Response to Request for Proposals

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 No.: C00077383DB80

SHIRLEY
CONTRACTING COMPANY, LLC

4.1 - Letter of Submittal

SHIRLEY
CONTRACTING COMPANY, LLC

January 6, 2015

Mr. John Daoulas, P.E.
Virginia Department of Transportation
1401 East Broad Street,
Annex Building, 8th Floor
Richmond, VA 23219

RE: Design-Build Project for Route 29 Solutions
Albemarle County, Virginia
Contract ID No. C00077383DB80
Section 4.1 - Letter of Submittal

Dear Mr. Daoulas:

Shirley Contracting Company, LLC (Shirley), is pleased to submit this Technical Proposal for the Design-Build Project for Route 29 Solutions (the Project). Our Team is committed to partnering with VDOT, local businesses and the citizens of Charlottesville to deliver all of the improvements on time, under budget and in a manner that exceeds the priorities established in the RFP. These priorities include:

- ***Cost*** - Provide the best price for the scope of work;
- ***Approach*** - Construct the US29/Rio Road Intersection on schedule, while maximizing incentives and minimizing public impacts;
- ***Design Concept*** - Provide an efficient design that meets/exceeds the RFP requirements.

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

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

4.1.5 - Principal Officer: Michael E. Post, President/CEO/Manager, Shirley Contracting Company, LLC
8435 Backlick Road, Lorton, VA 22079, 703.550.8100(P), 703.550.9346(F)
mpost@shirleycontracting.com

4.1.6 - Proposal Payment Agreement: An executed Proposal Payment Agreement, Attachment 9.3.1, is included as an attachment to this Letter of Submittal.

4.1.7 - Certification of Debarment: Signed Certification of Debarment Forms are included as an attachment to this Letter of Submittal.

4.1.8 - Responsible Charge Engineer: The Responsible Charge Engineer for the Project will be Mr. Jeffrey

Austin, PE. A Key Personnel Resume form for Mr. Austin is included as Attachment 4.1.8.

4.1.9 - The proposed Final Completion Date: October 30, 2017.

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

Sincerely,

Michael E. Post
President/CEO/Manager
Shirley Contracting Company, LLC

ATTACHMENTS:
Attachment 3.6 - Form C-78
Attachment 4.0.1.1 - Technical Proposal Checklist
Attachment 4.1.8 - Key Personnel Resume Form
Attachment 9.3.1 - Proposal Payment Agreement
Attachment 11.8.6(a)(b) - Debarment Forms

4.2 - Offeror’s Qualifications

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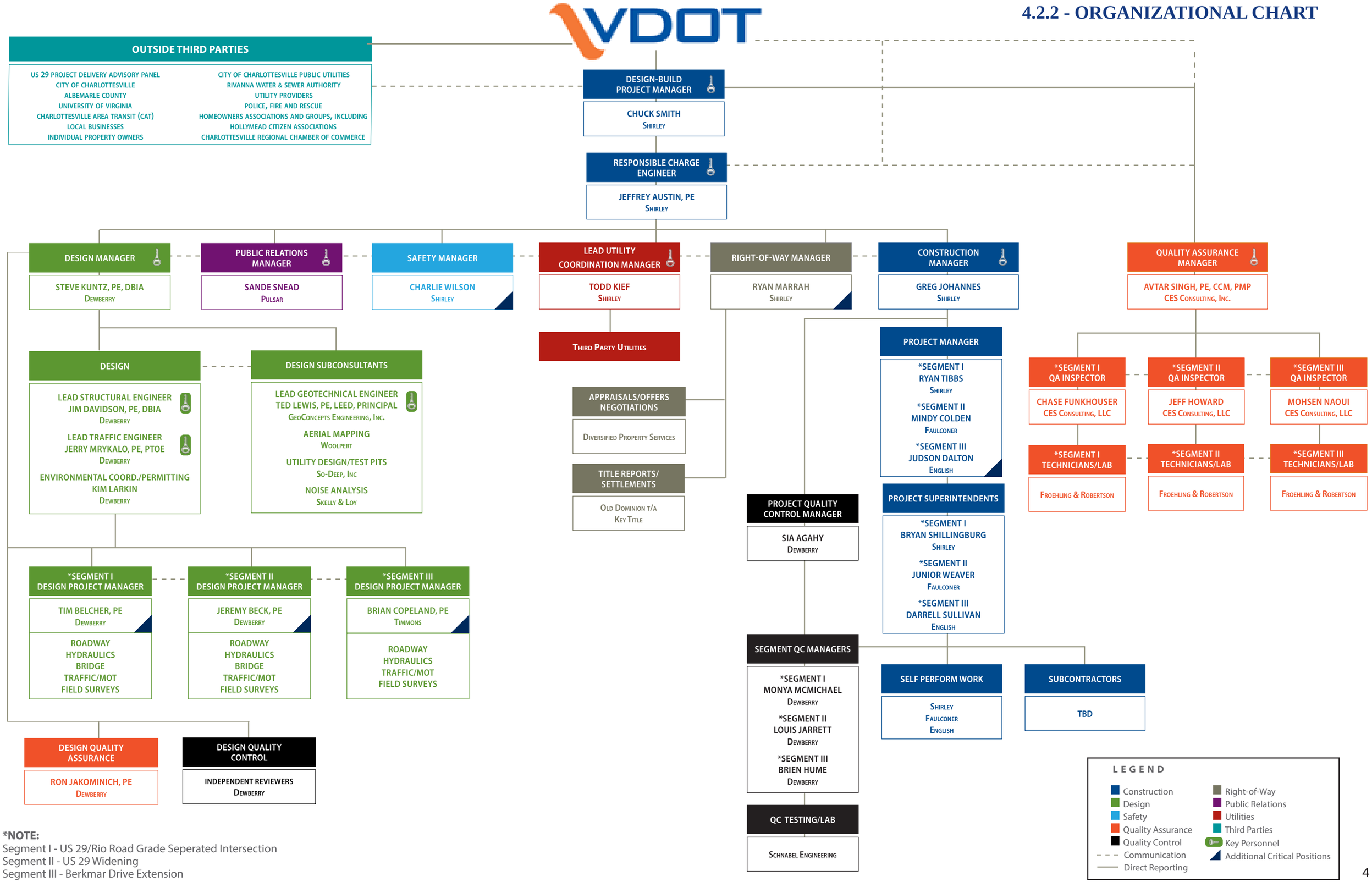
4.2.1 CONFIRMATION

We confirm that the information contained in our Statement of Qualifications (SOQ) remains true and accurate in accordance with Section 11.4. Per the requirements of Addendum No. 1, we have added the position of Responsible Charge Engineer.

4.2.2 ORGANIZATIONAL CHART

The Project Organizational Chart on the following page identifies the "chain of command" and major functions to be performed and their reporting relationships in managing, designing and constructing the Project, including quality control/quality assurance. As required by Addendum No.1 to the Request for Proposals, we have updated the Organizational Chart to include Mr. Jeffrey Austin, PE, for the position of Responsible Charge Engineer. The Responsible Charge Engineer (RCE), Jeffrey Austin, PE, will report directly to the Design-Build Project Manager, Chuck Smith. The RCE will communicate with all discipline heads including design, construction, and quality assurance. There are no other changes to the organizational structure so and updated narrative is not required.

4.2.2 - ORGANIZATIONAL CHART



***NOTE:**
Segment I - US 29/Rio Road Grade Seperated Intersection
Segment II - US 29 Widening
Segment III - Berkmar Drive Extension

4.3 - Design Concept

4.3 - Design Concept

4.3 Design Concept

INTRODUCTION

Transportation projects that provide the greatest benefit to the public tend to focus on regional or corridor improvements rather than ones that are localized to one specific area. The Design-Build Project for Route 29 Solutions (the Project) will provide congestion relief and capacity improvements to the Route 29 corridor approaching Charlottesville from the north. Not only will capacity be increased on Route 29 itself, but the extension of Berkmar Drive will provide a beneficial parallel facility and alternate route for the public. **Our Team is uniquely aware of the benefits of completing corridor focused, multi-phased projects to provide regional congestion relief, having extensive design-build experience developing phased improvements to corridors** such as Route 28 in Fairfax and Loudoun Counties and I-66 in Prince William County. Like Route 29, these projects included alternate parallel routes, in addition to the primary improvement as key features of the scope. As a result, these projects have successfully improved capacity for the primary thru-traffic route, as well as that of the local commuter traffic, and resulted in dramatic improvements to the quality of life for all affected. Our Team is excited to have the opportunity to bring this same experience to the Route 29 corridor.

Using our previous experience on large, multi-facility corridor improvement projects, we have focused on each Segment of the Project to identify opportunities to enhance the RFP concept, with the goal of achieving the following benefits:

- Maintaining acceptable levels of service and operations to reduce impacts to the traveling public during construction;
- Completing the Project within the schedule by maximizing work areas and work hours;
- Facilitating concurrent design and construction processes;
- Complying with environmental constraints;
- Reducing or avoidance of utility and right-of-way impacts; and
- Preparing multiple smaller design packages to allow for quicker review and advanced plan package approval.

As required by the RFP documents, our Team's concepts for each of the three Project elements meets or exceeds the requirements listed in the Design Criteria Tables (Attachments 2.2.1 and 2.2.2). Further, limits of construction for each element are within the existing or proposed right-of-way shown in the RFP conceptual plans, except where easement and/or right-of-way modifications are allowed by the RFP documents. Finally, no project elements will require approval of design exceptions or design waivers beyond those already identified in the RFP documents.

4.3.1 US 29 & RIO ROAD GRADE SEPARATED INTERSECTION

4.3.1.1 Conceptual Roadway Plan

General Geometry, Horizontal Alignment, Design Speed, and Typical Sections

The general geometry including horizontal curve information, the number and width of lanes, shoulders, and pedestrian facilities, and design speeds for each roadway segment are included in our Volume II Design Concept plans and are further described below. Pavement sections for both Rio Road and US

29 (depressed lanes and local roadway widening) are consistent with the minimum pavement sections required in the RFP documents. Specific descriptions of the improvements proposed on US 29 include the following:

Local Roadway

A. GS-5 facility with a 45mph design speed utilizing TC-5.11ULS superelevation criteria and CG-7 curb and gutter along the outside of the roadway;
B. Two 11' wide southbound lanes, with the rightmost lane being a shared thru-right at the intersection with Rio Road;
C. Two 11' wide northbound lanes, with the rightmost lane being a shared thru-right at the intersection with Rio Road. Between the Rio Road intersection and the Albemarle Square entrance, an 11' wide auxiliary lane will be provided;
D. Dual left turn lanes for the northbound and southbound US 29 to Rio Road, including one lane in each direction which will serve as a "U" turn lane for local business access; and
E. A 5.5' concrete sidewalk located immediately behind the back of curb on both northbound and southbound US 29.

An improvement from the RFP that our Team has made is to the turning geometry of the dual left turns at the Rio Road Intersection. By optimizing the turning paths of each of the movements, we are able to **reduce the bridge length from 350' to less than 275'.** This single modification provides the following Project benefits:

An improvement over the RFP that our Team has made is to the turning geometry of the dual left turns at the Rio Road Intersection.

A. Shortens the bridge construction duration;
B. Improves the vertical profile to allow the profile of US 29 to be raised and wall lengths reduced;
C. Converts the structure from a "Category A" to a "Category X" facility which reduces fire safety requirements, installation costs, and long-term maintenance costs;
D. Accommodates concurrent operation of opposing dual left movements in all directions;
E. Improves facility safety by reducing the "tunnel" length;
F. Lowers VDOT's long-term maintenance costs; and
G. Reduces impacts to public safety and mobility due to shorter roadway construction limits.

Depressed Roadway

A. GS-5 facility with a 45mph design speed utilizing TC-5.11ULS superelevation. Based on the degree of curvature through the depressed lanes (3,000' radius), a "normal" roadway crown will be utilized, directing flow towards the outside shoulders in both directions;
B. Two 11' lanes in each direction, separated by a concrete median barrier and 2' shoulders; and
C. 8' wide paved shoulder on the outside of both the northbound and southbound lanes, immediately adjacent to the concrete barrier and retaining walls used to support the bridge and local roadway.

Where the depressed lanes diverge and merge with the local lanes, straight line transitions will be used to shift the lanes away from the centerline of the roadway. Also the existing raised grass median will be regraded and curb reinstalled adjacent to the transitioning lanes. Because of the straight line tapers, impacts

to existing curb, sidewalks and entrances south of Rio Road have been reduced, leading to minimized impacts to right-of-way and construction timelines.

On Rio Road, improvements are limited to median nose adjustments to accommodate the dual left turning movements to and from the local lanes of US 29, as well as repositioning and reconstruction of islands to accommodate traffic signal and pedestrian signal equipment. All thru and turn lanes on Rio Road will be maintained at 11', consistent with the existing typical section.

Roadway Profiles

The profile of Rio Road will remain unchanged from the existing condition, and curb and gutter and median improvements will be constructed to match existing grades and connect to the adjacent, undisturbed facilities.

On US 29, the local roadway improvements will be constructed by widening the roadway from the existing edges of pavement. Based on the horizontal alignment of the local lanes, it is expected that all widening will be completed at a cross slope of 2%. The existing pavement cross slopes will be verified by additional field surveys to ensure adequate cross slopes are provided in the areas to be milled and overlaid.

For the depressed lanes of US 29, our Team investigated multiple profiles in an effort to reduce retaining wall area, the length of the depressed lanes, and to simplify the drainage facility design and installation. Based on these efforts, the most advantageous profile was one that eliminates a sump condition below the Rio Road overpass. The minimum grade on the depressed lanes will be 0.5%, and by avoiding installation of a sump, and therefore not having to provide overland relief, the storm sewer system does not need to be oversized, inlet spacing can be standardized, and pipe sizes can be minimized. This optimized storm sewer system design reduces the amount of work necessary during the 103-day closure period and furthers the goal of completing work ahead of schedule.

This optimized storm sewer system design reduces the amount of work necessary during the 103-day closure period and furthers the goal of completing work ahead of schedule.

Hydraulic and Stormwater Management Design

Our Team's conceptual drainage design, including major drainage structures, inlet placement, storm sewer pipe alignments and sizes, and stormwater management facilities are shown on our Volume II Conceptual Design plans. These facilities meet the following criteria:

- Compliance with the VDOT Drainage Manual for an Urban Other Principal Arterial (US 29) or Urban Minor Arterial (Rio Road);
- Maintains proper flow from existing storm sewers and off-site developments;
- Conveys flow to adequate outfalls and/or proposed stormwater management facilities; and
- Pipe materials in compliance with PC-1 criteria.

In general, drainage will be intercepted in DI-2, DI-3, and DI-10 type inlets depending on their location and proximity to existing and/or proposed utilities. Storm sewer trunk lines will either be located along the outsides of the local lanes of US 29 or immediately in front of the retaining walls adjacent to the depressed lanes.

Stormwater management facilities will be designed in accordance with the new II-B technical criteria. As discussed at our Proprietary Meetings, our Team intends to utilize offsite water quality credits as allowed by Virginia Law 9VAC25-870-69. Based on our analysis, approximately 8 lbs. per year of phosphorus will be created (as calculated utilizing the Virginia Runoff Reduction Method). Per the offsite compliance options identified in the Virginia Law, if a project post-construction phosphorus control requirement is less than 10 lbs. per year then the total stormwater management nutrient credit can be purchased.

Accordingly, we have investigated purchasing the entire water quality requirement for the Project from the Pamunkey Farm Nutrient Bank thus **reducing the Project stormwater management needs from three facilities to a single underground facility, located in the southeast quadrant of the interchange.** This approach benefits the Project in several ways:

- Minimizes commercial property easement impacts by approximately 33,700 SF;
- Reduces VDOT's long-term maintenance and inspection costs;
- Shortens the construction schedule; and
- Lowers initial construction costs.

Right-of-Way Limits

As a result of our Team's design approach and efficiencies, we have eliminated fee take impacts to two properties. While our concept will impact the same number of properties with temporary and permanent easements, the acreage of these impacts is also expected to be reduced. The reduction of easements is possible due to the following enhancements:

As a result of our Team's design approach and efficiencies, we have eliminated fee take impacts to two properties.

- Approach to stormwater management eliminates two facilities; and
- Improved lane taper geometry allows the local lanes to join with the existing roadway "quicker".

We recognize that VDOT has begun advance acquisition of utility easements, and will coordinate our right-of-way and easement plans with those acquisitions. During final design development, we will explore with VDOT replacing fee takes with permanent roadway or street easements. Not only would this reduce the number of acquisitions from 10 to four, but also avoids the cost of damage claims resulting from reduced setbacks and buffers.

Utility Impacts

Utility impacts and anticipated relocations are detailed in section 4.4.3 and provided for reference below:

Table 4.3.1 - Utility Impacts

Item Description	Station			Quantity	Unit	Comments
	BL	From	To			
WATER						
18" Water	US 29	48+25	60+25	1,260	EA	Offset line from median to NB local lanes
8" Water	US 29	48+25	N/A	105	EA	Reconnect line to existing system along the SB local lanes
8" Water	US 29	55+00	59+00	380	EA	Reconnect service to parcel 008
24" Water	US 29	60+50	68+00	825	EA	Offset line from median to NB local lanes
SANITARY						
Adjust MH	US 29	62+50	67+00	3	EA	Adjust MH to prop grade
GAS						
6" Steel Gas	Rt. 29	48+75	68+75	2,100	LF	Offset line from median to SB local lanes
4" Gas	US 29	63+00	68+00	580	LF	Reconnect line to Parcel 023
TELECOM						
Quest Government	US 29	58+00	70+00	1,500	LF	Move crossing East of portal - Common Ductbank
Centurylink	Rio Rd.	158+00	166+00	2,300	LF	Move crossing around East of portal - Common Ductbank
Lumos	Rio Rd.	160+00	160+75	100	LF	Relocate out of Signal foundation
Fiberlight	US 29	54+00	67+00	TBD	LF	Adjust Boxes and design storm around existing UG line
ELECTRIC						
DVP Poles	US 29	62+50	70+00	4	EA	Place 70' Metal poles - conflict with prop widening
Single Phase UG	US 29	60+00	69+00	1,100	EA	UG to pole on south side of Rio Road intersection to replace OH crossing

Additional Considerations

Plan Development Schedule

Figure 4.3.1

Plan Development Schedule

4.3 **Design Concept**

Our Team has developed an approach to the design phase that accounts for the challenges of delivering such a complex project on a tight timeline within a limited project footprint. Successful completion will require unique packaging of design elements, and submission of numerous "schedule-matched" design packages to keep the Project on schedule. Also, as shown in Figure 4.3.1, we intend to begin, at our own risk, certain critical design activities prior to Notice To Proceed (NTP). This will greatly benefit the schedule by allowing the following design packages to be submitted to VDOT for initial review on the NTP date:

- Geometric design package, including all horizontal geometry, vertical geometry, and superelevation design;
- Advance signal package, including site-specific temporary traffic control (TTC) plans and transportation management plan (TMP).

In addition to the packages above being submitted on the NTP date, our approach will allow the following packages to be submitted within two months of NTP:

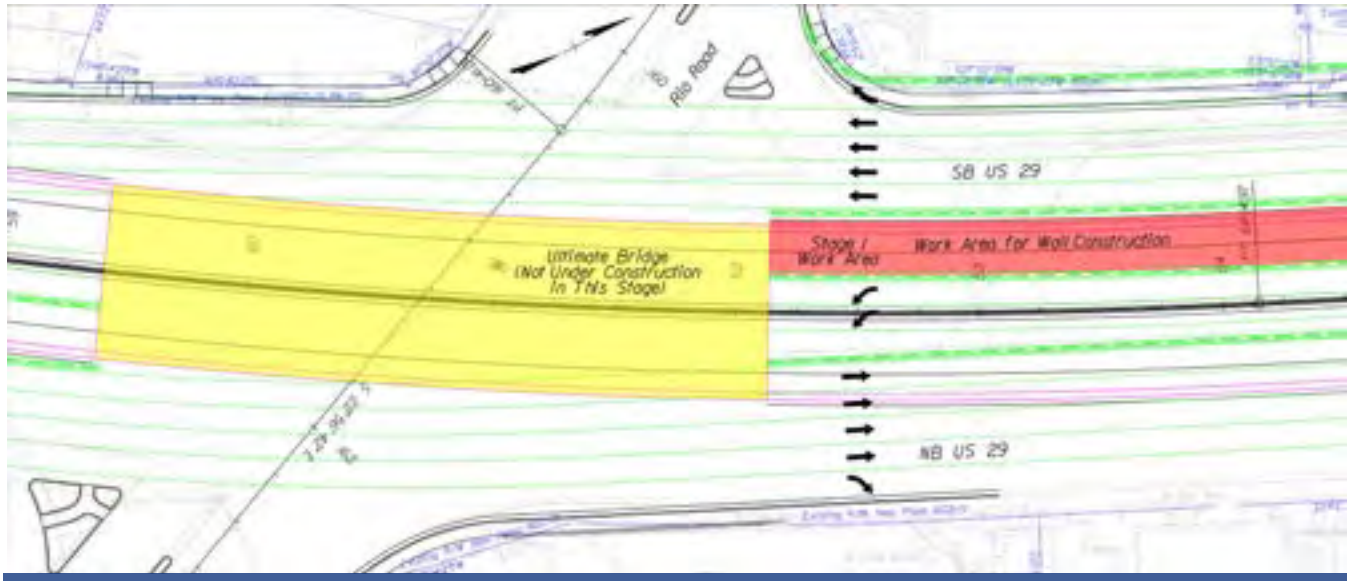
- Final geometric design package, inclusive of comment responses and modifications from the initial submission review;
- Final advance signal package;
- Initial drainage design package, including calculations;
- Initial temporary traffic control TTC plans and TMP for the entire project;
- Critical right-of-way acquisition plan;
- Stage 1 bridge report;
- Water main relocation plans for the City of Charlottesville 18"/24" water main relocation; and
- Initial depressed lane retaining wall plans.

In order to support the aggressive development of these packages, supplemental field surveys for elements within VDOT right-of-way, and survey access notification letters will be mailed to adjacent property owners on the NTP date. The following survey and supplemental field activities are anticipated:

- Verification of property lines and boundary lines for right-of-way plan development;
- Survey/stake-out of geotechnical borings;
- Spot verification of edge of pavement elevations;
- Survey control verification;
- Utility test pits; and
- Wetland delineation.

Throughout the plan development process, our Team will partner with VDOT to implement an over-the-shoulder review process in advance of formal submissions. This will limit review times, reduce the number of comments, and avoid significant design changes. As our approach starts initial design activities upon notice of intent to award (prior to NTP), we will discuss with VDOT ways to have preliminary reviews and over-the-shoulder meetings prior to the NTP date.

Figure 4.3.2



Northwest Quadrant Stage 1 Work Area

Construction Impacts and Safety Enhancements

In order to construct Segments of the permanent grade separation prior to the 103 day closure and with minimal impacts to the traveling public, our Team has developed staged construction plans which will "open" areas of the existing road to construction activities. The general approach to our staged construction is:

Phase 1: Work Prior to 103 day closure period

- ***Stage 1 -*** Complete temporary and partial permanent widening to the outsides of existing US 29. Shift traffic to the outside widening to allow partial construction of depressed lane retaining walls in the northwest and southeast quadrants;
- ***Stage 2 -*** Restore pavement in Stage 2 work areas, shift traffic, and construct depressed lane retaining walls in the northeast and southwest quadrants;
- ***Stage 3 -*** Rio Road bridge foundations.

The timing of completion of Stage 2 and 3 work is anticipated to coincide with the beginning of the 103 day closure. As an example of a typical quadrant work zone, Figure 4.3.2 shows the northwest corner Stage 1 with a red shading depicting the work area which will allow for construction of the permanent walls outside of traffic. Additional details of this work sequence are provided in Sections 4.4 and 4.5, but the intent of this sequence is to:

- Allow for maximum construction of permanent elements prior to the 103 day closure;
- Limit impacts to the traveling public throughout the entire construction schedule by reducing temporary lane closure needs during work periods; and
- Improve safety for construction workers and inspection staff during the 103 day closure by reducing work in the limited space available for multiple trades and construction activities.

In addition to the construction sequencing improvements, our Team has also modified the RFP concept to reduce the length of the bridge, as previously noted. This introduces the following safety enhancements:

- Reduces the underpass length;
- Reduces the length where emergency access is restricted; and
- Reduces the area of structure where fire impacts could result in damage or degradation of the bridge structure.

These enhancements will ensure that both construction and long-term operation of the bridge can be completed in the safest manner possible while limiting impacts to the traveling public.

Operational and Public Acceptance Considerations

Ultimately all of the design modifications and details will be developed in an effort to improve operational performance and build public support. Some of the decisions our Team has made toward operational enhancements include:

- Reducing signal delays by adjusting the dual left turns to reduce the intersection size while maintaining concurrent turning operations; and
- Staged construction that maximizes permanent elements to be built outside of the 103 day closure without temporary lane closures.

4.3.1.2 CONCEPTUAL STRUCTURAL PLANS

Rio Road Bridge over Route 29 Depressed Lanes (B-651)

Our concept for this bridge is shown in our Volume II Design Concept plans and improves upon the RFP concept in several ways:

- Utilizes Accelerated Bridge Construction (ABC) methods for the superstructure to reduce the construction duration of the bridge;
- Utilizes a structural retaining wall consisting of secant piles for the tallest wall sections and soldier pile and concrete lagging for the remaining wall length;
- Utilizes a precast facing that will meet all of the Project architectural requirements (utilizing formliners and a color stain coating to provide a simulated dry stacked stone surface similar to that used at the Route 250 Bypass Interchange at McIntire Road); and
- Reduces the length of the bridge along US 29 from 350’ shown on the RFP plans to approximately 275’. This will further reduce the construction time for the bridge.

With these improvements, our concept provides VDOT with a project that will be constructed within the required schedule and require less long-term maintenance. Provided below is a detailed description of the general elements of the bridge:

Our concept provides VDOT with a project that will be constructed within the required schedule and require less long-term maintenance.

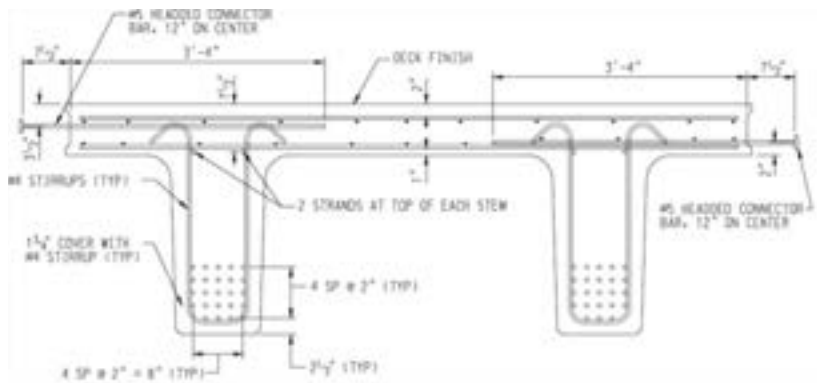
Typical Section

Our concept matches the typical section shown in the RFP with the exception of our improvements that reduce the length of the bridge as previously described. Lanes accommodated include: two thru lanes in each direction on Rio Road, dual left turns from each direction on Rio Road to the local lanes of US 29, and dual left turns and U-turns from both directions of the local US 29 lanes onto Rio Road. Additionally, a pedestrian crossing will be provided across the south side of the bridge. All architectural requirements of the RFP and the special provisions will be provided. Additionally, the horizontal concrete surfaces of the raised medians will incorporate a stamped finish with a texture and color as approved by VDOT.

Superstructure

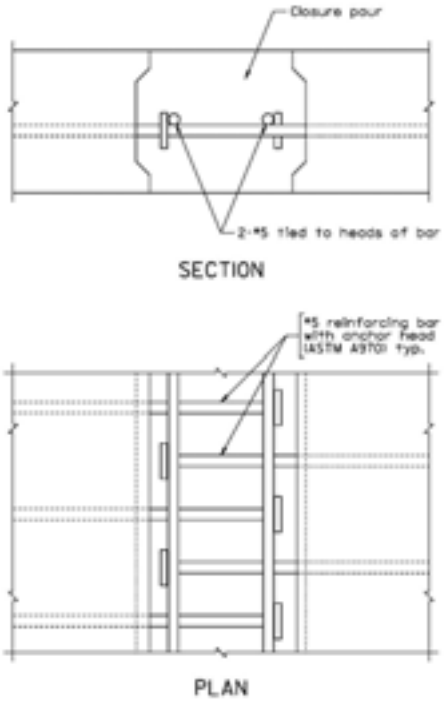
The proposed bridge consists of a single span approximately 75' in length. As noted above, we plan to utilize ABC methods to construct the bridge superstructure. The bridge superstructure will be constructed utilizing NEXT Beam sections (See Figure 4.3.3). Each section will consist of two precast concrete "stems" joined together with a precast concrete deck slab meeting the VDOT minimum thickness requirements. Adjacent sections will be connected utilizing reinforcing steel extending from the precast slabs into a closure pour (see Figure 4.3.4). These sections will also follow the guidance and recommendations in a number of FHWA publications including: the Accelerated Bridge Construction Manual, the Connection Details for Prefabricated Bridge Elements and Systems, and the SHRP2 Innovative Designs for Rapid Renewal report. The use of the NEXT Beam sections will speed construction as the sections can be fabricated and delivered to the Project site prior to the 103 day closure period. Additionally, utilizing this method for the bridge deck will dramatically reduce the time in the field that it takes to construct the bridge superstructure as there will be no need to install stay-in-place deck forms, place and tie the majority of the reinforcing steel or set up and use a screed to place the deck concrete. A minimum 2" thick high-strength concrete overlay in accordance with the requirements of the RFP will provide a final, uniform riding surface across the bridge. All deck drainage (if needed) will be coordinated with the roadway drainage design. Concrete will be low permeability in accordance with the requirements of the RFP. Reinforcing steel will be Corrosion Resistant Reinforcing (CRR) in accordance with VDOT Structure and Bridge IIM-S&B 81.5.

Figure 4.3.3



Typical NEXT Beam Detail

Figure 4.3.4



Closure Pour Details Between Adjacent NEXT Beams

Substructure

The abutments will consist of cast in place concrete abutments supported on the secant pile retaining walls under the abutments. The NEXT Beam section is compatible with eliminating the joint at the abutment and providing a jointless bridge. The reinforcing steel from the secant piles will extend into the abutment seats (see Figure 4.3.5). Architectural treatments will be incorporated utilizing formliners and a color stain coating to provide a simulated dry stacked stone surface similar to that used at the Route 250 Bypass Interchange at McIntire Road.

Figure 4.3.5

Typical Abutment Section

Maintenance & Construction Considerations

In accordance with the RFP documents and current design standards, the bridge will be designed using AASHTO LRFD Bridge Design Specifications, 6th Edition and VDOT Modifications. Further, a load rating of the bridge will be developed and submitted prior to opening the bridge to traffic. We will employ construction materials that will minimize long-term maintenance of the bridge. As previously discussed, the use of low permeability concrete, corrosion resistant reinforcing steel and precast NEXT Beam sections for the superstructure will greatly increase the durability of the structure. Additionally, use of precast/prefabricated elements to construct the bridge will provide better quality control due to the controlled environment of the fabrication yard as opposed to constructing these elements on the job site. All of these factors will combine to provide the Department with a quality, low maintenance structure.

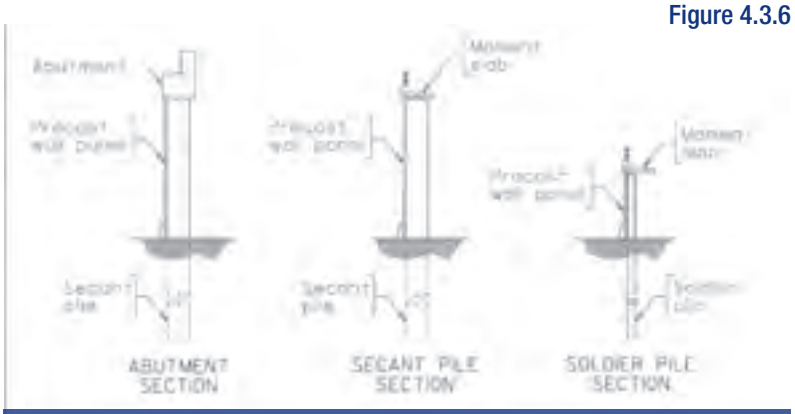
NFPA 502 Fire Protection Systems - Based on the length of our proposed bridge (approximately 275'), the bridge is considered as a Category X structure in accordance with NFPA 502 Section 7.2. All requirements for this category of structure outlined in the RFP Part 2, Section 2.3.13 and the applicable sections of NFPA 502 will be met with the construction of the bridge structure including:

- An engineering analysis of the Fire Protection and Fire Life Safety Factors outlined in NFPA 502, Section 4.3.1;
- Fire protection of the structural elements as outlined in NFPA 502, Section 7.3 for a Peak Fire Heat Release Rate of 100 Megawatts;
- Fire Detection;
- Traffic Control; and
- Fire Protection (installation of stand pipes, etc.).

Retaining Walls

The design and construction of the retaining walls on either side of the depressed section of US 29 is a critical element of this Segment. Our Team has developed a concept that will simplify the design and construction of the walls as well as allow construction for a significant portion of the walls to be completed prior to the 103 day closure period. Our concept for the retaining walls is shown in our Volume II Design Concept Plans. The design and construction of the structural walls will be broken into three wall types as shown in Figure 4.3.6:

Figure 4.3.6

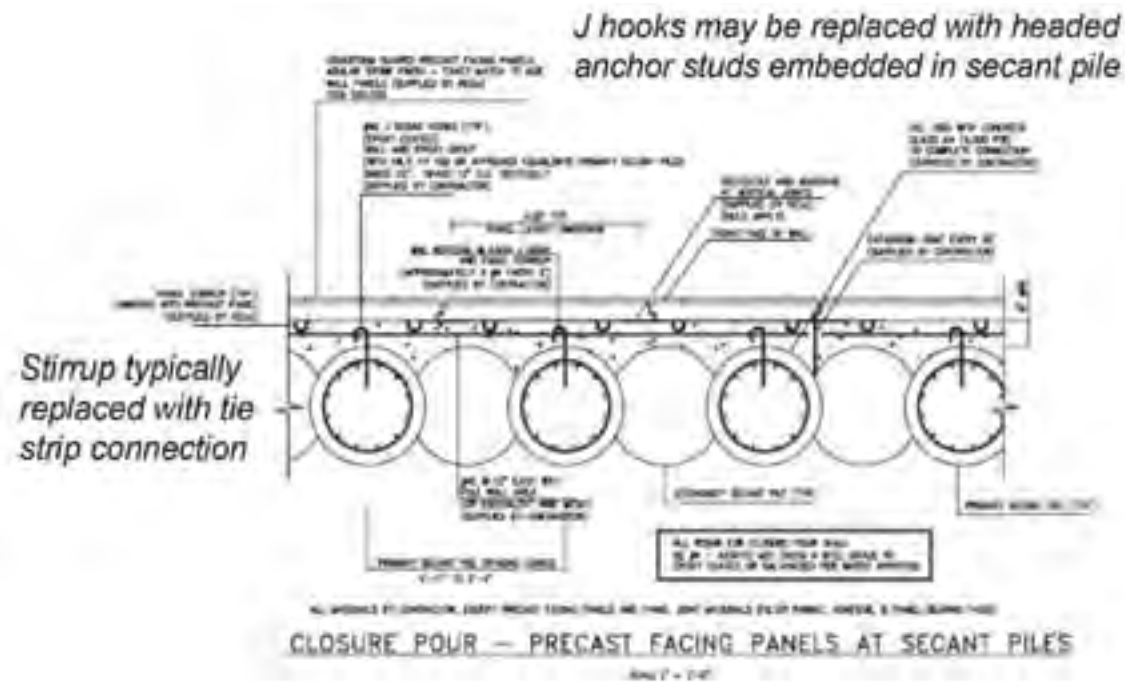


Structural Walls

- ***Abutment Section -*** the section under the bridge will consist of secant pile walls designed for both the lateral earth pressure behind the walls, and the lateral and vertical loads from the bridge abutments;
- ***Secant Pile Section -*** the section beyond and immediately adjacent to the bridge will consist of secant pile walls designed for the lateral earth pressure behind the walls; and
- ***Soldier Pile Section -*** the sections at the beginning/end of the walls where they are shorter in height will consist of steel soldier pile and concrete lagging.

By utilizing different wall types, construction durations will be reduced by eliminating temporary shoring and allowing portions to be constructed prior to the 103 day closure period. Excavation and construction of the roadway can begin as soon as the 103 day closure period begins since the structural wall will already be in place. The structural walls shown in Figure 4.3.7 will then be faced with precast concrete panels that will provide the final architectural details. Architectural treatments will be incorporated utilizing formliners and a color stain coating to provide a simulated dry stacked stone surface similar to that used at the Route 250 Bypass Interchange at McIntire Road (See Figure 4.3.8).

Figure 4.3.7



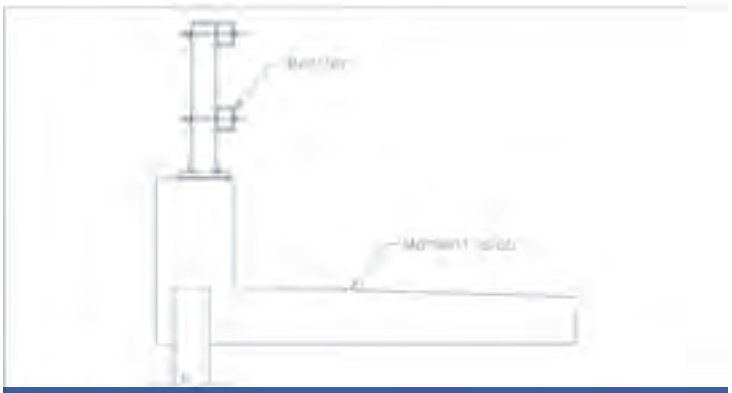
Secant Piles and Precast Wall Facing

Figure 4.3.8

Precast Wall Facing

Additional considerations given to the depressed lane walls include:

Figure 4.3.9



Moment Slab

- Wall sections will be designed such that they meet all structural requirements and minimize deflection without the use of tiebacks. The elimination of the need for tiebacks greatly benefits the schedule as there is no need for this construction element to be completed prior to excavation;
- A powder-coated BR-27 barrier wall supported on a moment slab at the top of the retaining walls (See Figure 4.3.9);
- Attachment details for the architectural facing will consist of shear studs welded to the soldier piles and inserts installed in the secant piles to support/anchor the architectural wall. Cast-in-place concrete will then be utilized to fill the void between the structural wall and the facing;
- Walls will be designed to account for future maintenance of adjacent drainage structures and storm sewer pipes, including potential excavation for their replacement; and
- Fire Protection (installation of stand pipes, etc.).

4.3.2 US 29 WIDENING

4.3.2.1 Conceptual Roadway Plan

General Geometry, Horizontal Alignment, Design Speed, and Typical Sections

The general geometry including the number and width of lanes, shoulders, and pedestrian facilities for each roadway segment are included in our Volume II Design Concept plans and are further described below.

4.3 **Design Concept**

Pavement sections for US 29 and each of the intersecting roadways are consistent with the minimum pavement sections required in the RFP documents. Specific descriptions of the improvements proposed as part of the US 29 Widening project element include:

Route 29

- GS-5 facility with a 45mph design speed utilizing TC-5.11U superelevation criteria, however stopping sight distances and minimum vertical curvature will be adequate for a 50mph facility;
- Three 12' wide travel lanes in each direction, with 12' wide right and left turn lanes as shown on our conceptual plans;
- CG-7 curb and gutter along the outsides of the roadway;
- CG-3 curb in the median, located 1' from the edge of the travel lanes and turn lanes;
- Minimum raised grass median width of 16' in locations not adjacent to left turn lanes or 4' adjacent to left turn lanes, with the exception of the median at the North Hollymead Drive intersection, where a minimum median width of 8' is provided adjacent to the left turn lane;
- 10' wide asphalt shared use path adjacent to northbound US 29 from Polo Grounds Drive to North Hollymead Drive;
- 5' wide concrete sidewalk adjacent to southbound US 29 from North Hollymead Drive to Towncenter Drive; and
- Remains within the 75' cleared APE on the Brookhill property.

Ashwood Boulevard

Only minor construction is anticipated on Ashwood Boulevard as required for the connection of the shared use path and median modifications to accommodate that facility. Roadway and intersection improvements will be designed to the following criteria:

- GS-7 Urban Collector; and
- 40mph design speed.

The most critical element of the improvements at the Ashwood Boulevard intersection will be the adjustment of the median cross-over grade on US 29, which will be improved to provide adequate sight distances for all turning movements.

Ridgewood Drive

Ridgewood Drive will be realigned as shown on our conceptual plans in an effort to maintain access throughout construction while improving the profile of the proposed roadway. The following design criteria will be used:

- Private road with a 20mph design speed; and
- Roadway width will vary from 24' at the connection with US 29 to 22' where it connects to the existing roadway to the east of US 29.

North and South Hollymead Drive

Similar to the improvements proposed at the Ashwood Drive intersection, improvements to and along

north and south Hollymead Drive are expected to be minimal and only as required to connect curb and gutter to the existing shoulders as well as to accommodate the pedestrian crossings and connections along US 29. Improvements to both intersecting streets will be designed per the following criteria:

- GS-7 Urban Collector;
- 30mph design speed; and
- Minimum 11' lane widths to match to existing conditions.

Private Entrances and Driveways

In addition to the major intersections and access roads identified above, several driveways and entrances will also be constructed to maintain access to other individual properties along the US 29 corridor. Each of these driveways will be designed in accordance with commercial or private entrance criteria, depending on the existing entrance configuration and use of the property, and entrance geometry and widths will be designed to accommodate turning movements without off-tracking onto the curb and gutter sections on Route 29.

Roadway Profiles

As noted in RFP Attachment 2.2.2, the profile of US 29 will be developed to provide stopping sight distances in compliance with 50mph criteria. While the roadway is only required to meet 45mph design criteria, our Team has developed profiles for the entire length of both the northbound and southbound lanes of US 29 which meet 50mph criteria, **exceeding the RFP requirements and providing a safety benefit.** As a further design improvement, profiles have been developed to minimize the amount of full depth reconstruction and grade adjustments **leaving only two areas along southbound US 29 that require complete reconstruction.** This approach is an improvement over the RFP concept in several ways:

- Reduces the number of areas requiring reconstruction;
- Reduces the length of the areas requiring reconstruction; and
- Improves traffic control and minimized disruptions.

Since the southbound profiles were adjusted to minimize reconstruction, the northbound profile has been developed to eliminate substandard features and closely match the southbound profile. This will avoid and eliminate excessive break-overs at intersections and along areas of narrow median widths. Throughout the Project, the entire US 29 median will consist of traversable and recoverable cross-slopes.

Profiles for each of the intersecting streets and entrances have also been developed in compliance with the appropriate design criteria. Table 4.3.2 identifies the maximum and minimum grade for each roadway and connection:

Table 4.3.2 - Maximum and Minimum Grade

Roadway Alignment	Maximum Grade	Minimum Grade
Northbound US 29	4.95%	1.10%
Southbound US 29	5.55%	0.50%
Ashwood Boulevard	2.00%	0.52%
Ridgewood Drive	8.77%	2.00%
South Hollymead Drive	5.62%	2.00%
North Hollymead Drive	5.71%	2.00%
Entrances and Driveways	8.21%	0.83%

4.3 **Design Concept**

Hydraulic and Stormwater Management Design

Our Team's conceptual drainage design, including inlet placement, storm sewer pipe alignments and sizes, culverts, ditches, and stormwater management facilities are shown on our Volume II Conceptual Design plans. All drainage designs will be developed in compliance with the VDOT Drainage Manual and the criteria established for an Urban Other Principal Arterial.

In general and as shown on our conceptual plans, drainage will consist of the following elements:

- ***Drop inlets –*** DI-2 and DI-3 curb inlets; DI-5, DI-7 and DI-12 yard inlets;
- ***Storm sewer pipes and culverts –*** ranging in size from 15" to 60" to convey inlet collections to adequate outfalls, including proposed stormwater management basins. Pipe materials will be selected in accordance with PC-1 requirements;
- ***Roadside ditches –*** utilized to intercept offsite runoff and direct flow towards culverts or storm sewer systems; and
- ***Box culverts –*** a double 8'x10' box culvert is anticipated near Sta. 694+00/1694+00 to replace the existing double box culvert.

Consistent with RFP requirements, we have developed our conceptual drainage design with the understanding that all cross culverts will need to be removed or abandoned and replaced. All culverts will be sized to account for proper countersinking in accordance with environmental permit requirements, and pipe culverts located in deep fills will be upsized as required by VDOT Drainage Manual criteria.

Where possible, culverts will be installed via open cut installation, sequenced with the phased roadway construction. Temporary pipe extensions will be designed and coordinated with the temporary traffic control plans. Should culvert installation be infeasible due to depths of cover, then jack and bore methods will be utilized.

Stormwater management will be designed in accordance with II-C technical criteria per VDOT IIM 195.8. Water quality and quantity requirements will be achieved under the performance based method and MS-19 design criteria. Based on our analysis of the Project stormwater and phosphorous removal needs, we have determined that 9 lbs. per year of phosphorus is created by the Project which will be fully treated through construction of four extended detention enhanced facilities. Additional facilities, as shown on our conceptual plans, have been designed to meet adequate outfall requirements for each project outfall. **Our design represents a major improvement over the RFP conceptual plans, which identified construction of eight stormwater management BMP facilities.** Our approach greatly benefits the Project by:

- Reducing VDOT's long-term maintenance costs;
- Minimizing right-of-way and easement impacts;
- Improving Project Schedule; and
- Reducing overall Project cost.

Our Team is continuing to explore reducing these impacts even further by purchasing nutrient credits. Based on discussions with the Pamunkey Farm Nutrient Bank, it is entirely feasible that we can eliminate two of the four proposed stormwater management basins should credits remain available at the time of final design, further adding to the benefits noted above.

Right-of-Way Limits

As shown on our Volume II Conceptual Design plans, the right-of-way limits required are consistent with those shown in the RFP documents. 32 properties will be impacted by construction of the improvements, but impacted areas on these properties have been reduced through the following enhancements:

- Reduced number of stormwater management facilities;
- Improved roadway profiles have reduced slope impacts and the limits of temporary construction easements;
- Refined easement layouts to avoid sliver or minimal impacts to narrow properties which extend close to the roadway; and
- Inclusion of 14 retaining walls to avoid or reduce utility impacts and minimize right-of-way and easement impacts.

Utility Impacts

Utility impacts and anticipated relocations are detailed in Table 4.3.3 below. It should be noted that, as required by the RFP documents, **Dominion transmission facilities along southbound US 29 are not impacted by our design.**

Table 4.3.3 - Utility Impacts

Item Description	Station			Quantity	Unit	Comments
	BL	From	To			
WATER SUBTOTAL						
12" RWSA	US 29 NB	1610+50	1697+00	8,900	EA	Relocate existing 12" line out of roadway. Relocate to under trail.
ACSA	US 29 NB	1652+90	1687+00	5	EA	Reconnect to existing laterals off of 12" RWSA main
ACSA	US 29 NB	1658+00	N/A	1	EA	Relocate existing PRV and MH to the new Ridgewood Drive entrance
ELECTRIC SUBTOTAL						
DVP Distribution Pole	US 29 NB	1651+00	1655+00	1	EA	Relocate pole out of the proposed trail and reconnect pole drop
DVP Distribution Pole	US 29 NB	1655+00	N/A	1	EA	Relocate pole out of proposed fill
DVP Distribution Pole	US 29 NB	1660+00	N/A	1	EA	Relocate pole out of proposed driveway entrance

Additional Considerations

Construction Impacts, Safety, Operational, and Public Acceptance Considerations

Consistent with any major roadway widening project, designing the improvements with consideration of temporary traffic control from the outset reduces impacts to the traveling public and benefits the construction schedule. For this reason, our Team developed a completely new horizontal alignment and vertical profile for this Segment. The following improvements were incorporated:

- Baselines shifted to match the existing roadway crown, allowing more accurate identification of existing vertical profiles, design speeds, and sight distances;
- Improved vertical profiles which maximize reuse of the existing pavement and minimize the limits of full depth reconstruction; and

- Improved median cross-over grades that eliminate bifurcation of the roadway and reducing limits of reconstruction at major intersecting roads.

Our Team understands that one of the primary objectives of the US 29 Widening element of the Project is to improve the safety of the corridor, especially with respect to vertical sight distances and intersection sight distance. As noted above, our Team's concept that incorporates profiles suitable for a 50mph facility will improve motorist and pedestrian safety in the corridor.

A further safety improvement will be discussed with VDOT as the TTC plan is developed. We will propose to close median cross-overs during initial construction activities in order to enhance safety during construction. Only median cross-overs which are identified to be permanently closed will be considered for closure during construction. This is consistent with our other widening projects, where installation of temporary barrier in the median could limit sight distance at unsignalized intersections and adversely impact the safety of the corridor. In conjunction with consideration of closure of the median cross-overs, we will investigate whether adjacent intersection turn lanes need to be lengthened to accommodate increased turning volumes and longer queues.

4.3.3 BERKMAR DRIVE EXTENSION

4.3.3.1 Conceptual Roadway Plan

General Geometry, Horizontal Alignment, Design Speed, and Typical Sections

The general geometry including the number and width of lanes, shoulders, and pedestrian facilities for Berkmar Drive is shown in our Volume II Design Concept. Pavement sections are consistent with the minimum pavement sections required in the RFP documents. Specific details of the Berkmar Drive element of the Project include:

Berkmar Drive

- GS-7 facility with a 40mph design speed utilizing TC-5.11ULS superelevation criteria;
- One 11' wide travel lane in each direction;
- 4' wide on-road bike lane on the outside of each travel lane;
- Raised 10' wide shared use path on the east side of the road, and a raised 5' wide sidewalk on the west side of the road; and
- CG-6 curb and gutter along the outsides of the roadway.

Our Team's concept for the Berkmar Drive Extension incorporates several enhancements aimed at both the interim roadway configuration and the ability to easily expand it to the ultimate 4-lane roadway. These enhancements include:

- ***Identification of a "true" centerline -*** Establishes a centerline for the ultimate 4-lane roadway which also serves as the baseline for the interim 2-lane facility. This will simplify the ability to expand the roadway in the future, since consistent geometry can be utilized for all phases of improvements.
- ***Simplified typical section -*** Places the crown of the road along a true centerline of the ultimate 4-lane section. By eliminating the crown in the 2-lane section, the number of drainage structures has been reduced for both the interim 2-lane facility as well as the ultimate 4-lane facility.

- ***Horizontal Alignment Improvements -*** As allowed by the RFP and discussed in our Team's Proprietary Meeting, we have developed a revised alignment for the Berkmar Bridge over the south Fork Rivanna River which eliminates horizontal curves on the bridge. The alignment has been developed to be compatible with environmental commitments, avoiding the wetlands beneath the bridge, and offers several benefits:

  - Eliminates superelevation transitions on the bridge, and eliminates the need for different cross slopes on the travel lanes as compared to the barrier separated shared-use path. Since the entire length of the bridge will be in a tangent, the entire bridge will utilize a "normal" cross slope;
  - Easily accommodates the future widening from 2-lanes to 4-lanes since curved girders and variable width deck overhangs will not be required for either bridge section; and
  - Eliminates the need to install bridge scupper inlets adjacent to both travel lanes since all flow will be directed towards the east, adjacent to the barrier separated shared use path.

Roadway Profile

As shown on our conceptual plans, **our Team has developed an alternate profile for Berkmar Drive which has allowed us to lower the bridge by approximately 17'.** This will be further explained in section 4.3.3.2 below. In developing this improved profile, earthwork balancing, construction access, earthwork hauls, cut and fill slope impacts, and environmental limits have all been considered. As shown on the conceptual plans, the maximum vertical grade proposed by our concept is 8.00% and the minimum vertical grade is 0.50%, both of which are within the allowable criteria for a 40mph GS-7 facility in rolling terrain.

Hydraulic and Stormwater Management Design

All drainage designs will be developed in compliance with the VDOT Drainage Manual and the criteria established for an Urban Collector. As shown on our conceptual plans, drainage will consist of the following elements:

- ***Drop inlets –*** DI-3 curb inlets along the roadway, DI-12 inlets for roadside ditches, and manholes in storm sewer lines to serve as "drop-down" locations to minimize flow velocities and potential for outlet erosion;
- ***Storm sewer pipes –*** ranging in size from 15" to 36" to convey inlet collections to adequate outfalls, including proposed stormwater management basins. Pipe materials will be selected in accordance with PC-1 requirements;
- ***Roadside ditches –*** utilized to intercept offsite runoff and direct flow towards culverts or storm sewer systems; and
- ***Culverts –*** several culverts have been placed to maintain drainage of off-site flows without impacting proposed storm sewer systems or requiring stormwater management basins to be increased in size. Several culverts have been increased in size based on the amount of fill and in accordance with VDOT requirements for future maintenance and inspection considerations.

Stormwater management facility locations and sizes for the Berkmar Drive Extension have been developed in accordance with the new II-B technical criteria. As shown on our conceptual plans, stormwater management requirements for the Project are being met through construction of seven stormwater

management basins providing a phosphorous removal of 38.19 lbs/yr. Stormwater management basin locations have been selected to minimize easement and environmental impacts and also to address adequate outfall requirements for the Project.

Right-of-Way Limits

Right-of-way and easement impacts are shown on the conceptual plans, with differences between the RFP limits and our proposed limits shown for comparison. Right-of-way for the corridor is consistent with the RFP documents, providing a right-of-way width of 120' centered on the baseline to accommodate future widening to 4-lanes. Minor adjustments in right-of-way limits have been identified as allowed by the RFP at the following locations and for the following reasons:

- ***At the roundabout with Hilton Heights Road –*** The roundabout location and corresponding right-of- way location has been adjusted to be in compliance with approach geometry in accordance with the FHWA Roundabout Guide;
- ***At the crossing of the Rivanna River –*** The right-of-way locations have been adjusted to coincide with our adjusted roadway alignment;
- ***Station 168+00 to Station 176+00 right and Station 195+50 to Station 198+00 right –*** adjusted right-of-way line to coincide with existing property lines. This will avoid sliver property remainders and eliminate "land-locked" properties. These areas may be adjusted during final design and through right-of-way appraisal and acquisition processes;
- ***Station 212+00 to Station 223+00 –*** right-of-way has been adjusted to mimic horizontal alignment shift which utilizes a portion of the stormwater easement for the roadway improvements, in an effort to minimize and avoid environmental impacts; and
- ***Station 228+50 to Town Center Boulevard –*** roadway and right-of-way has been shifted to align properly with the existing roundabout, including existing splitter islands.

In addition to these specific areas of improvements, the adjustments we have made to the vertical profile have also resulted in reduced temporary construction easement needs for tall cut and fill slopes.

Utility Impacts

Utility impacts and anticipated relocations are shown in Table 4.3.4 below.

Table 4.3.4 - Utility Impacts

Item Description	Station			Quantity	Unit	Comments
	BL	From	To			
SANITARY						
8" Sanitary Sewer	Berkmar	225+00	N/A	245	LF	Set two manholes and relocate sewer in casing due to proposed fill depth
TELECOM						
Centurylink	Berkmar	168+00	N/A	150	LF	Lower 1200 pr copper in place below roadway grade
ELECTRIC						
Poles w/pole drop	Berkmar	128+00	N/A	2	EA	Place pole on each side of prop bridge for power drop
UG Power	Berkmar	128+00	N/A	200	LF	Move OH power to UG under bridge
Poles	Berkmar	179+00	N/A	2	EA	Place pole on each side of prop road to raise OH line

Additional Considerations

Recognizing the critical nature of the schedule requirements, our Team added additional design resources to the Team at the RFQ stage. In the case of the Berkmar Drive segment, we added The Timmons Group to focus solely on the design of this Segment. Coordination between the hydraulic analysis for the Rivanna River and the bridge design, both of which will be completed by Dewberry, will be continuously coordinated throughout design. The following coordination efforts have already been completed and will allow initial design activities to start prior to NTP:

- ***Horizontal alignment adjustment –*** Over the Rivanna River, the alignment has been shifted to eliminate superelevation transitions on the bridge and to simplify construction access, construction techniques, and ability to widen the bridge in the future;
- ***Vertical profile adjustment –*** The profile has been adjusted both to balance cut and fill, and to reduce the height of the bridge piers while maintaining adequate vertical clearance per the dam break flow analysis; and
- ***Stormwater management –*** Devices and treatment amounts have been coordinated between the US 29 and Berkmar Segments since both fall within the same HUC watershed.

Construction Impacts, Safety, Operational, and Public Acceptance Considerations

Since the Berkmar improvements are located in an undisturbed area, there will be minimal impacts to the traveling public except where connections are made to Hilton Heights Road and Town Center Drive. Impacts to adjacent property owners and houses have been considered; however, many of the adjustments previously described were initially identified in an effort to reduce impacts to the public and improve public acceptance of the Project. These improvements include:

- ***Earthwork balance –*** eliminates the need to take material off-site or bring additional material on-site, thus reducing the amount of construction equipment and hauling on public roadways;
- ***Alignment modifications –*** The adjustments made at both roundabouts have been made to be in compliance with FHWA roundabout guidance, which will ultimately improve operations, efficiency, and safety;
- ***Horizontal alignment modifications –*** across the Berkmar Bridge over the Rivanna River, the elimination of the horizontal curves eliminates off-tracking concerns which would occur due to the 11' travel lanes being located immediately adjacent to the on-road bike lane. This will improve safety for bicyclists who use the on-road bike lane and may be traveling adjacent to larger vehicles at relatively high speeds.

4.3.3.2 CONCEPTUAL STRUCTURAL PLANS

Berkmar Drive Bridge over South Fork Rivanna River (B-651)

Our concept for this bridge improves upon the RFP concept in several very important ways:

- Elimination of horizontal curvature and superelevation on the bridge;
- Reduction of bridge length by approximately 130';
- Elimination of one span while meeting all hydraulic requirements; and
- Lowered vertical profile, reducing the heights of the substructure elements by approximately 17'.

By incorporating these enhancements, our Team will be able to realize improvements to fabrication, erection, and access during construction, and will provide a finished product which is more cost effective, requires less maintenance, and be more accessible for inspections and maintenance.

Provided below are more detailed descriptions of specific elements of the bridge:

Typical Section

Our concept matches the typical section of the bridge provided in the RFP concept plans. The proposed bridge will consist of a 6' wide raised sidewalk, two 15' wide travel lanes (which include on-lane bike lanes), and a 14' wide barrier separated shared use path. VDOT Standard BR-27C barriers will be utilized at both outside fascias as well as for the barrier between the travel lanes and the shared use path. Architectural finishes including color stain coating and a simulated dry stacked stone appearance will be incorporated in design details and construction elements in accordance with the RFP requirements.

Superstructure

The proposed bridge will consist of a 4-span structure utilizing continuous weathering steel plate girders spaced at approximately 11'-7" on center supporting a concrete deck slab. The bridge will utilize jointless bridge design technologies as outlined in the VDOT Manual of the Structure and Bridge Division, Volume V- Part 2, Chapter 17. It is anticipated that this will result in the use of Virginia Alternate Abutments to achieve a jointless bridge deck due to the length of the bridge. Deck drainage will be required and has been coordinated with the Project stormwater management needs and roadway drainage elements. Low permeability concrete will be used in accordance with the RFP, and reinforcing steel will be corrosion resistant reinforcing (CRR) in accordance with VDOT Structure and Bridge IIM-S&B 81.5. Based on our revised profile, the low chord elevation will be approximately 8' above the Sunny Day Dam Breach elevation of 374.

Substructure

The abutments are anticipated to be Virginia Alternate Abutments supported on either spread footings or deep foundations. The piers will either consist of multicolumn bents or single column "hammerhead" type piers supported on either spread footing or deep foundations. The final determination as to the type of abutment and pier foundations will occur after the following design elements are completed:

- Geotechnical investigation and recommendations;
- Hydraulic and hydrologic analysis (H&HA); and
- Scour analysis.

Both abutments and piers will be designed for the loads associated with the Sunny Day Breach as an Extreme Event II.

Maintenance & Construction Considerations

During development of our Team's Berkmar Drive bridge concept, we have also accounted for maintenance and construction considerations. The bridge proposed by our Team will employ construction materials that will minimize long-term maintenance of the bridge. The use of low permeability concrete and corrosion

resistant reinforcing steel will greatly increase the durability of the structure, which combined with weathering steel girders and jointless bridge design will provide VDOT with a relatively maintenance-free structure. Lowering the profile of the road and eliminating a span further reduces the amount of bridge that needs to be maintained and improves maintenance access, further reducing future maintenance costs.

In accordance with the RFP documents and current design standards, the bridge will be designed using AASHTO LRFD Bridge Design Specifications, 6th Edition and VDOT Modifications, and a load rating of the bridge will be developed and submitted prior to opening the bridge to traffic.

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

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

Our Team's approach to construct the US 29 & Rio Road Grade Separated Intersection relies on three key elements that will ensure a successful delivery of this very challenging Project: impeccable planning; experienced and dedicated resources; and flawless execution. Over the past 13 years the Shirley Team has brought each of these elements to VDOT by successfully delivering 15 individual projects, in addition to more than 20 separate projects as part of the Route 28 Corridor Improvements Project. The Project brings unique challenges with an aggressive schedule for completion, extremely constrained work areas, and lane closure restrictions with limited windows of construction work times. Our Team understands VDOT's Project objectives and during construction it is our commitment to develop successful strategies to address all concerns. The construction sequence and plan of operations detailed herein demonstrates our understanding of the Project as well as our commitment of the resources required to meet the Project schedule. A brief review and summary of the Project's objectives and our Team's solutions are as follows:

1. ***Objective:*** Minimizing congestion and limiting impacts to the traveling public.
   Solution: Develop a Right-of-Way/Temporary Traffic Control (TTC) that allows construction activities to occur in dedicated corridors which minimizes necessary lane closures.
2. ***Objective:*** Minimizing impacts to affected businesses and stakeholders throughout the course of construction.
   Solution: Relocate critical utilities in existing right-of-way and develop a Transportation Management Plan (TMP) that allows access to business at all times during construction.
3. ***Objective:*** Developing and managing effective communication strategies and working relationships with US 29 Project Delivery Advisory Panel (PDAP), business owners and other key stakeholders.
   Solution: At least 90 days before any traffic impacts or mobilization, along with our Public Relations Partner, Pulsar, our Team will develop a Public Information and Communications Plan (PICP) in accordance with VDOT's and the Culpeper District Office's regulations, policies and procedures. The approved PICP will serve as the primary tool and guideline for establishing the working network of communication between the Project Design-Build Team and the affected stakeholders.
4. ***Objective:*** Design-Builder has the necessary resources and expertise to efficiently and effectively manage the Project with the ultimate goal of meeting the milestone dates with the opportunity to realize incentives.
   Solution: Our Team has already developed a resource matrix with the anticipated manpower from a design and construction perspective. We will maximize manpower with our partners, Faulconer and English.
5. ***Objective:*** Quickly react to resolve unforeseen field conditions such as unknown utilities or differing site conditions in order to keep the Project on schedule.
   Solution: Our Team will develop an Emergency Utility Outage Plan (EUOP) that outlines the procedures that the Team will follow in the event of an outage with any utility. It will contain the 24/7 emergency contacts for the utility representatives, Police/Fire/Rescue, equipment and material suppliers, the media, and the unique procedures that the Team will follow for each specific utility. Furthermore, our geotechnical plan will address varying site conditions during construction and the use of a dedicated geotechnical inspector during critical operations.

Our Team's approach to the US 29 & Rio Road Segment is centered around keeping the traveling public, the construction workforce, and citizens of Charlottesville and Albemarle County safe, while maximizing

the amount of work that can be put in place while working within the RFP's space and time constraints. We have taken an approach that creates the maximum amount of work area available and chosen construction methods that can be utilized efficiently in the limited time windows available for construction. There are four very distinct work time windows that we have identified by Phases throughout this work plan discussion. Listed below are the critical activities occurring in each Project Phase that are further detailed in Section 4.4.1 - Sequence of Construction Narrative.

PRELIMINARY PHASE (Design, Right-of-Way and Utility Relocation)

January 2015 (Notice of Intent to Award) - October 2015

- Perform critical preliminary design and geotechnical investigations;
- Submission and approval of critical roadway and bridge design packages;
- Early start of right-of-way process and acquisition of critical land rights; and
- Critical utility relocations.

PHASE 1

October 2015 - May 23, 2016

- Signal modification at Berkmar Drive and Rio Road;
- Construct temporary local lane road widenings along US 29 southbound and northbound;
- Modify travel lane configurations to create work zone quadrants;
- Construct and install depressed roadway retaining wall foundation elements; and
- Construct and install Rio Road bridge abutment foundation elements.

PHASE 2 (103-day Intersection Closure Period of the Rio Road Intersection)

May 23, 2016 - September 2, 2016

- Close Rio Road intersection;
- Excavate and dispose of depressed roadway soils;
- Install retaining wall facing and architectural elements;
- Complete all depressed roadway civil elements including drainage, pavement section and medians;
- Construct the Rio Road Bridge over US 29 including fire protection, under-bridge lighting and surface work;
- Re-construct the Rio Road Intersection Traffic Signal and signing; and
- Install traffic safety devices for opening of the US 29 depressed roadway.

PHASE 3

September 2, 2016 - December 2, 2016

- Complete remaining contract work following the opening of the depressed roadway portions of US 29 and the Rio Road bridge;
- Complete top of retaining wall moment slabs and parapets;
- Removal of temporary local lane pavement widenings;
- Construction of new curb and gutter, sidewalks, and pedestrian facilities along US 29 southbound

and northbound local lanes;
- Removal and modification of the signalized intersections along the US 29 corridor;
- Final roadway resurfacing and pavement marking; and
- Final inspection and acceptance of roadway and bridge by VDOT.

4.4.1 - SEQUENCE OF CONSTRUCTION - US 29 & RIO ROAD GRADE SEPARATED INTERSECTION

Our Team has developed a sequence of construction for the Project, which meets the RFP requirements by completing the US 29 & Rio Road grade separated intersection by December 2, 2016 while maximizing the opportunity to obtain additional incentives by completing work by interim milestone dates. In Section 4.7 of this Technical Proposal we have presented a detailed critical path schedule depicting our planned sequence of the construction activities. The description below explains the means and methods our Team has developed during the four phases of the Project.

PRELIMINARY PHASE

January 2015 (Notice of Intent to Award) - October 2015

With such an aggressive completion schedule, it is imperative to discuss the front end activities of **design, right-of-way acquisitions, and utility relocations.** These initial items along with the early construction activities are on the critical path of the schedule. As described in Section 4.3, upon Notice of Intent to Award our design partners will immediately begin the necessary preliminary design activities including the field geotechnical investigations necessary to prepare the first submission roadway plans. In partnership with VDOT, it is our intent to produce a set of critical right-of-way and TTC documents that can be utilized to begin acquisition of permanent right-of-way as well as obtaining utility and construction easements required for the initial phases of the Project. Additionally, these maintenance of traffic documents can be used for the utility relocations that must take place within existing right-of-way. The Shirley utility crews and the private utility company relocations are on the critical path during the first stages of construction. **It is our Team's assumption that along with our co-located VDOT partners, the required early set of critical right-of-way and temporary traffic control documents will be developed, submitted and approved within 75 calendar days of Notice to Proceed.**

It is important that VDOT understand, participate, and commit to this required aggressive schedule for the Project to be a success. Nine day plan reviews, co-located office facilities and over-the-shoulder reviews will be a huge benefit to the process. **A commitment to partnering and to the process must be unwavering from both parties.**

Immediately following these approvals, our Team will continue acquisition of the property rights. We will dedicate a Right-of-Way Manager and acquisition firm to facilitate the process. Our Team has assumed a very aggressive acquisition schedule allowing six months to acquire the parcels necessary to begin the critical roadway widenings along southbound US 29. Property rights will need to be acquired by October 2015 to maintain the Project Schedule.

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

Concurrently, our Team will rely on the VDOT utility relocation corridors identified in the Addendum #2 RFP documents to assist with our construction sequencing. Most notably are the following critical utilities that must start relocations as soon as documents and engineering are approved. These utilities are discussed in further detail in Section 4.4.3 of this Proposal:

- ***Dominion Power Overhead Utility Poles -*** We understand that VDOT intends to relocate the existing Dominion Power pole at the northwest corner of the US 29 and Rio Road intersection. This pole along with the three poles just north of the intersection must be relocated approximately 10 to 15' further west to allow room for the temporary and permanent widening of US 29. Also on these poles are Comcast Communications and Verizon facilities which will also require relocation.

- ***Rivanna Water and Sewer Authority (RWSA) 18 & 24" Watermain -*** This utility must be relocated immediately at the onset of plan approvals as it runs parallel to and is physically in the future depressed roadway construction area. We intend to relocate the watermain into the existing far right travel lane of northbound US 29. Relocation of the watermain will occur in late Summer/Fall 2015 during night-time lane closures. Temporary roadway patches will be used to restore roadway surfaces prior to re-opening lanes every morning. Upon completion of the watermain relocation, the temporary patches will be removed and permanent asphalt will be placed.

- ***City of Charlottesville 4 & 6" Gas Main -*** Similar to the watermain, the gas main runs in the future depressed roadway construction area. We intend to relocate the gas main in the existing far right travel lane of southbound US 29. Relocation of the gas main will also occur in late Summer/Fall 2015 during night-time lane closures. Roadway restoration will be similar to the 18 & 24" watermain located in US 29.

- ***CenturyLink Underground Communication Ductbank -*** This utility is a direct conflict as it runs perpendicular to the future depressed roadway. Understanding the complexity of this relocation from the utility owner's perspective makes this a critical utility for the Project. Our Team will rely on the pre-planning and engineering performed by VDOT and CenturyLink . Our Team understands the intention to place CenturyLink and other private communication facilities into a shared ductbank system running along northbound US 29 and crossing at approximately Station 66+00. Our Team is committed to designing and planning construction activities with the goal that this utility must be removed out of conflict by September 15, 2015 in order to maintain the Project Schedule.

PHASE 1

October 2015 - May 23, 2016

The early acquisition of right-of-way and easements and subsequent utility relocations will allow for construction of the roadway widening along US 29. These widenings will allow our Team to open construction quadrants (as shown in Figure 4.4.1 on the following page) for installation of the depressed roadway retaining wall foundation elements. Despite the extremely constrained areas these quadrants are critical to the up-front work to be completed in advance of the 103-day closure period.

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

Figure 4.4.1

Quadrant Work Zones

Stage 1- NW and SE Quadrant Construction

Prior to construction of the US 29 temporary widenings, crews will install the temporary median crossover and temporary signal required at the Berkmar Drive and US 29 intersection just south of the Project. Just west of the Project, any temporary median breaks and improvements along Rio Road including adjustment of pavement markings will be performed. North of the intersection, a median crossover, left turn lanes and a temporary signal will be installed at US 29 and Myers Drive.

From a traffic flow and TMP perspective, it is our Team's intent to construct the northwest and southeast quadrants concurrently in Stage 1. In order to create the quadrant openings, the US 29 southbound and northbound approach roadway widenings will be constructed concurrently starting in October 2015. Our Team will dedicate two construction teams consisting of drainage and grading crews to install many of the permanent drainage features as well as the majority of the permanent pavement section in these areas. In addition, the teams will be installing any temporary paving necessary to create the adequate room for the ensuing quadrant construction. It is anticipated that these widenings can be constructed behind temporary construction barriers and can occur during daytime work hours. All pedestrian movements displaced during this time will be detoured with appropriate signing and designated alternate routes. This setup will significantly limit the need for temporary lane closures during Stage 1, as the majority of work will be constructed behind temporary barrier.

Following completion of the roadway widenings in Fall 2015, US 29 thru-traffic and right turn movements will be shifted to the far outside. Additionally, the dual left turn movements from both directions of US 29 onto Rio Road will be diverted away from the thru-traffic as vehicles approach the intersection (see Figure 4.4.2 on the following page). This diversion of the left turn movements will create the gore space required for the quadrant areas, while still maintaining all existing turn movements at Rio Road and adjacent intersections. Traffic barrier service and attenuators will be placed to protect the work zone. It is anticipated that these work areas will be approximately 24 to 30' wide. Immediately our Team will mobilize two wall crews to install the depressed roadway retaining wall foundation elements on both the northwest and southeast quadrants. Currently, our Team is planning to use multiple retaining wall types depending on wall heights and geotechnical investigations. Primarily, we will focus on the following:

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

Figure 4.4.2

Phase 1 - Stage 1

- ***Lower Wall Heights (0' to 12') -*** Cantilevered Soldier Beam and Concrete Lagging System. Beams will be installed using drilled methods to reduce vibrations and installed to ultimate depths for the permanent depressed roadway. Beams will be backfilled with structural concrete to depressed roadway elevations; lean concrete will be used to backfill the remainder of drilled holes.
- ***Increased Wall Heights (12' and greater) -*** Secant Pile Walls. (see Figure 4.4.3) Secant piles will be designed for cantilevered condition and will be installed using drilled methods. Secondary secants will be reinforced with either I-beam sections or deformed bars according to controlling design parameters.

Figure 4.4.3

Secant Pile Installation

The quadrants will allow for 24 hour construction access to the retaining wall work. It is anticipated that the primary drilling work can occur during daytime hours and spoil removal and concrete work can occur at night-time in allowable lane closures as well as within the quadrant areas. The dedicated quadrants will also allow for safe delivery of critical material such as reinforcing steel and ready-mix concrete.

Following completion pile and beam installation in the northwest and southeast quadrants, the roadway pavement that was disturbed in these areas will be patched. This will allow for the next stage of traffic movement.

Stage 2 - NE and SW Quadrant Construction

While Stage 1 retaining wall work is ongoing, grading and drainage crews will commence with the roadway widening work along US 29 southbound from Station 47+00 to 60+00 (southwest quadrant). This widening will consist of permanent drainage installations as well as the permanent and temporary pavement sections

required for the Stage 2 quadrant work (see Figure 4.4.4). In the northeast quadrant along northbound US 29, roadway widening is severely constrained by the presence of the existing retaining wall running from Station 61+00 to 66+00. In this area, it is our intent to simply remove the concrete path currently behind the wall and replace it with temporary asphalt for a minimal widening in this area. We do not intend to remove parapets or impact the structural integrity of the wall.

Figure 4.4.4

Phase 1 - Stage 2

With the US 29 widenings complete, the temporary traffic barrier service will be removed from the Stage 1 work zones. For Stage 2 work, the quadrant work zones will be created by separating the thru-traffic on both US 29 northbound and southbound. Appropriate signing and pavement markings will clearly delineate the separation areas. Traffic will merge together following the work zones and all turning movements will be maintained as required by the RFP. Traffic barrier service will then be installed to delineate northeast and southwest work zones.

Similar to Stage 1, the northeast and southwest retaining wall foundations will be built concurrently by two drilling and wall crews. Similar construction methods and foundation types will be used as in Stage 1. Again 24 hour access to the area will aid in expediting work.

Unlike Stage 1 work, pavement restoration and removal of temporary traffic barrier service will not be required as we are anticipating that the completion of the Stage 2 work will coincide with completion of Stage 3 and thus near the start of the Phase 2 103-day closure of the Rio Road Intersection on May 23, 2016.

Stage 3 - Rio Road Bridge Foundations

As the Stage 2 northeast quadrant retaining wall (shorter of the wall segments) is completed, we will immediately transition this crew to begin the Rio Road Bridge foundation installation. It is our intent to use a similar secant pile installation for the dual purpose of abutment foundation and retaining wall under the Rio Road Bridge. These installations will have to occur during night-time lane closures as no permanent work zone can be established through the existing intersection. All pavement disturbed during the night time closures will be restored prior to opening of traffic the next morning. Our crews intend to complete both abutment foundations prior to the May 23, 2016 commencement of the 103-day closure period.

PHASE 2 - 103-day Closure of the Rio Road Intersection

May 23, 2016 - Sept 2, 2016

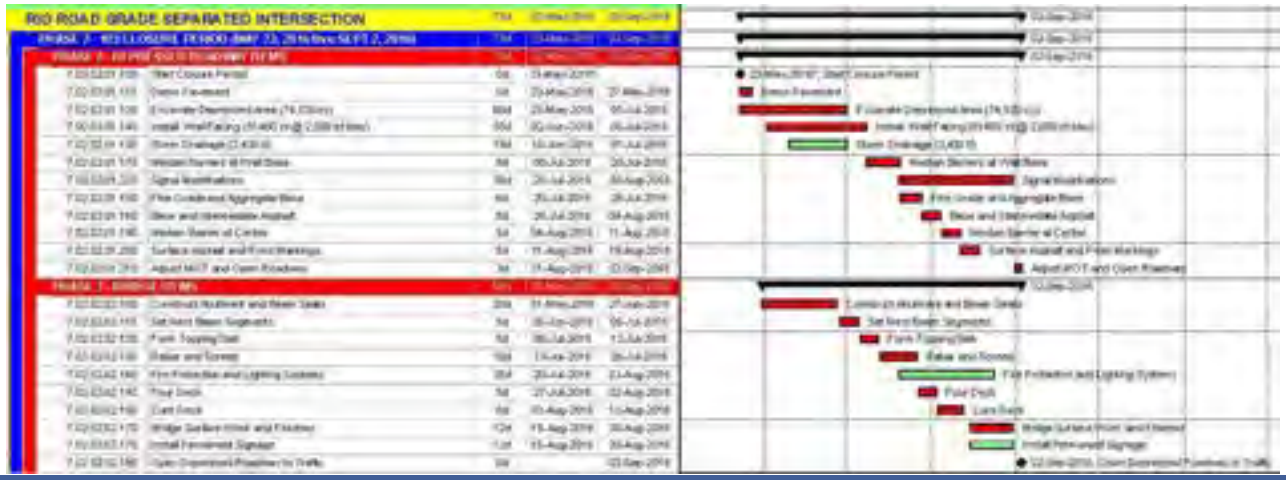
Following completion of the bridge foundations, crews will begin preparation of the roadway for the Phase 2 closure period. Per Figure 4.4.5, traffic will be maintained as required by the RFP documents during the closure period. Phase 2 will be utilized to construct the majority of the depressed roadway area and the Rio Road Bridge. In order to maximize schedule efficiency and the opportunity to obtain incentives, our Team will use a double crew shift strategy for the major construction operations during this Phase. We intend to work two, eight to ten hour shifts per day for the excavation, lagging, precast wall panels, drainage and pavement section operations.

Figure 4.4.5

Phase 2

In general, our plan will be to remove the existing pavement and excavate the depressed roadway to a point that bridge crews will begin abutment construction on top of the previously installed foundation elements. Concurrent activities will occur for the depressed roadway and bridge elements during the 103-day closure period. Figure 4.4.6 includes an excerpt of our planned sequence from our Section 4.7 Proposal Schedule for this phase.

Figure 4.4.6



Planned Detailed Sequence

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

Depressed Roadway Construction

Upon commencement of the closure period, traffic crews will place temporary traffic barriers to clearly delineate the closed portions of the intersection and prevent traffic from mistakenly entering the work zone or excavation areas. Work will commence as follows:

Removal of Pavement - All pavement to be removed will be milled and placed in trucks for offsite disposal.

Excavation and Disposal of Cut Material Offsite - Approximately 74,000 CY of excavated material will be removed for construction of the depressed roadway. Two excavation crews will remove approximately 2,500 CY per day. In order to meet this production we have already secured disposal sites in the surrounding area to assure that disposal and trucking concerns are not an issue. In our Proposal Schedule, we have allowed an additional five days of crew time for removal of any required undercutting or poor soil remediation once subgrade is reached.

Installation of Concrete Lagging Panels Between the Soldier Beam Members Installed in Phase 1 - In the shallower cut portions of the depressed roadway we will install traditional soldier beams in Phase 1 and use concrete lagging in between the vertical piles as the permanent support of excavation. Approximately 15,000 SF of precast lagging will be installed during the excavation. All lagging will be stored at the Project's staging yard and will be available for day or night time installation. The lagging can be installed with relatively light lifting equipment and will be able to keep up with the excavation crews.

Drainage Installation - In our Volume II Concept Plans, our proposed preliminary drainage is depicted in the depressed roadway. With approximately 2,400 LF of new drainage pipe and 18 drop inlets, we are anticipating two drainage crews to begin installation as soon as subgrade elevation is reached in the new depressed roadway area.

Precast Facing Installation - 51,500 SF - In accordance with the details provided in Section 4.3 Design Concept, precast concrete facing panels will be attached to the wall foundation elements. We are anticipating that 5' x 10' architectural panels will be delivered and stockpiled at the central staging area just prior to the 103 day closure period. Panels will be installed following full height excavation of the retaining wall and bridge abutment walls. Panels will be attached starting from the bottom (roadway elevation) then up to top of wall. With a two shift operation, approximately 2,000 SF of panel per day will be installed (25 working days).

Median Barriers - Where required, foundations for MB-7F median barriers will be installed immediately following drainage installation and will be coordinated with the installation of the precast concrete facing panel installation. MB-7D median barriers that separate the US 29 northbound and southbound thru traffic will be slip-formed on intermediate asphalt.

Aggregate Base/Asphalt Paving - Aggregate roadway base installation will occur as areas are brought to finished elevations and appropriate subgrade proof-rolling and compaction testing has passed. Asphalt crews will be available during day or night-time work hours to place the base and intermediate asphalt. It is anticipated that the depressed roadway portion will be opened to traffic on intermediate asphalt and temporary pavement markings. Final surface asphalt and pavement markings will be installed in Phase 3 as the entire US 29/Rio Road Intersection work draws near completion.

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

Rio Road Bridge Construction and Intersection Signal

Abutment Construction - As described in Section 4.3 Design Concept, our Team intends to install a traditional cast in place abutment seat and bearing pads for the Rio Road bridge. Following excavation of the depressed roadway area to the bottom of the abutment footings, approximately 7', two structural crews will form and pour the abutment footing and bearing pads.

Girder Installation - Our plan to use the precast NEXT Beam system of modular beam/deck segments will greatly advance our schedule as we anticipate all 35 beams can be set in less than one week. These NEXT Beams are light, weighing only 30 to 40 tons per unit, allowing the use of smaller conventional mobile cranes thus minimizing impacts to traffic and mitigating schedule concerns. Fabrication and delivery of the beams are also a time saver as several firms can manufacture them within a 500 mile radius of the jobsite. The use of the NEXT Beam eliminates the need for access under the bridge deck during construction so that the ongoing depressed roadway construction can continue concurrently.

Figure 4.4.7

NEXT Beam Installation

Bridge Deck Form and Pour - A cast-in-place topping slab will be installed on top of the modular girders. There will be virtually no formwork required for this slab and only reinforcing steel installation will need to be performed before concrete can be placed. Following curing of bridge decks, any curbing and/or medians will be formed and poured on top of the bridge deck surface.

Underbridge Lighting and Fire Protection Systems - Following decking of the Rio Bridge, we will complete the fire protection system, underbridge lighting and any required deck drainage systems prior to the opening of the depressed roadway. This work will be timed just following the base paving operations as much of the work will be performed via use of manlifts. Specialty subcontractors will be utilized for the fire protection system and dedicated electrical crews will install the underbridge lighting.

Rio Road Signalized Intersection - Finally, in Phase 2 of the Project, the new signal equipment including poles and mast arms will be installed. We anticipate the elimination of the signal truss originally proposed in the RFP, which will allow us to install all signal elements with conventional equipment saving interruption of traffic if large cranes on top of the elevated roadway sections were required.

Contingency Plans and Efficiency Strategies During the 103 Day Closure Period

- Schedule allows additional time for undercutting of subgrade if required;
- Multiple crew shifts with dedicated supervision;
- Use of ABC techniques via use of NEXT Beam system of modular bridge beam/deck sections;
- Scheme allows concurrency of multiple operations in the depressed roadway section;
- Storage yard utilized for stockpiling of required materials;

- Available resources from our Team partners as needed; and
- Additional shifts.

PHASE 3 - Following the 103-day Closure of the Rio Road Intersection

September 3, 2016 - December 2, 2016

With the opening of the depressed roadway by September 2, 2016, traffic will be configured to allow room for the follow-up work to complete the entire Rio Road Intersection. Again, it is anticipated that multiple crews will be required for this work in order to meet the required milestone and completion dates.

Phase 3 - Stage 1

Work will progress from the median to the outside of the local lanes. In Stage 1, local US 29 traffic will be shifted slightly to the outside utilizing the temporary pavement installed in Phase 1 while maintaining the required number thru and turn lanes. This shift will create the room necessary to complete the tops of the retaining walls supporting the depressed roadway constructed in Phase 2. The top of the walls have a combination moment slab and parapet. Upon completion of the pouring and curing of these elements, the permanent roadway section will be installed. At this point traffic can be shifted to Stage 2.

Phase 3 - Stage 2

In Stage 2, US 29 local traffic will be shifted slightly towards the interior of the intersection. This will allow for the removal of any temporary pavement constructed in Phase 1. All permanent drainage piping and structure adjustments will be made. All outside curb and gutter, median islands, and entrance ramps will be installed as well as all permanent pedestrian facilities including sidewalks, handicap ramps, and handrails. All permanent signal adjustments and installations will be completed in this stage.

Sequence Of Construction Benefits

Safety and Operations

Our Team's Sequence of Construction and Design Concept provides significant safety and operational benefits to the traveling public during the accelerated construction schedule. Listed below is a brief summary of the key items that highlight the safety and operations benefits of our Work Plan:

- Maintains required travel lanes and turning movements throughout all phases of construction;
- Allows advance construction in preparation of the 103-day closure period by creating dedicated zones with 24 hour access to construction work areas;
- Safely separates traffic from work zones and construction workers;
- Construction vehicles and dump trucks will be able to safely enter and exit into the existing travel lanes beyond the limits of the temporary barriers;
- Retaining walls and bridge abutment walls designed for full cantilever support of excavation during 103-day closure period saving time and cost of tie-backs or temporary bracing;
- Allows concurrent work areas for advancement of schedule and possibility of incentive achievement;
- Allows for pedestrian movements throughout the entire construction sequence; and
- Reduces the need for temporary lane closure prior to the 103 day closure period.

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

Geotechnical Constraints

Since our Team will complete the required geotechnical investigations and provide methods for remediation of poor soils expected to be encountered in the US29/Rio Road intersection well prior to construction, the final sequencing of work will be developed to include any geotechnical constraints or soil remediation methods so that there are no delays in work activities. Even at this early RFP stage of the Project, our Team has reviewed the preliminary geotechnical information provided and chosen retaining wall systems and foundation depths in order to develop our construction scheduling and resource requirements for this Technical Proposal. Additionally, we have assumed in our preliminary scheduling that considerations for poor subgrade soils in the depressed roadway areas must be addressed. Treatment methods such as 'undercut and replace', or use of geogrids and fabrics will be identified in the final geotechnical recommendations, and construction durations adjusted accordingly so that milestone and completion dates are met.

In order to assure that our Team can react quickly to any unforeseen geotechnical issues during construction, we are dedicating a geotechnical inspector during wall foundation and bridge abutment drilling as well as roadway subgrade activities so that decisions can be made at the job level and job progress is not delayed.

Environmental Considerations

Given the Rio Road Intersection is located within a well urbanized area there are few natural resources that will be impacted. There are two locations on the Project with adjacent existing stormwater management facilities which may be jurisdictional. One is located on Parcel 100, the other is located behind Parcel 145 off of Berkmar Drive. Our Team's design avoids impacts to these facilities; however, should utility relocations be necessary, this project will qualify for a Nationwide #23 or Nationwide #12 from the Corps of Engineers, both of which have been granted Section 401 water quality certification from the Virginia Department of Environmental Quality.

There is a potential to encounter petroleum contaminated soil or groundwater from historic spills offsite. Once the Phase 2 environmental assessments have been provided by VDOT, our Team will address any required coordination or treatment plan with DEQ in concert with VDOT. Any required removal of contaminants will be scheduled as to not delay planned construction activities on the critical path.

During construction phasing, our Team will ensure that the Erosion and Sediment (E&S) control documents are strictly adhered to and the approved Stormwater Pollution Protection Plan (SWPPP) is followed. This starts with installation of all Phase 1 E&S devices such as silt fence, diversion dikes, sediment traps and basins prior to grubbing and grading operations. We will dedicate an E&S maintenance crew to the Project at all times that can continually monitor the site and relieve over-burdened E&S devices and reinstall or reinforce existing devices and prepare for forecasted rain and storm events. This crew will be led by a foreman carrying the VDOT ESCCC and DCR Registered Land Disturber credentials. VDOT Forms C-107a and C-107b as well as proper documentation will be kept current at all times per DCR and VDOT regulations.

Right-of-Way Considerations

In accordance with our Preliminary Proposal Schedule, our Team's construction sequencing has taken into account the critical property acquisitions required for the early start of the US 29 roadway widening along

the northwest and southeast quadrants as well as those required for the required Stormwater Management facilities and drainage elements planned to be located in the adjacent retail parking lots. Equally critical are the easements that will be required for the early utility relocation along US 29 northbound and southbound. Listed in the table below are the five critical property acquisitions required at the onset of plan approvals. Our Team will rely on VDOT designated utility easements and will assist VDOT in finalizing all land rights prior to utility relocations.

Table 4.4.1 - Critical Property Acquisitions

Parcel	Owner	Property Rights Required
010	Union Bank and Trust Company	Fee Take, Temporary Construction and Utility Easements
011	1710 Seminole Trail, LLC	Fee Take, Temporary Construction and Utility Easements
012	The Luck Group, LLC	Fee Take, Temporary Construction and Utility Easements
013	Tap Investments, LLC	Fee Take, Temporary Construction and Utility Easements
014	Bearwood Properties, LLC	Fee Take, Temporary Construction and Utility Easements

Staging and Storage

Our Team thoroughly understands the critical importance of maintaining safe staging and storage areas during construction. Equipment and materials will be stored either beyond the clear zone, or behind temporary barriers in order to maximize public safety. Also, we will ensure that materials are not stored within deflection areas of temporary barrier or guardrail, and that intersection sight lines are not blocked for turning vehicles. In addition we will include the locations of allowable construction access points in the TTC plans to ensure they are in positions where sight distances are adequate and where there is room for construction vehicle acceleration and deceleration areas. Our Team understands the importance of maintaining a clean and orderly project, as this improves public perception, avoids driver distraction, and maximizes safety for all parties involved.

Our Team understands the importance of maintaining a clean and orderly project, as this improves public perception, avoids driver distraction, and maximizes safety for all parties involved.

Public Involvement/Stakeholder Coordination

A detailed description of our coordination efforts with the public and all stakeholders is provided in the following Section 4.4.2.

Minimal Disruption to Local Businesses

Throughout construction our planned operations will take into account the impact to the local businesses and their daily operations. We will remain a proactive Team member committed to the success of the Project and the surrounding community. This starts with design of the temporary widenings. These temporary impacts will be the most noticeable for the local businesses during construction. Proper planning, notice, and consideration will be given prior to construction of the work adjacent to the businesses. It is anticipated that no major elevation changes will be required along storefronts allowing safe ingress/egress for store employees and patrons. Some storefront parking will be impacted, however,

We will remain a proactive Team member committed to the success of the Project and the surrounding community.

our Team will work with each individual shop owner to configure the temporary parking to be as efficient as possible during the brief impact period. We will remain in contact with the local business community and will react quickly to any concerns they may have.

Allocation of Resources

Throughout Section 4.4 of this Technical Proposal, the Shirley Team has already identified the anticipated resources required to construct the US 29 & Rio Road Grade Separated Intersection. Table 4.4.2 below indicates the planned manpower requirements during construction.

Table 4.4.2 - Anticipated Allocation of Resources - Projected Manpower

Construction Team	# of Crews	Approx. Manpower Per Crew	Total Projected Manpower
SHIRLEY CONTRACTING - US 29/RIO ROAD INTERSECTION			
Phase 1 - Stage 1			
Grading/Excavation (Day)	2	6	12
Drainage (Day)	2	6	12
Wet Utilities (Night)	1	6	6
Maintenance of Traffic (Night)	2	3	6
Erosion & Sediment Control (Day)	1	3	3
Quadrant Support Crew (Spoils/Road Clean)	2	8	16
Secant Pile/Pile Subcontractor	2	6	12
Yard Support	1	4	4
Phase 1 - Stage 2			
Grading/Excavation (Day)	2	6	12
Drainage (Day)	2	6	12
Wet Utilities (Night)	1	6	6
Maintenance of Traffic (Night)	2	3	6
Erosion & Sediment Control (Day)	1	3	3
Quadrant Support Crew (Spoils/Road Clean)	2	8	16
Secant Pile/Pile Subcontractor	2	6	12
Yard Support	1	4	4
Phase 1 - Stage 3			
Maintenance of Traffic (Night)	2	3	6
Erosion & Sediment Control (Day)	1	3	3
Secant Pile/Pile Subcontractor	1	6	6
Yard Support	1	4	4
Phase 2			
Grading/Excavation (Day & Night)	2	8	16
Drainage (Day)	2	8	16
Maintenance of Traffic (Night)	1	3	3
Erosion & Sediment Control (Day & Night)	2	3	6
Wall Lagging Crew (Day & Night)	2	5	10
Precast Panel Installation (Day & Night)	2	8	16

Construction Team	# of Crews	Approx. Manpower Per Crew	Total Projected Manpower
Median Barriers (Day)	1	8	8
Yard Support (Day & Night)	2	4	8
Abutment and Seats (Day & Night)	2	8	16
Set NEXT Beams (Day)	1	10	10
Topping Slab (Day & Night)	2	8	16
Signal Crew (Day)	1	10	10
Phase 3			
Grading/Excavation (Day & Night)	2	6	12
Drainage (Day)	2	6	12
Maintenance of Traffic (Day & Night)	2	3	6
Erosion & Sediment Control (Day)	1	3	3
Support Crew (Spoils/Road Clean)	2	5	10
Moment Slabs and Parapets (Day)	2	6	12
Yard Support	1	4	4
Punchout Crew	1	5	5

4.4.2 - TRANSPORTATION MANAGEMENT PLAN - US 29 & RIO ROAD GRADE SEPARATED INTERSECTION

Instead of describing how we will simply meet the Project safety and mobility goals, **we are focusing on how our Team will instead exceed the minimum public safety and traveler mobility requirements of the RFP.** We take pride in our constant attention to safety in every facet of design and construction as can be seen by our commitments for this Project, and is evidenced in our unmatched successful experience with TMP and TTC plans on many of the most heavily traveled corridors in the Commonwealth. As detailed below, **some of the many ways we will exceed the minimum public safety and traveler mobility requirements include:**

- A sequence of construction that minimizes temporary lane closures and business impacts;
- An in-house work zone safety training program;
- Collection and analysis of 2015 hourly traffic data to limit disruptions to hours of lowest volumes;
- Optimized use of concrete barrier for safety;
- Use of enhanced safety devices exceeding standards; and
- Thorough planning and preparation of incident management procedures.

We know that setting the stage for a successful and safe project for the traveling public, business community, construction, inspection, and VDOT project staff begins with the development of a comprehensive and accurate TMP. As noted in Section 2.10 of the RFP, our Team will prepare a Type C, Category V TMP in accordance with VDOT I&IM 241.5/TE-351.3 that provides a single overarching plan to ensure all proposed construction is fully coordinated and that conflicts are avoided between project Segments, while also including Rio Road Segment specific Transportation Operations Plans, Public Communications Plans, and Incident Management Plans for the unique complexities of this compact urban work area. In addition to the safety and mobility maximization features included in the TMP, site-specific TTC plans

will be developed per the requirements of the 2011 Virginia Work Area Protection Manual (VWAPM) for each stage of construction.

The TMP and TTC plans will be developed with a constant focus on maximizing safety for the traveling public and construction personnel. The plans will also put heavy emphasis on substantially limiting the need for temporary lane closures and business impacts, which is allowed by our Phase 1 sequence of construction where the majority of wall construction will be completed beyond the travel lanes within barrier separated working corridors. These corridors will be created utilizing smooth temporary geometry as well as significant temporary signing and channelizing devices to clearly indicate travel patterns to motorists, such as left turn lanes that will be separated from thru lanes. When temporary lane closures are necessary, such as for barrier placement and equipment delivery, their durations will be limited to the smallest timeframe possible.

Relevant Experience and Training Program

To meet these high safety and mobility standards, the TTC and TMP plan development will be led by our Lead Traffic Engineer, Jerry Mrykalo, who has vast successful experience on similar high-profile projects, and exceeds the contract requirements for this position by being certified as and **Professional Traffic Operations Engineer (PTOE)** and certified as a **VDOT Work Zone Traffic Control Instructor.** Additionally, all of our design engineers are VDOT certified in the development of TTC and TMP plans based on successful completion of our in-house Work Zone Traffic Control Training program. These qualifications and training program **exceed RFP requirements**, and allow us to develop TTC and TMP plans that equally exceed safety and mobility minimum standards. Jerry is certified to instruct all three levels of VDOT training (Basic, Intermediate, and Advanced) which are tailored to specific roles of our Team members.

These qualifications and training program exceed RFP requirements, and allow us to develop TTC and TMP plans that equally exceed safety and mobility minimum standards.

Focus on Exceeding Mobility Requirements

In order to achieve the goals of maximizing safety and minimizing travel delays, we will initiate design activities by collecting current 24-hour volume information on US 29 and Rio Road. We thoroughly understand that the mandatory lane closure restriction times listed Section 2.10.3 of the RFP are to be followed. Yet by collecting this updated 24-hour traffic volume information during both the school year and summer of 2015, we can utilize it in development of the TMP to allow for construction activities that do require temporary off-peak lane closures to occur during the hours of lowest volume to minimize impacts. For example, this process will allow us to schedule shorter duration work, such as traffic signal work that may take four hours, during the hours of lowest volume within the longer allowable temporary lane closure window. This process is especially valuable as we recognize volumes on US 29 during the early morning hours (1:00AM to 3:00AM) are much less than the beginnings and ends of the allowable lane closure periods in the evening and mid-morning. Also, due to changes in traffic patterns associated with other regional projects and off-site development, we recognize that traffic flow characteristics frequently shift. Given these reasons, we believe it is very important to collect these updated traffic counts to verify that work will coincide with the hours of lowest traffic volumes at the Project site whenever possible.

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

Figure 4.4.8

24 Hour Analysis

Detailed analysis computations will be performed on the 24-hour traffic volume information using VISSIM, HCS+, and other applicable advanced software packages such as QuickZone, as well as the production of graphics to easily visualize and evaluate the data. Figure 4.4.8 shows our 24-hour analysis results from a recent VDOT Design-Build project on I-64, which similar to this project, was also subject to seasonal variations in traffic patterns. We verified that overnight operations were limited to hours in which the traffic volumes (shown with blue and black lines) were less than the capacity of the remaining open travel lane (shown with the horizontal red line). By completing this analysis, we are able to ensure that traffic impacts to the public are minimized to the fullest extent possible, which has safety and travel time benefits.

Focus on Safety

Figure 4.4.9

Temporary Traffic Control

Concurrent with the design of the TMP, our Team will develop site-specific TTC plans for the Project. The TTC plans will detail each and every specific element required during construction of the Project. These plans will be developed for each stage of construction to identify barrier and channelization locations, safe maintenance of existing pedestrian facilities, temporary sign locations, temporary pavement marking and marker requirements and limits, temporary traffic signalization, temporary drainage requirements, areas of temporary and permanent construction, detour plans, and all other requirements per VDOT's I&IM-241.5, The 2011 VWAPM, and the Manual on Uniform Traffic Control Devices (MUTCD). Given the temporary reconfiguration of intersections anticipated on US 29, all turning movements will be analyzed with AutoTurn software to ensure temporary geometry accommodates truck turning paths. Also, intersection sight distance will be analyzed to avoid the potentially dangerous condition of devices such as temporary barrier or construction materials blocking the sight lines of turning traffic. In addition, Portable Changeable Message Sign (PCMS) device locations and messages will be included in the plans. The careful design of locations meeting sight distance requirements and concise, comprehensible message design by our traffic engineers ensures that the public receives the maximum benefit without providing confusing or incomplete information. Figure 4.4.9 is a photo of the temporary

traffic control installed for the Shirley – Dewberry Route 29/Linton Hall Rd Interchange, which as with this project, had very high volumes and close proximity to several businesses. Specific details of our TTC plans, including planned lane closures and lane width restrictions are as follows:

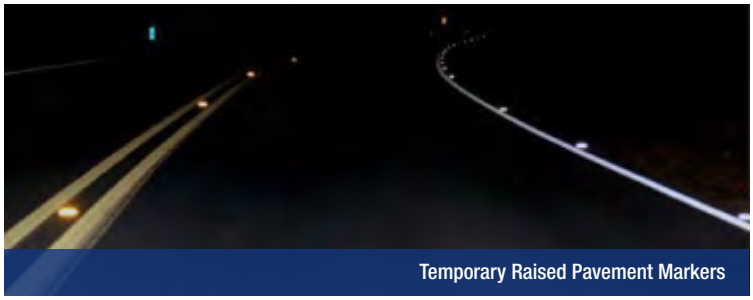
US 29 and Rio Road

- Outside of the 103 day intersection closure period, all four existing travel lanes in each direction US 29, all right and left turn lanes, and all lanes on Rio Road will be maintained during all stages of construction. All existing traffic signals will also be maintained during this period;
- During the 103 day intersection closure period, three northbound and two southbound travel lanes will be maintained along US 29, with right in/right out movements maintained in each direction along Rio Road. It is anticipated that these movements will be controlled with a temporary signal;
- Traffic will be maintained along US 29 by constructing temporary pavement along of the outside shoulders to accommodate travel lanes during median construction of the depressed lanes;
- Temporary traffic barrier will be utilized to maximize safety;
- All temporary traffic shifts will be designed to meet the full posted speed of 45mph on US 29, exceeding the requirements of the VWAPM and the RFP;
- All existing pedestrian and bicycle access will be maintained throughout construction;
- No temporary detours will be proposed, but alternate routes will be suggested utilizing public outreach and temporary prominent guide signing. Available alternate routes include Berkmar Drive west of US 29 and Rio Road east of US 29 and will be supplemented by temporary signalization along US 29 at Berkmar Drive and Myers Drive during the 103 day intersection closure period;
- Temporary lane closures will be limited to off-peak hours as specific in Section 2.10.3 of the RFP. Temporary lane closures are anticipated for night time paving, subsurface work, placement of traffic barriers, delivery of materials, traffic signal work, and major drainage feature construction, utility construction, and structures construction. No flagging operations are anticipated on US 29; and
- Temporary 20 minute maximum full stoppages on US 29 during overnight hours are only expected for overhead traffic signal work, and police assistance will be utilized for safety.

Enhanced Safety and Mobility Features

To further enhance our TTC Plans, our Team will employ impact management strategies that exceed RFP requirements in order to maximize safety and mobility. These strategies will be particularly focused on avoiding potentially high-severity run-off-road, head-on, and intersection crashes, given the high traffic volumes, curvature, and numerous driveways and intersections along US 29. For example, full temporary raised pavement markers (as shown on Figure 4.4.10) will be used to supplement lane line pavement markings for increased visibility, especially at night and during wet pavement conditions, which has the significant benefit of reducing occurrences of vehicles leaving their travel lanes. Also, temporary intersection warning signs exceeding the requirements of the VWAPM will be installed to warn drivers of shifted intersection and entrance locations.

Figure 4.4.10



Temporary Raised Pavement Markers

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

We will focus on expediting the implementation of safety and operational improvements in the interim condition during construction, prior to the final design solutions being constructed. For example, we will analyze the phasing and signal timings for all temporary lane configurations at traffic signals using Synchro and VISSIM analysis software in order to provide maximum benefits for the public.

Thorough Incident Management Planning

In the event that an unexpected incident does occur in the work area, our Team will be fully prepared to respond quickly to mitigate the impacts to traffic, and work to help to restore full traffic operations in a swift manner. Examples of strategies that will be utilized to successfully mitigate the risks of unforeseen incidents, such as traffic crashes or construction accidents. Our Team will:

- Pre-stage detour signing for pre-designed detour routes guide signs and pink "emergency scene" signs;
- Include a comprehensive "telephone tree" of the order of calls to be placed to critical parties in the event of an incident (D-B team, VDOT, and emergency responders) any hour of the day;
- Utilize wrecker service that is capable of removing stranded vehicles from the roadway that may be blocking travel lanes;
- Design temporary traffic control plans to include shoulders and pull-off areas where possible to provide refuge for disabled vehicles and for emergency vehicle use; and
- Portable CCTV cameras will be utilized to quickly identify travel delays and assess incidents.

Comprehensive Public Outreach

A significant public outreach campaign is vital to a successful TMP. Our Team, led by Sande Snead from Pulsar, Inc., combined with the involvement of and coordination with VDOT, will proactively communicate with citizens, businesses, community groups, public officials, police, fire and rescue and schools impacted during critical elements of construction. Our staff has extensive experience communicating and conducting community/business outreach on high-impact road construction projects. The lessons learned from our experience in various urban areas in the Commonwealth include the key insight that the public will give VDOT a great deal of latitude if they are informed in advance of impacts to their commute, ride or neighborhood. This key premise is the basis for all of the community/business outreach and communications. Our Team will develop the Public Information and Communications Plan (PICP) in accordance with VDOT and the Culpeper District's PIO as well as VDOT's regulations, policies and procedures. At least 90 days before any traffic impacts or mobilization, the Team will deliver the PICP to VDOT for approval. As detailed below, there are multiple project stakeholders who may be impacted at various times during construction. Identification of these stakeholders in advance of construction activities will help to identify mitigation strategies for any temporary impacts.

- ***Police, Fire & Rescue –*** Coordination will be required with emergency staff prior to all construction activities. This coordination will include The Seminole Trail Volunteer Fire Department, the Charlottesville-Albemarle Rescue Squad, other regional fire stations, Albemarle County Police and Virginia State Police. In advance of all construction activities, in particular the 103 day intersection closure, we will coordinate extensively with these emergency responders to ensure that all necessary adjustments to response routes are fully vetted prior to implementation. During the intersection closure, we anticipate daily outreach to the agencies, and plan to utilize police assistance to ensure maximum safety for all parties.

- ***Local Businesses –*** The northern Charlottesville area businesses community will be impacted during construction (specifically commercial business in the Rio Road area along US 29 such as the Charlottesville Fashion Square Mall, Albemarle Square Shopping Center, 29th Place Shopping Center and Rio Hill Shopping Center). To minimize impacts, US 29 will remain open at all at all times, all access will be continuously maintained for all businesses. We will also coordinate closely with business management to construct necessary improvements in the direct vicinity of their property during the hours of least impact. Our Team has successful experience working with businesses to retain their visibility during construction while complying with the requirements of the WAPM and not blocking sight lines. In addition, during the 103 day closure period, our Team will offer detailed access route maps to business operators for distribution to their patrons where access from US 29 is temporarily modified.
- ***Schools –*** Coordination with the following school organizations will be necessary:
  - Several Albemarle County schools and their bus routes are in proximity of the Project, and include: Woodbrook and Agnor Hurt Elementary Schools, Jack Jouett Middle School, and Albemarle High School.
  - Although impacts are expected to be minimal, comprehensive coordination efforts will be undertaken with each of these school organizations to inform them of construction impacts.
- ***Traveling Public & Transit –*** The maintenance of all travel lanes and ramps throughout construction will limit impacts to the traveling public. Our optimization of the temporary lane closure hours that will be limited to off-peak hours will further reduce impacts. Keeping all work behind barriers and maximizing lane widths will also limit delays associated with temporary lane configurations during peak hours. Any impacts will also be coordinated with Charlottesville Area Transit to ensure safe and reliable service is maintained.

We will also work with VDOT to develop a targeted and effective advertising program with the intent of engaging and informing the maximum amount of travelers and well as the stakeholders listed above.

Our Safety and Mobility Commitment

Our Team is adamant about providing and maintaining a safe work zone, and we also always look for ways to improve traffic patterns not only after construction, but during construction. Therefore, with the inclusion of the features detailed above, we are committed to exceeding the RFP safety and mobility requirements. With features such as reduced lane closures, a unique training program, and enhanced safety devices, we will provide a complete and comprehensive TMP for the Project.

4.4.3 - UTILITIES - US 29 & RIO ROAD GRADE SEPARATED INTERSECTION

In preparation of this Proposal, our Team has done a thorough study of the potential utility conflicts, their impacts, and ways to avoid and/or minimize these impacts for the US 29 & Rio Road Grade Separated Intersection. We also attended the preliminary UFI meeting held by VDOT on December 4, 2014, and understand that VDOT is making positive progress towards completing preliminary engineering and acquiring utility easements for the know conflicts. Once selected, our Team intends on partnering with VDOT and the utility companies to complete these efforts within the timeframes shown on our Proposal Schedule.

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

One key to the successful completion of utility relocations within the Project Schedule that cannot be understated is having a Team with the experienced resources and relationships in place at the time the Project starts. We have worked closely and built relationships with VDOT, the localities, and all of the utility companies affected by this Project, and have a thorough working knowledge of the processes and procedures of each. It is because of this experience that we have learned first-hand the importance of avoiding utility conflicts and relocations altogether. This will be our first and highest priority throughout the design and construction phases of the Project. If conflicts cannot be avoided by design alternatives, then we will work diligently to minimize these relocations through a combination of design and/or protection measures that allow the utilities to remain in place. Only as a last resort will we relocate utilities to eliminate conflicts with the new construction.

Approach To Utility Coordination

For this Project, our entire Team will be following the VDOT Utility Relocation Policies and Procedures Manual with regard to the utility scope of work. We have already begun activities to ensure the success of the utility relocation process, and the following is a general outline of the steps and activities to be performed once the Project is underway. Understanding that VDOT may have completed, or will be in the process of completing, some of these steps prior to Project Award for this segment, our Team will either confirm or ensure that each is completed:

Figure 4.4.10 - Approach to Utility Coordination

1
- Obtain utility designations
- Review test pit information
- Identify locations of existing easements

2
- Provide feedback to design, permitting and right-of-way managers on potential conflicts
- Develop plans for avoidance of utilities or minimization of utility relocation

3
- Review plans for avoidance or relocations with utility companies
- Coordinate with right-of-way managers on easements that might be needed to accommodate the relocations

4
- Hold UFI meetings with private utility owners where conflicts exist
- Establish utility relocation plan, budget and schedule
- Incorporate relocations into the Project schedule

5
- Verify each private utility's prior rights
- Prepare UT-9 forms
- Finalize pro-rata share budgets and relocation schedules

6
- Meet with public utilities to finalize avoidance and/or relocation plans
- Incorporate plans into design documents and submit for approval
- Obtain necessary right-of-way (easements) for the utility relocations

7
- Incorporate approved utility relocation plans into the construction schedule
- Identify utility relocation activities which fall on the critical path
- Evaluate resources needed to accomplish critical relocations

8
- Proceed with utility relocations
- Take immediate action on unforeseen utility conflicts
- Maintain team approach to achieve quick resolution on unforeseen conditions and other field issues

Specific Project Utility Impacts

As identified in the Preliminary UFI Meeting, numerous utilities are known to be present and in conflict with the proposed improvements. The conflict analysis during the design and construction of the Project and the relocation and/or avoidance measures are included in our proposal. The Project utility impacts and potential conflicts are summarized and included herein as Table 4.4.3 – Project Utility Impacts.

Table 4.4.3 - Known Utilities and Potential Conflicts

Utility/ Owner	Approximate Location	Known/Potential Conflict	QTY	UOM	Relocation Plan/ Avoidance Strategy
ELECTRIC					
Overhead Dominion Power	US 29 Station 62+50 to 70+00	Poles and crossing are in conflict with proposed underpass, signal truss and US 29 widening	7	Poles	Coordinate de-energizing lines with Dominion Power
TELECOMMUNICATIONS					
CenturyLink	Rio Road Station 158+00 to 166+00	U/G crossing of US 29 conflicts with proposed underpass	2,300	LFT	Relocate in common ductbank
Quest Government	US 29 Station 58+00 to 70+00	U/G crossing of US 29 conflicts with proposed underpass	1,500	LFT	Relocate in common ductbank
Lumos	Rio Road Station 160+00 to 160+75	U/G conflicts with proposed signal truss foundation	100	LFT	Relocate away from foundation
Fiberlight	US 29 Station 54+00 to 67+00	Potential conflicts with proposed storm and road widening	1,300	LFT	Coordinate closely with design to avoid; adjust existing boxes
WATER/SEWER LINES					
RWSA - 18" Water	US 29 Station 48+25 to 60+25	Conflicts with proposed underpass	1,260	LFT	Relocate to east side of US 29
RWSA - 24" Water	US 29 Station 60+50 to 68+00	Conflicts with proposed underpass	825	LFT	Relocate to east side of US 29
ACSA - 8" Water	US 29 Station 48+25	Conflicts with proposed underpass	105	LFT	Reconnect new line to existing system
ACSA - 8" Water\	US 29 Station 55+00 to 59+00	Conflicts with proposed underpass	380	LFT	Reconnect service to Parcel 008
ACSA - Sewer	US 29 Station 62+50 to 67+00	Road widening conflicts with manholes	3	LFT	Adjust manholes to proposed grade
GAS					
Charlottesville Gas - 6" Steel	US 29 Station 48+75 to 68+75	Conflicts with proposed underpass	2,100	LFT	Relocate to west side of US 29
Charlottesville Gas - 4" Plastic	US 29 Station 63+00 to 68+00	Connection to Parcel 023 conflicts with proposed underpass	580	LFT	Relocate on east side of US 29 to connect to Parcel 023

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

Utility Mitigation Strategies

As we have prepared our Team's proposal in response to the RFP, our Team has invested a significant amount of time and effort to determine where utilities are currently located, how they are affected by the design, the cost to relocate unavoidable conflicts, and the schedule for doing so. As part of this analysis, we have already identified several opportunities for minimizing the relocation of utilities by designing around them as well as planning relocations at strategic locations and stages of work to have the least impact to construction activities as well as the traveling public. In addition, several steps are critical to avoiding delays in the event unknown utilities are discovered. While the feasibility of these will be finalized as the design is completed, the following demonstrate our commitment to a continued focus on this effort:

A. As the existing RWSA waterline and City of Charlottesville gas are located within the limits of the depressed roadway excavation, it is critical that these facilities be relocated early in the schedule. To allow this to occur, we are planning to relocate both of these utilities to locations within the existing right-of-way. The RWSA waterline will be placed along the northbound outside lane of US 29, and the City of Charlottesville gas line will be relocated along the southbound outside lane of US 29. Construction can begin as soon as plans are approved, and completing this work early in the schedule also eliminates potential lane closure conflicts with other work.
B. Our Team will complete supplementary utility designations and test pits early in the design phase to identify any unknown utilities that were not identified by the RFP plans and to accurately locate both the vertical and horizontal location of all existing utilities. This information will minimize the risk that unknown utilities will be uncovered during construction and will provide additional information to our design team to enable them to design around existing utilities.
C. The existing underground fiber optic system owned by Fiberlight is located within the limits of the southbound widening of US 29 from approximate Station 54+00 to 67+00 and therefore potentially will conflict with the proposed storm sewer and excavation necessary for the widening. As an early activity, our Team will perform extensive test pitting of the facility to determine its exact location. This data will then be used by the design Team to avoid conflicts with the storm system and to confirm that earthwork activities will not impact the facility. If conflicts cannot be avoided, we will review options with Fiberlight to relocate small portions in place, or as a last resort, relocate the facility.
D. For the proposed relocation of the electric and several fiber optic facilities, a common ductbank, shared by all, is a proven strategy for expediting the relocations and reducing costs. This common ductbank, located on the east side of US 29 from approximate Station 158+00 to 166+00, is planned to be constructed by our forces as an early schedule activity. This will afford the most time in the schedule to complete the relocations of each facility.
E. To avoid delays due to unidentified/non-located utilities, it is critical that a thorough designation process, both in the field and through records research, be completed early in the design phase. It is also critical that the proposed improvements be reviewed in detail with each utility provider to clearly understand which facilities are present, where they are located, and options available to avoid them. Before any earth-disturbing activity is scheduled, MISS UTILITY will be notified and existing facilities marked in the field. These marks will be reviewed by the Superintendent, Foremen, and Utility Manager to ensure that they are accurate and that they match the design. Finally, an extensive test-pitting program which includes both the design and construction phases, will be completed. In cases where an unknown utility is discovered during construction activities, it will be immediately

reviewed by the Utility Manager and Utility representatives to determine the scope of the impact. The construction team will be consulted, and if relocation is not an immediate option, the construction crews will be redirected to other activities.

Utilities have the potential to significantly impact the Project Schedule and cost. On design-build projects with an aggressive schedule such as this, the risk is even greater for several reasons. First, at this stage of the Project's development, the roadway plans are at a very preliminary level of completion and minimal utility test hole data is available. Other than those facilities with obvious impacts to the proposed underpass, it is difficult to determine the accurate location of the existing facilities or the full extent of the impact the design will have on them. Second, the majority of the utility companies are just beginning their design and analysis of their prior rights, cost and schedule for their potential relocations. Finally, there is limited leverage available to the design builder to affect the utility companies to complete their work within the overall project schedule.

It is precisely our Team's experience managing these risks that has lead to the successful completion of every one of our design-build projects for VDOT. We have a proven strategy for mitigating these risks, one that VDOT can count on our Team implementing on the US 29 & Rio Road Project. Further, VDOT can count on the Team partnering with them to continue VDOT's efforts during the procurement phase. These strategies include:

We have a proven strategy for mitigating these risks, one that VDOT can count on our Team implementing on the US 29 & Rio Road Project.

- Designating a full time Utility Manager whose primary focus is to manage the utility scope of the Project from concept to completion. Our in-house Utility Manager has served in this role on every one of our design-build projects to date and is already intimately involved in this Project;
- Completely integrating utilities with all other project disciplines including design, right of way, permitting, construction, and QA/QC. The primary method of accomplishing this task is by holding, at a minimum, weekly Design Meetings with the entire Project Team;
- Creating a realistic Project Schedule with input from the utility and other disciplines. As shown in the Proposal Schedule submitted under Section 4.7, we have already reviewed the known utility conflicts and VDOT's strategy for relocating them and incorporated them into the overall sequence of work;
- Holding weekly (at a minimum) Construction Progress Meetings on the jobsite. Led by the Construction Manager, these meetings are used to facilitate coordination, during the construction phase, among the utility, construction and QA/QC disciplines; and
- Supplementing and assisting the utility companies with their work. Examples include constructing ductbanks, drilling and setting of poles for aerial relocations, hiring a utility-approved subcontractor to swing or splice cable, performing the "in-place" relocations where we excavate around a utility and lower or raise the line without damaging the existing conduit or cable, and setting up temporary traffic control requirements for the utilities use.

Example Strategy to Restore Unforeseen Utility Outage

Prior to the start of any construction activities, the Shirley Team will develop an EUOP that outlines the procedures that the Team will follow in the event of an outage with any utility. It will contain the 24/7

emergency contacts for the utility representatives, Police/Fire/Rescue, equipment and material suppliers, the media, and the unique procedures that the Team will follow for each specific utility. These may include tasks that the Team can perform in order to assist the utility with restoration of service such as: providing access for utility equipment and personnel, excavation to expose damage, maintenance of traffic operations, maintaining spare parts (ie: spare sections of waterline), and setting of utility poles. The Plan will also address how the Team will notify those customers affected by the outage.

As a specific example, a crew is excavating to place storm sewer along Route 29 and the plans show that the work will cross an existing 8" waterline. As part of their pre-planning for the work, the Team reviewed the EUOP and confirmed that the Plan requires spare sections of the size waterline to be crossed to be onsite during construction. It also requires that the location of any valves be clearly marked on the plans and in the field. As the work progressed, an excavator operator mis-judges the location of the waterline and hits it with the bucket, causing a break. The Team immediately notifies the Supervisor, who calls the utility company. If permitted, the Team then operates the valves to isolate the damaged section of pipe. Other Team members then notify the affected customers as well as Fire/Rescue of the outage. After assessing the damage and determining the best approach to repair it with the utility representative, the Team undertakes the steps to repair it, which may include setting up a lane closure, excavating around the damage, and mobilizing equipment and spare parts. Should additional resources be necessary, these will also be contacted and mobilized. Once repairs are complete, the Team will notify customers and all others affected that service has been restored.

4.5 - Approach to Construct the Entire Project

4.5 Approach to Construct the Entire Project

The Shirley Team has a successful proven track record of completing segmented, multi-phase projects as design-build and with a fast-track schedule. As an example, we have completed more than 20 distinct and individual Segments of the Route 28 Corridor Improvements Project as design-build - each one on-time and on-budget. To accomplish this, we perfected a management approach that has proven highly effective for all involved, and plan to bring this same approach to this Project.

4.5.1 SEQUENCE OF CONSTRUCTION - ENTIRE PROJECT

As we implement this approach, the goals of the Team remain consistent and focused on the following:

- Meeting the scheduled completion dates for each Segment;
- Achieving the maximum early completion incentives;
- Maintaining the highest standards of safety for the public, the workers, and VDOT;
- Partnering with VDOT throughout all phases of work;
- Increasing capacity and mobility throughout the corridor;
- Remaining compliant with environmental commitments;
- Improving operational deficiencies; and
- Minimizing impacts during construction to all affected.

At the core of this approach, the Team will dedicate specialized resources to the major tasks necessary to complete all of the Project disciplines. Equally important will be the integration of these disciplines by the Design-Build Project Manager (D-B PM) into a single cohesive and coordinated Team effort. These are extremely critical to ensure that each discipline is accomplished completely and on schedule so as not to delay the construction activities. As the Organizational Chart outlines in Section 4.2.2, these major disciplines (Task Forces) will include:

1. ***Overall Design-Build Project Management -*** This group has overall responsibility to integrate and coordinate all of the Project disciplines, as well as serving as the primary manager for the Shirley Team and the primary point-of-contact to VDOT. These managers include the D-B PM and the Responsible Charge Engineer;
2. ***Design -*** Lead by the Design Manager, this discipline will complete all design and engineering necessary to produce approved plans. To address the resource and schedule requirements to complete the various Segments, this group will consist of three distinct roadway design teams for (1) US 29/Rio Road Intersection, (2) US 29 Widening, and (3) Berkmar Drive Extension. To maintain consistency, Dewberry will be the primary engineer for the two US 29 Segments. Recognizing the need for additional resources, we have added Timmons Group to the Team to design the Berkmar Segment. Also included in this group will be both in-house and subconsultant resources necessary to complete surveys and mapping, utility designations and test pits, noise analysis, permitting, geotechnical, stormwater management, and traffic;
3. ***Utility Coordination -*** Our utility group will be lead by Shirley's Lead Utility Coordination Manager and assisted by several of Shirley's utility managers. This group is already actively engaged in planning the relocation process and will ensure completion of the relocation design, easement acquisition, construction, and scheduling process;

4. ***Right-of-Way Group -*** Lead by our in-house Right-of-Way Manager, this group will focus on the acquisition of all rights-of-way necessary to perform the work, and will manage the subconsultants performing appraisals, offers, negotiations, title reports, certificates, and settlements;
5. ***Construction -*** Similar to the Design Group, we have added specific and dedicated resources to our Team to ensure that the three Segments will be completed on time, that these resources will remain focused on their Segment, and to facilitate the sharing of resources if necessary. Our Team is lead by Shirley's Construction Manager and includes:
   - Shirley Contracting Company, LLC (Shirley) for the US 29/Rio Road Intersection;
   - Faulconer Construction (Faulconer) for the US 29 Widening; and
   - W.C. English, Incorporated (English) for the Berkmar Extension.

   All three companies have proven track records and extensive resources that can be drawn upon as needed. In the case of the US 29/Rio Road Segment, Shirley will utilize our affiliate company, Clark Foundations, to perform the support of excavation/retaining wall specialty work for the depressed roadway. Each team member will have specific focus on their respective Segments, but the collaborative effort and coordination of resources will also allow each member to share resources with any other Segment as necessary for the benefit of the total Project;
6. ***Quality Assurance Group -*** Recognizing that this Group will be critical to each Segment's ability to maintain the schedule and ensure a quality product, we have dedicated a separate QA Inspector for each of the three Segments. These Inspectors will report to the overall QA Manager, but will maintain specific focus on their assigned Segment; and
7. ***Quality Control Group -*** Like Quality Assurance, we have assigned individual QC Managers to each Segment.

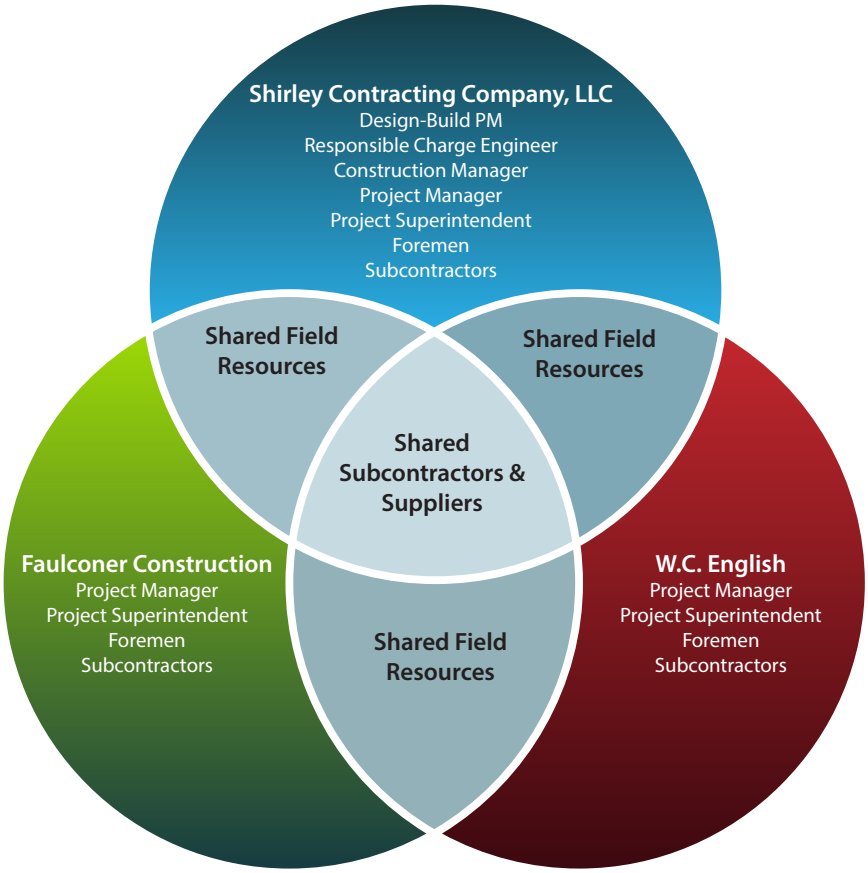
To ensure the complete integration of all of these groups into a single cohesive and coordinated Project, our Team will implement the same strategy utilized on every one of our design-build projects. This approach is founded on the principal that each discipline must be fully coordinated with each and every other discipline on a constant and regular basis. Our D-B PM has the responsibility to lead these efforts, and we accomplish this primarily through a series of meetings that are held, at a minimum, on a weekly basis. These meetings include:

1. ***Task Force Meetings -*** Each individual Task Force will discuss and plan all Segments of their responsibility and the timeframes for completing their work;
2. ***Design Coordination Meetings -*** The Task Force leads and support personnel as necessary, will meet to review, coordinate, and integrate their discipline with all of the other disciplines;
3. ***Construction Progress Meetings -*** During the construction phase, these meetings bring together all of the construction leads, and the other Task Force leads as needed, to coordinate resources, review the schedule, and discuss project issues; and
4. ***Project Progress Meetings -*** During all phases, we bring together VDOT representatives with all of the Task Force leads to discuss issues and concerns, review the schedule, and discuss contractual issues.

Construction Sequence

Overall, the three Project Segments, including the US 29 Widening, the Berkmar Extension, and the US 29 & Rio Road Grade Separated Intersection are intended to improve the mobility and safety of travelers in

Figure 4.5.1



the Charlottesville and Albemarle County region. It is clear from the RFP documents that VDOT and the Project Development Advisory Panel have placed a clear emphasis on minimizing the impacts to the region's commuters, businesses, tourists, students, and pedestrians during construction of the Project. With this in mind we have developed an overall construction plan that takes into account constructing such major improvements within the constraints of the aggressive schedule dates, limited work areas, and lane closure restrictions.

Construction activities will be managed by the D-B PM and Construction Manager with the assignment of three individual Project Managers for the three unique Segments. As shown in Figure 4.5.1, each Segment will be assigned Supervisory personnel dedicated to ensure individual success on each Segment and to facilitate resource sharing.

From a Summary Level, the general Sequence of Construction of the overall Project is as follows:

Segment I - US 29 & Rio Road Grade Separated Intersection

October 2015 - December 2016

This Segment has the most compressed schedule and heaviest traffic volumes on the Project. Furthermore, with the defined 103-day closure period from May 23, 2016 - September 2, 2016, Shirley will be dedicated to planning and executing the construction sequence as detailed in Section 4.4 of this Technical Proposal.

Briefly summarized, the planned sequence is as follows:

PHASE 1

October 2015 - May 23, 2016

- Signal modification at Berkmar Drive and Rio Road;
- Construct temporary local lane roadway widenings along US 29 southbound and northbound;
- Modify travel lane configurations to create work zone quadrants;

- Construct and install depressed roadway retaining wall foundation elements; and
- Construct and install Rio Road bridge abutment foundation elements.

PHASE 2 - 103-day intersection closure period of the Rio Road Interchange

May 23, 2016 - September 2, 2016

- Close Rio Road intersection at US 29;
- Excavate and dispose of depressed roadway soils;
- Install retaining wall facing and architectural elements;
- Complete all depressed roadway civil elements including drainage, pavement section and medians;
- Construct the Rio Road Bridge over US 29 including fire protection, under-bridge lighting and surface work;
- Reconstruct the Rio Road intersection traffic signal and signing; and
- Install traffic safety devices for opening of the US 29 depressed roadway.

PHASE 3

September 2, 2016 - December 2, 2016

- Completion of remaining contract work following the opening of the depressed roadway portions of US 29 and the Rio Road bridge;
- Complete top of retaining wall moment slabs and parapets;
- Removal of temporary local lane pavement widenings;
- Construction of new curb and gutter, sidewalks, pedestrian facilities along US 29 southbound and northbound local lanes;
- Removal and modification of the signalized intersections along the US 29 corridor;
- Final roadway resurfacing and pavement marking; and
- Final inspection and acceptance of roadway and bridge by VDOT.

Segment II - US 29 Widening

October 2015 - October 2017

With limited work areas and extensive traffic control, much of our approach for US 29 Widening was developed to take advantage of our strengths and local presence of our Team member Faulconer. Faulconer employs over 250 personnel, own and operate over 200 pieces of major construction equipment, and maintain 17 utility crews. Furthermore, **Faulconer has extensive local experience safely completing projects along the US 29 corridor,** including improvements to US 29 at Hollymead Town Center and to US 29 and Hydraulic Road for the Shops of Stonefield project. Both of these projects required focused coordination and collaboration with VDOT, various state and local agencies, and a multitude of stakeholders in order to minimize impacts during construction to the traveling public, local residences and businesses. Both projects were completed safely, met all environmental and quality metrics, and finished on time.

> The entire Shirley Team is confident that Faulconer is unmatched when it comes to their local knowledge and availability of skilled local resources.

4.5 **Approach to Construct the Entire Project**

With detailed input from Faulconer, our Team collectively developed a sequence of construction for US 29 Widening that **meets or exceeds the requirements of the RFP** by completing the US 29 Widening project on or before October 30, 2017. Section 4.7 of this Technical Proposal includes our detailed critical path schedule depicting our planned staging and sequencing of our construction activities for this Segment. Specific areas of focus include stormwater management and maintenance of traffic.

Properly designed and installed stormwater management and drainage features are critical to maintaining safe travel during weather events and effectively protecting the environment. Furthermore, proper stormwater management is of paramount importance in maintaining a safe, workable and productive site. To accomplish these objectives, we are placing significant attention in controlling both stormwater quality and quantity, and our dividing the US 29 Widening project into four major drainage areas. These areas are as follows:

> ***Alpha:*** Southbound Station 610+00 to 642+00 and corresponding NB Station 1610+00 to 1642+00*
> ***Bravo:*** Southbound Station 642+00 to 660+00 and corresponding NB Station 1642+00 to 1660+00*
> ***Charlie:*** Southbound Station 660+00 to 683+00 and corresponding NB Station 1660+00 to 1683+00*
> ***Delta:*** Southbound Station 683+00 to 708+00 and corresponding NB Station 1683+00 to 1708+00*
> **Stationing is approximate for purposes of simplification and clarity.*

Our maintenance of traffic approach is based on two objectives: (1) maximizing the safety of the public, project personnel, and all other property owners and stakeholders; and (2) minimizing impact to the traveling public through careful development of MOT plans to ensure maximum mobility through the work zones. Our plan will allow for multiple work activities to occur concurrently in the various work areas in order to avoid or minimize project delays and reduce exposure to the traveling public and project personnel.

Key points of our proposed sequence of construction include:

- The early acquisition of right-of-way and easements and subsequent utility relocations will allow for US 29 Widening construction activities to advance unimpeded;
- All phases will require modifications to both the existing and the new storm sewer system to allow for proper and positive drainage. Description of major drainage features, improvements, and/or areas are described within each stage;
- Installation of temporary signalization or modifications to the existing signalization equipment, and the placement of temporary pavement markings, signing and other delineation devices will be required to ensure maximum and unimpeded mobility of the traveling public through work zones;
- Major culvert crossings will be jack and bored to mitigate any MOT challenges or concerns; and
- Multiple grading, drainage and wall crews will be deployed within each stage and/or drainage area, when possible, to ensure that milestones are met.

Major Project Phases:

- ***Phase 1A –*** Southbound US 29 detour construction within drainage areas Bravo and Delta and

southbound temporary and permanent widening within the median.

- Initiate construction of temporary signalization along US 29 at Ashwood Boulevard and north Hollymead Drive;
- Start construction of Stormwater Management Basins (SWMB) #6 and #3;
- Construct two temporary realignment detours to the median of southbound US 29;
- Approximately a 300' distance north and south of southbound US 29 Stations 647+50 to 652+50 (herein referred to South Detour) and Stations 689+75 to 696+50 (herein referred to as north Detour) will require the construction of temporary pavement sections to allow for full width southbound reconstruction;
- The South Detour will require a lane shift prior to the Ashwood Boulevard intersection and modifications to the existing signal equipment;
- The North Detour will be installed to allow for the partial construction of the double 8'x10" box culvert. Modifications to the existing signal at north Hollymead Drive will also be required;
- Start construction of the double 8'x10" box culvert located at Station 694+00; and
- Construct permanent and temporary pavement section to both northbound and southbound median.

■ ***Phase 1B -*** Construction of southbound US 29 from Station 647+50 to 652+50 and Station 689+75 to 696+50:

- Permanent shoulder widening activities to southbound US 29 will start within drainage areas Alpha and Charlie;
- Partial construction of the double 8'x10" box culvert will continue. (The remaining portion of the box culvert construction will take place during Stage 2);
- Construction of SWMB #2;
- Full width reconstruction of the permanent section of southbound US 29 from Station 647+50 to 652+50 and Station 689+75 to 696+50;
- Permanent shoulder widening activities to southbound US 29 within drainage areas Bravo and Delta; and
- All southbound US 29 shoulder/right travel lanes within all drainage areas will be constructed.

■ ***Phase 2 –*** Complete all Northbound US 29 improvements:

- Southbound and northbound US 29 traffic will be switched to the newly completed permanent and temporary southbound sections allowing us to proceed virtually unimpeded with the reconstruction of northbound US 29;
- Construction of SWMB #7;
- Complete construction of the double 8'x10" box culvert;
- Concurrent reconstruction of northbound US 29 in all drainage areas;
- Maintain 24 hour public access to parcels impacted and affected by the reconstruction of northbound US 29; and
- Improvements to Ashwood Boulevard, Ridgewood Drive, south Hollymead and north Hollymead Drive.

■ ***Phase 3 –*** Median construction and final completion:

- Switch northbound traffic to the new northbound section;
- Remove temporary pavement sections;

- All final surface paving, striping, signing, guardrail and signalization; and
- Complete all remaining shoulder work through final stabilization.

While developing this sequence, we have identified the following major activities, and our Team's planned mitigation strategy, that have the potential to disrupt safety and operations for all stakeholders:

Activity - Overall realignment and changing traffic patterns on both US 29 northbound and southbound.
Mitigation - Throughout the construction of the Project, two northbound and two southbound travel lanes will be maintained. Advance notification in public outreach will be given prior to implementation of new traffic patterns. All necessary barrier, channelization devices, temporary signing, temporary pavement marking and marker requirements will be in accordance to the 2011 Virginia Work Area Protection Manual (VWAPM) and the Manual on Uniform Traffic Control Devices (MUTCD). When temporary lane closures are necessary, they will be limited to the shortest timeframe possible and avoided during peak hours.

Activity - Modifications to the intersections of US 29 and Ashwood Boulevard, US 29 and North Hollymead Drive, US 29 and Ridgewood Drive, and US 29 and South Hollymead Drive.
Mitigation - Temporary signalization that will be required at the intersection of US 29 and Ashwood Boulevard, and North Hollymead Drive to allow for the safe and unimpeded flow of traffic onto those roads. Furthermore, dedicated turn lanes for those two roads will be maintained throughout the Project. Ridgewood Drive and South Hollymead Drive will essentially be unaffected until Phase 2 of our sequence of construction. At that time, our Team will make the necessary temporary drainage and pavement provisions to allow for the unrestricted and unimpeded access to both roads. All necessary barrier, channelization devices, temporary signing, temporary pavement marking and marker requirements will also be in place.

Activity - Modifications to the private and commercial driveways and entrances due to the northbound reconstruction of US 29.
Mitigation - The private and commercial driveways and entrances accessed from US 29 northbound will be unavoidably impacted during Phase 2. Preplanning, continuous and early dialogue with the affected property and business owners, VDOT and emergency services will be necessary in order to provide unrestricted access those affected properties and businesses. The TMP and Temporary Traffic Control (TTC) plans for these properties will allow for 24 hour public access to those parcels. All necessary temporary pavement, temporary drainage, barrier, channelization devices, temporary signing, temporary pavement marking and marker requirements will be in place to safely direct the traveling public to those parcels and to maintain the safety of project personnel.

Segment III - Berkmar Extension

January 2016 - October 2017

The Berkmar Drive Extension's construction activities will be led by English. English has been in the construction industry for over 100 years and has ample resources to commit to the construction of all the roadwork and bridge construction, with over 600 employees and over 350 major pieces of equipment available.

Initially, English's focus will be grading operations and related erosion and sediment controls to access construction of the bridge abutments, both north and south. Due to the environmental constraints created by the proximity of the two piers on either side of the Rivanna River and the location of the third pier located

directly adjacent to the wetlands on the north side of the river in the flood plain, the pier construction schedule will be tied directly to the environmental permitting process. In order to allow both bridge construction and all other grading operations to proceed concurrently, we will focus on construction of both abutments as early as possible. Pier construction will follow abutment construction once environmental permits are obtained.

Our proposed sequence of construction is summarized as follows:

Roadway Operations:

- Construct fills at both Abutment A and B (approximately 50,000 CY of excavation);
- Mass grading operations (approximately 250,000 CY) to include Stormwater Management Basins A thru E and other necessary erosion and sediment controls;
- Major culvert crossings (1,345' of 60" & 250' of 36/24") and the 8" Sanitary Sewer relocation with casing at Station 225+00+/- will be installed throughout the Project corridor concurrent with mass grading operations;
- Storm drain installation (11,475');
- Fine grading for pavement structures, sidewalks, and shared use paths; and
- Construction of concrete flatwork and asphalt paving and final roadway activities.

Bridge Operations:

- Construct both bridge abutments after earthen abutments are complete;
- After completion of bridge Abutments A & B and the acquisition of all environmental approvals, bridge crews will construct all three bridge piers; and
- Construct bridge superstructure.

While developing this sequence, we have identified the following major activities, and our mitigation strategy, that have the potential to disrupt safety and operations for all stakeholders and our schedule:

Activity – Construct tie-ins at existing Berkmar Drive, Hilton Heights Road and Town Center Drive.
Mitigation – The construction operation will be done in accordance with the requirements of the RFP Section 2.10.3 allowing for lane closures during off peak periods. Each phase of the work will be coordinated so that at the conclusion of each allowable work shift the roadway can be reopened for use. All necessary temporary pavement, temporary drainage, barrier, channelization devices, temporary signing, temporary pavement marking and marker requirements will be in place to safely direct the traveling public. Adequate notifications will be provided to the public through our public outreach program.

Activity – Erect girders over Rio Mills Road (Span d).
Mitigation – The construction operation will be done in accordance with the requirements of the RFP section 2.10. This activity will have to be scheduled to limit the disruption to Rockydale Quarries operations and the movements of the residents along Rio Mills Road. Proper notification through our public outreach program of the impacts and the schedule will be given to all businesses and residents along the corridor. All necessary traffic control devices, temporary signing, will be in place to safely direct the traveling public.

Activity – Rock Excavation
Mitigation – With excavations of up to 35', rock excavation is expected. During our geotechnical design work we will closely analyze the potential for rock and the means and methods to excavate. If blasting is required all blasting operations will be performed in accordance with the Special Provision for Controlled Blasting, including preblast inspections.

Sequence Of Construction Benefits

Safety and Operations

The Team will develop maintenance of traffic schemes that maximize the creation of work zones so that work can be completed without the need for lane closures.

Our Team will remain continually focused throughout the construction phase on minimizing the impacts to both the traveling public and local businesses. Following the requirements of the RFP, lane closures will only be planned during nighttime hours. In planning for the work, the Team will develop maintenance of traffic schemes that maximize the creation of work zones so that work can be completed without the need for lane closures. As an example, on the US 29/Rio Road Intersection Project, the Team has already developed a concept that temporarily widens US 29 to the outside in order to create work areas out of traffic for construction of the shoring required for the depressed roadway retaining walls. Not only does this avoid traffic disruptions, but it increases the number of work hours available, thus benefiting the schedule. This same approach is planned for the US 29 Widening Segment where we anticipate that most construction will be performed without the need for lane closures. Other than the 103-day shutdown period, no reduction in the number and type of lanes is planned for any Segment at any time. Where nighttime lane closures are necessary, the Construction Manager will ensure that they are coordinated between the Segments and the various crew needs. The Construction Manager will also ensure that each lanes closure is well-planned, monitored, and allows for reasonable time to restore traffic prior to the morning restriction and start of rush hour. Contingency plans will be an integral part of the planning process for every activity and will include steps to be taken in case of equipment breakdown, unforeseen conditions, accidents, or adverse weather conditions.

Geotechnical Constraints

As soon possible during the design development phase, our geotechnical design firm will utilize as many as six drill crews to begin the assembly of the critical subsurface investigations required for all three Segments of the Project. These subsurface reports will be the basis of each Team members plan to handle or treat the geotechnical issues that may be encountered during construction of the individual Project Segments. Based upon our review of the preliminary Geotechnical Data Report (GDR) reports provided in the RFP, below is the basis of how the process will occur:

US 29/Rio Road Intersection

- ***Expected Geotechnical Issues/Concerns -*** Critical drilling and bridge foundation activities as well as condition of subgrade encountered in the depressed roadway area.
- ***Strategy Plan -*** We have assumed in our preliminary scheduling that considerations for poor subgrade soils in the depressed roadway areas must be addressed. Treatment methods such as 'undercut and replace', or use of geogrids and fabrics will be identified in the final geotechnical recommendations, and construction durations adjusted accordingly so that milestone and completion dates are met.

In order to assure that our Team can react quickly to any unforeseen geotechnical issues during construction, we are dedicating a geotechnical inspector from GeoConcepts during wall foundation and bridge abutment drilling as well as roadway subgrade activities so that decisions can be made at the job level and job progress is not delayed.

US 29 Widening:

- ***Expected Geotechnical Issues/Concerns -*** Shallow cuts and fills with the possibility of encountering unsuitable materials;
- ***Strategy Plan -*** With shallow cuts and fills during grading operations, our geotechnical plan for the US 29 Widening will take into account the areas where unsuitable material is expected to be encountered. Our engineers will design several remedial options that can be utilized on site depending on the soil characteristics and time of year constraints that the weather may impose. Being a local Charlottesville contractor, Faulconer is very familiar with the soils in the region and will assist engineers with recommended soil remediation methods. During excavation of the double 8' x 10' box culvert, our Team will dedicate a full-time geotechnical inspector to assist if unsuitable materials are encountered and we will be able to react quickly to any unforeseen conditions.

Berkmar Extension:

- ***Expected Geotechnical Issues/Concerns -*** Extensive rock excavation in both mass cuts, utility trenches and the Rivanna River Bridge Foundations;
- ***Strategy Plan -*** Upon review of the preliminary GDR, our Team is already planning for encountering substantial quantities of rock as shown in our preliminary Proposal Schedule in Section 4.7. Durations for excavation and utility installations take into account slower productions in rock. English Construction is very familiar with the properties of the rock seams in this region of the State. Furthermore, they have worked with many of the local blasting firms and will have the availability to draw from many resources once the preliminary drilling and blasting plan is developed.

  The Rivanna River Bridge Drilled Shaft Foundations will be founded on competent rock. During drilling operations, a full-time geotechnical inspector will be on-site to determine the rock quality and report immediate findings to the bridge engineers and designers.

Environmental Impacts

To date, our Team has never been delayed by acquisition of environmental permits on any of our design-build projects, and the up-front work we have already completed will ensure that track record is maintained on this Project as well. The benefit of this experience is our ability to work with design engineers to minimize impacts during the early design stages. This will ensure that the Project is constructible, and will include all proposed project impacts in a comprehensive manner to avoid the potential for last minute permit issues or need for design changes.

To date, our Team has never been delayed by acquisition of environmental permits on any of our design-build projects.

Our Team has thoroughly reviewed the environmental documents provided and created constraints for the Project designer to utilize in design to address avoidance of critical environmental elements such as the wetlands south of Rio Mills Road, and the 75' de minimis impact area offset on the US 29 Widening

Segment along the Brookhill historic property. We have also determined that there is a potential for wetlands within two areas adjacent to the Rio Road Interchange. We will incorporate this information into the final design in order to minimize and avoid impacts to these critical resources and assure compliance with the environmental commitments.

Typically, the location of the storm water management basins can have an effect on the total wetland impacts for the Project. As noted previously, our Team has incorporated avoidance strategies, and grading and sizing modifications to maximize the treatment options available while minimizing impacts. Immediately following NTP, our Team will initiate field surveys to identify existing wetland and stream locations in order to receive the required jurisdictional determination (JD) with the COE for all three Segments. We will assure the necessary archaeological investigations are conducted and will provide them to VDOT for clearance, then immediately apply for the appropriate permits when the plans are developed to approximately 60% level.

Our Team will remain intimately involved in the Project Task Force Meetings and Over The Shoulder Plan Reviews to verify compliance in design and construction. During construction phasing, our Team will ensure that the Erosion and Sediment (E&S) control documents are strictly adhered to and the approved Stormwater Pollution Protection Plan (SWPPP) is followed. This starts with installation of all Phase 1 E&S devices such as silt fence, diversion dikes, sediment traps and basins prior to grubbing and grading operations. Our Team will ensure that stabilization of denuded areas is performed within the required time frames. Most importantly, we will dedicate full-time erosion and sediment maintenance crews to the Project at all times that can continually monitor the site and relieve over-burdened E&S devices, re-install or reinforce existing devices and prepare for forecasted rain and storm events. These crews will be led by a foreman carrying the VDOT ESCCC and DEQ Registered Land Disturber credentials. VDOT Forms C-107a and C-107b as well as proper documentation will be kept current at all times per DEQ and VDOT regulations.

As each Segment contains varied environmental constraints and permitting requirements we have summarized the environmental constraints in Table 4.5.1 below:

Table 4.5.1 - Environmental Constraints

Project Section	FHWA NEPA Document	U.S. Army Corps of Engineers	VA Department of Environmental Quality	Virginia Marine Resources Commission	Other Environmental Factors
RIO ROAD INTERCHANGE	Yes, CE Compliance Monitoring during design & construction	Wetland Delineation, JD and Nationwide permits #23 or #12 for work in waters if necessary.	Section 401 Water Quality Certification of the Nationwide Permits	No jurisdictional channels with over 5 square mile drainage area.	Potential to encounter contaminated soil and groundwater Potential DEQ reporting, treatment and disposal.
Timeframes		No delay for upland work, majority of work in uplands (120 days for work in waters)	Automatic with Corps permit issuance	0 days	Obtain DEQ approval of clean-up plan within 30 days of Phase II results.

Project Section	FHWA NEPA Document	U.S. Army Corps of Engineers	VA Department of Environmental Quality	Virginia Marine Resources Commission	Other Environmental Factors
ROUTE 29 WIDENING	Yes, CE Compliance Monitoring during design & construction	Wetland Delineation & JD. Corps SPGP for impacted waters and wetlands.	Virginia Water Protection General Permit #3	No jurisdictional channels with over 5 square mile drainage area.	Avoid two cemeteries, avoid and minimize encroachments into 75' cleared APE on historic Brookhill Property
Timeframes		6 months for JD & Permit	5 months (concurrent) for Permit	0 days	
BERKMAR ROAD	No NEPA, LAP project	Wetland Delineation, JD and Corps SPGP or individual permit for impacted waters & wetlands north of Rio Mills Road	Virginia Water Protection General Permit #3	Sub-aqueous Bed Permit from VMRC required for Rivanna River Crossing	Archaeological Site Recovery Plan, verify survey for areas outside of original 200' wide APE. Avoid wetlands south of Rio Mills Road as well as cemetery near center of job. Phase I Hazardous Materials Surveys for ROW Compliance with LEDPA
Timeframes		8 months for JD & Permit	6 months (concurrent) for Permit	4 months (concurrent)	

Right-of-Way Acquisitions

In Section 4.3, our Team outlined the right-of-way acquisitions required for each Project Segment. As shown in Section 4.7 of our Proposal Schedule, our Team has included the entire right-of-way acquisition and easement process as the sequence of construction was developed. Our in-house Right-of-Way Manager, Ryan Marrah, along with our specialized right-of-way consultant, Diversified Property Services have identified every parcel on the Project that will require property rights acquisitions and have developed a critical list of properties that will require immediate attention as soon as Notice to Proceed is issued. Throughout this process the status and budget for these acquisitions will be maintained, closely monitored and coordinated with VDOT.

Staging and Storage Areas

All three Segments of the Project have varying difficulties when developing staging and storage area to be utilized during construction. The Berkmar Extension Segment is generally constructed off of the public roadway so there are numerous locations that can be utilized to store major materials. For the Rivanna River Bridge activities, all materials will be stored away from any environmentally sensitive areas. The US 29 Widening Segment presents more challenges as to locations to store and stage materials. Since the majority of the work is shallow storm sewer and sliver road widenings, there will not be the need to store many major materials on site. We will plan to have 'on-time' deliveries from many of our suppliers and vendors in order to limit the need for storage space. The US 29 and Rio Road Grade Separated Intersection

will require an off-site storage area in order to meet the aggressive schedule and keep the flow of materials during off-peak hours. We will work with our local partner, Faulconer to locate centralized parcels that can be leased for our purposes.

Our Team thoroughly understands the critical importance of maintaining safe staging and storage areas during construction. As with all of our projects, equipment and materials will be stored either beyond the clear zone or behind temporary barriers in order to maximize public safety. Also, we will ensure that materials are not stored within deflection areas of temporary barrier or guardrail, and that intersection sight lines are not blocked for turning vehicles. We will include the locations of allowable construction access points in the TCC plans to ensure sight distances are adequate and that there is room for construction vehicle acceleration and deceleration areas. Finally, our Team understands the importance of maintaining a clean and orderly project, as this improves public perception, avoids driver distraction, and maximizes safety for all parties involved.

Public Involvement

A detailed description of our coordination efforts with the public and all stakeholders is provided in the following Section 4.5.2.

Stakeholder Coordination to Ensure Minimal Disruption to Local Business

Beginning in the design phase, minimizing impacts to businesses during construction will be an integral part of the planning process. The entire Team is committed to maintaining access to all businesses at all times, and each property will be evaluated individually so that plans and schedules are developed to meet this objective. Entrances that are modified shall be done in phases, at night during off-business hours, or only after alternate access is provided. Should parking impacts prove unavoidable, the Team will create replacement parking, or again, phase the work to minimize these impacts. All work areas directly in front of businesses will be kept in good condition and restored as much as practical after every shift or work activity. Equipment will not be parked or staged in front of these businesses except when work is active. Signing and lighting that is impacted by the work will be relocated, replaced, or re-created with temporary as appropriate. In the case of utility relocations that affect services to businesses, outages will be planned for off-business hours. In every case, throughout the construction phase, the Team will establish a plan to communicate with businesses so that we develop 24/7 points of contact, understand their needs and concerns, keep them informed of our schedule and activities, and coordinate with them.

Government Approvals

Our Team's Design and Construction scheduling detailed in Section 4.7 take into account government approvals required for plan documents, environmental permitting, right-of-way acquisitions, utility relocations, and construction permitting. The governmental agencies anticipated to be involved with the Project include, but are not limited to, the following Federal, State, and Local agencies:

- Federal Highway Administration
- VDOT
- United States Army Corps of Engineers
- United States Fish and Wildlife Service

- State of Virginia Department of Environmental Quality
- State of Virginia Marine Resources Commission
- State of Virginia Department of Historic Resources
- State of Virginia Department of Game and Inland Fisheries
- State of Virginia Department of Conservation and Recreation (delegate for Virginia Department of Agriculture and Consumer Services)
- City of Charlottesville
- Albemarle County
- Rivanna Water & Sewer Authority (RWSA)

Our Team understands the importance of maintaining a clean and orderly project, as this improves public perception, avoids driver distraction, and maximizes safety for all parties involved.

During design, we have allotted the required review times frames for both VDOT and Federal Highway Administration (FHWA) as well as time for re-submission of corrected plans by our Design Team. Environmental Permitting requirements of all Authorities Having Jurisdiction (AHJ's) have been identified in the Environmental Constraints Section of this Proposal. Historical averages for review and approval timeframes have been used. Our Team is very familiar with the processes and agencies that will be involved with this Project. As the agent for VDOT during the right-of-way acquisition process, we have allotted the required timeframes required for the property rights on all three segments of the Project. During the public utility relocations, we will work with the City of Charlottesville, Albemarle County and RWSA for the engineering and construction of their associated facilities. Our Team will ensure that adequate resources are available to coordinate all activities and required submissions with all governmental agencies anticipated to be involved with the Project.

Resource Allocation

Table 4.5.2 depicts the individual and combined resources anticipated for the concurrent construction activity across three projects. As shown, each contractor member of our Team is providing dedicated crews for key work elements such as grading, utilities and structural work.

Table 4.5.2 - Anticipated Allocation of Resources - Projected Manpower

Construction Team	# of Crews	Approximate Manpower Per Crew	Total Projected Manpower
SHIRLEY CONTRACTING - US 29/RIO ROAD INTERSECTION			
See Table 4.4.2 in Section 4.4 for breakdown of crew description			
Phase 1 - Stage 1	13	6	71
Phase 1 - Stage 2	13	6	71
Phase 1 - Stage 3	5	4	19
Phase 2	20	7	135
Phase 3	13	5	64
FAULCONER CONSTRUCTION - US 29 WIDENING			
Grading/Excavation	2	6	12
Drainage & Wet Utilities	3	6	18
Maintenance of Traffic	1	3	3
Erosion & Sediment Control	1	2	2
Retaining Walls	2	8	16

Construction Team	# of Crews	Approximate Manpower Per Crew	Total Projected Manpower
W.C. ENGLISH - BERKMAR DRIVE EXTENSION			
Grading/Excavation	2	6	12
Drainage & Wet Utilities	2	4	8
Maintenance of Traffic	1/2	2	1
Erosion & Sediment Control	1/2	2	1
Bridge Foundations & Construction	2	6	12
Retaining Walls (Subcontractors)	1	8	8
SHARED SUBCONTRACTORS			
Clearing & Grubbing	1	4	4
Flatwork & Incidental Concrete	2	4	8
Asphalt Paving	3	8	24
Pavement Markings	1	6	6
Traffic Signal & Roadway Lighting	2	6	12
Seeding & Landscaping	1	5	5
Guardrail	2	4	8

4.5.2 TRANSPORTATION MANAGEMENT PLAN

As introduced in the Rio Road TMP discussion in Section 4.4.2, **we are focusing on how our Team will exceed the minimum public safety and traveler mobility requirements of the RFP for all three project Segments.** As detailed below, some of the ways we will accomplish this include:

- A sequence of construction that minimizes temporary lane closures and stakeholder impacts;
- An in-house work zone safety training program;
- Collection and analysis of 2015 hourly traffic data to limit disruptions to hours of lowest volumes;
- Optimized use of concrete barrier for safety, and geometry that meets the full 45mph US 29 speeds;
- Use of enhanced safety devices exceeding standards; and
- Thorough planning and preparation of incident management procedures.

We know that setting the stage for a successful and safe project for the traveling public, business community, construction, inspection, and VDOT project staff begins with the development of a comprehensive and accurate Transportation Management Plan (TMP) that encompasses all three Segments. As noted in Section 2.10 of the RFP, our Team will prepare a Type C, Category V TMP in accordance with VDOT I&IM 241.5/TE-351.3 that provides a single overarching plan to ensure all proposed construction is fully coordinated and that conflicts are avoided between project Segments, while also including project-specific Transportation Operations Plans, Public Communications Plans, and Incident Management Plans for the unique complexities of each project Segment. In

Figure 4.5.2

TMP Framework

addition to the safety and mobility maximization features included in the TMP, site-specific TTC plans will be developed per the requirements of the 2011 VWAPM for each stage of construction. Figure 4.5.2 shows our planned TMP framework we will utilize to ensure individual Segments as well as overall project goals are achieved. Each individual project Segment TMP will be developed by dedicated teams under the central management of the lead traffic engineer, just as each project Segment will be constructed by dedicated construction teams.

The TMP and TTC plans for each project Segment will be developed with a constant focus on maximizing safety for the traveling public and construction personnel. The plans will also put heavy emphasis on eliminating the need for temporary lane closures to the extent possible, and where temporary lanes closures are necessary, limiting their duration to the smallest timeframe possible. We recognize the special importance of this on US 29 given critical nature of this route to both the region and the entire state for long distance travel, especially on the US 29 Widening project Segment where we single lane closures would have a particularly high impact on traffic as travelers would be restricted to a single lane during these operations.

Relevant Experience and Training Program

As discussed in full detail in Section 4.4.2, the TTC and TMP plan development will be led by our Lead Traffic Engineer, Jerry Mrykalo, PTOE who is certified as a VDOT Work Zone Traffic Control instructor. **Our in-house training program exceeds the RFP requirements, and allows us to develop TTC and TMP plans that equally exceed safety and mobility minimum standards.**

Focus on Exceeding Mobility Requirements

In order to achieve the goals of maximizing safety and minimizing travel delays, we will initiate design activities by collecting current 24-hour volume information on US 29 (at both Rio and US 29 Widening), and Rio Road. We thoroughly understand that the mandatory lane closure restriction times listed Section 2.10.3 of the RFP are to be followed. Yet by collecting this updated 24-hour traffic volume information (during both the school year and summer of 2015), we can utilize it in development of the TMP to allow for construction activities that do require temporary off-peak lane closures to occur during the hours of lowest volume to minimize impacts to the public. This process will allow us to schedule shorter duration work (such as traffic signal work that may take four hours) during the hours of lowest volume within the longer allowable temporary lane closure window. This process is especially valuable as we recognize volumes on US 29 during the early morning hours (1:00AM to 3:00AM) are much less than the beginnings and ends of the allowable lane closure periods in the evening and mid-morning. Also, due to changes in traffic patterns associated with other regional projects and off-site development, we recognize that traffic flow characteristics frequently shift. Given these reasons, we believe it is very important to collect these updated traffic counts to verify that work will coincide with the hours of lowest traffic volumes at the Project site whenever possible.

Our in-house training program exceeds the RFP requirements, and allows us to develop TTC and TMP plans that equally exceed safety and mobility minimum standards.

Detailed analysis computations will be performed on the 24-hour traffic volume information using VISSIM, HCS+, and other applicable advanced software packages such as QuickZone, as well as the production of graphics to easily visualize and evaluate the data. By completing this analysis, we are able

to ensure that traffic impacts to the public are minimized to the fullest extent possible, which has a safety and travel time benefits.

Focus on Safety

Concurrent with the design of the TMP, our Team will develop site-specific TTC plans for the Project. The TTC plans will detail each and every specific Segment required during construction of the Project. These plans will be developed for each stage of construction for each project Segment to identify barrier and channelization locations, safe maintenance of existing pedestrian facilities, temporary sign locations, temporary pavement marking and marker requirements and limits, temporary traffic signalization, temporary drainage requirements, areas of temporary and permanent construction, detour plans, and all other requirements per VDOT's I&IM-241.5, The 2011 VWAPM, and the MUTCD. Given the temporary reconfiguration of intersections anticipated on US 29, all turning movements will be analyzed with AutoTurn software to ensure temporary geometry accommodates truck turning paths. Also, intersection sight distance will be analyzed to avoid the potentially dangerous condition of devices such as temporary barrier or construction materials blocking the sight lines of turning traffic. In addition, Portable Changeable Message Sign (PCMS) device locations and messages will be included in the plans. The careful design of locations meeting sight distance requirements and concise, comprehensible message design by our traffic engineers ensures that the public receives the maximum benefit without providing confusing or incomplete information. Figure 4.5.3 is a photo of the TTC installed for the Shirley – Dewberry team's Route 50 Widening project in a stage where two lanes in each direction were temporary maintained on the ultimate three lanes westbound barrel of roadway, which is anticipated to be extremely similar to Phase 2 for the US 29 Widening project Segment. Specific details of our TTC plans, including planned lane closures and lane width restrictions are below.

Figure 4.5.3

Temporary Traffic Control

US 29/Rio Road

- For US 29/Rio Road details, refer to Section 4.4.1, page 43.

US 29 Widening

- On US 29 two minimum 11' wide travel lanes plus right and left turn lanes will be maintained in each direction of travel during all stages of construction, e**xceeding the RFP requirements of an inside 10' lanes** to maximize safety, large vehicle movements (including emergency vehicles and buses), and traveler mobility;
- Traffic will be maintained along US 29 by constructing temporary pavement to accommodate travel lanes during pavement reconstruction;

- Temporary traffic barrier will be utilized to maximize safety of the traveling public and construction personnel;
- All existing traffic signals will be maintained throughout construction;
- All temporary traffic shifts will be designed to meet the full posted speed of 45 mph on US 29 wherever possible, exceeding the requirements of the VWAPM and the RFP;
- No temporary detours or road closures will be proposed, and temporary lane closures will be limited to off-peak hours as specific in Section 2.10.3 of the RFP. Temporary lane closures are anticipated for night time paving, placement of traffic barriers, delivery of materials, traffic signal work, and major drainage feature construction. No flagging operations are anticipated on US 29; and
- Temporary 20 minute maximum full stoppages on US 29 during overnight hours are only expected for overhead traffic signal work, and police assistance will be utilized for safety.

Berkmar Drive Extension

- Along all roadways affected by construction, minimum 11' wide travel lanes plus existing turn lanes will be maintained in each direction of travel during all stages of construction to maximize traveler access and mobility;
- Any necessary temporary traffic shifts will be designed to meet the full posted speeds of each affected roadway wherever possible, exceeding the requirements of the VWAPM and the RFP;
- All existing pedestrian and bicycle access along affected roadways will be maintained throughout construction;
- No temporary detours or road closures are anticipated, and temporary lane closures will be limited to off-peak hours as specific in Section 2.10.3 of the RFP. Temporary lane closures are anticipated for tie-in paving, roundabout work, delivery of materials, and major drainage feature construction. Flagging operations will only be implemented when absolutely necessary, and are anticipated to occur during overnight hours in accordance with the RFP; and
- Temporary 20 minute maximum full stoppages on Rio Mills Road are expected for overhead bridge work. Stoppages on roadways such as existing Berkmar Drive, Town Center Drive, and Hilton Heights Road are not anticipated, but if required they will be implemented during overnight hours with police assistance for maximized safety.

Enhanced Safety and Mobility Features

To further enhance our TTC Plans, our Team will employ site-specific impact management strategies that exceed RFP requirements in order to maximize safety and mobility. These strategies will be particularly focused on avoiding potentially high-severity run-off-road, head-on, and intersection crashes, given the high traffic volumes, curvature, and numerous driveways and intersections along US 29. Other strategies that will be utilized where warranted include the use of wider than normal lane lines for increased delineation of lane shifts, use of temporary transverse rumble strips to alert motorists of unusual conditions such as in advance of crossovers on US 29 Widening, and the use of tighter than required channelizing device spacing for increased work zone delineation and construction personnel safety. In addition to these accident avoidance strategies, our Team will further exceed requirements by providing forgiving roadside design during construction and utilizing temporary concrete barrier for the protection for protection of both the traveling public and construction personnel.

Our Team will employ site-specific impact management strategies that exceed RFP requirements in order to maximize safety and mobility.

Also, we will also put a focus on expediting the implementation of safety and operational improvements in the interim condition during construction, prior to the final design solutions being constructed. For example, we will prioritize the opening of the third thru lane on US 29 where possible to provide the public with this tremendous mobility benefit. In addition, we will analyze the phasing and signal timings for all temporary lane configurations at traffic signals using Synchro and VISSIM analysis software in order to provide maximum benefits to the public.

Thorough Incident Management Planning

In the event that an unexpected incident does occur in the work area, our Team will be fully prepared to respond quickly to mitigate the impacts to traffic, and work to help to restore full traffic operations in a swift manner. Examples of strategies that will be utilized to successfully mitigate the risks of unforeseen incidents such as traffic crashes or construction accidents, our Team will:

- Pre-stage detour signing for pre-designed detour routes guide signs and pink "emergency scene" signs;
- Include a comprehensive "telephone tree" of the order of calls to be placed to critical parties in the event of an incident (D-B team, VDOT, and emergency responders) any hour of the day;
- Utilize wrecker service that is capable of removing stranded vehicles from the roadway that may be blocking travel lanes;
- Design temporary traffic control plans to include shoulders and pull-off areas where possible to provide refuge for disabled vehicles and for emergency vehicle use especially along US 29 Widening;
- Portable CCTV cameras will be utilized to quickly identify travel delays and assess incidents; and
- The dedicated crews assigned to each project Segment will allow for redundancy in equipment and personnel resources that can be easily shifted from one Segment to another in the event of an incident.

Comprehensive Public Outreach

Finally, as also described in Section 4.4.2, a significant public outreach campaign is vital to a successful TMP. Our Team, led by Sande Snead from Pulsar, Inc., combined with the involvement of and coordination with VDOT, will pro-actively communicate with citizens, businesses, community groups, public officials, police, fire and rescue and schools who could be impacted during critical elements of construction. Our Team will develop the Public Information and Communications Plan (PICP) in accordance with VDOT Culpeper District's PIO as well as VDOT's regulations, policies and procedures. At least 90 days before any traffic impacts or mobilization, the Team will deliver the PICP to VDOT for approval. As detailed below, there are several Project Stakeholders who may be impacted at various times during construction. Identification of these stakeholders in advance of construction activities will identify mitigation strategies for any temporary impacts.

- ***Police, Fire & Rescue –*** Coordination will be required with emergency staff to provide advance notification of temporary lane restrictions and roadway closures. For the US 29 Widening and Berkmar Drive projects, this coordination will include Hollymead Fire & Rescue, The Seminole Trail Volunteer Fire Department, Earlysville Volunteer Fire Company, other regional fire stations, Albemarle County Police and Virginia State Police will be required for assistance with temporary

lane closures, and for other major activities. Please see Section 4.4.2 for discussion for the Rio Road project.

- ***Local Businesses –*** The northern Charlottesville area businesses community will be impacted during construction specifically commercial business along Route 29 such as Walmart and Sam's Club along Berkmar Drive and the Hollymead Town Center along Route 29. To minimize impacts, US 29 will remain open at all at all times, all access will be continuously maintained for all businesses. We will also coordinate closely with business management to construct necessary improvements in the direct vicinity of their property during the hours of least impact.
- ***Schools –*** Coordination with the following school organizations will be necessary since their school boundaries encompass the Project site, and their bus routes travel on US 29 and affected roadways:
  - Several Albemarle County schools and their bus routes are in proximity of the Project and include: Hollymead, Woodbrook and Agnor Hurt Elementary Schools, Mortimer Sutherland Middle School, and Albemarle High School.
  - Comprehensive coordination efforts will be undertaken with each of these school organizations to make them aware of construction impacts.
- ***Traveling Public & Transit –*** The maintenance of all travel lanes throughout construction will limit impacts to the traveling public. In addition, our optimization of the temporary lane closure hours that will be limited to off-peak hours will further reduce these impacts. Also, keeping all work behind barriers and maximizing lane widths will also help limit delays associated with temporary lane configurations during peak hours. Any impacts will also be coordinated with Charlottesville Area Transit to ensure safe and reliable services in maintained. In addition, our Team will also closely coordinate with the nearby Charlottesville Albemarle Airport to ensure both employees and customers are aware of construction activities.
- ***Local Residences –*** Homeowners immediately adjacent to US 29 will be impacted temporarily with added construction noise and clearing, grading and construction activities close to their properties. Impacts will be mitigated through scheduling and utilizing construction equipment and techniques than minimize noise.

In addition to these specific stakeholders, constant communication will be maintained with VDOT staff, the Project Delivery Advisory Panel (PDAP), local government, and all other stakeholders. We will work with VDOT to develop a targeted and effective advertising program with the intent of engaging and informing the maximum amount of travelers and well as the stakeholders listed above.

Our Safety and Mobility Commitment

Our Team is adamant about providing and maintaining a safe work zone, and we also always look for ways to improve traffic patterns not only after construction, but during construction. Therefore, with the inclusion of the features detailed above, **we are committed to exceeding the RFP safety and mobility requirements.** With features such as reduced lane closures, use of temporary geometry accommodating full posted speeds, a unique training program, and enhanced safety devices, we look forward to the privilege of successfully designing and constructing the three project Segments concurrently.

4.6 - Disadvantaged Business Enterprises

4.6 - Disadvantaged Business Enterprises

4.6 Disadvantaged Business Enterprises

Commitment to Achieving the DBE Goal

Shirley Contracting Company, LLC (Shirley) is committed to achieving the 13% DBE participation goal for the Project for the entire value of the contract.

4.7 - Proposal Schedule

4.7 Proposal Schedule

4.7.1 Proposal Schedule

The Shirley Team's Preliminary Proposal Schedule is provided at the end of the Proposal Schedule Narrative.

4.7.2 Proposal Schedule Narrative

Shirley has provided a Preliminary Schedule identifying our plan for all phases of the design-build process based on the following project Milestones listed in Table 4.7.1. As we have noted in our Technical Proposal, it is our intent to deliver the Project by the Completion Date of October 30, 2017. Additionally, we will deliver the Rio Road Grade Separated Intersection by December 2, 2016. with our Team's intention to obtain the incentive associated with the opening of the depressed roadway by September 2, 2016.

Table 4.7.1

Milestone	Date
Notice of Intent to Award Date	January 26, 2015
Commonwealth Transportation Board Approval	February 18, 2015
Design-Build Contract Execution	March 3, 2015
Notice to Proceed Date	March 4, 2015
Start Rio Road Intersection Construction	September 2, 2015
Open Depressed Lanes to Traffic at Rio Road Intersection	September 2, 2016
Start Berkmar Extension Construction	October 13, 2015
Start US 29 Widening Construction	October 20, 2015
Final Completion Rio Road Intersection	December 2, 2016
Final Completion Berkmar Extension	October 30, 2017
Final Completion US 29 Widening	October 30, 2017
Final Completion Entire Project	October 30, 2017

Work Breakdown Structure

In order to deliver the Project on time, our Team has developed a detailed Preliminary Proposal Schedule in accordance with the RFP requirements. The Team has organized the schedule into a hierarchical Work Breakdown Structure (WBS) in order to demonstrate the relationships and activity durations amongst the design, environmental permitting, public involvement, right-of-way acquisition, utility relocation, and construction disciplines. This is shown as our Level 1 Work Breakdown Structure. For most of the Level 1 WBS groupings, we have divided the activities by the individual Segments or Elements; US 29 and Rio Road Grade Separated Intersection, US 29 Widening, and Berkmar Extension. All elements of the design-build process are captured under these Level 1 tasks and are briefly described below:

01. Project Milestones: Area reserved for easy review of the Project status.

02. Design: Includes preliminary engineering services, plan development, design QA/QC reviews, submittal milestones, and VDOT reviews and approvals of plans. This section includes a second level WBS structure to group design activities by type of design submission including roadway and bridge.

For this Project we have also added second level WBS groups to track activities required for design surveys and geotechnical activities that are critical to such a complex project.

03. Public Involvement: This section of the schedule includes activities and milestones for developing the planned public involvement process including communication plans, public information meetings, and updates to the Office of Public Affairs for major traffic shifts and the VDOT website.

04. Environmental Permitting: Includes wetland and stream delineations, jurisdictional determinations, permit management and preparation, mitigation, and permit submissions and reviews from the authorities having jurisdiction.

05. Right-of-way Acquisition: The acquisition of property rights will be required to obtain permanent right-of-way as well as permanent and temporary construction and utility easements. This section of the schedule is grouped by construction segments to identify impacts as construction progress dictates.

06. Utility Relocations: Includes activities for UFI meetings, preparation of preliminary engineering (PE) estimates, approval of PE estimates, utility relocation design by the utility owner, approval of the utility design, and utility relocation construction. The utility relocations are separated into second level WBS groups based on utility owner.

07. Construction: Includes all components of roadway and bridge construction including the Quality Assurance and Quality Control processes required throughout construction. The Construction section of the schedule is segmented by additional levels of WBS structure to divide the construction activities into phases of work, areas of work, and major portions of work such as bridge or retaining wall activities. This grouping of work packages has proven to allow for easy and clear tracking of activity progress to ensure on-time completion.

Table 4.7.2 shown below is a complete outline of the WBS Structure for the Project:

Table 4.7.2

WBS Code	WBS Description
RTE 29 SOLUTIONS	ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80
RTE 29 SOLUTIONS.A	PROJECT MILESTONES
RTE 29 SOLUTIONS.B	DESIGN
RTE 29 SOLUTIONS.B.001	DESIGN SURVEYS
RTE 29 SOLUTIONS.B.002	GEOTECHNICAL
RTE 29 SOLUTIONS.B.01	RIO ROAD GRADE SEPARATED INTERSECTION
RTE 29 SOLUTIONS.B.01.01	Critical R-O-W and TTC Plan Set
RTE 29 SOLUTIONS.B.01.02	Final Roadway Plans
RTE 29 SOLUTIONS.B.01.03	Bridge & Retaining Wall Plans
RTE 29 SOLUTIONS.B.02	US 29 WIDENING
RTE 29 SOLUTIONS.B.02.01	Roadway Plans
RTE 29 SOLUTIONS.B.03	BERKMAR DRIVE EXTENSION
RTE 29 SOLUTIONS.B.03.01	Roadway Plans
RTE 29 SOLUTIONS.B.03.02	Rivanna River Bridge & Retaining Wall Plans
RTE 29 SOLUTIONS.C	PUBLIC INVOLVEMENT
RTE 29 SOLUTIONS.C.01	Public Information Communications Plan
RTE 29 SOLUTIONS.C.02	Public Involvement Meetings

4.7 **Proposal Schedule**

WBS Code	WBS Description
RTE 29 SOLUTIONS.D	PERMITTING
RTE 29 SOLUTIONS.D.01	RIO ROAD GRADE SEPARATED INTERSECTION
RTE 29 SOLUTIONS.D.01.01	Joint Wetlands and Waters Permit (If Required)
RTE 29 SOLUTIONS.D.01.02	LD 445 / VSMP / SWPPP Permit
RTE 29 SOLUTIONS.D.01.03	Hazardous Materials
RTE 29 SOLUTIONS.D.02	US 29 WIDENING
RTE 29 SOLUTIONS.D.02.01	Joint Wetlands and Waters Permit (If Required)
RTE 29 SOLUTIONS.D.02.02	LD 445 / VSMP / SWPPP Permit
RTE 29 SOLUTIONS.D.03	BERKMAR DRIVE EXTENSION
RTE 29 SOLUTIONS.D.03.01	Joint Wetlands and Waters Permit
RTE 29 SOLUTIONS.D.03.02	LD 445 / VSMP / SWPPP Permit
RTE 29 SOLUTIONS.D.03.03	Virginia Marine Resources Commission Permit
RTE 29 SOLUTIONS.E	RIGHT-OF-WAY ACQUISITIONS
RTE 29 SOLUTIONS.E.01	RIO ROAD GRADE SEPARATED INTERSECTION
RTE 29 SOLUTIONS.E.01.01	RIO ROAD INTERSECTION CRITICAL PROPERTIES
RTE 29 SOLUTIONS.E.01.02	RIO ROAD INTERSECTION REMAINDER of PROPERTIES
RTE 29 SOLUTIONS.E.02	US 29 WIDENING
RTE 29 SOLUTIONS.E.03	BERKMAR DRIVE EXTENSION
RTE 29 SOLUTIONS.F	UTILITY RELOCATIONS
RTE 29 SOLUTIONS.F.01	RIO ROAD INTERCHANGE
RTE 29 SOLUTIONS.F.01.01	RIVANNA WATER and SEWER AUTH. 18 and 24" WATER
RTE 29 SOLUTIONS.F.01.02	CITY of CHARLOTTESVILLE GAS
RTE 29 SOLUTIONS.F.01.03	CENTURY LINK + OTHER FIBER PROVIDERS / SHARED DUCTBANK
RTE 29 SOLUTIONS.F.01.04	DOMINION VIRGINIA POWER (OVERHEAD)
RTE 29 SOLUTIONS.F.02	US 29 WIDENING
RTE 29 SOLUTIONS.F.02.01	RIVANNA WATER and SEWER / ALBEMARLE COUNTY WATER
RTE 29 SOLUTIONS.F.02.02	DOMINION VIRGINIA POWER
RTE 29 SOLUTIONS.F.03	BERKMAR DRIVE EXTENSION
RTE 29 SOLUTIONS.F.03.01	8 SEWER "
RTE 29 SOLUTIONS.F.03.02	DOMINION VIRGINIA POWER
RTE 29 SOLUTIONS.F.03.03	CENTURYLINK UNDERGROUND
RTE 29 SOLUTIONS.G	CONSTRUCTION
RTE 29 SOLUTIONS.G.01	QA/QC Planning and Coordination
RTE 29 SOLUTIONS.G.02	RIO ROAD GRADE SEPARATED INTERSECTION
RTE 29 SOLUTIONS.G.02.01	PHASE 1 -ALL WORK PRIOR TO 103 DAY CLOSURE PE
RTE 29 SOLUTIONS.G.02.01.01	Stage 1 - RTE 29 NW and SE QUADRANTS
RTE 29 SOLUTIONS.G.02.01.02	Stage 2 - RTE 29 NE and SW QUADRANTS
RTE 29 SOLUTIONS.G.02.01.03	Stage 3 - BRIDGE ABUTMENT PILING / WALLS
RTE 29 SOLUTIONS.G.02.02	PHASE 2 - 103 CLOSURE PERIOD (MAY 23, 2016 thru SEPT 02, 2016)
RTE 29 SOLUTIONS.G.02.02.01	PHASE 2 -DEPRESSED ROADWAY ITEMS
RTE 29 SOLUTIONS.G.02.02.02	PHASE 2 -BRIDGE ITEMS

WBS Code	WBS Description
RTE 29 SOLUTIONS.G.02.03	PHASE 3 -ALL WORK FOLLOWING 103 CLOSURE PER
RTE 29 SOLUTIONS.G.02.03.01	Stage 1 - COMPLETE WORK at INTERIOR of INTERSECTION
RTE 29 SOLUTIONS.G.02.03.02	Stage 2 - COMPLETE OUTSIDE WORK
RTE 29 SOLUTIONS.G.03	RTE 29 WIDENING
RTE 29 SOLUTIONS.G.03.01	PHASE 1 A DETOURS AND MEDIAN WIDENING
RTE 29 SOLUTIONS.G.03.01.01	DRAINAGE AREA ALPHA
RTE 29 SOLUTIONS.G.03.01.02	DRAINAGE AREA CHARLIE
RTE 29 SOLUTIONS.G.03.01.03	DRAINAGE AREA DELTA
RTE 29 SOLUTIONS.G.03.01.04	DRAINAGE AREA BRAVO
RTE 29 SOLUTIONS.G.03.02	PHASE 1 B SOUTHBOUND SHOULDER WIDENING
RTE 29 SOLUTIONS.G.03.02.01	DRAINAGE AREA CHARLIE
RTE 29 SOLUTIONS.G.03.02.02	DRAINAGE AREA ALPHA
RTE 29 SOLUTIONS.G.03.02.03	DRAINAGE AREA BRAVO
RTE 29 SOLUTIONS.G.03.02.04	DRAINAGE AREA DELTA
RTE 29 SOLUTIONS.G.03.03	PHASE 2 NORTHBOUND RE-CONSTRUCTION

The following is a description of the calendars used for this Project.

Global Calendar: All calendars are based on an 8 hour work days and include the following holidays: New Year's Day, Memorial Day, 4th of July, Labor Day, Thanksgiving, the day after Thanksgiving, and Christmas.
Calendar 1: "5-Day Workweek" – This calendar is based on five working days per week and is used for all design, administrative, as well as the majority of construction activities.
Calendar 2: "7-Day Calendar" – Assigned to activities that have durations based on calendar days instead of work days. For example, VDOT's nine and 14 calendar day review duration.
Calendar 3: "5-Day Weather Impact" – This calendar is based on working part-time on sensitive weather activities. It is assigned to activities that are anticipated to have reduced productivity during the wet or winter months, such as placement of cement treated aggregates or bridge deck construction.
Calendar 4: "Winter Shutdown Calendar" - Assigned to activities that are unable to be performed during mid-December through mid-March due to cold weather. Activities such as bridge overlay work and surface asphalt are included.
Calendar 5: "Double Shift Calendar" - Assigned to critical activities that are associated with the Rio Road Grade Separated Intersection. The majority of these activities are leading up to or are during the 103-day closure period from May 23, 2016 through September 2, 2016.

Schedule Timing and Critical Path

The narrative below describes our Team's planned schedule and sequence of operations grouped by the Level 1 WBS Project disciplines of design, environmental permitting, public involvement, right-of-way acquisition, utility relocation, and construction. The sequencing of all disciplines was developed by considering the construction phasing of operations and determining the longest path to project completion with all factors considered including manpower, subcontractors, materials, design and environmental constraints and most importantly public safety and safety of the workforce. The Project phasing was

developed based upon our maintenance of traffic and sequencing shown in our Volume II Design Concept Plans and as detailed in Section 4.3, 4.4, and 4.5 of this Technical Proposal. Throughout the sequencing below, we have divided most of the schedule elements by the individual Project Segments:

- US 29 and Rio Road Grade Separated Intersection
- US 29 Widening
- Berkmar Extension

Design of the Project

This section of the schedule includes those activities necessary for preliminary and final roadway and bridge design and engineering plan preparation and approvals. It includes time for the necessary Design Quality Assurance/Quality Control reviews at multiple stages of the design process. As indicated by VDOT we have included the nine and 14 calendar-day review times for VDOT/FHWA of each design package submission. The design phase also includes activities for the completion of surveys, utility designations, test pits, geotechnical investigations, and utility relocation plans including a VDOT review of the geotechnical report prior to submission of the final roadway and bridge plans.

Our Team will begin the design phase of the Project immediately upon Notice of Intent to Award starting with those activities associated with the US 29/Rio Rd Grade Separated Intersection 'Critical Right-of-Way and Temporary Traffic Control Plan Set'. Design surveys, utility designations/test pits and geotechnical investigations will be occurring concurrently with the geometric, signal, drainage, and traffic control activities. The schedule shows a May 15, 2015 approval of this critical plan set. Rio Rd Bridge design activities will begin following Notice to Proceed and will run concurrently with the roadway design items. Final Roadway and Bridge Plan sets are anticipated to be complete by October 2015. Dewberry will begin the US 29 Widening Roadway Plans following the initial survey of the Project. A dedicated team will perform all design activities with the goal of plan set approvals by September 15, 2015.

The Berkmar Extension roadway design activities will be performed by our partner, Timmons Group, LLC. Similarly their work will begin with the initial surveys and utility designation necessary for submission of the 1st submission roadway plans. Dewberry's structural design team will perform the engineering and design activities for the bridge over the Rivanna River including the necessary scour analysis of the potential breach of the Rivanna Reservoir Dam. Roadway and bridge design activities are anticipated to be complete by late October 2015.

Public Involvement

The public involvement schedule includes submitting our emergency contact list upon NTP, developing our Public Information and Communication Plan (PICP) and holding Public Information Meetings in incremental stages during construction. This includes providing regular updates to the Office of Public Affairs throughout the entire design-build process. The schedule includes the major milestone activities for the Public Information Meetings. However, there are many other public involvement activities that our Public Relations Team with the leadership of Pulsar Advertising, Inc., will perform throughout the Project. These include holding meetings with local businesses and attending meetings with homeowners associations, local government representatives, and community groups. We will also provide information for regular updates on weekly lane closure plans on the Project website as well as VDOT's website.

Environmental Permitting

Environmental Permitting will begin at NTP with gaining access to affected property owners along the Project's corridor to begin the required Phase I environmental surveys. Our Team will immediately perform wetland delineations, obtain jurisdictional determinations and prepare the Joint Wetlands and Water Permit Application. Following completion and acceptance of the 60% roadway and bridge plans we will submit the necessary Permit Applications to the authorities having jurisdiction. We anticipate that the Individual Permits for USACE as well as the Virginia Water Protection Permit #3 from DEQ will require a four to five month approval time frame. For the Rivanna River Bridge on the Berkmar Extension segment, a Sub-Aqueous Bed Permit will be required prior to the start of bridge activities. Our Team will also complete the requisite VDOT stormwater forms (LD-445 series), and will provide Stormwater Pollution Prevention Plans (SWPPP) and related information for inclusion on the VDOT SWPPP General Information sheets.

Right-of-Way Acquisition

The acquisition of property rights will be required to obtain permanent right-of-way as well as permanent and temporary construction easements as well as easements throughout all segments. For the US 29/Rio Road Intersection we have broken out the right-of-way acquisitions between the critical early acquisitions and the remainder of the required properties. The critical properties are necessary to obtain the utility easements in order to relocate the Dominion Virginia Power Poles along southbound US 29/Rio Road Segment. Acquisitions for the US 29 Widening and Berkmar segments are also shown in this area with the anticipation of all property rights acquired by January 6, 2016.

Utility Relocations

Section 4.3 of our Technical Proposal lists the anticipated utility relocations and potential conflicts for all three segments of the Project. To simplify and track the utility relocations, we have created a work breakdown structure that groups the utility relocation activities by utility owner and segment location. This further allows us to coordinate the work with utility relocations using the construction sequencing. Within each segment group, we have included activities for holding the Utility Field Investigation (UFI) meeting, preparation of the Preliminary Engineering (PE) estimates by the utility owner, approval of the PE estimate, design of the utility relocation, and construction of the relocation by area. The utility relocation schedule starts with formal UFI meetings held in Summer 2015 following completion of all utility test pits and progression of design documents to roughly 60%. This will enable our Team to confirm and adjust our list of utility conflicts based on the field test pit data prior to holding the formal UFI meeting. We will continue this early coordination of utilities throughout the design phase of the Project to ensure that the right-of-way and roadway plans are coordinated with the utility relocation plans.

Construction Sequence

Pre-Construction, Submittals and Material Procurement

In a separate WBS group we have identified the major critical QA/QC Preparatory Meetings (Hold Points) that will be required prior to commencing with construction activities. The overall Level of Effort for the QA/QC process is represented by a bar spanning all construction activities until final punch-out of the Project. The following sequencing is divided amongst the three Project Segments.

Segment 1 - Rio Road Grade Separated Intersection

PHASE 1 - October 2015 - May 23, 2016

The early acquisition of right-of-way and easements and subsequent utility relocations will allow for construction of the roadway widenings along US 29. These widenings will allow our Team to open construction quadrants for installation of the depressed roadway retaining wall foundation elements. Despite the extremely constrained areas these quadrants are critical for the up-front work to be completed in advance of the 103-day closure period.

Stage 1- NW and SE Quadrant Construction

Prior to construction at the US 29 and Rio Road Detour Routes. This work includes the temporary median crossover and temporary signal required at the Berkmar Drive and US 29 intersection just south of the Project. Just west of the Project, any temporary median breaks and improvements along Rio Road including adjustment of pavement markings will be performed. North of the intersection, a median crossover, left turn lanes and a temporary signal will be installed at US 29 and Myers Drive.

From a traffic flow and TMP perspective, it is our Team's intent to construct the northwest and southeast quadrants concurrently in this Phase 1 period prior to May 23, 2016. In order to create the quadrant openings the US 29 southbound and northbound approach roadway widenings will be constructed concurrently starting in October 2015. Our Team will dedicate two construction teams consisting of drainage and grading crews to install many of the permanent drainage features as well as the majority of the permanent pavement section in these areas. In addition, the teams will be installing any temporary paving necessary to create the adequate room for the ensuing quadrant construction. It is anticipated that these widenings can be constructed behind temporary construction barriers and can occur during daytime work hours. All pedestrian movements displaced during this time will be detoured with appropriate signing and designated alternate routes.

Following completion of the roadway widenings in Fall 2015, US 29 thru-traffic and right turn movements will be shifted to the far outside. Additionally the dual left turn movements from both directions of US 29 onto Rio Road will be diverted away from the thru-traffic as vehicles approach the intersection. This diversion of the left movements will create the gore space required for the quadrant areas. Traffic barrier service and attenuators will be placed to protect the work zone from traffic. It is anticipated that these work areas will be approximately 24' to 30' in width. Immediately our Team will mobilize 2 wall crews to install the depressed roadway retaining wall foundation elements on both the NW and SE quadrants. Currently our Team is planning to use both Secant Piles and Cantilvered Soldier Beams with Concrete Lagging depending on wall heights and geotechnical investigations.

The quadrants will allow for 24 hour construction access to the retaining wall work. It is anticipated that the primary drilling work can occur during daytime hours and spoil removal and concrete work can occur at night-time in allowable lane closures as well as the quadrant areas.

Following completion Pile and Beam installation in the NW and SE quadrants, the roadway pavement that was disturbed in these areas will be patched back to existing conditions. This will allow for the next stage of traffic movement.

Stage 2- NE and SW Quadrant Construction

While Stage1 Retaining Wall work is ongoing, grading and drainage crews will commence with the roadway widening work along US 29 southbound (SW quadrant south of Rio Road). This widening will consist of permanent drainage installations as well as the permanent and temporary pavement sections required for the Stage 2 quadrant work. In the NE quadrant along northbound US 29, roadway widening is severely constrained by the presence of the existing retaining wall. In this area, it is our intent to simply remove the concrete path currently sitting behind the wall and replace this with temporary asphalt for a minimal widening in this area. We do not intend to remove parapets or impact the structural integrity of the wall.

With the US 29 widenings complete, the temporary traffic barrier service will be removed from the Stage 1 work zones. For Stage 2 work, the quadrant work zones will be created be separating the thru- traffic on both US 29 northbound and southbound. Appropriate signing and pavement markings will clearly delineate the separation areas. Traffic will merge together following the work zones and all turning movements will be maintained as required by the RFP. Traffic barrier service will then be installed as in Stage 1.

Similar to Stage 1, the NE and SW retaining wall foundations will be built concurrently by two drilling and wall crews. Similar construction methods and foundation types will be used as in Stage 1. Again 24 hour access to the area will help accelerate the work.

Unlike Stage 1 work, pavement restoration and removal of temporary traffic barrier service will not be required as we are anticipating that the completion of the Stage 2 work would coincide with completion of Stage 3 and thus near the start of the Phase II 103-day closure of the Rio Road Intersection on May 23, 2016.

Stage 3- Rio Road Bridge Foundations

As the Stage 2 NE quadrant retaining wall (shorter of the wall segments) is completed, we will immediately transition this crew to begin the Rio Road Bridge Foundation installation. It is our intent to use a similar secant pile installation or beam/lagging system for the dual purpose of abutment foundation and retaining wall under the Rio Road Bridge. These installations will have to occur during night-time lane closures as no permanent work zone can be established through the existing intersection. All pavement disturbed during the night time closures will be restored prior to opening of traffic the next morning. Our crews intend to complete both Abutment A and Abutment B foundations prior to the May 23, 2016 commencement of the 103-day closure period.

PHASE 2 (103-day Closure of the Rio Road Intersection) - May 23, 2016 - September 2, 2016

It is our intention to obtain the incentive associated with the opening of the depressed roadway by September 2, 2016. Following completion of the Bridge elements, crews will begin preparation of the roadway for the Phase 2 closure period. Phase 2 will be utilized to construct the majority of the depressed roadway area and the Rio Road Bridge. In order to maximize schedule efficiency and the opportunity to obtain incentives, our Team will use a double crew shift strategy for the major construction operations during this Phase. We intend to work two, eight to ten hour shifts per day for the excavation, lagging, precast wall panels, drainage and pavement section operations.

4.7 **Proposal Schedule**

In general our plan will be to remove the existing pavement and excavate the depressed roadway to a point that bridge crews will begin abutment construction on top of the previously installed foundation elements. Concurrent activities will occur for the depressed roadway and bridge elements during the 103-day closure period.

Depressed Roadway Construction

Upon commencement of the closure period, traffic crews will place temporary traffic barriers to clearly delineate the closed portions of the intersection and prevent traffic from mistakenly entering the work zone or excavation areas. Work will commence as follows:

Removal of Pavement - All pavement to removed will be milled and placed in trucks for offsite disposal.

Excavation and Disposal of cut material offsite - Approximately 74,000 CY of excavation will be removed for construction of the depressed roadway. Two excavation crews will remove approximately 2,500 CY per day. In order to meet this production we have already secured disposal sites in the surrounding area to assure that disposal and trucking concerns are not an issue. In our scheduled we have allowed an additional five days of crew time for removal of any required undercutting or poor soil remediation once subgrade is reached.

Installation of concrete lagging panels between the soldier beam members installed in Phase 1 - In the shallower cut portions of the depressed roadway we will install traditional soldier beams in Phase 1 and use concrete lagging in between the vertical piles as the permanent support of excavation. Approximately, 15,000 square feet of precast lagging will be installed during the excavation. All lagging will be stored at the Project's staging yard and will be available at the ready for day or night time installation. The lagging can be installed with relatively light lifting equipment and will be able to keep up with the excavation crews.

Drainage Installation - In our Volume II Concept Plans our proposed preliminary drainage is depicted in the depressed roadway. With approximately 2,400 LF of new drainage pipe and 18 drop inlets, we are anticipating two drainage crews to begin installation as soon as subgrade elevation is reached in the new depressed roadway area.

Precast Facing Installation - In accordance with the details in Section 4.3 Design Concept, precast concrete facing panels will be attached to the wall foundation elements. We are anticipating that 5' x 10' architectural panels will be delivered and stockpiled at the central staging area just prior to the 103 day closure period. Panels will be installed following full height excavation of the retaining wall and bridge abutment walls. Panels will be attached starting from the bottom (roadway elevation) then up to top of wall. With a two shift operation, approximately 2,000 SF of panel per day will be installed.

Median Barriers - Where required, foundations for MB-7F median barriers will be installed immediately following drainage installation and will be coordinated with the installation of the precast concrete facing panel installation. MB-7D Median barriers that separate the US 29 northbound and southbound thru traffic will be slip-formed on intermediate asphalt.

Aggregate Base/Asphalt Paving - Aggregate roadway base installation will occur as areas are brought to finished elevations and appropriate subgrade proof-rolling and compaction testing has passed. Asphalt crews will be available during day or night-time work hours to place the base and intermediate asphalt. It is anticipated that traffic in the depressed roadway portion will be opened on intermediate asphalt and temporary pavement markings. Final surface asphalt and pavement markings will be installed in Phase 3 as the entire US29 / Rio Road Intersection work draws near completion.

Rio Road Bridge Construction and Intersection Signal

Abutment Construction - As described in Section 4.3 Design Concept, our Team intends to install a traditional cast in place abutment seat and bearing pads for the Rio Road Overpass. Following excavation of the depressed roadway area to the bottom of the abutment footing; approximately 7', two structural crews will form and pour the abutment footing and bearing pads.

Girder Installation - Our plan is to us the precast concrete NEXT Beam system of modular beam/deck segments. Units will be delivered directly from the manufacturers facility to the jobsite. It is anticipated that all units can be erected in about one week working two shifts per day.

Bridge Deck Form and Pour - Immediately following the erection of the NEXT Beam units, crews will form place reinforcing steel and pour the topping slab for the Rio Road Bridge. Any required bridge joints will be installed prior to the deck pours as well as drainage, standpipe or electrical conduits to be cast in the decks. Following curing of bridge decks, any curbing and or medians will be formed and poured on top of the final bridge deck surface.

Underbridge Lighting and Fire Protection Systems - Following decking of the Rio Bridge, completion of the fire protection system. underbridge lighting and any required deck drainage systems will be installed prior to the opening of the depressed roadway. Specialty subcontractors will be utilized for the fire protection system and dedicated electrical crews will install the underbridge lighting.

Rio Road Signalized Intersection - Finally in Phase 2 of the Project, the new signal equipment including poles and mast arms will be installed.

PHASE 3 (Following the 103-day Closure of the Rio Road Intersection) - September 3, 2016 - December 2, 2016

With the opening of the depressed roadway by September 2, 2016, traffic will be configured to allow room for the follow-up work to complete the entire Rio Road Interchange. Again, it is anticipated that multiple crews will be required for this work in order to meet the required milestone and completion dates.

Stage 1

Work will commence from the inside to the out. In Stage 1 local US 29 traffic will be shifted slightly to the outside utilizing the temporary pavement installed in Phase 1 while maintaining the required number thru and turn lanes. This shift will create the room necessary to complete the tops of the retaining walls supporting the depressed roadway constructed in Phase 2. Upon completion of the pouring and curing of these elements, the permanent roadway section will be installed. At this point traffic can be shifted to Stage 2.

Stage 2

In Stage 2 US 29 local traffic will be shifted slightly towards the interior of the interchange. This will allow for the removal of any temporary pavement constructed in Phase 1. All permanent drainage piping and structure adjustments will be made. All outside curb and gutter, median islands, and entrance ramps will be installed as well as all permanent pedestrian facilities including sidewalks, handicap ramps, and handrails. All permanent signal adjustments and installations will be completed in this stage.

Segment 2 - US 29 Widening

In order to properly design, manage and prioritize resources, MOT operations and construction activities, we have divided the US 29 Widening project into four major drainage areas. These areas are as follows:

Alpha: SB Station 610+00 to 642+00 and corresponding NB Station 1610+00 to 1642+00*
Bravo: SB Station 642+00 to 660+00 and corresponding NB Station 1642+00 to 1660+00*
Charlie: SB Station 660+00 to 683+00 and corresponding NB Station 1660+00 to 1683+00*
Delta: SB Station 683+00 to 708+00 and corresponding NB Station 1683+00 to 1708+00*
**Stationing is approximate for purposes of simplification and clarity.*

Project phasing and sequencing as shown in the Proposal Schedule is summarized as follows:

Phase 1A – Phase 1A consists of southbound US 29 North and South Detour construction (within drainage areas Bravo and Delta) and southbound temporary and permanent widening within the median of the entire project.

Phase 1A will start with the concurrent construction of temporary signalization along US 29 at Ashwood Boulevard and North Hollymead Drive, construction of SWMB #6 and #3, and installation of MOT measures to facilitate construction activities for the North and South Detours. Following the installation of MOT measures within the two detour areas we will proceed with concurrent construction of the two detours from approximately southbound Station 644+00 to 656+00 and Station 686+00 to 701+00. MOT measures will be extended along the entire southbound median to facilitate the construction of the temporary and permanent widening. (Temporary widening to the median of southbound US 29 is to accommodate northbound traffic during Phase 2 construction activities.)

Once the detours are in place, temporary signalization is operational and traffic has been switched, temporary and permanent median widening operations will continue and we will start the partial construction of the double 8’x10” box culvert at Station 694+00. (The remaining portion of the box culvert construction will take place during Phase 2.) Two grading crews, with support from utility crew/s, will proceed with temporary and permanent widening construction to the median within all drainage areas, except for in the immediate areas of the North and South Detours.

During this stage we will commence with jack and bore operations to replace the existing major culvert crossings. These operations will continue through other phases until completed.

Phase 1B – Phase 1B consists of the construction of the permanent section/vertical realignment of southbound US 29 from Station 647+50 to 652+50 and Station 689+75 to 696+50, and full construction of the southbound permanent section right travel lanes.

Upon completion of the temporary and permanent widening within the median of the entire project, MOT features will be established and will shift southbound traffic towards the median to allow for southbound shoulder construction operations to commence. Partial construction of the double 8'x10" box culvert at Station 694+00 will continue. With the already completed SWMB #3 in place, one grading, one wall and two utility crews immediately start construction activities within drainage area Charlie. Concurrently, one grading, two utility and two wall crews will be deployed within drainage area Alpha.

While areas Alpha and Charlie and under construction, a third grading and fifth utility crew will proceed with the vertical realignment of the southbound permanent section right travel lanes within drainage areas Bravo. Drainage to the previously completed SWMB #6 from the southbound US 29 Bravo drainage area under northbound US 29 will be installed via jack and bore.

Once the partial box culvert construction is completed, two grading crews and a wall will proceed with the construction of SWMB #2, construction of the wall and backfill/fill operations over the box culvert. Once conditions permit, a utility crew will be added to install the drainage within drainage area Delta and install the waterline adjacent to US 29. The grading crew will finish out the full construction and vertical realignment of the southbound permanent section from Station 689+75 to 696+50.

Phase 2 – Phase 2 consists of the construction of the permanent section/vertical realignment of the entire northbound US 29 section.

Upon completion of the southbound full width reconstruction and the new/temporary southbound shoulder section, modifications to temporary signal equipment at Ashwood Boulevard and North Hollymead Drive will be performed to accommodate the new traffic pattern and we will switch both southbound and northbound US 29 traffic to the newly completed sections. After traffic is switched and all MOT measures are in place, we will be able to proceed virtually unimpeded with the reconstruction of northbound US 29. We will continue construction of the double 8'x10" box culvert through completion. Multiple grading and utility crews will deployed and will work concurrently within each drainage area. The upper section of drainage area Alpha will start with the construction of SWMB #7 to allow for proper site drainage.

Provisions and accommodations will be made to allow for 24 hour public access to those parcels impacted and affected by the reconstruction of northbound US 29. As previously stated, maximizing the safety, minimizing impact and ensuring maximum mobility is our overarching goal.

Phase 3 – Median construction.
Once the reconstruction of northbound US 29 is completed, northbound traffic will be fully restored onto the new northbound section. MOT measures will be in place to facilitate the completion of the median. Temporary pavement sections will be fully removed. Final grading and drainage will be installed to its designed configuration to allow for the final stabilization of the median. A minimum of two grading and two utility crews will be deployed in this stage to allow for concurrent construction activities. During this stage all final surface paving, striping, signage, guardrail and signalization will be completed. Any and all remaining shoulder work will also be completed through final stabilization.

Segment 3 - Berkmar Extension

The Berkmar Extension segment will begin in October 2015 with grading operations and related erosion and sediment controls associated with the construction of the north and south bridge abutments. Due to the environmental constraints created be the proximity of the two piers on either side of the Rivanna River and the location of the third pier located directly adjacent to the wetlands on the north side of the river in the flood plain, pier construction schedule will be tied directly to the environmental permitting process. In order to have the bridge construction and all other grading operations occurring concurrently our Team will focus on starting bridge construction at both abutment locations as early as possible; allowing pier construction to begin just following the abutments. The proposed sequence of construction is summarized as follows:

Grading Operations

- Construct earthen abutments at both Abutment A and B with 50,000 CY of excavation;
- Continue mass grading operations of 250,000 CY of excavation (dirt & rock) to include Stormwater Management Basins A thru E and other necessary erosion and sediment control;
- Major culvert crossings (1,345’ of 60” & 250’ of 24” to 36”) and the 8” Sanitary Sewer relocation with casing at Station 225+00+/- will be installed throughout the Project corridor concurrent with mass grading operations to allow for mass grading to continue uninterrupted;
- Grading operations will continue with storm drain installation (11,475’) and all fine grading for pavement structures, sidewalks, and shared use paths;
- As grading operations out of traffic finish, grading crews will begin to work on the construction of tie-ins of Berkmar Drive at Hilton Heights Road and Town Center Drive; and
- Multiple grading and pipe crews will be deployed to allow for concurrent construction of all available components to ensure that milestones are met.

Bridge Operations

- Bridge crews will be deployed to construct both bridge abutments after earthen abutments are complete (while waiting for all environmental constraints to be cleared for pier construction);
- After completion of bridge Abutments A & B and the acquisition of all environmental approvals bridge crews will begin constructing all three bridge piers;
- Upon completion of all substructure elements bridge crews will begin super structure construction; and
- Multiple bridge crews will be deployed to allow for concurrent construction of all available components to ensure that milestones are met.

Critical Path

For the Project there will be multiple Critical Paths due the required interim milestone completion dates on the US 29/Rio Road Grade Separated Intersection differing from the overall Project completion dates. Additionally, with the use of multiple calendars there is some duplicity amongst schedule paths and critical activities. For clarification, we have included in this Section 4.7, a filter on the Critical Path activities that are calculated with zero Total Float available. The sequence below lists the activities associated with this Critical filter.

US 29/Rio Road Grade Separated Intersection

The critical path starts with the design surveys and design plan development associated with the Critical Right-of-Way and TTC Plan Set required for approval by May 15, 2015. This approval allows our right-of-way team to start property right acquisitions for the critical parcels along southbound US 29. With right-of way acquired, Phase 1, Stage 1 work will commence at the NW and SE quadrants as well as the Dominion Virginia Pole relocations in the NW quadrant of the segment. The critical path then transitions to the NE and SW quadrants. Finally, the Phase 1 work will complete with installation of the Rio Road bridge foundations through the intersection.

The critical path then transitions to the depressed roadway and Rio Road bridge activities occurring during the 103-day closure period from May 23, 2016 through September 2, 2016. It is our intention to obtain the incentive associated with the opening of the depressed roadway by September 2, 2016. Following the opening of the depressed roadway thru-lanes the Phase 3 work associated with the moment slabs, BR-27 railings, drainage, curb and gutter, sidewalks, and final asphalt paving is on the critical path.

Entire Project

For the entire project, the critical path also starts with the design surveys and supplemental utility designations that are required to prepare and complete the 1st submission roadway plans for both the US 29 Widening and Berkmar Extension segments. These submissions are scheduled for early June 2015 with the ensuing critical 60% design submissions scheduled for early August 2015. The submission of the 60% design documents will start the environmental permitting process in order to obtain any required Wetlands and Water Permits on the US 29 Widening and Berkmar Extension segments. Additionally, the 60% submissions will allow right-of-way acquisitions for the US 29 Widening and Berkmar Extension segments.

With its linear construction phasing and limited work areas, virtually all of the US 29 Widening segment is on the critical path from October 2015 through punchlist and close-out by October 30, 2017. Concurrently, on the Berkmar Extension segment, the linear nature of the construction of the Rivanna River bridge is retained on the overall projects critical path. Bridge construction will occur from December 2, 2015 through September 25, 2017. Berkmar activities then transition to the final opening of the segment and punchlist and close-out by October 30, 2017.

Project Controls

Through our Team's experience delivering major design-build roadway projects ahead of schedule, the Shirley Team has developed scheduling protocols to govern the development, implementation, progress tracking, and recovery of the CPM schedule through all of the Project phases. These methods have proven effective as evidenced by the fact that every design-build project completed by our Team has finished either on time or ahead of schedule.

Schedule Development

For any design-build project, it is imperative that the Project Team develop a detailed CPM Schedule that considers the interrelationships between all of the design-build disciplines. This is especially important

on a project with right-of-way and utility impacts that must be integrated into the design and construction sequencing. Our Team has developed the Preliminary Proposal Schedule included at the end of this section with a Work Breakdown Structure (WBS) that clearly delineates the tasks of each discipline manager, including design, permitting, right-of-way, utilities, and construction.

In order to develop the overall detailed CPM Schedule, each discipline manager will be responsible for producing a schedule to govern his own work and providing insight into how his schedule activities affect and are affected by activities in other disciplines. Once each manager has prepared their individual schedule, we will hold schedule development meetings run by the Design-Build Project Manager and attended by all discipline managers to review the individual schedules and integrate them into the overall CPM Schedule. These meetings ensure that:

- The work packages within each discipline are comprehensive enough to define the work with no activities omitted;
- The work packages are integrated within each discipline and between disciplines to generate a clearly defined project 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 discipline manager understands the schedules of the other disciplines and how their work inter-relates with the other disciplines;
- Each discipline manager understands how his work affects the Critical Path of the Project and the priorities of the Design-Build Project Manager and the other discipline managers; and
- The schedule meets or exceeds the requirements of the Contract.

These meetings will enable the Shirley Team to create a detailed CPM Schedule that has been jointly prepared by 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.

Throughout the design phase of the Project, as more detailed plans are developed and utility conflicts are verified through test pitting, these meetings will continue to further develop the CPM Schedule into the more detailed Baseline CPM Schedule. This schedule can then be utilized by all Team members to plan and track the progress of their work. It will be submitted to VDOT for review and approval and utilized during the planning phases for utilities, permitting, right-of-way, design, and subcontractor/ supplier scope and purchasing. Specific milestone dates from the CPM schedule will be written into subcontracts and purchase orders, making them contractually responsible for meeting schedule deadlines.

Procedures for Monitoring and Reporting Schedule Progress to Ensure Timely Project Completion

The key to effectively monitoring schedule progress is maintaining efficient communication between the discipline managers, resulting in constant coordination and schedule feedback. From the NTP date through the completion of design activities, our Team at a minimum will hold weekly Design Coordination Meetings which are run by the Design-Build Project Manager and attended by all discipline managers. Design Coordination Meetings have been a crucial tool on other design-build projects by facilitating face-to-face communication between the discipline managers. For each Design Coordination Meeting, the Design-Build Project Manager will review the CPM Schedule and identify all activities that were

scheduled for completion the previous week or are planned for the next two weeks. During the meeting the Project Team discusses the status of 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 (for example the identification of a new utility impact or the ability to design around a planned utility relocation); the impact of revised schedule dates on other activities and disciplines; identification of ways to advance the schedule ahead of the planned completion or mitigate schedule delays; and general design review, constructability, and determination of means and methods.

After each weekly meeting, the Design-Build Project Manager will update the CPM schedule and forward copies of an updated "look-ahead" schedule to each of the discipline managers identifying the critical dates agreed to during the weekly design meeting. This process continues throughout the design, permitting, and right-of-way phases to ensure there is no slippage to the start of the utility relocation and construction phases of the Project.

During the utility relocation and construction phases of the Project, the Design-Build Project Manager, Construction Manager, Designer Manager, QA Manager, QC Manager, and VDOT will continue to meet weekly for a Construction Progress Meeting to coordinate necessary QA, QC, Independent Assurance (IA) and Independent Verification (IV) inspections. At each meeting, the Construction Manager will review the work performed during the previous week and outline the schedule activities that will be performed during the following two weeks.

An additional technique that Shirley uses to monitor construction progress is the "Daily Shift Cost Report" (DSCR). At the end of each day, the construction field personnel compare the quantity of work, and the cost to do so, completed that day with the budgeted production and cost. Not only does this analysis provide an early indicator of cost concerns, but it also instantly highlights potential issues with the schedule by focusing on production rates. Completing and reviewing the DSCR's allows the construction team to make immediate "real-time" adjustments to work crews, equipment, trucking, subcontractor resources, and material deliveries to adjust production rates in order to maintain the Project schedule. Our Team will also review and adjust the durations of future schedule activities based on the DSCR production rates to help identify and mitigate schedule concerns for the later phases of the Project.

In addition to weekly schedule meetings with the VDOT, our Team will also prepare and submit monthly schedule updates for review and approval by VDOT, including a narrative of the schedule modifications, updated activities, project issues affecting the schedule, and a description of the Critical Path with updated schedule milestones. These daily, weekly, and monthly reviews of production rates, activity durations, and overall schedule status will enable our Team to identify and mitigate potential schedule delays to ensure early completion of the Project.

Procedures for Rescheduling Activities and Schedule Recovery

If during the course of the Project, we encounter delays to the Projects Critical Path, we will complete a Time Impact Analysis (TIA), re-sequence the schedule, and prepare a schedule recovery plan to reclaim lost time. This plan may include increasing work shifts, adding crews and resources to construct Critical Path activities concurrently, and changing MOT schemes or modifying the design to remove activities from the critical path. If it is early in the Project at the time the delay is encountered, schedule recovery

may require adjustments by any or all of discipline managers including, Design, Permitting, Right-of-Way, Utility Relocation, and Construction. However, if 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 the delay.

Mitigation of Major Delay Risks

Timely Review and Approval of Submittals

Upon Notice of Award, the Shirley Team will prepare a submittal schedule identifying all submittals that will be required for the Project. This schedule will identify the individual responsible for preparing the submittal, the anticipated submittal date, the parties responsible for reviewing and approving, the anticipated review durations, and a list of the individuals that must receive a copy of the approved submittal. At a minimum, the following submittals will be included:

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

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

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

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

Utility Relocations

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

We have facilitated these discussions through the preexisting relationships that we have developed through other design-build projects. Our Utility Coordinator, Todd Kief has coordinated the relocations of over $50 million of utility relocations on our design-build projects over the last 12 years. This experience has enabled Todd to develop relationships with over 25 different utility owners including all of the utilities that will be impacted on the Project.

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

Summary

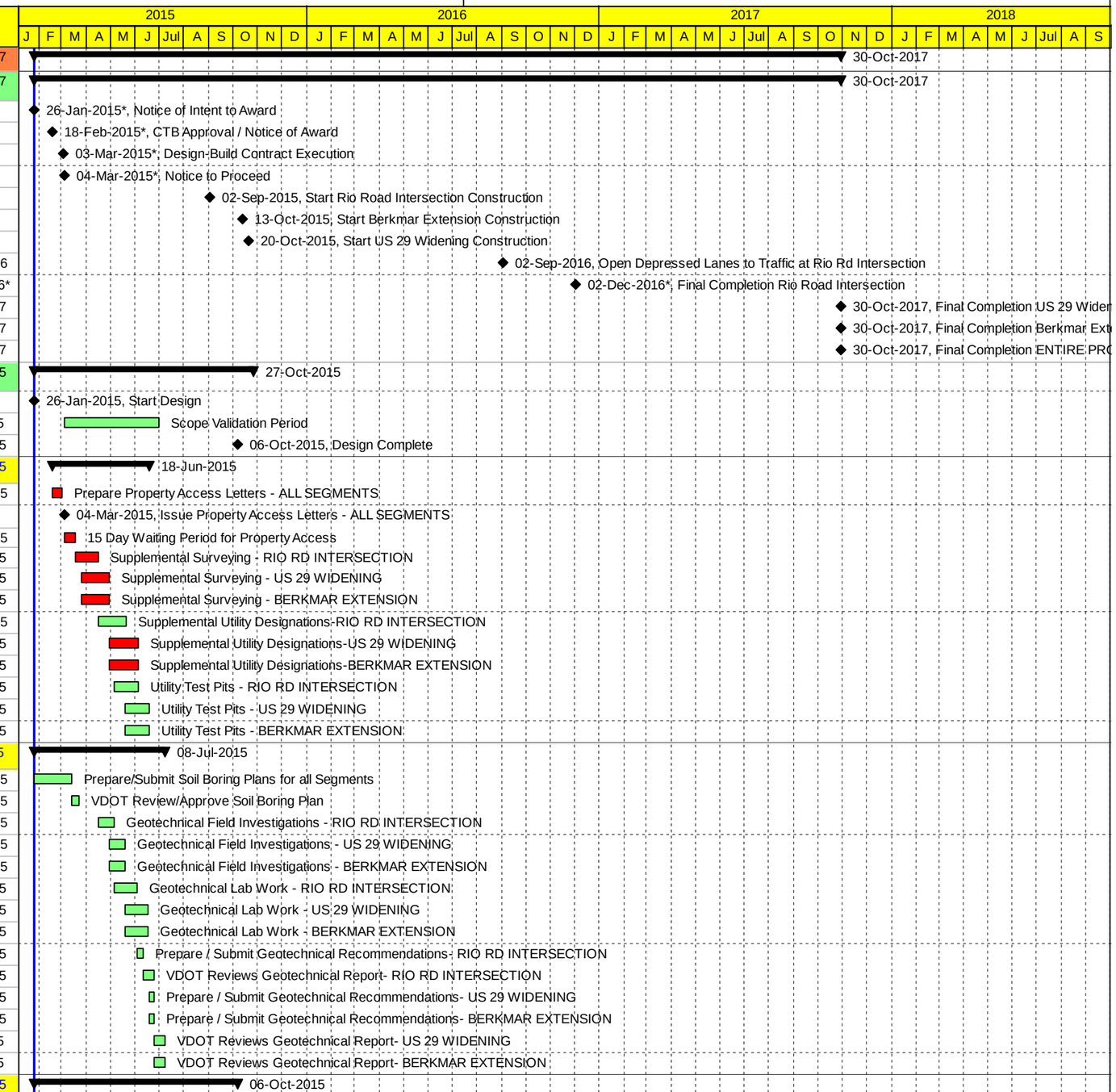
Our Team's comprehensive pre-proposal preparation, proven experience in all phases of design-build, and extensive project controls and schedule management and recovery techniques will serve to ensure that the Project will complete ahead of schedule. Over the years, we have built a solid professional reputation on meeting our commitments, completing projects ahead of schedule and under budget, performing quality work in a safe work environment, and establishing a problem-solving atmosphere and partnership with the Owner. This is a result of our extensive experience, quality people, and corporate commitment. The Design-Build Project for Route 29 Solutions is an extremely challenging and exciting Project for our Team and is one that we will bring this same level of commitment to for the benefit of VDOT, the City of Charlottesville, Albemarle County and all Project Stakeholders.

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80		702d	26-Jan-2015	30-Oct-2017
PROJECT MILESTONES		702d	26-Jan-2015	30-Oct-2017
1.100	Notice of Intent to Award	0d	26-Jan-2015*	
1.110	CTB Approval / Notice of Award	0d	18-Feb-2015*	
1.120	Design-Build Contract Execution	0d	03-Mar-2015*	
1.130	Notice to Proceed	0d	04-Mar-2015*	
1.140	Start Rio Road Intersection Construction	0d	02-Sep-2015	
1.160	Start Berkmar Extension Construction	0d	13-Oct-2015	
1.150	Start US 29 Widening Construction	0d	20-Oct-2015	
1.155	Open Depressed Lanes to Traffic at Rio Rd Intersection	0d		02-Sep-2016
1.170	Final Completion Rio Road Intersection	0d		02-Dec-2016*
1.180	Final Completion US 29 Widening	0d		30-Oct-2017
1.190	Final Completion Berkmar Extension	0d		30-Oct-2017
1.200	Final Completion ENTIRE PROJECT	0d		30-Oct-2017
DESIGN		193d	26-Jan-2015	27-Oct-2015
2.100	Start Design	0d	26-Jan-2015	
2.105	Scope Validation Period	120d	04-Mar-2015	01-Jul-2015
2.130	Design Complete	0d		06-Oct-2015
DESIGN SURVEYS		86d	18-Feb-2015	18-Jun-2015
2.001.099	Prepare Property Access Letters - ALL SEGMENTS	9d	18-Feb-2015	02-Mar-2015
2.001.100	Issue Property Access Letters - ALL SEGMENTS	0d	04-Mar-2015	
2.001.110	15 Day Waiting Period for Property Access	15d	04-Mar-2015	18-Mar-2015
2.001.120	Supplemental Surveying - RIO RD INTERSECTION	20d	19-Mar-2015	15-Apr-2015
2.001.150	Supplemental Surveying - US 29 WIDENING	25d	26-Mar-2015	29-Apr-2015
2.001.180	Supplemental Surveying - BERKMAR EXTENSION	25d	26-Mar-2015	29-Apr-2015
2.001.130	Supplemental Utility Designations-RIO RD INTERSECTION	25d	16-Apr-2015	20-May-2015
2.001.160	Supplemental Utility Designations-US 29 WIDENING	25d	30-Apr-2015	04-Jun-2015
2.001.190	Supplemental Utility Designations-BERKMAR EXTENSION	25d	30-Apr-2015	04-Jun-2015
2.001.140	Utility Test Pits - RIO RD INTERSECTION	22d	05-May-2015	04-Jun-2015
2.001.170	Utility Test Pits - US 29 WIDENING	22d	19-May-2015	18-Jun-2015
2.001.200	Utility Test Pits - BERKMAR EXTENSION	22d	19-May-2015	18-Jun-2015
GEOTECHNICAL		116d	26-Jan-2015	08-Jul-2015
2.002.100	Prepare/Submit Soil Boring Plans for all Segments	35d	26-Jan-2015	13-Mar-2015
2.002.110	VDOT Review/Approve Soil Boring Plan	9d	14-Mar-2015	22-Mar-2015
2.002.120	Geotechnical Field Investigations - RIO RD INTERSECTION	20d	16-Apr-2015	05-May-2015
2.002.160	Geotechnical Field Investigations - US 29 WIDENING	20d	30-Apr-2015	19-May-2015
2.002.200	Geotechnical Field Investigations - BERKMAR EXTENSION	20d	30-Apr-2015	19-May-2015
2.002.130	Geotechnical Lab Work - RIO RD INTERSECTION	20d	06-May-2015	03-Jun-2015
2.002.170	Geotechnical Lab Work - US 29 WIDENING	20d	20-May-2015	17-Jun-2015
2.002.210	Geotechnical Lab Work - BERKMAR EXTENSION	20d	20-May-2015	17-Jun-2015
2.002.140	Prepare / Submit Geotechnical Recommendations- RIO RD I	5d	04-Jun-2015	10-Jun-2015
2.002.150	VDOT Reviews Geotechnical Report- RIO RD INTERSECTI	14d	11-Jun-2015	24-Jun-2015
2.002.180	Prepare / Submit Geotechnical Recommendations- US 29 W	5d	18-Jun-2015	24-Jun-2015
2.002.220	Prepare / Submit Geotechnical Recommendations- BERKMA	5d	18-Jun-2015	24-Jun-2015
2.002.190	VDOT Reviews Geotechnical Report- US 29 WIDENING	14d	25-Jun-2015	08-Jul-2015
2.002.230	VDOT Reviews Geotechnical Report- BERKMAR EXTENSIC	14d	25-Jun-2015	08-Jul-2015
RIO ROAD GRADE SEPARATED INTERSECTION		179d	26-Jan-2015	06-Oct-2015



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

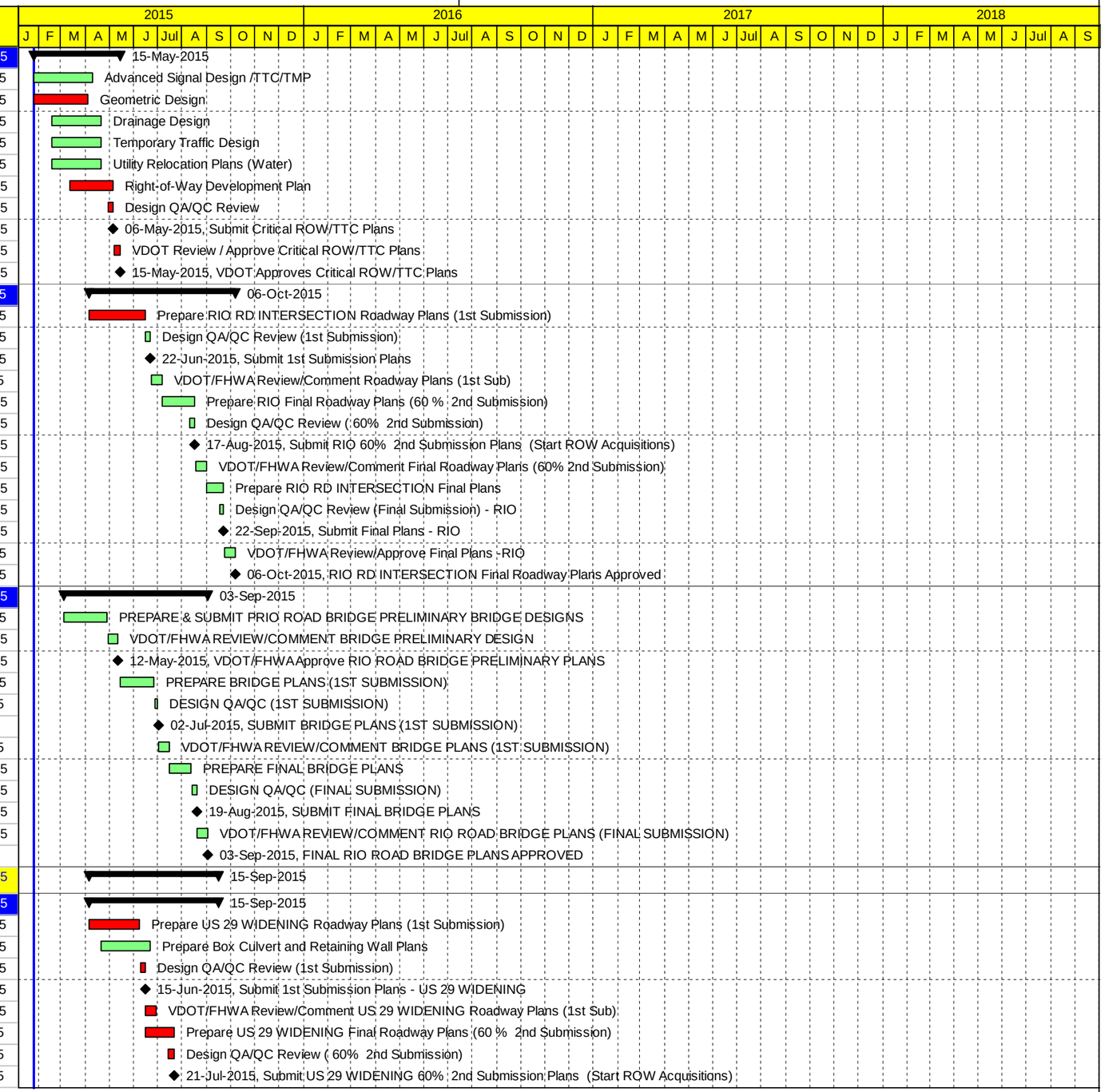
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
Critical R-O-W and TTC Plan Set		80d	26-Jan-2015	15-May-2015
2.01.01.110	Advanced Signal Design /TTC/TMP	55d	26-Jan-2015	10-Apr-2015
2.01.01.120	Geometric Design	50d	26-Jan-2015	03-Apr-2015
2.01.01.130	Drainage Design	45d	18-Feb-2015	21-Apr-2015
2.01.01.140	Temporary Traffic Design	45d	18-Feb-2015	21-Apr-2015
2.01.01.160	Utility Relocation Plans (Water)	45d	18-Feb-2015	21-Apr-2015
2.01.01.150	Right-of-Way Development Plan	40d	12-Mar-2015	06-May-2015
2.01.01.170	Design QA/QC Review	5d	30-Apr-2015	06-May-2015
2.01.01.180	Submit Critical ROW/TTC Plans	0d		06-May-2015
2.01.01.190	VDOT Review / Approve Critical ROW/TTC Plans	9d	07-May-2015	15-May-2015
2.01.01.200	VDOT Approves Critical ROW/TTC Plans	0d		15-May-2015
Final Roadway Plans		129d	06-Apr-2015	06-Oct-2015
2.01.02.100	Prepare RIO RD INTERSECTION Roadway Plans (1st Subn	50d	06-Apr-2015	15-Jun-2015
2.01.02.110	Design QA/QC Review (1st Submission)	5d	16-Jun-2015	22-Jun-2015
2.01.02.120	Submit 1st Submission Plans	0d		22-Jun-2015
2.01.02.180	VDOT/FHWA Review/Comment Roadway Plans (1st Sub)	14d	23-Jun-2015	06-Jul-2015
2.01.02.190	Prepare RIO Final Roadway Plans (60 % 2nd Submission)	30d	07-Jul-2015	17-Aug-2015
2.01.02.200	Design QA/QC Review (60% 2nd Submission)	5d	11-Aug-2015	17-Aug-2015
2.01.02.210	Submit RIO 60% 2nd Submission Plans (Start ROW Acquis	0d		17-Aug-2015
2.01.02.220	VDOT/FHWA Review/Comment Final Roadway Plans (60% 2	14d	18-Aug-2015	31-Aug-2015
2.01.02.230	Prepare RIO RD INTERSECTION Final Plans	15d	01-Sep-2015	22-Sep-2015
2.01.02.240	Design QA/QC Review (Final Submission) - RIO	4d	17-Sep-2015	22-Sep-2015
2.01.02.250	Submit Final Plans - RIO	0d		22-Sep-2015
2.01.02.260	VDOT/FHWA Review/Approve Final Plans -RIO	14d	23-Sep-2015	06-Oct-2015
2.01.02.270	RIO RD INTERSECTION Final Roadway Plans Approved	0d		06-Oct-2015
Bridge & Retaining Wall Plans		129d	04-Mar-2015	03-Sep-2015
2.01.03.100	PREPARE & SUBMIT PRIO ROAD BRIDGE PRELIMINARY	40d	04-Mar-2015	28-Apr-2015
2.01.03.110	VDOT/FHWA REVIEW/COMMENT BRIDGE PRELIMINARY	14d	29-Apr-2015	12-May-2015
2.01.03.120	VDOT/FHWA Approve RIO ROAD BRIDGE PRELIMINARY I	0d		12-May-2015
2.01.03.130	PREPARE BRIDGE PLANS (1ST SUBMISSION)	30d	15-May-2015	26-Jun-2015
2.01.03.140	DESIGN QA/QC (1ST SUBMISSION)	5d	27-Jun-2015	01-Jul-2015
2.01.03.150	SUBMIT BRIDGE PLANS (1ST SUBMISSION)	0d	02-Jul-2015	
2.01.03.160	VDOT/FHWA REVIEW/COMMENT BRIDGE PLANS (1ST S	14d	02-Jul-2015	15-Jul-2015
2.01.03.170	PREPARE FINAL BRIDGE PLANS	20d	16-Jul-2015	12-Aug-2015
2.01.03.180	DESIGN QA/QC (FINAL SUBMISSION)	5d	13-Aug-2015	19-Aug-2015
2.01.03.190	SUBMIT FINAL BRIDGE PLANS	0d		19-Aug-2015
2.01.03.200	VDOT/FHWA REVIEW/COMMENT RIO ROAD BRIDGE PL	14d	20-Aug-2015	02-Sep-2015
2.01.03.210	FINAL RIO ROAD BRIDGE PLANS APPROVED	0d	03-Sep-2015	
US 29 WIDENING		114d	06-Apr-2015	15-Sep-2015
Roadway Plans		114d	06-Apr-2015	15-Sep-2015
2.02.01.100	Prepare US 29 WIDENING Roadway Plans (1st Submission)	45d	06-Apr-2015	08-Jun-2015
2.02.01.125	Prepare Box Culvert and Retaining Wall Plans	45d	20-Apr-2015	22-Jun-2015
2.02.01.110	Design QA/QC Review (1st Submission)	5d	09-Jun-2015	15-Jun-2015
2.02.01.120	Submit 1st Submission Plans - US 29 WIDENING	0d		15-Jun-2015
2.02.01.130	VDOT/FHWA Review/Comment US 29 WIDENING Roadway	14d	16-Jun-2015	29-Jun-2015
2.02.01.140	Prepare US 29 WIDENING Final Roadway Plans (60 % 2nd	25d	16-Jun-2015	21-Jul-2015
2.02.01.150	Design QA/QC Review (60% 2nd Submission)	5d	15-Jul-2015	21-Jul-2015
2.02.01.160	Submit US 29 WIDENING 60% 2nd Submission Plans (Star	0d		21-Jul-2015



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

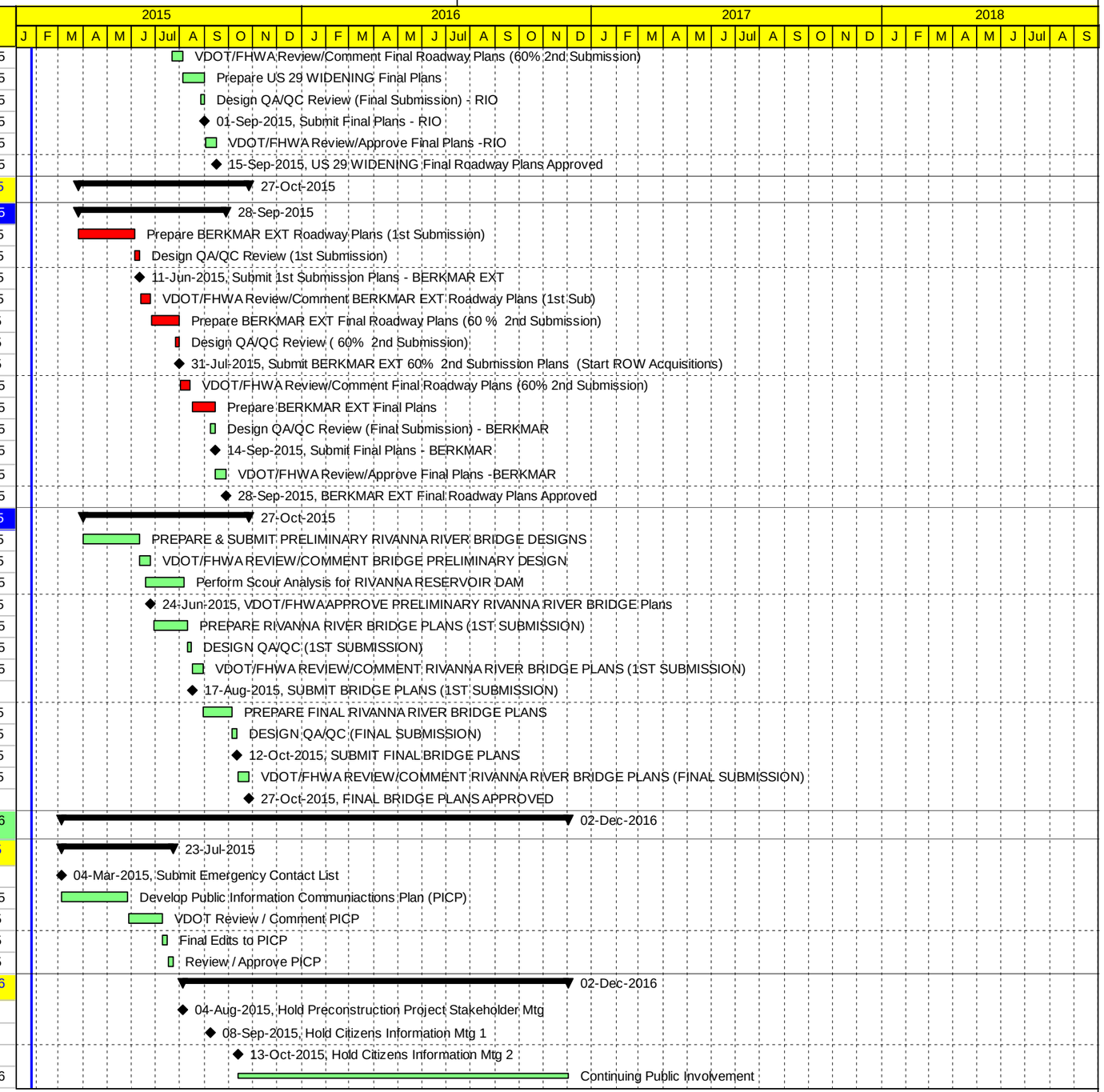
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
2.02.01.170	VDOT/FHWA Review/Comment Final Roadway Plans (60% 2	14d	22-Jul-2015	04-Aug-2015
2.02.01.180	Prepare US 29 WIDENING Final Plans	20d	05-Aug-2015	01-Sep-2015
2.02.01.190	Design QA/QC Review (Final Submission) - RIO	4d	27-Aug-2015	01-Sep-2015
2.02.01.200	Submit Final Plans - RIO	0d		01-Sep-2015
2.02.01.210	VDOT/FHWA Review/Approve Final Plans -RIO	14d	02-Sep-2015	15-Sep-2015
2.02.01.220	US 29 WIDENING Final Roadway Plans Approved	0d		15-Sep-2015
BERKMAR DRIVE EXTENSION		150d	26-Mar-2015	27-Oct-2015
Roadway Plans		130d	26-Mar-2015	28-Sep-2015
2.03.01.100	Prepare BERKMAR EXT Roadway Plans (1st Submission)	50d	26-Mar-2015	04-Jun-2015
2.03.01.110	Design QA/QC Review (1st Submission)	5d	05-Jun-2015	11-Jun-2015
2.03.01.120	Submit 1st Submission Plans - BERKMAR EXT	0d		11-Jun-2015
2.03.01.130	VDOT/FHWA Review/Comment BERKMAR EXT Roadway P	14d	12-Jun-2015	25-Jun-2015
2.03.01.140	Prepare BERKMAR EXT Final Roadway Plans (60 % 2nd Su	25d	26-Jun-2015	31-Jul-2015
2.03.01.150	Design QA/QC Review (60% 2nd Submission)	5d	27-Jul-2015	31-Jul-2015
2.03.01.160	Submit BERKMAR EXT 60% 2nd Submission Plans (Start R	0d		31-Jul-2015
2.03.01.170	VDOT/FHWA Review/Comment Final Roadway Plans (60% 2	14d	01-Aug-2015	14-Aug-2015
2.03.01.180	Prepare BERKMAR EXT Final Plans	20d	17-Aug-2015	14-Sep-2015
2.03.01.190	Design QA/QC Review (Final Submission) - BERKMAR	4d	09-Sep-2015	14-Sep-2015
2.03.01.200	Submit Final Plans - BERKMAR	0d		14-Sep-2015
2.03.01.210	VDOT/FHWA Review/Approve Final Plans -BERKMAR	14d	15-Sep-2015	28-Sep-2015
2.03.01.220	BERKMAR EXT Final Roadway Plans Approved	0d		28-Sep-2015
Rivanna River Bridge & Retaining Wall Plans		146d	01-Apr-2015	27-Oct-2015
2.03.02.100	PREPARE & SUBMIT PRELIMINARY RIVANNA RIVER BRID	50d	01-Apr-2015	10-Jun-2015
2.03.02.110	VDOT/FHWA REVIEW/COMMENT BRIDGE PRELIMINARY	14d	11-Jun-2015	24-Jun-2015
2.03.02.105	Perform Scour Analysis for RIVANNA RESERVOIR DAM	35d	18-Jun-2015	06-Aug-2015
2.03.02.120	VDOT/FHWA APPROVE PRELIMINARY RIVANNA RIVER BI	0d		24-Jun-2015
2.03.02.130	PREPARE RIVANNA RIVER BRIDGE PLANS (1ST SUBMIS	30d	29-Jun-2015	10-Aug-2015
2.03.02.140	DESIGN QA/QC (1ST SUBMISSION)	5d	11-Aug-2015	15-Aug-2015
2.03.02.150	VDOT/FHWA REVIEW/COMMENT RIVANNA RIVER BRIDG	14d	17-Aug-2015	30-Aug-2015
2.03.02.160	SUBMIT BRIDGE PLANS (1ST SUBMISSION)	0d	17-Aug-2015	
2.03.02.170	PREPARE FINAL RIVANNA RIVER BRIDGE PLANS	25d	31-Aug-2015	05-Oct-2015
2.03.02.180	DESIGN QA/QC (FINAL SUBMISSION)	5d	06-Oct-2015	12-Oct-2015
2.03.02.190	SUBMIT FINAL BRIDGE PLANS	0d		12-Oct-2015
2.03.02.200	VDOT/FHWA REVIEW/COMMENT RIVANNA RIVER BRIDG	14d	13-Oct-2015	26-Oct-2015
2.03.02.210	FINAL BRIDGE PLANS APPROVED	0d	27-Oct-2015	
PUBLIC INVOLVEMENT		445d	04-Mar-2015	02-Dec-2016
Public Information Communications Plan		100d	04-Mar-2015	23-Jul-2015
3.01.100	Submit Emergency Contact List	0d	04-Mar-2015	
3.01.110	Develop Public Information Communiactions Plan (PICP)	60d	04-Mar-2015	27-May-2015
3.01.120	VDOT Review / Comment PICP	30d	28-May-2015	09-Jul-2015
3.01.130	Final Edits to PICP	5d	10-Jul-2015	16-Jul-2015
3.01.140	Review / Approve PICP	5d	17-Jul-2015	23-Jul-2015
Public Involvement Meetings		338d	04-Aug-2015	02-Dec-2016
3.02.100	Hold Preconstruction Project Stakeholder Mtg	0d	04-Aug-2015	
3.02.110	Hold Citizens Information Mtg 1	0d	08-Sep-2015	
3.02.120	Hold Citizens Information Mtg 2	0d	13-Oct-2015	
3.02.130	Continuing Public Involvement	289d	13-Oct-2015	02-Dec-2016



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

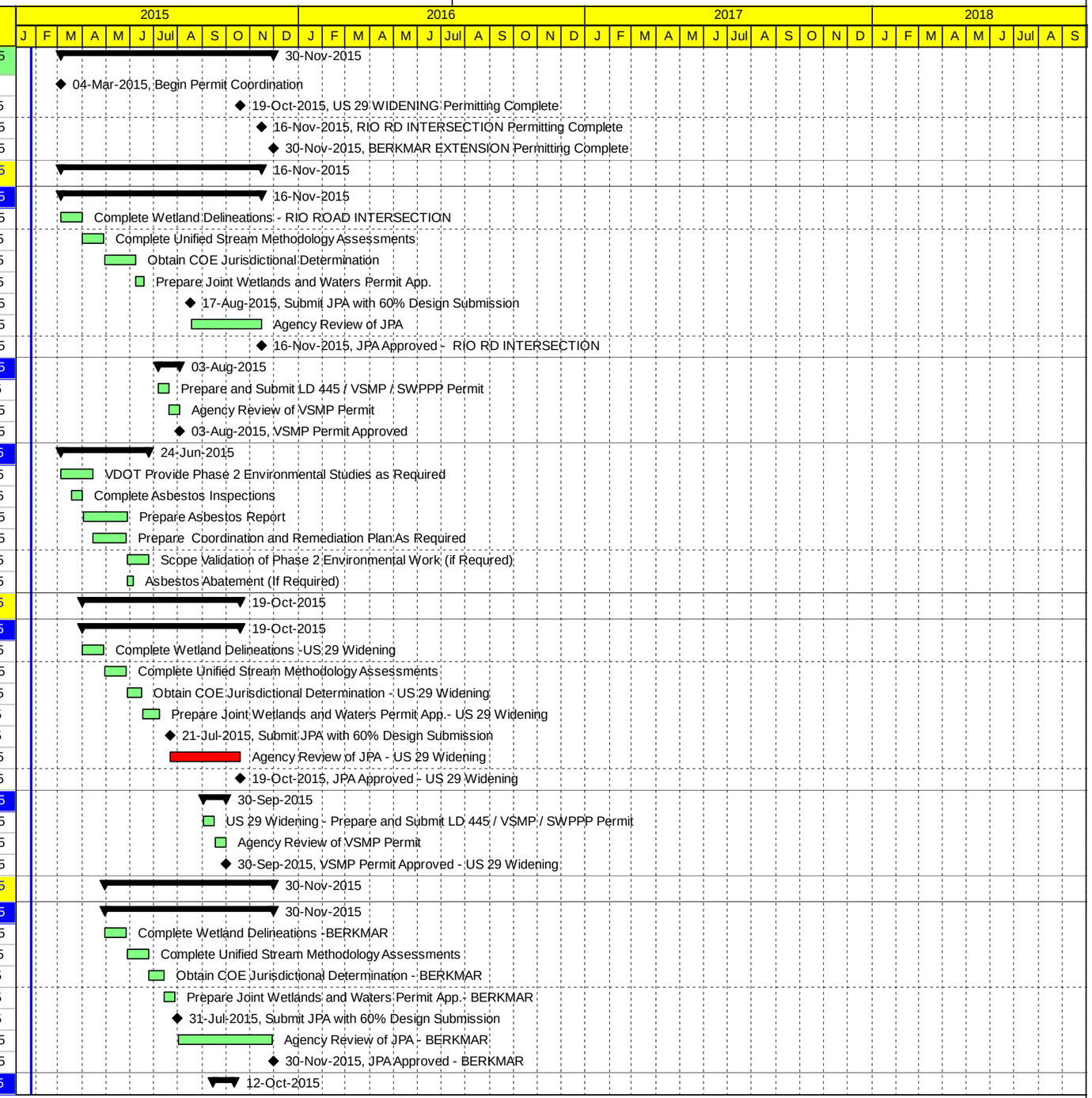
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
PERMITTING		188d	04-Mar-2015	30-Nov-2015
4.100	Begin Permit Coordination	0d	04-Mar-2015	
4.120	US 29 WIDENING Permitting Complete	0d		19-Oct-2015
4.110	RIO RD INTERSECTION Permitting Complete	0d		16-Nov-2015
4.130	BERKMAR EXTENSION Permitting Complete	0d		30-Nov-2015
RIO ROAD GRADE SEPARATED INTERSECTION		180d	04-Mar-2015	16-Nov-2015
Joint Wetlands and Waters Permit (If Required)		180d	04-Mar-2015	16-Nov-2015
4.01.01.110	Complete Wetland Delineations - RIO ROAD INTERSECTIO	20d	04-Mar-2015	31-Mar-2015
4.01.01.120	Complete Unified Stream Methodology Assessments	20d	01-Apr-2015	28-Apr-2015
4.01.01.130	Obtain COE Jurisdictional Determination	40d	29-Apr-2015	07-Jun-2015
4.01.01.140	Prepare Joint Wetlands and Waters Permit App.	10d	08-Jun-2015	19-Jun-2015
4.01.01.150	Submit JPA with 60% Design Submission	0d		17-Aug-2015
4.01.01.160	Agency Review of JPA	90d	18-Aug-2015	15-Nov-2015
4.01.01.170	JPA Approved - RIO RD INTERSECTION	0d		16-Nov-2015
LD 445 / VSMP / SWPPP Permit		20d	07-Jul-2015	03-Aug-2015
4.01.02.100	Prepare and Submit LD 445 / VSMP / SWPPP Permit	10d	07-Jul-2015	20-Jul-2015
4.01.02.110	Agency Review of VSMP Permit	14d	21-Jul-2015	03-Aug-2015
4.01.02.120	VSMP Permit Approved	0d		03-Aug-2015
Hazardous Materials		80d	04-Mar-2015	24-Jun-2015
4.01.03.130	VDOT Provide Phase 2 Environmental Studies as Required	30d	04-Mar-2015	14-Apr-2015
4.01.03.100	Complete Asbestos Inspections	10d	19-Mar-2015	01-Apr-2015
4.01.03.110	Prepare Asbestos Report	40d	02-Apr-2015	28-May-2015
4.01.03.140	Prepare Coordination and Remediation Plan As Required	30d	15-Apr-2015	27-May-2015
4.01.03.150	Scope Validation of Phase 2 Environmental Work (if Requred)	20d	28-May-2015	24-Jun-2015
4.01.03.120	Asbestos Abatement (If Required)	5d	29-May-2015	04-Jun-2015
US 29 WIDENING		141d	01-Apr-2015	19-Oct-2015
Joint Wetlands and Waters Permit (If Required)		141d	01-Apr-2015	19-Oct-2015
4.02.01.100	Complete Wetland Delineations -US 29 Widening	20d	01-Apr-2015	28-Apr-2015
4.02.01.110	Complete Unified Stream Methodology Assessments	20d	29-Apr-2015	27-May-2015
4.02.01.120	Obtain COE Jurisdictional Determination - US 29 Widening	20d	28-May-2015	16-Jun-2015
4.02.01.130	Prepare Joint Wetlands and Waters Permit App.- US 29 Wide	15d	17-Jun-2015	08-Jul-2015
4.02.01.140	Submit JPA with 60% Design Submission	0d		21-Jul-2015
4.02.01.150	Agency Review of JPA - US 29 Widening	90d	22-Jul-2015	19-Oct-2015
4.02.01.160	JPA Approved - US 29 Widening	0d		19-Oct-2015
LD 445 / VSMP / SWPPP Permit		20d	02-Sep-2015	30-Sep-2015
4.02.02.100	US 29 Widening - Prepare and Submit LD 445 / VSMP / SWF	10d	02-Sep-2015	16-Sep-2015
4.02.02.110	Agency Review of VSMP Permit	14d	17-Sep-2015	30-Sep-2015
4.02.02.120	VSMP Permit Approved - US 29 Widening	0d		30-Sep-2015
BERKMAR DRIVE EXTENSION		148d	29-Apr-2015	30-Nov-2015
Joint Wetlands and Waters Permit		148d	29-Apr-2015	30-Nov-2015
4.03.01.100	Complete Wetland Delineations -BERKMAR	20d	29-Apr-2015	27-May-2015
4.03.01.110	Complete Unified Stream Methodology Assessments	20d	28-May-2015	24-Jun-2015
4.03.01.120	Obtain COE Jurisdictional Determination - BERKMAR	20d	25-Jun-2015	14-Jul-2015
4.03.01.130	Prepare Joint Wetlands and Waters Permit App.- BERKMAR	10d	15-Jul-2015	28-Jul-2015
4.03.01.140	Submit JPA with 60% Design Submission	0d		31-Jul-2015
4.03.01.150	Agency Review of JPA - BERKMAR	120d	01-Aug-2015	28-Nov-2015
4.03.01.160	JPA Approved - BERKMAR	0d		30-Nov-2015
LD 445 / VSMP / SWPPP Permit		20d	15-Sep-2015	12-Oct-2015



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

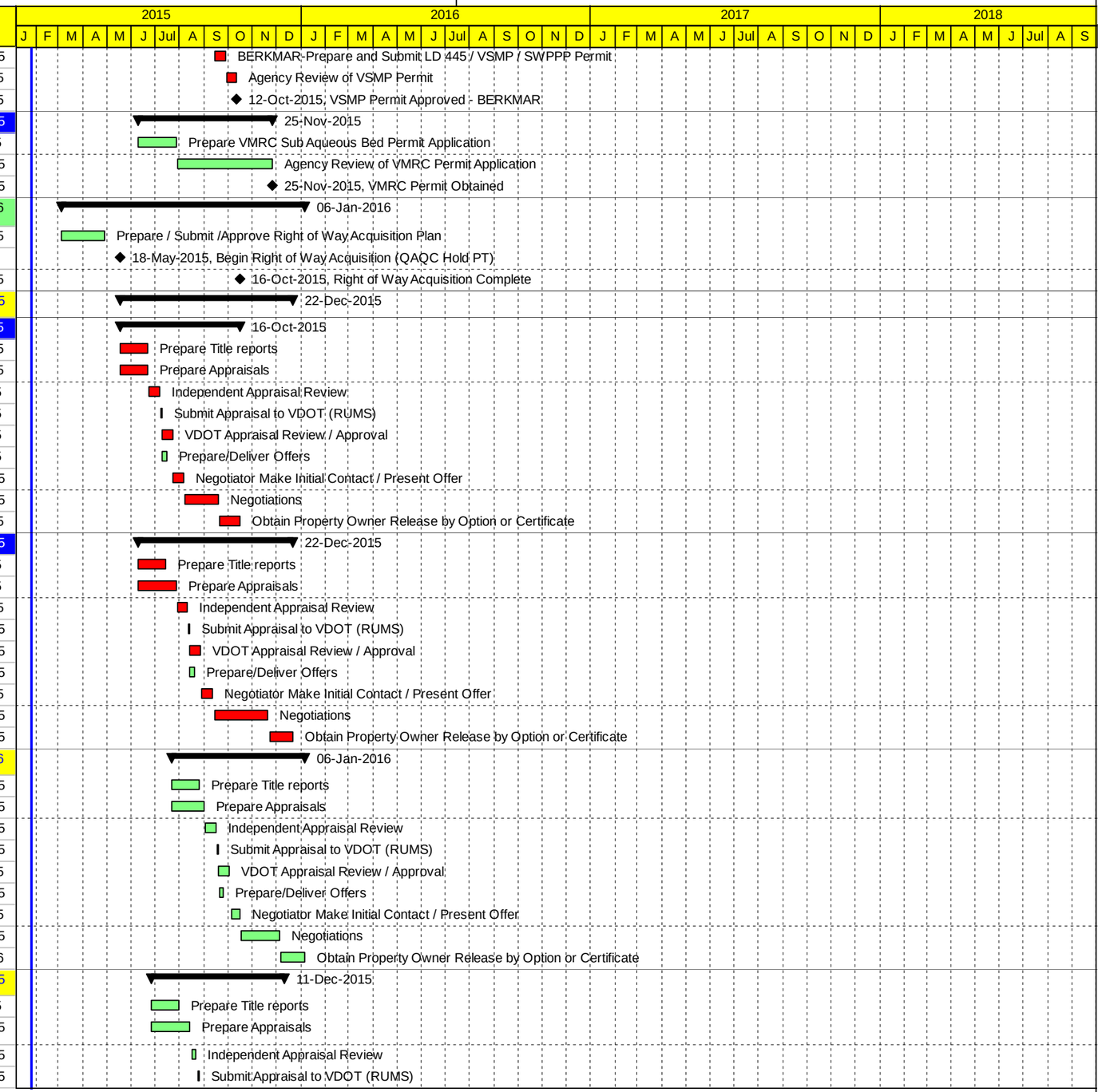
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
4.03.02.100	BERKMAR-Prepare and Submit LD 445 / VSMP / SWPPP Pe	10d	15-Sep-2015	28-Sep-2015
4.03.02.110	Agency Review of VSMP Permit	14d	29-Sep-2015	12-Oct-2015
4.03.02.120	VSMP Permit Approved - BERKMAR	0d		12-Oct-2015
Virginia Marine Resources Commission Permit		120d	09-Jun-2015	25-Nov-2015
4.03.03.100	Prepare VMRC Sub Aqueous Bed Permit Application	35d	09-Jun-2015	28-Jul-2015
4.03.03.110	Agency Review of VMRC Permit Application	120d	29-Jul-2015	25-Nov-2015
4.03.03.120	VMRC Permit Obtained	0d		25-Nov-2015
RIGHT-OF-WAY ACQUISITIONS		213d	04-Mar-2015	06-Jan-2016
5.100	Prepare / Submit /Approve Right of Way Acquisition Plan	40d	04-Mar-2015	28-Apr-2015
5.105	Begin Right of Way Acquisition (QAQC Hold PT)	0d	18-May-2015	
5.110	Right of Way Acquisition Complete	0d		16-Oct-2015
RIO ROAD GRADE SEPARATED INTERSECTION		152d	18-May-2015	22-Dec-2015
RIO ROAD INTERSECTION CRITICAL PROPERTIES		107d	18-May-2015	16-Oct-2015
5.01.01.100	Prepare Title reports	25d	18-May-2015	22-Jun-2015
5.01.01.110	Prepare Appraisals	25d	18-May-2015	22-Jun-2015
5.01.01.120	Independent Appraisal Review	10d	23-Jun-2015	07-Jul-2015
5.01.01.125	Submit Appraisal to VDOT (RUMS)	2d	08-Jul-2015	09-Jul-2015
5.01.01.130	VDOT Appraisal Review / Approval	14d	10-Jul-2015	23-Jul-2015
5.01.01.140	Prepare/Deliver Offers	5d	10-Jul-2015	16-Jul-2015
5.01.01.145	Negotiator Make Initial Contact / Present Offer	10d	24-Jul-2015	06-Aug-2015
5.01.01.150	Negotiations	30d	07-Aug-2015	18-Sep-2015
5.01.01.160	Obtain Property Owner Release by Option or Certificate	20d	21-Sep-2015	16-Oct-2015
RIO ROAD INTERSECTION REMAINDER of PROPERTIES		137d	09-Jun-2015	22-Dec-2015
5.01.02.100	Prepare Title reports	25d	09-Jun-2015	14-Jul-2015
5.01.02.110	Prepare Appraisals	35d	09-Jun-2015	28-Jul-2015
5.01.02.120	Independent Appraisal Review	10d	29-Jul-2015	11-Aug-2015
5.01.02.130	Submit Appraisal to VDOT (RUMS)	2d	12-Aug-2015	13-Aug-2015
5.01.02.140	VDOT Appraisal Review / Approval	14d	14-Aug-2015	27-Aug-2015
5.01.02.150	Prepare/Deliver Offers	5d	14-Aug-2015	20-Aug-2015
5.01.02.160	Negotiator Make Initial Contact / Present Offer	10d	28-Aug-2015	11-Sep-2015
5.01.02.170	Negotiations	50d	14-Sep-2015	20-Nov-2015
5.01.02.180	Obtain Property Owner Release by Option or Certificate	20d	23-Nov-2015	22-Dec-2015
US 29 WIDENING		115d	22-Jul-2015	06-Jan-2016
5.02.100	Prepare Title reports	25d	22-Jul-2015	25-Aug-2015
5.02.110	Prepare Appraisals	30d	22-Jul-2015	01-Sep-2015
5.02.120	Independent Appraisal Review	10d	02-Sep-2015	16-Sep-2015
5.02.130	Submit Appraisal to VDOT (RUMS)	2d	17-Sep-2015	18-Sep-2015
5.02.140	VDOT Appraisal Review / Approval	14d	19-Sep-2015	02-Oct-2015
5.02.150	Prepare/Deliver Offers	5d	21-Sep-2015	25-Sep-2015
5.02.160	Negotiator Make Initial Contact / Present Offer	10d	05-Oct-2015	16-Oct-2015
5.02.170	Negotiations	50d	17-Oct-2015	05-Dec-2015
5.02.180	Obtain Property Owner Release by Option or Certificate	20d	07-Dec-2015	06-Jan-2016
BERKMAR DRIVE EXTENSION		117d	26-Jun-2015	11-Dec-2015
5.03.100	Prepare Title reports	25d	26-Jun-2015	31-Jul-2015
5.03.110	Prepare Appraisals	35d	26-Jun-2015	14-Aug-2015
5.03.120	Independent Appraisal Review	5d	17-Aug-2015	21-Aug-2015
5.03.130	Submit Appraisal to VDOT (RUMS)	2d	24-Aug-2015	25-Aug-2015



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
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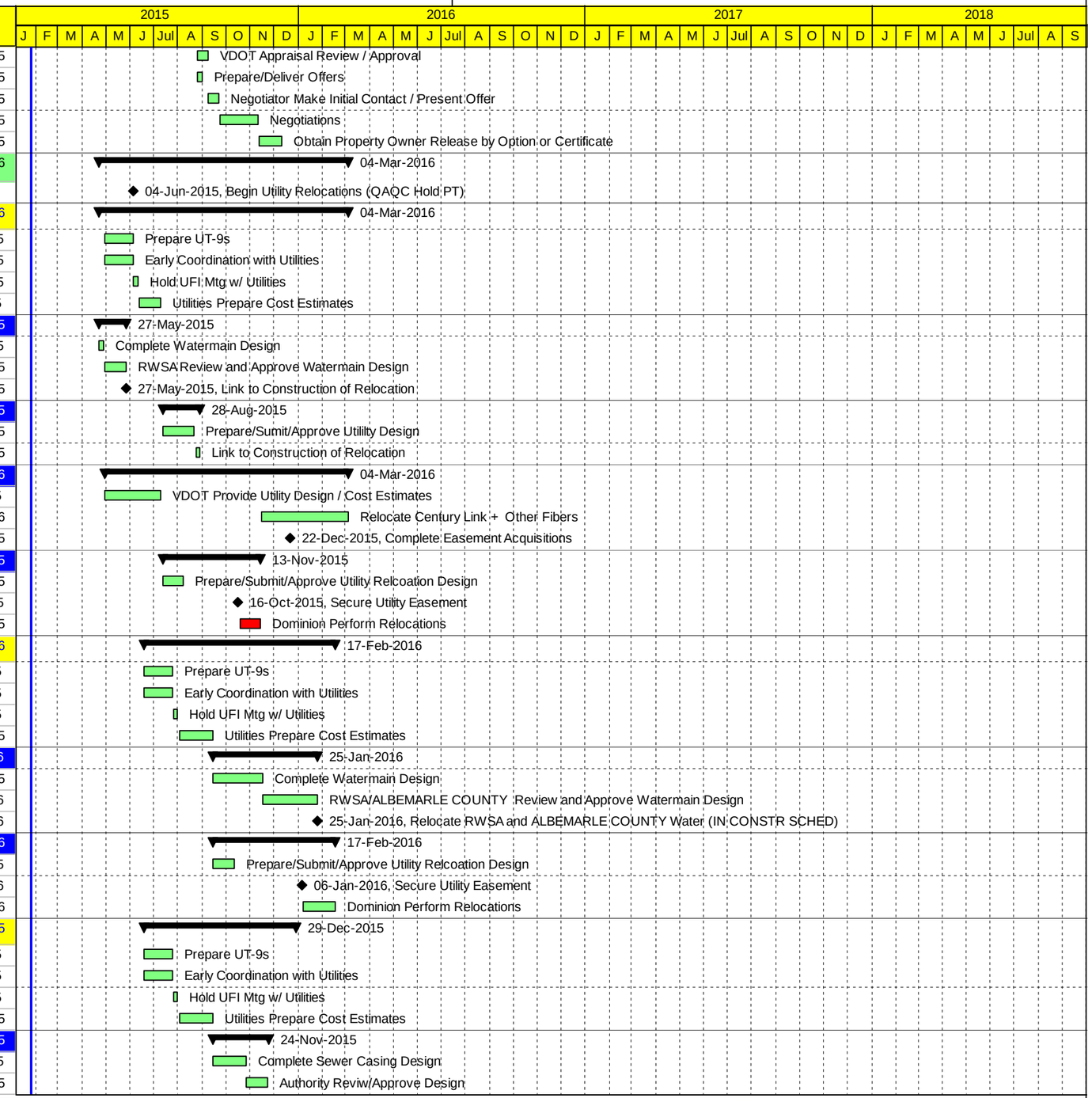
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
5.03.140	VDOT Appraisal Review / Approval	14d	26-Aug-2015	08-Sep-2015
5.03.150	Prepare/Deliver Offers	5d	26-Aug-2015	01-Sep-2015
5.03.160	Negotiator Make Initial Contact / Present Offer	10d	09-Sep-2015	22-Sep-2015
5.03.170	Negotiations	50d	23-Sep-2015	11-Nov-2015
5.03.180	Obtain Property Owner Release by Option or Certificate	20d	12-Nov-2015	11-Dec-2015
UTILITY RELOCATIONS		220d	22-Apr-2015	04-Mar-2016
6.100	Begin Utility Relocations (QAQC Hold PT)	0d	04-Jun-2015	
RIO ROAD INTERCHANGE		220d	22-Apr-2015	04-Mar-2016
6.01.100	Prepare UT-9s	25d	30-Apr-2015	04-Jun-2015
6.01.110	Early Coordination with Utilities	25d	30-Apr-2015	04-Jun-2015
6.01.120	Hold UFI Mtg w/ Utilities	5d	05-Jun-2015	11-Jun-2015
6.01.130	Utilities Prepare Cost Estimates	20d	12-Jun-2015	10-Jul-2015
RIVANNA WATER and SEWER AUTH. 18" and 24" WATERMAIN		25d	22-Apr-2015	27-May-2015
6.01.01.100	Complete Watermain Design	5d	22-Apr-2015	28-Apr-2015
6.01.01.110	RWSA Review and Approve Watermain Design	20d	29-Apr-2015	27-May-2015
6.01.01.120	Link to Construction of Relocation	0d		27-May-2015
CITY of CHARLOTTESVILLE GAS		35d	13-Jul-2015	28-Aug-2015
6.01.02.110	Prepare/Sumit/Approve Utililty Design	30d	13-Jul-2015	21-Aug-2015
6.01.02.120	Link to Construction of Relocation	5d	24-Aug-2015	28-Aug-2015
CENTURY LINK + OTHER FIBER PROVIDERS / SHARED USE DUCTBAN		214d	30-Apr-2015	04-Mar-2016
6.01.03.100	VDOT Provide Utility Design / Cost Estimates	50d	30-Apr-2015	10-Jul-2015
6.01.03.120	Relocate Century Link + Other Fibers	75d	16-Nov-2015	04-Mar-2016
6.01.03.110	Complete Easement Acquisitions	0d		22-Dec-2015
DOMINION VIRGINIA POWER (OVERHEAD)		89d	13-Jul-2015	13-Nov-2015
6.01.04.100	Prepare/Submit/Approve Utility Relcoation Design	20d	13-Jul-2015	07-Aug-2015
6.01.04.110	Secure Utility Easement	0d		16-Oct-2015
6.01.04.120	Dominion Perform Relocations	20d	19-Oct-2015	13-Nov-2015
US 29 WIDENING		167d	19-Jun-2015	17-Feb-2016
6.02.100	Prepare UT-9s	25d	19-Jun-2015	24-Jul-2015
6.02.110	Early Coordination with Utilities	25d	19-Jun-2015	24-Jul-2015
6.02.120	Hold UFI Mtg w/ Utilities	5d	27-Jul-2015	31-Jul-2015
6.02.130	Utilities Prepare Cost Estimates	30d	03-Aug-2015	14-Sep-2015
RIVANNA WATER and SEWER / ALBEMARLE COUNTY WATER		90d	15-Sep-2015	25-Jan-2016
6.02.01.100	Complete Watermain Design	45d	15-Sep-2015	16-Nov-2015
6.02.01.110	RWSA/ALBEMARLE COUNTY Review and Approve Waterr	45d	17-Nov-2015	25-Jan-2016
6.02.01.120	Relocate RWSA and ALBEMARLE COUNTY Water (IN CON	0d		25-Jan-2016
DOMINION VIRGINIA POWER		107d	15-Sep-2015	17-Feb-2016
6.02.02.100	Prepare/Submit/Approve Utility Relcoation Design	20d	15-Sep-2015	12-Oct-2015
6.02.02.110	Secure Utility Easement	0d		06-Jan-2016
6.02.02.120	Dominion Perform Relocations	30d	07-Jan-2016	17-Feb-2016
BERKMAR DRIVE EXTENSION		132d	19-Jun-2015	29-Dec-2015
6.03.100	Prepare UT-9s	25d	19-Jun-2015	24-Jul-2015
6.03.110	Early Coordination with Utilities	25d	19-Jun-2015	24-Jul-2015
6.03.120	Hold UFI Mtg w/ Utilities	5d	27-Jul-2015	31-Jul-2015
6.03.130	Utilities Prepare Cost Estimates	30d	03-Aug-2015	14-Sep-2015
8" SEWER		50d	15-Sep-2015	24-Nov-2015
6.03.01.100	Complete Sewer Casing Design	30d	15-Sep-2015	26-Oct-2015
6.03.01.110	Authority Reviw/Approve Design	20d	27-Oct-2015	23-Nov-2015



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

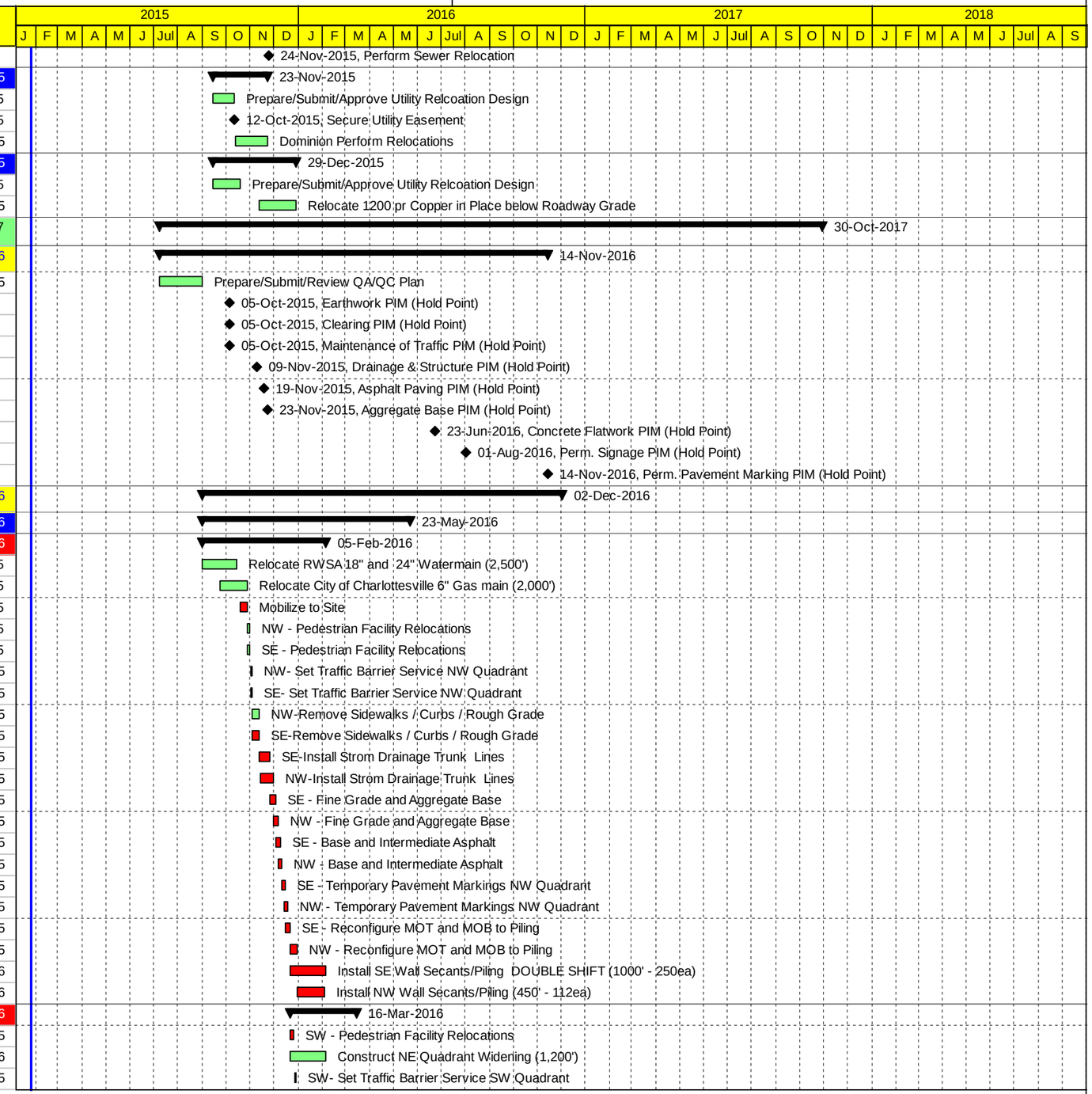
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
6.03.01.120	Perform Sewer Relocation	0d	24-Nov-2015	
DOMINION VIRGINIA POWER		50d	15-Sep-2015	23-Nov-2015
6.03.02.100	Prepare/Submit/Approve Utility Relcoation Design	20d	15-Sep-2015	12-Oct-2015
6.03.02.110	Secure Utility Easement	0d		12-Oct-2015
6.03.02.120	Dominion Perform Relocations	30d	13-Oct-2015	23-Nov-2015
CENTURYLINK UNDERGROUND		72d	15-Sep-2015	29-Dec-2015
6.03.03.100	Prepare/Submit/Approve Utility Relcoation Design	25d	15-Sep-2015	19-Oct-2015
6.03.03.110	Relocate 1200 pr Copper in Place below Roadway Grade	30d	12-Nov-2015	29-Dec-2015
CONSTRUCTION		587d	08-Jul-2015	30-Oct-2017
QA/QC Planning and Coordination		344d	08-Jul-2015	14-Nov-2016
7.01.100	Prepare/Submit/Review QA/QC Plan	40d	08-Jul-2015	01-Sep-2015
7.01.110	Earthwork PIM (Hold Point)	0d	05-Oct-2015	
7.01.150	Clearing PIM (Hold Point)	0d	05-Oct-2015	
7.01.200	Maintenance of Traffic PIM (Hold Point)	0d	05-Oct-2015	
7.01.105	Drainage & Structure PIM (Hold Point)	0d	09-Nov-2015	
7.01.140	Asphalt Paving PIM (Hold Point)	0d	19-Nov-2015	
7.01.120	Aggregate Base PIM (Hold Point)	0d	23-Nov-2015	
7.01.160	Concrete Flatwork PIM (Hold Point)	0d	23-Jun-2016	
7.01.180	Perm. Signage PIM (Hold Point)	0d	01-Aug-2016	
7.01.190	Perm. Pavement Marking PIM (Hold Point)	0d	14-Nov-2016	
RIO ROAD GRADE SEPARATED INTERSECTION		317d	01-Sep-2015	02-Dec-2016
PHASE 1 - ALL WORK PRIOR TO 103 DAY CLOSURE PERIOD		183d	01-Sep-2015	23-May-2016
Stage 1 - RTE 29 NW and SE QUANDRANTS		106d	01-Sep-2015	05-Feb-2016
6.01.01.140	Relocate RWSA 18" and 24" Watermain (2,500')	30d	01-Sep-2015	14-Oct-2015
6.01.02.140	Relocate City of Charlottesville 6" Gas main (2,000')	25d	23-Sep-2015	28-Oct-2015
7.02.01.01.100	Mobilize to Site	8d	19-Oct-2015	28-Oct-2015
7.02.01.01.120	NW - Pedestrian Facility Relocations	5d	28-Oct-2015	31-Oct-2015
7.02.01.01.180	SE - Pedestrian Facility Relocations	5d	28-Oct-2015	31-Oct-2015
7.02.01.01.125	NW- Set Traffic Barrier Service NW Quadrant	2d	02-Nov-2015	03-Nov-2015
7.02.01.01.135	SE- Set Traffic Barrier Service NW Quadrant	2d	02-Nov-2015	03-Nov-2015
7.02.01.01.130	NW-Remove Sidewalks / Curbs / Rough Grade	15d	03-Nov-2015	12-Nov-2015
7.02.01.01.190	SE-Remove Sidewalks / Curbs / Rough Grade	15d	03-Nov-2015	12-Nov-2015
7.02.01.01.210	SE-Install Strom Drainage Trunk Lines	20d	12-Nov-2015	25-Nov-2015
7.02.01.01.140	NW-Install Strom Drainage Trunk Lines	21d	13-Nov-2015	30-Nov-2015
7.02.01.01.220	SE - Fine Grade and Aggregate Base	10d	25-Nov-2015	04-Dec-2015
7.02.01.01.150	NW - Fine Grade and Aggregate Base	10d	30-Nov-2015	07-Dec-2015
7.02.01.01.230	SE - Base and Intermediate Asphalt	5d	04-Dec-2015	10-Dec-2015
7.02.01.01.160	NW - Base and Intermediate Asphalt	5d	07-Dec-2015	11-Dec-2015
7.02.01.01.240	SE - Temporary Pavement Markings NW Quadrant	3d	11-Dec-2015	15-Dec-2015
7.02.01.01.170	NW - Temporary Pavement Markings NW Quadrant	5d	14-Dec-2015	18-Dec-2015
7.02.01.01.310	SE - Reconfigure MOT and MOB to Piling	5d	16-Dec-2015	22-Dec-2015
7.02.01.01.300	NW - Reconfigure MOT and MOB to Piling	6d	21-Dec-2015	30-Dec-2015
7.02.01.01.500	Install SE Wall Secants/Piling DOUBLE SHIFT (1000' - 250e	65d	22-Dec-2015	05-Feb-2016
7.02.01.01.400	Install NW Wall Secants/Piling (450' - 112ea)	25d	31-Dec-2015	04-Feb-2016
Stage 2 - RTE 29 NE and SW QUANDRANTS		57d	22-Dec-2015	16-Mar-2016
7.02.01.01.200	SW - Pedestrian Facility Relocations	5d	22-Dec-2015	26-Dec-2015
7.02.01.02.110	Construct NE Quadrant Widening (1,200')	65d	22-Dec-2015	05-Feb-2016
7.02.01.01.145	SW- Set Traffic Barrier Service SW Quadrant	2d	28-Dec-2015	29-Dec-2015



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

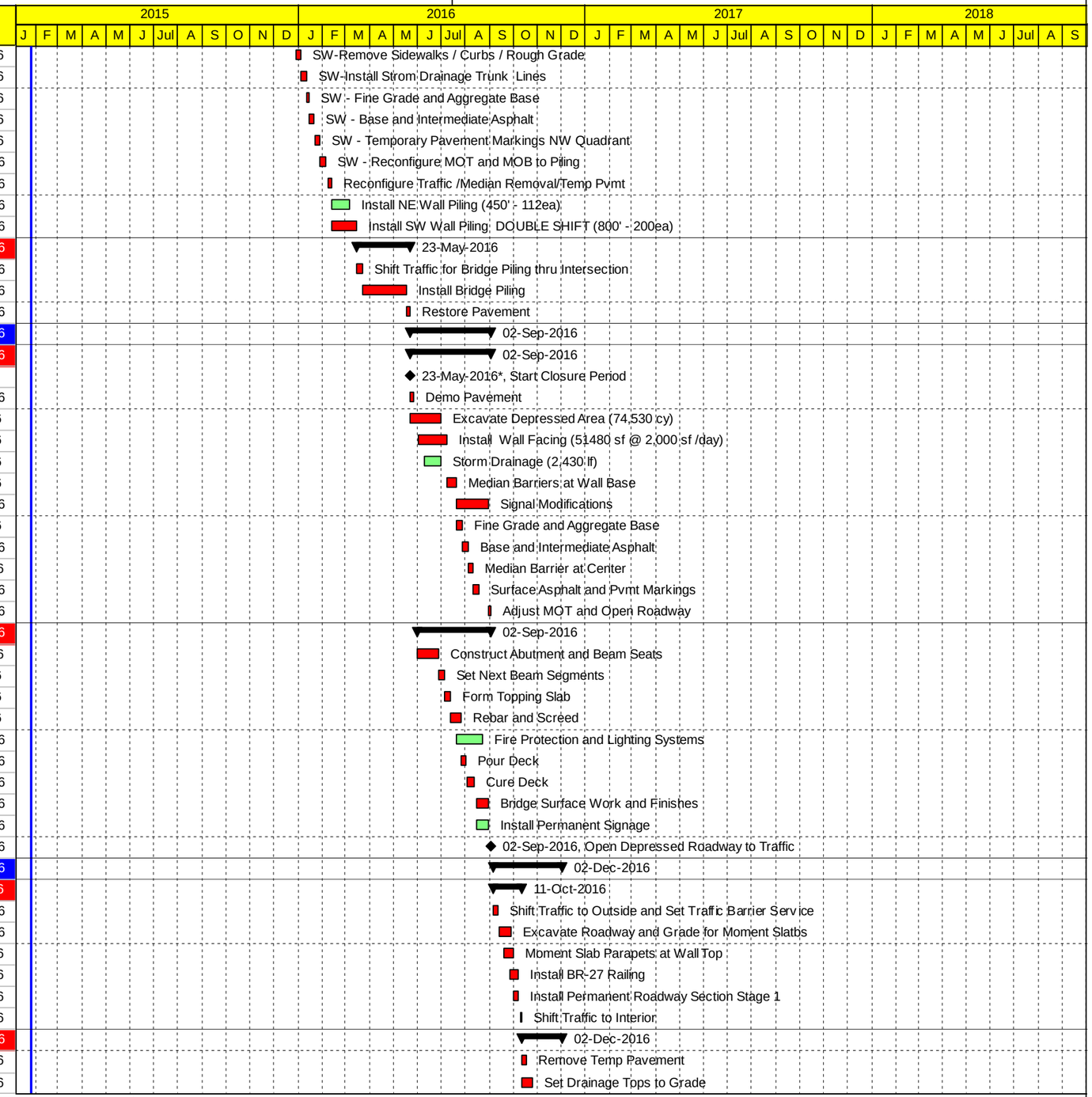
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.02.01.01.250	SW-Remove Sidewalks / Curbs / Rough Grade	8d	29-Dec-2015	05-Jan-2016
7.02.01.01.260	SW-Install Strom Drainage Trunk Lines	12d	05-Jan-2016	12-Jan-2016
7.02.01.01.270	SW - Fine Grade and Aggregate Base	5d	12-Jan-2016	15-Jan-2016
7.02.01.01.280	SW - Base and Intermediate Asphalt	5d	15-Jan-2016	21-Jan-2016
7.02.01.01.290	SW - Temporary Pavement Markings NW Quadrant	5d	22-Jan-2016	28-Jan-2016
7.02.01.01.320	SW - Reconfigure MOT and MOB to Piling	6d	29-Jan-2016	05-Feb-2016
7.02.01.02.120	Reconfigure Traffic /Median Removal/Temp Pvmt	5d	08-Feb-2016	12-Feb-2016
7.02.01.02.130	Install NE Wall Piling (450' - 112ea)	35d	12-Feb-2016	07-Mar-2016
7.02.01.02.140	Install SW Wall Piling DOUBLE SHIFT (800' - 200ea)	50d	12-Feb-2016	16-Mar-2016
Stage 3 - BRIDGE ABUTMENT PILING / WALLS		**49d**	**16-Mar-2016**	**23-May-2016**
7.02.01.03.100	Shift Traffic for Bridge Piling thru Intersection	5d	16-Mar-2016	22-Mar-2016
7.02.01.03.105	Install Bridge Piling	40d	23-Mar-2016	17-May-2016
7.02.01.03.110	Restore Pavement	4d	18-May-2016	23-May-2016
PHASE 2 - 103 CLOSURE PERIOD (MAY 23, 2016 thru SEPT 2, 2016)		**73d**	**23-May-2016**	**02-Sep-2016**
PHASE 2 - DEPRESSED ROADWAY ITEMS		**73d**	**23-May-2016**	**02-Sep-2016**
7.02.02.01.100	Start Closure Period	0d	23-May-2016*	
7.02.02.01.110	Demo Pavement	5d	23-May-2016	27-May-2016
7.02.02.01.120	Excavate Depressed Area (74,530 cy)	60d	23-May-2016	01-Jul-2016
7.02.02.01.140	Install Wall Facing (51480 sf @ 2,000 sf /day)	55d	02-Jun-2016	08-Jul-2016
7.02.02.01.130	Storm Drainage (2,430 lf)	15d	10-Jun-2016	01-Jul-2016
7.02.02.01.170	Median Barriers at Wall Base	8d	08-Jul-2016	20-Jul-2016
7.02.02.01.220	Signal Modifications	30d	20-Jul-2016	30-Aug-2016
7.02.02.01.150	Fine Grade and Aggregate Base	6d	20-Jul-2016	28-Jul-2016
7.02.02.01.160	Base and Intermediate Asphalt	5d	28-Jul-2016	04-Aug-2016
7.02.02.01.190	Median Barrier at Center	5d	04-Aug-2016	11-Aug-2016
7.02.02.01.200	Surface Asphalt and Pvmt Markings	5d	11-Aug-2016	18-Aug-2016
7.02.02.01.210	Adjust MOT and Open Roadway	3d	31-Aug-2016	02-Sep-2016
PHASE 2 - BRIDGE ITEMS		**68d**	**31-May-2016**	**02-Sep-2016**
7.02.02.02.100	Construct Abutment and Beam Seats	20d	31-May-2016	27-Jun-2016
7.02.02.02.110	Set Next Beam Segments	5d	28-Jun-2016	05-Jul-2016
7.02.02.02.120	Form Topping Slab	5d	06-Jul-2016	12-Jul-2016
7.02.02.02.130	Rebar and Screed	10d	13-Jul-2016	26-Jul-2016
7.02.02.02.160	Fire Protection and Lighting Systems	25d	20-Jul-2016	23-Aug-2016
7.02.02.02.140	Pour Deck	5d	27-Jul-2016	02-Aug-2016
7.02.02.02.150	Cure Deck	8d	03-Aug-2016	12-Aug-2016
7.02.02.02.170	Bridge Surface Work and Finishes	12d	15-Aug-2016	30-Aug-2016
7.02.02.02.175	Install Permanent Signage	12d	15-Aug-2016	30-Aug-2016
7.02.02.02.180	Open Depressed Roadway to Traffic	0d		02-Sep-2016
PHASE 3 - ALL WORK FOLLOWING 103 CLOSURE PERIOD		**62d**	**06-Sep-2016**	**02-Dec-2016**
Stage 1 - COMPLETE WORK at INTERIOR of INTERSECTION		**26d**	**06-Sep-2016**	**11-Oct-2016**
7.02.03.01.100	Shift Traffic to Outside and Set Traffic Barrier Service	5d	06-Sep-2016	12-Sep-2016
7.02.03.01.110	Excavate Roadway and Grade for Moment Slatbs	12d	13-Sep-2016	28-Sep-2016
7.02.03.01.130	Moment Slab Parapets at Wall Top	20d	19-Sep-2016	01-Oct-2016
7.02.03.01.140	Install BR-27 Railing	20d	26-Sep-2016	07-Oct-2016
7.02.03.01.150	Install Permanent Roadway Section Stage 1	10d	01-Oct-2016	07-Oct-2016
7.02.03.01.160	Shift Traffic to Interior	2d	10-Oct-2016	11-Oct-2016
Stage 2 - COMPLETE OUTSIDE WORK		**36d**	**12-Oct-2016**	**02-Dec-2016**
7.02.03.02.100	Remove Temp Pavement	5d	12-Oct-2016	18-Oct-2016
7.02.03.02.110	Set Drainage Tops to Grade	10d	12-Oct-2016	25-Oct-2016



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

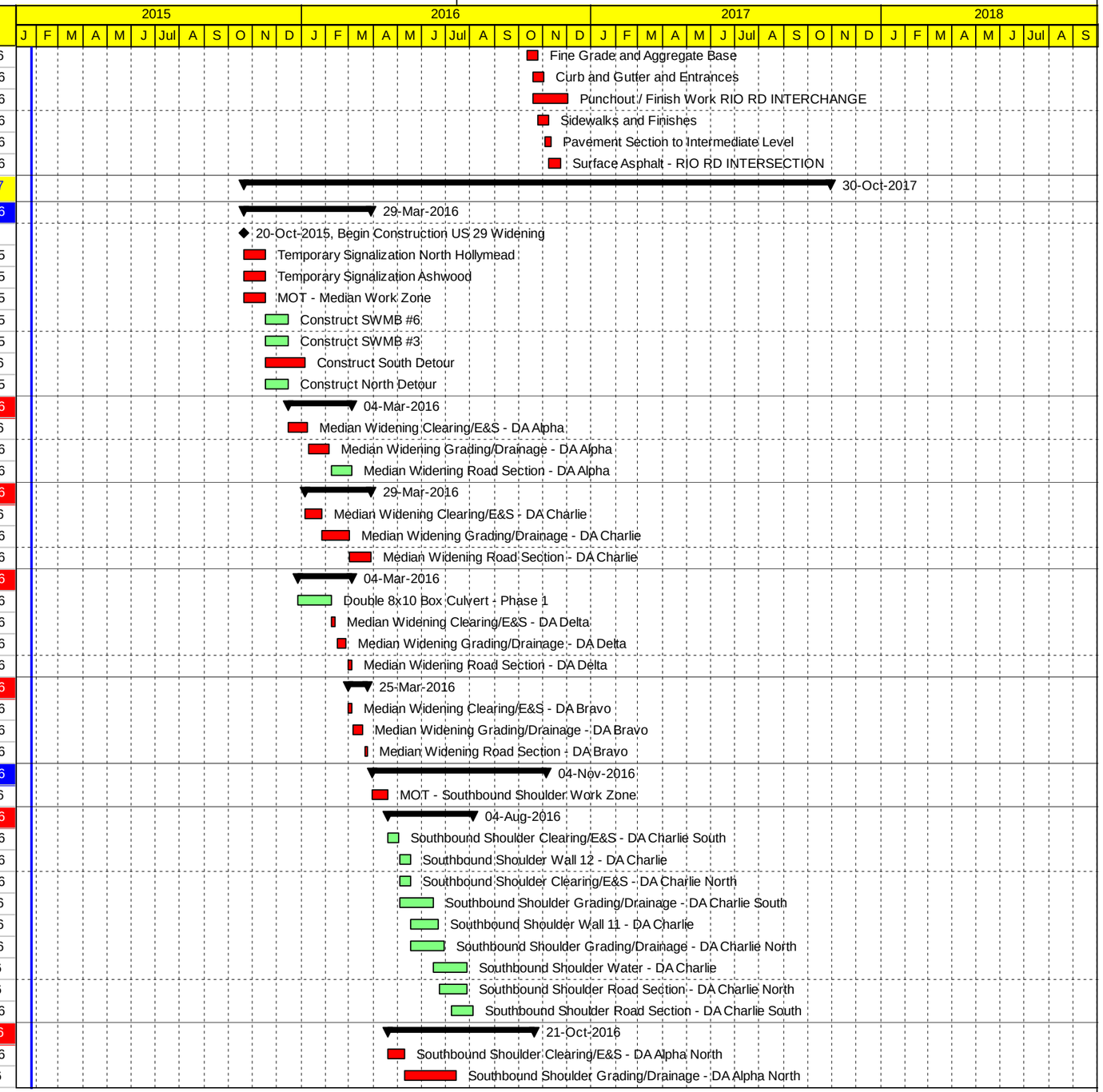
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.02.03.02.120	Fine Grade and Aggregate Base	10d	12-Oct-2016	25-Oct-2016
7.02.03.02.130	Curb and Gutter and Entrances	10d	19-Oct-2016	01-Nov-2016
7.02.03.02.170	Punchout / Finish Work RIO RD INTERCHANGE	30d	20-Oct-2016	02-Dec-2016
7.02.03.02.140	Sidewalks and Finishes	10d	26-Oct-2016	08-Nov-2016
7.02.03.02.150	Pavement Section to Intermediate Level	12d	04-Nov-2016	11-Nov-2016
7.02.03.02.160	Surface Asphalt - RIO RD INTERSECTION	12d	08-Nov-2016	23-Nov-2016
RTE 29 WIDENING		514d	20-Oct-2015	30-Oct-2017
PHASE 1 A DETOURS AND MEDIAN WIDENING		111d	20-Oct-2015	29-Mar-2016
7.03.01.100	Begin Construction US 29 Widening	0d	20-Oct-2015	
7.03.01.110	Temporary Signalization North Hollymead	20d	20-Oct-2015	16-Nov-2015
7.03.01.120	Temporary Signalization Ashwood	20d	20-Oct-2015	16-Nov-2015
7.03.01.130	MOT - Median Work Zone	20d	20-Oct-2015	16-Nov-2015
7.03.01.140	Construct SWMB #6	15d	16-Nov-2015	15-Dec-2015
7.03.01.150	Construct SWMB #3	15d	16-Nov-2015	15-Dec-2015
7.03.01.160	Construct South Detour	25d	16-Nov-2015	05-Jan-2016
7.03.01.170	Construct North Detour	15d	16-Nov-2015	15-Dec-2015
DRAINAGE AREA ALPHA		55d	16-Dec-2015	04-Mar-2016
7.03.01.01.100	Median Widening Clearing/E&S - DA Alpha	15d	16-Dec-2015	08-Jan-2016
7.03.01.01.110	Median Widening Grading/Drainage - DA Alpha	20d	11-Jan-2016	05-Feb-2016
7.03.01.01.120	Median Widening Road Section - DA Alpha	20d	08-Feb-2016	04-Mar-2016
DRAINAGE AREA CHARLIE		60d	06-Jan-2016	29-Mar-2016
7.03.01.02.100	Median Widening Clearing/E&S - DA Charlie	15d	06-Jan-2016	26-Jan-2016
7.03.01.02.110	Median Widening Grading/Drainage - DA Charlie	25d	27-Jan-2016	01-Mar-2016
7.03.01.02.120	Median Widening Road Section - DA Charlie	20d	02-Mar-2016	29-Mar-2016
DRAINAGE AREA DELTA		49d	28-Dec-2015	04-Mar-2016
7.03.01.03.130	Double 8x10 Box Culvert - Phase 1	30d	28-Dec-2015	08-Feb-2016
7.03.01.03.100	Median Widening Clearing/E&S - DA Delta	5d	08-Feb-2016	12-Feb-2016
7.03.01.03.110	Median Widening Grading/Drainage - DA Delta	10d	15-Feb-2016	26-Feb-2016
7.03.01.03.120	Median Widening Road Section - DA Delta	5d	29-Feb-2016	04-Mar-2016
DRAINAGE AREA BRAVO		20d	29-Feb-2016	25-Mar-2016
7.03.01.04.100	Median Widening Clearing/E&S - DA Bravo	5d	29-Feb-2016	04-Mar-2016
7.03.01.04.110	Median Widening Grading/Drainage - DA Bravo	10d	07-Mar-2016	18-Mar-2016
7.03.01.04.120	Median Widening Road Section - DA Bravo	5d	21-Mar-2016	25-Mar-2016
PHASE 1 B SOUTHBOUND SHOULDER WIDENING		155d	30-Mar-2016	04-Nov-2016
7.03.02.100	MOT - Southbound Shoulder Work Zone	15d	30-Mar-2016	19-Apr-2016
DRAINAGE AREA CHARLIE		75d	20-Apr-2016	04-Aug-2016
7.03.02.01.100	Southbound Shoulder Clearing/E&S - DA Charlie South	10d	20-Apr-2016	03-May-2016
7.03.02.01.110	Southbound Shoulder Wall 12 - DA Charlie	10d	04-May-2016	17-May-2016
7.03.02.01.130	Southbound Shoulder Clearing/E&S - DA Charlie North	10d	04-May-2016	17-May-2016
7.03.02.01.150	Southbound Shoulder Grading/Drainage - DA Charlie South	30d	04-May-2016	15-Jun-2016
7.03.02.01.120	Southbound Shoulder Wall 11 - DA Charlie	25d	18-May-2016	22-Jun-2016
7.03.02.01.140	Southbound Shoulder Grading/Drainage - DA Charlie North	30d	18-May-2016	29-Jun-2016
7.03.02.01.160	Southbound Shoulder Water - DA Charlie	30d	16-Jun-2016	28-Jul-2016
7.03.02.01.170	Southbound Shoulder Road Section - DA Charlie North	25d	23-Jun-2016	28-Jul-2016
7.03.02.01.180	Southbound Shoulder Road Section - DA Charlie South	20d	08-Jul-2016	04-Aug-2016
DRAINAGE AREA ALPHA		130d	20-Apr-2016	21-Oct-2016
7.03.02.02.100	Southbound Shoulder Clearing/E&S - DA Alpha North	15d	20-Apr-2016	10-May-2016
7.03.02.02.110	Southbound Shoulder Grading/Drainage - DA Alpha North	45d	11-May-2016	14-Jul-2016



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

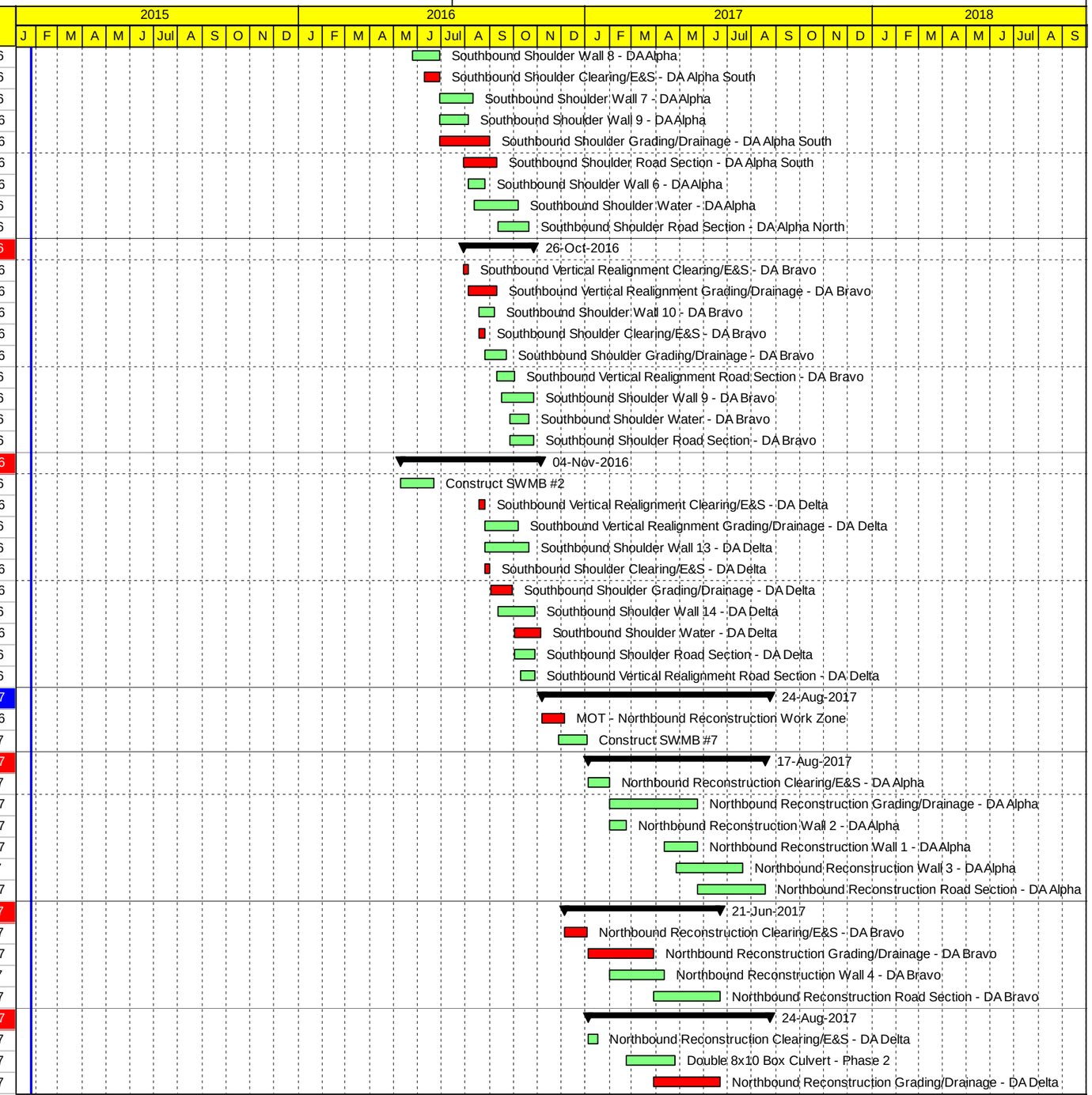
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.03.02.02.120	Southbound Shoulder Wall 8 - DA Alpha	25d	25-May-2016	29-Jun-2016
7.03.02.02.150	Southbound Shoulder Clearing/E&S - DA Alpha South	15d	09-Jun-2016	29-Jun-2016
7.03.02.02.130	Southbound Shoulder Wall 7 - DA Alpha	30d	30-Jun-2016	11-Aug-2016
7.03.02.02.140	Southbound Shoulder Wall 9 - DA Alpha	25d	30-Jun-2016	04-Aug-2016
7.03.02.02.160	Southbound Shoulder Grading/Drainage - DA Alpha South	45d	30-Jun-2016	01-Sep-2016
7.03.02.02.190	Southbound Shoulder Road Section - DA Alpha South	30d	29-Jul-2016	09-Sep-2016
7.03.02.02.170	Southbound Shoulder Wall 6 - DA Alpha	15d	05-Aug-2016	25-Aug-2016
7.03.02.02.180	Southbound Shoulder Water - DA Alpha	40d	12-Aug-2016	07-Oct-2016
7.03.02.02.200	Southbound Shoulder Road Section - DA Alpha North	30d	12-Sep-2016	21-Oct-2016
DRAINAGE AREA BRAVO		**63d**	**29-Jul-2016**	**26-Oct-2016**
7.03.02.03.100	Southbound Vertical Realignment Clearing/E&S - DA Bravo	5d	29-Jul-2016	04-Aug-2016
7.03.02.03.110	Southbound Vertical Realignment Grading/Drainage - DA Bra	25d	05-Aug-2016	09-Sep-2016
7.03.02.03.120	Southbound Shoulder Wall 10 - DA Bravo	10d	18-Aug-2016	07-Sep-2016
7.03.02.03.140	Southbound Shoulder Clearing/E&S - DA Bravo	5d	19-Aug-2016	25-Aug-2016
7.03.02.03.150	Southbound Shoulder Grading/Drainage - DA Bravo	15d	25-Aug-2016	22-Sep-2016
7.03.02.03.130	Southbound Vertical Realignment Road Section - DA Bravo	15d	09-Sep-2016	03-Oct-2016
7.03.02.03.160	Southbound Shoulder Wall 9 - DA Bravo	25d	16-Sep-2016	26-Oct-2016
7.03.02.03.170	Southbound Shoulder Water - DA Bravo	20d	26-Sep-2016	21-Oct-2016
7.03.02.03.180	Southbound Shoulder Road Section - DA Bravo	20d	26-Sep-2016	26-Oct-2016
DRAINAGE AREA DELTA		**125d**	**11-May-2016**	**04-Nov-2016**
7.03.02.04.100	Construct SWMB #2	30d	11-May-2016	22-Jun-2016
7.03.02.04.110	Southbound Vertical Realignment Clearing/E&S - DA Delta	5d	19-Aug-2016	25-Aug-2016
7.03.02.04.120	Southbound Vertical Realignment Grading/Drainage - DA Del	30d	26-Aug-2016	07-Oct-2016
7.03.02.04.130	Southbound Shoulder Wall 13 - DA Delta	40d	26-Aug-2016	21-Oct-2016
7.03.02.04.150	Southbound Shoulder Clearing/E&S - DA Delta	5d	26-Aug-2016	01-Sep-2016
7.03.02.04.160	Southbound Shoulder Grading/Drainage - DA Delta	20d	02-Sep-2016	30-Sep-2016
7.03.02.04.170	Southbound Shoulder Wall 14 - DA Delta	35d	12-Sep-2016	28-Oct-2016
7.03.02.04.180	Southbound Shoulder Water - DA Delta	25d	03-Oct-2016	04-Nov-2016
7.03.02.04.190	Southbound Shoulder Road Section - DA Delta	20d	03-Oct-2016	28-Oct-2016
7.03.02.04.140	Southbound Vertical Realignment Road Section - DA Delta	15d	10-Oct-2016	28-Oct-2016
PHASE 2 NORTHBOUND RE-CONSTRUCTION		**202d**	**07-Nov-2016**	**24-Aug-2017**
7.03.03.100	MOT - Northbound Reconstruction Work Zone	15d	07-Nov-2016	05-Dec-2016
7.03.03.110	Construct SWMB #7	20d	28-Nov-2016	03-Jan-2017
DRAINAGE AREA ALPHA		**160d**	**04-Jan-2017**	**17-Aug-2017**
7.03.03.01.100	Northbound Reconstruction Clearing/E&S - DA Alpha	20d	04-Jan-2017	31-Jan-2017
7.03.03.01.110	Northbound Reconstruction Grading/Drainage - DA Alpha	80d	01-Feb-2017	23-May-2017
7.03.03.01.120	Northbound Reconstruction Wall 2 - DA Alpha	15d	01-Feb-2017	21-Feb-2017
7.03.03.01.130	Northbound Reconstruction Wall 1 - DA Alpha	30d	12-Apr-2017	23-May-2017
7.03.03.01.140	Northbound Reconstruction Wall 3 - DA Alpha	60d	26-Apr-2017	20-Jul-2017
7.03.03.01.150	Northbound Reconstruction Road Section - DA Alpha	60d	24-May-2017	17-Aug-2017
DRAINAGE AREA BRAVO		**138d**	**06-Dec-2016**	**21-Jun-2017**
7.03.03.02.100	Northbound Reconstruction Clearing/E&S - DA Bravo	15d	06-Dec-2016	03-Jan-2017
7.03.03.02.110	Northbound Reconstruction Grading/Drainage - DA Bravo	60d	04-Jan-2017	28-Mar-2017
7.03.03.02.120	Northbound Reconstruction Wall 4 - DA Bravo	50d	01-Feb-2017	11-Apr-2017
7.03.03.02.130	Northbound Reconstruction Road Section - DA Bravo	60d	29-Mar-2017	21-Jun-2017
DRAINAGE AREA DELTA		**165d**	**04-Jan-2017**	**24-Aug-2017**
7.03.03.03.100	Northbound Reconstruction Clearing/E&S - DA Delta	10d	04-Jan-2017	17-Jan-2017
7.03.03.03.110	Double 8x10 Box Culvert - Phase 2	45d	22-Feb-2017	25-Apr-2017
7.03.03.03.120	Northbound Reconstruction Grading/Drainage - DA Delta	60d	29-Mar-2017	21-Jun-2017



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

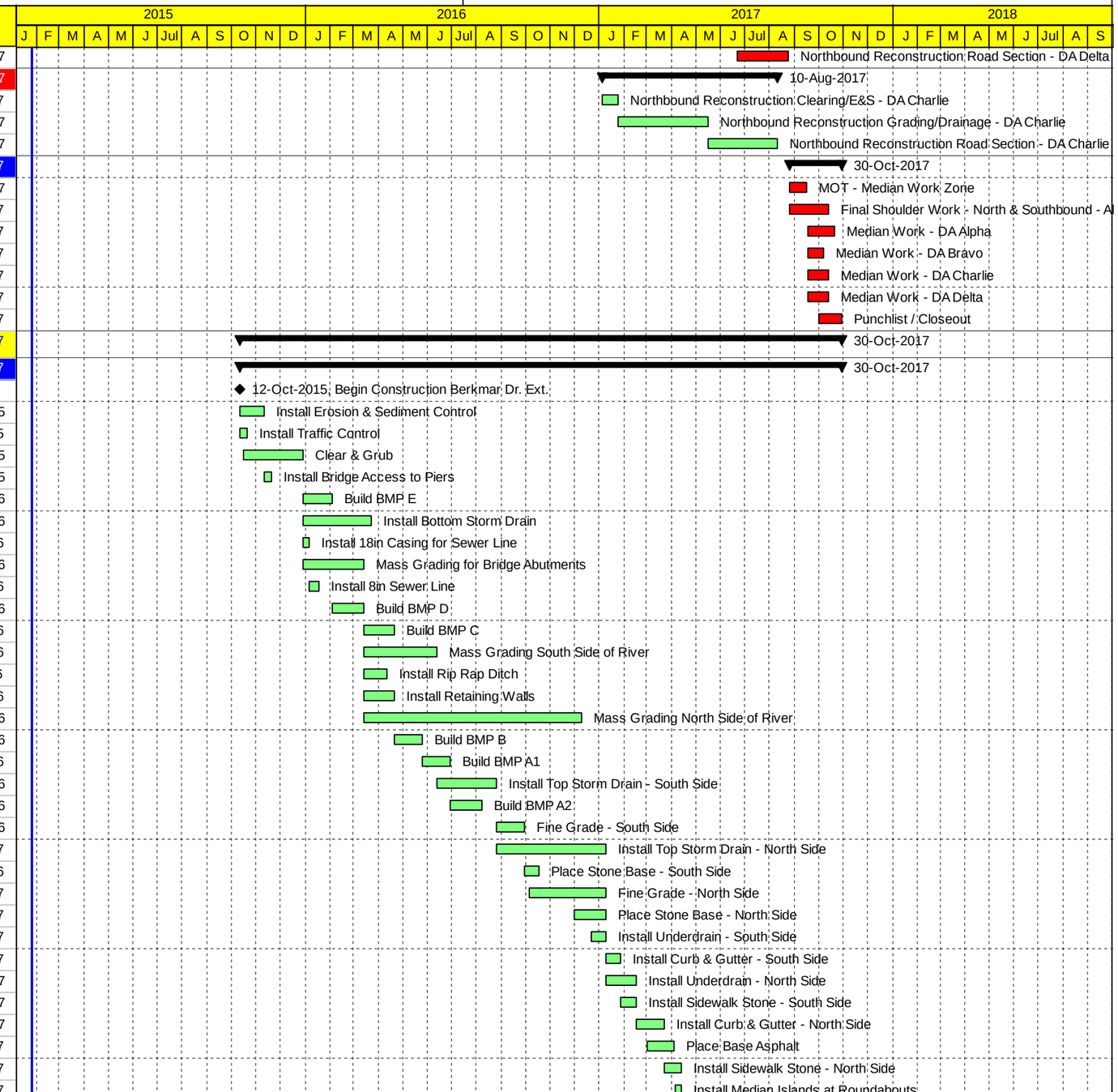
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.03.03.03.130	Northbound Reconstruction Road Section - DA Delta	45d	22-Jun-2017	24-Aug-2017
DRAINAGE AREA CHARLIE		**155d**	**04-Jan-2017**	**10-Aug-2017**
7.03.03.04.100	Northbound Reconstruction Clearing/E&S - DA Charlie	15d	04-Jan-2017	24-Jan-2017
7.03.03.04.110	Northbound Reconstruction Grading/Drainage - DA Charlie	80d	25-Jan-2017	16-May-2017
7.03.03.04.120	Northbound Reconstruction Road Section - DA Charlie	60d	17-May-2017	10-Aug-2017
PHASE 3 MEDIAN WORK		**46d**	**25-Aug-2017**	**30-Oct-2017**
7.03.04.100	MOT - Median Work Zone	15d	25-Aug-2017	15-Sep-2017
7.03.04.150	Final Shoulder Work - North & Southbound - All Drainage Are	35d	25-Aug-2017	13-Oct-2017
7.03.04.110	Median Work - DA Alpha	25d	18-Sep-2017	20-Oct-2017
7.03.04.120	Median Work - DA Bravo	15d	18-Sep-2017	06-Oct-2017
7.03.04.130	Median Work - DA Charlie	20d	18-Sep-2017	13-Oct-2017
7.03.04.140	Median Work - DA Delta	20d	18-Sep-2017	13-Oct-2017
7.03.04.160	Punchlist / Closeout	30d	01-Oct-2017	30-Oct-2017
BERKMAR DRIVE EXTENSION		**519d**	**12-Oct-2015**	**30-Oct-2017**
BERKMAR ROADWAY CONSTRUCTION		**519d**	**12-Oct-2015**	**30-Oct-2017**
7.04.01.100	Begin Construction Berkmar Dr. Ext.	0d	12-Oct-2015	
7.04.01.110	Install Erosion & Sediment Control	20d	12-Oct-2015	11-Nov-2015
7.04.01.120	Install Traffic Control	5d	12-Oct-2015	20-Oct-2015
7.04.01.130	Clear & Grub	40d	16-Oct-2015	29-Dec-2015
7.04.01.140	Install Bridge Access to Piers	5d	11-Nov-2015	20-Nov-2015
7.04.01.150	Build BMP E	20d	29-Dec-2015	04-Feb-2016
7.04.01.210	Install Bottom Storm Drain	45d	29-Dec-2015	23-Mar-2016
7.04.01.220	Install 18in Casing for Sewer Line	5d	29-Dec-2015	06-Jan-2016
7.04.01.240	Mass Grading for Bridge Abutments	40d	29-Dec-2015	14-Mar-2016
7.04.01.230	Install 8in Sewer Line	5d	06-Jan-2016	18-Jan-2016
7.04.01.160	Build BMP D	20d	04-Feb-2016	14-Mar-2016
7.04.01.170	Build BMP C	20d	14-Mar-2016	20-Apr-2016
7.04.01.250	Mass Grading South Side of River	50d	14-Mar-2016	13-Jun-2016
7.04.01.260	Install Rip Rap Ditch	15d	14-Mar-2016	11-Apr-2016
7.04.01.270	Install Retaining Walls	20d	14-Mar-2016	20-Apr-2016
7.04.01.510	Mass Grading North Side of River	150d	14-Mar-2016	09-Dec-2016
7.04.01.180	Build BMP B	20d	20-Apr-2016	25-May-2016
7.04.01.190	Build BMP A1	20d	25-May-2016	29-Jun-2016
7.04.01.280	Install Top Storm Drain - South Side	40d	13-Jun-2016	25-Aug-2016
7.04.01.200	Build BMP A2	20d	29-Jun-2016	08-Aug-2016
7.04.01.290	Fine Grade - South Side	20d	25-Aug-2016	29-Sep-2016
7.04.01.520	Install Top Storm Drain - North Side	75d	25-Aug-2016	09-Jan-2017
7.04.01.300	Place Stone Base - South Side	10d	29-Sep-2016	17-Oct-2016
7.04.01.530	Fine Grade - North Side	50d	06-Oct-2016	09-Jan-2017
7.04.01.540	Place Stone Base - North Side	20d	30-Nov-2016	09-Jan-2017
7.04.01.310	Install Underdrain - South Side	10d	21-Dec-2016	09-Jan-2017
7.04.01.320	Install Curb & Gutter - South Side	10d	09-Jan-2017	27-Jan-2017
7.04.01.550	Install Underdrain - North Side	20d	09-Jan-2017	16-Feb-2017
7.04.01.330	Install Sidewalk Stone - South Side	10d	27-Jan-2017	16-Feb-2017
7.04.01.560	Install Curb & Gutter - North Side	18d	16-Feb-2017	22-Mar-2017
7.04.01.370	Place Base Asphalt	20d	01-Mar-2017	04-Apr-2017
7.04.01.570	Install Sidewalk Stone - North Side	13d	22-Mar-2017	12-Apr-2017
7.04.01.380	Install Median Islands at Roundabouts	5d	05-Apr-2017	12-Apr-2017



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

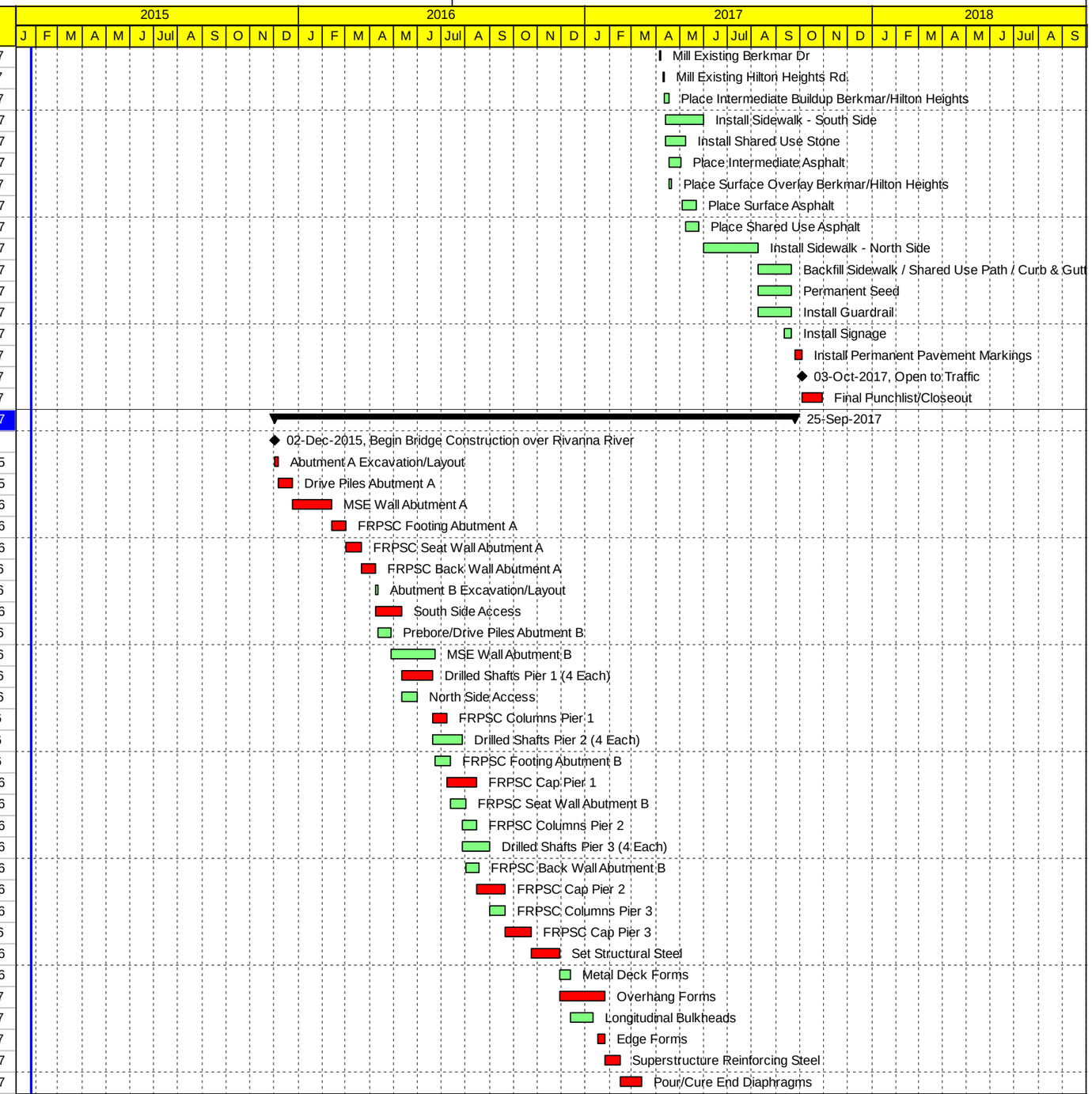
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.04.01.420	Mill Existing Berkmar Dr	2d	05-Apr-2017	06-Apr-2017
7.04.01.430	Mill Existing Hilton Heights Rd.	2d	10-Apr-2017	11-Apr-2017
7.04.01.440	Place Intermediate Buildup Berkmar/Hilton Heights	2d	12-Apr-2017	17-Apr-2017
7.04.01.340	Install Sidewalk - South Side	25d	12-Apr-2017	31-May-2017
7.04.01.350	Install Shared Use Stone	12d	12-Apr-2017	08-May-2017
7.04.01.450	Place Intermediate Asphalt	10d	17-Apr-2017	03-May-2017
7.04.01.470	Place Surface Overlay Berkmar/Hilton Heights	2d	18-Apr-2017	20-Apr-2017
7.04.01.460	Place Surface Asphalt	10d	04-May-2017	22-May-2017
7.04.01.360	Place Shared Use Asphalt	10d	08-May-2017	25-May-2017
7.04.01.580	Install Sidewalk - North Side	40d	31-May-2017	09-Aug-2017
7.04.01.390	Backfill Sidewalk / Shared Use Path / Curb & Gutter	20d	09-Aug-2017	20-Sep-2017
7.04.01.400	Permanent Seed	20d	09-Aug-2017	20-Sep-2017
7.04.01.410	Install Guardrail	20d	09-Aug-2017	20-Sep-2017
7.04.01.490	Install Signage	5d	11-Sep-2017	20-Sep-2017
7.04.01.480	Install Permanent Pavement Markings	5d	25-Sep-2017	03-Oct-2017
7.04.01.500	Open to Traffic	0d		03-Oct-2017
7.04.01.590	Final Punchlist/Closeout	19d	04-Oct-2017	30-Oct-2017
BRIDGE over RIVANNA RIVER		459d	02-Dec-2015	25-Sep-2017
7.04.02.100	Begin Bridge Construction over Rivanna River	0d	02-Dec-2015	
7.04.02.110	Abutment A Excavation/Layout	2d	02-Dec-2015	07-Dec-2015
7.04.02.120	Drive Piles Abutment A	10d	07-Dec-2015	24-Dec-2015
7.04.02.130	MSE Wall Abutment A	25d	24-Dec-2015	12-Feb-2016
7.04.02.140	FRPSC Footing Abutment A	10d	12-Feb-2016	02-Mar-2016
7.04.02.150	FRPSC Seat Wall Abutment A	10d	02-Mar-2016	21-Mar-2016
7.04.02.160	FRPSC Back Wall Abutment A	10d	21-Mar-2016	08-Apr-2016
7.04.02.170	Abutment B Excavation/Layout	2d	08-Apr-2016	12-Apr-2016
7.04.02.230	South Side Access	20d	08-Apr-2016	11-May-2016
7.04.02.180	Prebore/Drive Piles Abutment B	10d	12-Apr-2016	28-Apr-2016
7.04.02.190	MSE Wall Abutment B	30d	28-Apr-2016	23-Jun-2016
7.04.02.240	Drilled Shafts Pier 1 (4 Each)	20d	11-May-2016	20-Jun-2016
7.04.02.270	North Side Access	10d	11-May-2016	01-Jun-2016
7.04.02.250	FRPSC Columns Pier 1	10d	20-Jun-2016	08-Jul-2016
7.04.02.280	Drilled Shafts Pier 2 (4 Each)	20d	20-Jun-2016	28-Jul-2016
7.04.02.200	FRPSC Footing Abutment B	10d	23-Jun-2016	12-Jul-2016
7.04.02.260	FRPSC Cap Pier 1	20d	08-Jul-2016	15-Aug-2016
7.04.02.210	FRPSC Seat Wall Abutment B	10d	12-Jul-2016	01-Aug-2016
7.04.02.290	FRPSC Columns Pier 2	10d	28-Jul-2016	15-Aug-2016
7.04.02.310	Drilled Shafts Pier 3 (4 Each)	20d	28-Jul-2016	01-Sep-2016
7.04.02.220	FRPSC Back Wall Abutment B	10d	01-Aug-2016	18-Aug-2016
7.04.02.300	FRPSC Cap Pier 2	20d	15-Aug-2016	21-Sep-2016
7.04.02.320	FRPSC Columns Pier 3	10d	01-Sep-2016	21-Sep-2016
7.04.02.330	FRPSC Cap Pier 3	20d	21-Sep-2016	24-Oct-2016
7.04.02.340	Set Structural Steel	20d	24-Oct-2016	29-Nov-2016
7.04.02.350	Metal Deck Forms	7d	29-Nov-2016	12-Dec-2016
7.04.02.360	Overhang Forms	30d	29-Nov-2016	26-Jan-2017
7.04.02.380	Longitudinal Bulkheads	15d	12-Dec-2016	10-Jan-2017
7.04.02.370	Edge Forms	5d	17-Jan-2017	26-Jan-2017
7.04.02.390	Superstructure Reinforcing Steel	10d	26-Jan-2017	14-Feb-2017
7.04.02.400	Pour/Cure End Diaphragms	15d	14-Feb-2017	14-Mar-2017



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
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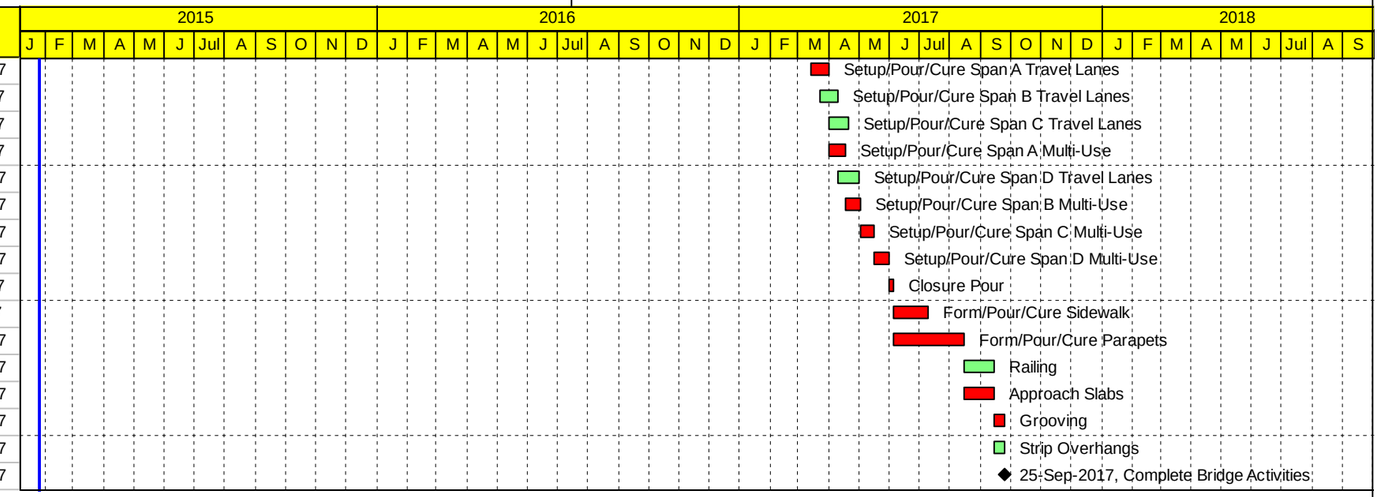
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: All Activities

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.04.02.410	Setup/Pour/Cure Span A Travel Lanes	10d	14-Mar-2017	31-Mar-2017
7.04.02.420	Setup/Pour/Cure Span B Travel Lanes	10d	23-Mar-2017	10-Apr-2017
7.04.02.430	Setup/Pour/Cure Span C Travel Lanes	10d	31-Mar-2017	20-Apr-2017
7.04.02.450	Setup/Pour/Cure Span A Multi-Use	8d	31-Mar-2017	17-Apr-2017
7.04.02.440	Setup/Pour/Cure Span D Travel Lanes	10d	10-Apr-2017	01-May-2017
7.04.02.460	Setup/Pour/Cure Span B Multi-Use	8d	17-Apr-2017	02-May-2017
7.04.02.470	Setup/Pour/Cure Span C Multi-Use	8d	02-May-2017	16-May-2017
7.04.02.480	Setup/Pour/Cure Span D Multi-Use	8d	16-May-2017	31-May-2017
7.04.02.490	Closure Pour	2d	31-May-2017	05-Jun-2017
7.04.02.500	Form/Pour/Cure Sidewalk	20d	05-Jun-2017	10-Jul-2017
7.04.02.510	Form/Pour/Cure Parapets	40d	05-Jun-2017	14-Aug-2017
7.04.02.520	Railing	15d	14-Aug-2017	14-Sep-2017
7.04.02.530	Approach Slabs	15d	14-Aug-2017	14-Sep-2017
7.04.02.540	Grooving	5d	14-Sep-2017	25-Sep-2017
7.04.02.550	Strip Overhangs	5d	14-Sep-2017	25-Sep-2017
7.04.02.560	Complete Bridge Activities	0d		25-Sep-2017



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
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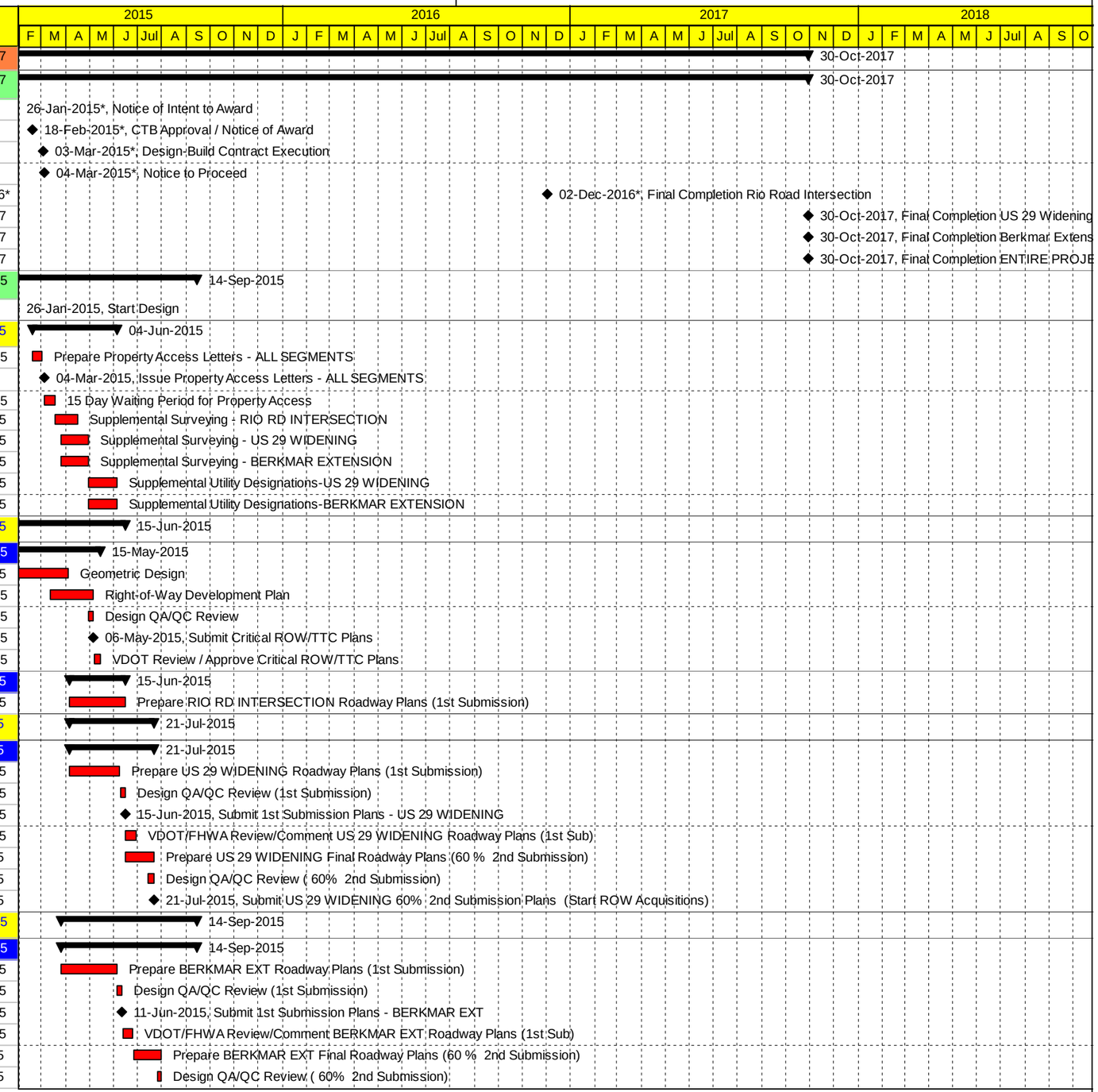
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: Critical.

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80		702d	26-Jan-2015	30-Oct-2017
PROJECT MILESTONES		702d	26-Jan-2015	30-Oct-2017
1.100	Notice of Intent to Award	0d	26-Jan-2015*	
1.110	CTB Approval / Notice of Award	0d	18-Feb-2015*	
1.120	Design-Build Contract Execution	0d	03-Mar-2015*	
1.130	Notice to Proceed	0d	04-Mar-2015*	
1.170	Final Completion Rio Road Intersection	0d		02-Dec-2016*
1.180	Final Completion US 29 Widening	0d		30-Oct-2017
1.190	Final Completion Berkmar Extension	0d		30-Oct-2017
1.200	Final Completion ENTIRE PROJECT	0d		30-Oct-2017
DESIGN		163d	26-Jan-2015	14-Sep-2015
2.100	Start Design	0d	26-Jan-2015	
DESIGN SURVEYS		76d	18-Feb-2015	04-Jun-2015
2.001.099	Prepare Property Access Letters - ALL SEGMENTS	9d	18-Feb-2015	02-Mar-2015
2.001.100	Issue Property Access Letters - ALL SEGMENTS	0d	04-Mar-2015	
2.001.110	15 Day Waiting Period for Property Access	15d	04-Mar-2015	18-Mar-2015
2.001.120	Supplemental Surveying - RIO RD INTERSECTION	20d	19-Mar-2015	15-Apr-2015
2.001.150	Supplemental Surveying - US 29 WIDENING	25d	26-Mar-2015	29-Apr-2015
2.001.180	Supplemental Surveying - BERKMAR EXTENSION	25d	26-Mar-2015	29-Apr-2015
2.001.160	Supplemental Utility Designations-US 29 WIDENING	25d	30-Apr-2015	04-Jun-2015
2.001.190	Supplemental Utility Designations-BERKMAR EXTENSION	25d	30-Apr-2015	04-Jun-2015
RIO ROAD GRADE SEPARATED INTERSECTION		100d	26-Jan-2015	15-Jun-2015
Critical R-O-W and TTC Plan Set		80d	26-Jan-2015	15-May-2015
2.01.01.120	Geometric Design	50d	26-Jan-2015	03-Apr-2015
2.01.01.150	Right-of-Way Development Plan	40d	12-Mar-2015	06-May-2015
2.01.01.170	Design QA/QC Review	5d	30-Apr-2015	06-May-2015
2.01.01.180	Submit Critical ROW/TTC Plans	0d		06-May-2015
2.01.01.190	VDOT Review / Approve Critical ROW/TTC Plans	9d	07-May-2015	15-May-2015
Final Roadway Plans		50d	06-Apr-2015	15-Jun-2015
2.01.02.100	Prepare RIO RD INTERSECTION Roadway Plans (1st Subn	50d	06-Apr-2015	15-Jun-2015
US 29 WIDENING		75d	06-Apr-2015	21-Jul-2015
Roadway Plans		75d	06-Apr-2015	21-Jul-2015
2.02.01.100	Prepare US 29 WIDENING Roadway Plans (1st Submission)	45d	06-Apr-2015	08-Jun-2015
2.02.01.110	Design QA/QC Review (1st Submission)	5d	09-Jun-2015	15-Jun-2015
2.02.01.120	Submit 1st Submission Plans - US 29 WIDENING	0d		15-Jun-2015
2.02.01.130	VDOT/FHWA Review/Comment US 29 WIDENING Roadway	14d	16-Jun-2015	29-Jun-2015
2.02.01.140	Prepare US 29 WIDENING Final Roadway Plans (60 % 2nd	25d	16-Jun-2015	21-Jul-2015
2.02.01.150	Design QA/QC Review (60% 2nd Submission)	5d	15-Jul-2015	21-Jul-2015
2.02.01.160	Submit US 29 WIDENING 60% 2nd Submission Plans (Star	0d		21-Jul-2015
BERKMAR DRIVE EXTENSION		120d	26-Mar-2015	14-Sep-2015
Roadway Plans		120d	26-Mar-2015	14-Sep-2015
2.03.01.100	Prepare BERKMAR EXT Roadway Plans (1st Submission)	50d	26-Mar-2015	04-Jun-2015
2.03.01.110	Design QA/QC Review (1st Submission)	5d	05-Jun-2015	11-Jun-2015
2.03.01.120	Submit 1st Submission Plans - BERKMAR EXT	0d		11-Jun-2015
2.03.01.130	VDOT/FHWA Review/Comment BERKMAR EXT Roadway P	14d	12-Jun-2015	25-Jun-2015
2.03.01.140	Prepare BERKMAR EXT Final Roadway Plans (60 % 2nd Su	25d	26-Jun-2015	31-Jul-2015
2.03.01.150	Design QA/QC Review (60% 2nd Submission)	5d	27-Jul-2015	31-Jul-2015



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
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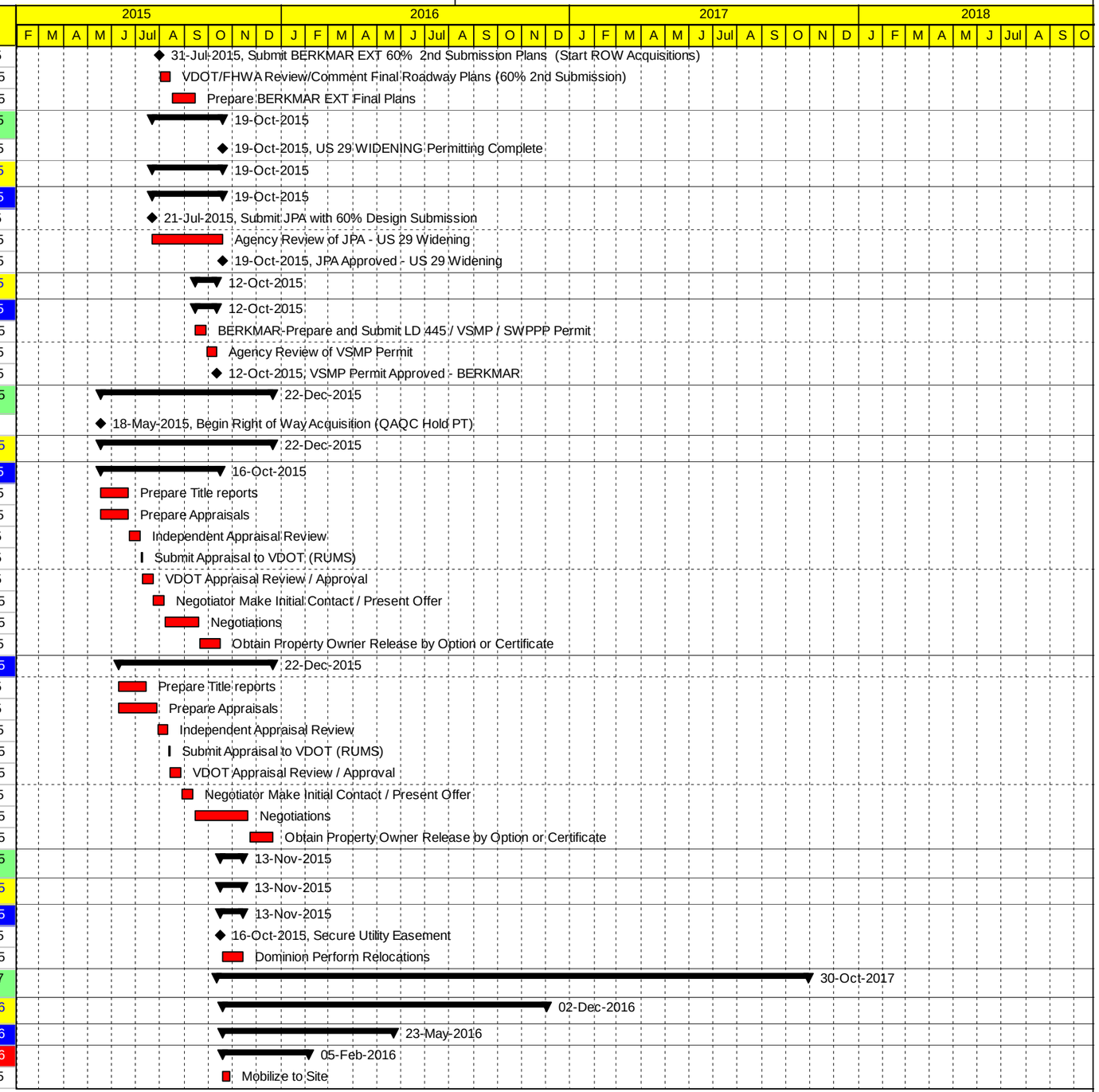
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: Critical.

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
2.03.01.160	Submit BERKMAR EXT 60% 2nd Submission Plans (Start R	0d		31-Jul-2015
2.03.01.170	VDOT/FHWA Review/Comment Final Roadway Plans (60% 2	14d	01-Aug-2015	14-Aug-2015
2.03.01.180	Prepare BERKMAR EXT Final Plans	20d	17-Aug-2015	14-Sep-2015
PERMITTING		63d	21-Jul-2015	19-Oct-2015
4.120	US 29 WIDENING Permitting Complete	0d		19-Oct-2015
US 29 WIDENING		63d	21-Jul-2015	19-Oct-2015
Joint Wetlands and Waters Permit (If Required)		63d	21-Jul-2015	19-Oct-2015
4.02.01.140	Submit JPA with 60% Design Submission	0d		21-Jul-2015
4.02.01.150	Agency Review of JPA - US 29 Widening	90d	22-Jul-2015	19-Oct-2015
4.02.01.160	JPA Approved - US 29 Widening	0d		19-Oct-2015
BERKMAR DRIVE EXTENSION		20d	15-Sep-2015	12-Oct-2015
LD 445 / VSMP / SWPPP Permit		20d	15-Sep-2015	12-Oct-2015
4.03.02.100	BERKMAR-Prepare and Submit LD 445 / VSMP / SWPPP Pe	10d	15-Sep-2015	28-Sep-2015
4.03.02.110	Agency Review of VSMP Permit	14d	29-Sep-2015	12-Oct-2015
4.03.02.120	VSMP Permit Approved - BERKMAR	0d		12-Oct-2015
RIGHT-OF-WAY ACQUISITIONS		152d	18-May-2015	22-Dec-2015
5.105	Begin Right of Way Acquisition (QAQC Hold PT)	0d	18-May-2015	
RIO ROAD GRADE SEPARATED INTERSECTION		152d	18-May-2015	22-Dec-2015
RIO ROAD INTERSECTION CRITICAL PROPERTIES		107d	18-May-2015	16-Oct-2015
5.01.01.100	Prepare Title reports	25d	18-May-2015	22-Jun-2015
5.01.01.110	Prepare Appraisals	25d	18-May-2015	22-Jun-2015
5.01.01.120	Independent Appraisal Review	10d	23-Jun-2015	07-Jul-2015
5.01.01.125	Submit Appraisal to VDOT (RUMS)	2d	08-Jul-2015	09-Jul-2015
5.01.01.130	VDOT Appraisal Review / Approval	14d	10-Jul-2015	23-Jul-2015
5.01.01.145	Negotiator Make Initial Contact / Present Offer	10d	24-Jul-2015	06-Aug-2015
5.01.01.150	Negotiations	30d	07-Aug-2015	18-Sep-2015
5.01.01.160	Obtain Property Owner Release by Option or Certificate	20d	21-Sep-2015	16-Oct-2015
RIO ROAD INTERSECTION REMAINDER of PROPERTIES		137d	09-Jun-2015	22-Dec-2015
5.01.02.100	Prepare Title reports	25d	09-Jun-2015	14-Jul-2015
5.01.02.110	Prepare Appraisals	35d	09-Jun-2015	28-Jul-2015
5.01.02.120	Independent Appraisal Review	10d	29-Jul-2015	11-Aug-2015
5.01.02.130	Submit Appraisal to VDOT (RUMS)	2d	12-Aug-2015	13-Aug-2015
5.01.02.140	VDOT Appraisal Review / Approval	14d	14-Aug-2015	27-Aug-2015
5.01.02.160	Negotiator Make Initial Contact / Present Offer	10d	28-Aug-2015	11-Sep-2015
5.01.02.170	Negotiations	50d	14-Sep-2015	20-Nov-2015
5.01.02.180	Obtain Property Owner Release by Option or Certificate	20d	23-Nov-2015	22-Dec-2015
UTILITY RELOCATIONS		20d	16-Oct-2015	13-Nov-2015
RIO ROAD INTERCHANGE		20d	16-Oct-2015	13-Nov-2015
DOMINION VIRGINIA POWER (OVERHEAD)		20d	16-Oct-2015	13-Nov-2015
6.01.04.110	Secure Utility Easement	0d		16-Oct-2015
6.01.04.120	Dominion Perform Relocations	20d	19-Oct-2015	13-Nov-2015
CONSTRUCTION		519d	12-Oct-2015	30-Oct-2017
RIO ROAD GRADE SEPARATED INTERSECTION		285d	19-Oct-2015	02-Dec-2016
PHASE 1 - ALL WORK PRIOR TO 103 DAY CLOSURE PERIOD		151d	19-Oct-2015	23-May-2016
Stage 1 - RTE 29 NW and SE QUANDRANTS		74d	19-Oct-2015	05-Feb-2016
7.02.01.01.100	Mobilize to Site	8d	19-Oct-2015	28-Oct-2015



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

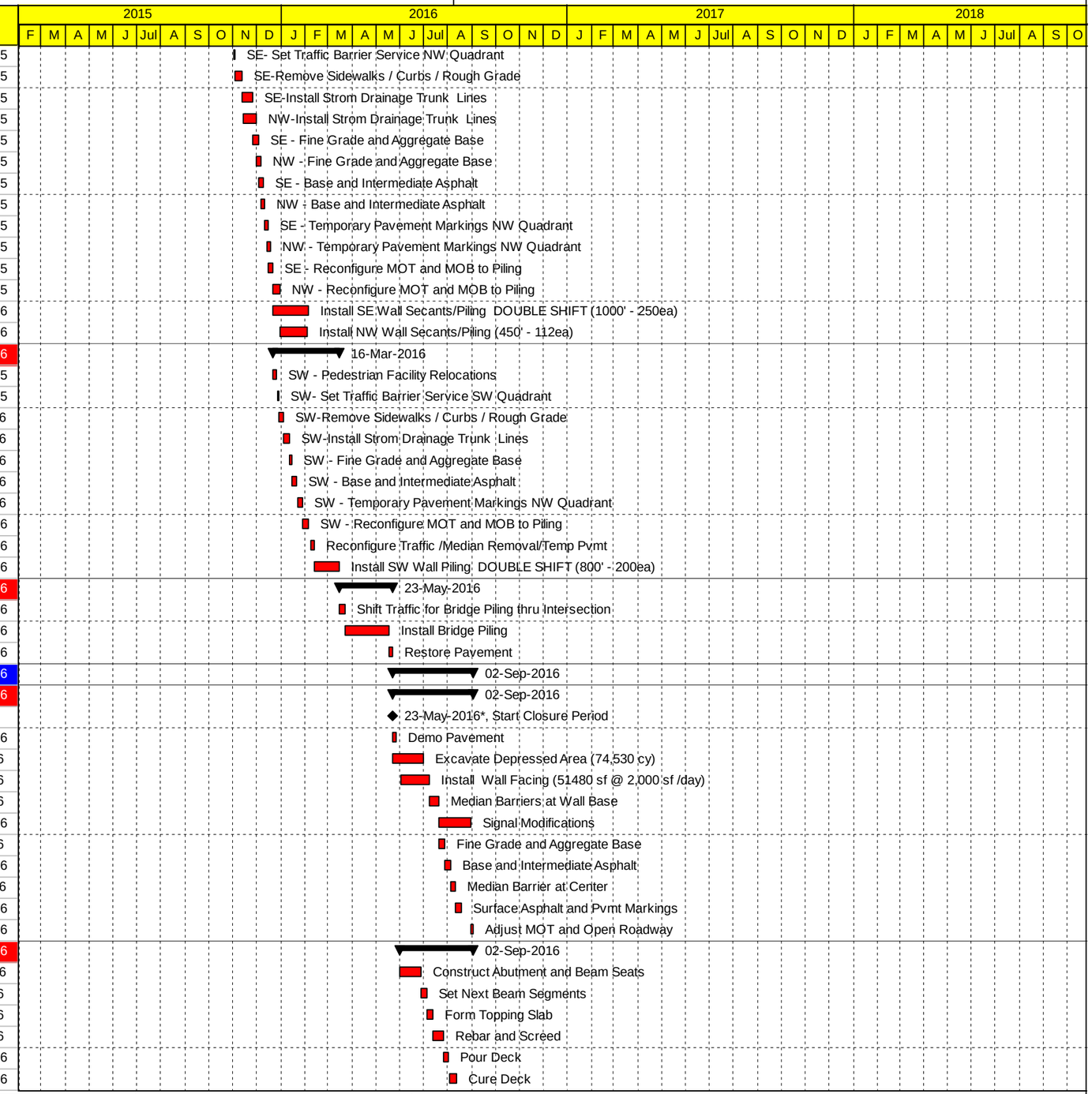
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: Critical.

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.02.01.01.135	SE- Set Traffic Barrier Service NW Quadrant	2d	02-Nov-2015	03-Nov-2015
7.02.01.01.190	SE-Remove Sidewalks / Curbs / Rough Grade	15d	03-Nov-2015	12-Nov-2015
7.02.01.01.210	SE-Install Strom Drainage Trunk Lines	20d	12-Nov-2015	25-Nov-2015
7.02.01.01.140	NW-Install Strom Drainage Trunk Lines	21d	13-Nov-2015	30-Nov-2015
7.02.01.01.220	SE - Fine Grade and Aggregate Base	10d	25-Nov-2015	04-Dec-2015
7.02.01.01.150	NW - Fine Grade and Aggregate Base	10d	30-Nov-2015	07-Dec-2015
7.02.01.01.230	SE - Base and Intermediate Asphalt	5d	04-Dec-2015	10-Dec-2015
7.02.01.01.160	NW - Base and Intermediate Asphalt	5d	07-Dec-2015	11-Dec-2015
7.02.01.01.240	SE - Temporary Pavement Markings NW Quadrant	3d	11-Dec-2015	15-Dec-2015
7.02.01.01.170	NW - Temporary Pavement Markings NW Quadrant	5d	14-Dec-2015	18-Dec-2015
7.02.01.01.310	SE - Reconfigure MOT and MOB to Piling	5d	16-Dec-2015	22-Dec-2015
7.02.01.01.300	NW - Reconfigure MOT and MOB to Piling	6d	21-Dec-2015	30-Dec-2015
7.02.01.01.500	Install SE Wall Secants/Piling DOUBLE SHIFT (1000' - 250e	65d	22-Dec-2015	05-Feb-2016
7.02.01.01.400	Install NW Wall Secants/Piling (450' - 112ea)	25d	31-Dec-2015	04-Feb-2016
Stage 2 - RTE 29 NE and SW QUANDRANTS		**57d**	**22-Dec-2015**	**16-Mar-2016**
7.02.01.01.200	SW - Pedestrian Facility Relocations	5d	22-Dec-2015	26-Dec-2015
7.02.01.01.145	SW- Set Traffic Barrier Service SW Quadrant	2d	28-Dec-2015	29-Dec-2015
7.02.01.01.250	SW-Remove Sidewalks / Curbs / Rough Grade	8d	29-Dec-2015	05-Jan-2016
7.02.01.01.260	SW-Install Strom Drainage Trunk Lines	12d	05-Jan-2016	12-Jan-2016
7.02.01.01.270	SW - Fine Grade and Aggregate Base	5d	12-Jan-2016	15-Jan-2016
7.02.01.01.280	SW - Base and Intermediate Asphalt	5d	15-Jan-2016	21-Jan-2016
7.02.01.01.290	SW - Temporary Pavement Markings NW Quadrant	5d	22-Jan-2016	28-Jan-2016
7.02.01.01.320	SW - Reconfigure MOT and MOB to Piling	6d	29-Jan-2016	05-Feb-2016
7.02.01.02.120	Reconfigure Traffic /Median Removal/Temp Pvmt	5d	08-Feb-2016	12-Feb-2016
7.02.01.02.140	Install SW Wall Piling DOUBLE SHIFT (800' - 200ea)	50d	12-Feb-2016	16-Mar-2016
Stage 3 - BRIDGE ABUTMENT PILING / WALLS		**49d**	**16-Mar-2016**	**23-May-2016**
7.02.01.03.100	Shift Traffic for Bridge Piling thru Intersection	5d	16-Mar-2016	22-Mar-2016
7.02.01.03.105	Install Bridge Piling	40d	23-Mar-2016	17-May-2016
7.02.01.03.110	Restore Pavement	4d	18-May-2016	23-May-2016
PHASE 2 - 103 CLOSURE PERIOD (MAY 23, 2016 thru SEPT 2, 2016)		**73d**	**23-May-2016**	**02-Sep-2016**
PHASE 2 - DEPRESSED ROADWAY ITEMS		**73d**	**23-May-2016**	**02-Sep-2016**
7.02.02.01.100	Start Closure Period	0d	23-May-2016*	
7.02.02.01.110	Demo Pavement	5d	23-May-2016	27-May-2016
7.02.02.01.120	Excavate Depressed Area (74,530 cy)	60d	23-May-2016	01-Jul-2016
7.02.02.01.140	Install Wall Facing (51480 sf @ 2,000 sf /day)	55d	02-Jun-2016	08-Jul-2016
7.02.02.01.170	Median Barriers at Wall Base	8d	08-Jul-2016	20-Jul-2016
7.02.02.01.220	Signal Modifications	30d	20-Jul-2016	30-Aug-2016
7.02.02.01.150	Fine Grade and Aggregate Base	6d	20-Jul-2016	28-Jul-2016
7.02.02.01.160	Base and Intermediate Asphalt	5d	28-Jul-2016	04-Aug-2016
7.02.02.01.190	Median Barrier at Center	5d	04-Aug-2016	11-Aug-2016
7.02.02.01.200	Surface Asphalt and Pvmt Markings	5d	11-Aug-2016	18-Aug-2016
7.02.02.01.210	Adjust MOT and Open Roadway	3d	31-Aug-2016	02-Sep-2016
PHASE 2 - BRIDGE ITEMS		**68d**	**31-May-2016**	**02-Sep-2016**
7.02.02.02.100	Construct Abutment and Beam Seats	20d	31-May-2016	27-Jun-2016
7.02.02.02.110	Set Next Beam Segments	5d	28-Jun-2016	05-Jul-2016
7.02.02.02.120	Form Topping Slab	5d	06-Jul-2016	12-Jul-2016
7.02.02.02.130	Rebar and Screed	10d	13-Jul-2016	26-Jul-2016
7.02.02.02.140	Pour Deck	5d	27-Jul-2016	02-Aug-2016
7.02.02.02.150	Cure Deck	8d	03-Aug-2016	12-Aug-2016



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

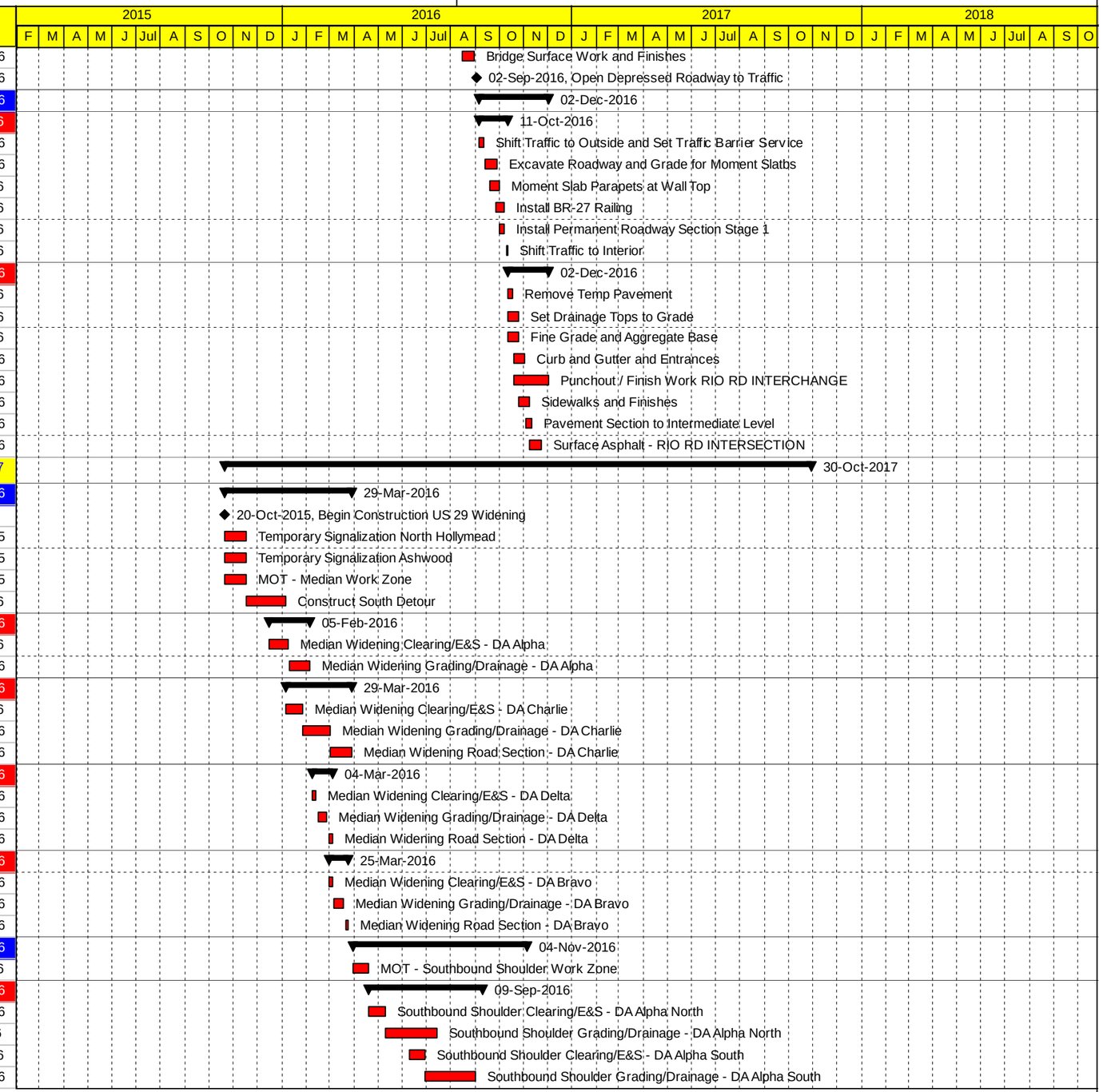
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: Critical.

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.02.02.02.170	Bridge Surface Work and Finishes	12d	15-Aug-2016	30-Aug-2016
7.02.02.02.180	Open Depressed Roadway to Traffic	0d		02-Sep-2016
PHASE 3 - ALL WORK FOLLOWING 103 CLOSURE PERIOD		62d	06-Sep-2016	02-Dec-2016
Stage 1 - COMPLETE WORK at INTERIOR of INTERSECTION		26d	06-Sep-2016	11-Oct-2016
7.02.03.01.100	Shift Traffic to Outside and Set Traffic Barrier Service	5d	06-Sep-2016	12-Sep-2016
7.02.03.01.110	Excavate Roadway and Grade for Moment Slatbs	12d	13-Sep-2016	28-Sep-2016
7.02.03.01.130	Moment Slab Parapets at Wall Top	20d	19-Sep-2016	01-Oct-2016
7.02.03.01.140	Install BR-27 Railing	20d	26-Sep-2016	07-Oct-2016
7.02.03.01.150	Install Permanent Roadway Section Stage 1	10d	01-Oct-2016	07-Oct-2016
7.02.03.01.160	Shift Traffic to Interior	2d	10-Oct-2016	11-Oct-2016
Stage 2 - COMPLETE OUTSIDE WORK		36d	12-Oct-2016	02-Dec-2016
7.02.03.02.100	Remove Temp Pavement	5d	12-Oct-2016	18-Oct-2016
7.02.03.02.110	Set Drainage Tops to Grade	10d	12-Oct-2016	25-Oct-2016
7.02.03.02.120	Fine Grade and Aggregate Base	10d	12-Oct-2016	25-Oct-2016
7.02.03.02.130	Curb and Gutter and Entrances	10d	19-Oct-2016	01-Nov-2016
7.02.03.02.170	Punchout / Finish Work RIO RD INTERCHANGE	30d	20-Oct-2016	02-Dec-2016
7.02.03.02.140	Sidewalks and Finishes	10d	26-Oct-2016	08-Nov-2016
7.02.03.02.150	Pavement Section to Intermediate Level	12d	04-Nov-2016	11-Nov-2016
7.02.03.02.160	Surface Asphalt - RIO RD INTERSECTION	12d	08-Nov-2016	23-Nov-2016
RTE 29 WIDENING		514d	20-Oct-2015	30-Oct-2017
PHASE 1 ADETOURS AND MEDIAN WIDENING		111d	20-Oct-2015	29-Mar-2016
7.03.01.100	Begin Construction US 29 Widening	0d	20-Oct-2015	
7.03.01.110	Temporary Signalization North Hollymead	20d	20-Oct-2015	16-Nov-2015
7.03.01.120	Temporary Signalization Ashwood	20d	20-Oct-2015	16-Nov-2015
7.03.01.130	MOT - Median Work Zone	20d	20-Oct-2015	16-Nov-2015
7.03.01.160	Construct South Detour	25d	16-Nov-2015	05-Jan-2016
DRAINAGE AREA ALPHA		35d	16-Dec-2015	05-Feb-2016
7.03.01.01.100	Median Widening Clearing/E&S - DA Alpha	15d	16-Dec-2015	08-Jan-2016
7.03.01.01.110	Median Widening Grading/Drainage - DA Alpha	20d	11-Jan-2016	05-Feb-2016
DRAINAGE AREA CHARLIE		60d	06-Jan-2016	29-Mar-2016
7.03.01.02.100	Median Widening Clearing/E&S - DA Charlie	15d	06-Jan-2016	26-Jan-2016
7.03.01.02.110	Median Widening Grading/Drainage - DA Charlie	25d	27-Jan-2016	01-Mar-2016
7.03.01.02.120	Median Widening Road Section - DA Charlie	20d	02-Mar-2016	29-Mar-2016
DRAINAGE AREA DELTA		20d	08-Feb-2016	04-Mar-2016
7.03.01.03.100	Median Widening Clearing/E&S - DA Delta	5d	08-Feb-2016	12-Feb-2016
7.03.01.03.110	Median Widening Grading/Drainage - DA Delta	10d	15-Feb-2016	26-Feb-2016
7.03.01.03.120	Median Widening Road Section - DA Delta	5d	29-Feb-2016	04-Mar-2016
DRAINAGE AREA BRAVO		20d	29-Feb-2016	25-Mar-2016
7.03.01.04.100	Median Widening Clearing/E&S - DA Bravo	5d	29-Feb-2016	04-Mar-2016
7.03.01.04.110	Median Widening Grading/Drainage - DA Bravo	10d	07-Mar-2016	18-Mar-2016
7.03.01.04.120	Median Widening Road Section - DA Bravo	5d	21-Mar-2016	25-Mar-2016
PHASE 1 B SOUTHBOUND SHOULDER WIDENING		155d	30-Mar-2016	04-Nov-2016
7.03.02.100	MOT - Southbound Shoulder Work Zone	15d	30-Mar-2016	19-Apr-2016
DRAINAGE AREA ALPHA		100d	20-Apr-2016	09-Sep-2016
7.03.02.02.100	Southbound Shoulder Clearing/E&S - DA Alpha North	15d	20-Apr-2016	10-May-2016
7.03.02.02.110	Southbound Shoulder Grading/Drainage - DA Alpha North	45d	11-May-2016	14-Jul-2016
7.03.02.02.150	Southbound Shoulder Clearing/E&S - DA Alpha South	15d	09-Jun-2016	29-Jun-2016
7.03.02.02.160	Southbound Shoulder Grading/Drainage - DA Alpha South	45d	30-Jun-2016	01-Sep-2016



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

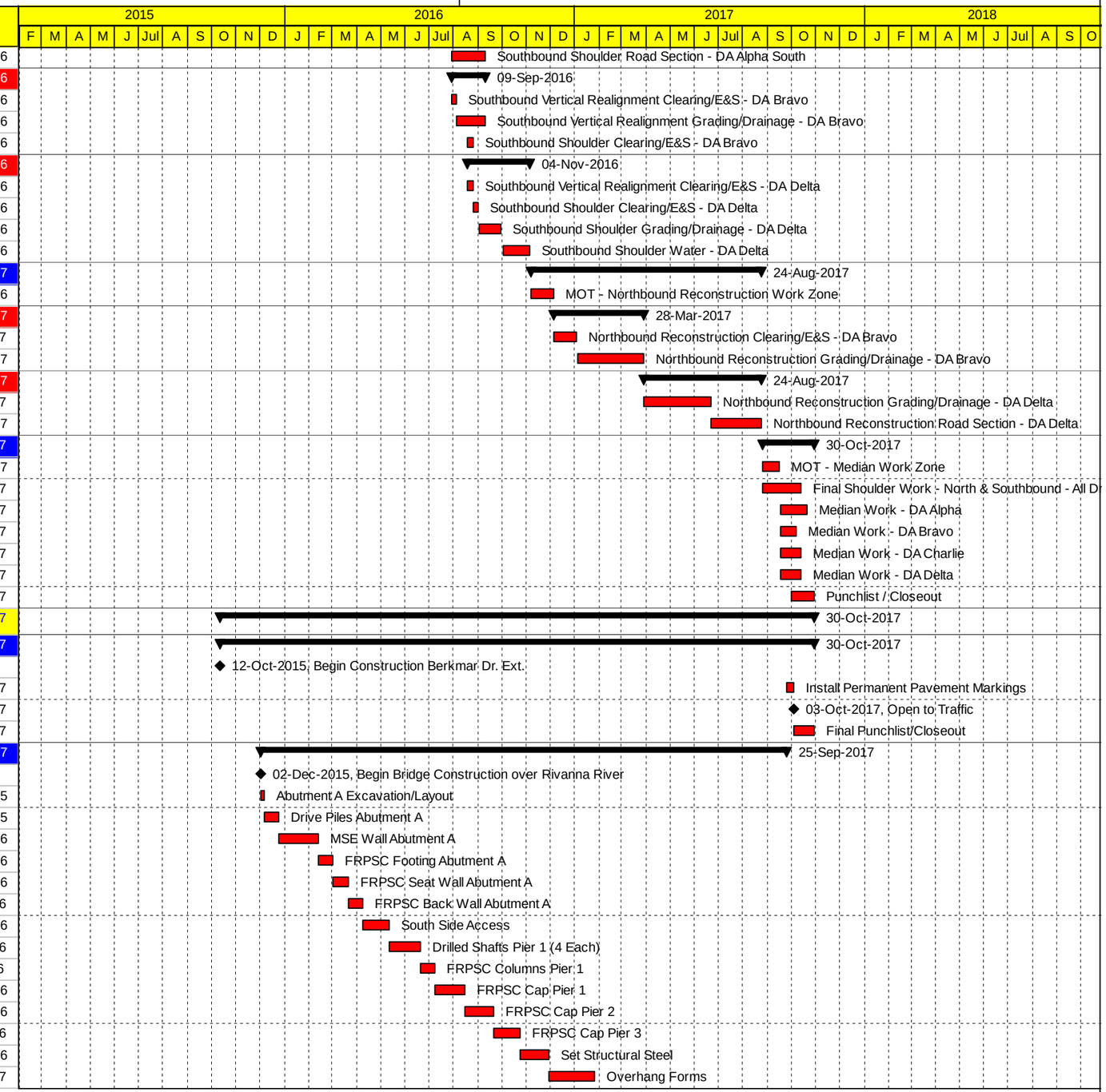
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: Critical.

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.03.02.02.190	Southbound Shoulder Road Section - DA Alpha South	30d	29-Jul-2016	09-Sep-2016
DRAINAGE AREA BRAVO		30d	29-Jul-2016	09-Sep-2016
7.03.02.03.100	Southbound Vertical Realignment Clearing/E&S - DA Bravo	5d	29-Jul-2016	04-Aug-2016
7.03.02.03.110	Southbound Vertical Realignment Grading/Drainage - DA Bra	25d	05-Aug-2016	09-Sep-2016
7.03.02.03.140	Southbound Shoulder Clearing/E&S - DA Bravo	5d	19-Aug-2016	25-Aug-2016
DRAINAGE AREA DELTA		55d	19-Aug-2016	04-Nov-2016
7.03.02.04.110	Southbound Vertical Realignment Clearing/E&S - DA Delta	5d	19-Aug-2016	25-Aug-2016
7.03.02.04.150	Southbound Shoulder Clearing/E&S - DA Delta	5d	26-Aug-2016	01-Sep-2016
7.03.02.04.160	Southbound Shoulder Grading/Drainage - DA Delta	20d	02-Sep-2016	30-Sep-2016
7.03.02.04.180	Southbound Shoulder Water - DA Delta	25d	03-Oct-2016	04-Nov-2016
PHASE 2 NORTHBOUND RE-CONSTRUCTION		202d	07-Nov-2016	24-Aug-2017
7.03.03.100	MOT - Northbound Reconstruction Work Zone	15d	07-Nov-2016	05-Dec-2016
DRAINAGE AREA BRAVO		78d	06-Dec-2016	28-Mar-2017
7.03.03.02.100	Northbound Reconstruction Clearing/E&S - DA Bravo	15d	06-Dec-2016	03-Jan-2017
7.03.03.02.110	Northbound Reconstruction Grading/Drainage - DA Bravo	60d	04-Jan-2017	28-Mar-2017
DRAINAGE AREA DELTA		105d	29-Mar-2017	24-Aug-2017
7.03.03.03.120	Northbound Reconstruction Grading/Drainage - DA Delta	60d	29-Mar-2017	21-Jun-2017
7.03.03.03.130	Northbound Reconstruction Road Section - DA Delta	45d	22-Jun-2017	24-Aug-2017
PHASE 3 MEDIAN WORK		46d	25-Aug-2017	30-Oct-2017
7.03.04.100	MOT - Median Work Zone	15d	25-Aug-2017	15-Sep-2017
7.03.04.150	Final Shoulder Work - North & Southbound - All Drainage Are	35d	25-Aug-2017	13-Oct-2017
7.03.04.110	Median Work - DA Alpha	25d	18-Sep-2017	20-Oct-2017
7.03.04.120	Median Work - DA Bravo	15d	18-Sep-2017	06-Oct-2017
7.03.04.130	Median Work - DA Charlie	20d	18-Sep-2017	13-Oct-2017
7.03.04.140	Median Work - DA Delta	20d	18-Sep-2017	13-Oct-2017
7.03.04.160	Punchlist / Closeout	30d	01-Oct-2017	30-Oct-2017
BERKMAR DRIVE EXTENSION		519d	12-Oct-2015	30-Oct-2017
BERKMAR ROADWAY CONSTRUCTION		519d	12-Oct-2015	30-Oct-2017
7.04.01.100	Begin Construction Berkmar Dr. Ext.	0d	12-Oct-2015	
7.04.01.480	Install Permanent Pavement Markings	5d	25-Sep-2017	03-Oct-2017
7.04.01.500	Open to Traffic	0d		03-Oct-2017
7.04.01.590	Final Punchlist/Closeout	19d	04-Oct-2017	30-Oct-2017
BRIDGE over RIVANNA RIVER		459d	02-Dec-2015	25-Sep-2017
7.04.02.100	Begin Bridge Construction over Rivanna River	0d	02-Dec-2015	
7.04.02.110	Abutment A Excavation/Layout	2d	02-Dec-2015	07-Dec-2015
7.04.02.120	Drive Piles Abutment A	10d	07-Dec-2015	24-Dec-2015
7.04.02.130	MSE Wall Abutment A	25d	24-Dec-2015	12-Feb-2016
7.04.02.140	FRPSC Footing Abutment A	10d	12-Feb-2016	02-Mar-2016
7.04.02.150	FRPSC Seat Wall Abutment A	10d	02-Mar-2016	21-Mar-2016
7.04.02.160	FRPSC Back Wall Abutment A	10d	21-Mar-2016	08-Apr-2016
7.04.02.230	South Side Access	20d	08-Apr-2016	11-May-2016
7.04.02.240	Drilled Shafts Pier 1 (4 Each)	20d	11-May-2016	20-Jun-2016
7.04.02.250	FRPSC Columns Pier 1	10d	20-Jun-2016	08-Jul-2016
7.04.02.260	FRPSC Cap Pier 1	20d	08-Jul-2016	15-Aug-2016
7.04.02.300	FRPSC Cap Pier 2	20d	15-Aug-2016	21-Sep-2016
7.04.02.330	FRPSC Cap Pier 3	20d	21-Sep-2016	24-Oct-2016
7.04.02.340	Set Structural Steel	20d	24-Oct-2016	29-Nov-2016
7.04.02.360	Overhang Forms	30d	29-Nov-2016	26-Jan-2017



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

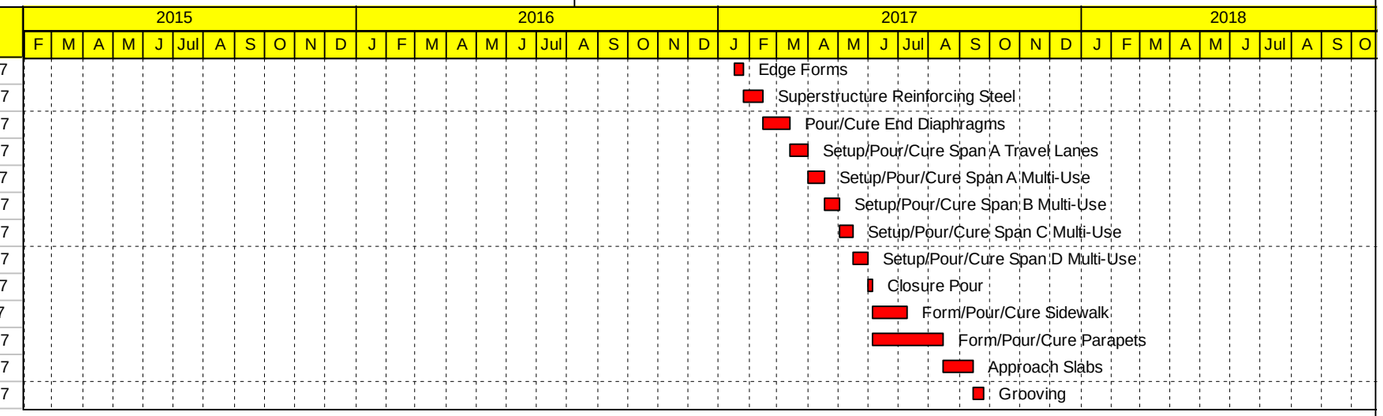
SHIRLEY CONTRACTING COMPANY, LLC

ROUTE 29 SOLUTIONS D-B Contract: C00077383DB80

4.7 PROPOSAL SCHEDULE
TASK filter: Critical.

SUBMISSION: JANUARY 6, 2015

Activity ID	Activity Name	Duration	Start	Finish
7.04.02.370	Edge Forms	5d	17-Jan-2017	26-Jan-2017
7.04.02.390	Superstructure Reinforcing Steel	10d	26-Jan-2017	14-Feb-2017
7.04.02.400	Pour/Cure End Diaphragms	15d	14-Feb-2017	14-Mar-2017
7.04.02.410	Setup/Pour/Cure Span A Travel Lanes	10d	14-Mar-2017	31-Mar-2017
7.04.02.450	Setup/Pour/Cure Span A Multi-Use	8d	31-Mar-2017	17-Apr-2017
7.04.02.460	Setup/Pour/Cure Span B Multi-Use	8d	17-Apr-2017	02-May-2017
7.04.02.470	Setup/Pour/Cure Span C Multi-Use	8d	02-May-2017	16-May-2017
7.04.02.480	Setup/Pour/Cure Span D Multi-Use	8d	16-May-2017	31-May-2017
7.04.02.490	Closure Pour	2d	31-May-2017	05-Jun-2017
7.04.02.500	Form/Pour/Cure Sidewalk	20d	05-Jun-2017	10-Jul-2017
7.04.02.510	Form/Pour/Cure Parapets	40d	05-Jun-2017	14-Aug-2017
7.04.02.530	Approach Slabs	15d	14-Aug-2017	14-Sep-2017
7.04.02.540	Grooving	5d	14-Sep-2017	25-Sep-2017



Remaining Level of Effort | Finish Milesone | Remaining Work | Summary
Start Milestone | Actual Work | Critical Remaining Work

SHIRLEY CONTRACTING COMPANY, LLC

Appendix

Attachment 4.0.1.1 - Technical Proposal Checklist

Attachment 4.0.1.1 - Technical Proposal Checklist

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	N/A
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	N/A
Letter of Submittal	NA	Sections 4.1		
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	1-2
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	1
Authorized representative's original signature	NA	Section 4.1.1	yes	2
Declaration of intent	NA	Section 4.1.2	yes	1
120 day declaration	NA	Section 4.1.3	yes	1
Point of Contact information	NA	Section 4.1.4	yes	1
Principal Officer information	NA	Section 4.1.5	yes	1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.6	no	N/A
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.7	no	N/A
Key Personnel Resume Form – Responsible Charge Engineer	Attachment 4.1.8	Section 4.1.8	no	N/A
Offeror's Qualifications	NA	Section 4.2		
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2.1	yes	3

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
Revised Organizational chart that includes the Responsible Charge Engineer with any other updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	4
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	3
Design Concept	NA	Section 4.3		5
US 29 & Rio Road Grade Separated Intersection	NA	Section 4.3.1		5
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	73-80 & 5-12
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	81-83 & 12-16
US 29 Widening	NA	Section 4.3.2		16
Conceptual Roadway Plans and description	NA	Section 4.3.2.1	yes	84-104 & 16-21
Berkmar Drive Extension	NA	Section 4.3.3		21
Conceptual Roadway Plans and description	NA	Section 4.3.3.1	yes	105-118 & 21-24
Conceptual Structural Plans and description	NA	Section 4.3.3.2	yes	119-120 & 24-26
Approach to Construct the US 29 & Rio Road Grade Separated Intersection	NA	Section 4.4		27
Sequence of Construction	NA	Section 4.4.1	yes	27-41
Transportation Management Plan	NA	Section 4.4.2	yes	41-46
Utilities	NA	Section 4.4.3	yes	46-51
Approach to Construct the Entire Project	NA	Section 4.5		52

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
Sequence of Construction	NA	Section 4.5.1	yes	52-66
Transportation Management Plan	NA	Section 4.5.2	yes	66-71
Disadvantaged Business Enterprises (DBE)	NA	Section 4.6		72
Written statement of percent DBE participation	NA	Section 4.6	yes	72
Proposal Schedule	NA	Section 4.7		
Proposal Schedule	NA	Section 4.7	no	N/A
Proposal Schedule Narrative	NA	Section 4.7	no	N/A
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.7	no	N/A

Attachment 3.6 - Form C-78

Form C-78-RFP

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

Michael E. Post
PRINTED NAME

President/CEO/Manager
TITLE

Attachment 9.3.1 - Proposal Payment Agreement

Attachment 9.3.1 - Proposal Payment Agreement

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this "Agreement") is made and entered into as of this 6th day of January, 2015, by and between the Virginia Department of Transportation ("VDOT"), and Shirley Contracting Company, LLC ("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: _____

Name: Michael E. Post

Title: President/CEO/Manager

Attachment 11.8.6(a)(b) - Debarment Forms

Attachment 11.8.6(a)(b) - Debarment Forms

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.

	January 6, 2015	President/CEO/Manager
Signature	Date	Title

Shirley Contracting Company, LLC
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.

12/29/2014 Executive Vice President

Signature Date Title

Dewberry Consultants LLC

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

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

Signature 01/02/2015 Date PRINCIPAL/CORPORATE SECRETARY Title

TIMMONS GROUP
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.

Paul Burkpatt 12/29/14 Principal
Signature Date Title

GeoConcepts Engineering, 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.

	01/06/2015	President
Signature	Date	Title

CES Consulting LLC
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.

January 6, 2015
Signature Date

Wilson L. Dickerson, Jr.
Senior Vice President
Title

W. C. English, Incorporated
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.

C. Frederick Stump II 12/29/2014 SECRETARY

Signature Date Title

FAULCONER CONSTRUCTION COMPANY, INCORPORATED

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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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.

	12/29/14	President and Chief Operating Officer
Signature	Date	Title

Skelly and Loy, 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.

Johnny - Anh Pham	12/30/14	SR. VP/ CFO
Signature	Date	Title

SO - DEEP, 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 Date 12/30/2014 Senior Associate
Title

Woolpert 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	Date	Title
[signature]	12/29/14	Sr. V.P.

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.

12/29/2014 President

Signature Date Title

Froehling & Robertson, 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	1/2/2015 Date	Partner Title

Pulsar Advertising, 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.

Patricia E. Dablock 1/2/2015 President

Signature Date Title

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

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

Signature Date 12-22-14 Title Settlement officer

Old Dominion Settlements Inc., T/A Key Title
Name of Firm

Attachment 4.1.8 - Key Personnel Resume Form

Attachment 4.1.8 - Key Personnel Resume Form

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.

a. Name & Title: **Jeffrey Austin, P.E., Vice President**

b. Project Assignment: **Responsible Charge Engineer**

c. Name of Firm with which you are now associated: **Shirley Contracting Company, LLC**

d. Years experience: With this Firm **14** Years With Other Firms **8** Years

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):

Shirley Contracting Company, LLC, Shirley Design-Build, LLC

Contract Manager/Vice President, September 2004 to Present

Responsible for providing oversight and monitoring of all stages of the design-build project life cycle; coordination with internal and external stakeholders; ensures project delivery in accordance with the project schedule; works closely with owners representatives, designers, construction staff and quality teams.

- **Route 606 - Loudoun County Parkway/Old Ox Road Reconstruction and Widening**, June 2014 to Present - Design-Build Project Manager
- **Gloucester Parkway Extension,** March 2014 to Present - Design-Build Project Manager
- **Route 7 Westbound Truck Climbing Lane,** November 2013 to Present - Design-Build Project Manager
- **I-66 Widening,** September 2013 to Present - Design-Build Project Manager
- **Loudoun Water, Water Treatment Plant Site Access and Program Administration Facilities Design-Build,** May 2013 to Present - Design-Build Project Manager
- **I-64-Exit 91 Interchange Improvements**, October 2012 to Present - Design-Build Project Manager
- **Route 27/244 Interchange Modifications**, September 2011 to Present - Design-Build Project Manager
- **Pacific Boulevard Extension**, July 2011 to July 2013 - Design-Build Project Manager
- **Route 50 Widening**, March 2011 to Present - Design-Build Project Manager
- **University Boulevard PPTA,** March 2011 to December 2013 - Design-Build Project Manager
- **Route 28 Corridor Improvements**, September 2004 to Present - Design-Build Project Manager
- **Waxpool Road/Loudoun County Parkway Intersection Improvements**, April 2010 to March 2011 - Design-Build Project Manager
- **Pacific Boulevard Design-Build,** July 2008 to August 2010 - Design-Build Project Manager
- **Battlefield Parkway Design-Build**, July 2007 to November 2009 - Design-Build Project Manager
- **Dulles Greenway Capital Improvements Program**, March 2005 to December 2007 - Design-Build Project Manager

Senior Project Manager, October 2000 to September 2004

Responsible for daily management of large construction projects, including project budgeting, project cost controls, project CPM scheduling, schedule updates, owner requisitions, public relations and subcontractor management.

- **Springfield Interchange Phase IV**, October 2000 to September 2004 - Responsible for managing construction.

Alpha Corporation

Various Positions, 1992 to October 2000

- **Prince George's County, Maryland**, January 2000 to October 2000 - Senior Engineer.
- **Route 7/Fairfax County Parkway Interchange**, August 1998 to December 1999 - Sr. Inspector & Office Engineer.

e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:
Virginia Polytechnic Institute & State University/Blacksburg, VA/Bachelor of Science/1992/Civil Engineering

f. Active Registration: Year First Registered/ Discipline/VA Registration #:
1999 / PROFESSIONAL ENGINEER / 0402 033555

g. Document the extent and depth of your experience and qualifications relevant to the Project.

1. *Note your specific responsibilities and authorities for each project, not those of the firm.*
2. *Note whether experience is with current firm or with other firm.*
3. *Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.*

(List at least three (3), but no more than five (5) relevant projects for which you have performed a similar function.)

1. University Boulevard PPTA Project - Prince William County, Virginia

Shirley Design-Build, LLC, Design-Build Project Manager (March 2011 – December 2013)

Jeff was responsible for management and direction of the discipline managers for the overall design-build process

including design, permitting, utility relocations, right-of-way acquisition, quality assurance & quality control, and construction for this $29 million design-build PPTA project for Prince William County. The Project elements included construction of University Boulevard between Sudley Manor Drive and Hornbaker Road as a six-lane divided urban roadway including a bridge over a tributary of Broad Run. He also managed the upgrading of 7,000 L.F. of Hornbaker Road to a four-lane divided roadway. As the main point of contact for the Team, Jeff was responsible for communication and coordination with Prince William County, VDOT, permitting agencies, impacted property owners, and other stakeholders. He developed the CPM schedule and monitored project controls to ensure on-time completion.

2. Pacific Boulevard Design-Build Project - Loudoun County, Virginia

Shirley Design-Build, LLC, Design-Build Project Manager (July 2008 – August 2010)

Jeff was responsible for management and direction of the discipline managers for the overall design-build process including design, permitting, utility relocations, right-of-way acquisition, quality assurance & quality control, and construction for this $19 million design-build project, which extends from Auto World Drive to Severn Way in Loudoun Country, Virginia. As the main point of contact for the Shirley/Dewberry Team, Jeff was responsible for communication and coordination with VDOT, NVRPA, permitting agencies, impacted property owners, and other stakeholders on the Project. He developed the CPM schedule and monitored progress of the project, which was completed on schedule in August 2010. In cooperation with VDOT, he coordinated with the Eugenia Investments, the primary property owner impacted by the Project, and the Design Team to prepare exhibits and cost estimates to ultimately revise the Project's design to incorporate improved entrance features for the property. As a result of this effort, Eugenia Investments agreed to dedicate the right-of-way at no cost, saving VDOT over $3 million and facilitating the early start of construction.

3. Battlefield Parkway Design-Build Project - Leesburg, Virginia

Shirley Design-Build, LLC, Design-Build Project Manager (July 2007 – November 2009)

As the Design-Build Project Manager for the Shirley/Dewberry Team, Jeff was responsible for contract administration and management of the overall design-build process including design, permitting, utility relocations, right-of-way acquisition, quality assurance & quality control, and construction for the $26.5 million design-build project to extend Battlefield Parkway from Kinkaid Boulevard to Route 7 in Leesburg, Virginia. He was the point of contact for communication and coordination with VDOT, the Town of Leesburg, NVRPA, permitting agencies, impacted property owners, and local communities on the project. Jeff also developed the CPM schedule for the project.

4. Dulles Greenway Capital Improvements Program - Loudoun County, Virginia

Shirley Contracting Company, LLC, Design-Build Project Manager (March 2005 – December 2007)

Jeff was responsible for the overall contract administration for this $71 million design-build project, which included widening the mainline roadway from four to six lanes, expansion of the mainline toll plaza, improvements to the existing Greenway interchange at Route 606, and new interchanges at Routes 653 and Route 654. He managed and integrated the individual design-build disciplines of the Shirley/Dewberry Team including design, permitting, utility relocations, and construction to ensure constructability and eliminate conflicts. He was the main point of contact for the communication and coordination with the Owner, VDOT, the Town of Leesburg, MWAA, permitting agencies, and other stakeholders. Jeff developed the CPM schedule and monitored project controls for the duration of the contract to ensure on-time project completion. As a result of the D-B Team's excellent performance through the first 18 months of the project, he was able to negotiate the addition of the Greenway/Route 772 Interchange to the Project. With Jeff's leadership, the D-B Team was able to complete the design, permitting, utility relocations, and construction of this added project in just 16 months and to complete the entire project by the original completion date of December 2007. In recognition of the success of this project, he was part of the design-build team that received the Design-Build Institute of America *2008 Regional Design-Build Excellence Award*.

5. Centreville Road Widening Design-Build Project - Centreville, Virginia

Shirley Contracting Company, LLC, Design-Build Manager (June 2005 – September 2008)

As Design-Build Manager, Jeff was responsible for leading the Shirley/Dewberry Team through all phases of the Design-Build process including design, permitting, right-of-way acquisition, utility relocations and construction. He was the primary point of contact for our team coordinating the design and construction with VDOT, local landowners, developers, the Fairfax County Department of Transportation and Board of Supervisors for the Centreville Road Widening Project. Shirley Contracting was awarded a $26 million change order to design and construct the Centreville Road Widening Project as part of the Route 28 Corridor Improvements 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. **Not applicable for this position**

Response to Request for Proposals

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 No.: C00077383DB80

SHIRLEY
CONTRACTING COMPANY, LLC

THIS PROJECT WAS DEVELOPED UTILIZING THE DEPARTMENT'S ENGINEERING DESIGN PACKAGE (GEOPAK).
GEOPAK Computer Identification No. 10636

FHWA 534 DATA 42121

STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	STP-5401()	29	0029-002-901 PE-101, RW-201, C-501	1

SHEET INDEX

1	TITLE SHEET
1J(1)-1J(2)	CONCEPTUAL ROUTE 29 SEQUENCE OF CONSTRUCTION
2A	TYPICAL SECTIONS
3-5	CONCEPTUAL ROADWAY PLANS & PROFILES

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

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

VOLUME II PLANS
ALBEMARLE COUNTY
ROUTE 29 & RIO ROAD (ROUTE 631)
GRADE SEPARATED INTERSECTION
FROM: DOMINION DRIVE (ROUTE 851)
TO: WOODBROOK DRIVE (ROUTE 1417)

ROUTE 29 FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA	
URBAN OTHER PRINCIPAL ARTERIAL (GS-5) 45 MPH DESIGN SPEED	
FROM: TO:	DOMINION DRIVE (ROUTE 851) WOODBROOK DRIVE (ROUTE 1417)
ADT (2014)	24,831
ADT (2040)	30,240
DHV	2,691
D (%) (design hour)	54%
T (%) (design hour)	3%
V (MPH)	45

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

PROJECT MANAGER
SURVEYED BY
DESIGN DATE BY Dewberry Consultants, LLC : (703) 289-4796
SUBSURFACE UTILITY BY, DATE

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
CITY,TOWN OR VILLAGE
RIGHT OF WAY LINE
FENCE LINE
UNFENCED PROPERTY LINE
FENCED PROPERTY LINE
WATER LINE
SANITARY SEWER LINE
GAS LINE
ELECTRIC UNDERGROUND CABLE
TRAVELED WAY
GUARD RAIL
RETAINING WALL
RAILROADS
BASE OR SURVEY LINE
LEVEE OR EMBANKMENT
BRIDGES
CULVERTS
DROP INLET
POWER POLES
TELEPHONE OR TELEGRAPH POLES
TELEPHONE OR TELEGRAPH LINES
HEDGE
TREES
HEAVY WOODS
GROUND ELEVATION
GRADE ELEVATION

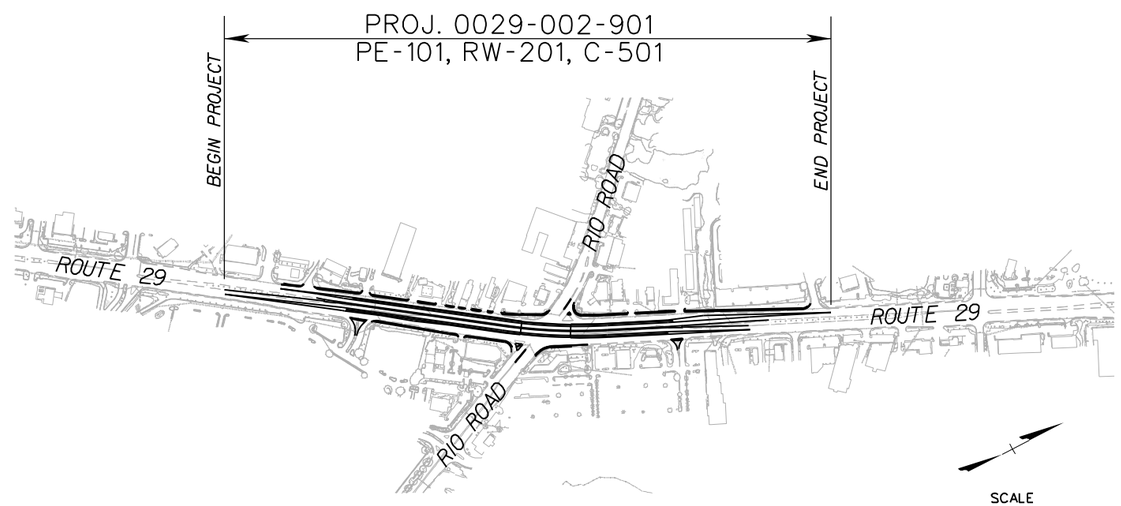
THE COMPLETE ELECTRONIC PDF VERSION OF THE PLAN ASSEMBLY AS AWARDED HAS BEEN SEALED AND SIGNED USING DIGITAL SIGNATURES AND THE OFFICIAL PLAN ASSEMBLY IN ELECTRONIC FORMAT IS STORED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY, INCLUDING ALL SUBSEQUENT REVISIONS, WILL BE THE OFFICIAL CONSTRUCTION PLANS. FOR INFORMATION RELATIVE TO ELECTRONIC FILES AND LAYERED PLANS, SEE THE GENERAL NOTES

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

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT'S 2007 ROAD AND BRIDGE SPECIFICATIONS, 2008 ROAD AND BRIDGE STANDARDS, 2009 MUTCD, 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, 2011 VIRGINIA WORK AREA PROTECTION MANUAL AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC PDF VERSION OF THE PLAN ASSEMBLY.

ALL CURVES ARE TO BE SUPERELEVATED, TRANSITIONED AND WIDENED IN ACCORDANCE WITH STANDARD TC-5.11ULS EXCEPT WHERE OTHERWISE NOTED.

THE ORIGINAL APPROVED TITLE SHEET(S), INCLUDING ORIGINAL SIGNATURES, ARE FILED IN THE VDOT CENTRAL OFFIC PLAN LIBRARY. ANY MISUSE OF ELECTRONIC FILES, INCLUDING SCANNED SIGNATURES, IS ILLEGAL AND ENFORCED TO THE FULL EXTENT OF THE LAW.



SCALE 0 500 1000

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	EQUALITIES FEET	LENGTH INCLUDING BRIDGE(S) FEET	LENGTH INCLUDING BRIDGE(S) MILES	LENGTH EXCLUDING BRIDGE(S) FEET	LENGTH EXCLUDING BRIDGE(S) MILES	TYPE PROJECT	DESCRIPTION
0029-002-901	PE-101	NHPP-002-7(045)		106136						PREL. ENG.	FROM: DOMINION DRIVE (ROUTE 851) TO: WOODBROOK DRIVE (ROUTE 1417)
	RW-201	NHPP-002-7(045)		106136						RIGHT-OF-WAY	FROM: DOMINION DRIVE (ROUTE 851) TO: WOODBROOK DRIVE (ROUTE 1417)
	C-501	NHPP-002-7(045)		106136						CONSTRUCTION	FROM: DOMINION DRIVE (ROUTE 851) TO: WOODBROOK DRIVE (ROUTE 1417)

Project Lengths are based on Route 29 Construction Baseline.

REVISED

TIER 2 PROJECT

RECOMMENDED FOR APPROVAL FOR RIGHT-OF-WAY ACQUISITION	
DATE	(DESIGN-BUILD FIRM) DESIGN MANAGER
DATE	(DESIGN-BUILD FIRM) PROJECT MANAGER
DATE	VDOT PROJECT MANAGER
DATE	VDOT MEGAPROJECTS DIRECTOR OR DESIGN-BUILD PROGRAM MANAGER
DATE	CHIEF ENGINEER

APPROVED FOR RIGHT OF WAY ACQUISITION	
DATE	CHIEF OF POLICY

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
DATE	(DESIGN-BUILD FIRM) DESIGN MANAGER
DATE	(DESIGN-BUILD FIRM) PROJECT MANAGER
DATE	VDOT PROJECT MANAGER
DATE	VDOT MEGAPROJECTS DIRECTOR OR DESIGN-BUILD PROGRAM MANAGER

APPROVED FOR CONSTRUCTION	
DATE	CHIEF ENGINEER

Copyright 2015, Commonwealth of Virginia

$TIME$STAMP$

PROJECT	SHEET NO.
0029-002-901	1

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	IJ(1)

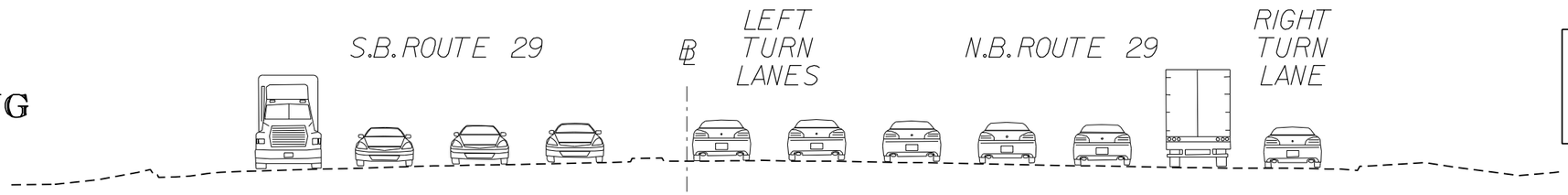
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PROPOSED SEQUENCE OF CONSTRUCTION

RIO ROAD GRADE SEPARATED INTERSECTION

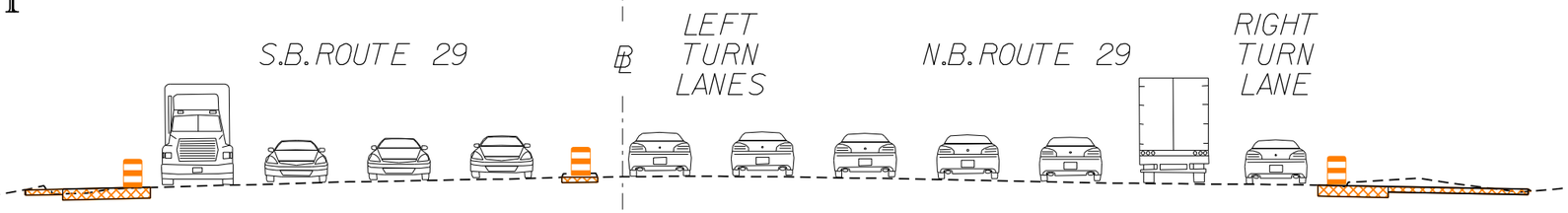
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

EXISTING



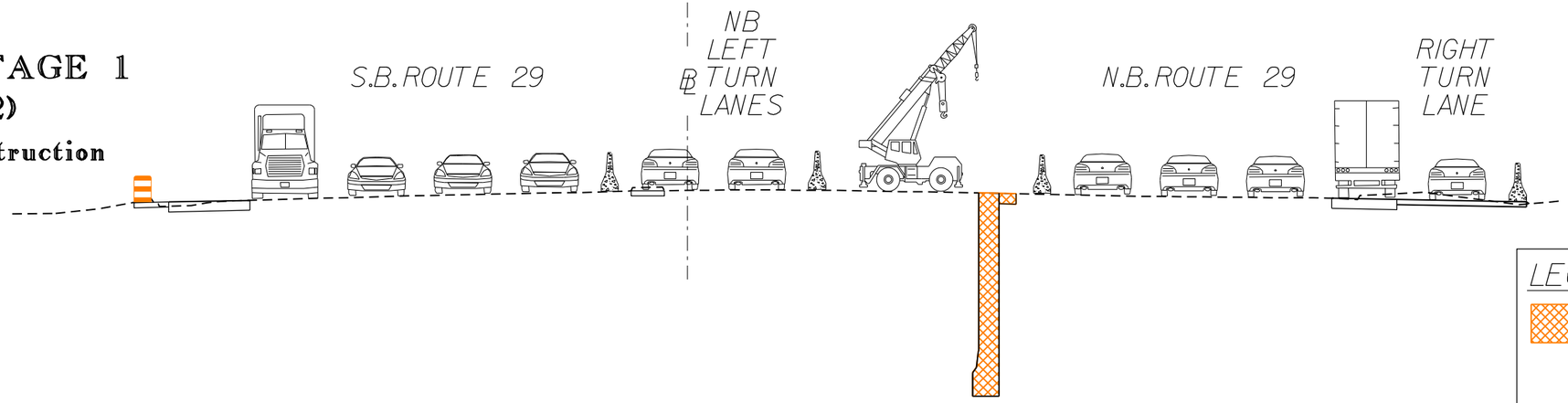
PHASE 1 - STAGE 1 (STEP 1)

Outside Widening (Including Temporary Pavement)



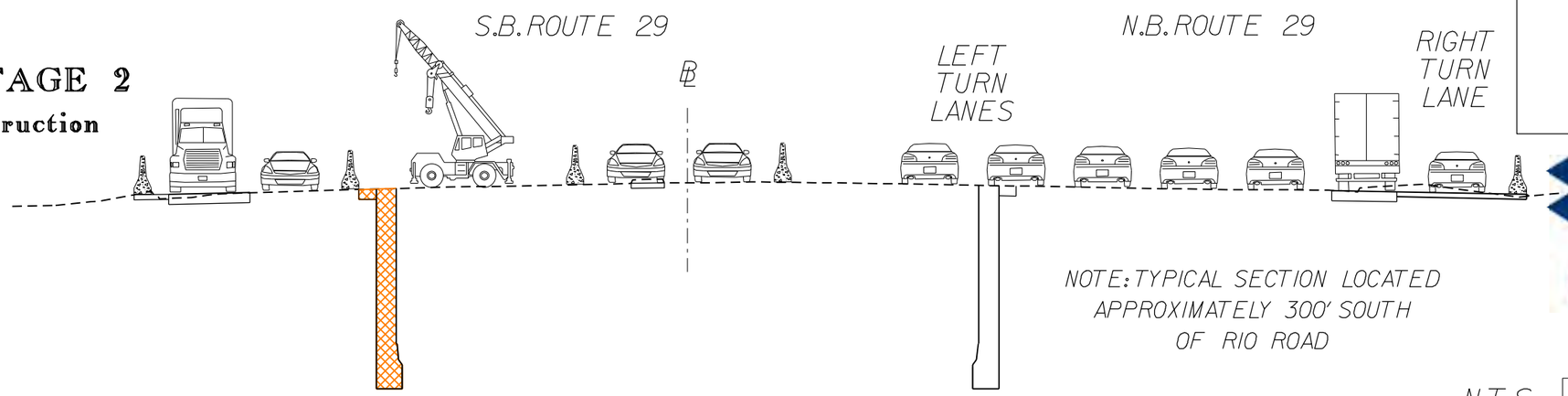
PHASE 1 - STAGE 1 (STEP 2)

NB Wall Construction



PHASE 1 - STAGE 2

SB Wall Construction



NOTE: TYPICAL SECTION LOCATED APPROXIMATELY 300' SOUTH OF RIO ROAD

LEGEND:

- WORK AREA
- TEMPORARY BARRIER WHERE REQ'D. PER PLANS
- GROUP 2 CHANNELIZING DEVICE

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

N.T.S.

	PROJECT	SHEET NO.
	0029-002-135	IJ(1)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201, C-501	IJ(2)

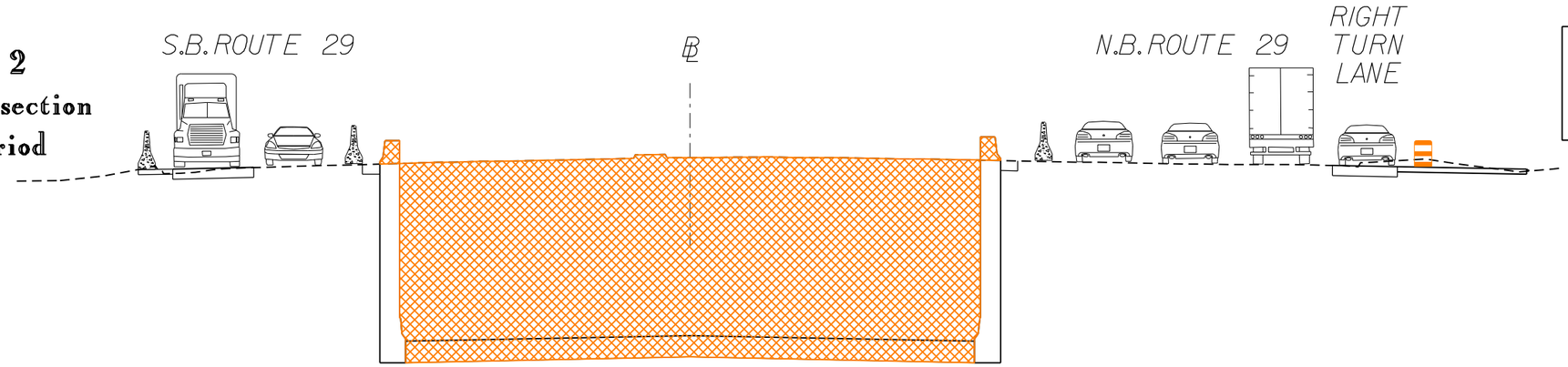
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PROPOSED SEQUENCE OF CONSTRUCTION

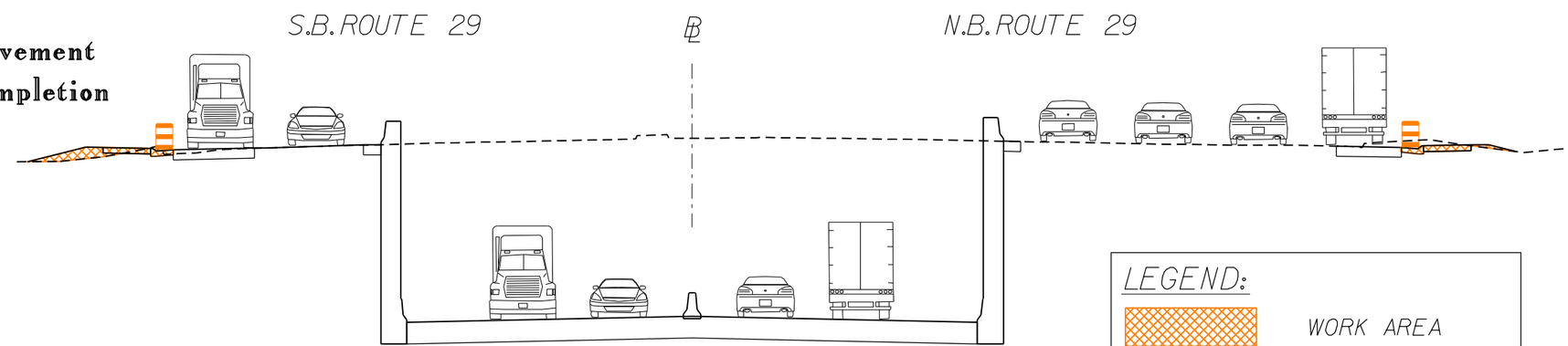
RIO ROAD GRADE SEPARATED INTERSECTION

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

PHASE 2
103 Day Intersection Closure Period



PHASE 3
Remove Temporary Pavement & Outside Completion



LEGEND:

- WORK AREA
- TEMPORARY BARRIER WHERE REQ'D. PER PLANS
- GROUP 2 CHANNELIZING DEVICE

NOTE: TYPICAL SECTION LOCATED APPROXIMATELY 300' SOUTH OF RIO ROAD

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

N.T.S.

PROJECT	SHEET NO.
0029-002-135	IJ(2)

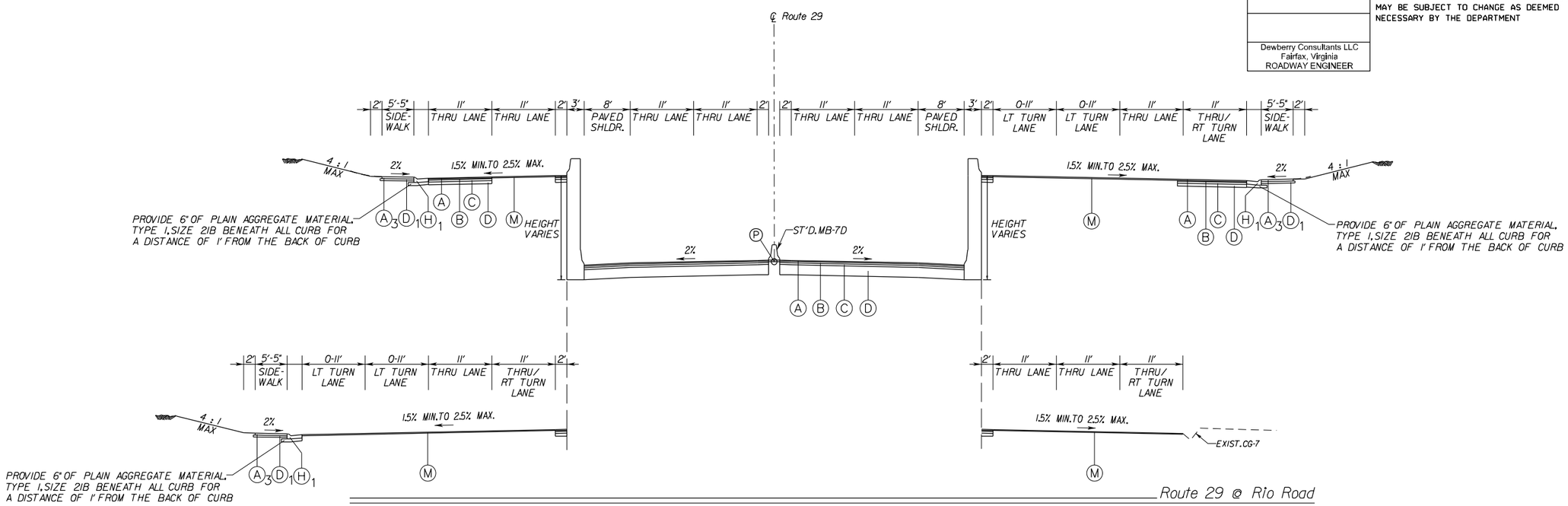
PROJECT MANAGER _ _ _ _ _ _ _ _ _
SURVEYED BY _ _ _ _ _ _ _ _ _
DESIGN SUPERVISED BY _ _ _ _ _ _
SUBSURFACE UTILITY BY, DATE _ _ _ _ _ _ _ _ _ _ _ .

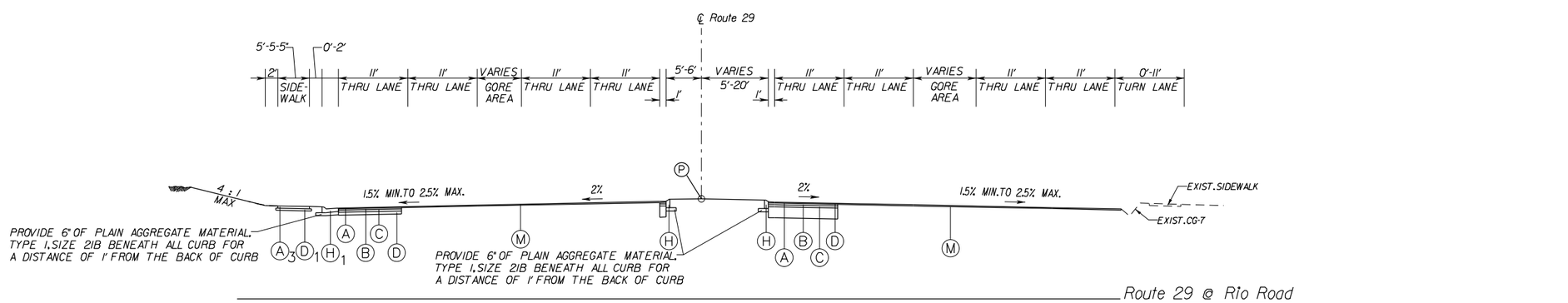
TYPICAL SECTIONS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO) 0029-002-901 RW-201,C-501	2A

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER





LEGEND

- (A) 2" Asphalt Concrete, Type SM-12.5D
- $(A)_1$ 2" Asphalt Concrete, Type SM-9.5A
- $(A)_2$ 2" Asphalt Concrete, Type SM-9.5A @ 240 lbs/sy
- $(A)_3$ 4" Hydraulic Cement Concrete, Class A3
- (B) 3" Asphalt Concrete, Type IM-19.0A
- $(B)_2$ 2" Asphalt Concrete, Type IM-19.0A
- (C) 4" Asphalt Concrete, Type BM-25.0A
- $(C)_1$ 3" Asphalt Concrete, Type BM-25.0A
- (D) 21" Aggregate Base Material, Type 1, Size No. 21B ✳
  ✳ 21" of Aggregate Base Material to Match Existing Mainline Pavement Structure Depth and/or Provide Cross-Sectional Drainage. A Min. of 10" of Aggregate Base Material Is Required to Meet the Calculated Design Structural Number. For any Sections of Existing Pavement that are Removed and Replaced Entirely, or New Pavement is Not Adjacent to Existing Pavement, the Min. Required Aggregate Base Material Is 10" If Cross-Sectional Drainage of the Structures Will be Provided or Mainained.
- $(D)_1$ 4" Aggregate Base Material, Type 1, Size No. 21B Extended 4" on Either Side of The Surface
- $(D)_2$ 6" Aggregate Base Material, Type 1, Size No. 21B
- $(D)_3$ 6" Plain Aggregate, Type 1, Size No. 21B Extended 6" on Either Side of The Surface
- (E) Hand Rail, St'd. HR-1 Req'd.
- (F) Retaining Wall in Fill
- $(F)_1$ Retaining Wall in Cut
- (G) Gaurdrail, St'd. GR-2A Req'd.
- (H) Curb, St'd. CG-3
- $(H)_1$ Curb and Gutter, St'd. CG-7
- $(H)_2$ Curb and Gutter, St'd. CG-2
- (J) Paved Ditch, St'd. PG-2A, Type E Req'd.
- (M) Mill Existing Pavement 2" and Replace with Min. 2" Asphalt Concrete SM-12.5D
- (P) Profile Grade Line
- (U) Underdrain, St'd. UD-4

SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

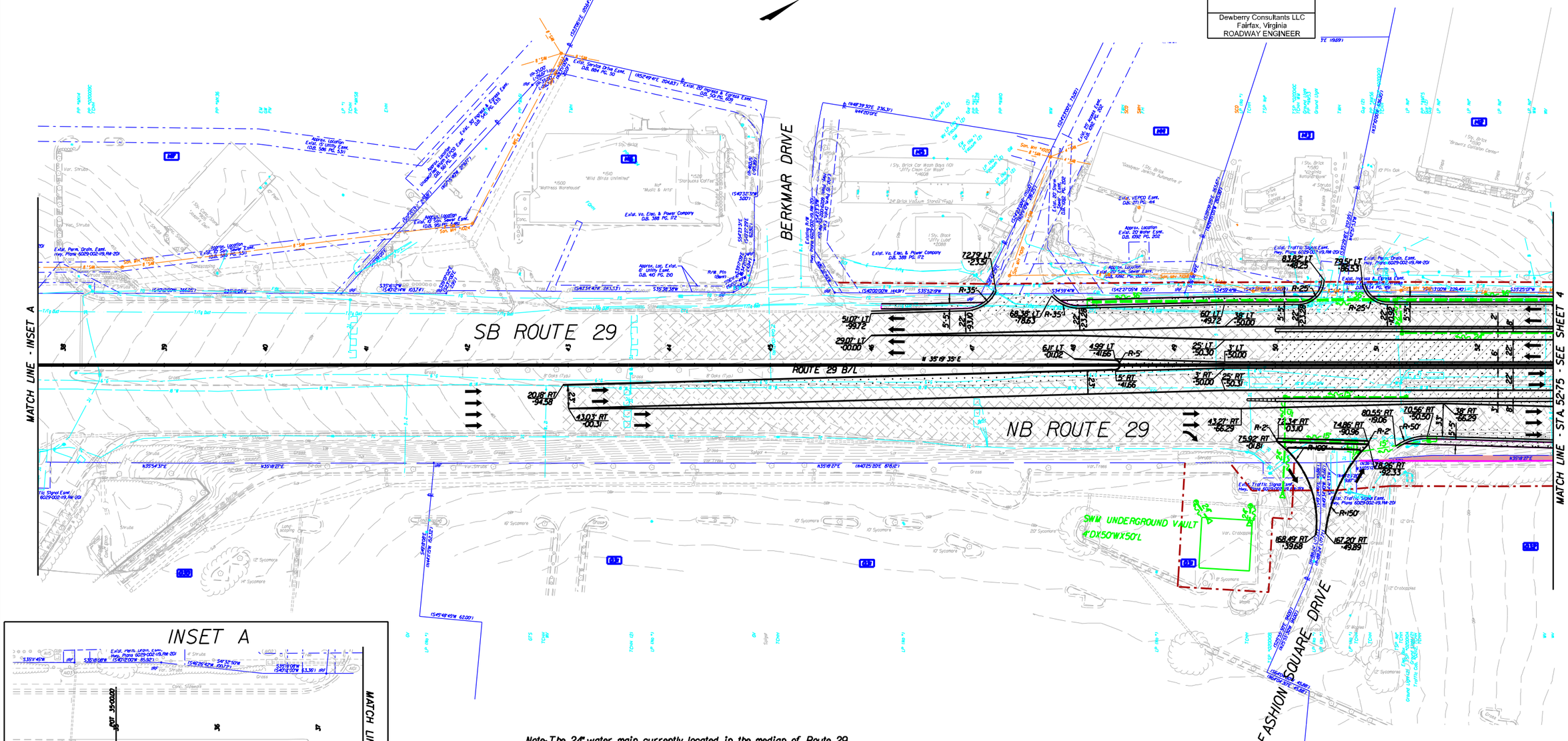
PROJECT	SHEET NO.
0029-002-135	2A

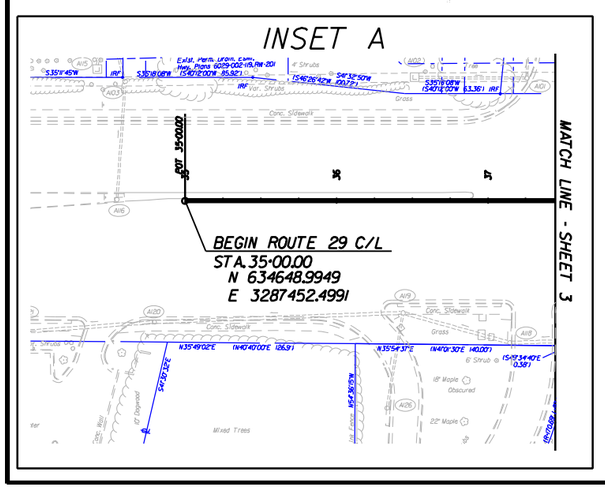
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-901 RW-201,C-501	3

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER





Note: The 24" water main currently located in the median of Route 29 will be relocated to the right-most northbound thru lane. The 6" gas main currently located in the median of Route 29 will be relocated to the right-most southbound thru lane. Final locations of both utility relocations will be coordinated with VDOT and the utility owner, as well as refelct existing horizontal and vertical positions of service connections, and relocations of other utilities currently being coordinated by VDOT.

- Denotes Full Depth Pavement
- Denotes Demolition of Pavement
- Denotes Milling and Overlay
- Denotes Variable Depth Overlay
- Denotes Concrete Sidewalk
- Denotes Change In Anticipated Right-of-Way Impacts as Compared to the RFP Plans
- Denotes Proposed Right-of-Way per RFP Documents
- Denotes Proposed Right-of-Way
- Denotes Proposed Permanent Easements
- Denotes Proposed Temporary Easements
- C _ _ Denotes Construction Limits In Cuts
- F _ _ Denotes Construction Limits In Fills

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SCALE 0 50' 100'

PROJECT	SHEET NO.
0029-002-901	3

Denotes Proposed Right-of-Way per RFP Documents
Denotes Proposed Right-of-Way
Denotes Proposed Permanent Easements
Denotes Proposed Temporary Easements
C _ _ Denotes Construction Limits in Cuts
F _ _ Denotes Construction Limits in Fills

Denotes Full Depth Pavement
Denotes Demolition of Pavement
Denotes Milling and Overlay
Denotes Variable Depth Overlay
Denotes Concrete Sidewalk
Denotes Change in Anticipated Right-of-Way Impacts as Compared to the RFP Plans

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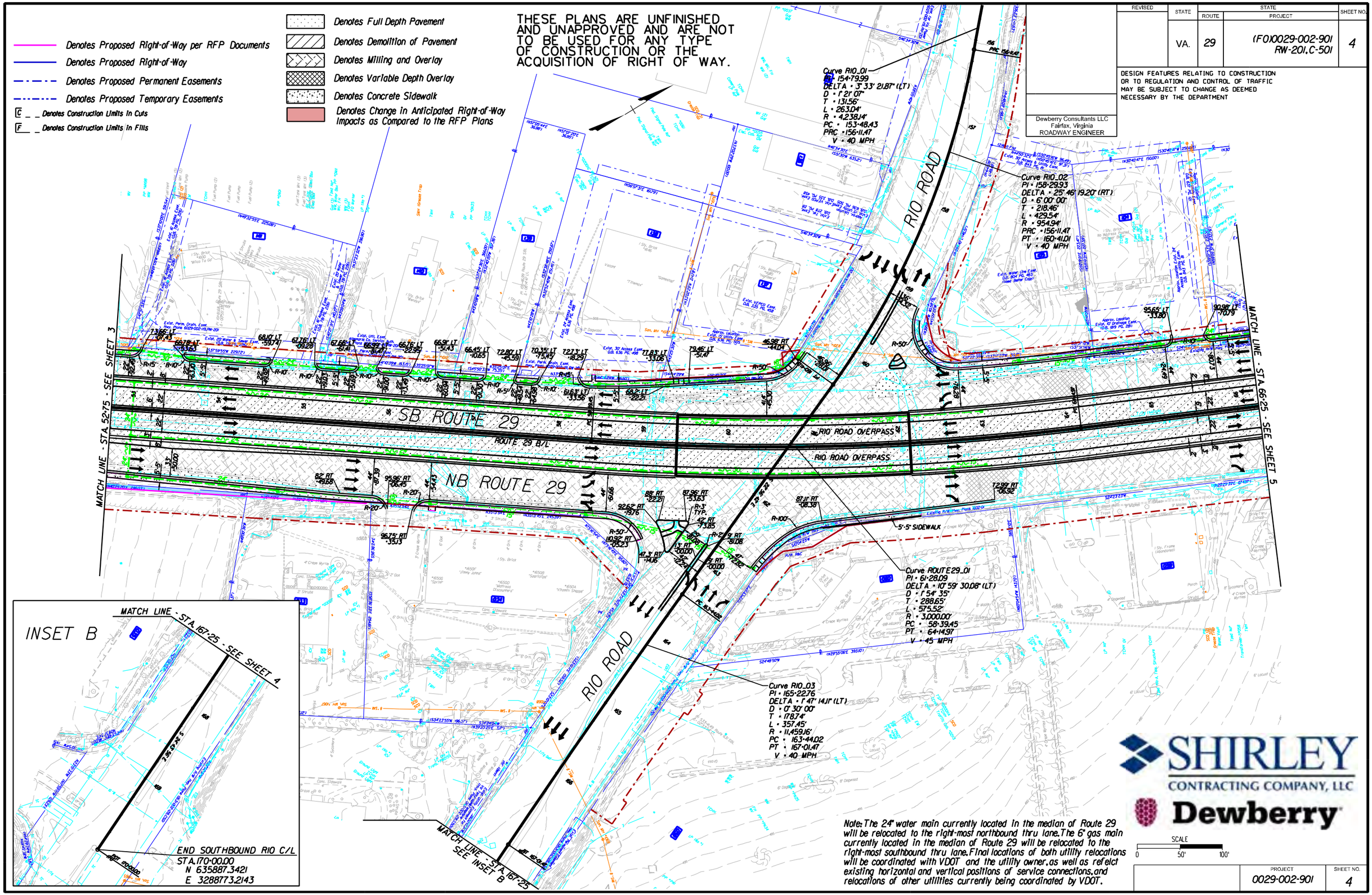
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-901 RW-201,C-501	4

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



Note: The 24" water main currently located in the median of Route 29 will be relocated to the right-most northbound thru lane. The 6" gas main currently located in the median of Route 29 will be relocated to the right-most southbound thru lane. Final locations of both utility relocations will be coordinated with VDOT and the utility owner, as well as reflect existing horizontal and vertical positions of service connections, and relocations of other utilities currently being coordinated by VDOT.

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SCALE 0 50' 100'

PROJECT	SHEET NO.
0029-002-901	4

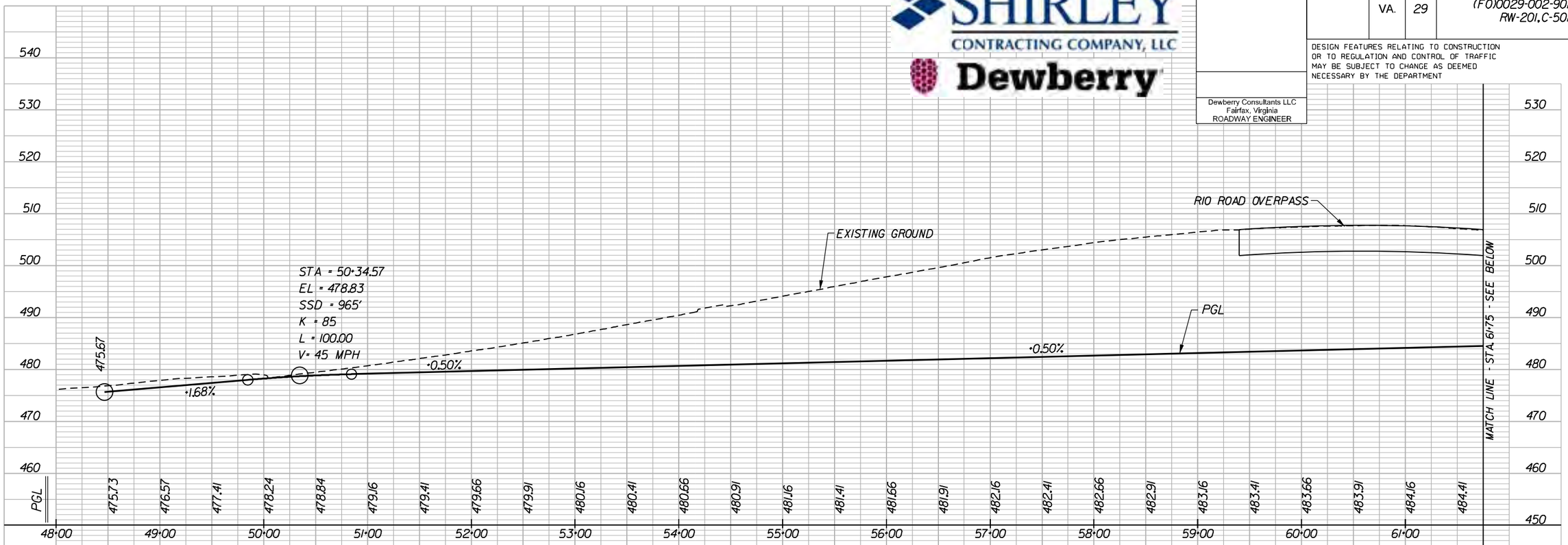
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-901 RW-201,C-501	4A

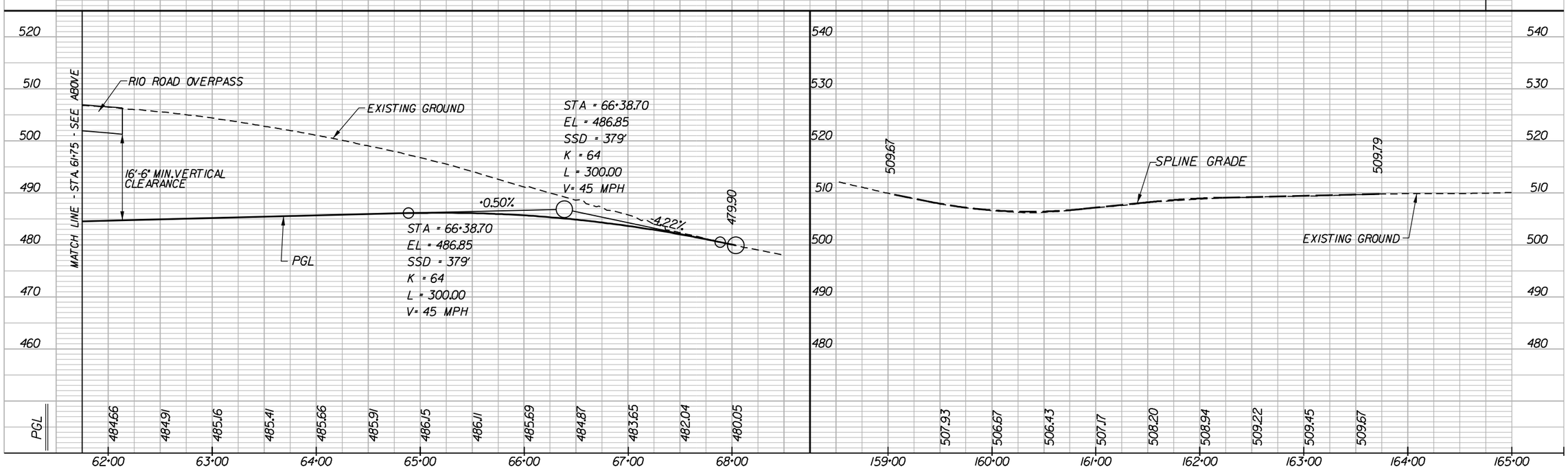
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER





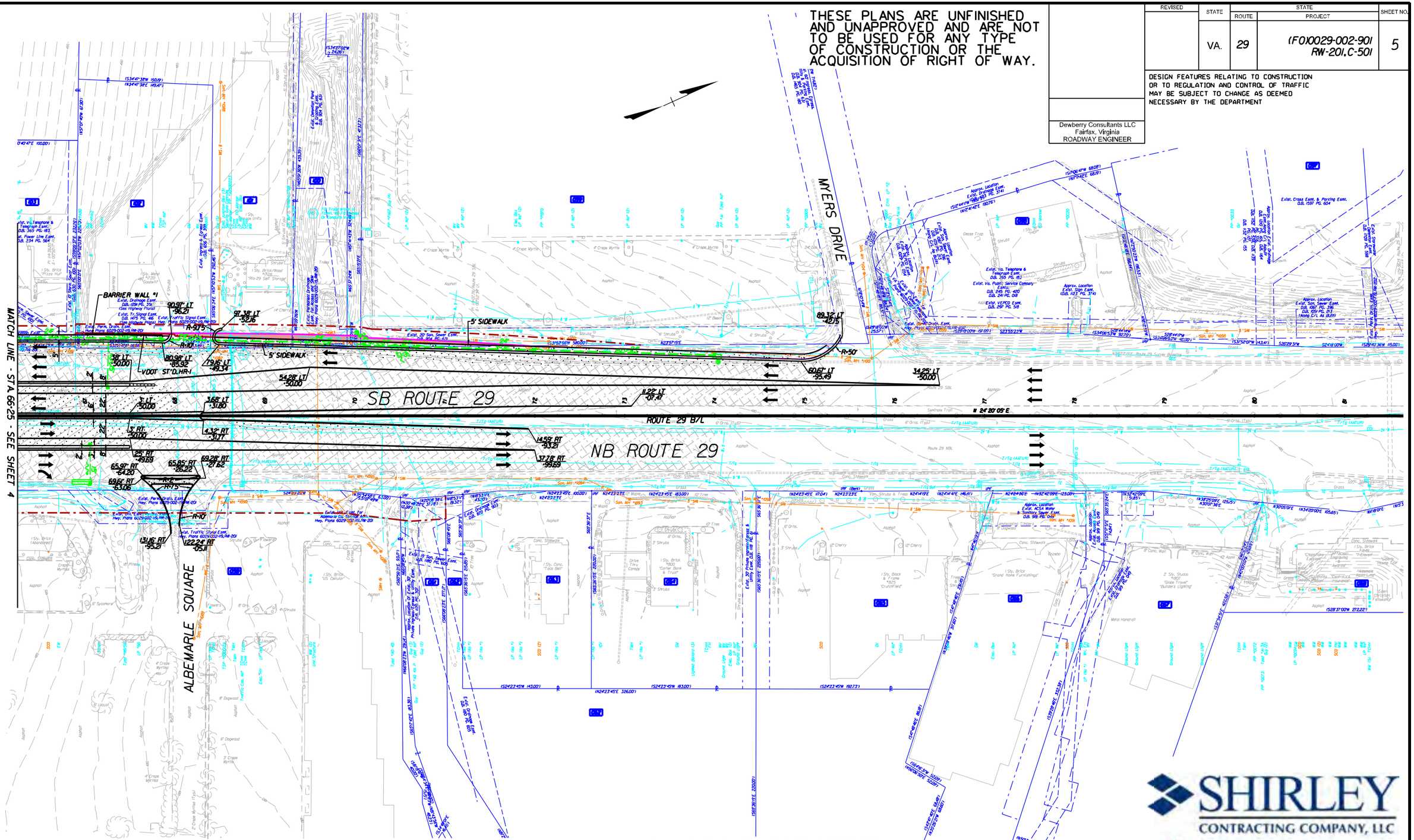
PROJECT	SHEET NO.
0029-002-901	4A

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

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-901 RW-201,C-501	5

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



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- Denotes Full Depth Pavement
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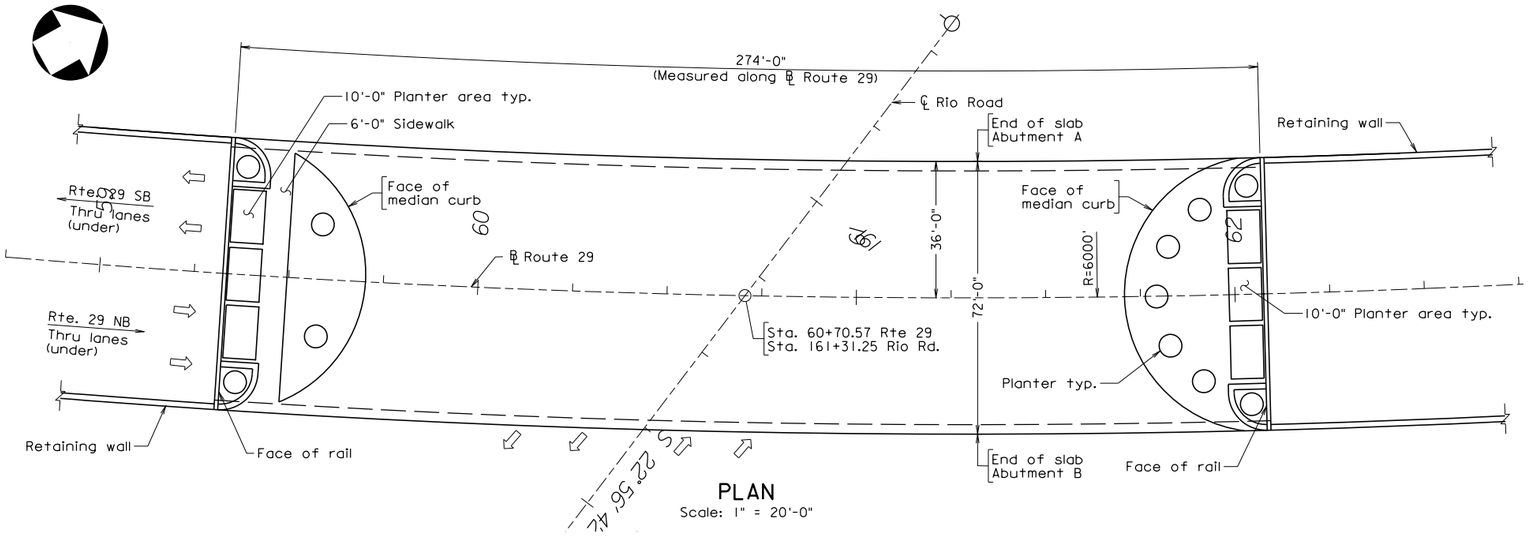
SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

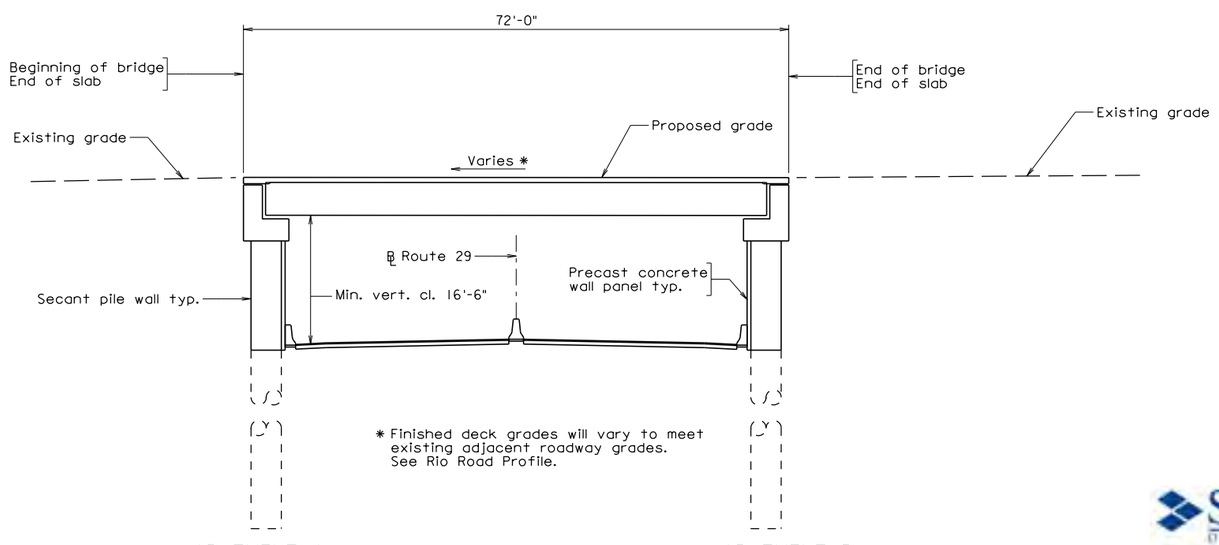
SCALE
0 50' 100'

PROJECT	SHEET NO.
0029-002-901	5

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NHPP-002-7(045)	29	0029-002-901, B651	(1)
NBIS Number:		-	UPC No. 106136		
Federal Oversight Code:		N/A	FHWA Construction and Scour Code:		



PLAN
Scale: 1" = 20'-0"



DEVELOPED SECTION
Scale: 1" = 10'

DESIGN EXCEPTION(S):

None.

GENERAL NOTES:

Width: 1'-0" Rail, Roadway width 274'-0", 1'-0" 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.

Note to Offerors:

These plans depict the approximate location and a concept of the proposed structure. The bridge geometrics, span lengths, type and size of superstructure members and substructure elements and maintenance of traffic are to be developed by the Offeror.

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE ON

RIO ROAD AT ROUTE 29

ALBEMARLE COUNTY

PROJ. 0029-002-901, B651

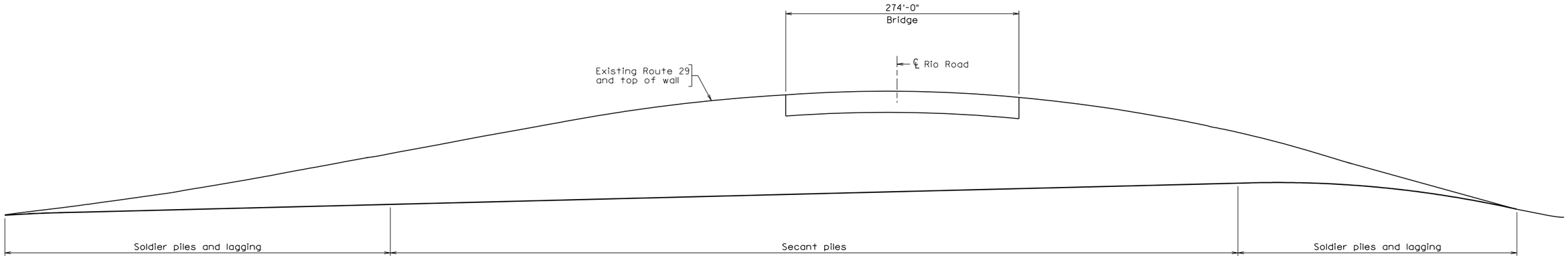
SHIRLEY DESIGN-BUILD, LLC

Dewberry

b106136.dgn

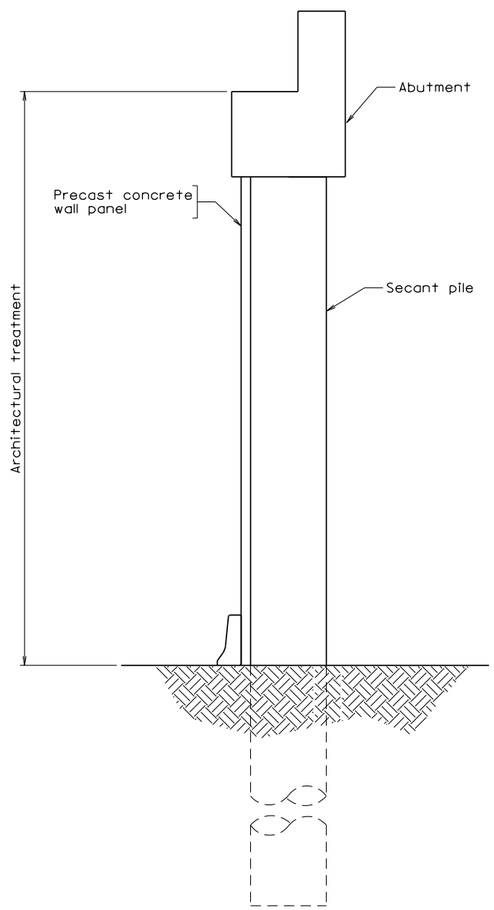
Plan_DevelopedSection

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	————	29	0029-002-901, B651	

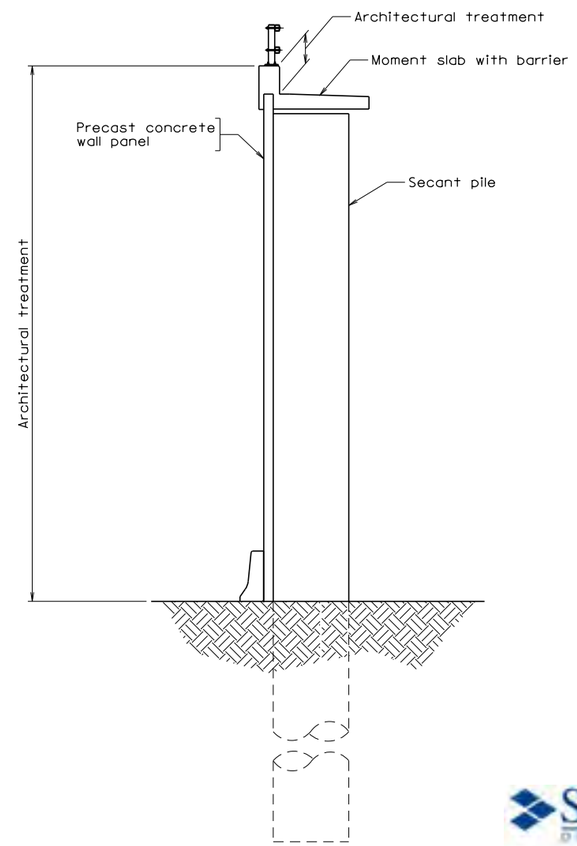


TYPICAL WALL ELEVATION

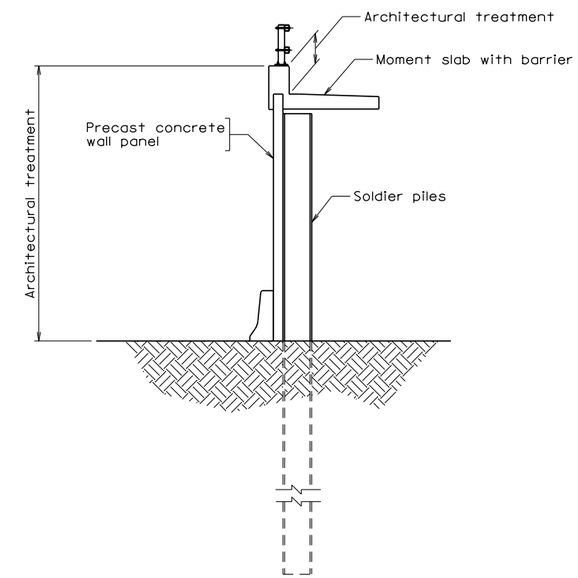
Scale: 1" = 60'-0"



ABUTMENT SECTION



SECANT PILE SECTION



SOLDIER PILE SECTION

Notes:

Areas indicated as receiving architectural treatment will receive a finish in accordance with the Special Provision for architectural finish included in RFP Information Package.

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

© 2014, Commonwealth of Virginia

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

PROPOSED RETAINING WALL

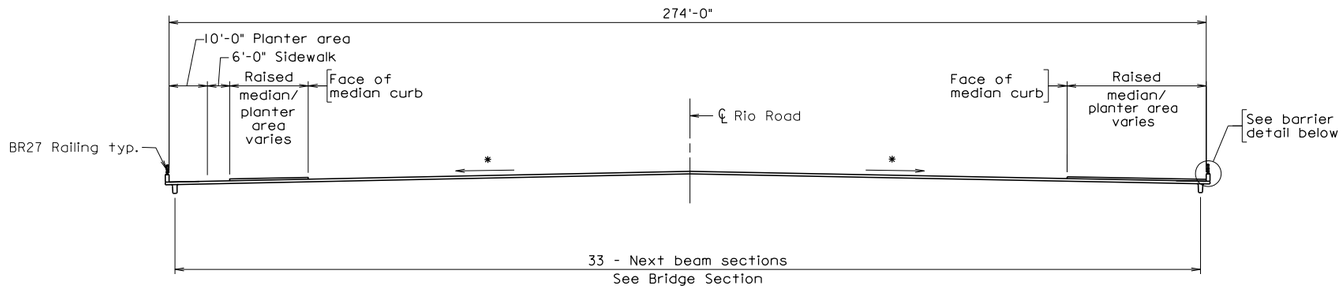
Designed:	Date	Plan No.	Sheet No.
Drawn:			
Checked:			

Wall_Elevation_Pile_Sections_Proposal.dgn

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	—	29	0029-002-901, B651	

Note:

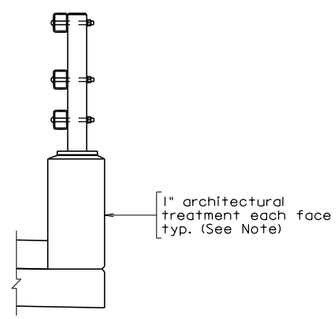
Areas indicated as receiving architectural treatment will receive a finish in accordance with the Special Provision for architectural finish included in RFP Information Package.



TRANSVERSE SECTION

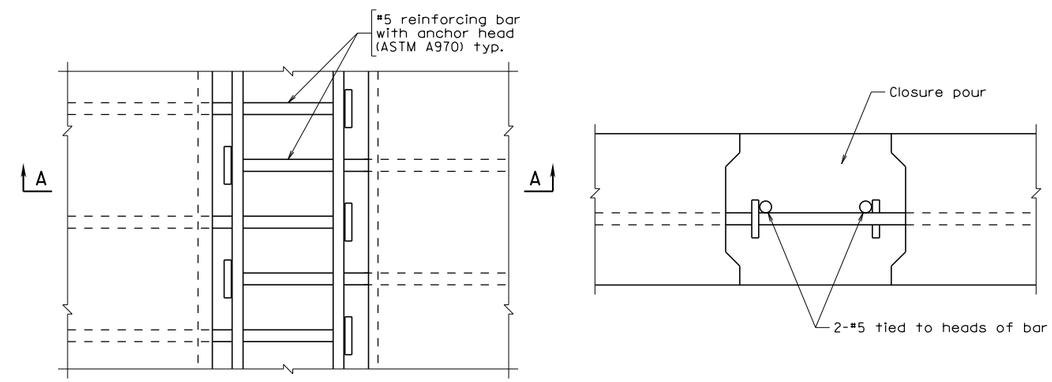
Scale: 1"= 20'

* Finished deck grades will match adjacent roadway grades. See Rio Road Profile.



BARRIER DETAIL

Scale: ¾"= 1'-0"

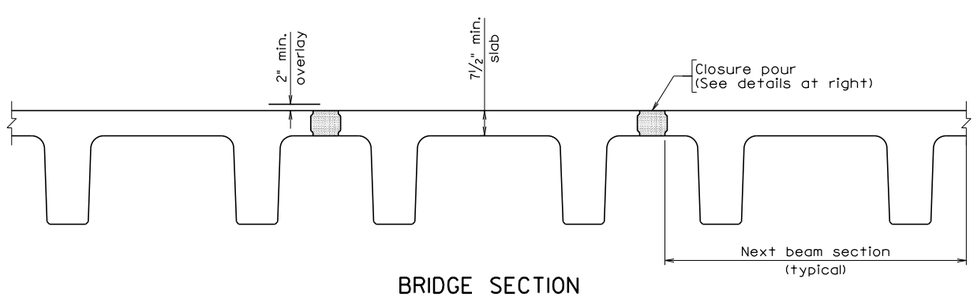


PLAN

SECTION A-A

CLOSURE POUR DETAILS

Scale: 3"= 1'-0"



BRIDGE SECTION

Scale: ½" = 1'-0" unless noted otherwise

© 2014, Commonwealth of Virginia

No.	Description	Date

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION AND DETAILS

Designed:	Date	Plan No.	Sheet No.
Drawn:			
Checked:			

Transverse_Section_Proposal.dgn

THIS PROJECT WAS DEVELOPED UTILIZING THE DEPARTMENT'S ENGINEERING DESIGN PACKAGE (GEOPAK).
GEOPAK Computer Identification No. 77383

SHEET INDEX

1	TITLE SHEET
1J	CONCEPTUAL ROUTE 29 SEQUENCE OF CONSTRUCTION
2A(1)-2A(2)	TYPICAL SECTIONS
3-10	CONCEPTUAL ROADWAY PLANS & PROFILES

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

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

VOLUME II PLANS

ALBEMARLE COUNTY
ROUTE 29 WIDENING
FROM: POLO GROUNDS ROAD (RTE. 643)
TO: TOWN CENTER DRIVE (RTE. 1719)

STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	STP-5104(166)	29	0029-002-135 PE-101, RW-201, C-501	1

ROUTE 29 FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA	
URBAN OTHER PRINCIPAL ARTERIAL (GS-5) 45 MPH DESIGN SPEED	
FROM: TO:	POLO GROUNDS ROAD (ROUTE 643) TOWN CENTER DRIVE (ROUTE 1719)
ADT (2014)	49,000
ADT (2040)	60,000
DHV	4,980
D (%) (design hour)	56%
T (%) (design hour)	6%
V (MPH)	45

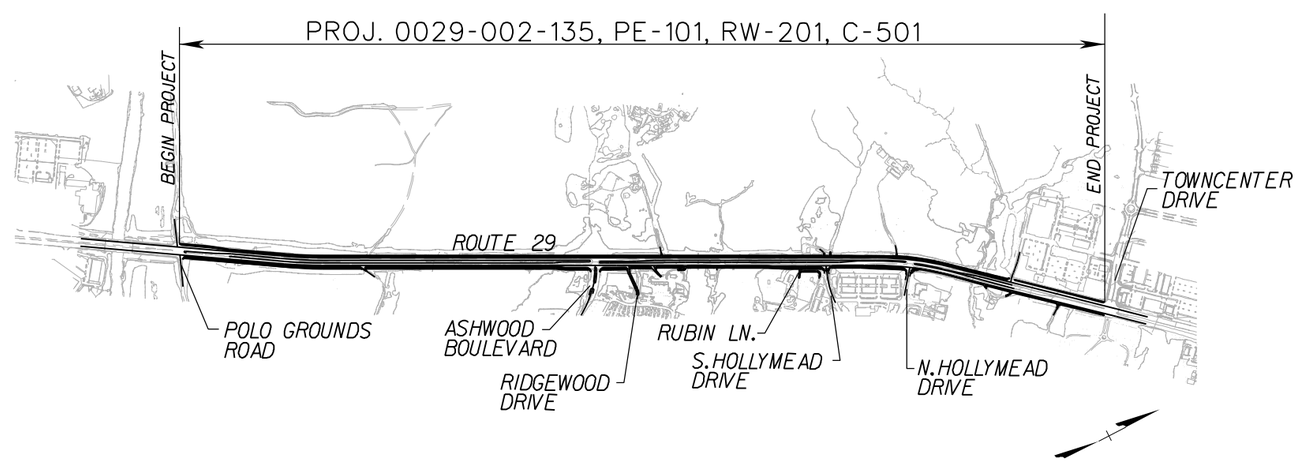
SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

PROJECT MANAGER
SURVEYED BY
DESIGN DATE BY Dewberry Consultants, LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
CITY,TOWN OR VILLAGE
RIGHT OF WAY LINE
FENCE LINE
UNFENCED PROPERTY LINE
FENCED PROPERTY LINE
WATER LINE
SANITARY SEWER LINE
GAS LINE
ELECTRIC UNDERGROUND CABLE
TRAVELED WAY
GUARD RAIL
RETAINING WALL
RAILROADS
BASE OR SURVEY LINE
LEVEE OR EMBANKMENT
BRIDGES
CULVERTS
DROP INLET
POWER POLES
TELEPHONE OR TELEGRAPH POLES
TELEPHONE OR TELEGRAPH LINES
HEDGE
TREES
HEAVY WOODS
GROUND ELEVATION
GRADE ELEVATION



SCALE 0 800 1600

THE COMPLETE ELECTRONIC PDF VERSION OF THE PLAN ASSEMBLY AS AWARDED HAS BEEN SEALED AND SIGNED USING DIGITAL SIGNATURES AND THE OFFICIAL PLAN ASSEMBLY IN ELECTRONIC FORMAT IS STORED IN THE VDOT CENTRAL OFFICE PLAN LIBRARY, INCLUDING ALL SUBSEQUENT REVISIONS, WILL BE THE OFFICIAL CONSTRUCTION PLANS. FOR INFORMATION RELATIVE TO ELECTRONIC FILES AND LAYERED PLANS, SEE THE GENERAL NOTES

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

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT'S 2007 ROAD AND BRIDGE SPECIFICATIONS, 2008 ROAD AND BRIDGE STANDARDS, 2009 MUTCD, 2011 VIRGINIA SUPPLEMENT TO THE MUTCD, 2011 VIRGINIA WORK AREA PROTECTION MANUAL AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC PDF VERSION OF THE PLAN ASSEMBLY.

ALL CURVES ARE TO BE SUPERELEVATED, TRANSITIONED AND WIDENED IN ACCORDANCE WITH STANDARD TC-5.11U EXCEPT WHERE OTHERWISE NOTED.

THE ORIGINAL APPROVED TITLE SHEET(S), INCLUDING ORIGINAL SIGNATURES, ARE FILED IN THE VDOT CENTRAL OFFIC PLAN LIBRARY. ANY MISUSE OF ELECTRONIC FILES, INCLUDING SCANNED SIGNATURES, IS ILLEGAL AND ENFORCED TO THE FULL EXTENT OF THE LAW.

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	EQUALITIES FEET	LENGTH INCLUDING BRIDGE(S) FEET	LENGTH INCLUDING BRIDGE(S) MILES	LENGTH EXCLUDING BRIDGE(S) FEET	LENGTH EXCLUDING BRIDGE(S) MILES	TYPE PROJECT	DESCRIPTION
0029-002-135	PE-101	STP-5104(166)		77383						PREL. ENG.	FROM: POLO GROUNDS ROAD (ROUTE 643) TO: TOWN CENTER DRIVE (ROUTE 1719)
	RW-201	STP-5104(166)		77383						RIGHT-OF-WAY	FROM: POLO GROUNDS ROAD (ROUTE 643) TO: TOWN CENTER DRIVE (ROUTE 1719)
	C-501	STP-5104(166)		77383						CONSTRUCTION	FROM: POLO GROUNDS ROAD (ROUTE 643) TO: TOWN CENTER DRIVE (ROUTE 1719)

Project Lengths are based on NB US 29 Construction Baseline.

REVISED

TIER 2 PROJECT

RECOMMENDED FOR APPROVAL FOR RIGHT-OF-WAY ACQUISITION	
DATE	(DESIGN-BUILD FIRM) DESIGN MANAGER
DATE	(DESIGN-BUILD FIRM) PROJECT MANAGER
DATE	VDOT PROJECT MANAGER
DATE	VDOT MEGAPROJECTS DIRECTOR OR DESIGN-BUILD PROGRAM MANAGER
DATE	CHIEF ENGINEER

APPROVED FOR RIGHT OF WAY ACQUISITION	
DATE	CHIEF OF POLICY

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
DATE	(DESIGN-BUILD FIRM) DESIGN MANAGER
DATE	(DESIGN-BUILD FIRM) PROJECT MANAGER
DATE	VDOT PROJECT MANAGER
DATE	VDOT MEGAPROJECTS DIRECTOR OR DESIGN-BUILD PROGRAM MANAGER

APPROVED FOR CONSTRUCTION	
DATE	CHIEF ENGINEER

Copyright 2015, Commonwealth of Virginia

$TIME$STAMP$

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201, C-501	IJ

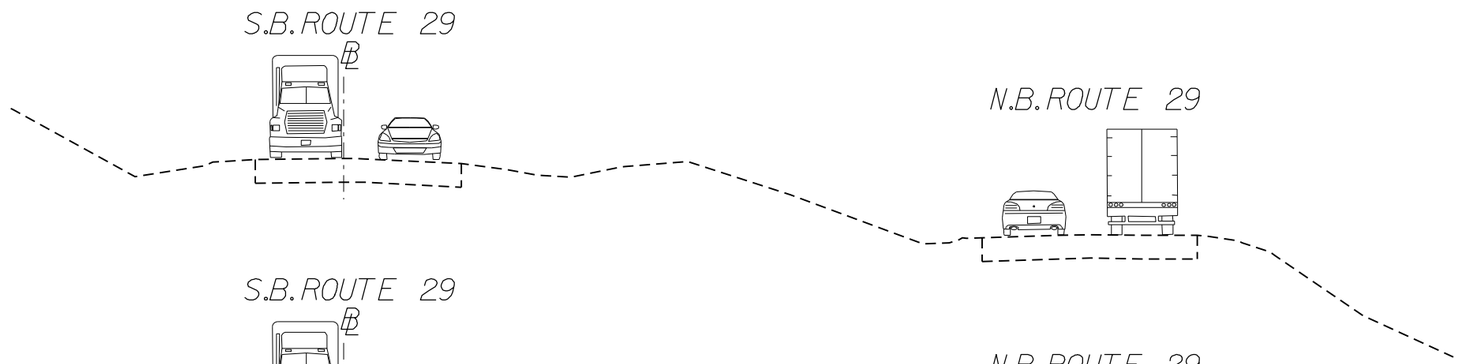
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PROPOSED SEQUENCE OF CONSTRUCTION

ROUTE 29 WIDENING

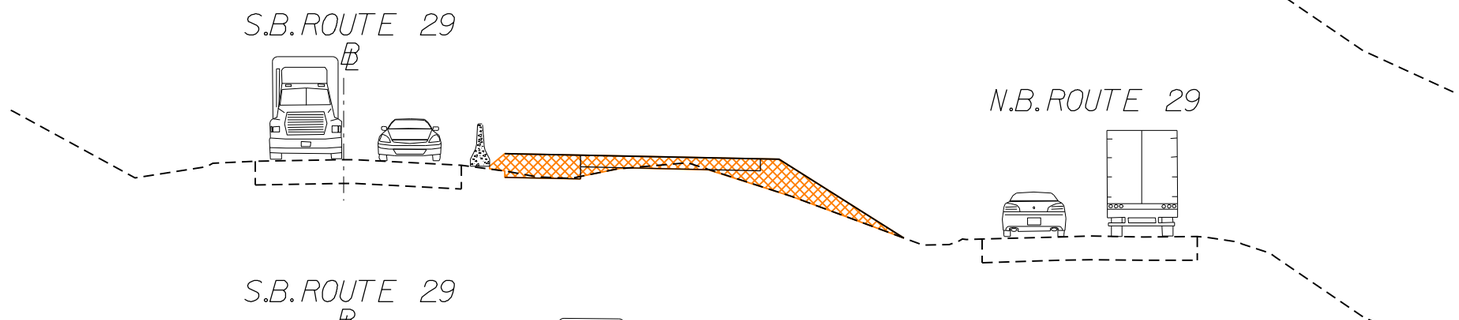
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

EXISTING



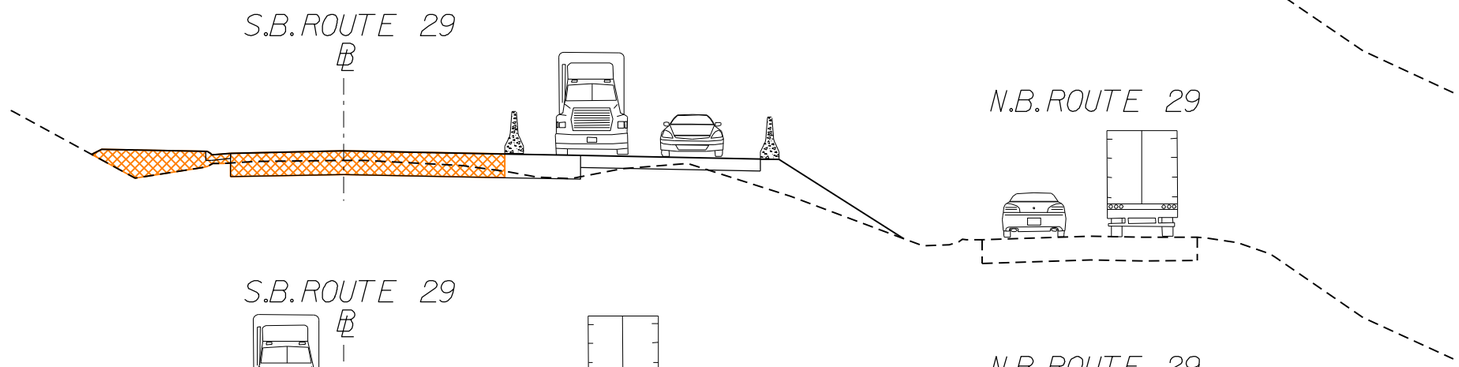
STAGE 1A

SB Inside Widening & Temporary Pavement



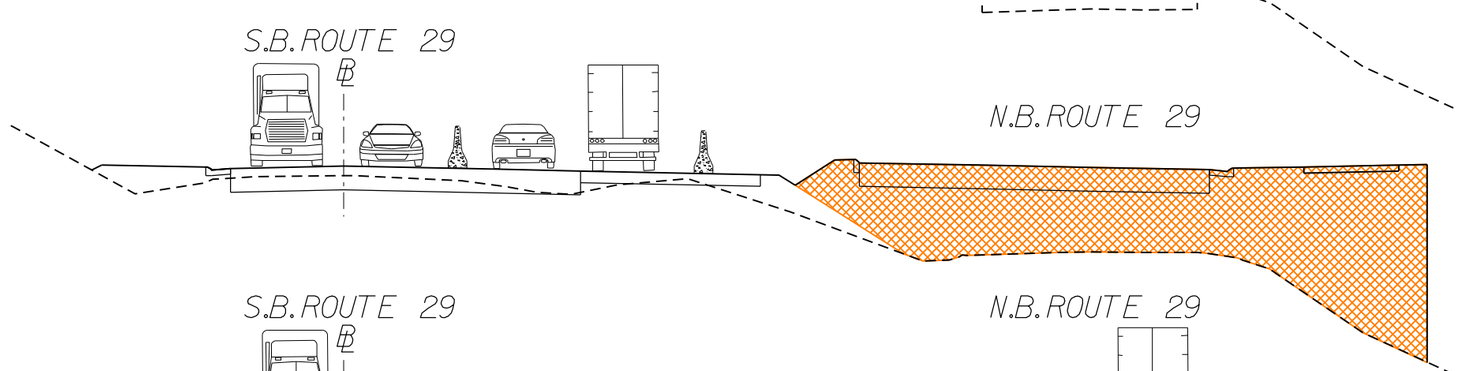
STAGE 1B

SB Reconstruction (Limited Areas Only)



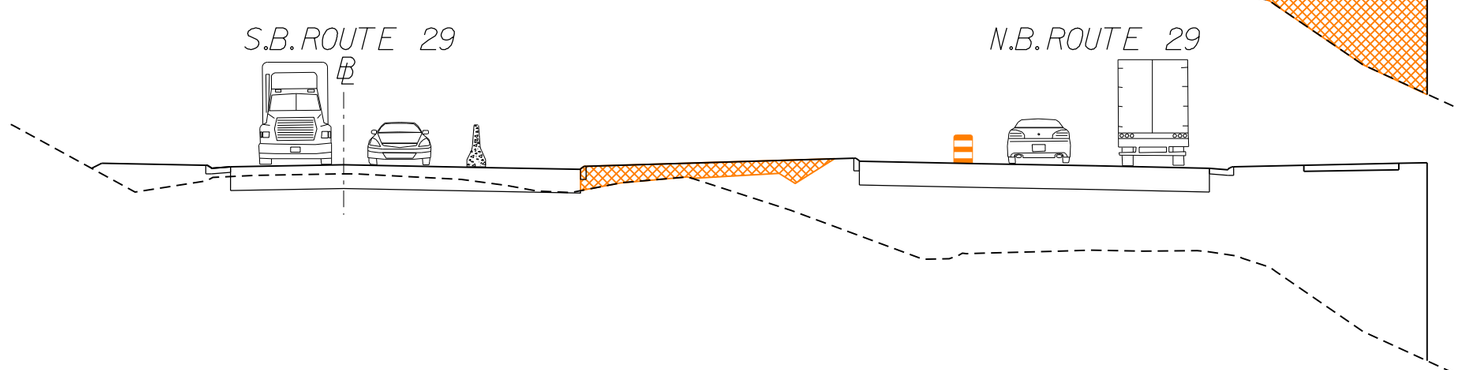
STAGE 2

NB Reconstruction



STAGE 3

Median Completion



LEGEND:

- WORK AREA
- TEMPORARY BARRIER WHERE REQ'D. PER PLANS
- GROUP 2 CHANNELIZING DEVICE

N.T.S.

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

PROJECT	SHEET NO.
0029-002-135	IJ

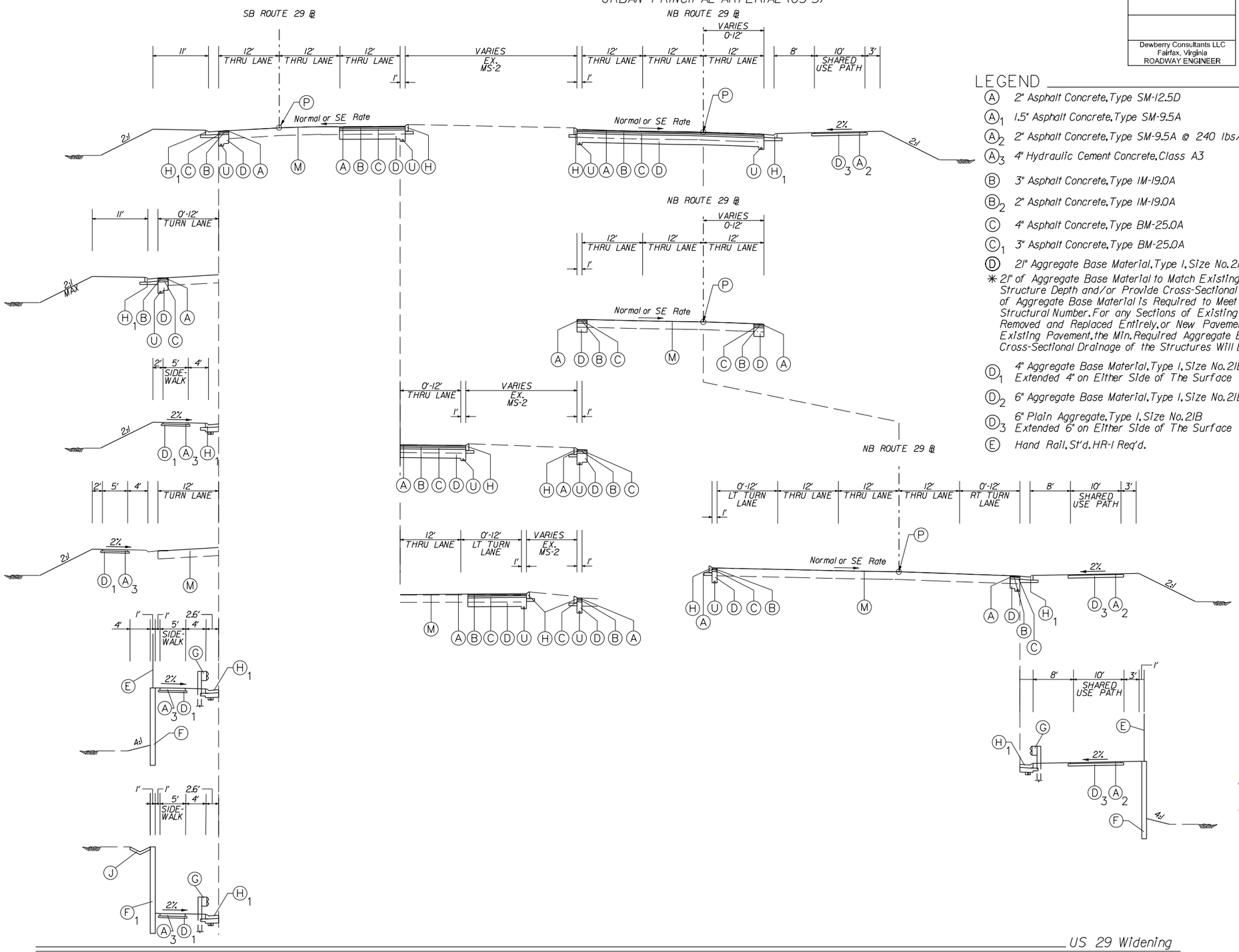
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201, C-501	2A(1)

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

TYPICAL SECTIONS

DESIGN SPEED = 45 MPH
URBAN PRINCIPAL ARTERIAL (GS-5)



LEGEND

- (A) 2" Asphalt Concrete, Type SM-12.5D
- (A)1 1.5" Asphalt Concrete, Type SM-9.5A
- (A)2 2" Asphalt Concrete, Type SM-9.5A @ 240 lbs/sy
- (A)3 4" Hydraulic Cement Concrete, Class A3
- (B) 3" Asphalt Concrete, Type IM-19.0A
- (B)2 2" Asphalt Concrete, Type IM-19.0A
- (C) 4" Asphalt Concrete, Type BM-25.0A
- (C)1 3" Asphalt Concrete, Type BM-25.0A
- (D) 21" Aggregate Base Material, Type I, Size No. 21B ✳

✳ 21" of Aggregate Base Material to Match Existing Mainline Pavement Structure Depth and/or Provide Cross-Sectional Drainage. A Min. of 10" of Aggregate Base Material is Required to Meet the Calculated Design Structural Number. For any Sections of Existing Pavement that are Removed and Replaced Entirely, or New Pavement is Not Adjacent to Existing Pavement, the Min. Required Aggregate Base Material is 10" if Cross-Sectional Drainage of the Structures Will be Provided or Maintained.

- (D)1 4" Aggregate Base Material, Type I, Size No. 21B Extended 4" on Either Side of The Surface
- (D)2 6" Aggregate Base Material, Type I, Size No. 21B
- (D)3 6" Plain Aggregate, Type I, Size No. 21B Extended 6" on Either Side of The Surface
- (E) Hand Rail, St'd. HR-1 Req'd.
- (F) Retaining Wall In Fill
- (F)1 Retaining Wall In Cut
- (G) Guardrail, St'd. GR-2A Req'd.
- (H) Curb, St'd. CG-3
- (H)1 Curb and Gutter, St'd. CG-7
- (H)2 Curb and Gutter, St'd. CG-2
- (J) Paved Ditch, St'd. PG-2A, Type E Req'd.
- (M) Mill Existing Pavement 2" and Replace with Min. 2" Asphalt Concrete SM-12.5D
- (P) Profile Grade Line
- (U) Underdrain, St'd. UD-4

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

TYPICAL SECTIONS

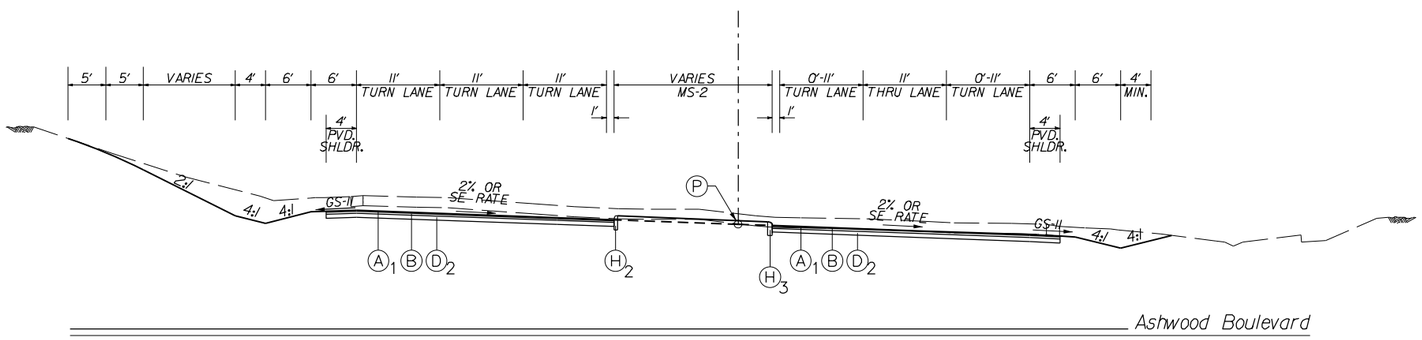
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	29	(FO)0029-002-135 RW-201,C-501	2A(2)

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

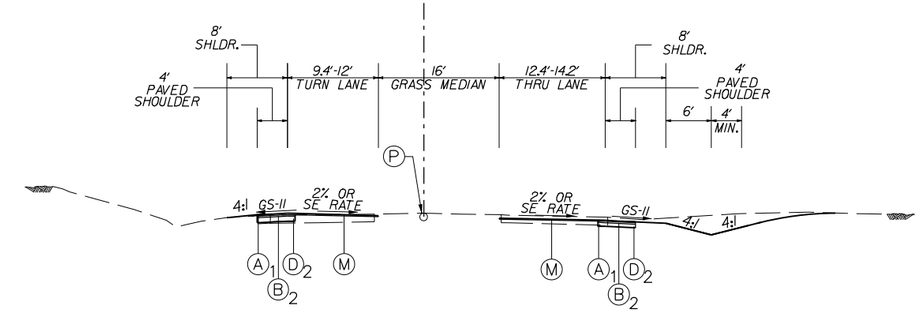
DESIGN SPEED = 40 MPH
URBAN COLLECTOR (GS-7)

ASHWOOD BOULEVARD ℄



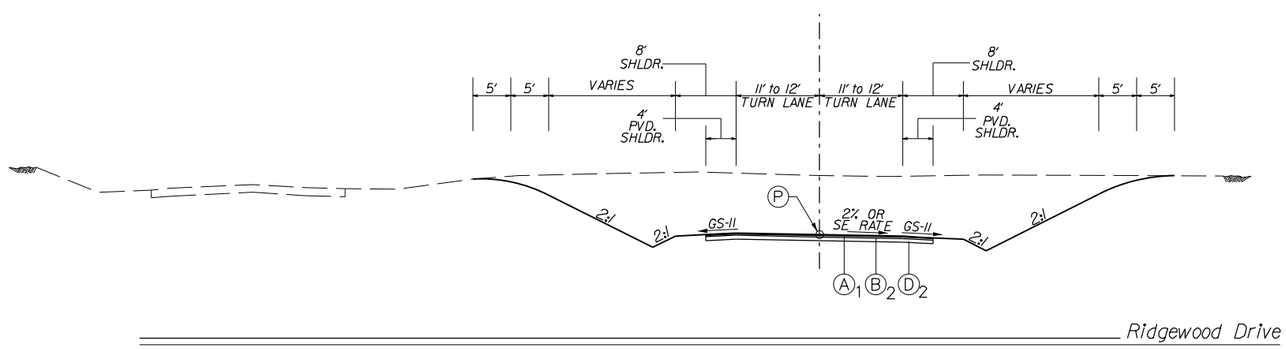
DESIGN SPEED = 30 MPH
URBAN COLLECTOR (GS-7)

SOUTH HOLLYMEAD DRIVE ℄

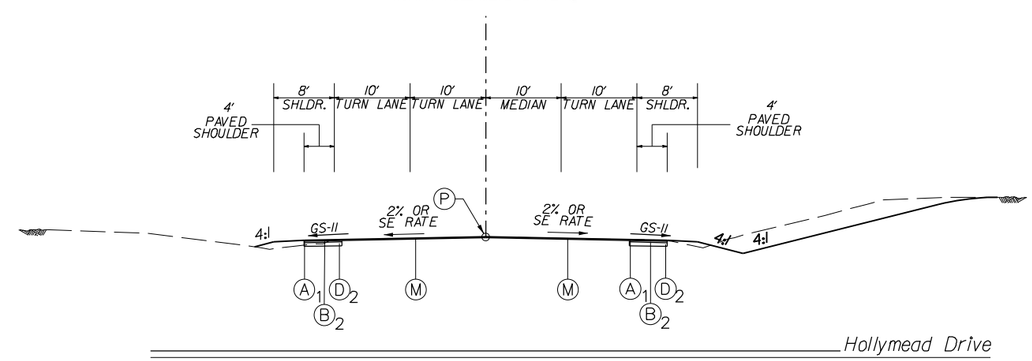


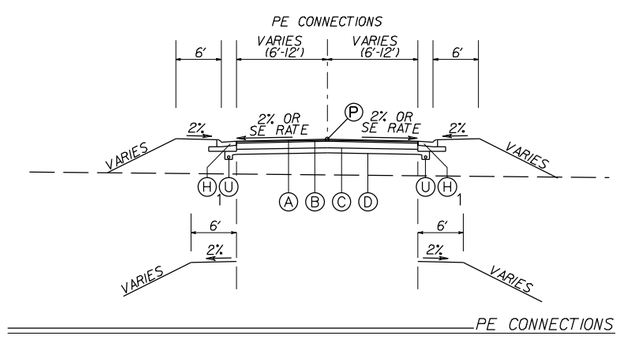
DESIGN SPEED = 20 MPH
PRIVATE ROAD

RIDGEWOOD DRIVE ℄



NORTH HOLLYMEAD DRIVE ℄





LEGEND

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- (A)2 2" Asphalt Concrete, Type SM-9.5A @ 240 lbs/sy
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- (M) Mill Existing Pavement 2" and Replace with Min. 2" Asphalt Concrete SM-12.5D
- (P) Profile Grade Line
- (U) Underdrain, St'd. UD-4

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

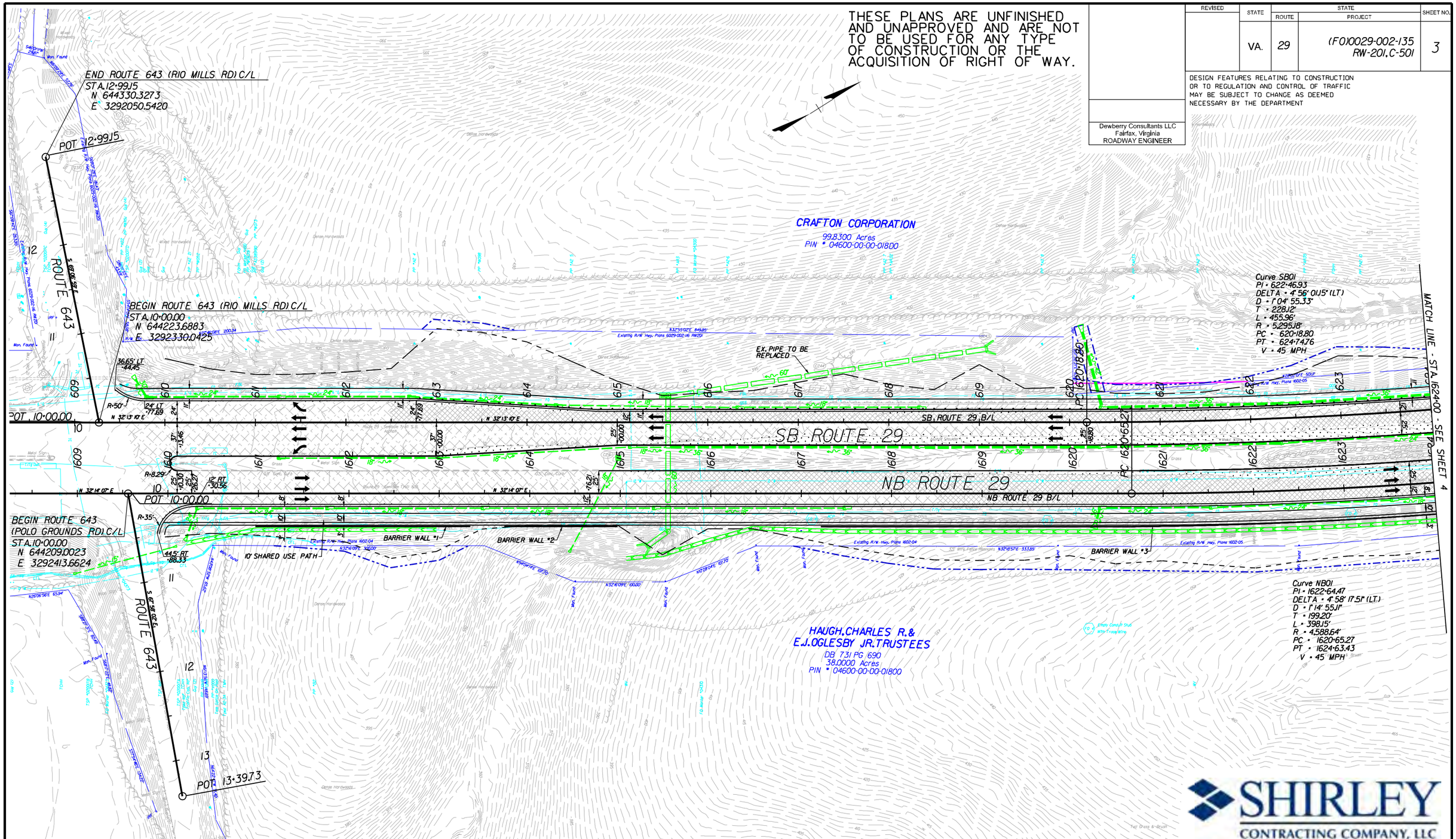
PROJECT	SHEET NO.
0029-002-135	2A(2)

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

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	3

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



Note: The water main currently located in the median of Route 29 will be relocated adjacent to the shared use path along the northbound lanes of Route 29. Final alignment and profile of the relocated water main will be coordinated with final drainage designs, existing vertical positions of service connections, and in a manner to reduce permanent utility easement impacts.

- Denotes Full Depth Pavement
- Denotes Demolition of Pavement
- Denotes Milling and Overlay
- Denotes Variable Depth Overlay
- Denotes Concrete Sidewalk
- Denotes Change In Anticipated Right-of-Way Impacts as Compared to the RFP Plans
- Denotes Proposed Right-of-Way per RFP Documents
- Denotes Proposed Right-of-Way
- Denotes Proposed Permanent Easements
- Denotes Proposed Temporary Easements
- C _ _ Denotes Construction Limits In Cuts
- F _ _ Denotes Construction Limits In Fills

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SCALE 0 50' 100'

PROJECT	SHEET NO.
0029-002-135	3

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	3A

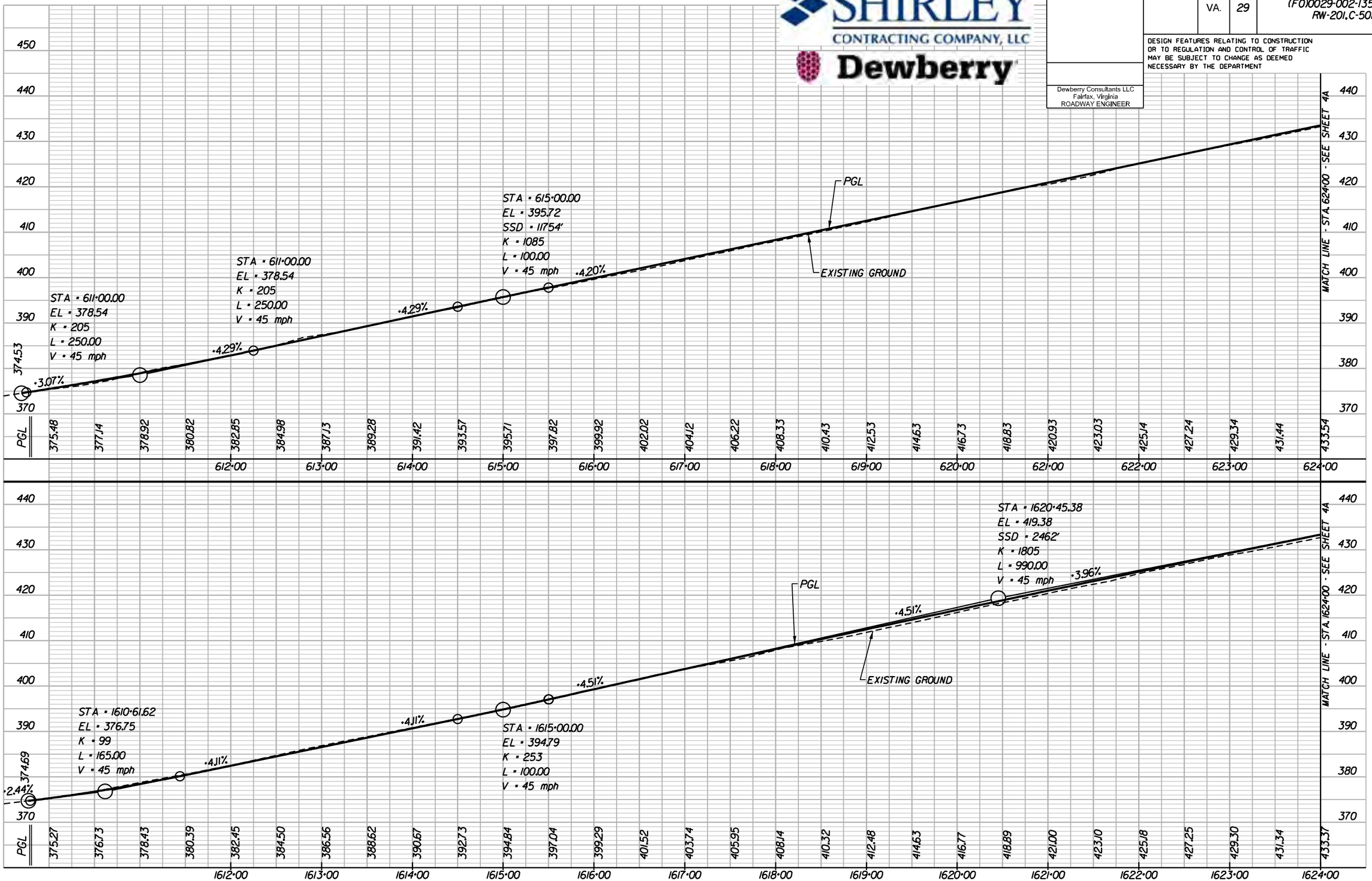
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SB ROUTE 29



NB ROUTE 29

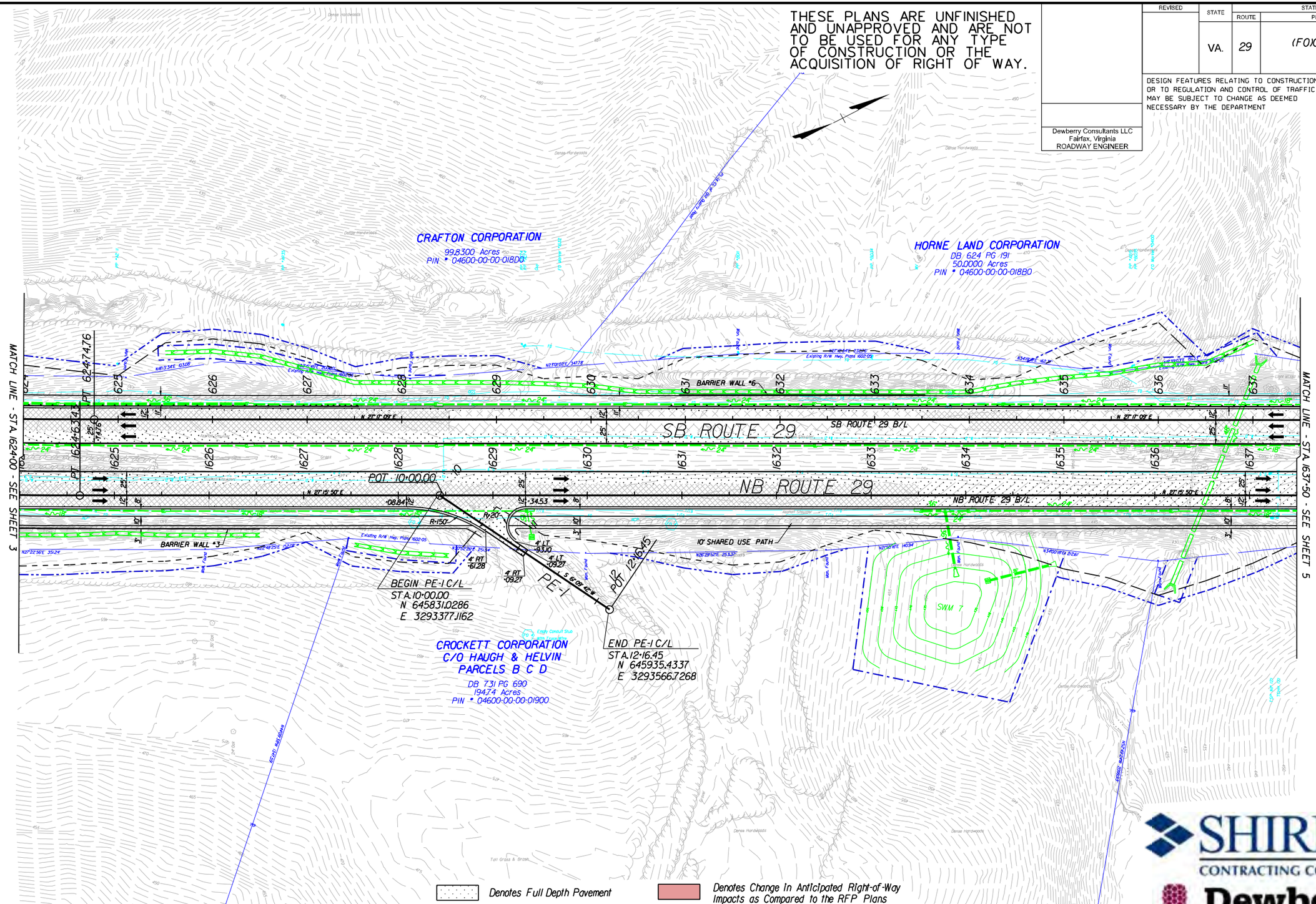
PROJECT	SHEET NO.
0029-002-135	3A

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

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	4

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



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SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SCALE 0 50' 100'

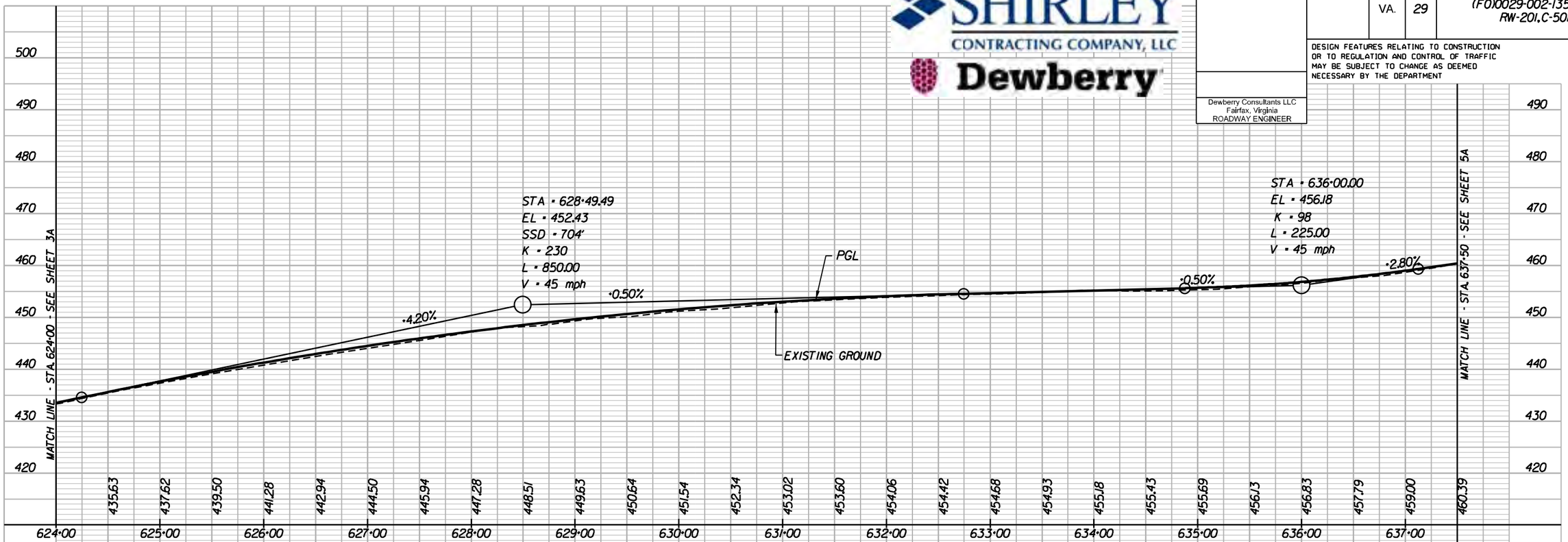
PROJECT	SHEET NO.
0029-002-135	4

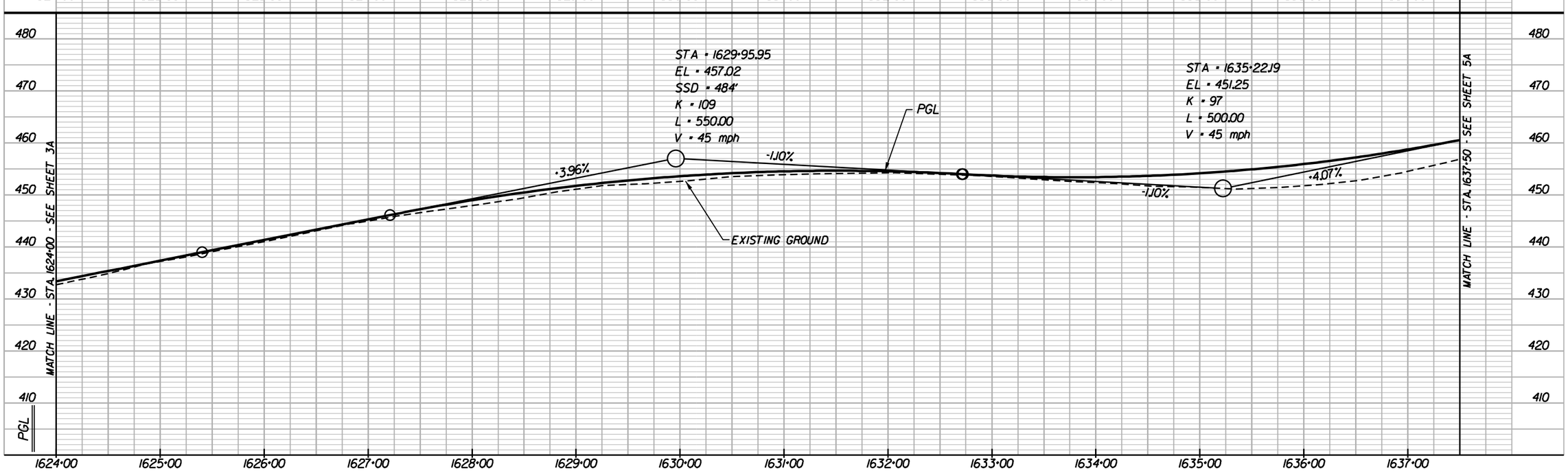
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	4A

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

SB ROUTE 29





NB ROUTE 29

PROJECT	SHEET NO.
0029-002-135	4A

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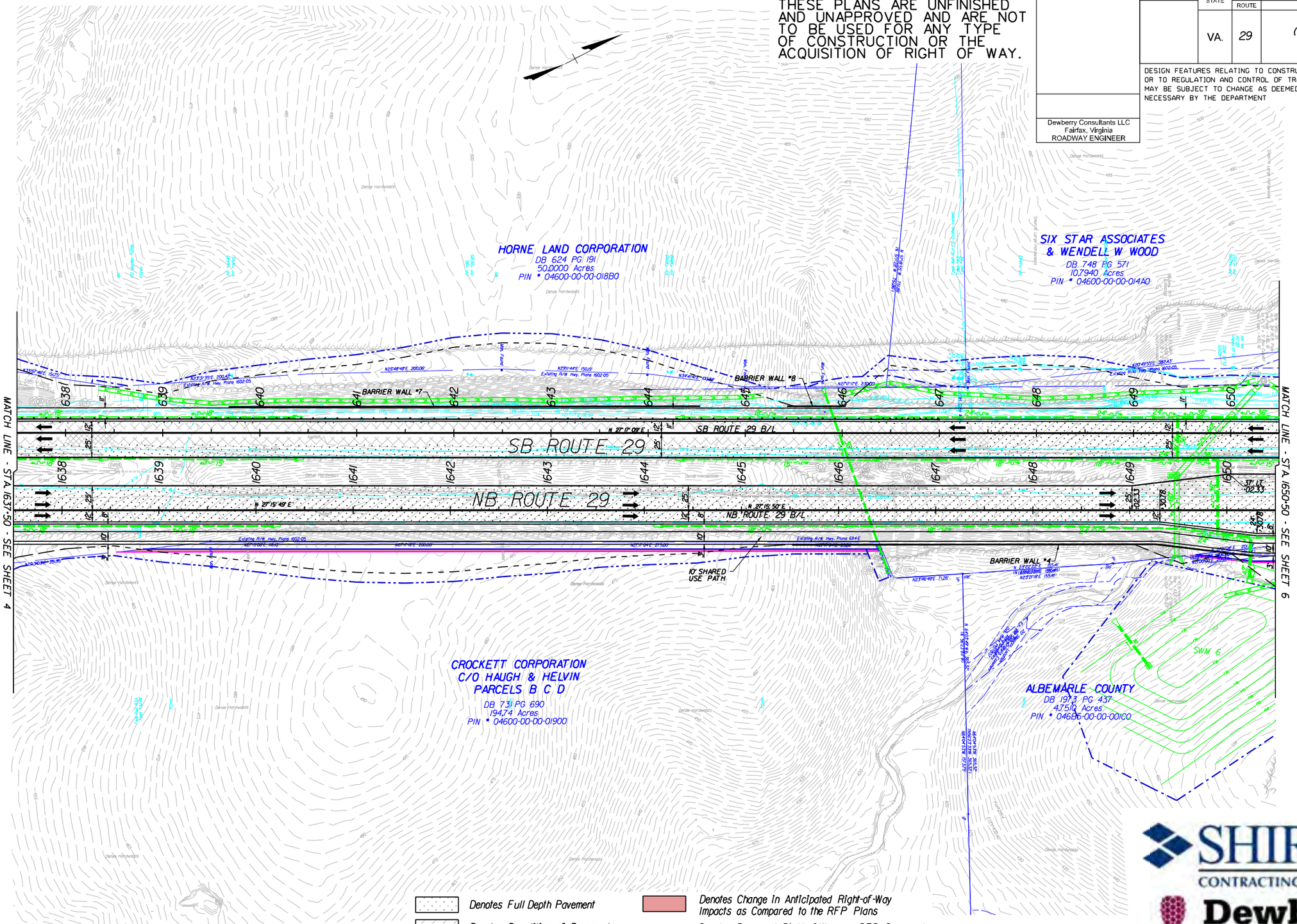
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	5

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



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- C _ _ Denotes Construction Limits In Cuts
- F _ _ Denotes Construction Limits In Fills

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SCALE 0 50' 100'

PROJECT	SHEET NO.
0029-002-135	5

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	5A

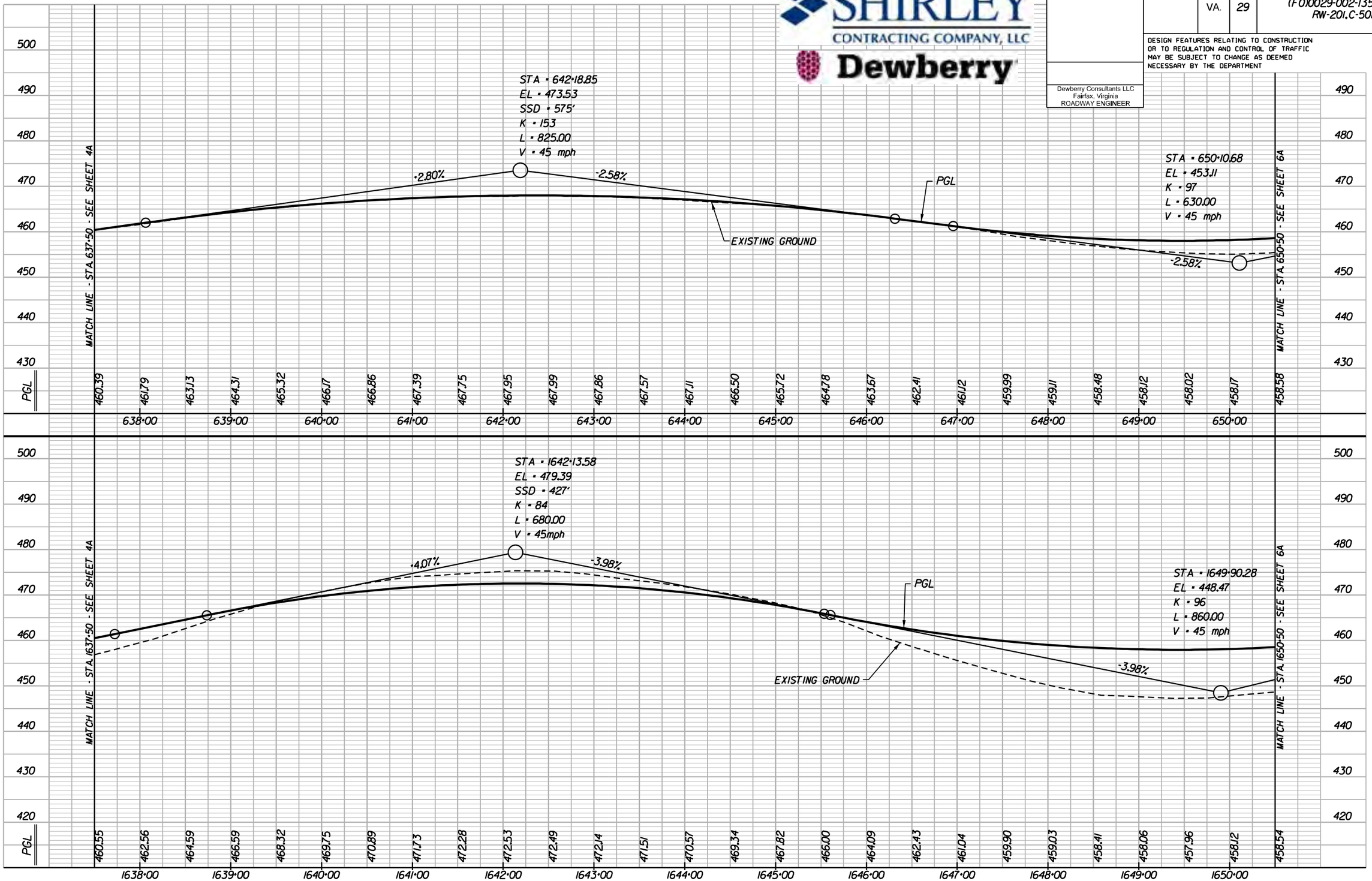
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SB ROUTE 29



NB ROUTE 29

PROJECT	SHEET NO.
0029-002-135	5A

Note: The water main currently located in the median of Route 29 will be relocated adjacent to the shared use path along the northbound lanes of Route 29. Final alignment and profile of the relocated water main will be coordinated with final drainage designs, existing vertical positions of service connections, and in a manner to reduce permanent utility easement impacts.

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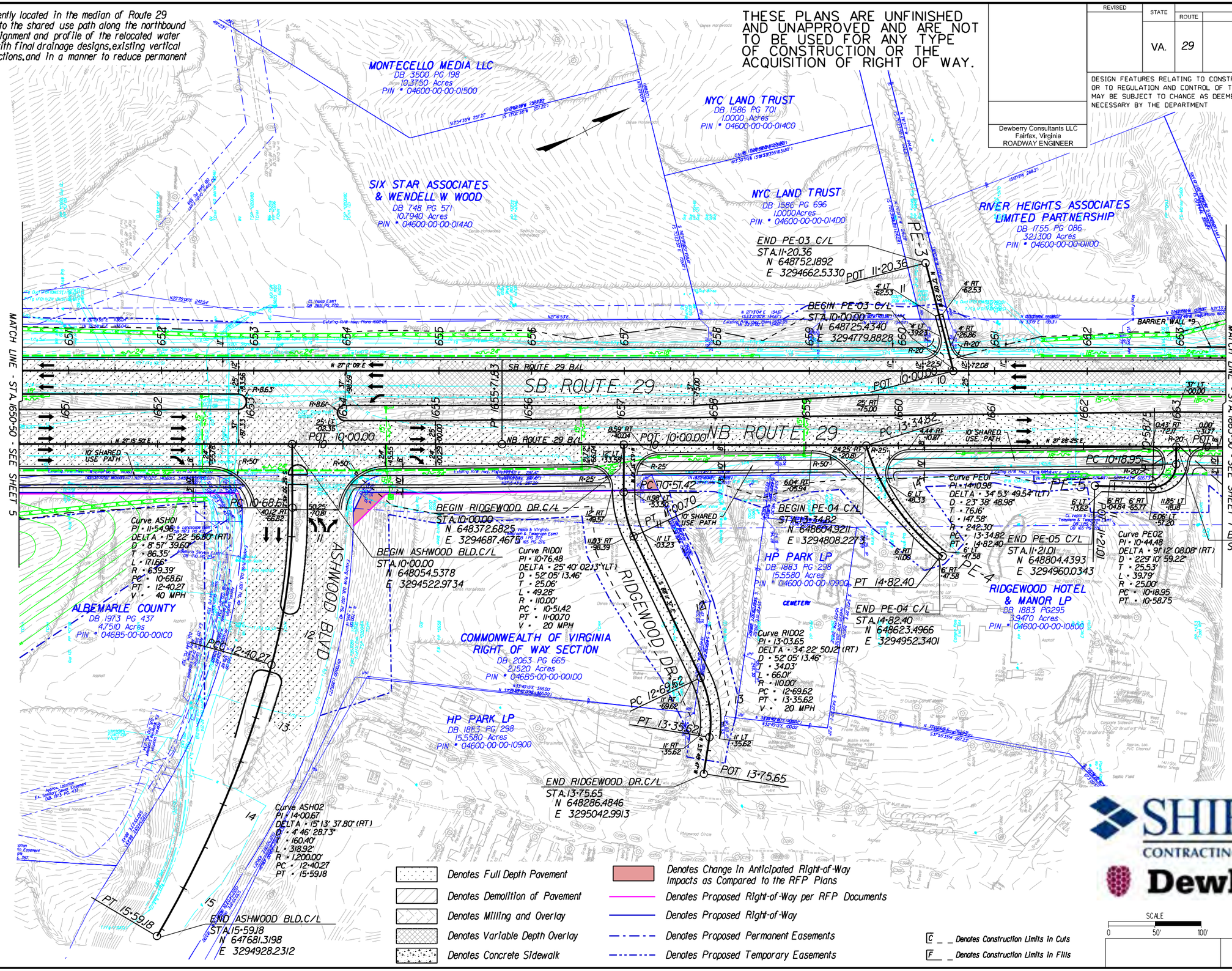
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201, C-501	6

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SCALE 0 50' 100'

PROJECT	SHEET NO.
0029-002-135	6

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(F0)0029-002-135 RW-201,C-501	6A

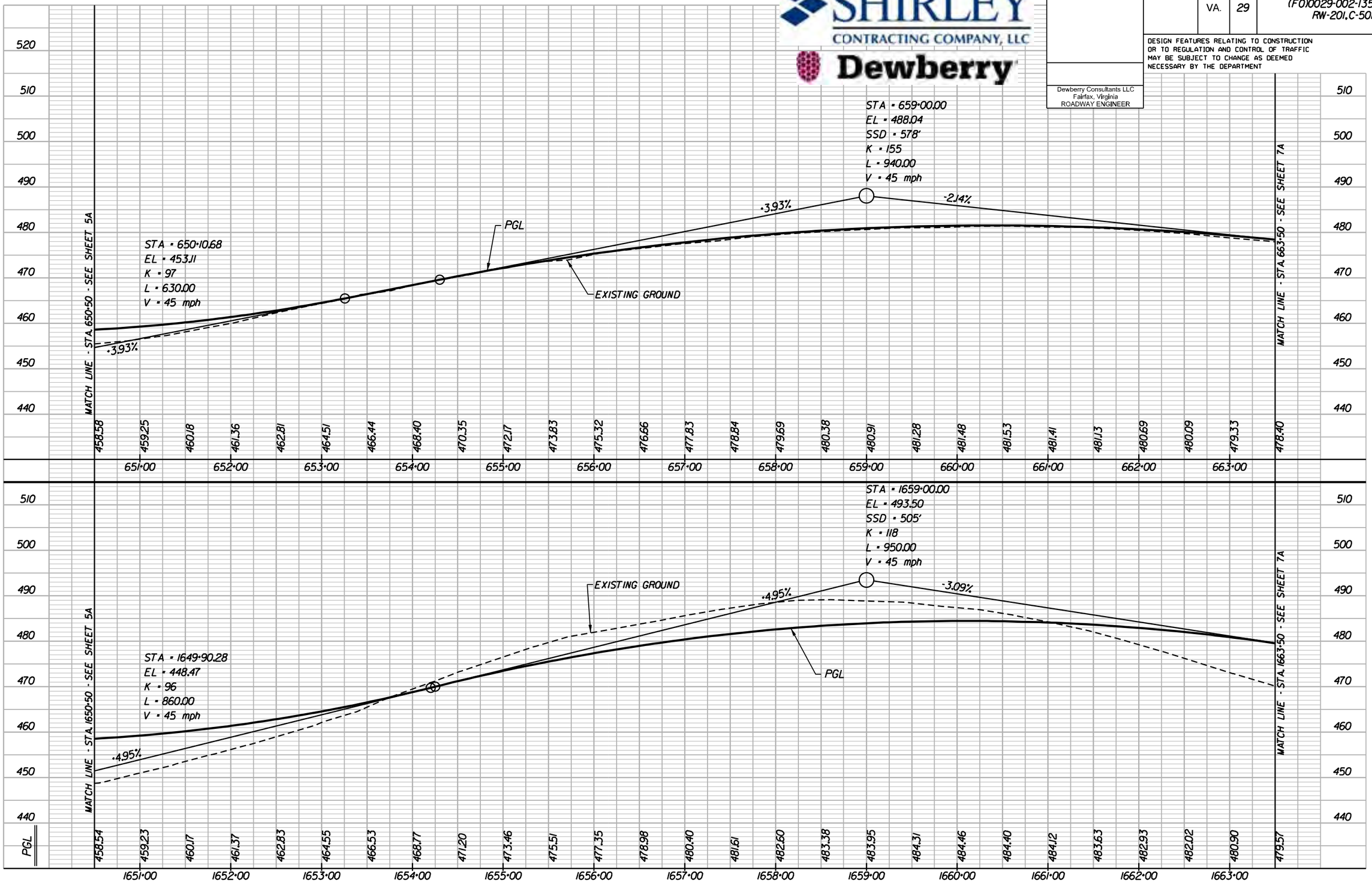
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SB ROUTE 29



NB ROUTE 29

PROJECT	SHEET NO.
0029-002-135	6A

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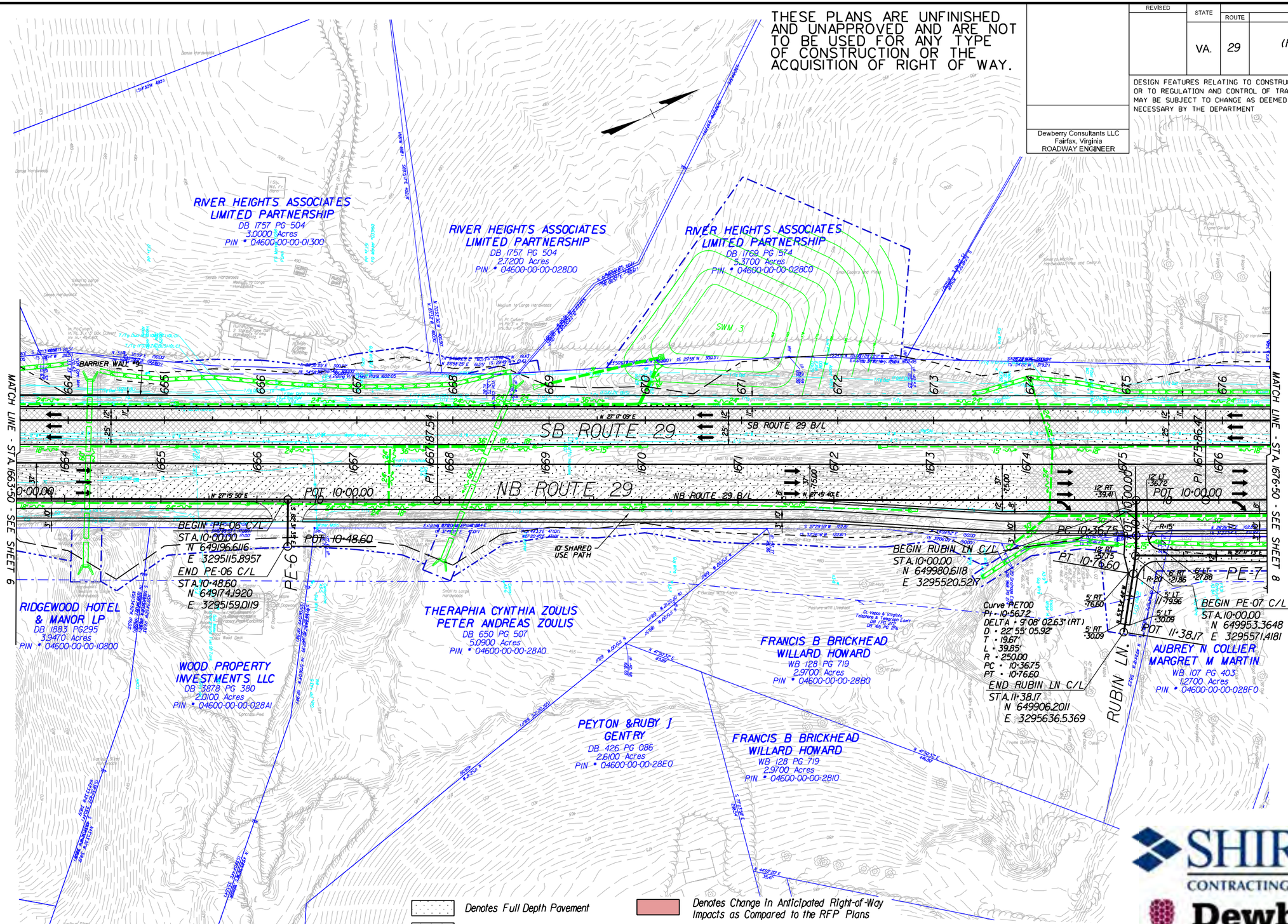
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	7

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



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SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

SCALE 0 50' 100'

PROJECT	SHEET NO.
0029-002-135	7

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	7A

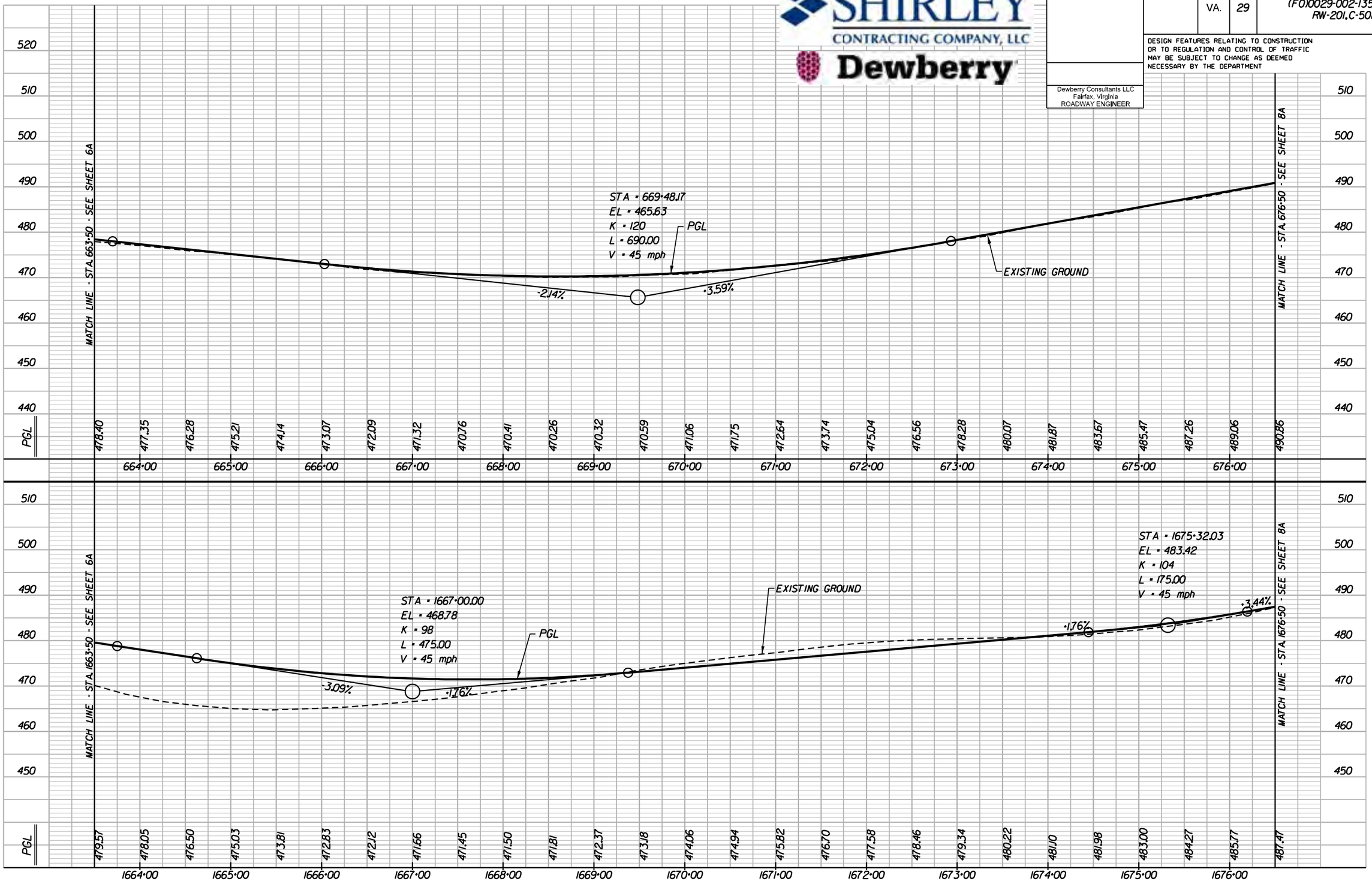
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SB ROUTE 29



NB ROUTE 29

PROJECT	SHEET NO.
0029-002-135	7A

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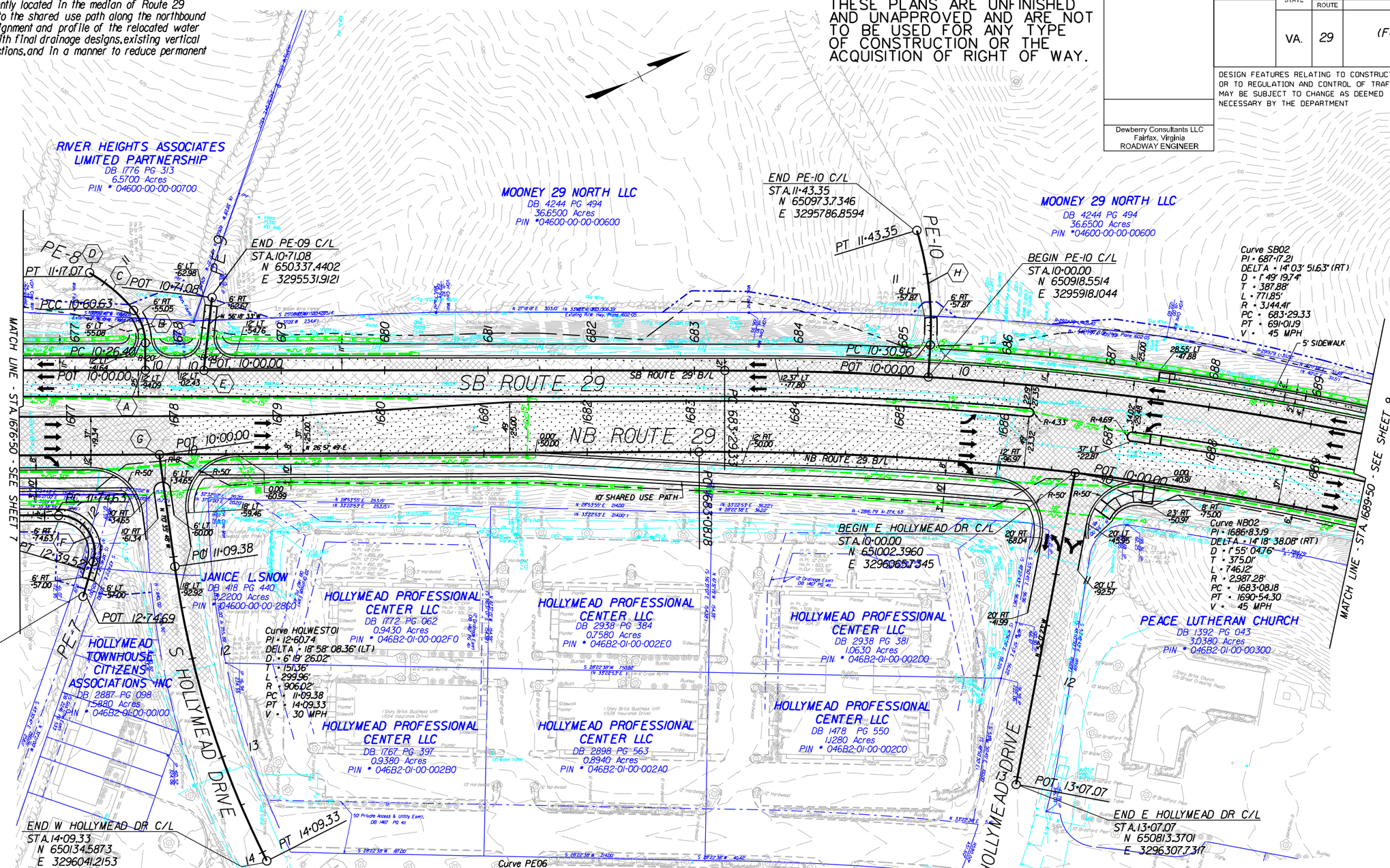
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201, C-501	8

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



(A) BEGIN PE-08 C/L STA.10+00.00
N 650247.6163
E 3295565.0623

(B) Curve PE04
PI = 10+44.22
DELTA = 39° 13' 46.79" (LT)
D = 114° 35' 29.61"
T = 17.82'
L = 34.23'
R = 50.00'
PC = 10+26.40
PT = 10+60.63

(C) Curve PE05
PI = 10+89.17
DELTA = 20° 44' 13.44" (LT)
D = 36° 44' 29.70"
T = 28.53'
L = 56.44'
R = 155.94'
PC = 10+60.63
PT = 11+17.07

(D) END PE-08 C/L STA.11+17.07
N 650242.8907
E 3295456.4013

(E) BEGIN PE-09 C/L STA.10+00.00
N 650298.0096
E 3295591.0565

(F) Curve PE03
PI = 12+21.26
DELTA = 106° 12' 59.46" (RT)
D = 16° 43' 42.08"
T = 46.63'
L = 64.88'
R = 35.00'
PC = 11+74.63
PT = 12+39.52

(G) BEGIN W HOLLYMEAD DR C/L
STA.10+00.00
N 650222.3570
E 3295643.9236

(H) Curve PE06
PI = 10+87.75
DELTA = 20° 23' 42.86" (LT)
D = 18° 08' 45.91"
T = 56.80'
L = 112.39'
R = 315.75'
PC = 10+30.96
PT = 11+43.35

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SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

SCALE 0 50' 100'

PROJECT	SHEET NO.
0029-002-135	8

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(F0)0029-002-135 RW-201,C-501	8A

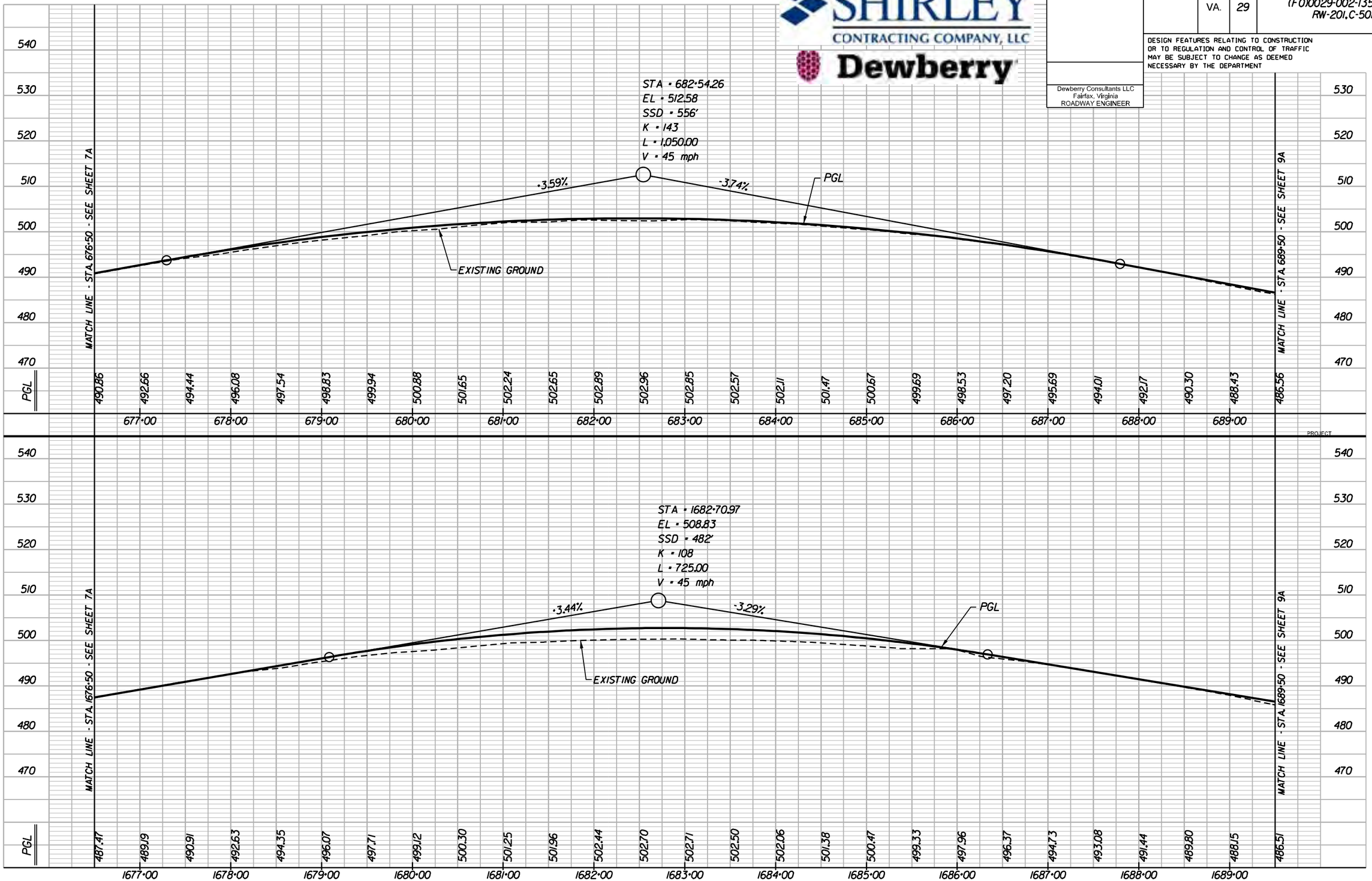
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SB ROUTE 29



NB ROUTE 29

PROJECT	SHEET NO.
0029-002-135	8A

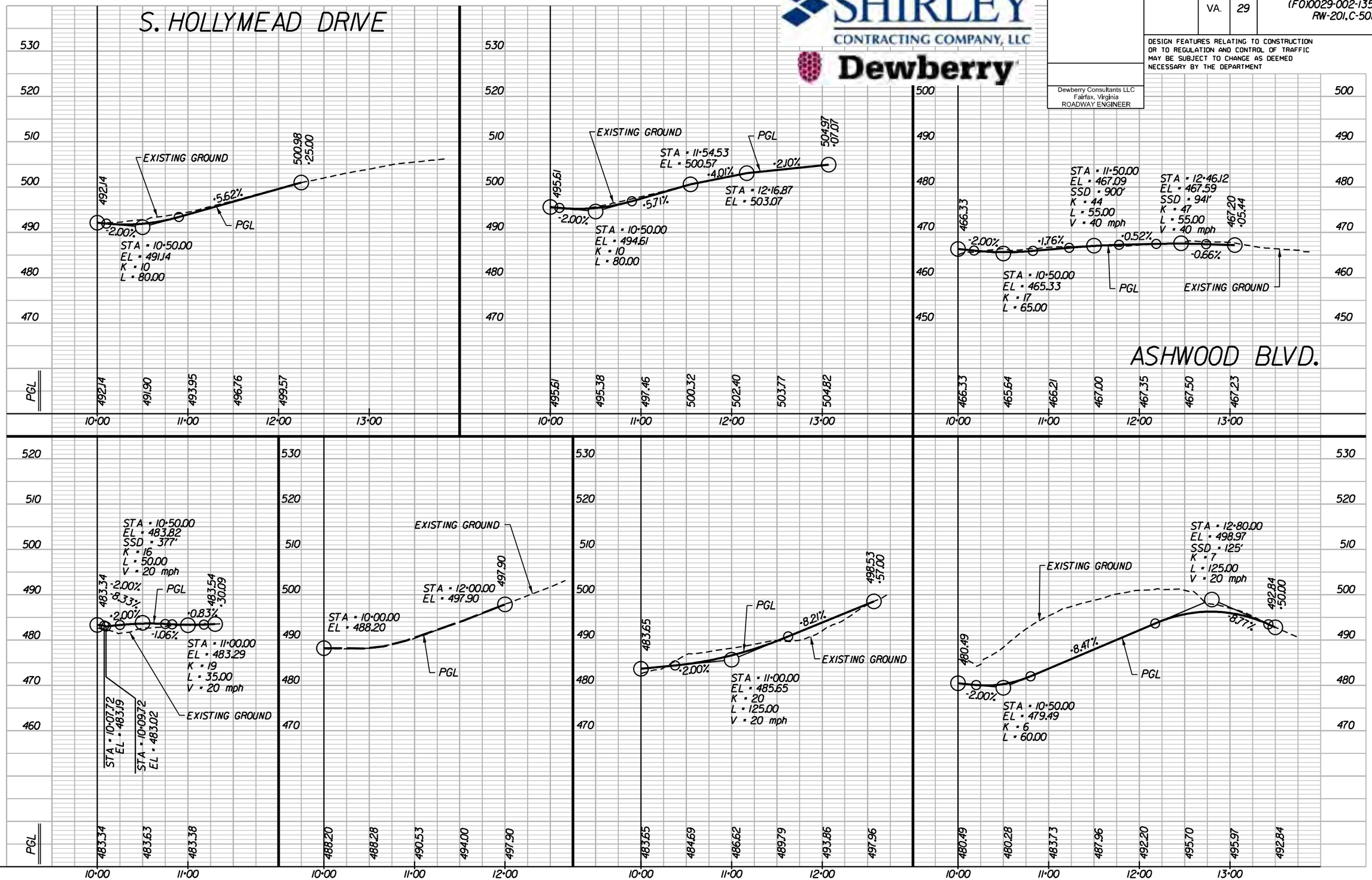
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	8B

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

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



PROJECT	SHEET NO.
0029-002-135	8B

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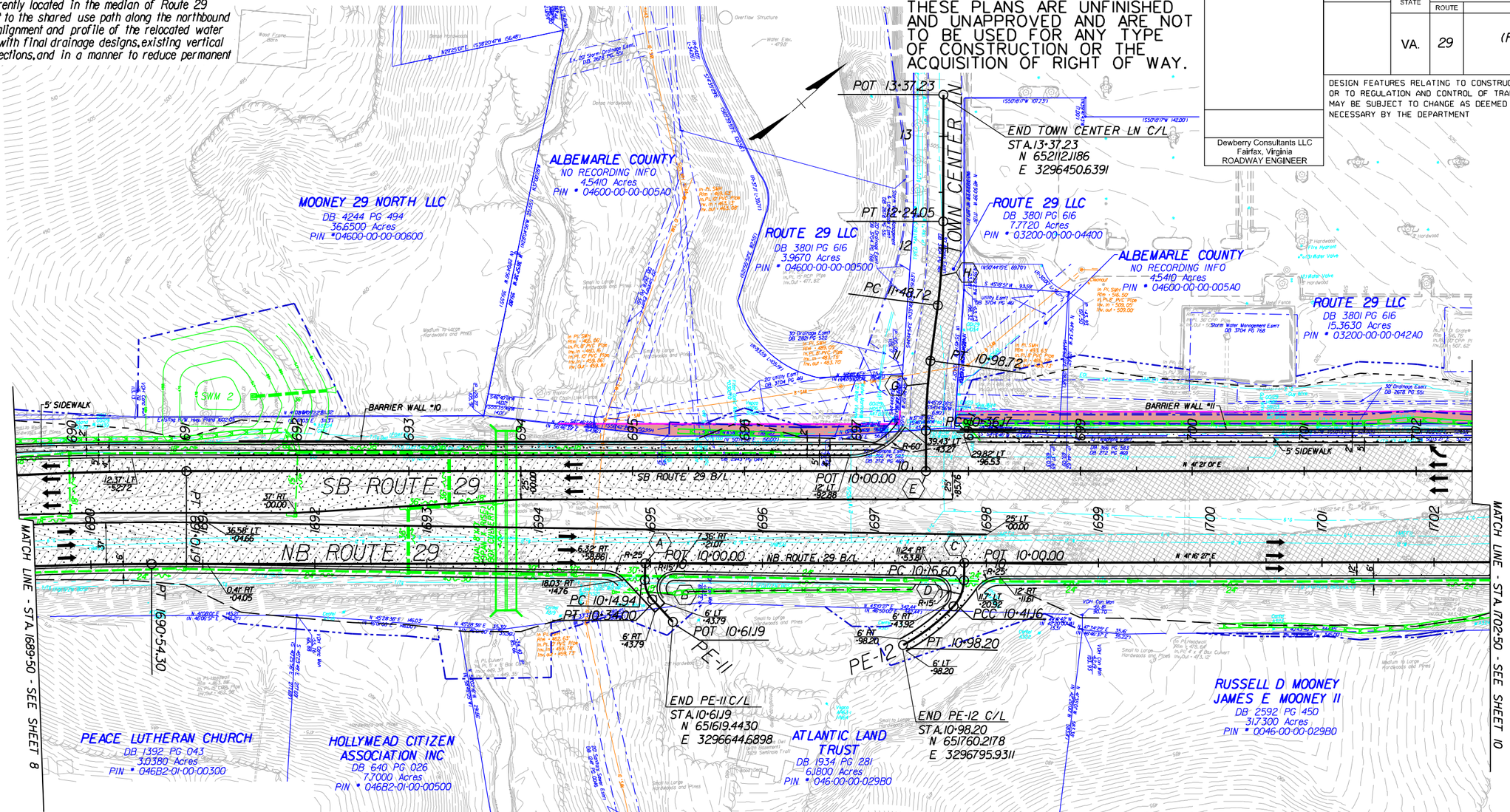
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201, C-501	9

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



(A) BEGIN PE-11 C/L STA. 10+00.00
N 651635.4241
E 3296589.0504

Curve PE07
PI = 10+24.96
DELTA = 43° 40' 28.12" (LT)
D = 229° 10' 59.22"
T = 10.02'
L = 19.06'
R = 25.00'
PC = 10+14.94
PT = 10+34.00

(B) Curve PE08
PI = 10+69.96
DELTA = 19° 37' 03.05" (RT)
D = 34° 23' 35.24"
T = 28.80'
L = 57.04'
R = 166.59'
PC = 10+41.16
PT = 10+98.20

(C) BEGIN PE-12 C/L STA. 10+00.00
N 651849.6701
E 3296777.0988

(D)

(E) BEGIN TOWN CENTER LN C/L
STA. 10+00.00
N 651878.1604
E 3296692.8804

Curve TOWN01
PI = 10+67.49
DELTA = 7° 29' 26.79" (RT)
D = 11° 58' 37.27"
T = 31.32'
L = 62.54'
R = 478.38'
PC = 10+36.17
PT = 10+98.72

(G) Curve TOWN02
PI = 11+86.44
DELTA = 7° 27' 48.06" (LT)
D = 9° 54' 28.11"
T = 37.72'
L = 75.33'
R = 578.29'
PC = 11+48.72
PT = 12+24.05

(B)

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SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

SCALE
0 50' 100'

PROJECT	SHEET NO.
0029-002-135	9

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	(F01)0029-002-135 RW-201,C-501	9A

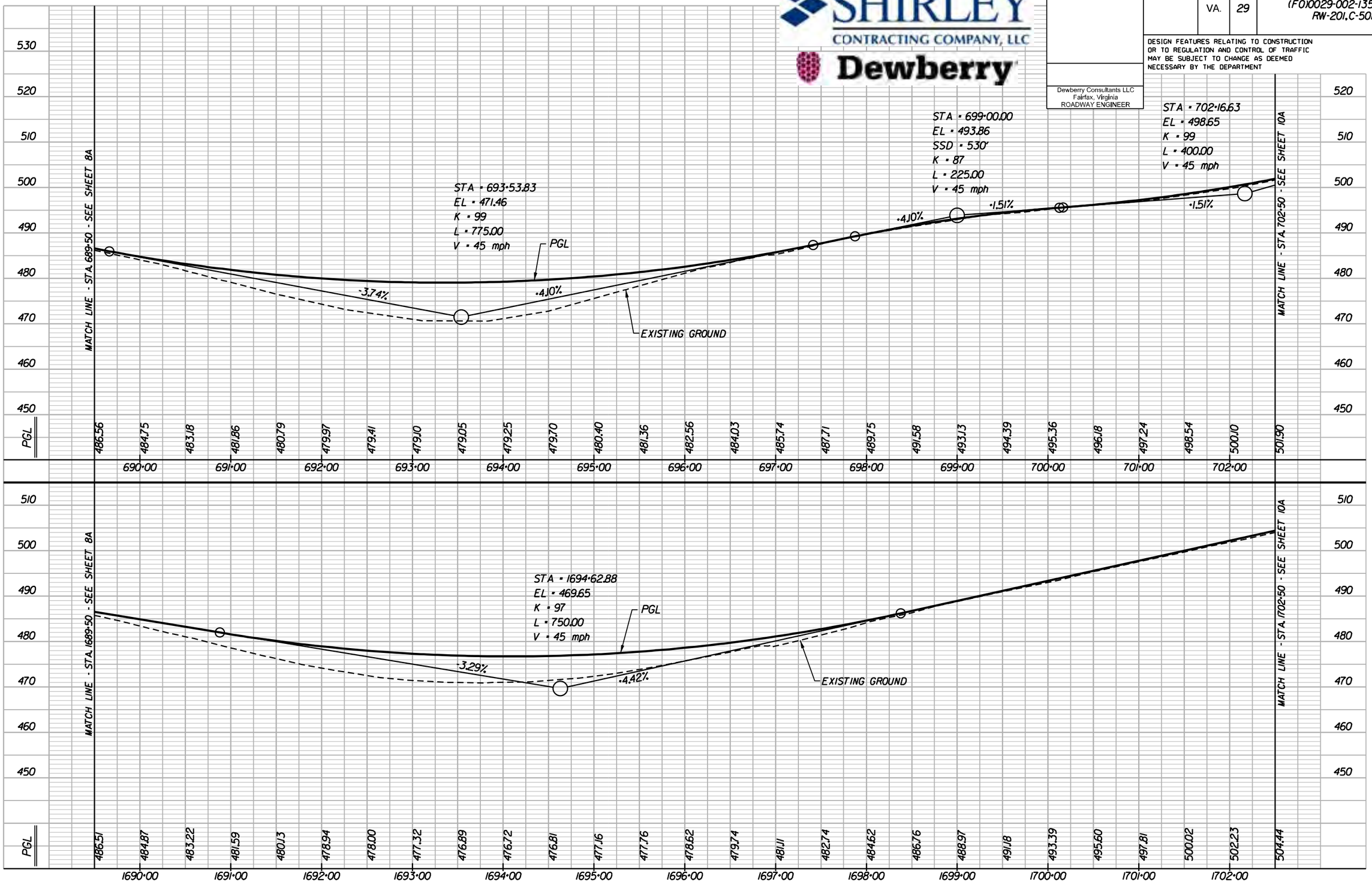
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

SB ROUTE 29



NB ROUTE 29

PROJECT	SHEET NO.
0029-002-135	9A

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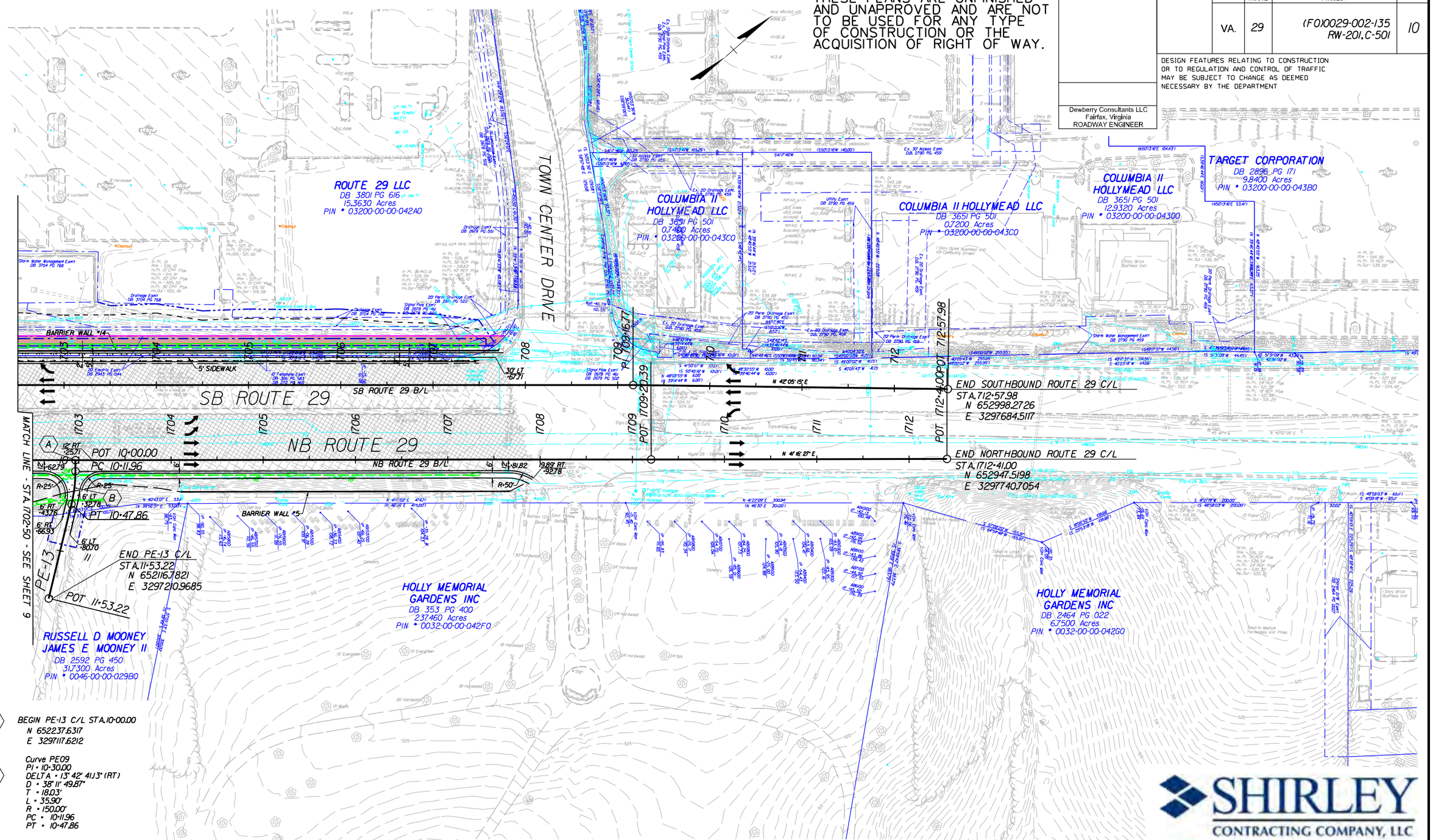
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(FO)0029-002-135 RW-201,C-501	10

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

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER



(A) BEGIN PE-13 C/L STA.10+00.00
N 652237.6317
E 3297117.6212

(B) Curve PE09
PI = 10+30.00
DELTA = 13° 42' 41.13" (RT)
D = 38° 11' 49.87"
T = 18.03'
L = 35.90'
R = 150.00'
PC = 10+11.96
PT = 10+47.86

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SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

SCALE 0 50' 100'

PROJECT	SHEET NO.
0029-002-135	10

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	(F0)0029-002-135 RW-201,C-501	10A

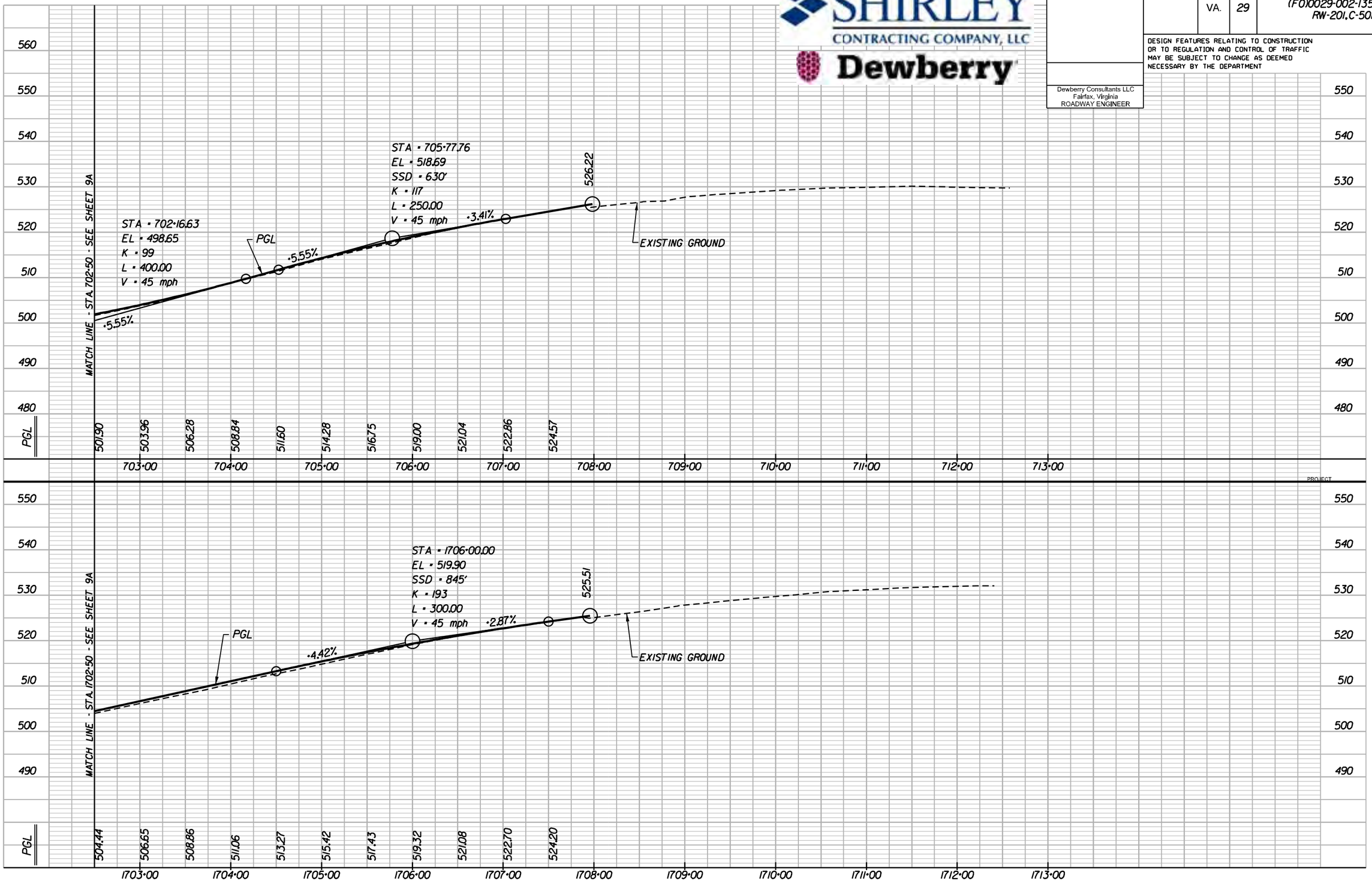
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Dewberry Consultants LLC
Fairfax, Virginia
ROADWAY ENGINEER

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SB ROUTE 29



NB ROUTE 29

PROJECT	SHEET NO.
0029-002-135	10A

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	9999	9999-002-900, PE-101	2

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

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

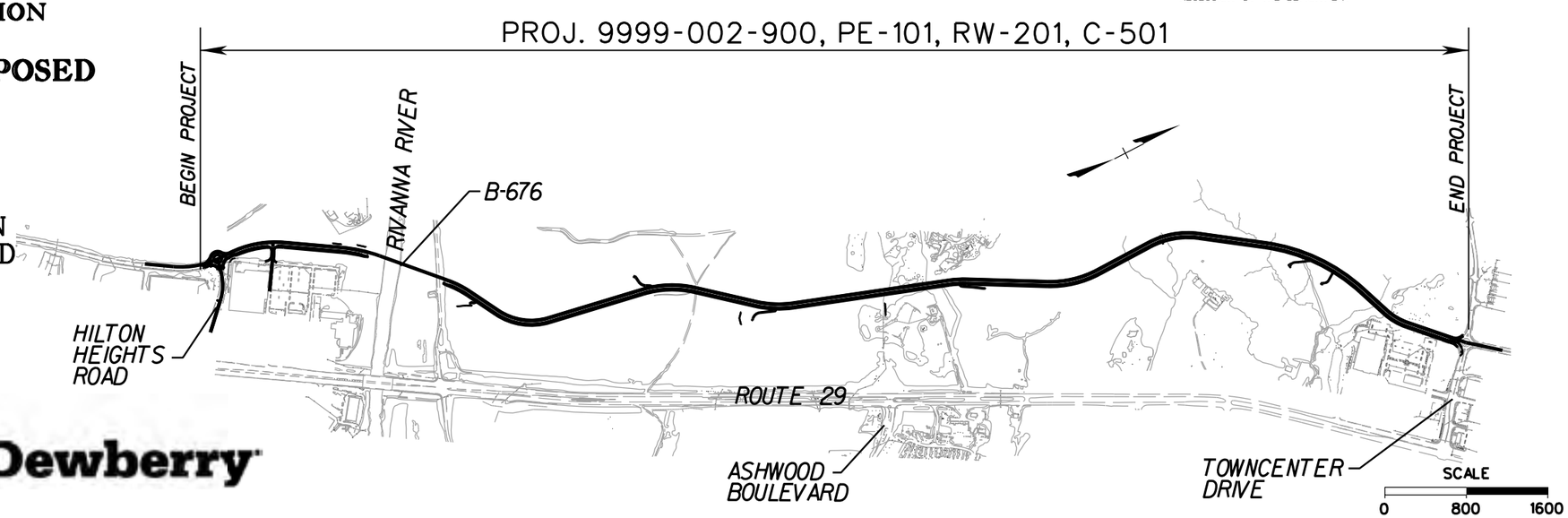
PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

VOLUME II PLANS

ALBEMARLE COUNTY
BERKMAR DRIVE EXTENSION
FROM: HILTON HEIGHTS ROAD
TO: TOWN CENTER DRIVE

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry



TYPICAL SECTIONS

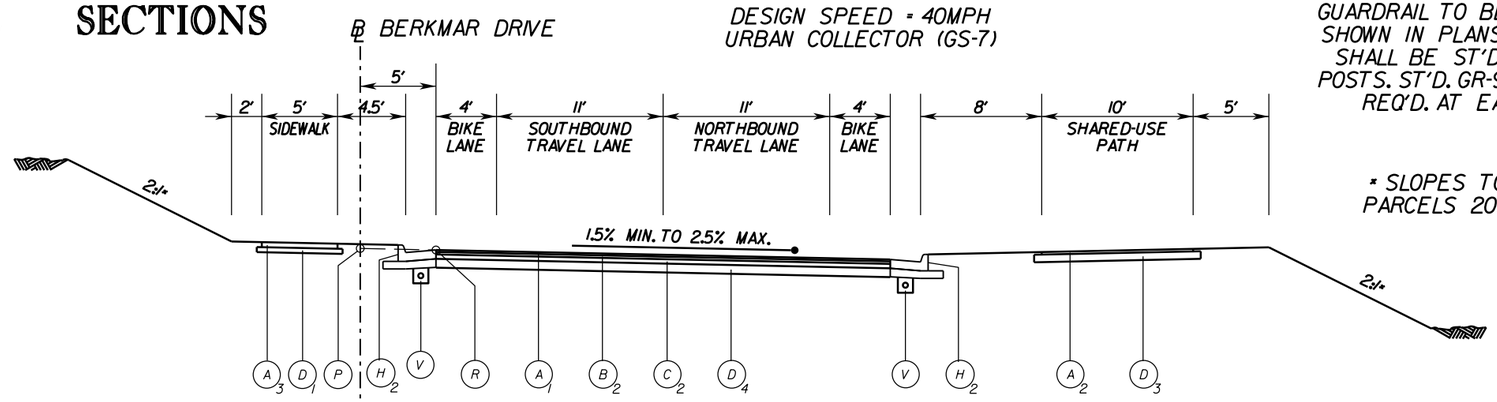
LEGEND

- (A)1 1.5" Asphalt Concrete, Type SM-9.5A
- (B)2 2" Asphalt Concrete, Type IM-19.0A
- (C)2 3.5" Asphalt Concrete, Type BM-25.0A
- (D)4 7" Aggregate Base Material, Type I, Size No. 21B
- (A)3 4" Hydraulic Cement Concrete, Class A3
- (D)1 4" Aggregate Base Material, Type I, Size No. 21B Extended 4" on Either Side of the Surface
- (A)2 2" Asphalt Concrete, Type SM-9.5A @ 220 lbs/sy
- (D)3 6" Plain Aggregate, Type I, Size No. 21B Extended 6" on Either Side of the Surface
- (H)2 Curb & Gutter, St'd. CG-6
- (P) Profile Grade Line
- (R) Point of Rotation
- (V) Underdrain, St'd. UD-4

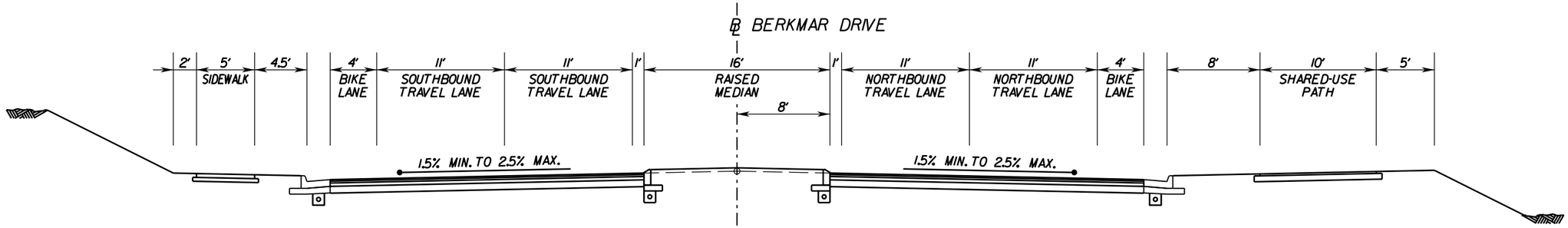
DESIGN SPEED = 40MPH
URBAN COLLECTOR (GS-7)

GUARDRAIL TO BE INSTALLED AS SHOWN IN PLANS. ALL GUARDRAIL SHALL BE ST'D. GR-2 WITH 8' POSTS. ST'D. GR-9 END TERMINAL REQ'D. AT EACH TERMINI

* SLOPES TO BE 3:1 ON PARCELS 209, 213 & 217



Berkmar Drive "Interim" Typical Section (Contract)



Berkmar Drive "Ultimate" Typical Section (Not In Contract)

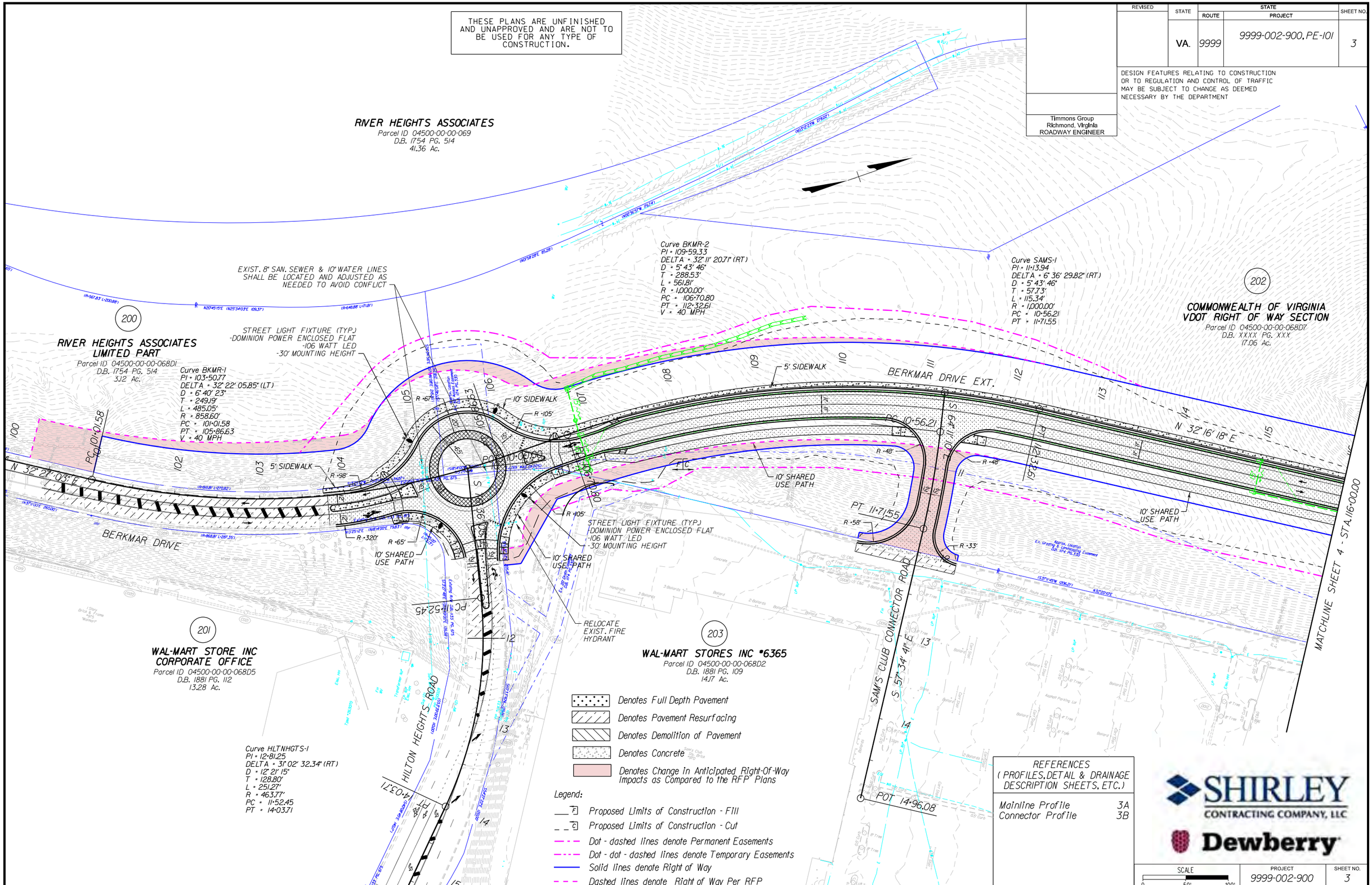
PROJECT	SHEET NO.
9999-002-900	2

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	3

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

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER



REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Mainline Profile	3A
Connector Profile	3B

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

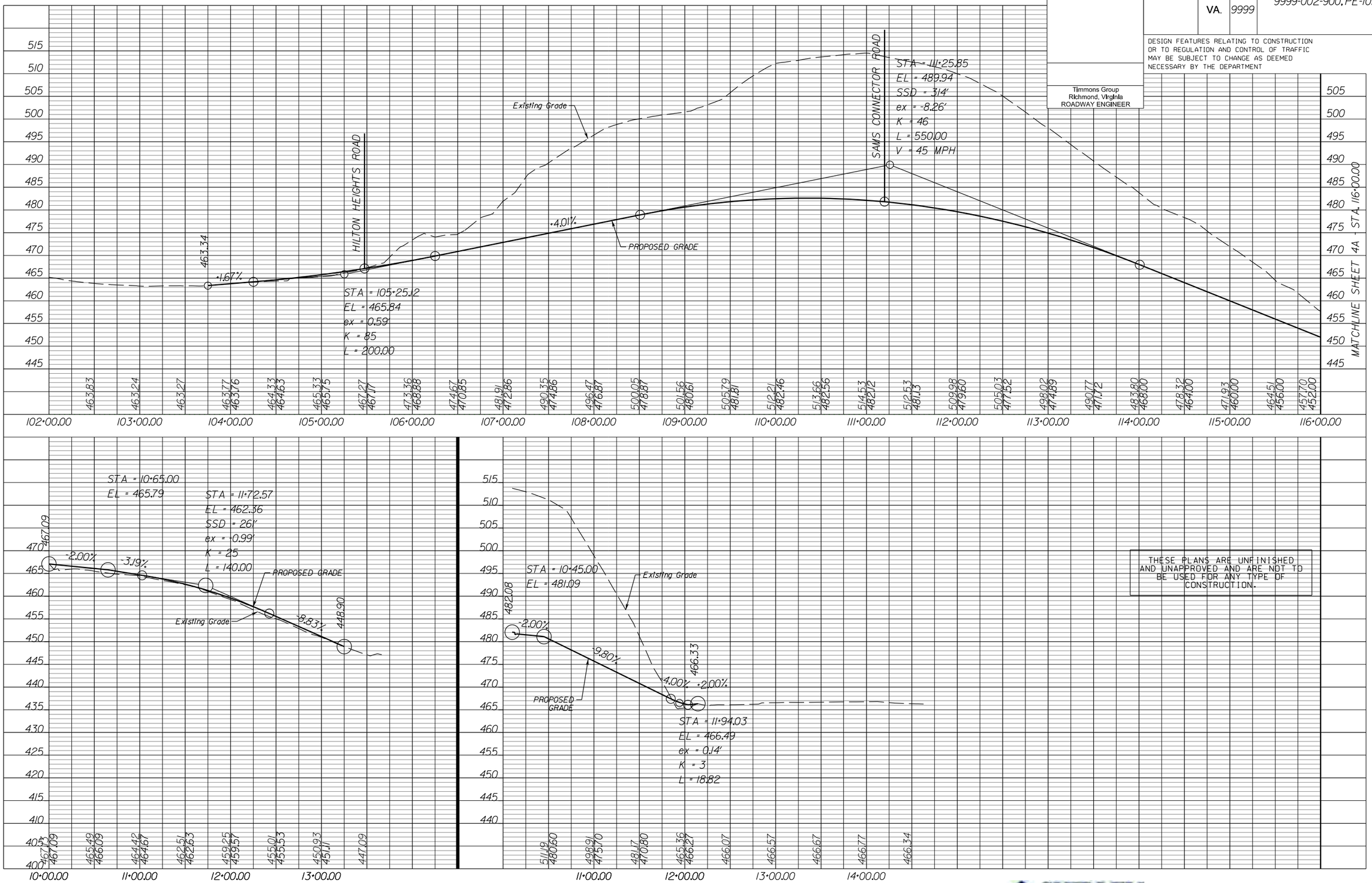
SCALE	PROJECT	SHEET NO.
0 50' 100'	9999-002-900	3

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	3A

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

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER

BERKMAR DRIVE



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HILTON HEIGHTS ROAD

SAM'S CLUB CONN. ROAD

Dewberry SHIRLEY CONTRACTING COMPANY, LLC

PROJECT	SHEET NO.
9999-002-900	3A

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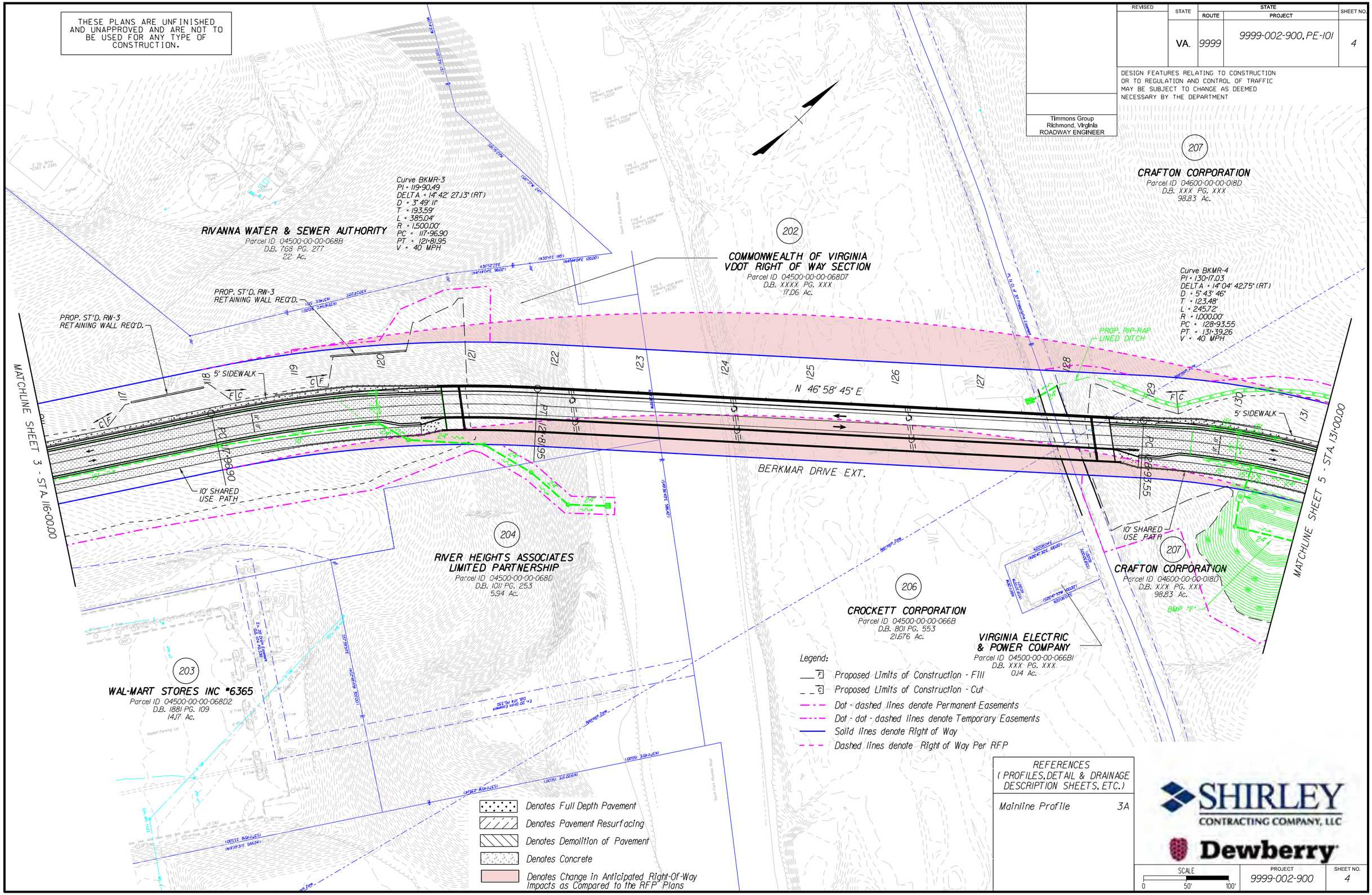
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	4

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

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER



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

Mainline Profile 3A

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

SCALE	PROJECT	SHEET NO.
0 50' 100'	9999-002-900	4

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REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	4A

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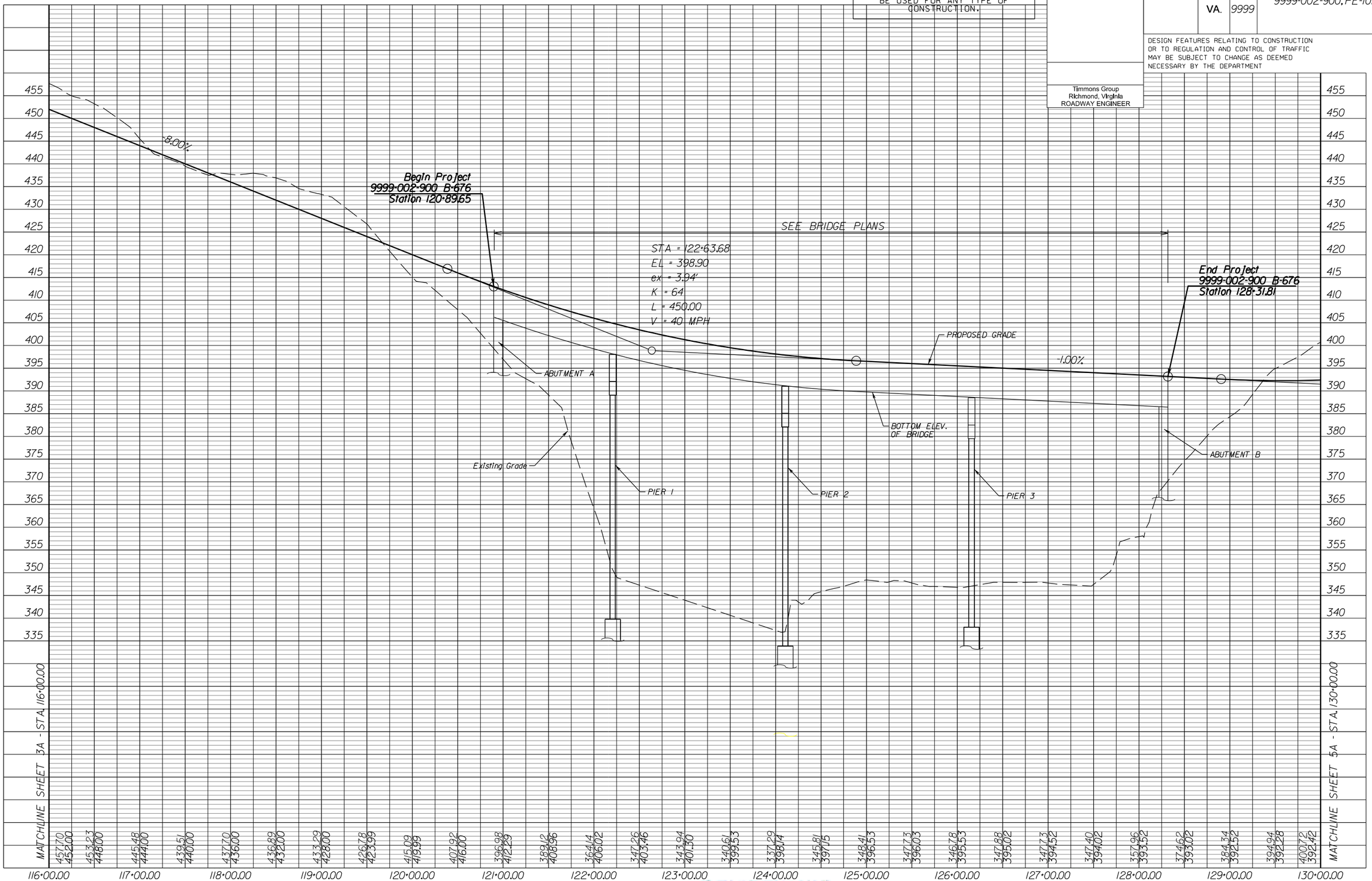
Timmons Group
Richmond, Virginia
ROADWAY ENGINEER



Dewberry SHIRLEY CONTRACTING COMPANY, LLC

BERKMAR DRIVE

PROJECT	SHEET NO.
9999-002-900	4A

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	5

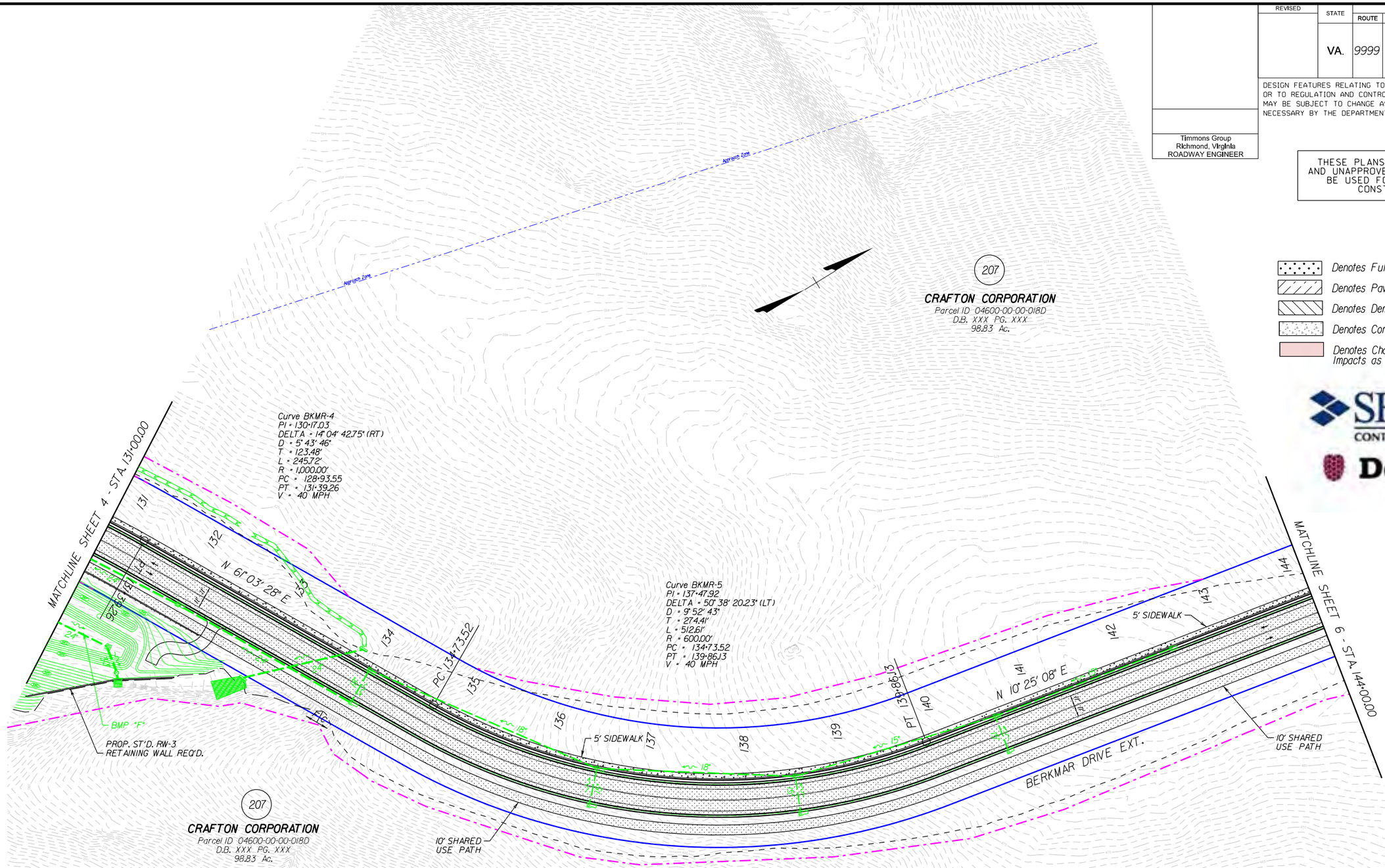
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

Denotes Full Depth Pavement
Denotes Pavement Resurfacing
Denotes Demolition of Pavement
Denotes Concrete
Denotes Change In Anticipated Right-Of-Way Impacts as Compared To the RFP Plans

SHIRLEY CONTRACTING COMPANY, LLC
Dewberry



Legend:

- F Proposed Limits of Construction - Fill
- C Proposed Limits of Construction - Cut
- Dot - dashed lines denote Permanent Easements
- Dot - dot - dashed lines denote Temporary Easements
- Solid lines denote Right of Way
- Dashed lines denote Right of Way Per RFP

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Mainline Profile	5A

SCALE	PROJECT	SHEET NO.
0 50' 100'	9999-002-900	5

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	5A

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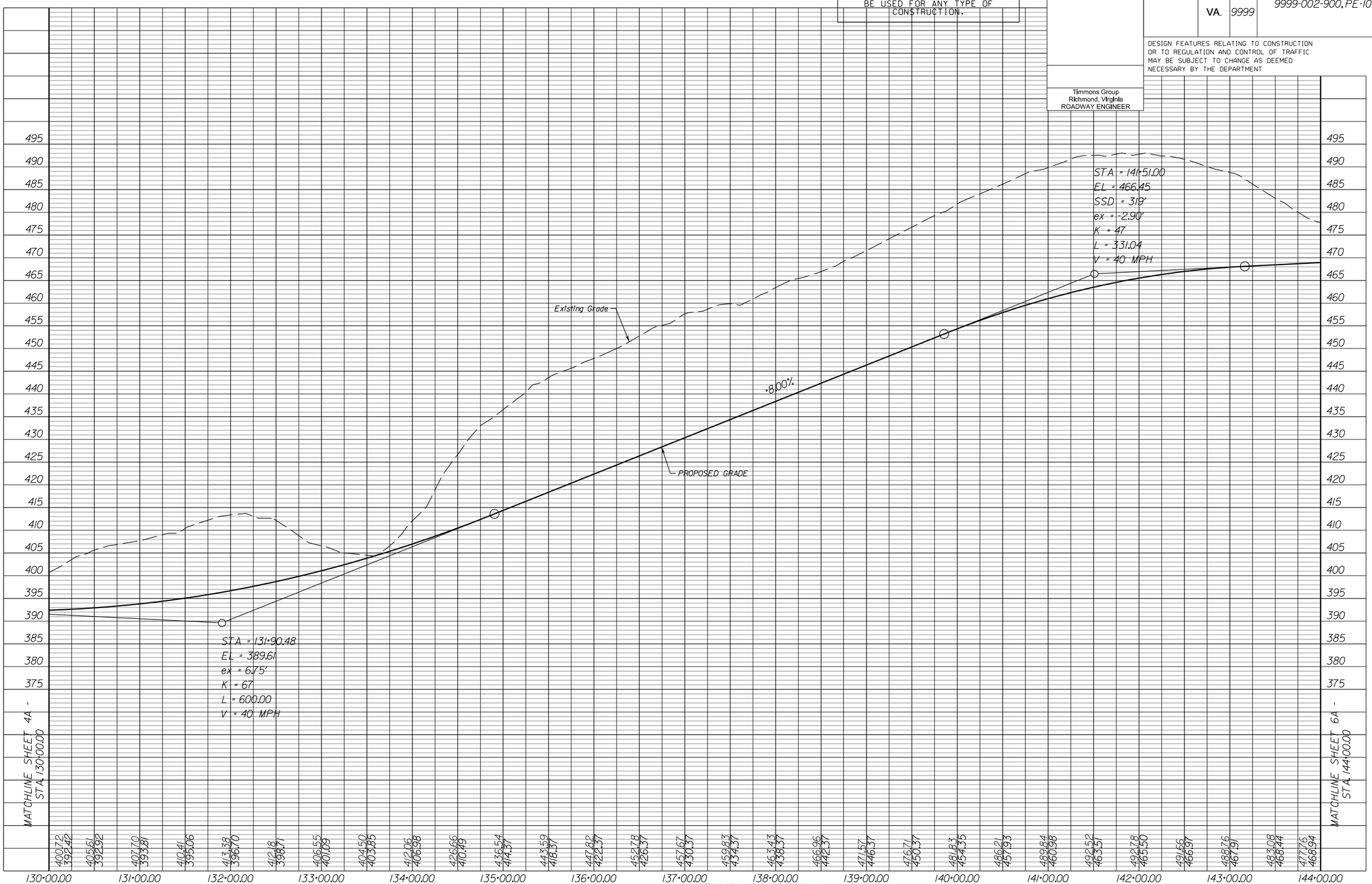
Timmons Group
Richmond, Virginia
ROADWAY ENGINEER



Dewberry SHIRLEY CONTRACTING COMPANY, LLC

BERKMAR DRIVE

PROJECT	SHEET NO.
9999-002-900	5A

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	6

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

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Richmond, Virginia
ROADWAY ENGINEER

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- Denotes Concrete
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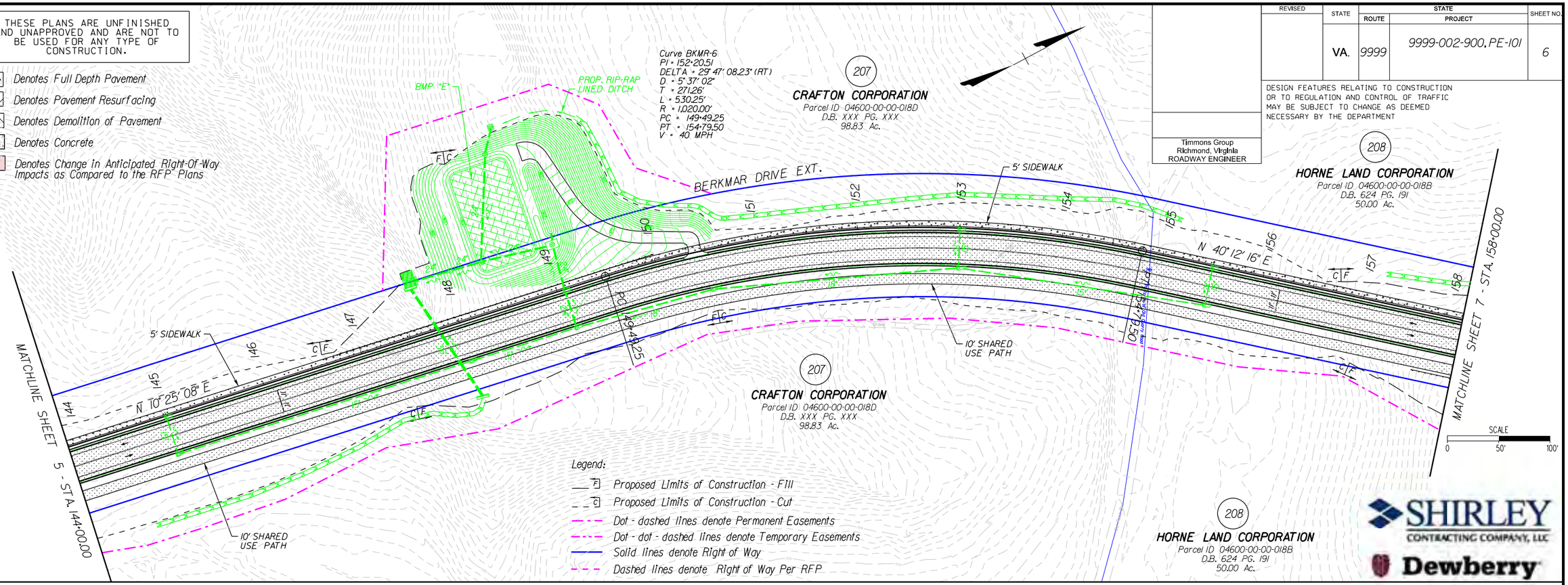
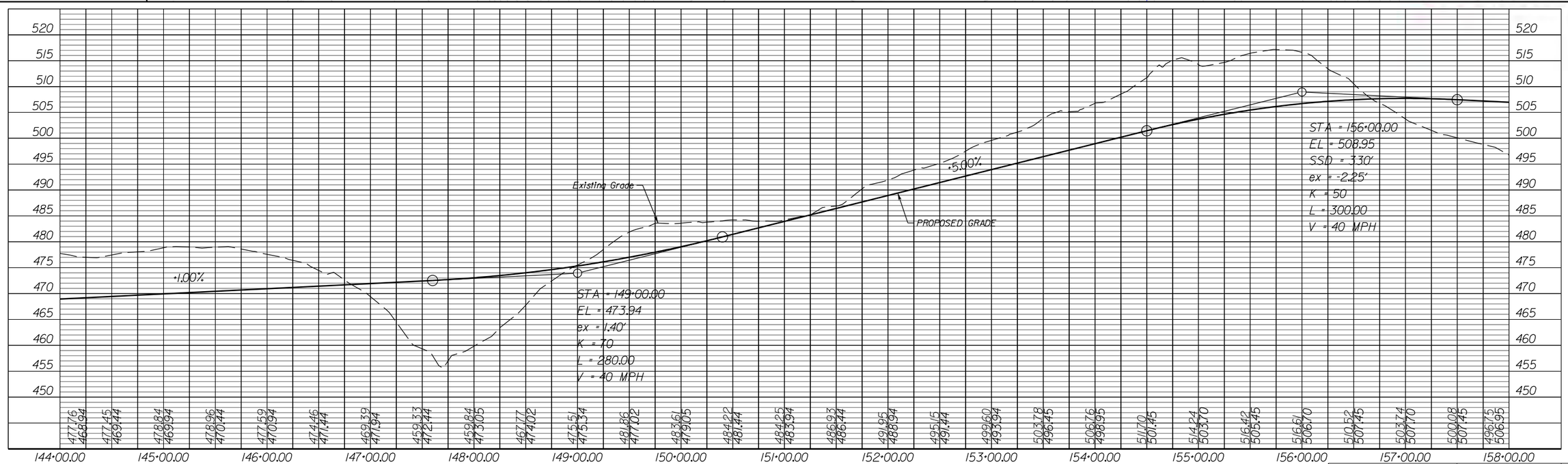


SHIRLEY CONTRACTING COMPANY, LLC

Dewberry



PROJECT	SHEET NO.
9999-002-900	6

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SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

Legend:

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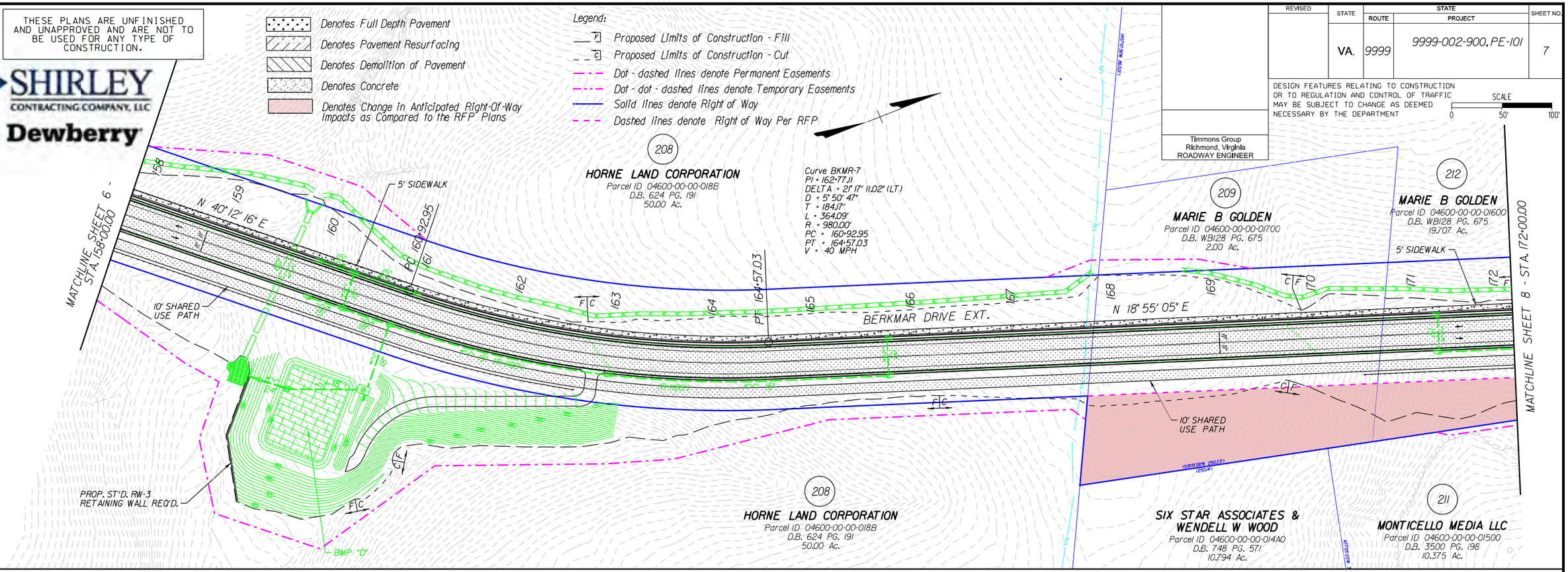
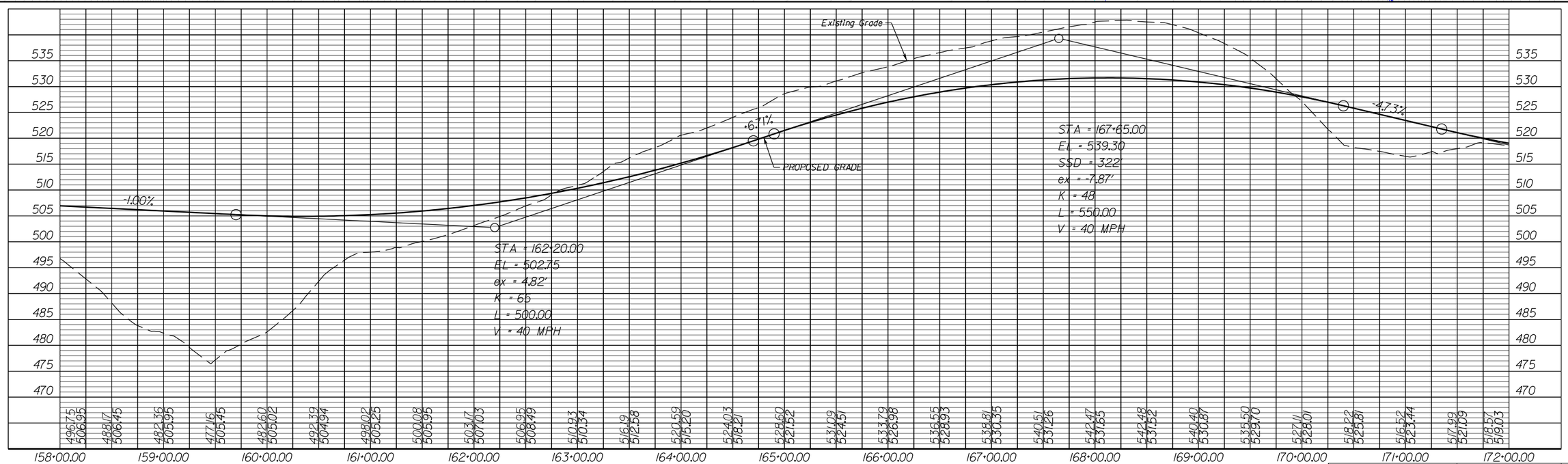
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	7

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

SCALE 0 50' 100'

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER





PROJECT	SHEET NO.
9999-002-900	7

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	8

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

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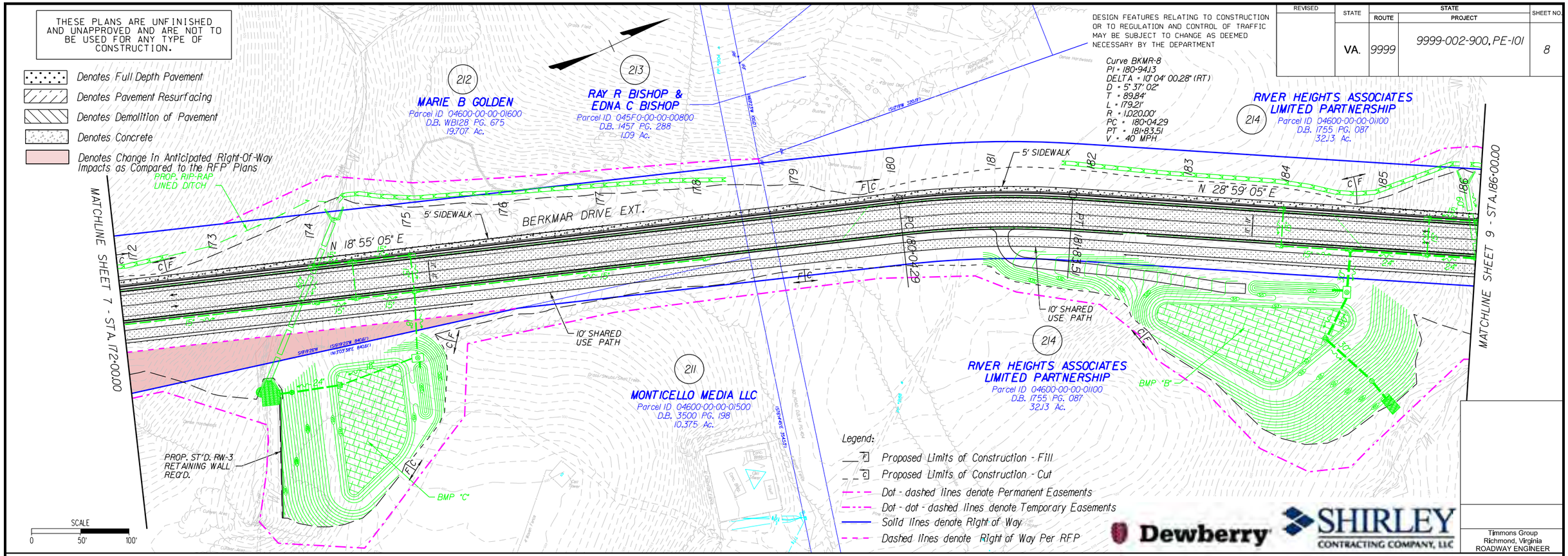
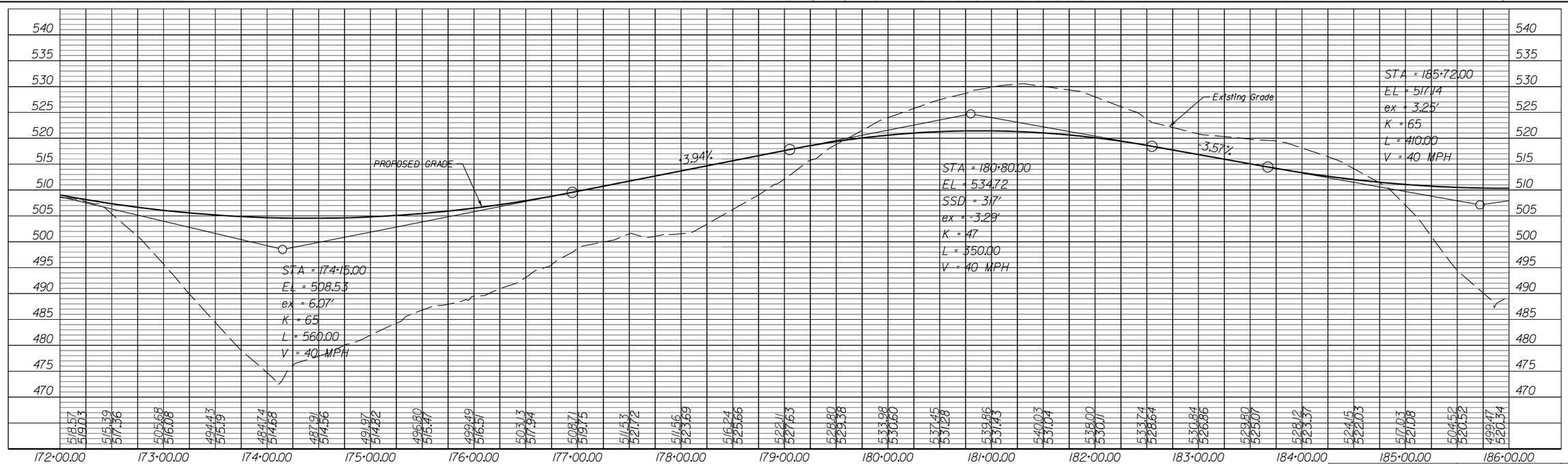
Denotes Demolition of Pavement
Denotes Concrete
Denotes Change In Anticipated Right-Of-Way Impacts as Compared to the RFP Plans



Dewberry

SHIRLEY CONTRACTING COMPANY, LLC

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER



PROJECT	SHEET NO.
9999-002-900	8

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	9

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

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER

SCALE 0 50' 100'

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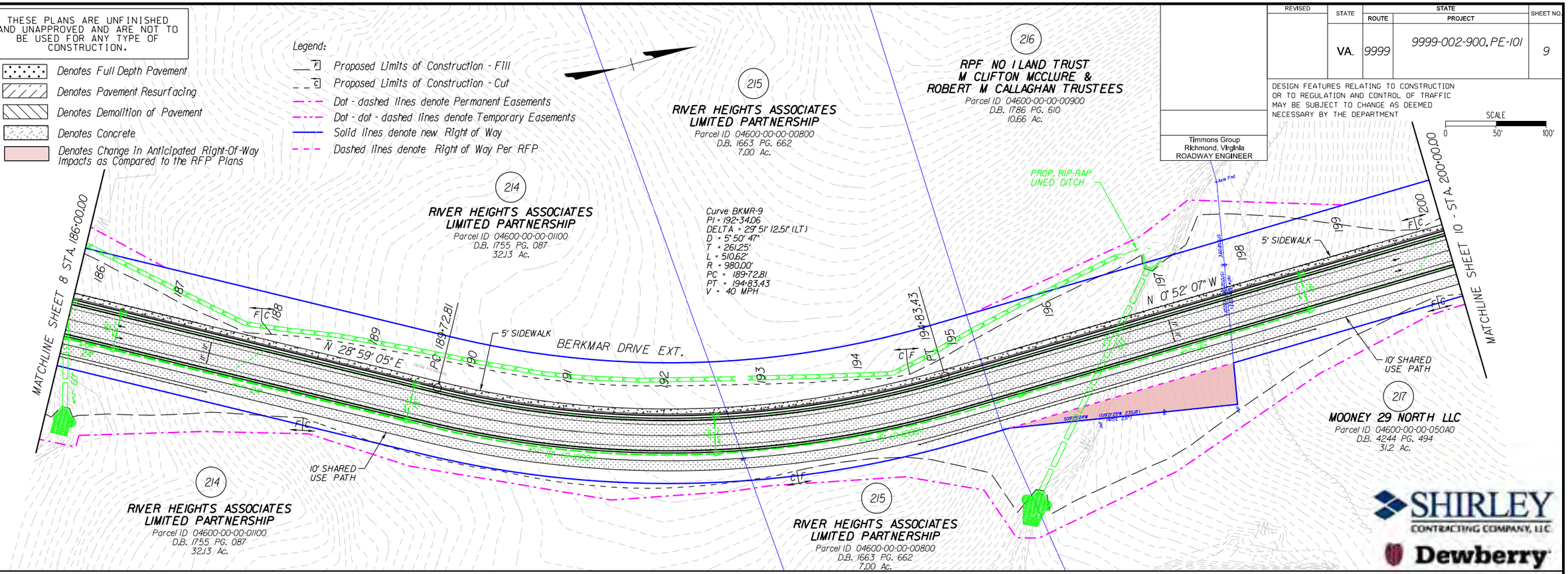
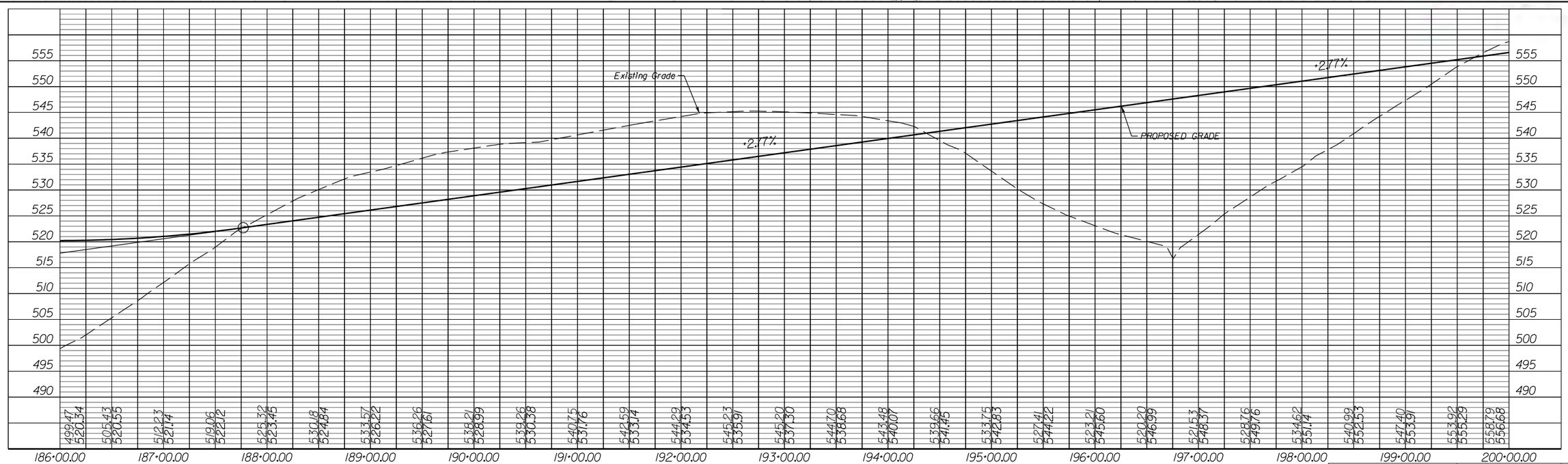


SHIRLEY CONTRACTING COMPANY, LLC

Dewberry



PROJECT	SHEET NO.
9999-002-900	9

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	10

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

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

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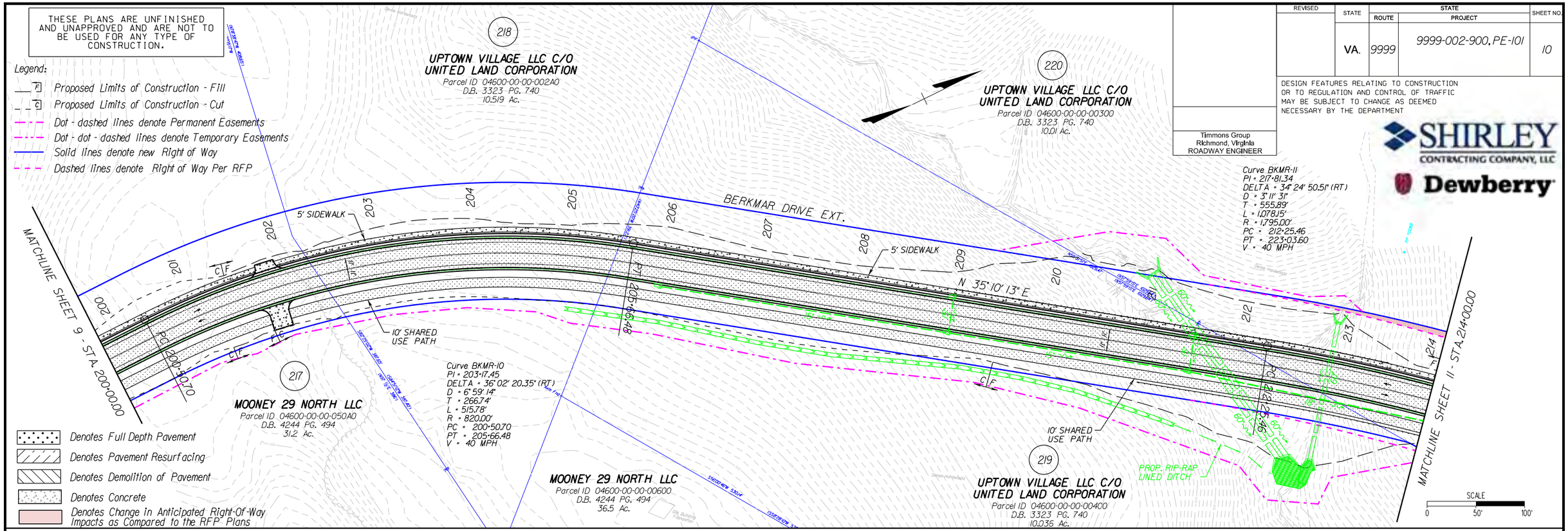

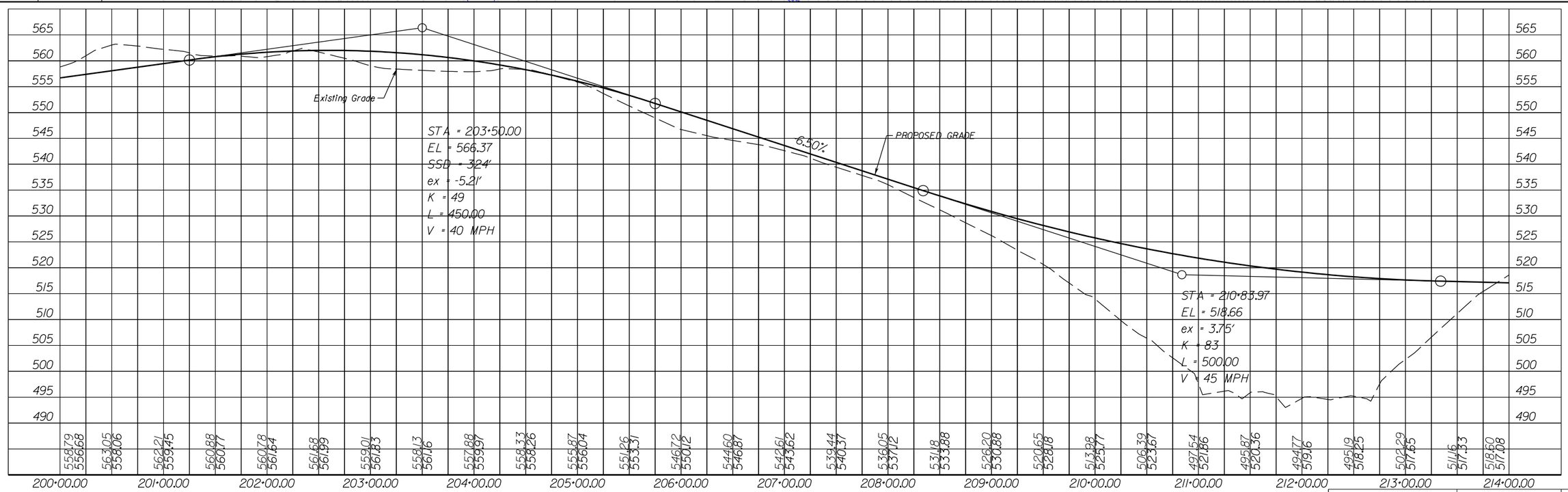

PROJECT	SHEET NO.
9999-002-900	10

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Dewberry SHIRLEY CONTRACTING COMPANY, LLC

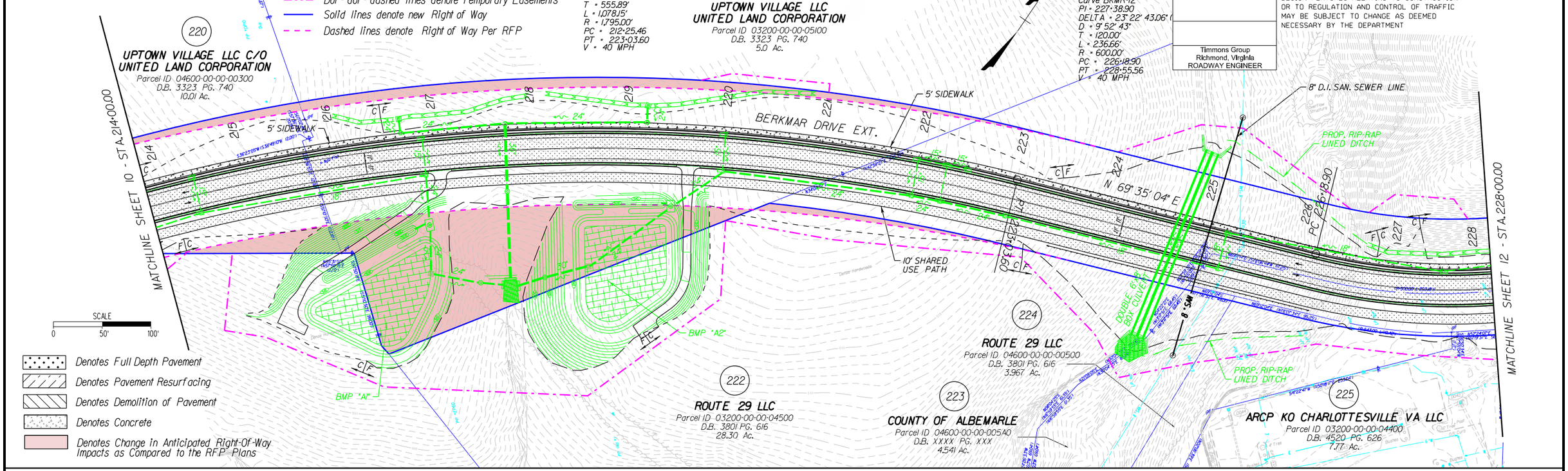
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	11

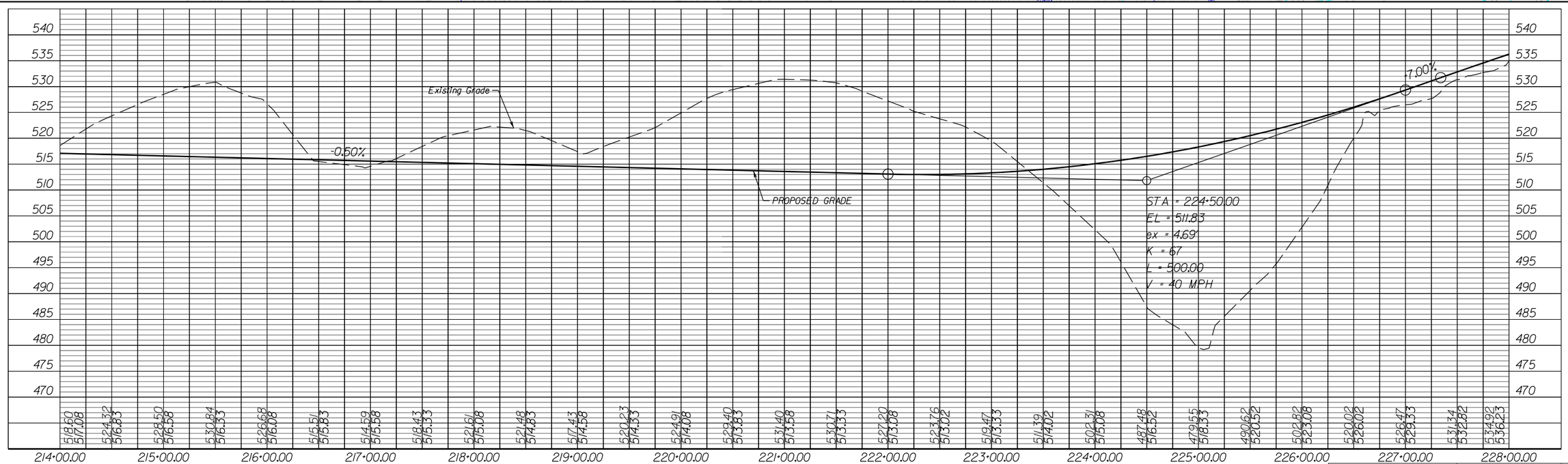
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER

Curve BKMR-11
PI = 217+81.34
DELTA = 34° 24' 50.51" (RT)
D = 3° 11' 31"
T = 555.89'
L = 1,078.15'
R = 1,795.00'
PC = 212+25.46
PT = 223+03.60
V = 40 MPH

Curve BKMR-12
PI = 227+38.90
DELTA = 23° 22' 43.06" (
D = 9° 52' 43"
T = 120.00'
L = 236.66'
R = 600.00'
PC = 226+18.90
PT = 228+55.56
V = 40 MPH





PROJECT	SHEET NO.
9999-002-900	11

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION.

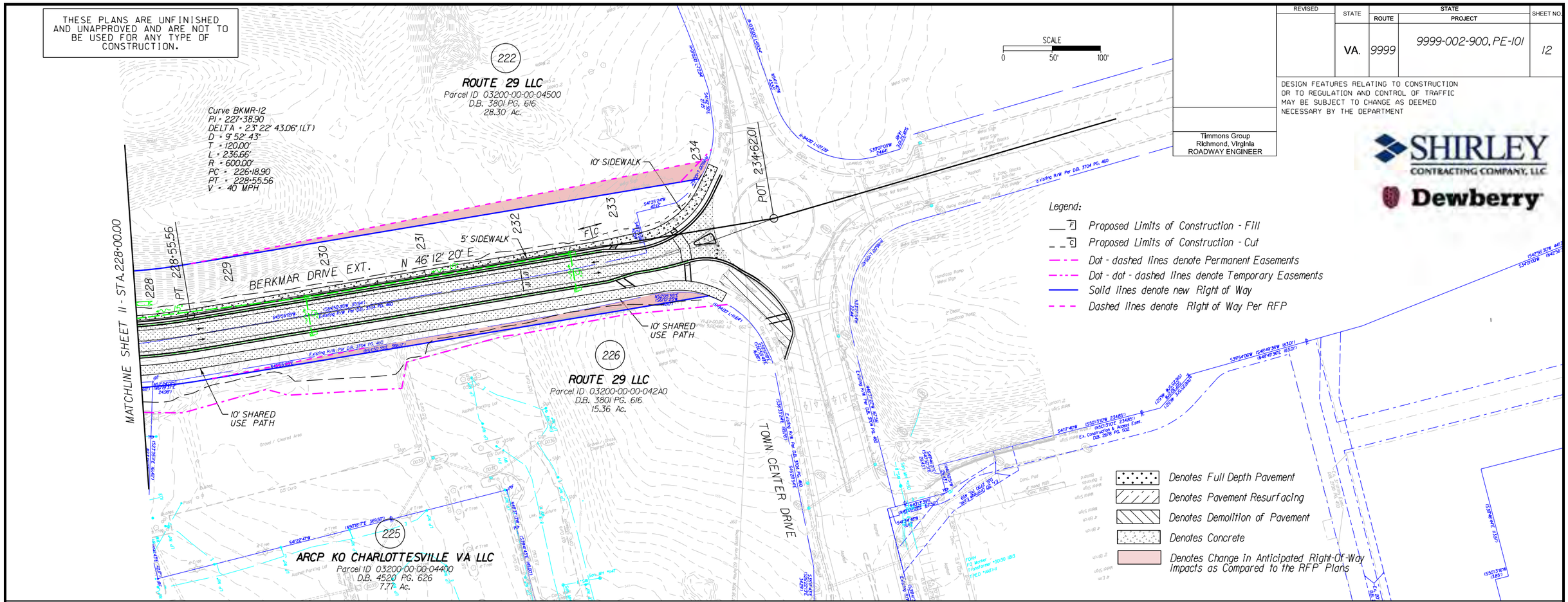
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	9999	9999-002-900, PE-101	12

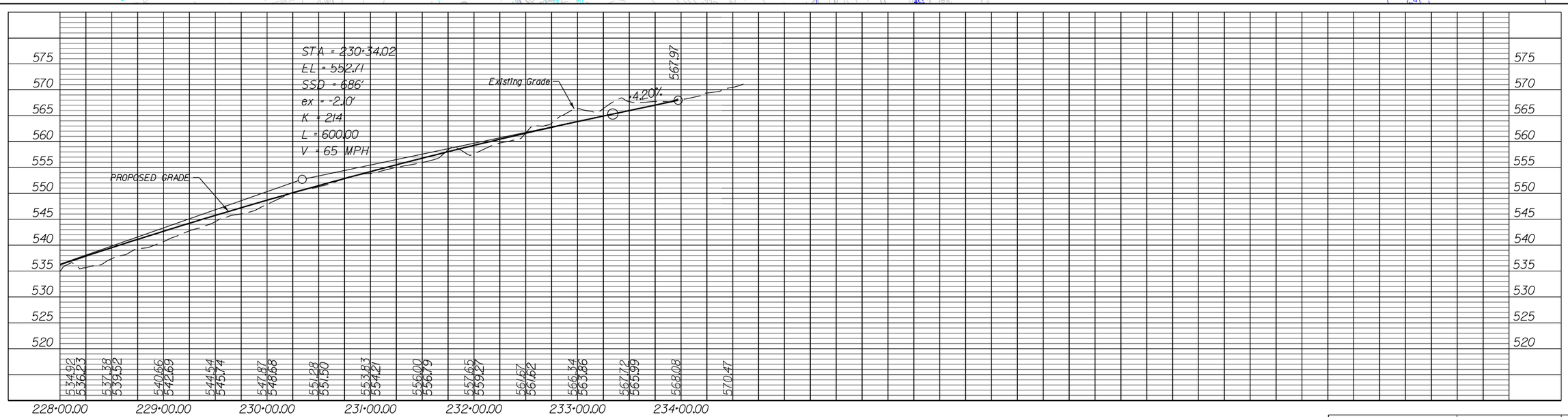
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Timmons Group
Richmond, Virginia
ROADWAY ENGINEER

SHIRLEY CONTRACTING COMPANY, LLC

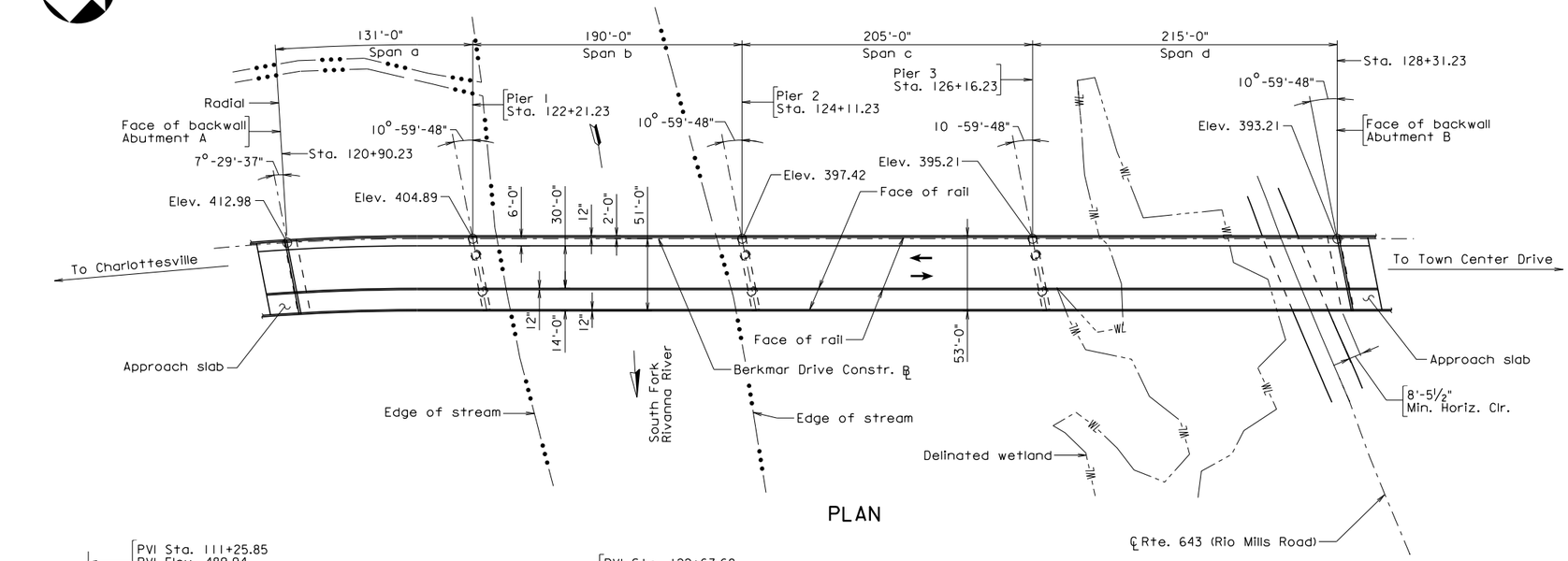
Dewberry



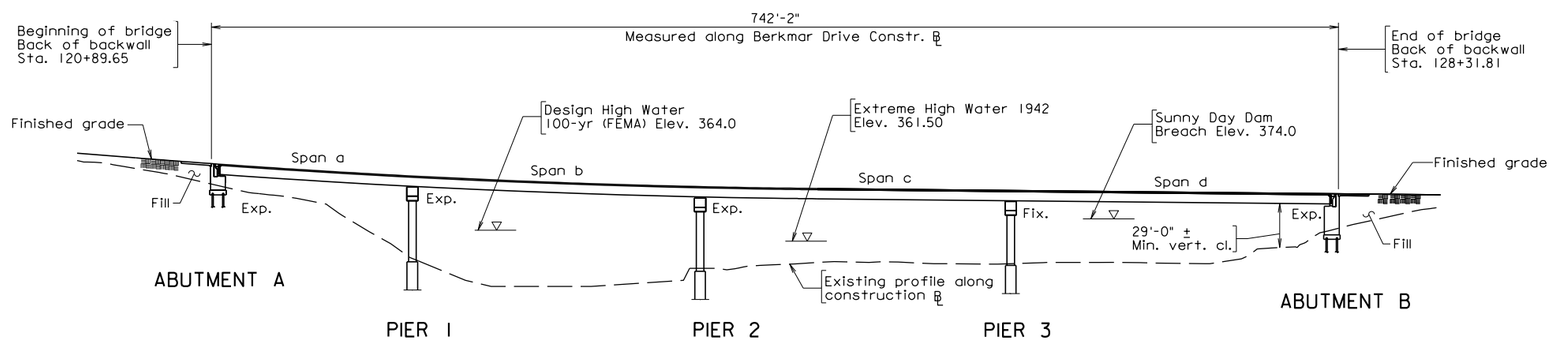


PROJECT	SHEET NO.
9999-002-900	12

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—		1403	9999-002-900, BXXX	1
NBIS Number:			UPC No.		
Federal Oversight Code: N/A			FHWA Construction and Scour Code:	X471-S_	



PLAN



DEVELOPED SECTION ALONG ℄

DESIGN EXCEPTION(S):

GENERAL NOTES:

Width: 6'-0" Sidewalk, 30'-0" Roadway, 1'-0" Barrier, 14'-0" Shared Use Path Overall width 51'-0" face-to-face of rails.

Span layout: 131' - 190' - 205' - 215'

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.

PRELIMINARY PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

VDOT

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. RTE. 631
PROJ. 9999-002-900, BXXX

No.	Description	Date
	REVISIONS	

Scale: 1" = 50'

Recommended for Approval: _____ State Structure and Bridge Engineer _____ Date

Approved: _____ Chief Engineer _____ Date

Date: January 6, 2015

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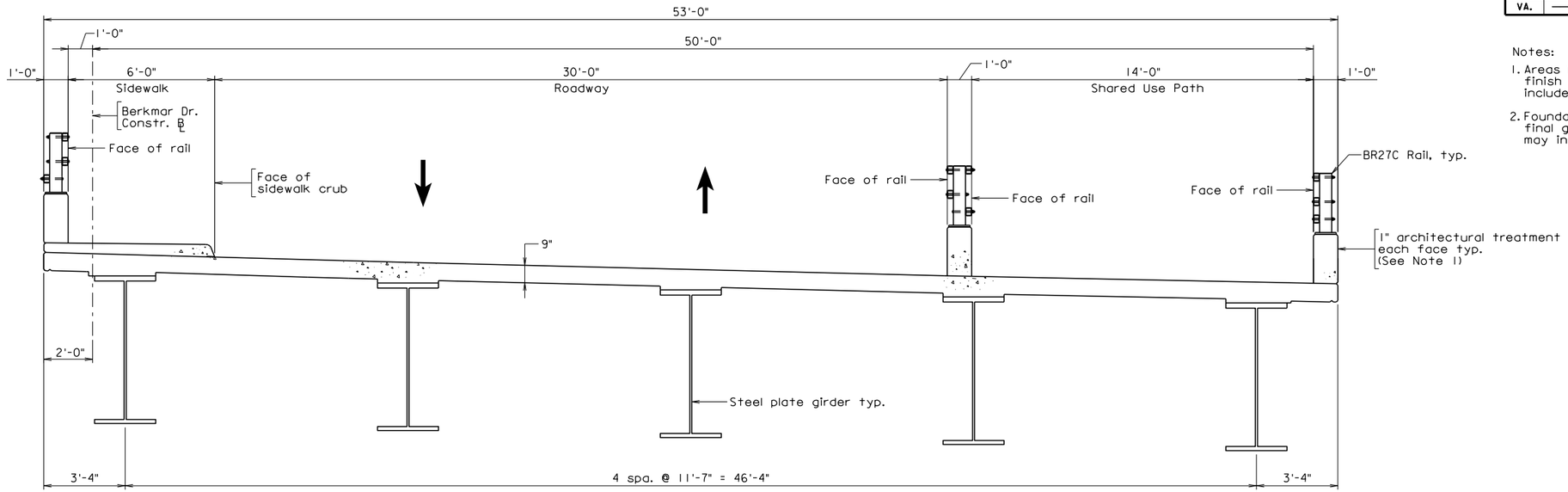
Sheet 1 of 2

Berkmar Bridge GPE .dgn

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	————————	1403	9999-002-900, BXXX	2

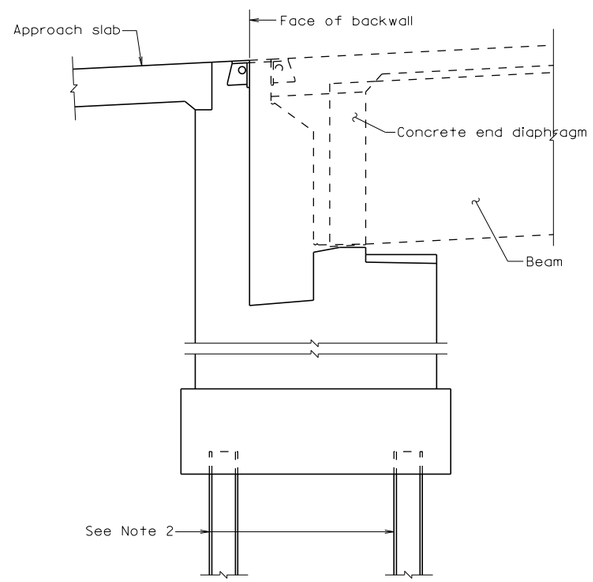
Notes:

1. Areas indicated as recieving architectural treatment will recieve a finish in accordance with the Special Provision for architectural finish included in RFP Information Package.
2. Foundation type will be determined during final design after the final geotechnical investigation has been completed. Foundation type may include drilled shafts, steel piles or spread footings.

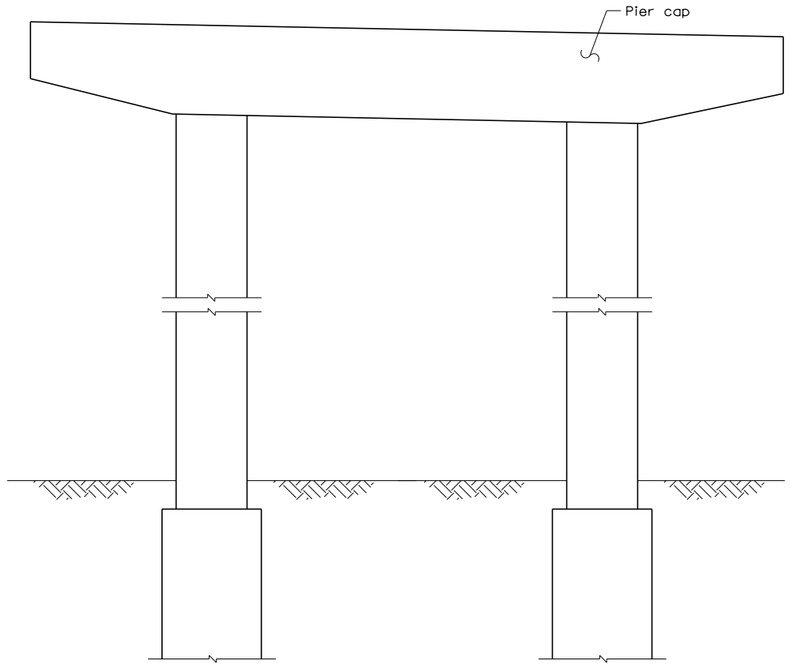


TRANSVERSE SECTION

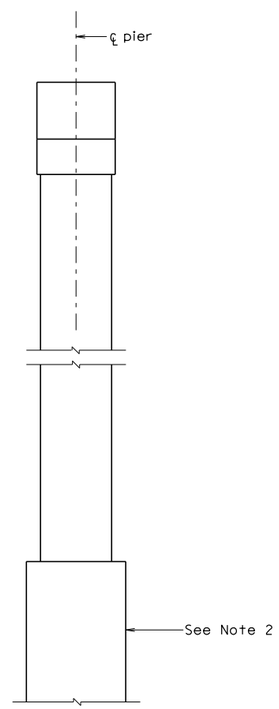
Scale 3/8" = 1'-0"



ABUTMENT SECTION



PIER ELEVATION



PIER END VIEW

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: As shown

© 2014, Commonwealth of Virginia

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION AND SUBSTRUCTURE DETAILS

Designed: MAA	Date	Plan No.	Sheet No.
Drawn: MAA Checked: JDD	Jan. 2015		2 of 2

Typical section and Substr details.dgn