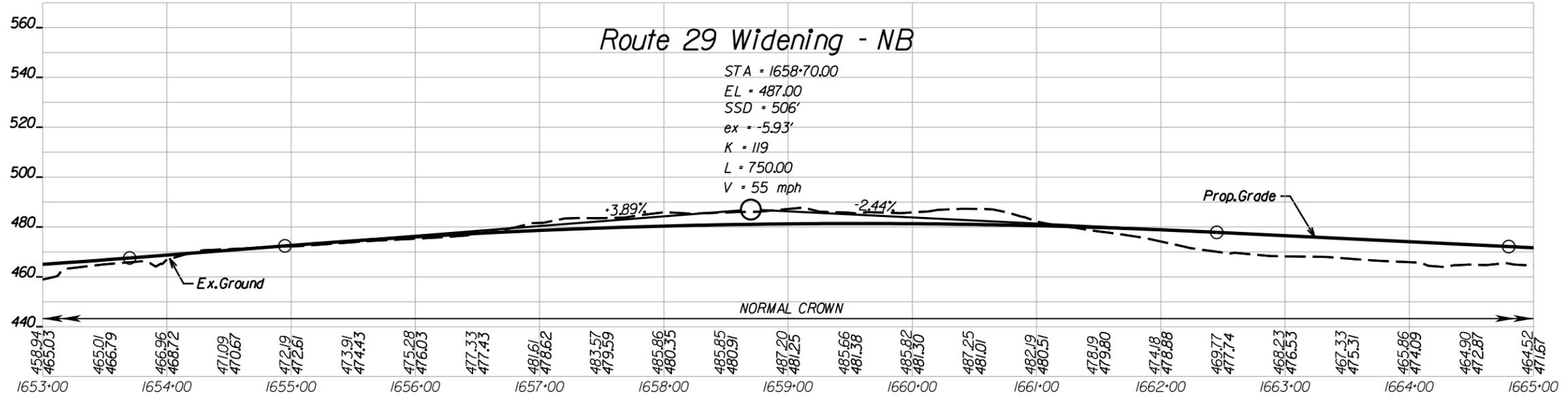
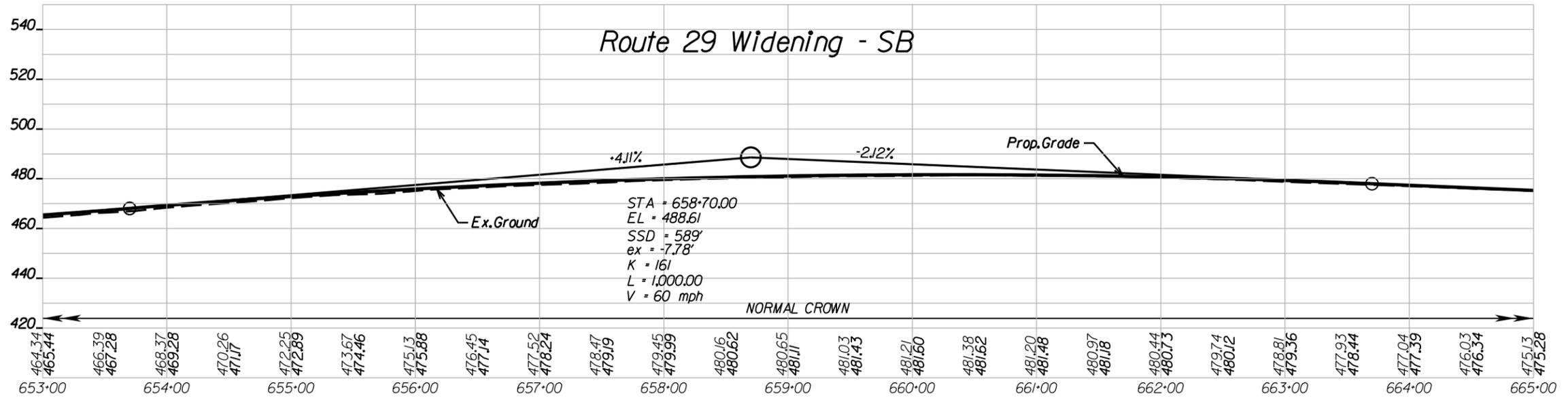


CONCEPTUAL PROFILES

ROUTE 29 WIDENING

SHEET 19 OF 25

#USERS
#DATE#



CONCEPTUAL PROFILES

ROUTE 29 WIDENING

SHEET 20 OF 25

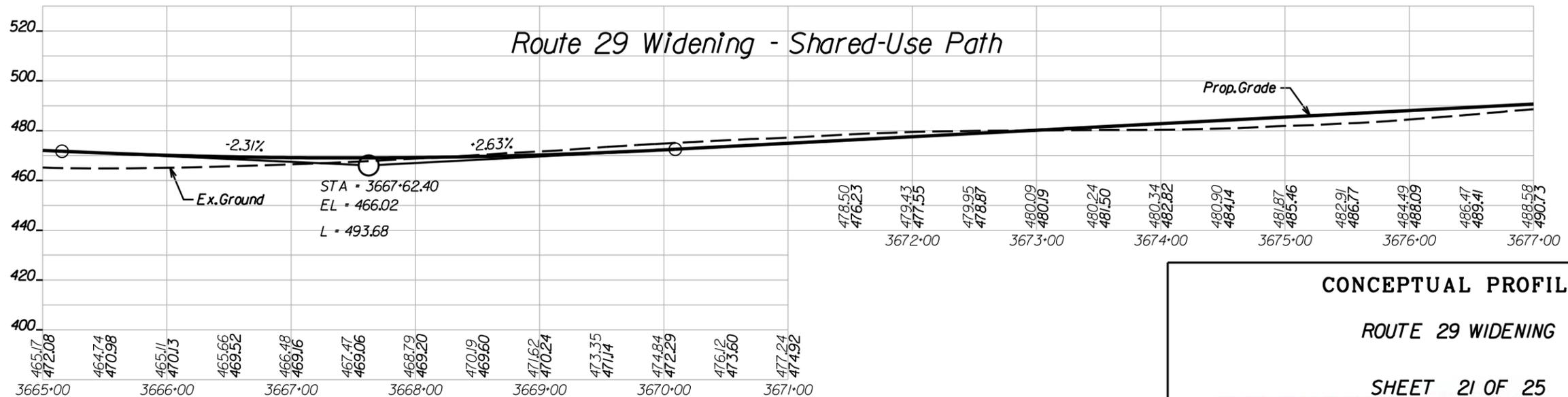
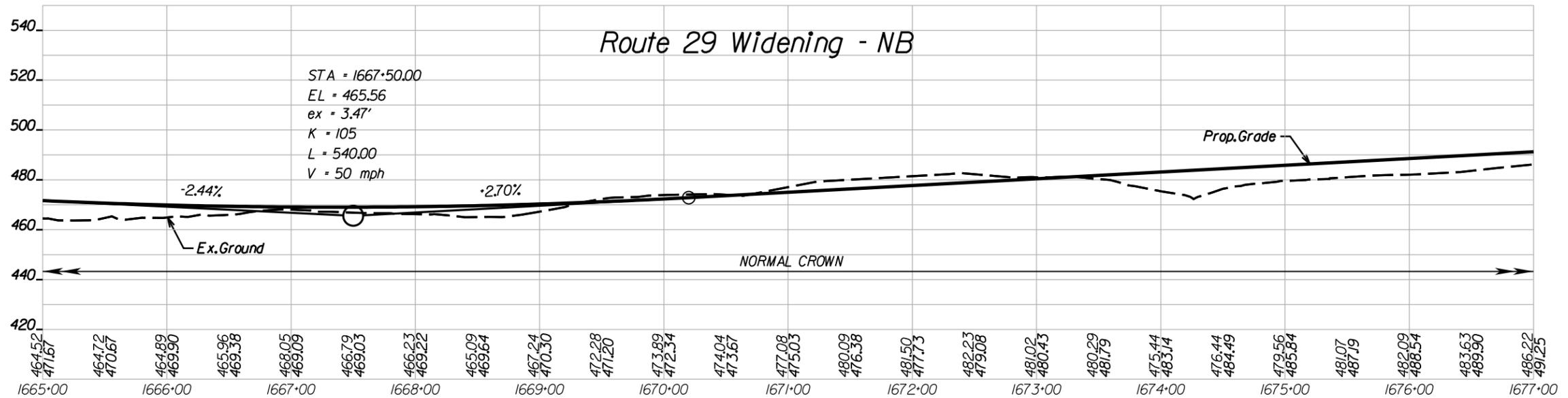
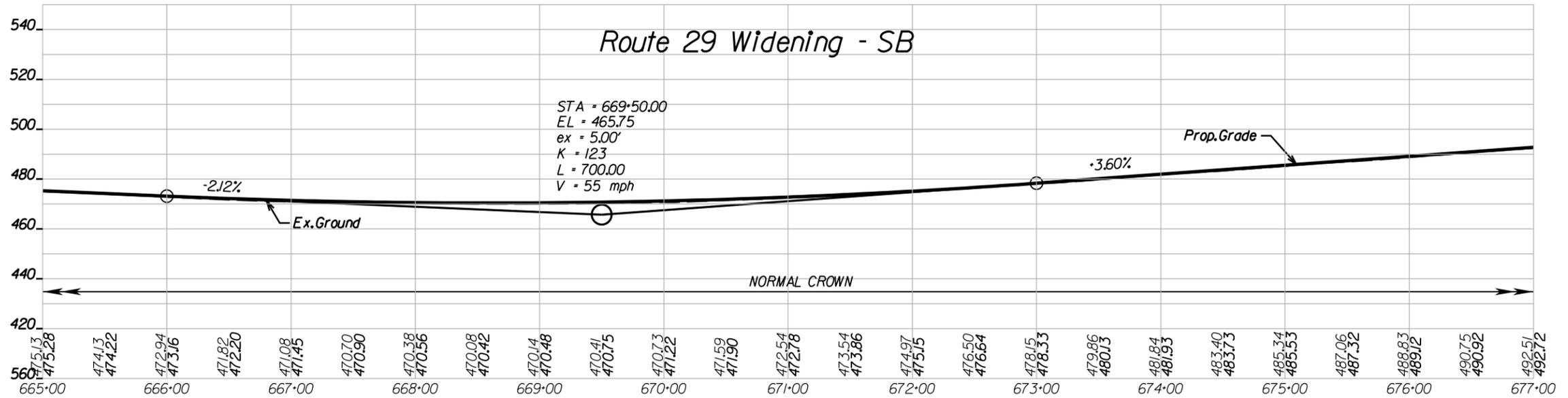
LANE CORMAN 

CONSTRUCTION

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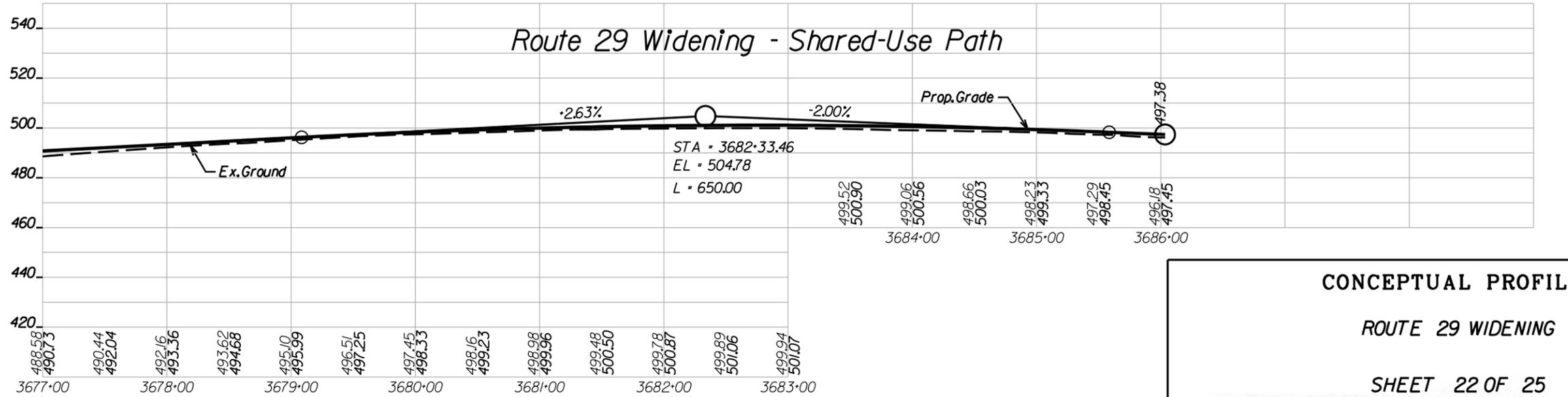
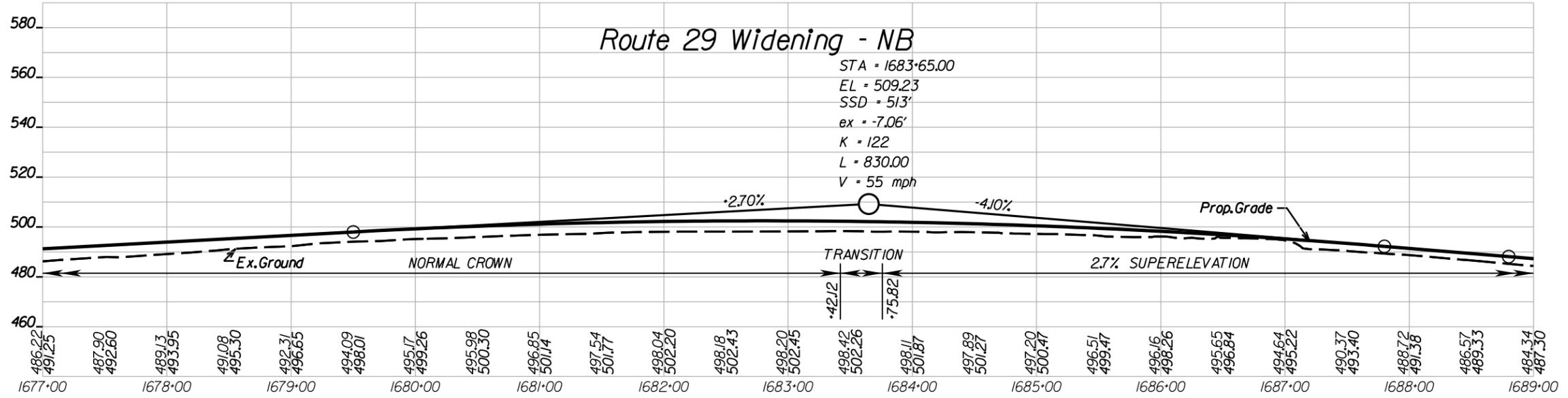
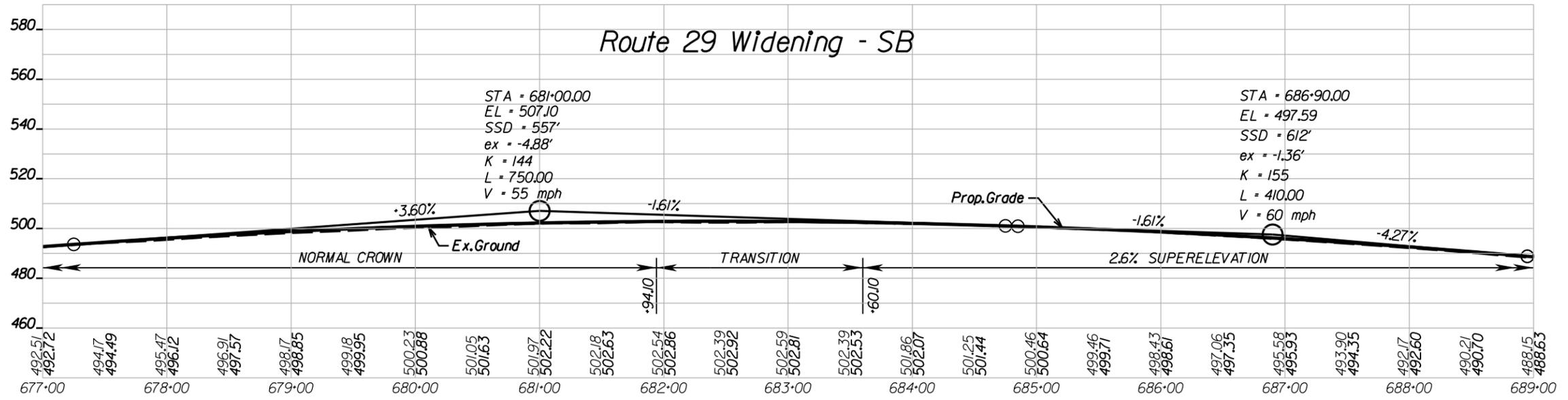


CONCEPTUAL PROFILES
ROUTE 29 WIDENING
 SHEET 21 OF 25

#USERS

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#DATE#



CONCEPTUAL PROFILES

ROUTE 29 WIDENING

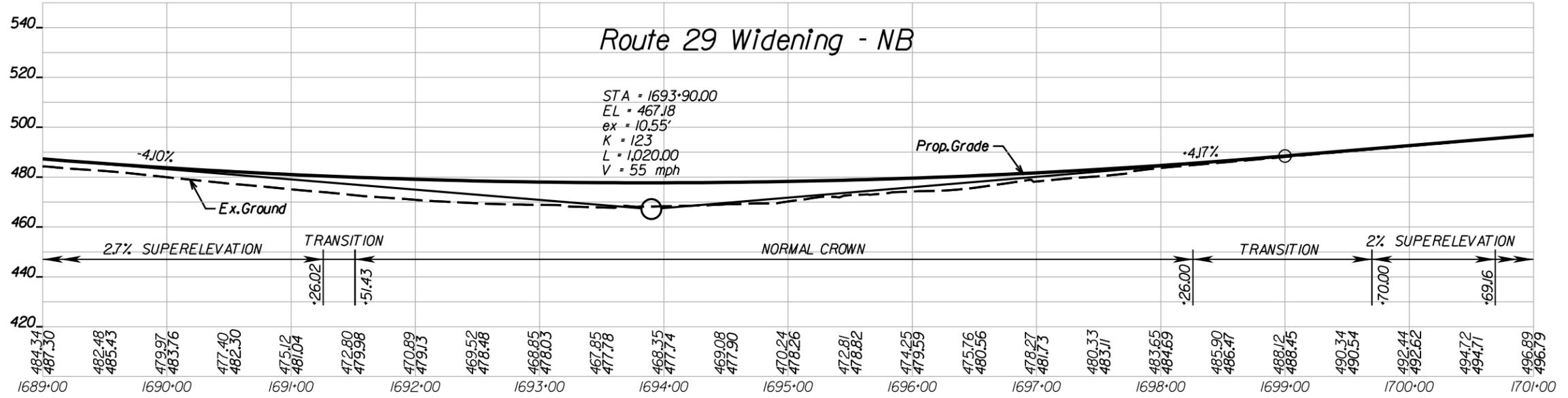
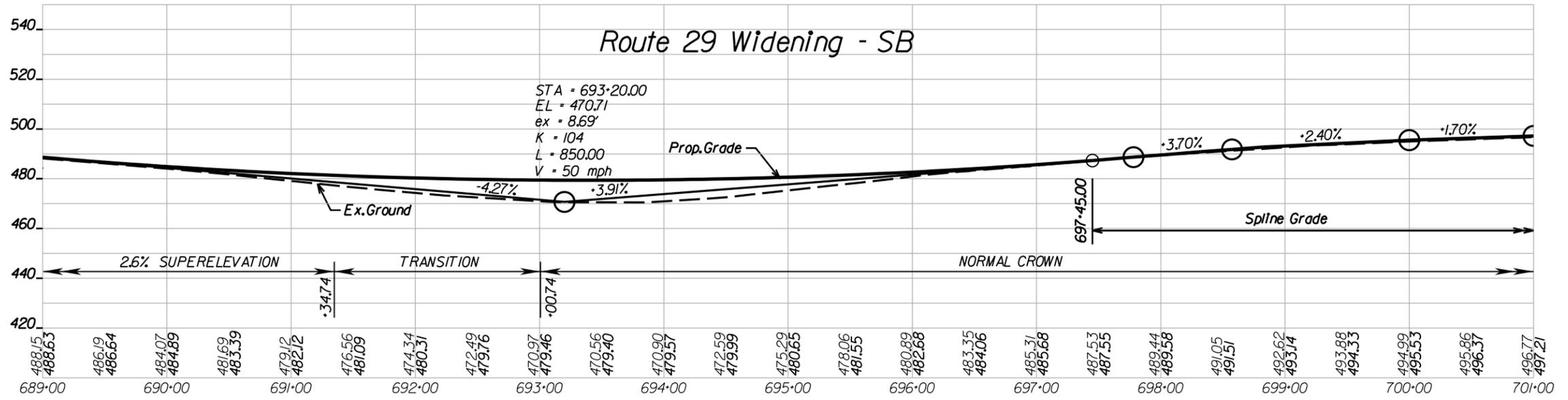
SHEET 22 OF 25



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#TIME

#DATE



CONCEPTUAL PLAN AND PROFILE

ROUTE 29 WIDENING - DEC.12.2014

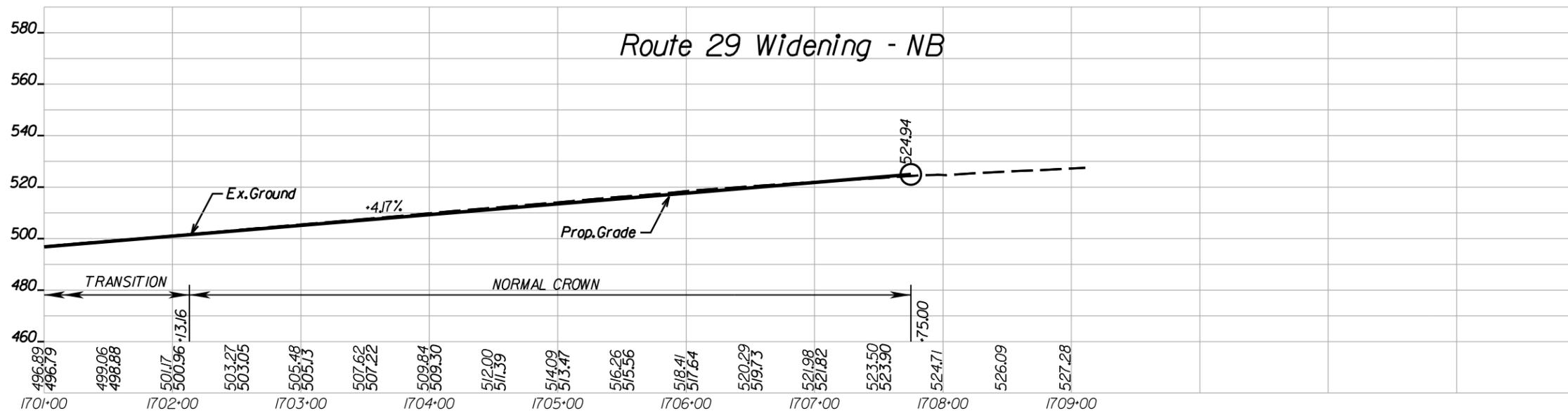
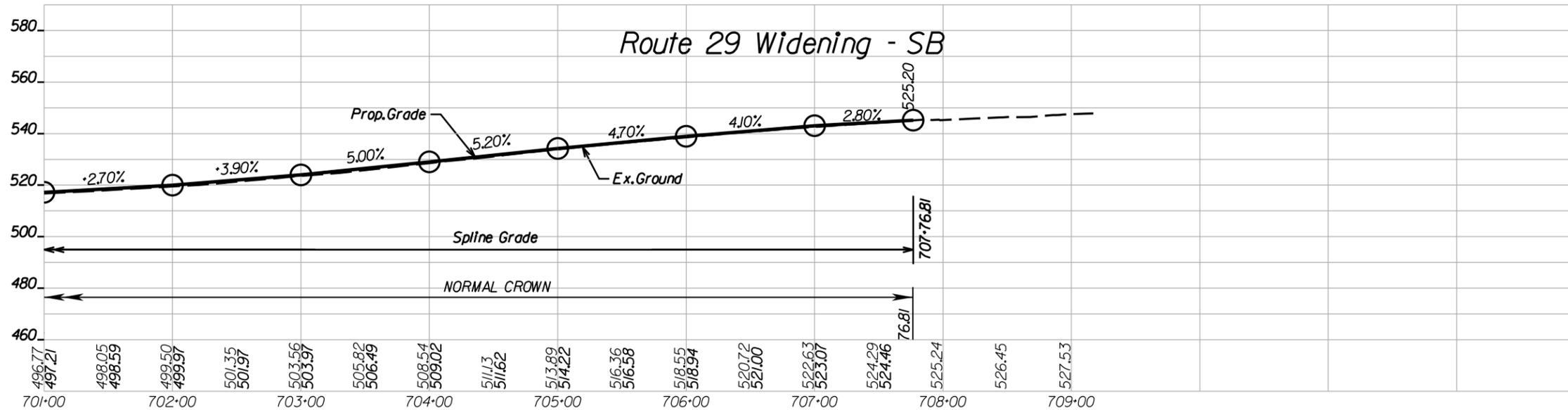
SHEET 23 OF 25



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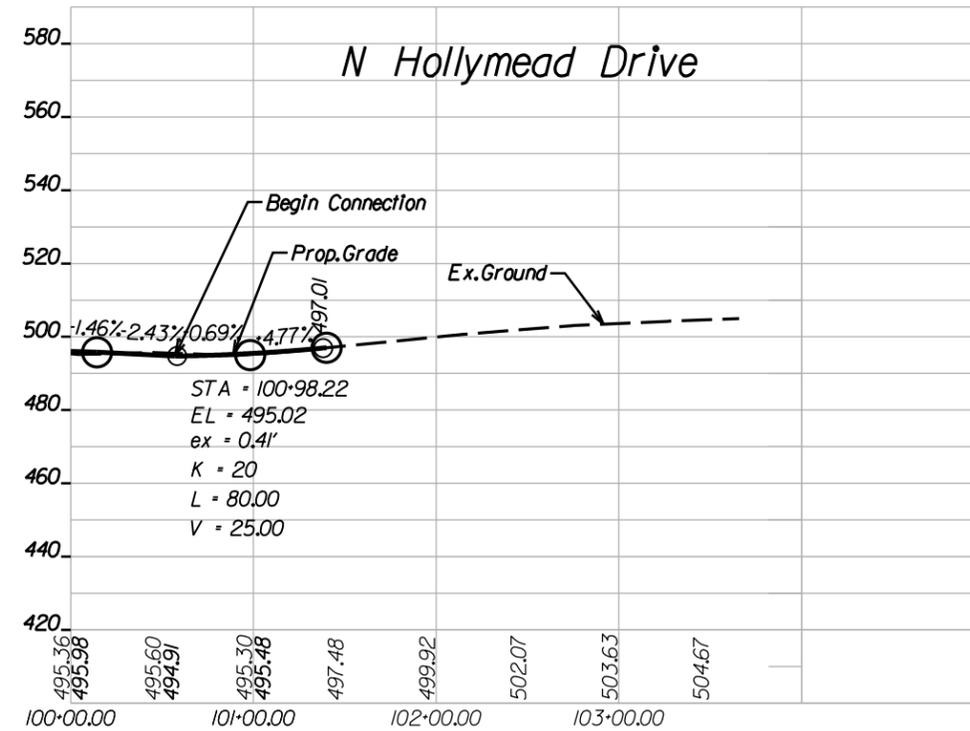
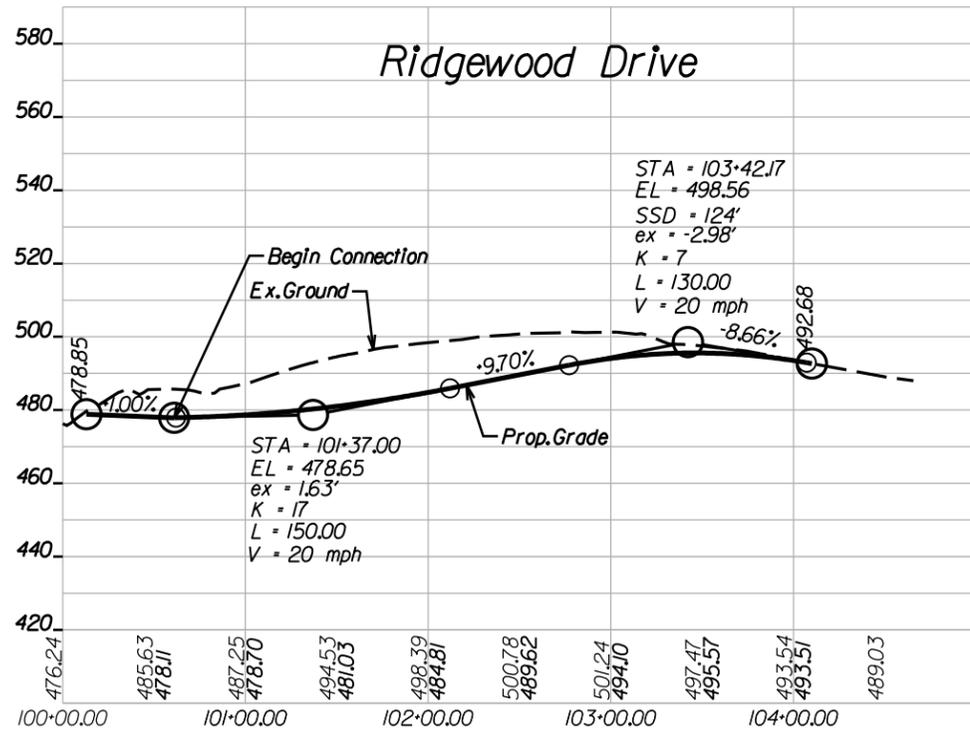
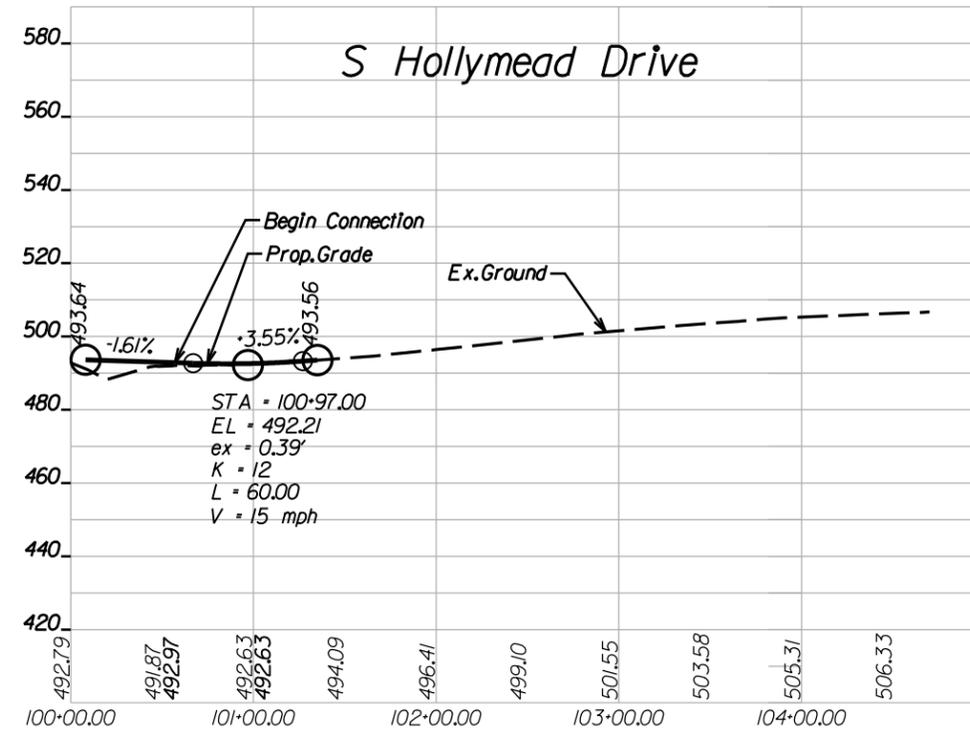
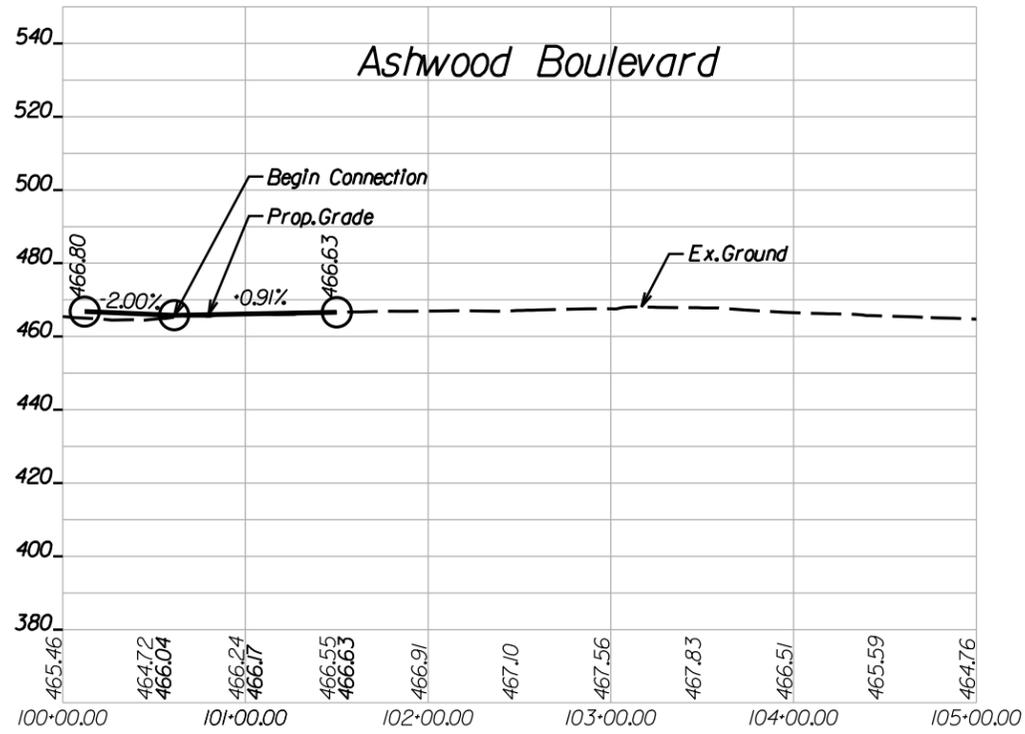
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CONCEPTUAL PROFILES
ROUTE 29 WIDENING - DEC.12.2014



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CONCEPTUAL PROFILES

ROUTE 29 WIDENING

SHEET 25 OF 25



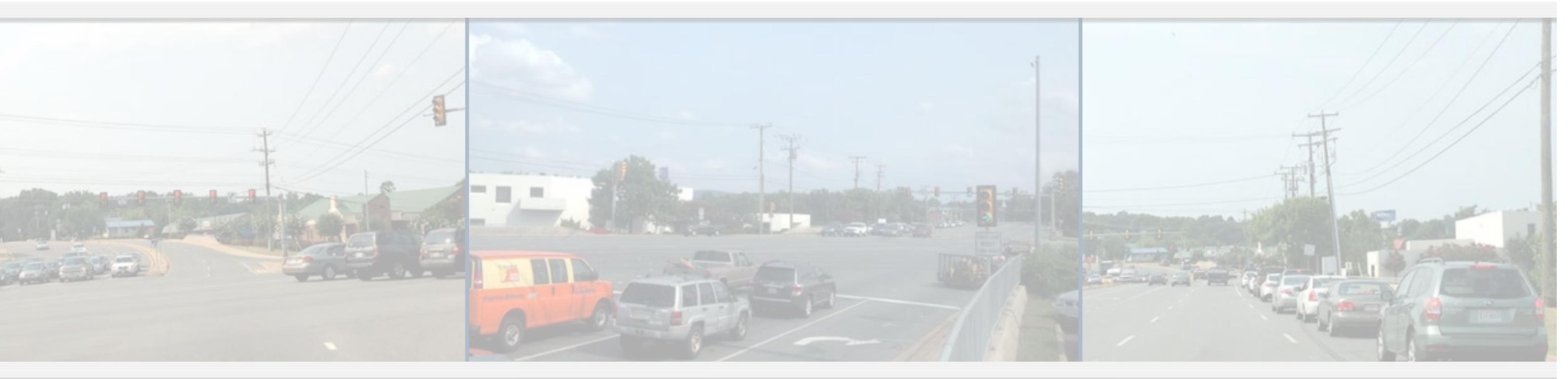
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Section 4.3.3

Berkmar Drive Extension



LANE AND **CORMAN**
CONSTRUCTION

In association with: **RK&K**

Section 4.3.3.1

Conceptual Roadway Plans



LANE AND **CORMAN**
CONSTRUCTION

In association with: **RK&K**



COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

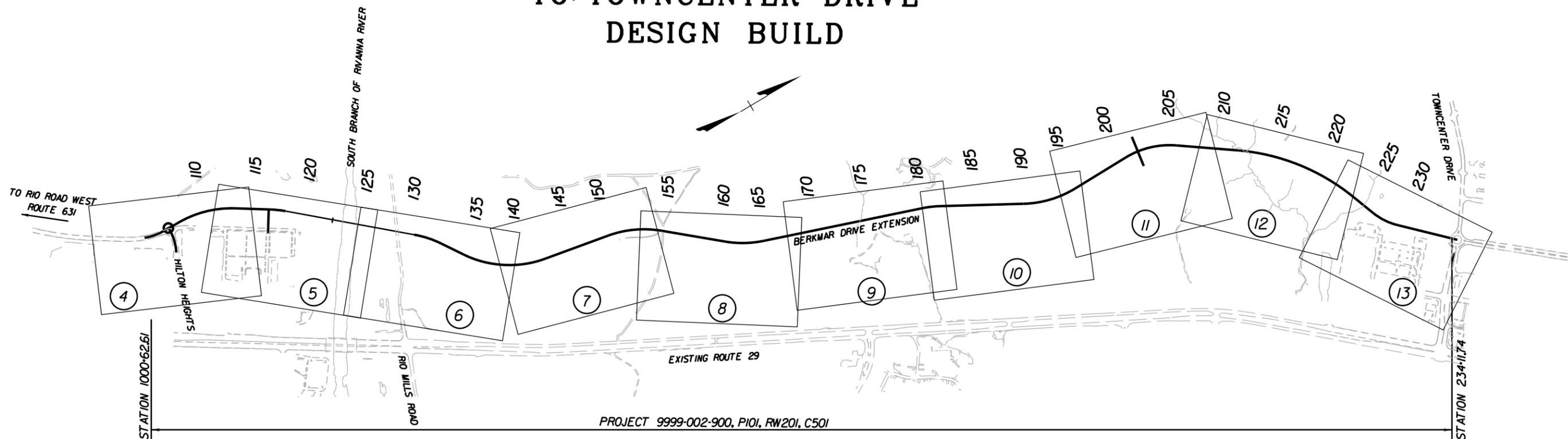
PLAN AND PROFILE OF PROPOSED
STATE HIGHWAY
COUNTY OF ALBEMARLE
BERKMAR DRIVE EXTENSION (ROUTE 1403)
FROM: HILTON HEIGHTS ROAD
TO: TOWNCENTER DRIVE
DESIGN BUILD

CONCEPTUAL PLANS
SHEET INDEX OF SHEETS

1	TITLE SHEET (1)
2-3	TYPICAL SECTIONS (2)
4-13	PLAN AND PROFILES (10)

STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.		1403	9999-002-900 PI01	1

	BERKMAR DRIVE (ROUTE 1403)
	URBAN COLLECTOR (GS-7)
	FROM: HILTON HEIGHTS ROAD
	TO: TOWNCENTER DRIVE
ADT (2014)	N/A
ADT (2018 Interim Year)	
ADT (2040)	10,000
DHV	
D % (design hour)	
T % (design hour)	
V (MPH)	40 MPH



PROJECT 9999-002-900, PI01, RW201, C501



Population ALBEMARLE COUNTY 24,286 (2010 Census)

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	EQUALITIES		LENGTH INCLUDING BRIDGE(S)		LENGTH EXCLUDING BRIDGE(S)		BRIDGE PLAN NO.	TYPE PROJECT	DESCRIPTION
					FEET		FEET	MILES	FEET	MILES			
9999-002-900	PE-101		PENG	106137			13101089	2.481	12382.706	2.345		PRE./ENG	From: HILTON HEIGHTS ROAD
	RW-201		ROWA	106137			13101089	2.481	12382.706	2.345		R/W	
	C-501		1000	106137			13101089	2.481	12382.706	2.345		CONSTR.	To: TOWNCENTER DRIVE
	B-XXX			XXXX	106137			718.383	0.136			BRIDGE	

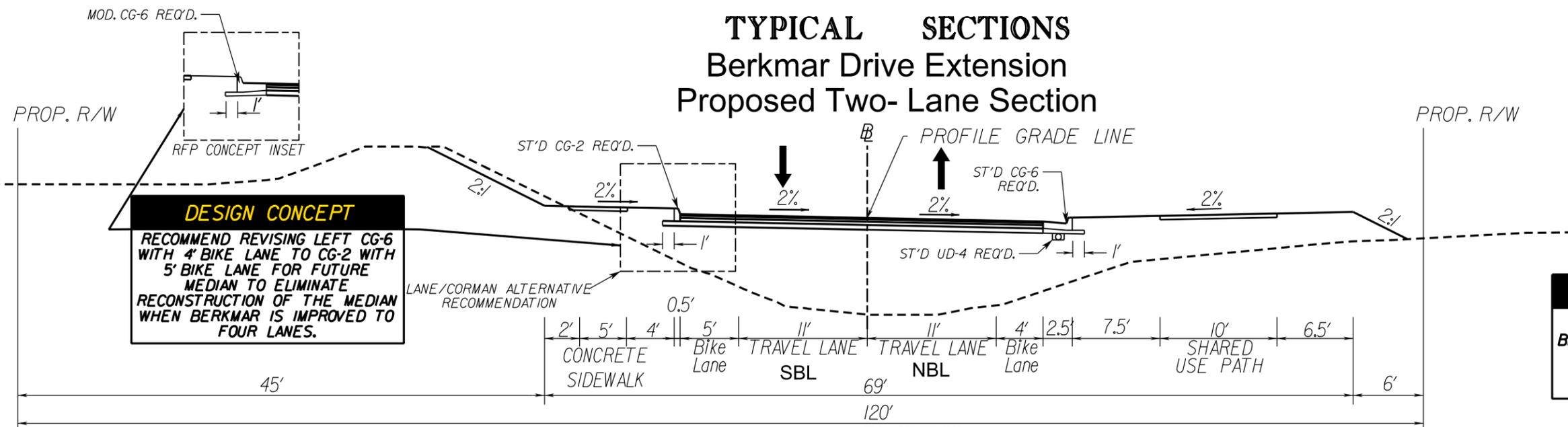
Project Lengths are based on Berkmar Drive Construction Baseline.

TITLE SHEET
BERKMAR DRIVE EXTENSION
SHEET 1 OF 13

#USERS#

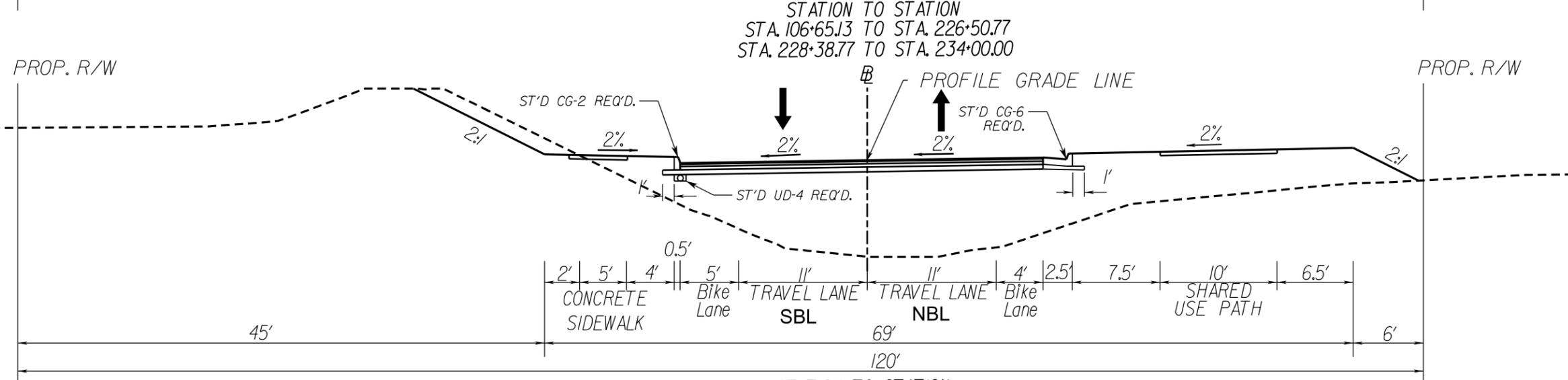
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TYPICAL SECTIONS Berkmar Drive Extension Proposed Two-Lane Section



DESIGN CONCEPT
RECOMMEND REVISING LEFT CG-6 WITH 4' BIKE LANE TO CG-2 WITH 5' BIKE LANE FOR FUTURE RECONSTRUCTION OF THE MEDIAN TO ELIMINATE RECONSTRUCTION OF THE MEDIAN WHEN BERKMAR IS IMPROVED TO FOUR LANES.

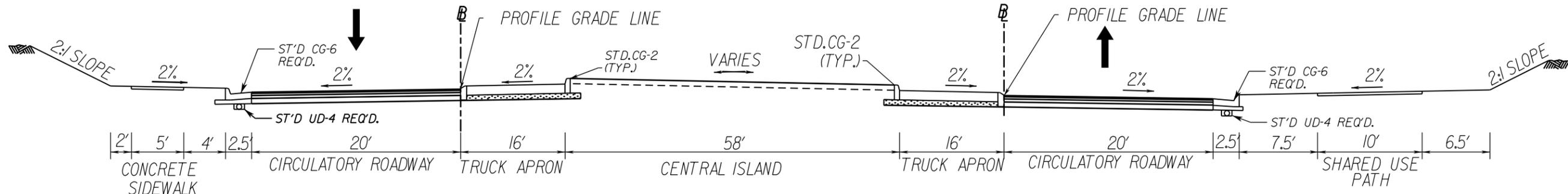
DESIGN CONCEPT
REMOVE CROWN POINT BETWEEN LANES TO MATCH FUTURE FOUR-LANE SECTION AND REDUCE CONSTRUCTION COST



STATION TO STATION
STA. 106+65.13 TO STA. 226+50.77
STA. 228+38.77 TO STA. 234+00.00

ROUNDABOUT

ROUNDABOUT



STATION TO STATION
STA. 226+50.77 TO STA. 228+38.77

**CONCEPTUAL TYPICAL SECTIONS
BERKMAR DRIVE EXTENSION**

- NOTES:
1. FOR LIMITS OF MILL AND OVERLAY AND FULL DEPTH PAVEMENT, REFER TO THE PLAN SHEETS.
 2. REFER TO GEOTECHNICAL ENGINEERING DATA REPORT FOR PAVEMENT DESIGN.

SHEET 2 OF 13

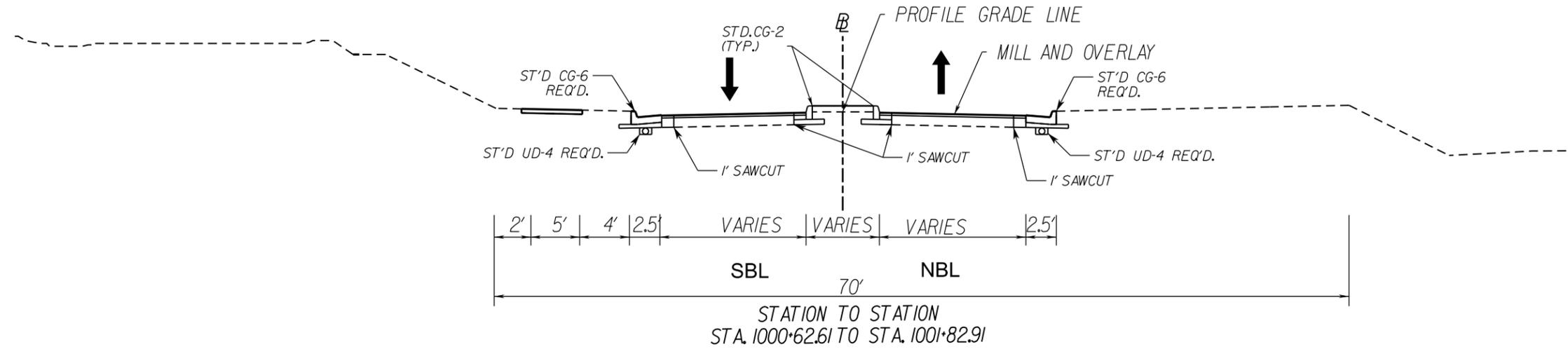
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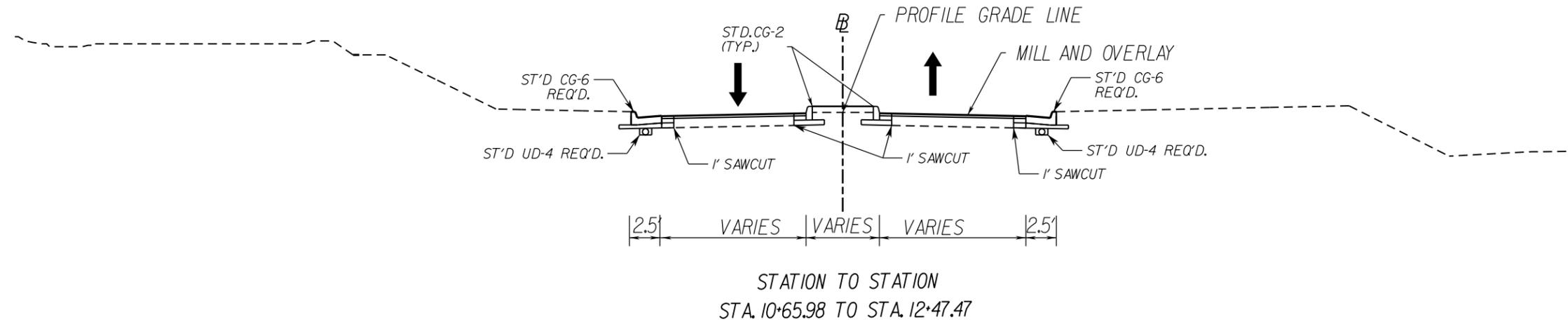
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#TIMES
#DATE#
#FILE#

TYPICAL SECTIONS

Existing Berkmar Drive



Existing Hilton Heights Road



NOTES:

1. FOR LIMITS OF MILL AND OVERLAY AND FULL DEPTH PAVEMENT, REFER TO THE PLAN SHEETS.
2. REFER TO GEOTECHNICAL ENGINEERING DATA REPORT FOR PAVEMENT DESIGN.

CONCEPTUAL TYPICAL SECTIONS

BERKMAR DRIVE EXTENSION

SHEET 3 OF 13

LANE CORMAN
CONSTRUCTION

WRA
Wilmon, Recordt and Associates, LLP

NOT TO SCALE

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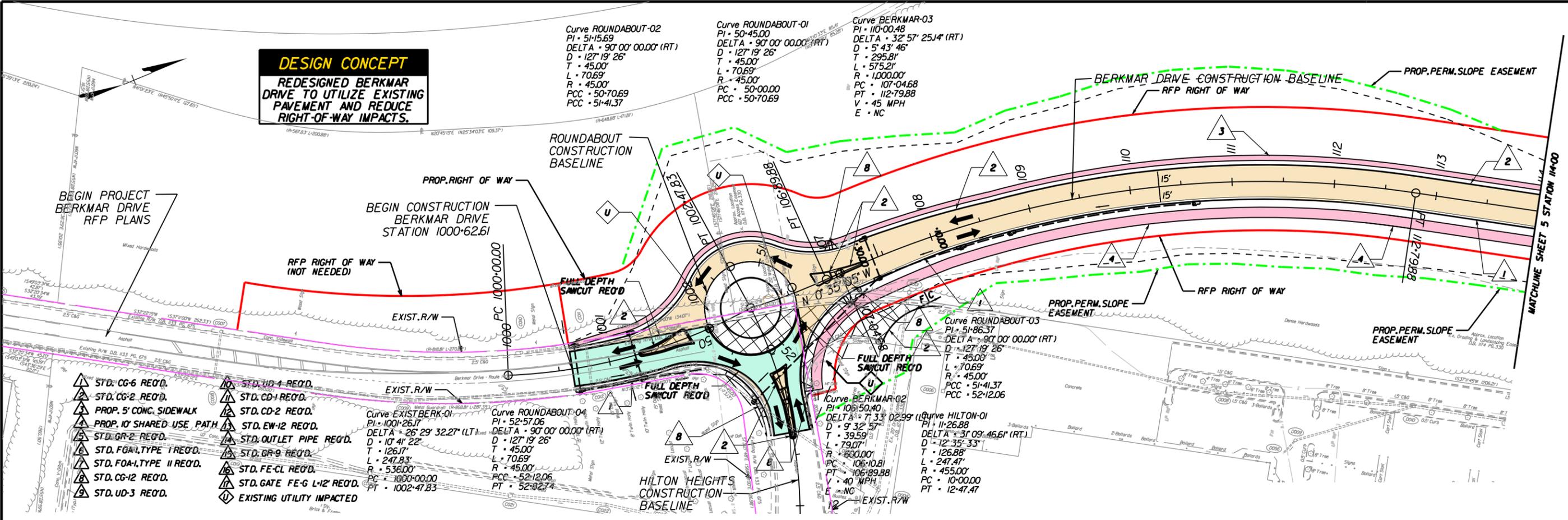
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DESIGN CONCEPT
REDESIGNED BERKMAR DRIVE TO UTILIZE EXISTING PAVEMENT AND REDUCE RIGHT-OF-WAY IMPACTS.

Curve ROUNDABOUT-02
 PI = 51+15.69
 DELTA = 90° 00' 00.00" (RT)
 D = 127' 19" 26"
 T = 45.00'
 L = 70.69'
 R = 45.00'
 PCC = 50-70.69
 PCC = 51-41.37

Curve ROUNDABOUT-01
 PI = 50+45.00
 DELTA = 90° 00' 00.00" (RT)
 D = 127' 19" 26"
 T = 45.00'
 L = 70.69'
 R = 45.00'
 PC = 50+00.00
 PCC = 50-70.69

Curve BERKMAR-03
 PI = 110+00.48
 DELTA = 32° 57' 25.14" (RT)
 D = 5' 43' 46"
 T = 295.81'
 L = 575.21'
 R = 1,000.00'
 PC = 107+04.68
 PT = 112+79.88
 V = 45 MPH
 E = NC



- 1 STD. CG-6 REQ'D.
- 2 STD. CG-2 REQ'D.
- 3 PROP. 5' CONC. SIDEWALK
- 4 PROP. 10' SHARED USE PATH
- 5 STD. GR-2 REQ'D.
- 6 STD. FGA-TYPE I REQ'D.
- 7 STD. FGA-TYPE II REQ'D.
- 8 STD. CG-12 REQ'D.
- 9 STD. UD-3 REQ'D.
- 10 STD. UD-4 REQ'D.
- 11 STD. CD-1 REQ'D.
- 12 STD. CD-2 REQ'D.
- 13 STD. EW-12 REQ'D.
- 14 STD. OUTLET PIPE REQ'D.
- 15 STD. GR-9 REQ'D.
- 16 STD. FE-CL REQ'D.
- 17 STD. GATE FE-G L-12 REQ'D.
- 18 EXISTING UTILITY IMPACTED

Curve EXIST BERK-01
 PI = 100+26.17
 DELTA = 26° 29' 32.27" (LT)
 D = 10' 41" 22"
 T = 126.17'
 L = 247.83'
 R = 536.00'
 PC = 100+00.00
 PT = 100+27.83

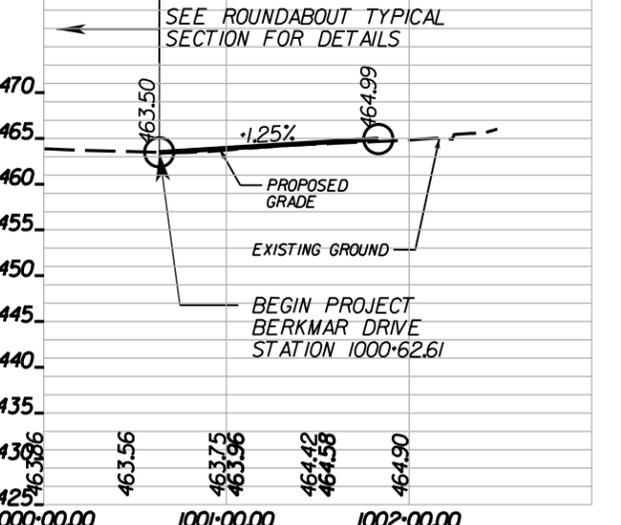
Curve ROUNDABOUT-04
 PI = 52+57.06
 DELTA = 90° 00' 00.00" (RT)
 D = 127' 19" 26"
 T = 45.00'
 L = 70.69'
 R = 45.00'
 PCC = 52-12.06
 PT = 52-32.74

Curve BERKMAR-02
 PI = 106+50.40
 DELTA = 7' 33" 02.99" (LT)
 D = 9' 32' 57"
 T = 39.59'
 L = 79.07'
 R = 600.00'
 PC = 106+10.81
 PT = 106+89.88
 V = 40 MPH
 E = NC

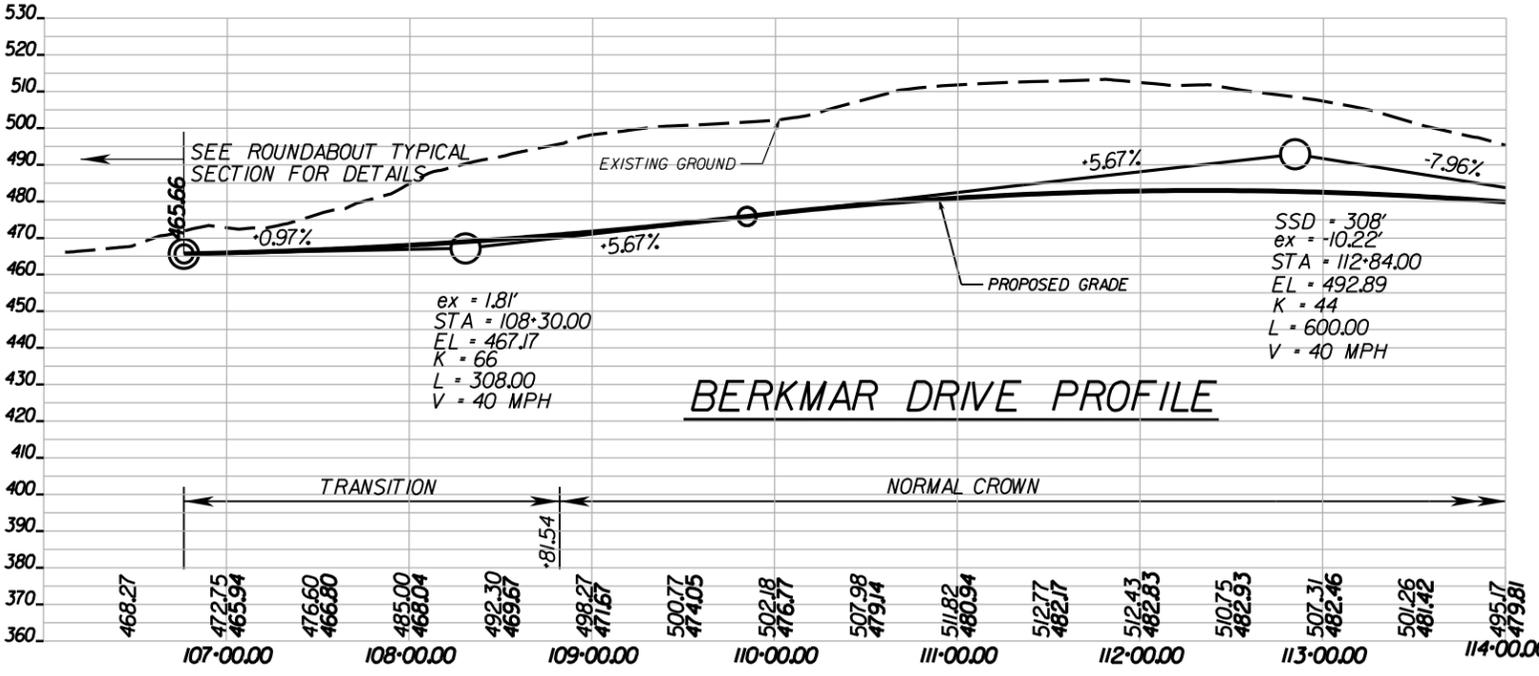
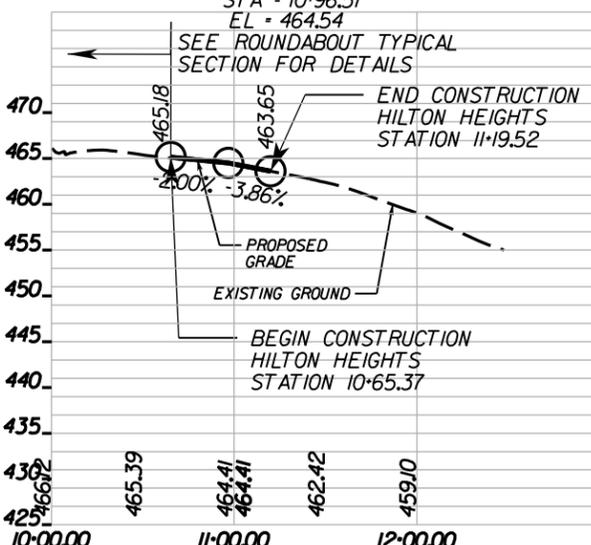
Curve ROUNDABOUT-03
 PI = 51+86.37
 DELTA = 90° 00' 00.00" (RT)
 D = 127' 19" 26"
 T = 45.00'
 L = 70.69'
 R = 45.00'
 PCC = 51-41.37
 PCC = 52-12.06

Curve HILTON-01
 PI = 11+26.88
 DELTA = 31° 09' 46.61" (RT)
 D = 12' 35" 33"
 T = 126.88'
 L = 247.47'
 R = 455.00'
 PC = 10+00.00
 PT = 12+47.47

EXISTING BERKMAR PROFILE



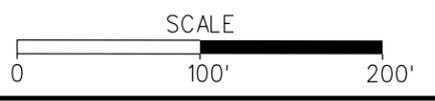
HILTON HEIGHTS PROFILE



- LEGEND:**
- EXISTING RIGHT OF WAY
 - EXISTING EASEMENT
 - PROPOSED RIGHT OF WAY
 - PROPOSED TEMPORARY EASEMENT
 - PROPOSED PERMANENT EASEMENT
 - PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
 - PROPOSED STORMWATER EASEMENT
 - PROPOSED SOUND WALL/RETAINING WALL
 - EXISTING WATER
 - EXISTING ELECTRIC
 - EXISTING FIBER OPTIC
 - EXISTING CABLE TV
 - EXISTING TELEPHONE
 - EXISTING TRAFFIC CONTROL
 - EXISTING UNKNOWN UTILITY
 - EXISTING GAS
 - EXISTING SANITARY
 - WETLANDS
 - MILL AND OVERLAY
 - FULL DEPTH PROPOSED PAVEMENT
 - CONCRETE SIDEWALK/SHARED USE PATH
 - PAVEMENT DEMOLITION
 - DENOTES CONSTRUCTION LIMITS IN CUT
 - DENOTES CONSTRUCTION LIMITS IN FILL

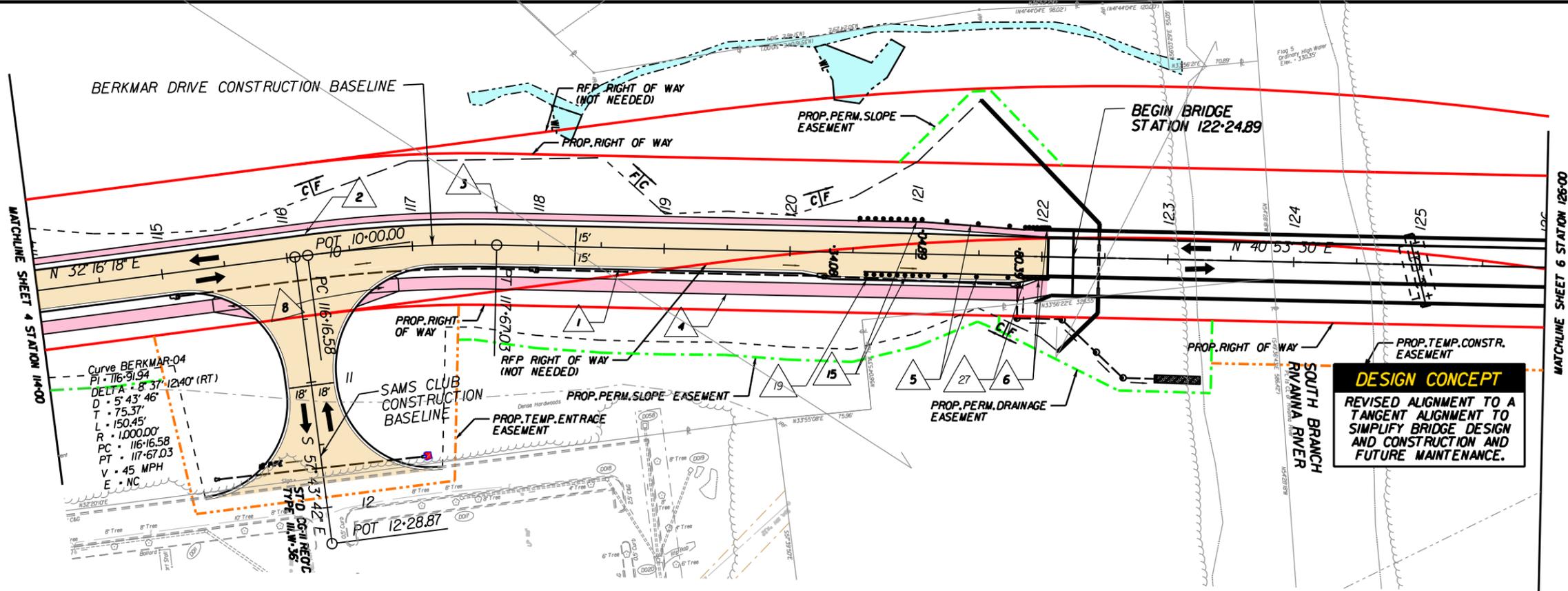
CONCEPTUAL PLAN AND PROFILE
BERKMAR DRIVE EXTENSION

SHEET 4 OF 13

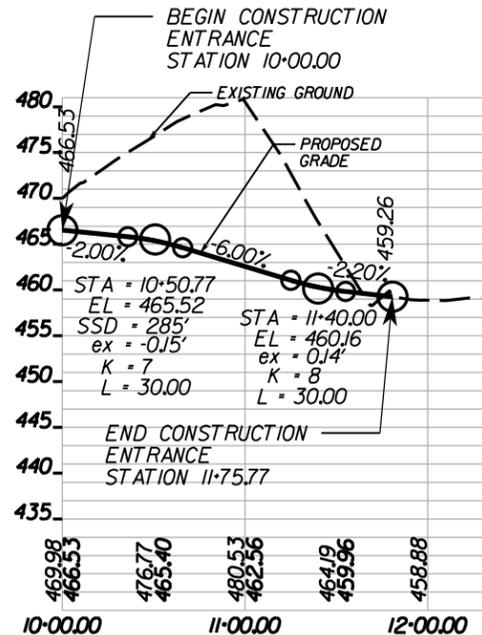


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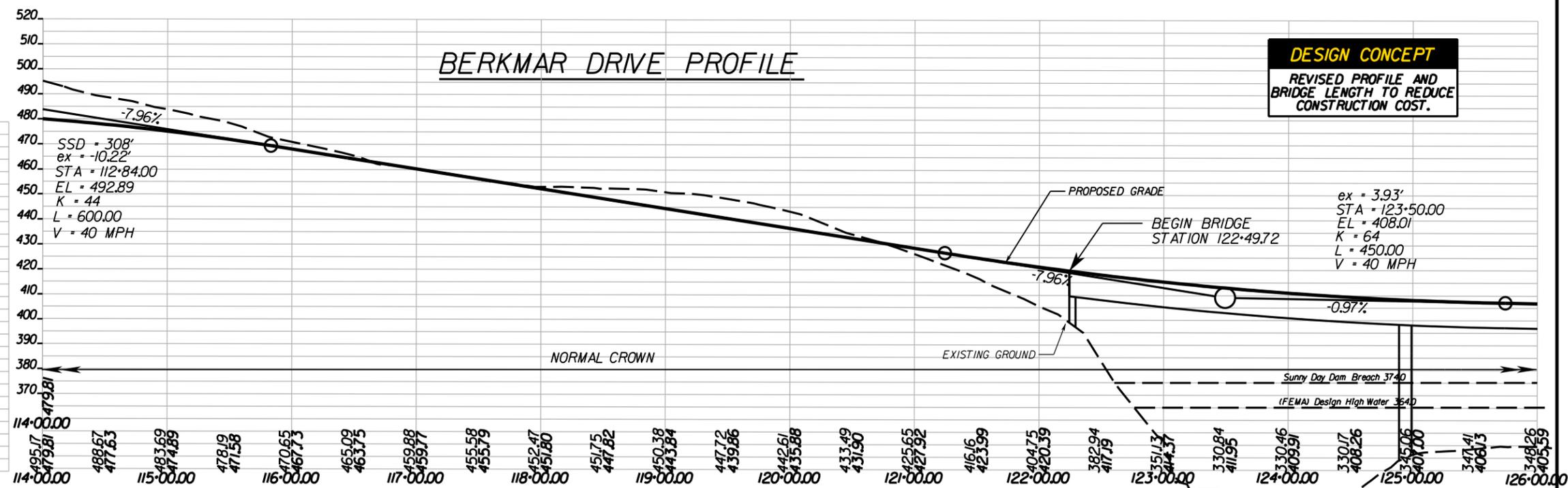
- ▲ STD. CG-6 REQ'D.
- ▲ STD. CG-2 REQ'D.
- ▲ PROP. 5' CONC. SIDEWALK
- ▲ PROP. 10' SHARED USE PATH
- ▲ STD. GR-2 REQ'D.
- ▲ STD. FOA-I, TYPE I REQ'D.
- ▲ STD. FOA-I, TYPE II REQ'D.
- ▲ STD. CG-12 REQ'D.
- ▲ STD. UD-3 REQ'D.
- ▲ STD. UD-4 REQ'D.
- ▲ STD. CD-1 REQ'D.
- ▲ STD. CD-2 REQ'D.
- ▲ STD. EW-12 REQ'D.
- ▲ STD. OUTLET PIPE REQ'D.
- ▲ STD. GR-9 REQ'D.
- ▲ STD. FE-CL REQ'D.
- ▲ STD. GATE FE-G L-12' REQ'D.
- ▲ STD. CG-7 REQ'D.
- ▲ STD. CG-3 REQ'D.
- ◊ EXISTING UTILITY IMPACTED



SAMS CLUB ENTRANCE PROFILE



BERKMAR DRIVE PROFILE



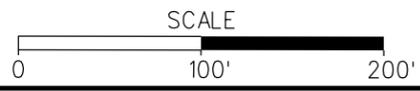
- LEGEND:**
- EXISTING RIGHT OF WAY
 - EXISTING EASEMENT
 - PROPOSED RIGHT OF WAY
 - PROPOSED TEMPORARY EASEMENT
 - PROPOSED PERMANENT EASEMENT
 - PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
 - PROPOSED STORMWATER EASEMENT
 - PROPOSED SOUND WALL/RETAINING WALL

- 24" W — EXISTING WATER
- E — EXISTING ELECTRIC
- FO — EXISTING FIBER OPTIC
- CATV — EXISTING CABLE TV
- T/Tg — EXISTING TELEPHONE
- TC — EXISTING TRAFFIC CONTROL
- Unk — EXISTING UNKNOWN UTILITY
- 2" G — EXISTING GAS
- 6" SAN — EXISTING SANITARY
- WETLANDS
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- CONCRETE SIDEWALK/SHARED USE PATH
- PAVEMENT DEMOLITION

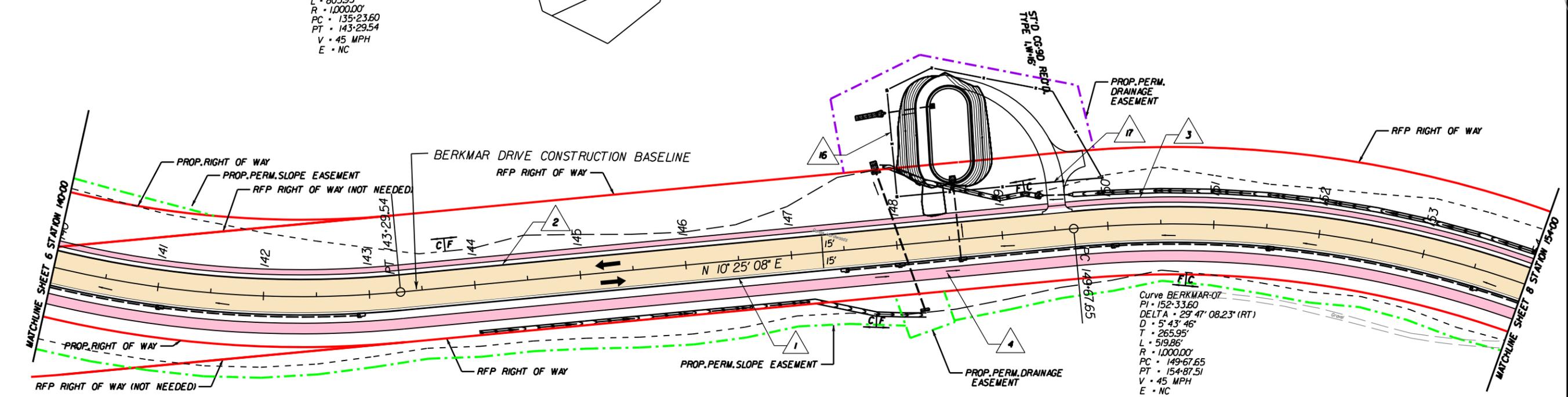
- [C] --- DENOTES CONSTRUCTION LIMITS IN CUT
- [F] --- DENOTES CONSTRUCTION LIMITS IN FILL

CONCEPTUAL PLAN AND PROFILE BERKMAR DRIVE EXTENSION

SHEET 5 OF 13

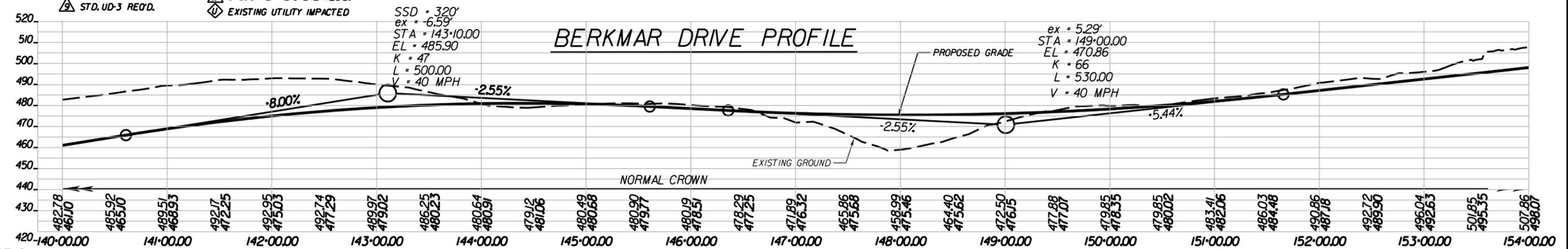


Curve BERKMAR-06
 PI = 139+49.90
 DELTA = 46° 10' 35.96" (LT)
 D = 5' 43' 46"
 T = 426.30'
 L = 805.93'
 R = 1000.00'
 PC = 135+23.60
 PT = 143+29.54
 V = 45 MPH
 E = NC



Curve BERKMAR-07
 PI = 152+33.60
 DELTA = 29° 47' 08.23" (RT)
 D = 5' 43' 46"
 T = 265.95'
 L = 519.86'
 R = 1000.00'
 PC = 149+67.65
 PT = 154+87.51
 V = 45 MPH
 E = NC

- | | |
|------------------------------|-------------------------------|
| ▲ STD. CG-6 REQ'D. | ▲ STD. UD-4 REQ'D. |
| ▲ STD. CG-2 REQ'D. | ▲ STD. CD-1 REQ'D. |
| ▲ PROP. 5' CONC. SIDEWALK | ▲ STD. CD-2 REQ'D. |
| ▲ PROP. 10' SHARED USE PATH | ▲ STD. EW-12 REQ'D. |
| ▲ STD. GR-2 REQ'D. | ▲ STD. OUTLET PIPE REQ'D. |
| ▲ STD. FOA-I, TYPE I REQ'D. | ▲ STD. GR-9 REQ'D. |
| ▲ STD. FOA-I, TYPE II REQ'D. | ▲ STD. FE-CL REQ'D. |
| ▲ STD. CG-12 REQ'D. | ▲ STD. GATE FE-G L-12' REQ'D. |
| ▲ STD. UD-3 REQ'D. | Ⓞ EXISTING UTILITY IMPACTED |

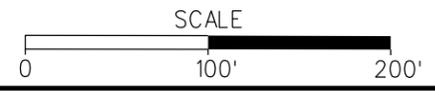


- LEGEND:**
- | | |
|----------------------------------|---|
| — 24" W — EXISTING WATER | ■ WETLANDS |
| — E — EXISTING ELECTRIC | ■ MILL AND OVERLAY |
| — FO — EXISTING FIBER OPTIC | ■ FULL DEPTH PROPOSED PAVEMENT |
| — CATV — EXISTING CABLE TV | ■ CONCRETE SIDEWALK/SHARED USE PATH |
| — T/Tg — EXISTING TELEPHONE | ■ PAVEMENT DEMOLITION |
| — TC — EXISTING TRAFFIC CONTROL | — C — DENOTES CONSTRUCTION LIMITS IN CUT |
| — Unk — EXISTING UNKNOWN UTILITY | — F — DENOTES CONSTRUCTION LIMITS IN FILL |
| — 2" G — EXISTING GAS | |
| — 6" SAN — EXISTING SANITARY | |

- | |
|---|
| ■ WETLANDS |
| ■ MILL AND OVERLAY |
| ■ FULL DEPTH PROPOSED PAVEMENT |
| ■ CONCRETE SIDEWALK/SHARED USE PATH |
| ■ PAVEMENT DEMOLITION |
| — C — DENOTES CONSTRUCTION LIMITS IN CUT |
| — F — DENOTES CONSTRUCTION LIMITS IN FILL |

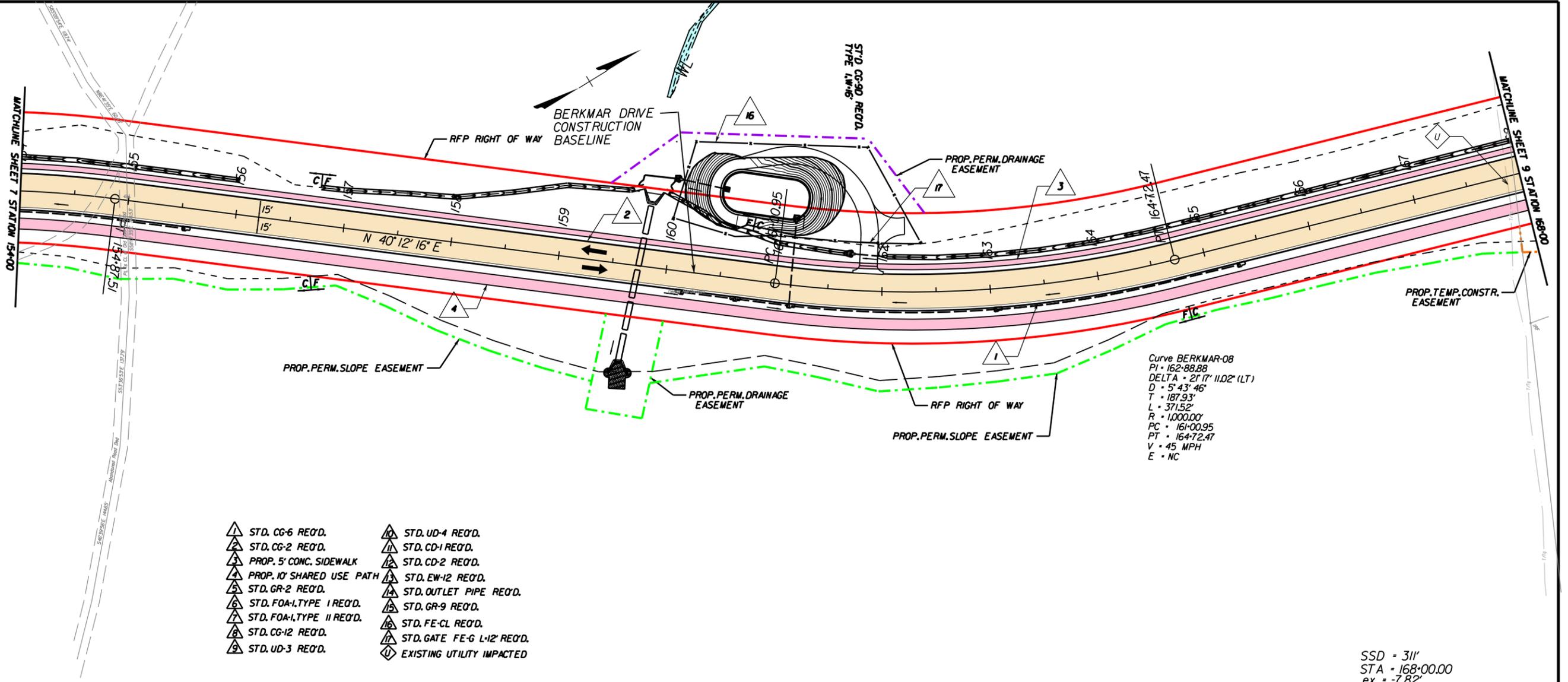
CONCEPTUAL PLAN AND PROFILE
 BERKMAR DRIVE EXTENSION

SHEET 7 OF 13

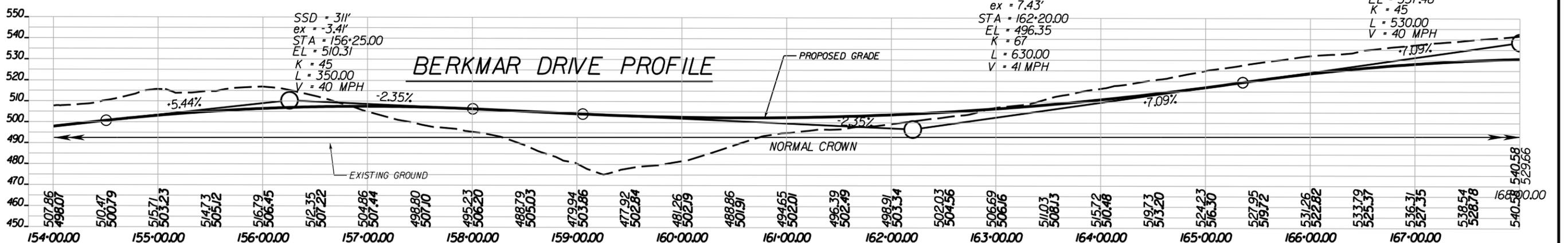


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- | | |
|------------------------------|-------------------------------|
| ▲ STD. CG-6 REQ'D. | ▲ STD. UD-4 REQ'D. |
| ▲ STD. CG-2 REQ'D. | ▲ STD. CD-1 REQ'D. |
| ▲ PROP. 5' CONC. SIDEWALK | ▲ STD. CD-2 REQ'D. |
| ▲ PROP. 10' SHARED USE PATH | ▲ STD. EW-12 REQ'D. |
| ▲ STD. GR-2 REQ'D. | ▲ STD. OUTLET PIPE REQ'D. |
| ▲ STD. FOA-I, TYPE I REQ'D. | ▲ STD. GR-9 REQ'D. |
| ▲ STD. FOA-I, TYPE II REQ'D. | ▲ STD. FE-CL REQ'D. |
| ▲ STD. CG-12 REQ'D. | ▲ STD. GATE FE-G L-12' REQ'D. |
| ▲ STD. UD-3 REQ'D. | ◊ EXISTING UTILITY IMPACTED |

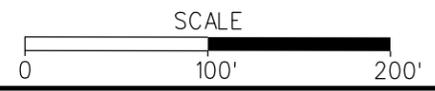


- LEGEND:**
- | | |
|----------------------------------|---------------------------------|
| — 24" W — EXISTING WATER | — E — EXISTING ELECTRIC |
| — FO — EXISTING FIBER OPTIC | — CATV — EXISTING CABLE TV |
| — T/Tg — EXISTING TELEPHONE | — TC — EXISTING TRAFFIC CONTROL |
| — Unk — EXISTING UNKNOWN UTILITY | — 2" G — EXISTING GAS |
| — 6" SAN — EXISTING SANITARY | |

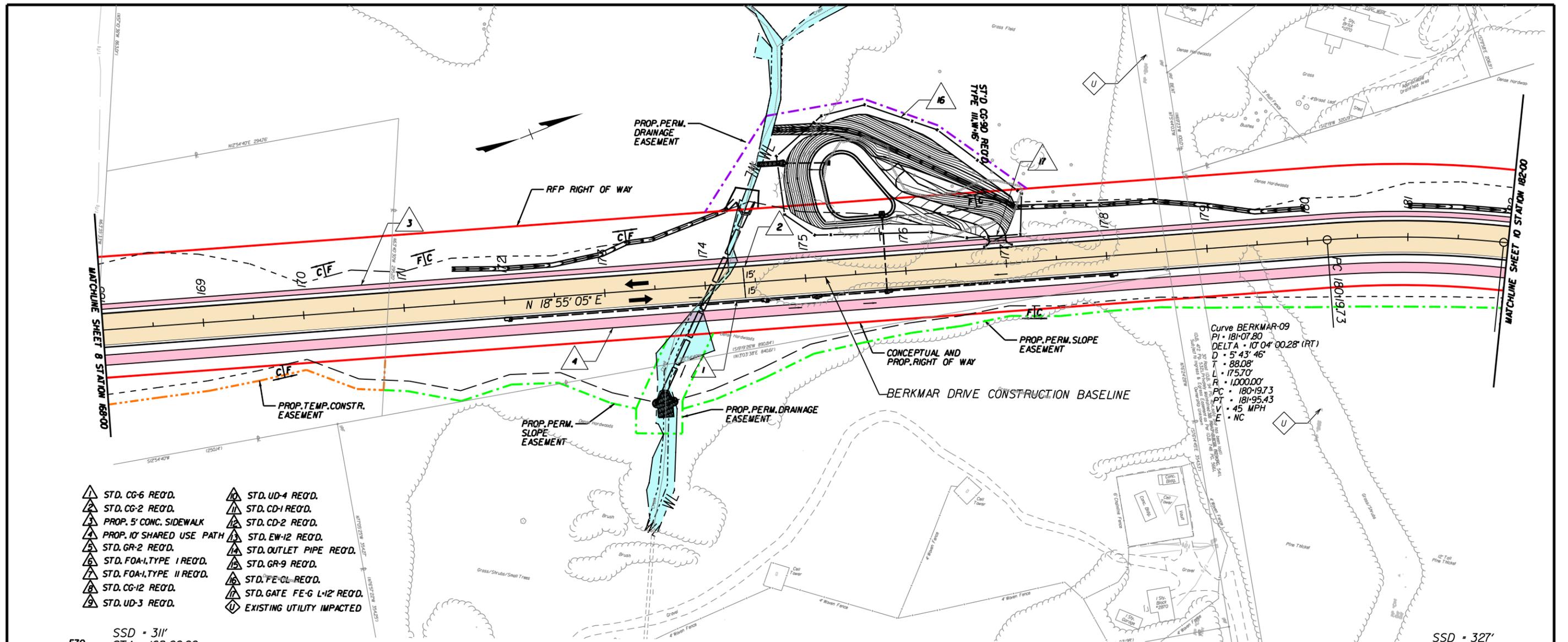
- | |
|---|
| ■ WETLANDS |
| ■ MILL AND OVERLAY |
| ■ FULL DEPTH PROPOSED PAVEMENT |
| ■ CONCRETE SIDEWALK/SHARED USE PATH |
| ■ PAVEMENT DEMOLITION |
| C — DENOTES CONSTRUCTION LIMITS IN CUT |
| F — DENOTES CONSTRUCTION LIMITS IN FILL |

CONCEPTUAL PLAN AND PROFILE
 BERKMAR DRIVE EXTENSION

SHEET 8 OF 13

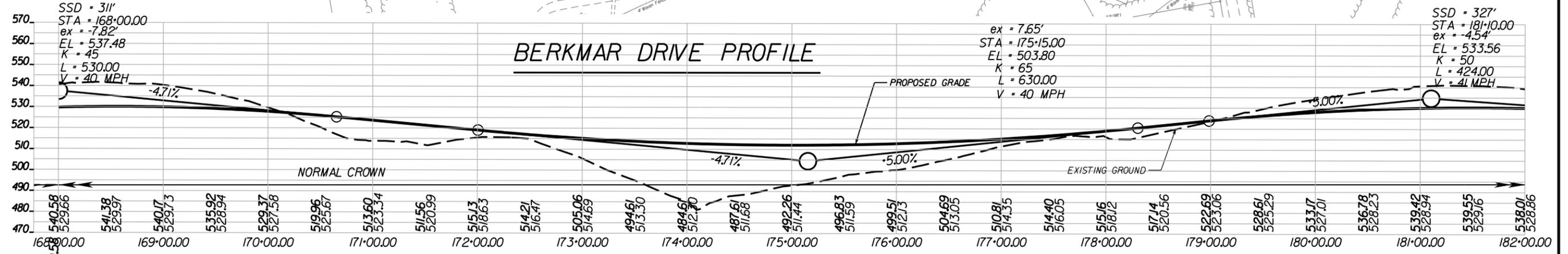


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- | | |
|------------------------------|-------------------------------|
| ▲ STD. CG-6 REQ'D. | ▲ STD. UD-4 REQ'D. |
| ▲ STD. CG-2 REQ'D. | ▲ STD. CD-1 REQ'D. |
| ▲ PROP. 5' CONC. SIDEWALK | ▲ STD. CD-2 REQ'D. |
| ▲ PROP. 10' SHARED USE PATH | ▲ STD. EW-12 REQ'D. |
| ▲ STD. GR-2 REQ'D. | ▲ STD. OUTLET PIPE REQ'D. |
| ▲ STD. FOA-I, TYPE I REQ'D. | ▲ STD. GR-9 REQ'D. |
| ▲ STD. FOA-I, TYPE II REQ'D. | ▲ STD. FE-CL-REQ'D. |
| ▲ STD. CG-12 REQ'D. | ▲ STD. GATE FE-G L-12' REQ'D. |
| ▲ STD. UD-3 REQ'D. | ▲ EXISTING UTILITY IMPACTED |

Curve BERKMAR-09
 PI = 181+07.80
 DELTA = 107°04'00.28\"/>

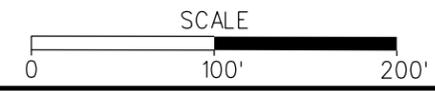


LEGEND:

- | | |
|----------------------------------|---|
| — 24" W — EXISTING WATER | ■ WETLANDS |
| — E — EXISTING ELECTRIC | ■ MILL AND OVERLAY |
| — FO — EXISTING FIBER OPTIC | ■ FULL DEPTH PROPOSED PAVEMENT |
| — CATV — EXISTING CABLE TV | ■ CONCRETE SIDEWALK/SHARED USE PATH |
| — T/Tg — EXISTING TELEPHONE | ■ PAVEMENT DEMOLITION |
| — TC — EXISTING TRAFFIC CONTROL | — C — DENOTES CONSTRUCTION LIMITS IN CUT |
| — Unk — EXISTING UNKNOWN UTILITY | — F — DENOTES CONSTRUCTION LIMITS IN FILL |
| — 2" G — EXISTING GAS | |
| — 6" SAN — EXISTING SANITARY | |

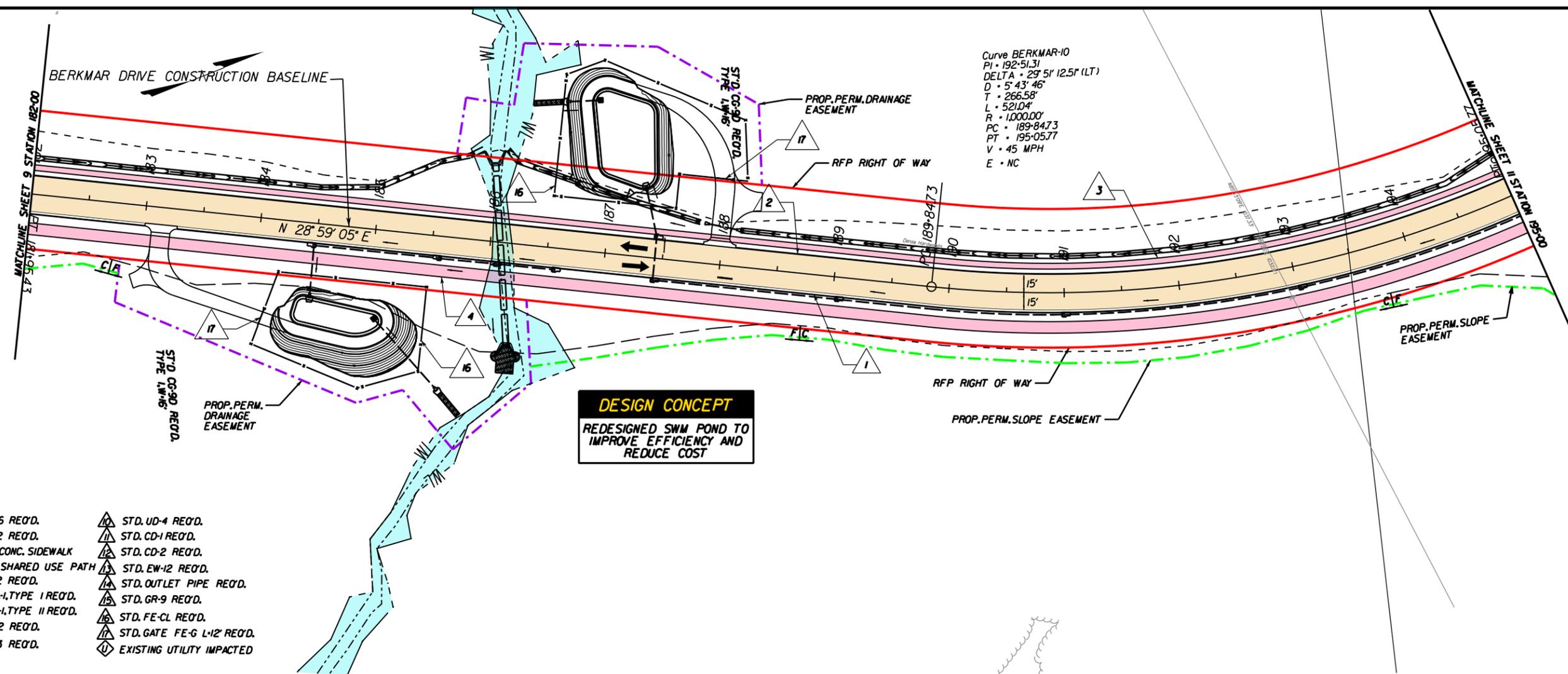
**CONCEPTUAL PLAN AND PROFILE
 BERKMAR DRIVE EXTENSION**

SHEET 9 OF 13

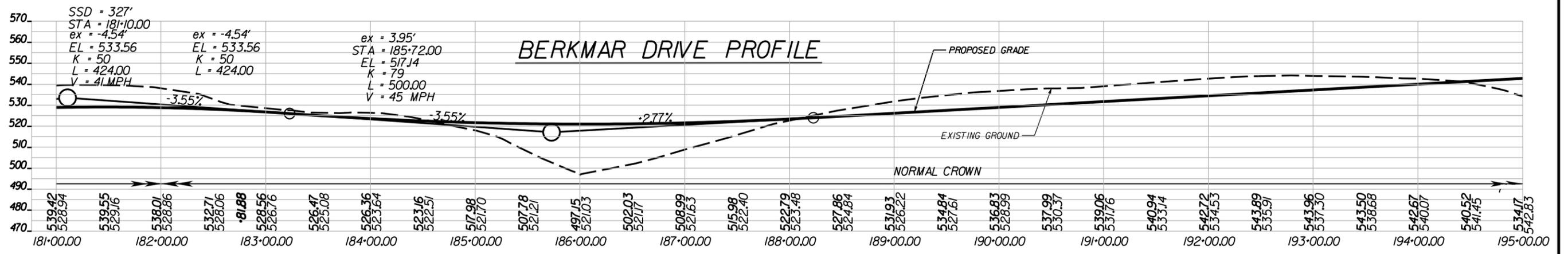


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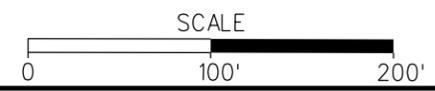
- | | |
|------------------------------|-------------------------------|
| ▲ STD. CG-6 REQ'D. | ▲ STD. UD-4 REQ'D. |
| ▲ STD. CG-2 REQ'D. | ▲ STD. CD-1 REQ'D. |
| ▲ PROP. 5' CONC. SIDEWALK | ▲ STD. CD-2 REQ'D. |
| ▲ PROP. 10' SHARED USE PATH | ▲ STD. EW-12 REQ'D. |
| ▲ STD. GR-2 REQ'D. | ▲ STD. OUTLET PIPE REQ'D. |
| ▲ STD. FOA-I, TYPE I REQ'D. | ▲ STD. GR-9 REQ'D. |
| ▲ STD. FOA-I, TYPE II REQ'D. | ▲ STD. FE-CL REQ'D. |
| ▲ STD. CG-12 REQ'D. | ▲ STD. GATE FE-G L-12' REQ'D. |
| ▲ STD. UD-3 REQ'D. | ◊ EXISTING UTILITY IMPACTED |



- LEGEND:**
- | | | | | |
|------------|--------------------------|---|-----------------------------------|-------------------------------------|
| — 24" W — | EXISTING WATER | ■ | WETLANDS | |
| — E — | EXISTING ELECTRIC | ■ | MILL AND OVERLAY | |
| — FO — | EXISTING FIBER OPTIC | ■ | FULL DEPTH PROPOSED PAVEMENT | |
| — CATV — | EXISTING CABLE TV | ■ | CONCRETE SIDEWALK/SHARED USE PATH | |
| — T/Tg — | EXISTING TELEPHONE | ■ | PAVEMENT DEMOLITION | |
| — TC — | EXISTING TRAFFIC CONTROL | ■ | — C — | DENOTES CONSTRUCTION LIMITS IN CUT |
| — Unk — | EXISTING UNKNOWN UTILITY | ■ | — F — | DENOTES CONSTRUCTION LIMITS IN FILL |
| — 2" G — | EXISTING GAS | | | |
| — 6" SAN — | EXISTING SANITARY | | | |

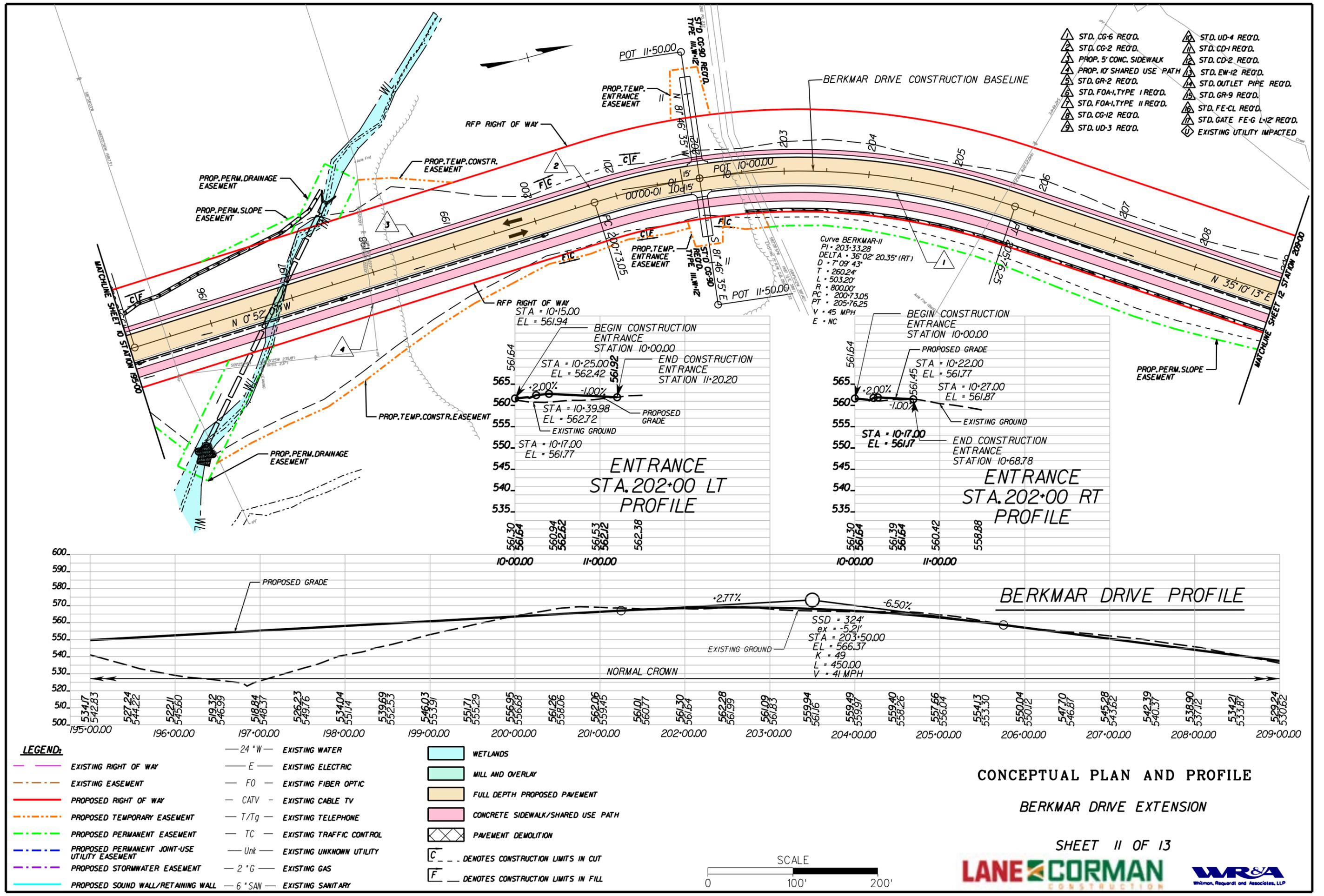
**CONCEPTUAL PLAN AND PROFILE
BERKMAR DRIVE EXTENSION**

SHEET 10 OF 13



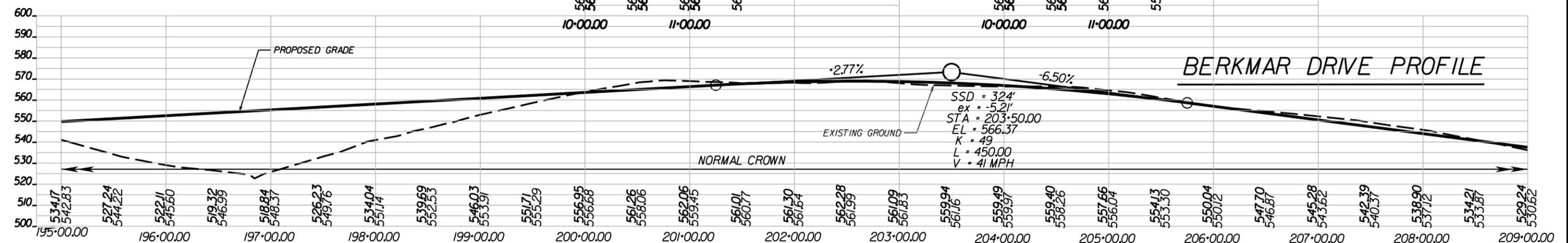
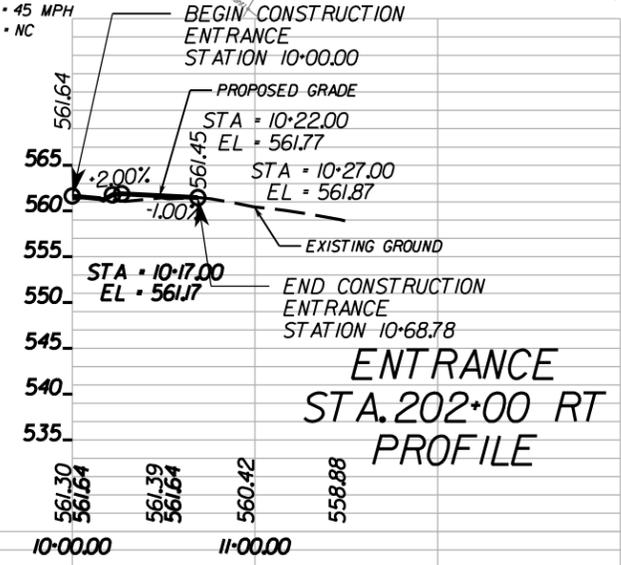
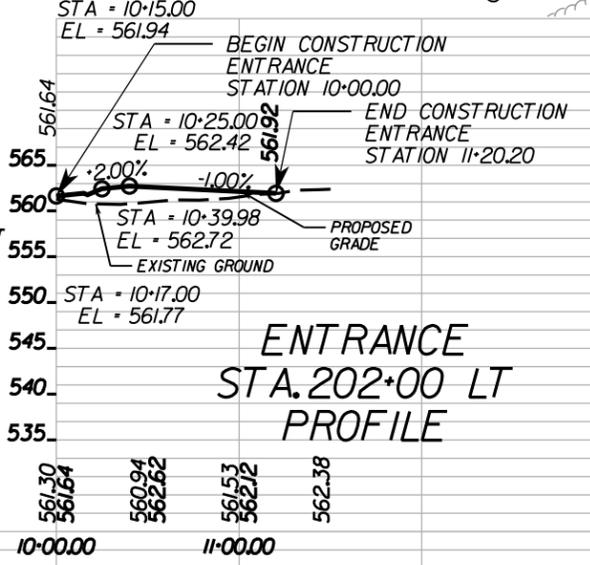
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- ▲ STD. CG-6 REQ'D.
- ▲ STD. CG-2 REQ'D.
- ▲ PROP. 5' CONC. SIDEWALK
- ▲ STD. GR-2 REQ'D.
- ▲ STD. FOA-I, TYPE I REQ'D.
- ▲ STD. FOA-I, TYPE II REQ'D.
- ▲ STD. CG-12 REQ'D.
- ▲ STD. UD-3 REQ'D.
- ▲ STD. UD-4 REQ'D.
- ▲ STD. CD-1 REQ'D.
- ▲ STD. CD-2 REQ'D.
- ▲ STD. EW-12 REQ'D.
- ▲ STD. OUTLET PIPE REQ'D.
- ▲ STD. GR-9 REQ'D.
- ▲ STD. FE-CL REQ'D.
- ▲ STD. GATE FE-G L-1/2' REQ'D.
- ◇ EXISTING UTILITY IMPACTED

Curve BERKMAR-II
 PI = 203+33.28
 DELTA = 36° 02' 20.35" (RT)
 D = 7° 09' 43"
 T = 260.24'
 L = 503.20'
 R = 800.00'
 PC = 200+73.05
 PT = 205+76.25
 V = 45 MPH
 E = NC

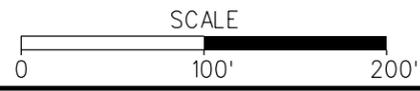


- LEGEND:**
- 24" W — EXISTING WATER
 - E — EXISTING ELECTRIC
 - FO — EXISTING FIBER OPTIC
 - CATV — EXISTING CABLE TV
 - T/Tg — EXISTING TELEPHONE
 - TC — EXISTING TRAFFIC CONTROL
 - Unk — EXISTING UNKNOWN UTILITY
 - 2" G — EXISTING GAS
 - 6" SAN — EXISTING SANITARY
 - 24" W — EXISTING WATER
 - E — EXISTING ELECTRIC
 - FO — EXISTING FIBER OPTIC
 - CATV — EXISTING CABLE TV
 - T/Tg — EXISTING TELEPHONE
 - TC — EXISTING TRAFFIC CONTROL
 - Unk — EXISTING UNKNOWN UTILITY
 - 2" G — EXISTING GAS
 - 6" SAN — EXISTING SANITARY

- WETLANDS
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- CONCRETE SIDEWALK/SHARED USE PATH
- PAVEMENT DEMOLITION
- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

**CONCEPTUAL PLAN AND PROFILE
 BERKMAR DRIVE EXTENSION**

SHEET II OF 13

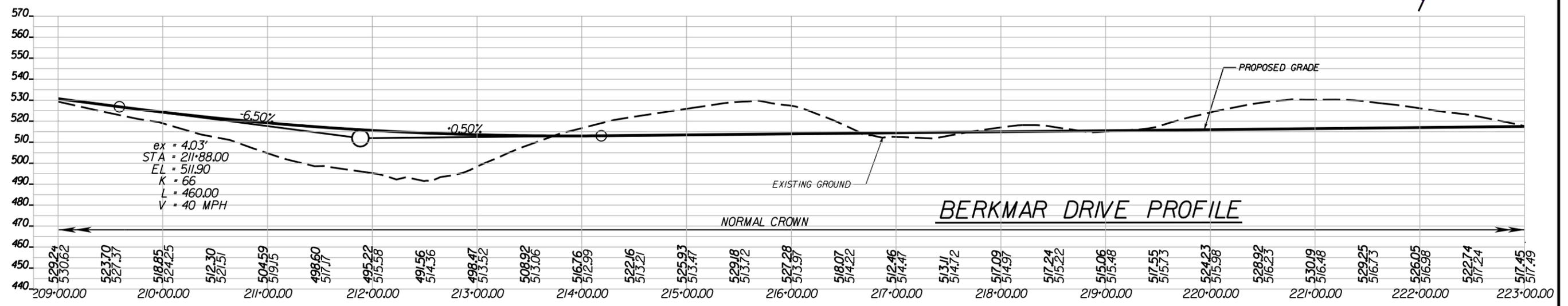
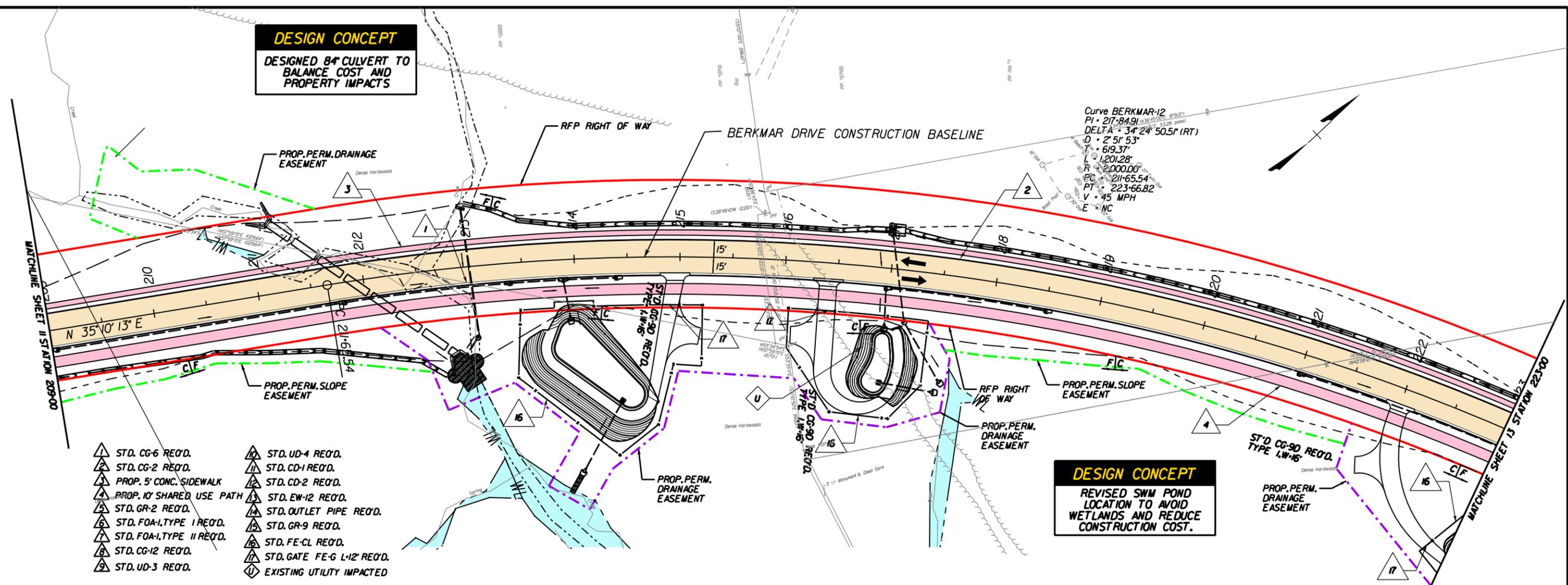


DESIGN CONCEPT
 DESIGNED 8' CULVERT TO
 BALANCE COST AND
 PROPERTY IMPACTS

DESIGN CONCEPT
 REVISED SWM POND
 LOCATION TO AVOID
 WETLANDS AND REDUCE
 CONSTRUCTION COST.

- | | |
|------------------------------|------------------------------|
| ▲ STD. CG-6 REQ'D. | ▲ STD. UD-4 REQ'D. |
| ▲ STD. CG-2 REQ'D. | ▲ STD. CD-1 REQ'D. |
| ▲ PROP. 5' CONC. SIDEWALK | ▲ STD. CD-2 REQ'D. |
| ▲ PROP. 10' SHARED USE PATH | ▲ STD. EW-12 REQ'D. |
| ▲ STD. GR-2 REQ'D. | ▲ STD. OUTLET PIPE REQ'D. |
| ▲ STD. FOA-I, TYPE I REQ'D. | ▲ STD. GR-9 REQ'D. |
| ▲ STD. FOA-I, TYPE II REQ'D. | ▲ STD. FE-CL REQ'D. |
| ▲ STD. CG-12 REQ'D. | ▲ STD. GATE FE-G L-12 REQ'D. |
| ▲ STD. UD-3 REQ'D. | ▲ EXISTING UTILITY IMPACTED |

Curve BERKMAR-12
 PI • 217.8491
 DELTA • 34° 24' 50.5" (RT)
 D • 251.53'
 L • 619.37'
 R • 2000.00'
 PC • 211.6554
 PT • 223.6682
 V • 45 MPH
 E • NC



LEGEND:

- | | |
|------------|--------------------------|
| — 24" W — | EXISTING WATER |
| — E — | EXISTING ELECTRIC |
| — FO — | EXISTING FIBER OPTIC |
| — CATV — | EXISTING CABLE TV |
| — T/Tg — | EXISTING TELEPHONE |
| — TC — | EXISTING TRAFFIC CONTROL |
| — Unk — | EXISTING UNKNOWN UTILITY |
| — 2" G — | EXISTING GAS |
| — 6" SAN — | EXISTING SANITARY |

- | | |
|-------|-------------------------------------|
| ■ | WETLANDS |
| ■ | MILL AND OVERLAY |
| ■ | FULL DEPTH PROPOSED PAVEMENT |
| ■ | CONCRETE SIDEWALK/SHARED USE PATH |
| ■ | PAVEMENT DEMOLITION |
| — C — | DENOTES CONSTRUCTION LIMITS IN CUT |
| — F — | DENOTES CONSTRUCTION LIMITS IN FILL |

CONCEPTUAL PLAN AND PROFILE
 BERKMAR DRIVE EXTENSION

SHEET 12 OF 13



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#DATE# #FILE#

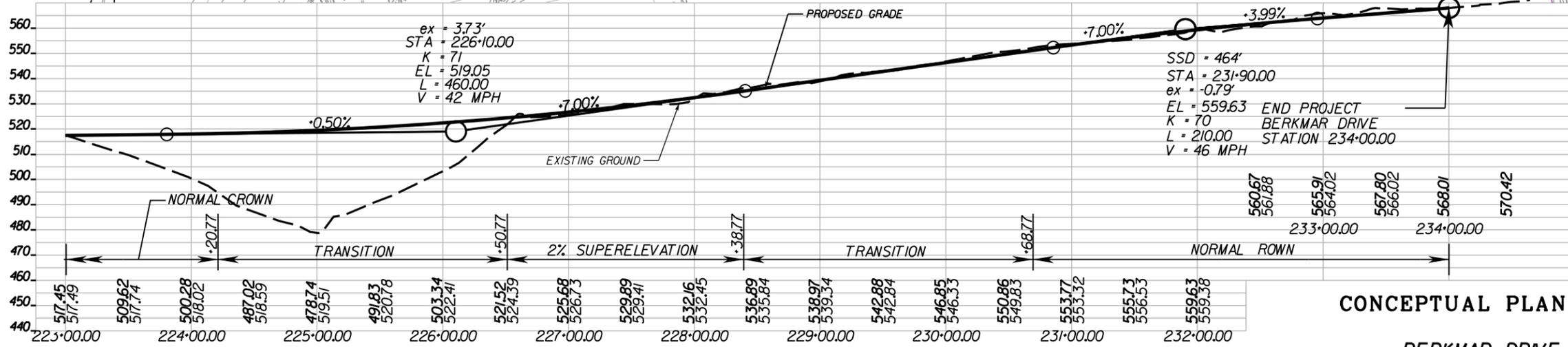
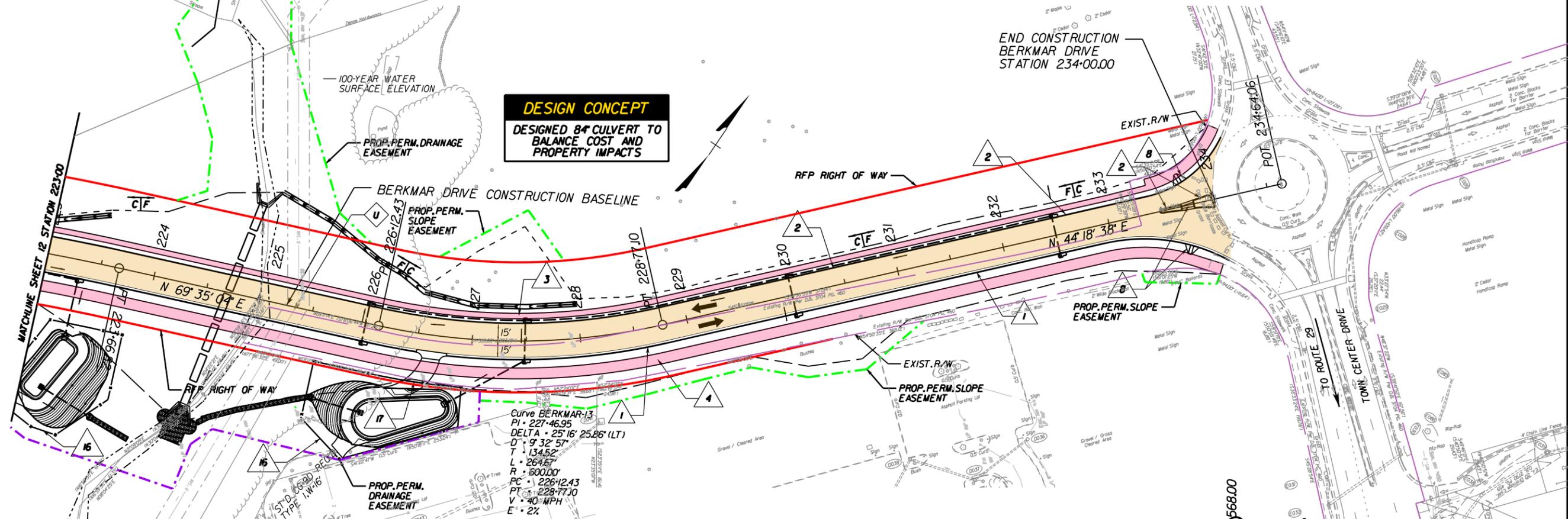
DESIGN CONCEPT
DESIGNED ADDITIONAL SWM BASINS TO IMPROVE WATER QUALITY

LEGEND:

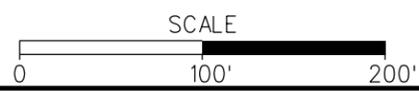
- 24" W — EXISTING WATER
- E — EXISTING ELECTRIC
- FO — EXISTING FIBER OPTIC
- CATV — EXISTING CABLE TV
- T/Tg — EXISTING TELEPHONE
- TC — EXISTING TRAFFIC CONTROL
- Unk — EXISTING UNKNOWN UTILITY
- 2" G — EXISTING GAS
- 6" SAN — EXISTING SANITARY
- — EXISTING RIGHT OF WAY
- — EXISTING EASEMENT
- — PROPOSED RIGHT OF WAY
- — PROPOSED TEMPORARY EASEMENT
- — PROPOSED PERMANENT EASEMENT
- — PROPOSED PERMANENT JOINT-USE UTILITY EASEMENT
- — PROPOSED STORMWATER EASEMENT
- — PROPOSED SOUND WALL/RETAINING WALL

- WETLANDS
- MILL AND OVERLAY
- FULL DEPTH PROPOSED PAVEMENT
- CONCRETE SIDEWALK/SHARED USE PATH
- PAVEMENT DEMOLITION
- C — DENOTES CONSTRUCTION LIMITS IN CUT
- F — DENOTES CONSTRUCTION LIMITS IN FILL

- △ STD. CG-6 REQ'D.
- △ STD. CG-2 REQ'D.
- △ PROP. 5' CONC. SIDEWALK
- △ PROP. 10' SHARED USE PATH
- △ STD. GR-2 REQ'D.
- △ STD. FOA-I, TYPE I REQ'D.
- △ STD. FOA-I, TYPE II REQ'D.
- △ STD. CG-12 REQ'D.
- △ STD. UD-3 REQ'D.
- △ STD. UD-4 REQ'D.
- △ STD. CD-1 REQ'D.
- △ STD. CD-2 REQ'D.
- △ STD. EW-12 REQ'D.
- △ STD. OUTLET PIPE REQ'D.
- △ STD. GR-9 REQ'D.
- △ STD. FE-CL REQ'D.
- △ STD. GATE FE-G L-1/2' REQ'D.
- ◇ EXISTING UTILITY IMPACTED



CONCEPTUAL PLAN AND PROFILE
BERKMAR DRIVE EXTENSION



#USERS#

#DATE# #FILE#

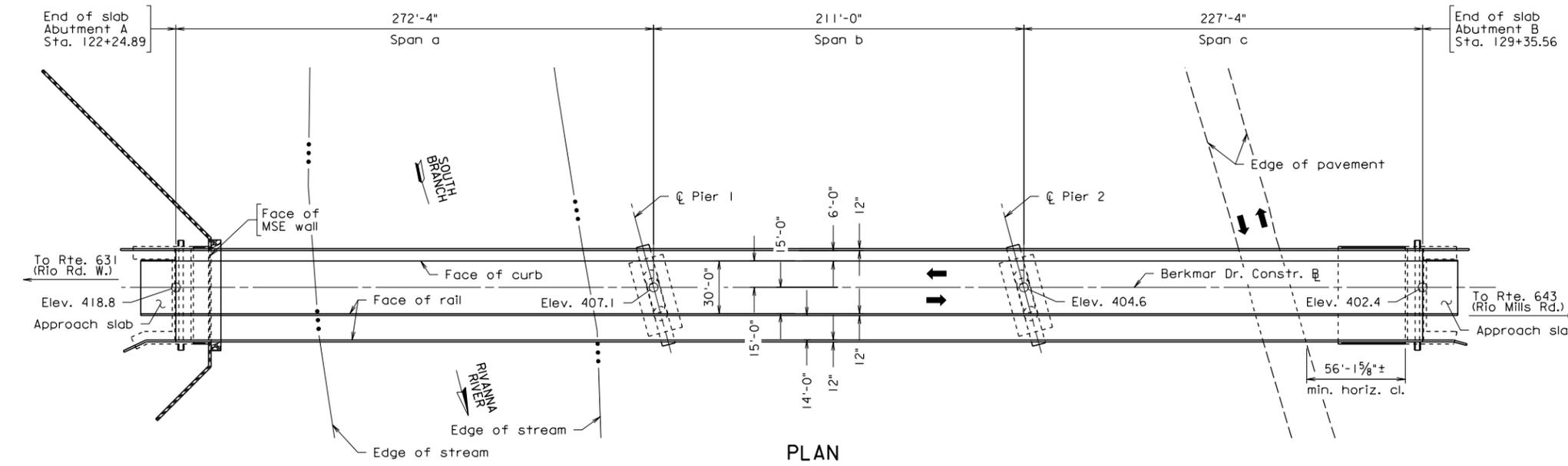
Section 4.3.3.2

Conceptual Structural Plans

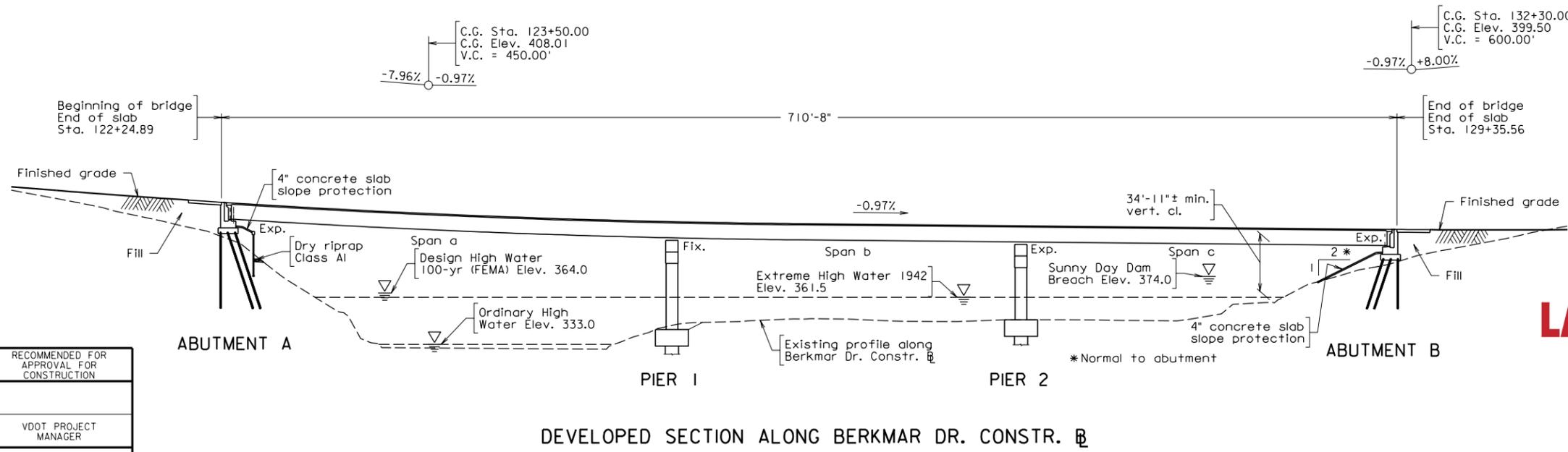


LANE AND **CORMAN**
CONSTRUCTION

In association with: **RK&K**



PLAN



DEVELOPED SECTION ALONG BERKMAR DR. CONSTR. E.

STATE	FEDERAL AID		STATE		SHEET NO.
VA.	ROUTE	PROJECT	ROUTE	PROJECT	I
			1403	9999-002-900 B676	
NBIS Number:			UPC No. 106137		
Federal Oversight Code: N/A			FHWA Construction and Scour Code: X441-S5		

DESIGN EXCEPTION(S):

None.

GENERAL NOTES:

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

Width: 30'-0" face of curb to face of rail, 14'-0" face-to-face of rail.

Span layout: 272'-4" - 211'-0" - 227'-4" continuous steel girder spans.

Capacity: HL-93 loading.

Drainage area: 264 sq. mi.

Specifications:

- Construction: Virginia Department of Transportation Road and Bridge Specifications, 2007.
- Design: AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012; and VDOT Modifications.
- Standards: Virginia Department of Transportation Road and Bridge Standards, 2008.

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

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

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION
VDOT PROJECT MANAGER
DISTRICT CONSTRUCTION MANAGER
WHITMAN REQUARDT & ASSOCIATES RICHMOND, VA STRUCTURAL ENGINEER
PLANS BY: WR&A
COORDINATED:
SUPERVISED: Jeremy Schlusel
DESIGNED: Michelle Defreese/Ryan Sedar
DRAWN: Michelle Defreese/Ryan Sedar
CHECKED: James Guinther



COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE ON
RTE. 1403 (BERKMAR DRIVE)
OVER THE SOUTH FORK RIVANNA RIVER
ALBERMARLE CO. - 1.4 MI N. OF RTE. 631
PROJ. 9999-002-900, B676

Recommended for Approval: _____ Date _____
D.B. Project Manager

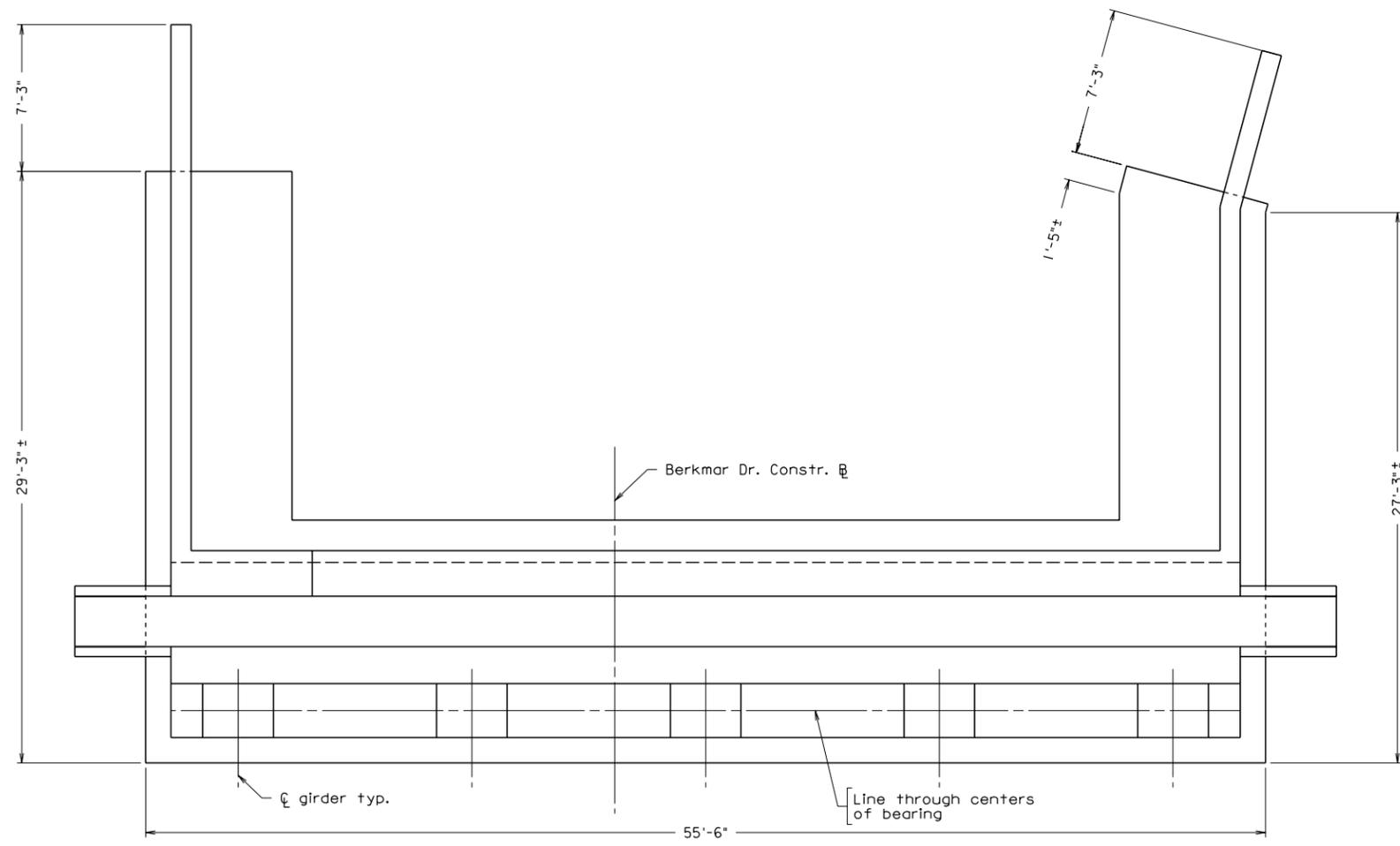
Approved: _____ Date _____
Chief Engineer

Date: December 2014 © 2014, Commonwealth of Virginia Sheet 1 of 4

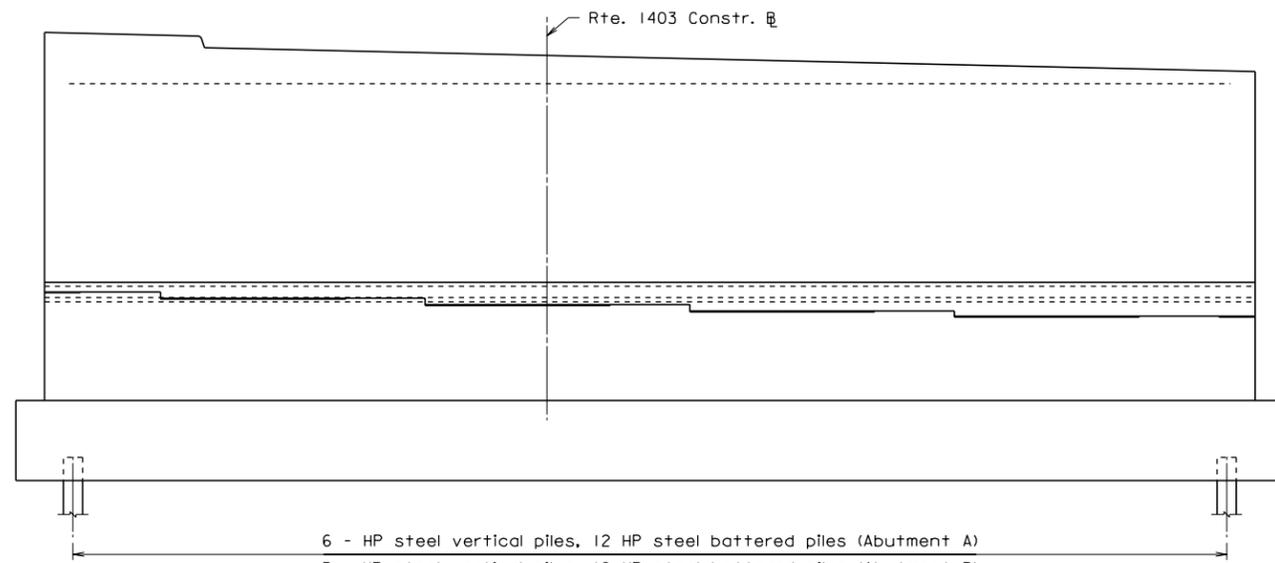
No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 2.		

Scale: 1" = 40' unless otherwise noted.

STATE	FEDERAL AID		STATE		SHEET
ROUTE	PROJECT		ROUTE	PROJECT	NO.
VA.			1403	9999-002-900 B676	2

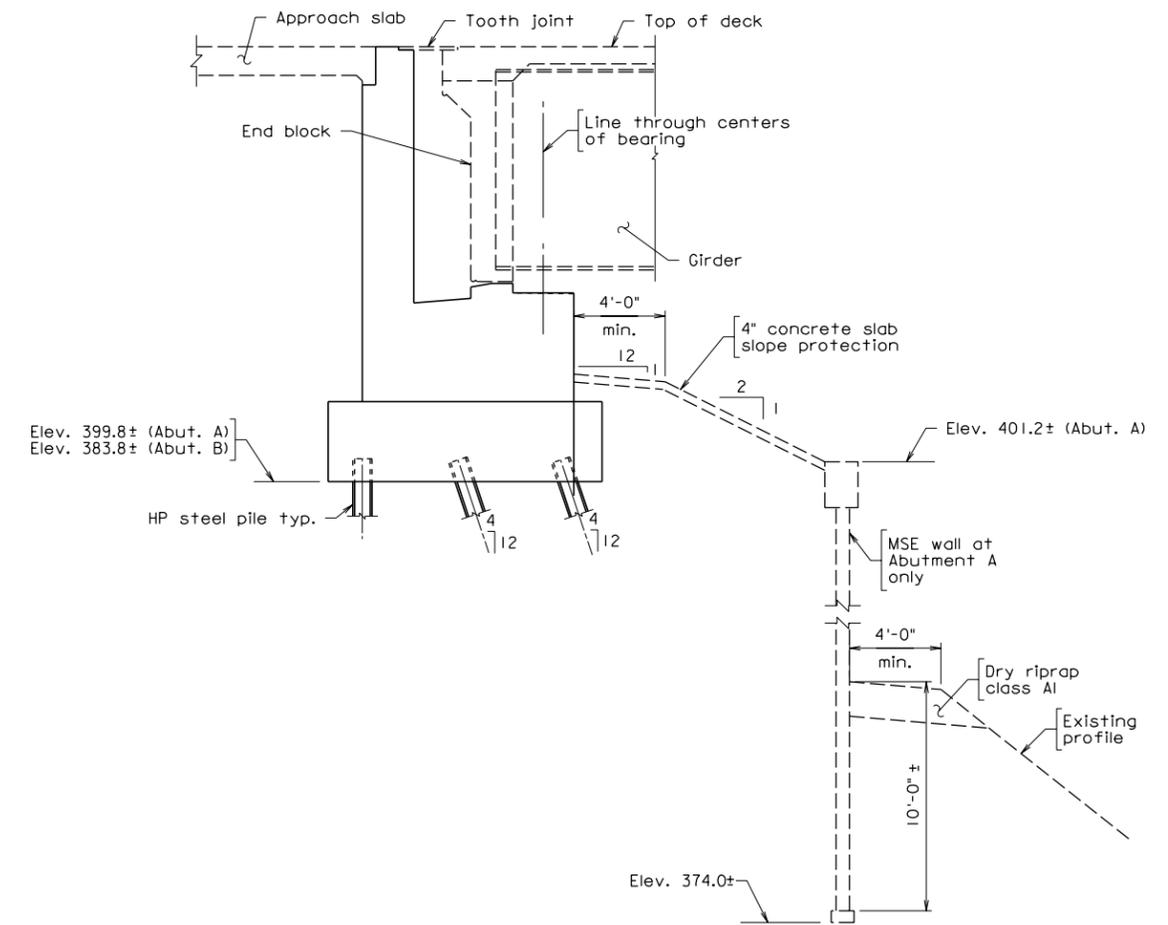


PLAN



ELEVATION

Abutment B shown. Abutment A similar, opposite hand.



SECTION



		COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
		STRUCTURE AND BRIDGE DIVISION			
		ABUTMENT DETAILS			
No.	Description	Date	Designed: W.B.A...	Date	Plan No.
			Drawn: W.B.A...	Dec. 2014	XXX-XX
			Checked: W.B.A...		2 of 4
Revisions					

WHITMAN REARDT & ASSOCIATES
RICHMOND, VA
STRUCTURAL ENGINEER

Scale: 1/4" = 1'-0" unless otherwise noted.

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Exhibit 4.7 Proposal Schedule



LANE AND **CORMAN**
CONSTRUCTION

In association with: **RK&K**



Route 29 Solutions - LANE/Corman Team Proposal Schedule

Activity ID	Activity Name	Original Duration	Start	Finish	2015												2016												2017												2018											
					Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4														
					Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	Aug	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A			
Design-Build Project for Route 29 Solutions																																																				
000-MS-0010	Technical Proposal Submission	0	06-Jan-15		◆ Technical Proposal Submission																																															
000-MS-0020	Complete Evaluation of Technical Proposal	0	16-Jan-15		◆ Complete Evaluation of Technical Proposal																																															
000-MS-0030	Price Proposal Submission	0	20-Jan-15		◆ Price Proposal Submission																																															
000-MS-0040	Open Price Proposal	0	21-Jan-15		◆ Open Price Proposal																																															
000-MS-0050	Notice of Intent to Award	0	26-Jan-15		◆ Notice of Intent to Award																																															
000-MS-0060	CTB Approval / Notice of Award	0	18-Feb-15		◆ CTB Approval / Notice of Award																																															
000-MS-0070	Design-Build Contract Execution	0	03-Mar-15		◆ Design-Build Contract Execution																																															
000-MS-0080	Notice to Proceed	0	04-Mar-15		◆ Notice to Proceed																																															
000-MS-9020	Final Completion - October 30, 2017	0		30-Oct-17*	◆ Final Completion - October 30, 2017																																															
Rte 29 & Rio Rd Grade Separated Intersection (0029-002-091)																																																				
010-MS-0100	Begin Retaining Wall Construction	0	09-Sep-15		◆ Begin Retaining Wall Construction																																															
010-MS-0110	Begin Grading within Existing ROW	0	09-Sep-15		◆ Begin Grading within Existing ROW																																															
010-MS-0120	Begin Grading Outside of Exist. ROW	0	15-Dec-15		◆ Begin Grading Outside of Exist. ROW																																															
010-MS-0130	Rio Road Shutdown Begins - May 23, 2016	0	23-May-16*		◆ Rio Road Shutdown Begins - May 23, 2016																																															
010-MS-0150	Rio Road Shutdown Complete - No Later Than September 2, 2016	0		04-Aug-16*	◆ Rio Road Shutdown Complete - No Later Than September 2, 2016																																															
010-MS-0160	Rio Road Final Completion - No Late Than December 2, 2016	0		10-Nov-16*	◆ Rio Road Final Completion - No Late Than December 2, 2016																																															
010-P-0010	Project Delivery Advisory Panel Meetings (PDAP)	618	04-Mar-15	10-Nov-16	Project Delivery Advisory Panel Meetings (PDAP)																																															
010-P-0020	Monthly Site Tours with PDAP	618	04-Mar-15	10-Nov-16	Monthly Site Tours with PDAP																																															
010-P-0030	Public Information Preparation and Release	618	04-Mar-15	10-Nov-16	Public Information Preparation and Release																																															
010-P-0040	Weekly Communications to VDOT	618	04-Mar-15	10-Nov-16	Weekly Communications to VDOT																																															
010-QA-0010	QA/QC Plan Submittal	20	04-Mar-15	31-Mar-15	QA/QC Plan Submittal																																															
010-QA-0020	QA/QC Plan Presentation	5	01-Apr-15	07-Apr-15	QA/QC Plan Presentation																																															
010-QA-0030	VDOT Independent Acceptance & Independent Verification	548	13-May-15	10-Nov-16	VDOT Independent Acceptance & Independent Verification																																															
010-QA-0040	Construction QA/QC	618	04-Mar-15	10-Nov-16	Construction QA/QC																																															
010-UT-0020	Utility Easements & Appr. 50% Design Provided by VDOT @ NTP	0		04-Mar-15	◆ Utility Easements & Appr. 50% Design Provided by VDOT @ NTP																																															
Scope Validation																																																				
010-SV-0100	Scope Validation Investigations	120	04-Mar-15	01-Jul-15	Scope Validation Investigations																																															
010-SV-0110	Scope Validation Submission	0		01-Jul-15	◆ Scope Validation Submission																																															
010-SV-0120	Scope Validation Discussions	30	02-Jul-15	31-Jul-15	Scope Validation Discussions																																															
Environmental / Permits																																																				
010-EV-0010	Hazardous Materials Phase II ESA by VDOT	0		04-Mar-15	◆ Hazardous Materials Phase II ESA by VDOT																																															
010-EV-0020	Water Quality Permit Determination	22	04-Mar-15	02-Apr-15	Water Quality Permit Determination																																															
010-EV-0030	Virginia Stormwater Management Permit	44	24-Apr-15	25-Jun-15	Virginia Stormwater Management Permit																																															
010-EV-0070	Nationwide 12 permit	90	04-Mar-15	01-Jun-15	Nationwide 12 permit																																															
Re-Evaluation																																																				
010-EV-0040	EQ 201 - RW Reauthorization	22	15-May-15	16-Jun-15	EQ 201 - RW Reauthorization																																															
010-EV-0050	EQ 103 - Environmental Certification / Commitments Checklist	52	23-Jun-15	03-Sep-15	EQ 103 - Environmental Certification / Commitments Checklist																																															
010-EV-0060	EQ 200 - PS&E Authorization	44	06-Jul-15	03-Sep-15	EQ 200 - PS&E Authorization																																															
Design																																																				
Geotechnical																																																				
010-GD-0010	Permits and Property Notification	20	04-Mar-15	31-Mar-15	Permits and Property Notification																																															
010-GD-0020	Boring Layout, Utility Clearance	20	18-Mar-15	14-Apr-15	Boring Layout, Utility Clearance																																															
010-GD-0030	Exploration	20	15-Apr-15	12-May-15	Exploration																																															
010-GD-0040	Laboratory Testing	20	29-Apr-15	27-May-15	Laboratory Testing																																															
010-GD-0050	Final Report Preparation	15	28-May-15	17-Jun-15	Final Report Preparation																																															



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



Route 29 Solutions - LANE/Corman Team Proposal Schedule

Activity ID	Activity Name	Original Duration	Start	Finish	2015												2016												2017												2018											
					Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3																	
					Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	Aug	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A			
010-GD-0060	VDOT Review of Geotechnical Report	30	18-Jun-15	17-Jul-15	<ul style="list-style-type: none"> VDOT Review of Geotechnical Report 																																															
010-GD-0070	Geotech Bridge & Retaining Walls Report	22	04-Mar-15	02-Apr-15	<ul style="list-style-type: none"> Geotech Bridge & Retaining Walls Report 																																															
010-GD-0080	VDOT Review of Geotech. Bridge & Walls Report	30	03-Apr-15	02-May-15	<ul style="list-style-type: none"> VDOT Review of Geotech. Bridge & Walls Report 																																															
Roadway																																																				
Advance Work Package																																																				
010-RD-0110	Drainage / Storm Water Management and E&S Plans	10	01-May-15	14-May-15	<ul style="list-style-type: none"> Drainage / Storm Water Management and E&S Plans 																																															
010-RD-0120	Drainage / Storm Water Management Report	10	01-May-15	14-May-15	<ul style="list-style-type: none"> Drainage / Storm Water Management Report 																																															
010-RD-0130	Design QA/ QC Advance Package for ROW Approval	5	08-May-15	14-May-15	<ul style="list-style-type: none"> Design QA/ QC Advance Package for ROW Approval 																																															
010-RD-0140	Submit Advance Package of Roadway / Drainage / E&S / SWM / Right of Way Plans for Approval	0	15-May-15	15-May-15	<ul style="list-style-type: none"> Submit Advance Package of Roadway / Drainage / E&S / SWM / Right of Way Plans for Approval 																																															
010-RD-0150	VDOT / FHWA Review of Advance Package	9	15-May-15	23-May-15	<ul style="list-style-type: none"> VDOT / FHWA Review of Advance Package 																																															
010-RD-0160	Advance Package for ROW	3	26-May-15	28-May-15	<ul style="list-style-type: none"> Advance Package for ROW 																																															
010-RD-0170	VDOT Approval of Advance Package for ROW	14	02-Jun-15	15-Jun-15	<ul style="list-style-type: none"> VDOT Approval of Advance Package for ROW 																																															
30% Design																																																				
010-RD-0010	Incidental Survey	22	26-Jan-15	24-Feb-15	<ul style="list-style-type: none"> Incidental Survey 																																															
010-RD-0020	Maintenance of Traffic / TMP (30%)	15	17-Feb-15	09-Mar-15	<ul style="list-style-type: none"> Maintenance of Traffic / TMP (30%) 																																															
010-RD-0030	Traffic Engineering (Signals / Signs / Striping)	15	17-Feb-15	09-Mar-15	<ul style="list-style-type: none"> Traffic Engineering (Signals / Signs / Striping) 																																															
010-RD-0040	Roadway Design	22	04-Mar-15	02-Apr-15	<ul style="list-style-type: none"> Roadway Design 																																															
010-RD-0050	Drainage / SWM / Erosion and Sediment Control	22	04-Mar-15	02-Apr-15	<ul style="list-style-type: none"> Drainage / SWM / Erosion and Sediment Control 																																															
010-RD-0060	Design QA / QC 30% Roadway Plans and Drainage Report	5	03-Apr-15	09-Apr-15	<ul style="list-style-type: none"> Design QA / QC 30% Roadway Plans and Drainage Report 																																															
010-RD-0070	Prepare Plans for Submission	5	10-Apr-15	16-Apr-15	<ul style="list-style-type: none"> Prepare Plans for Submission 																																															
010-RD-0080	Prepare Drainage and SWM Report for Submission	5	10-Apr-15	16-Apr-15	<ul style="list-style-type: none"> Prepare Drainage and SWM Report for Submission 																																															
010-RD-0090	Submit 30% Roadway Plans to VDOT	0	17-Apr-15	17-Apr-15	<ul style="list-style-type: none"> Submit 30% Roadway Plans to VDOT 																																															
010-RD-0100	VDOT / FHWA Review and Comments	14	17-Apr-15	30-Apr-15	<ul style="list-style-type: none"> VDOT / FHWA Review and Comments 																																															
60% Design																																																				
010-RD-0180	Roadway Design	22	01-May-15	02-Jun-15	<ul style="list-style-type: none"> Roadway Design 																																															
010-RD-0190	Maintenance of Traffic / TMP / WZTIA (60%)	22	01-May-15	02-Jun-15	<ul style="list-style-type: none"> Maintenance of Traffic / TMP / WZTIA (60%) 																																															
010-RD-0200	Drainage / SWM / Erosion and Sediment Control	22	01-May-15	02-Jun-15	<ul style="list-style-type: none"> Drainage / SWM / Erosion and Sediment Control 																																															
010-RD-0210	Traffic Engineering (Signals / Signs / Striping)	22	01-May-15	02-Jun-15	<ul style="list-style-type: none"> Traffic Engineering (Signals / Signs / Striping) 																																															
010-RD-0220	Design QA / QC 60% Roadway Plans	7	27-May-15	04-Jun-15	<ul style="list-style-type: none"> Design QA / QC 60% Roadway Plans 																																															
010-RD-0230	Prepare Plans for Submission	5	05-Jun-15	11-Jun-15	<ul style="list-style-type: none"> Prepare Plans for Submission 																																															
010-RD-0240	Submit 60% Roadway Plans to VDOT	0	12-Jun-15	12-Jun-15	<ul style="list-style-type: none"> Submit 60% Roadway Plans to VDOT 																																															
010-RD-0250	VDOT / FHWA Review and Comments	14	12-Jun-15	25-Jun-15	<ul style="list-style-type: none"> VDOT / FHWA Review and Comments 																																															
Final Design																																																				
010-RD-0260	Roadway Design	22	26-Jun-15	28-Jul-15	<ul style="list-style-type: none"> Roadway Design 																																															
010-RD-0270	Maintenance of Traffic / TMP / WZTIA	22	26-Jun-15	28-Jul-15	<ul style="list-style-type: none"> Maintenance of Traffic / TMP / WZTIA 																																															
010-RD-0280	Drainage / SWM / Erosion and Sediment Control	22	26-Jun-15	28-Jul-15	<ul style="list-style-type: none"> Drainage / SWM / Erosion and Sediment Control 																																															
010-RD-0290	Traffic Engineering (Signals / Signs / Striping)	22	26-Jun-15	28-Jul-15	<ul style="list-style-type: none"> Traffic Engineering (Signals / Signs / Striping) 																																															
010-RD-0300	Design QA / QC	5	22-Jul-15	28-Jul-15	<ul style="list-style-type: none"> Design QA / QC 																																															
010-RD-0310	Prepare Plans for Submission	5	29-Jul-15	04-Aug-15	<ul style="list-style-type: none"> Prepare Plans for Submission 																																															
010-RD-0320	Submit Final Roadway Plans to VDOT	0	05-Aug-15	05-Aug-15	<ul style="list-style-type: none"> Submit Final Roadway Plans to VDOT 																																															
010-RD-0330	VDOT / FHWA Review and Comments	14	05-Aug-15	18-Aug-15	<ul style="list-style-type: none"> VDOT / FHWA Review and Comments 																																															
010-RD-0340	Revise Plans and Submit For Construction	5	19-Aug-15	25-Aug-15	<ul style="list-style-type: none"> Revise Plans and Submit For Construction 																																															
010-RD-0350	VDOT Approved for Construction	14	26-Aug-15	08-Sep-15	<ul style="list-style-type: none"> VDOT Approved for Construction 																																															
Structures																																																				
Preliminary Design																																																				
010-SD-0010	Bridge Design	22	04-Mar-15	02-Apr-15	<ul style="list-style-type: none"> Bridge Design 																																															
010-SD-0020	Retaining Wall Design	15	04-Mar-15	24-Mar-15	<ul style="list-style-type: none"> Retaining Wall Design 																																															



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



Route 29 Solutions - LANE/Corman Team Proposal Schedule

Activity ID	Activity Name	Original Duration	Start	Finish	2015												2016												2017												2018											
					Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4														
					Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	Aug	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A			
010-UT-0240	Dominion VA Completes Utility Design (last 50%)	45	04-Mar-15	05-May-15	■ Dominion VA Completes Utility Design (last 50%)																																															
010-UT-0250	Dominion VA Utility Design & Cost Approved	22	06-May-15	05-Jun-15	■ Dominion VA Utility Design & Cost Approved																																															
010-UT-0260	Dominion VA Power NW Relocation	90	09-Jun-15	14-Oct-15	■ Dominion VA Power NW Relocation																																															
010-UT-0270	Dominion VA Power 29 crossing Relocation	60	01-Oct-15	24-Dec-15	■ Dominion VA Power 29 crossing Relocation																																															
Century Link																																																				
010-UT-0280	Century Link Completes Utility Design (last 50%)	66	04-Mar-15	04-Jun-15	■ Century Link Completes Utility Design (last 50%)																																															
010-UT-0290	Century Link Utility Design & Cost Approved	22	05-Jun-15	07-Jul-15	■ Century Link Utility Design & Cost Approved																																															
010-UT-0300	Century Link Relocation SW Quad	88	01-Oct-15	04-Feb-16	■ Century Link Relocation SW Quad																																															
010-UT-0310	Century Link Relocation 29 Crossing	44	01-Oct-15	02-Dec-15	■ Century Link Relocation 29 Crossing																																															
Comcast																																																				
010-UT-0320	Comcast Completes Utility Design (last 50%)	44	04-Mar-15	04-May-15	■ Comcast Completes Utility Design (last 50%)																																															
010-UT-0330	Comcast Utility Design & Cost Approved	22	05-May-15	04-Jun-15	■ Comcast Utility Design & Cost Approved																																															
010-UT-0340	Comcast SW Quad Relocation	40	01-Oct-15	25-Nov-15	■ Comcast SW Quad Relocation																																															
010-UT-0350	Comcast 29 crossing Relocation	40	01-Oct-15	25-Nov-15	■ Comcast 29 crossing Relocation																																															
Lumos																																																				
010-UT-0360	LUMOS Completes Utility Design (Last 50%)	44	04-Mar-15	04-May-15	■ LUMOS Completes Utility Design (Last 50%)																																															
010-UT-0370	LUMOS Utility Design & Cost Approved	22	05-May-15	04-Jun-15	■ LUMOS Utility Design & Cost Approved																																															
010-UT-0380	LUMOS relocate facilities	44	01-Oct-15	02-Dec-15	■ LUMOS relocate facilities																																															
Quest Government																																																				
010-UT-0390	Qwest Government Utility Design (Last 50%)	44	04-Mar-15	04-May-15	■ Qwest Government Utility Design (Last 50%)																																															
010-UT-0400	Qwest Government Design & Cost Approved	22	05-May-15	04-Jun-15	■ Qwest Government Design & Cost Approved																																															
010-UT-0410	Qwest Gov. Relocate Facilities	44	01-Oct-15	02-Dec-15	■ Qwest Gov. Relocate Facilities																																															
Fiberlight																																																				
010-UT-0420	Fiberlight Utility Design (Last 50%)	44	04-Mar-15	04-May-15	■ Fiberlight Utility Design (Last 50%)																																															
010-UT-0430	Fiberlight Design & Cost Approved	22	05-May-15	04-Jun-15	■ Fiberlight Design & Cost Approved																																															
010-UT-0440	Fiberlight Relocate Facilities	44	03-Dec-15	04-Feb-16	■ Fiberlight Relocate Facilities																																															
MCI																																																				
010-UT-0450	MCI Utility Design (Last 50%)	44	04-Mar-15	04-May-15	■ MCI Utility Design (Last 50%)																																															
010-UT-0460	MCI Design & Cost Approved	22	05-May-15	04-Jun-15	■ MCI Design & Cost Approved																																															
010-UT-0470	MCI Relocate Facilities	44	03-Dec-15	04-Feb-16	■ MCI Relocate Facilities																																															
ROW Acquisition																																																				
010-RW-0010	Title Research & Report	30	25-Feb-15	07-Apr-15	■ Title Research & Report																																															
010-RW-0020	Prepare Appraisals	40	01-May-15	26-Jun-15	■ Prepare Appraisals																																															
010-RW-0030	Prep Right of Way Plans	30	01-May-15	12-Jun-15	■ Prep Right of Way Plans																																															
010-RW-0040	Phase II Env. Assessments Complete (Hold Point)	1	04-Mar-15	04-Mar-15	◆ Phase II Env. Assessments Complete (Hold Point)																																															
010-RW-0050	Appraisal Review	8	29-Jun-15	09-Jul-15	■ Appraisal Review																																															
010-RW-0060	QA/QC Right of Way Plans	5	15-Jun-15	19-Jun-15	■ QA/QC Right of Way Plans																																															
010-RW-0070	Prepare Right of way Plans for Submission	2	22-Jun-15	23-Jun-15	■ Prepare Right of way Plans for Submission																																															
010-RW-0080	Submit Right of Way Plans to VDOT	0		23-Jun-15	◆ Submit Right of Way Plans to VDOT																																															
010-RW-0090	VDOT Appraisal Review	14	10-Jul-15	23-Jul-15	■ VDOT Appraisal Review																																															
010-RW-0100	VDOT Review/Comment R.O.W Plan	14	25-Jun-15	08-Jul-15	■ VDOT Review/Comment R.O.W Plan																																															
010-RW-0110	Deliver offers	8	04-Aug-15	13-Aug-15	■ Deliver offers																																															
010-RW-0120	Incorporate VDOT Comments	5	09-Jul-15	15-Jul-15	■ Incorporate VDOT Comments																																															
010-RW-0130	Prepare ROW Plans for Submission	3	16-Jul-15	20-Jul-15	■ Prepare ROW Plans for Submission																																															
010-RW-0140	Submit ROW Plans	0		20-Jul-15	◆ Submit ROW Plans																																															
010-RW-0150	VDOT/FHWA Review/Comment ROW	14	21-Jul-15	03-Aug-15	■ VDOT/FHWA Review/Comment ROW																																															
010-RW-0160	Notice to Commence R.O.W. Acquisition (Hold Point)	0		03-Aug-15	◆ Notice to Commence R.O.W. Acquisition (Hold Point)																																															



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



Route 29 Solutions - LANE/Corman Team Proposal Schedule

Activity ID	Activity Name	Original Duration	Start	Finish	2015												2016												2017												2018											
					Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3																	
					Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	Aug	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A			
ROW Acquisition																																																				
020-RW-0010	Title Research & Reports	30	16-Mar-15	24-Apr-15	■ Title Research & Reports																																															
020-RW-0020	Prepare RW Plans	30	22-Apr-15	03-Jun-15	■ Prepare RW Plans																																															
020-RW-0030	Appraisals	40	27-Apr-15	22-Jun-15	■ Appraisals																																															
020-RW-0040	QA/QC	5	04-Jun-15	10-Jun-15	■ QA/QC																																															
020-RW-0050	Prepare for Submission	2	11-Jun-15	12-Jun-15	■ Prepare for Submission																																															
020-RW-0060	Submit RW Plans for Review	0	15-Jun-15	15-Jun-15	■ Submit RW Plans for Review																																															
020-RW-0070	VDOT / FHWA Review	14	15-Jun-15	28-Jun-15	■ VDOT / FHWA Review																																															
020-RW-0080	Appraisal Review	8	23-Jun-15	02-Jul-15	■ Appraisal Review																																															
020-RW-0090	Incorporate VDOT comments	5	29-Jun-15	06-Jul-15	■ Incorporate VDOT comments																																															
020-RW-0100	Prepare for re-submission	3	07-Jul-15	09-Jul-15	■ Prepare for re-submission																																															
020-RW-0110	VDOT / FHWA Review/Approval	14	03-Jul-15	16-Jul-15	■ VDOT / FHWA Review/Approval																																															
020-RW-0120	Submit RW Plans	0	28-Aug-15	28-Aug-15	■ Submit RW Plans																																															
020-RW-0130	VDOT/FHWA Review/Approval	14	28-Aug-15	10-Sep-15	■ VDOT/FHWA Review/Approval																																															
020-RW-0140	Notice to Proceed with ROW Acquisition	0	11-Sep-15	11-Sep-15	■ Notice to Proceed with ROW Acquisition																																															
020-RW-0150	Offers/Negotiations	40	11-Sep-15	05-Nov-15	■ Offers/Negotiations																																															
020-RW-0160	Certificates of Take	40	06-Nov-15	05-Jan-16	■ Certificates of Take																																															
020-RW-0170	Voluntary Conveyances Obtained	5	06-Jan-16	12-Jan-16	■ Voluntary Conveyances Obtained																																															
020-RW-0180	ROW certified	5	13-Jan-16	19-Jan-16	■ ROW certified																																															
020-RW-0190	Recordations complete	40	20-Jan-16	15-Mar-16	■ Recordations complete																																															
020-RW-0200	Notice to Commence Construction	0	20-Jan-16		◆ Notice to Commence Construction																																															
020-RW-0210	Phase II Env. Assessments Complete (Hold Point)	1	27-Jan-15	27-Jan-15	■ Phase II Env. Assessments Complete (Hold Point)																																															
Construction																																																				
Phase 1A - Median																																																				
Station 636+74 to 663+39																																																				
020-1A-0010	Place Concrete Barrier & Place Temp Pav't Markings	4	22-Mar-16	25-Mar-16	■ Place Concrete Barrier & Place Temp Pav't Markings																																															
020-1A-0020	Install Temp Traffic Signal @ Ashwood Blvd	3	28-Mar-16	30-Mar-16	■ Install Temp Traffic Signal @ Ashwood Blvd																																															
020-1A-0030	Clear & Grub	2	31-Mar-16	01-Apr-16	■ Clear & Grub																																															
020-1A-0040	Install E&S	14	04-Apr-16	21-Apr-16	■ Install E&S																																															
020-1A-0050	Install Temp & Permanent Drainage	13	05-Apr-16	21-Apr-16	■ Install Temp & Permanent Drainage																																															
020-1A-0060	Place Fill - Rt 29 Median	11	12-Apr-16	26-Apr-16	■ Place Fill - Rt 29 Median																																															
020-1A-0070	Construct Wire Walls (Shore Fill)	7	20-Apr-16	28-Apr-16	■ Construct Wire Walls (Shore Fill)																																															
020-1A-0080	Construct Temp & Permanent Roadway in Median	5	29-Apr-16	05-May-16	■ Construct Temp & Permanent Roadway in Median																																															
Station 684+28 to 701+50																																																				
020-1A-0090	Place Concrete Barrier & Place Temp Pav't Markings	4	22-Mar-16	25-Mar-16	■ Place Concrete Barrier & Place Temp Pav't Markings																																															
020-1A-0100	Install Temp Traffic Signal @ Ashwood Blvd	3	28-Mar-16	30-Mar-16	■ Install Temp Traffic Signal @ Ashwood Blvd																																															
020-1A-0110	Clear & Grub	2	31-Mar-16	01-Apr-16	■ Clear & Grub																																															
020-1A-0120	Install E&S	14	04-Apr-16	21-Apr-16	■ Install E&S																																															
020-1A-0130	Install Temp & Permanent Drainage	13	07-Apr-16	25-Apr-16	■ Install Temp & Permanent Drainage																																															
020-1A-0140	Place Fill - Rt 29 Median	9	18-Apr-16	28-Apr-16	■ Place Fill - Rt 29 Median																																															
020-1A-0150	Construct Wire Walls (Shore Fill)	9	21-Apr-16	03-May-16	■ Construct Wire Walls (Shore Fill)																																															
020-1A-0160	Construct Temp & Permanent Roadway in Median	5	04-May-16	10-May-16	■ Construct Temp & Permanent Roadway in Median																																															
Phase 1B - SB																																																				
Station 647+00 to 653+00																																																				
020-1B-0010	Place / Shift Concrete Barrier & Place Temp Pav't Markings	4	11-May-16	16-May-16	■ Place / Shift Concrete Barrier & Place Temp Pav't Markings																																															
020-1B-0020	Install Temp Traffic Signal @ Ashwood & Hollymead	3	17-May-16	19-May-16	■ Install Temp Traffic Signal @ Ashwood & Hollymead																																															
020-1B-0040	Lane Shift - Rt 20 SB into Median (2 Locations)	3	20-May-16	24-May-16	■ Lane Shift - Rt 20 SB into Median (2 Locations)																																															
020-1B-0050	Install E&S	8	25-May-16	06-Jun-16	■ Install E&S																																															



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



Route 29 Solutions - LANE/Corman Team Proposal Schedule

Activity ID	Activity Name	Original Duration	Start	Finish	2015												2016												2017												2018											
					Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3			Qtr 4			Qtr 1			Qtr 2			Qtr 3																	
					Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	Aug	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A	Sep	Oct	N	Dec	Jan	Feb	Mar	Apr	M	Jun	Jul	A			
030-UT-0040	UFI Meeting - All Utilities	1	10-Jul-15	10-Jul-15	UFI Meeting - All Utilities																																															
ACSA																																																				
030-UT-0050	ACSA Sewer Design by DB	20	07-Aug-15	03-Sep-15	■ ACSA Sewer Design by DB																																															
030-UT-0060	ACSA Water Design by DB	20	07-Aug-15	03-Sep-15	■ ACSA Water Design by DB																																															
030-UT-0070	ACSA Sewer Design Approval	40	04-Sep-15	30-Oct-15	■ ACSA Sewer Design Approval																																															
030-UT-0080	ACSA Water Design Approval	40	04-Sep-15	30-Oct-15	■ ACSA Water Design Approval																																															
030-UT-0090	ACSA Relocate Sewer	40	02-Feb-16	28-Mar-16	■ ACSA Relocate Sewer																																															
030-UT-0100	ACSA Relocate Water	40	02-Feb-16	28-Mar-16	■ ACSA Relocate Water																																															
Dominion VA Power																																																				
030-UT-0110	Dominion UT-9 Review & PE Estimate	20	13-Jul-15	07-Aug-15	■ Dominion UT-9 Review & PE Estimate																																															
030-UT-0120	Dominion VA Utility Design	45	10-Aug-15	12-Oct-15	■ Dominion VA Utility Design																																															
030-UT-0130	Dominion VA Utility Design & Cost Approved	5	13-Oct-15	19-Oct-15	■ Dominion VA Utility Design & Cost Approved																																															
030-UT-0140	Dominion VA Power NW Relocation	45	21-Oct-15	23-Dec-15	■ Dominion VA Power NW Relocation																																															
Century Link																																																				
030-UT-0150	Century Link Estimate for PE	20	13-Jul-15	07-Aug-15	■ Century Link Estimate for PE																																															
030-UT-0160	Century Link Cost Approved	5	10-Aug-15	14-Aug-15	■ Century Link Cost Approved																																															
030-UT-0170	Century Link Utility Design	40	17-Aug-15	12-Oct-15	■ Century Link Utility Design																																															
030-UT-0180	Century Link Design & Cost Approved	5	13-Oct-15	19-Oct-15	■ Century Link Design & Cost Approved																																															
030-UT-0190	Century Link Relocation	150	20-Oct-15	19-May-16	■ Century Link Relocation																																															
ROW Acquisition																																																				
030-RW-0010	Env. Assessments Complete (Hold Point)	1	28-Apr-15	28-Apr-15	Env. Assessments Complete (Hold Point)																																															
030-RW-0020	Title Research	45	29-Apr-15	01-Jul-15	■ Title Research																																															
030-RW-0030	Right of Way Acquisition Start	0	07-Aug-15		◆ Right of Way Acquisition Start																																															
030-RW-0040	Prep Right of Way Plans	30	07-Aug-15	18-Sep-15	■ Prep Right of Way Plans																																															
030-RW-0050	QA/QC Right of Way Plans	5	21-Sep-15	25-Sep-15	■ QA/QC Right of Way Plans																																															
030-RW-0060	Prepare Roadway Plans for Submission	2	28-Sep-15	29-Sep-15	■ Prepare Roadway Plans for Submission																																															
030-RW-0070	Submit Right of Way Plans to VDOT	0		29-Sep-15	◆ Submit Right of Way Plans to VDOT																																															
030-RW-0080	VDOT Review/Comment R.O.W Plan	9	01-Oct-15	09-Oct-15	■ VDOT Review/Comment R.O.W Plan																																															
030-RW-0090	Incorporate VDOT Comments	5	12-Oct-15	16-Oct-15	■ Incorporate VDOT Comments																																															
030-RW-0100	Prepare Appraisals	10	12-Oct-15	23-Oct-15	■ Prepare Appraisals																																															
030-RW-0110	Prepare ROW Plans for Submission	3	19-Oct-15	21-Oct-15	■ Prepare ROW Plans for Submission																																															
030-RW-0120	Submit ROW Plans	0		21-Oct-15	◆ Submit ROW Plans																																															
030-RW-0130	VDOT Review/Comment ROW	9	22-Oct-15	30-Oct-15	■ VDOT Review/Comment ROW																																															
030-RW-0140	Appraisal Review	8	26-Oct-15	04-Nov-15	■ Appraisal Review																																															
030-RW-0150	Notice to Commence R.O.W. Acquisition (Hold Point)	0		30-Oct-15	◆ Notice to Commence R.O.W. Acquisition (Hold Point)																																															
030-RW-0160	VDOT Appraisal Review/Approval	9	05-Nov-15	13-Nov-15	■ VDOT Appraisal Review/Approval																																															
030-RW-0170	Deliver offers	8	16-Nov-15	25-Nov-15	■ Deliver offers																																															
030-RW-0180	Offer Negotiations	40	27-Nov-15	25-Jan-16	■ Offer Negotiations																																															
030-RW-0190	Certificate of Takes Filed	40	26-Jan-16	21-Mar-16	■ Certificate of Takes Filed																																															
030-RW-0200	Voluntary Conveyances obtained	5	26-Jan-16	01-Feb-16	■ Voluntary Conveyances obtained																																															
030-RW-0210	Right of Way Acquisition Complete	5	22-Mar-16	28-Mar-16	■ Right of Way Acquisition Complete																																															
030-RW-0220	Notice to Commence Construction	0		28-Mar-16	◆ Notice to Commence Construction																																															
030-RW-0230	Recordations complete	40	29-Mar-16	23-May-16	■ Recordations complete																																															
Construction																																																				
Phase 1																																																				
Roadway																																																				
030-I-0010	Construct Temporary Construction Entrances	20	29-Mar-16	25-Apr-16	■ Construct Temporary Construction Entrances																																															



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

