

RESPONSE TO REQUEST FOR PROPOSALS

Interstate 66 Widening

A DESIGN-BUILD PROJECT

From: Approximately 1.2 miles west of U.S. Route 15 (James Madison Hwy.)

To: Approximately 0.2 miles west of U.S. Route 29 (Lee Hwy.)

PRINCE WILLIAM COUNTY, VA



State Project No.: 0066-076-003, P101, R201, C501, B674, B675

Federal Project No.: NH--5A01(194)

Contract ID Number: C00093577DB49

Volume I: Technical Proposal

SUBMITTED TO:



SUBMITTED BY:



IN ASSOCIATION WITH:





June 3, 2013

Mr. John C. Daoulas, P.E.
Virginia Department of Transportation
1221 East Broad Street
Main Building, 4th Floor
Richmond, VA 23219

RE: Interstate 66 Widening
From: Approximately 1.2 miles west of U.S. Route 15 (James Madison Highway)
To: Approximately 0.8 miles east of U.S. Route 29 (Lee Highway)
Section 4.1 - Letter of Submittal

Dear Mr. Daoulas:

Shirley Contracting Company, LLC (Shirley), is pleased to submit this Technical Proposal for the I-66 Widening Project (the Project) to the Virginia Department of Transportation (VDOT). Together with Dewberry Consultants LLC as the Engineer of Record, we will provide VDOT and the traveling public with an unequaled level of assurance that the Project will be completed successfully ahead of the schedule identified in the RFP documents, exceeding the priorities established.

Shirley Contracting Company, LLC, 8435 Backlick Road Lorton, Virginia 22079, is the Offeror and legal entity that will enter into a contract with VDOT for this project.

Declarations:

Should Shirley be selected to enter into a contract with VDOT for the Project, it is our intent to do so 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.

Our Point of Contact for this Project is:
Garry A. Palleschi
Vice President
Shirley Contracting Company, LLC
8435 Backlick Road
Lorton, Virginia 22079
703-550-3579 (Phone) 703-550-9346 (Fax)
gpalleschi@shirleycontracting.com

Our Principal Officer for this Project is:
Michael E. Post
President/CEO/Manager
Shirley Contracting Company, LLC
8435 Backlick Road
Lorton, Virginia 22079
703-550-8100 (Phone) 703-550-3558 (Fax)
mpost@shirleycontracting.com

Substantial and Final Completion Dates:

Substantial Completion:

July 23, 2016

Final Completion:

August 21, 2016

Proposal Payment Agreement:

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

Certification of Debarment:

Signed Certification of Debarment Forms are included as an attachment in the appendix of our Technical Proposal to this Letter of Submittal.

Written Statement of Compliance:

Shirley's Technical Proposal is fully compliant with the Design Criteria Table included in the RFP Technical Requirements (Part 2) Attachment 2.2 and all other requirements of this RFP. Shirley also certifies that the proposed limits of construction, including all stormwater management facilities, are located within the right-of-way limits shown on the RFP plans with the exception of easements, and that our design concept does not require Design Exceptions and/or Design Waivers unless they are identified or included in the RFP or Addendum.

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

Sincerely,



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

4.2 OFFEROR'S QUALIFICATIONS

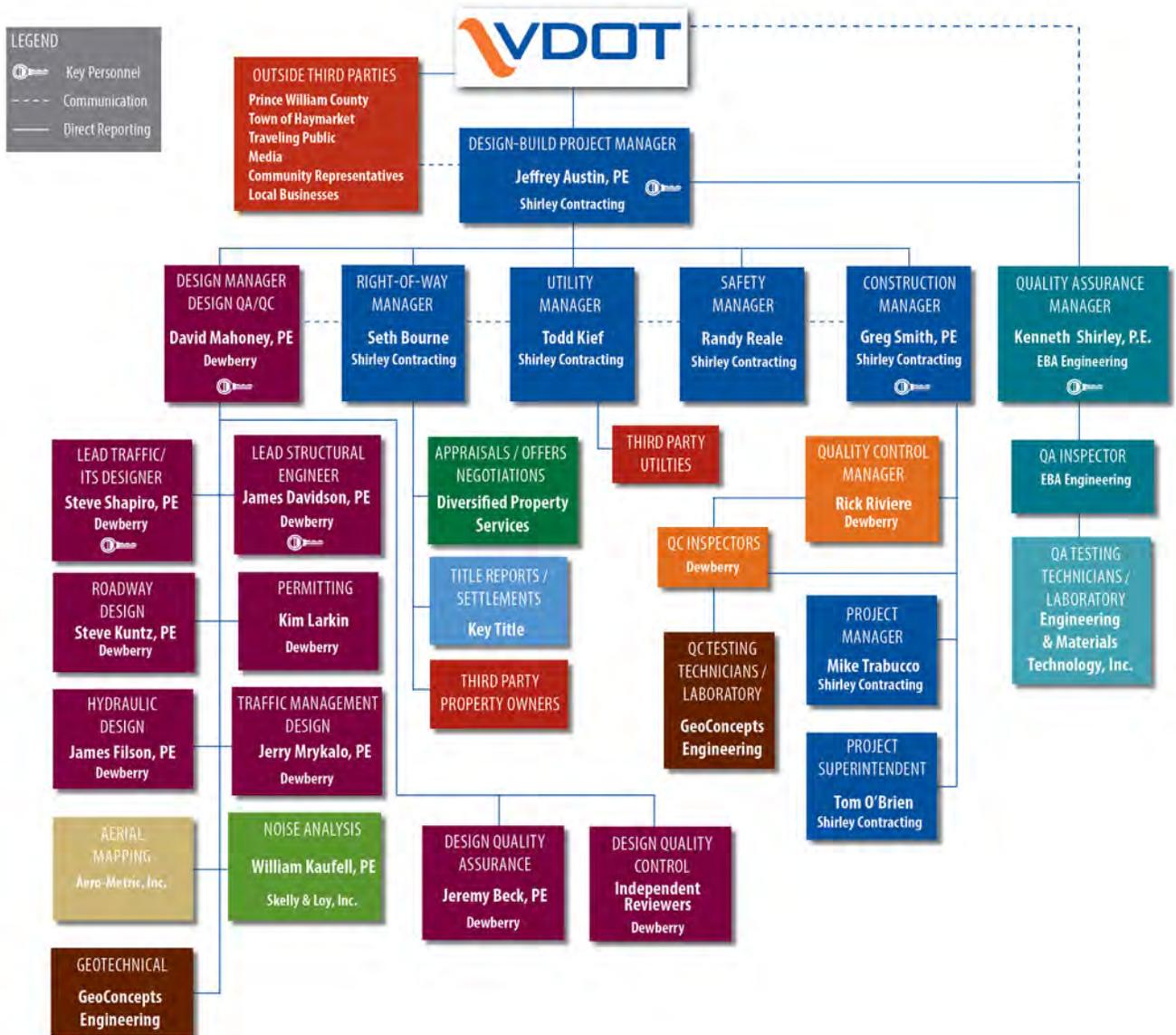
4.2 Offeror's Qualifications

4.2.1 TRUE, ACCURATE, AND UPDATED INFORMATION OF SOQ

Shirley Contracting Company, LLC hereby confirms that the information submitted in our Statement of Qualifications remains true and accurate, except for the following: Aaron Beraducci who was proposed as the Safety Manager, and Scott Brewer who was proposed as the Project Manager, are no longer with the company and are being replaced respectively by Randy Reale and Mike Trabucco. VDOT approved this change on April 12, 2013.

4.2.2 ORGANIZATIONAL CHART

The Project Organizational Chart below 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. There are two changes to the organizational chart as stated above in Section 4.2.1. As there are no changes to the chain of command, an updated narrative is not required.



4.3 Design Concept

The planned widening of I-66 between Route 29 in Gainesville and Route 15 in Haymarket has a long history. Dating back to the late 1990's, it was recognized that this section of I-66 would need to be widened to accommodate the population growth in northern Prince William County and points further west, and the associated increase in commuter use of the interstate. Today in 2013, this section of highway is very heavily used, with average daily volumes approaching 60,000. Routine delays approaching the Route 15 Interchange in the evening peak hours and congestion can extend for more than one mile. These delays are due to heavy traffic volumes destined for points north and south on Route 15, as well as from motorists trying to bypass the heavily travelled and frequently signalized Route 29 corridor immediately south of I-66.

Our Team's experience on I-66 is extensive and goes well beyond the limits of this Project. Dewberry has been the Engineer of Record for VDOT for all of the I-66 Widening Improvements between Route 50 in Fairfax and Route 29 in Gainesville, as well as the on-going Phase IV – I-66/Route 29/Linton Hall Road Interchange. Shirley has been completing construction improvements on I-66 since 2006 when the last segment of widening between Route 234 Bypass in Manassas and Route 29 in Gainesville was initiated, and is currently under construction with the improvements at Phase IV – I-66/Route 29/Linton Hall Road Interchange. ***This experience gives our Team unmatched knowledge of the I-66 corridor, which is evidenced by several modifications to the RFP concept which will exceed the expectations for the Project, improve traffic safety and operations during construction, reduce long-term maintenance needs and costs, and open the proposed improvements to traffic ahead of schedule.***

Provided below and shown in our Volume II Design Concept is our Team's proposed concept for the I-66 Widening improvements, including detailed explanations of each of the modifications we have made. Our concept meets the requirements identified in the RFP documents and the Design Criteria Table. Additionally, our proposed concept, including proposed stormwater management facilities, falls completely within the right-of-way limits shown in the RFP conceptual plans (with the exception of temporary and/or permanent easements as allowed by the RFP). Finally, our Team's proposed design does not include any sub-standard elements which would require approval of design exceptions or design waivers beyond those identified in the RFP.

ROADWAY IMPROVEMENTS

The I-66 Widening improvements contain several distinct elements of roadway improvements including:

- The Widening of I-66 from just west of Route 29 to west of Route 15 and Antioch Road
- Minor realignments and widening of the westbound I-66 exit ramp and eastbound I-66 entrance ramp from Route 15
- Reconstruction of Old Carolina Road and Catharpin Road overpasses and associated roadway and pedestrian improvements

Our Team has investigated each of these elements to identify ways to improve upon the RFP concept and exceed the Department's expectation for the Project as outlined below.

INTERSTATE 66

The improvements to I-66 include build-up and overlay of the existing travel lanes, demolition of existing shoulders, and widening of the road to accommodate an additional general purpose lane and HOV lane in each direction. Our Team will maintain the typical section identified in the RFP, including the 4' buffer between the HOV and general purpose lanes. The ultimate typical section for I-66 will include three (3) 12' wide general purpose lanes in each direction plus a single 12' wide HOV lane in each direction. These lane configurations

will be added or dropped at the Route 15 Interchange, as shown in our Volume II Conceptual Plans, with the exception of the westbound HOV lane, which will be terminated west of the Route 15 Interchange, near the Antioch Road overpass. Adjacent to the travel lanes, minimum 12' wide paved shoulders will be provided along with additional paved shoulder widening adjacent to barriers and/or guardrail to ensure the required "usable" shoulder width is provided. A median width of 38' will be provided throughout the Project, as measured from the edge of the graded shoulder to the edge of the opposing graded shoulder. At the east and west ends of the Project, the median width will vary to match the existing adjacent conditions. The vertical profile of I-66 will be based on an approximation of the existing roadway profile, as shown in our Volume II Design Concept where the widening elevations and longitudinal grades will be determined based on projection from the existing pavement elevations, incorporating the required build-up and any minor adjustments to provide a smooth travelling surface.

As required by the RFP documents, Stage 1 will consist of completing improvements to the westbound exit ramp in an effort to open the additional turn lane capacity as early as possible in the Project schedule. Based on our past experience in the I-66 corridor and recognition of existing safety concerns, ***our Team has identified an enhancement which we will incorporate into the phasing of construction.*** Specifically, as shown on sheet 1J of our Volume II Design Concept, we will complete the milling and build-up of the travel lanes, including the temporary build-up of the outside shoulders, as the initial work in Stage 2 of the I-66 mainline improvements. This work will be completed immediately following completion of the Stage 1 westbound ramp improvements at Route 15. Sequencing this work as an initial activity early in Stage 2 provides ***two enhancements to the Project:***

1. Reduced Temporary Lane Closures – Previous sections of I-66 widening have been constructed with the milling and build-up of the mainline lanes being a later stage of construction, following widening of the roadway, and as a separate stage from the interim outside shoulder strengthening work. By combining these work activities, the right lane closure which is required for the outside shoulder strengthening can be utilized for milling of the existing travel lane and build-up of both the right shoulder and outside lane. This combination of work proposed by our Team will reduce the required temporary lane closure disruptions to the travelling public through consolidation of work elements. ***The reduced night-time operations represent an improvement by minimizing traffic disruptions as well as exposure to construction and inspection staff to night-time drivers.*** Milling and build-up of the left lane will also be completed during this stage of work through separate, temporary left lane closures. ***The build-up of the existing travel lanes, through the top of the ultimate intermediate layer, will also provide for a uniform riding surface throughout construction***

2. Reduced Construction Duration after Pavement Widening – As noted, previous widenings of I-66 were phased such that milling and build-up occurred later in the sequence of construction. This phasing required the widened pavement to be constructed to an interim elevation, leaving off a portion of the base pavement as well as the intermediate and surface courses in an effort to avoid ponding water on the existing travel lanes. By shifting the milling and build-up to the initial phase, the widened pavement can be constructed to the top of the intermediate level, in line with the built-up section. Immediately upon completion of the outside widening, temporary barrier can be removed and the entire roadway paved with the ultimate surface course. ***This phasing eliminates the need to provide temporary drainage measures through the ultimate pavement, thus avoiding potential ponding concerns adjacent to the travel lanes during construction and reducing overall project costs. More importantly, as the public sees the completion of the widening, it allows for virtually immediate opening of all of the travel lanes. This sequencing modification represents a significant improvement from past sections of widening on I-66, and is a direct result of our experience and knowledge gained from those past projects.***

The improvements to I-66 have been designed to stay within existing right-of-way along the corridor, and ***our***

preliminary grading of the stormwater management basins indicates that we will not need any easements for the proposed facilities. This represents an enhancement from the RFP plans which will help to accelerate construction of the Project through reduced property acquisitions. This will be discussed in more detail in subsequent sections.

INTERCHANGE RAMPS

Our Team's concept for the realignment and widening of the eastbound I-66 entrance ramp from Route 15 is consistent with the RFP conceptual plans. The existing single lane ramp will be realigned and reconstructed, creating the fourth thru lane on eastbound I-66. Superelevation and shoulder widths will be brought to current standards based on the proposed horizontal alignment and design speed of the ramp, and the work will be completed in such a manner that it does not preclude the future I-66/Route 15 Interchange improvements.

For the westbound I-66 exit ramp to Route 15, our Team has made modifications in an effort to exceed the RFP requirements, reduce traffic impacts during construction, maximize driver safety, and allow for an accelerated opening of the ultimate lane configuration on the ramp. As discussed and accepted as part of our Proprietary Meeting, our Team has shifted all of the widening to the left side of the existing ramp. This adjustment provides multiple benefits:

- Avoids the need for acquisition of easements.
- Avoids impacts to existing utilities.
- Allows for construction to be completed in a single stage, minimizing construction duration.
- Allows for the continuous, un-interrupted operation of the existing right turn lane to northbound Route 15.
- Allows for the reuse of the existing traffic signal, avoiding double replacement of the structure (once now and again when the I-66/Route 15 Interchange improvements are constructed).

Following completion of the proposed improvements, a two-lane exit from I-66 will be provided before widening to a three-lane ramp to accommodate dual left turn lanes and a single right turn lane. Widening on Route 15 to receive the dual left turn lanes will be completed entirely in the median, and will be analyzed using AutoTurn to ensure the design vehicles for both lanes are accommodated throughout the left turn movement.

As required by the RFP documents, construction of the westbound exit ramp widening will be completed as the first stage of construction, and will be completed prior to the placement of barrier and closure of the outside shoulder on I-66. Our Team is keenly aware that the existing single left turn lane is significantly over capacity at this time, and quick construction and early opening of the dual left turn lanes will provide immediate relief to the westbound corridor. *In order to quickly implement these ramp improvements and provide immediate relief and safety improvement to motorists, our Team will prepare an advance set of Stage 1 & 2 construction plans for approval which will allow for immediate widening of the ramp and receiving area on southbound Route 15.* These advance plans will incorporate all elements needed for construction of the ramp widening including grading, drainage, E&S, temporary traffic control, TMP, traffic signal, and signing and marking. Since easement acquisitions and utility relocations are not required for our revised concept, we can implement the changes without any concerns of delay due to those elements. Since all of the work has been shifted to the left side of the ramp, there is no need for multiple stages of construction, reducing the amount of time temporary barrier is required adjacent to the ramp lanes. Finally, since our concept allows for the reuse of the existing traffic signal, there are no long-lead items which need to be purchased, fabricated, or shipped prior to opening of the ramp. *These enhancements will allow for an accelerated opening of this ramp, which we have scheduled to occur within three months of plan approval, and within approximately 7 months of NTP.*

OLD CAROLINA ROAD

The Old Carolina Road improvements include construction of a new two-lane roadway (2 – 12' wide travel lanes) with a raised 10' wide shared-use path located adjacent to a curb and gutter section on the west side of the roadway. The alignment and profile have been developed to meet the 35mph design speed identified in the RFP documents, with a maximum vertical grade of 4.98% anticipated based on our preliminary concept. Retaining walls will be required along portions of the roadway, and the parapets on those walls, as well as on the overpass above I-66, will be in compliance with current VDOT requirements for parapets located adjacent to either a travel lane or a shared use path facility as appropriate. With respect to the horizontal alignment of Old Carolina Road, our Team is proposing a shift to the east as compared to the existing roadway. ***As agreed to at our Proprietary Meeting, this adjustment provides a benefit to the Project by avoiding temporary impacts to the single family homes currently under construction on the west side of the roadway, and by eliminating the need to relocate the existing overhead utilities along the west side of the road.*** By shifting the alignment to the east, we have also reduced the area of impact north of I-66, where the improvements will be shifted partially into the existing right-of-way between I-66 and Jordan Lane, reducing impacts to private properties west of Old Carolina Road. Due to the horizontal alignment shift, improvements on the south end of the bridge will extend to Cheyenne Way, providing a uniform and consistent typical section between the bridge and that existing community entrance. ***This extension of work on Old Carolina Road exceeds the RFP requirements, which stopped approximately 150' further north, leaving a gap of unimproved roadway between the Project limits and Cheyenne Way.*** Shared use path improvements on the west side of Old Carolina Road will be constructed consistent with the limits identified in the RFP plans, and we will coordinate those improvements with the Town of Haymarket to ensure an ultimate continuous facility is provided.

The profile of Old Carolina Road will provide at least the minimum 16'-6" clearance over I-66, including the future auxiliary lane widening along eastbound I-66. The proposed profile for Old Carolina Road incorporates a maximum vertical grade of 4.98%, well less than the maximum allowed by VDOT and AASHTO criteria.

CATHARPIN ROAD

Improvements to Catharpin Road consist of constructing a new two-lane roadway (2 – 12' wide travel lanes) with a raised 10' wide shared use path located adjacent to a curb and gutter section on the east side of the roadway. Horizontal and vertical geometry for the roadway has been developed to meet the 45mph design speed required, including a maximum vertical grade of 4.08% anticipated based on our preliminary concept. However, our Team has made a significant improvement to the horizontal alignment of the road as compared to the RFP documents. For the improvements to Catharpin Road, the RFP documents allow for the partial closure of the existing roadway as long as northbound traffic is maintained at all times. Our Team recognizes that this is allowed by the RFP, but notes that this will place an unnecessary burden on travelers who use this road daily (who would be forced to multi-mile long detours) as well as an unnecessary burden to travelers along the detour routes (Route 29 and Route 15) which are already over-capacity. In recognition of this, ***our Team has developed an alternate alignment for Catharpin Road which eliminates the need to partially close the roadway during construction. This modification as accepted at our Proprietary Meeting, represents a significant improvement to the RFP plans, and is one of the areas where our Team will exceed the requirements of the RFP.*** As shown in our Volume II Design Concept, our Team has shifted the roadway to the east, completely clear of the existing bridge but still within existing right-of-way along the Catharpin Road corridor. ***Shifting the road to the east will allow both of the existing northbound and southbound lanes to remain open on Catharpin Road for the duration of the Project.*** The new bridge and roadway tie-in improvements will be constructed parallel to the existing roadway and traffic will be shifted to the new bridge and roadway alignment during a single switch, at which time the old bridge will be demolished and removed. Our revised alignment meets all design criteria for

a 45mph facility, and the typical section and pedestrian improvements will be consistent with those identified in the RFP documents.

Another significant enhancement to the Project which is created by shifting Catharpin Road to the east is that ***we will be able to construct both bridges at the same time.*** The RFP indicated that closure of the Old Carolina Bridge could not occur at the same time as the partial closure of the Catharpin Road Bridge. By maintaining two-way traffic on Catharpin Road, our Team will close Old Carolina Road over I-66, maintain two-way traffic on Catharpin Road, and complete construction of both bridges simultaneously. ***This will allow the permanent improvements to both roadways to be opened to traffic earlier in the overall sequence of the Project.***

BRIDGES & STRUCTURES

The enhancements introduced by our Team to the roadway elements identified above are not the only improvements to the Project. We have also made improvements to both the Old Carolina Road Bridge and the Catharpin Road Bridge in an effort to provide virtually maintenance free structures for VDOT. Both bridges will incorporate the required architectural treatments on the MSE walls, abutments, parapets, and piers. While cylindrical piers are easier to construct, ***our Team has chosen to use square piers to allow for incorporation of the architectural treatment on those elements as well.*** Form liners will be utilized in construction of the bridge piers to provide an architectural finish consistent with the other vertical elements of the bridges, and the ornamental pedestrian fence called for on the bridges will be provided. The need for bridge deck drainage for both bridges will be analyzed during design and, if necessary, will be incorporated into the final bridge plans.

Horizontal alignments of both bridges have been developed to avoid superelevation transitions and 0% cross slopes on bridge deck areas to improve drainage flow on the bridge and to adjacent roadway sections. Vertical clearances for both bridges will meet VDOT criteria (16'-6" minimum). Where necessary, protection of the substructure of both bridges will be provided in accordance with VDOT and AASHTO criteria. Additional details for each of the structures, and further enhancements to both structures provided by our Team, are identified below:

OLD CAROLINA ROAD OVERPASS

For the Old Carolina Road overpass, our Team is proposing an alternate span configuration ***which reduces the total span length of the Old Carolina Road bridge by approximately 65 feet.*** Design of the bridge will be in accordance with the VDOT Structure and Bridge Manual, Volume V, Part 2 and will incorporate full integral abutments (with approach slabs and sleeper pads) behind mechanically stabilized earth (MSE) walls. As shown in our Volume II Design Concept, the pier in the median of I-66 will remain centered on the roadway on a spread footing foundation. Since the piers are located more than 30 feet from the edge of pavement, protection consistent with BPPS-1 standards are not required; however, guardrail or high tension cable rail will be installed for protection and based on final median slopes. The abutments along both the westbound and eastbound travel lanes have been adjusted so that they are located immediately adjacent to the ultimate shoulders. Since the MSE walls in front of the abutments will be 14 feet from the edge of pavement, 42 inch high concrete barriers (Structure and Bridge Standard BPPS-3) will be constructed adjacent to the shoulder and in front of the abutments, and the ultimate typical section of I-66, including the future additional auxiliary lane from the Route 15 eastbound entrance ramp, will be accommodated below the bridge. As shown in our Volume II Design Concept, we anticipate the abutments will be supported on piles.

Since no portion of the existing bridge will be utilized during the construction of the Project, it will not be necessary to perform a temporary load rating on the existing bridge. A load rating of the new bridge will be performed and provided in accordance with VDOT requirements prior to opening the new bridge to traffic.

Although the RFP allows the use of either steel or concrete girders, the span arrangement of the RFP plans (two 155 foot long spans) virtually eliminated the ability to utilize concrete girders. With our Team's concept to reduce the span lengths for this bridge (to 2-122 foot long spans), we intend to utilize prestressed concrete bulb-tee girders instead of steel girders. ***The use of concrete bulb-tee girders also represents an improvement from the RFP concept (which would have required steel girders) since concrete girders do not require the level of long term maintenance typically necessary for steel girders.*** With the use of prestressed concrete girders, full integral abutments, corrosion resistant reinforcing steel, and low permeability concrete, the Department will receive a virtually maintenance free bridge.

An added benefit of utilizing concrete girders rather than steel girders is that the concrete girders will not require the field splices during erection. This will greatly increase the speed of erection of the girders over I-66, which in turn will reduce the time that traffic will need to be stopped during night-time beam erection.

CATHARPIN ROAD OVERPASS

Consistent with the modifications for Old Carolina Road, our Team is proposing an alternate span configuration ***which reduces the total span length of the Catharpin Road bridge by approximately 82 feet.*** Design of the bridge will be in accordance with the VDOT Structure and Bridge Manual, Volume V, Part 2 and will incorporate full integral abutments (with approach slabs and sleeper pads) behind mechanically stabilized earth (MSE) walls. As shown in our Volume II Design Concept, the pier in the median of I-66 will remain centered on the roadway on a spread footing foundation. Since the piers are located more than 30 feet from the edge of pavement, protection consistent with BPPS-1 standards are not required, however guardrail or high tension cable rail will be installed for protection and based on final median slopes. The abutments along both the westbound and eastbound travel lanes have been adjusted so that they are located immediately adjacent to the ultimate shoulders. Since the MSE walls in front of the abutments will be 14 feet from the edge of pavement, 42 inch high concrete barriers (Structure and Bridge Standard BPPS-3) will be constructed adjacent to the shoulder and in front of the abutments. Consistent with the Old Carolina Road Bridge, we anticipate the abutments will be supported on piles.

Since traffic patterns on the existing bridge will not be changed as a result of the construction of the Project, it will not be necessary to perform a temporary load rating on the existing bridge. A load rating of the new bridge will be performed and provided in accordance with VDOT requirements prior to opening the new bridge to traffic.

Consistent with the Old Carolina Road Bridge, the reduced span lengths proposed for this bridge allow for the use of prestressed concrete bulb-tee girders. ***This provides for a uniform appearance throughout the Project limits and eliminates the need for future painting of steel girders, a future maintenance savings to VDOT. The other advantages of utilizing the prestressed concrete girders, as stated in the description of the Old Carolina Road bridge (virtually maintenance free bridge, reduced length of traffic interruptions during girder erection), are also applicable to this bridge as well.***

Another enhancement to the Project relative to the Catharpin Road Bridge is the elimination of the longitudinal construction joint which would be required by phased construction of the structure. By shifting the alignment of the bridge to the east of the existing roadway, the entire width of the bridge can be constructed in a single phase. This reduces the number of bridge deck pours, and avoids the need to complete deck pours on a second phase of the bridge while the first phase of the bridge is open to traffic and being subjected to vibration. An additional advantage of the one phase construction of this bridge in our Team's concept is that traffic utilizing the existing bridge will be further away from construction activities for the new bridge than the RFP phased bridge construction concept, which will result in greater safety of the travelling public, workers, and VDOT personnel during the construction of the new bridge. ***The elimination of the longitudinal construction joint and the ability***

to construct the entire bridge in a single phase represents a significant improvement to the Project, exceeding the requirements identified in the RFP documents.

DRAINAGE & SWM BASINS

Our Team has completed a thorough investigation of the drainage and stormwater management needs for the Project. Consistent with the roadway and bridge improvements, we have identified ways in which our Team will exceed the requirements of the RFP.

ROADWAY DRAINAGE

Drainage improvements for I-66, the interchange ramps, and overpasses will incorporate both closed and open section designs. On Old Carolina Road and Catharpin Road, closed drainage systems incorporating curb inlets and storm sewers will be utilized to provide adequate drainage for the proposed improvements and maintain existing drainage patterns. On I-66 and the interchange ramps, a combination of storm sewer systems and open ditches will be utilized to convey water to adequate outfalls and new cross culverts of the interstate. In developing our preliminary concept for the I-66 Widening and interchange ramp improvements, we have considered the following elements:

- *Cross Culverts* – As required by the RFP, we have anticipated that all existing cross culverts are non-serviceable and need to be replaced. While we intend to review this with VDOT further following NTP (since several concrete culverts appear to be in good condition), our preliminary concept identifies the expected new culvert crossing locations and sizes to maintain drainage throughout the Project. In locations where cross culverts are located at excessive depths below the roadway, jack and bore installation methods will be utilized. Pipes which will be jacked and bored will have adequate cover above the pipe to avoid heaving of the roadway, and will avoid deep excavations and shoring required for open cut installation methods. The use of jack and bore installation will also reduce maintenance of traffic impacts to the travelling public, and avoid multiple shifts along the travel lanes to work around open cut installation. Replacement culverts which are located at shallow depths below the roadway will need to be installed via open cut methods to avoid the heaving concerns mentioned above.
- *Roadside Ditches* – Roadside ditches will be located adjacent to both eastbound and westbound I-66 as well as in the median to intercept all surface runoff. Flow will be directed to adequate outfalls, including stormwater management basins where needed for treatment purposes. As noted in our Volume II Design Concept, ***several roadside ditches will be designed as grass swales to improve the overall the treatment of the Project***, helping to eliminate the need for construction of several stormwater management basins while still meeting the phosphorus removal requirements. Ditches will also be designed adjacent to noise barriers to prevent ponding of water adjacent to the structures, and to maintain flow from offsite areas draining towards the Project.
- *Closed System Drainage* – At several locations along I-66, closed section drainage will be required to convey surface runoff to receiving channels or stormwater management basins. Closed systems will be required in areas of high fill, where curb is required to prevent sheet flow runoff from eroding tall slopes, as well as in areas where noise barriers are located close to the proposed shoulder, eliminating the ability to construct ditches between the shoulder and noise barrier. Where curbs are required on I-66, they will be located 14' from the edge of the travel lane, accounting for the required 12' shoulder width plus a 2' offset for guardrail or barrier installations while maintaining the required “usable” shoulder width. Based on our experience and in an effort to provide a long-lasting product, all curbing along I-66 will be concrete curb. ***The use of concrete curb represents a significant improvement to the corridor as opposed to the use of asphalt curb which is easily damaged over time. The use of concrete curb is consistent with the adjacent section of I-66 between Manassas and Gainesville, and is another area***

where our Team has exceeded the requirements of the RFP. Closed system drainage associated with the curbed sections will consist of DI-3 type inlets, with water conveyed to adequate outfalls via storm sewer pipes. All pipes and culverts utilized on the Project will be in accordance with the VDOT PC-1 standards for the appropriate roadway classification.

STORMWATER MANAGEMENT

Our Team used the latest version of VDOT Instructional & Information Memorandums (I&IM) LD-195, VDOT's Stormwater Program Advisory (SWPA) 12-01 and 12-02, and Virginia Department of Transportation Drainage Manual (VDM) to determine the methodology and requirements for stormwater management for this Project. As indicated in responses to questions made during the RFP process, SWPA 12-01 will apply to this Project.

In accordance with the criteria noted above, our Team analyzed the average land cover conditions to determine the requirements for stormwater management. Based on the applicable percent impervious cover of the site, our Team was able to design for the range of 16-21% per outfall. Accordingly, I&IM LD 195.7, Section 5.4.4.2, Table 1, indicates that vegetated filter strips or grassed swale water quality BMPs can be used. As shown on our Volume II Design Concept, our Team has placed these BMP's in locations which optimize the impervious treatment amount and efficiency of each BMP. ***Based on our reanalysis of the Project, and optimization of BMP locations, we have been able to eliminate 3 of the 4 extended detention basins which were identified in the RFP documents.*** This not only reduces initial construction costs, but also reduces long-term maintenance costs for VDOT, and eliminates the need to acquire all of the permanent stormwater management easements identified in the RFP conceptual plans. To further enhance our Team's stormwater management solution, we have identified several grass swales which will treat an additional 0.1 acres of impervious area. Finally, in the one location where a stormwater management basin is required, we are proposing to use a bio-retention basin in lieu of the extended detention basin as shown in the RFP conceptual plans, increasing the phosphorous removal efficiency from 15% to between 35% and 50%. ***With these modifications and enhancements, our Team has improved the targeted phosphorus removal efficiency for this Project which will allow VDOT to have a credit to use elsewhere within the hydrologic unit code (HUC) watershed.***

NOISE BARRIERS

Based on adjacent development along this portion of the I-66 corridor, there is a need for numerous noise barriers. We recognize that noise analysis for all of the barriers has been completed, that the barriers shown in the RFP plans have been found to be reasonable and feasible, and that they have gone through the public input process to determine that the walls are desired for construction. As a result, our Team plans to install the noise barriers in the locations shown on the conceptual plans. Minor adjustments may be required based on final, detailed design, but significant adjustments will not be proposed. Following development of final grading plans, noise barrier profiles will be developed for each barrier to identify the base elevation, top elevation, and existing ground elevations. Coordination with utility companies and fire and rescue staff will be completed to ensure that access points, including potential door locations, meet the requirements to provide a safe and easily accessible corridor.

An added challenge with development so close to the existing roadway is the potential for construction noise to impact adjacent properties. While night time operations will be minimal on this Project, the daytime construction work will have the potential to impact the outdoor activities at the Tyler Elementary and Pace West schools located between eastbound I-66 and Route 55 (John Marshall Highway). To reduce noise impacts to adjacent properties, our Team will explore opportunities to install noise barriers early during construction of the Project. Once final grading plans are developed, areas where noise barriers will be installed in undisturbed areas beyond any cut slopes will be identified. Then, components of those noise barriers will be fast-tracked through the shop drawing and fabrication process. Construction access will be developed to these areas, and noise barriers will

be installed to not only mitigate roadway noise, but to also provide mitigation in the audible construction noise.

Our Team uses this approach on all of our projects, having recently installed several miles of noise barrier on the ICC project in Maryland well in advance of roadway construction being completed. While this is not a requirement of the RFP, this is a commitment our Team will make to the Project, the local residences and the public, to look for opportunities to complete these noise barriers earlier in the construction schedule.

INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Our Team has significant experience in the design and installation of ITS elements. Most notably Dewberry designed and constructed the entirety of the existing ITS conduit system on I-66 between Manassas and Gainesville. We are aware of the on-going design-build project (I-66 ATM) to improve the ITS network on I-66 between the DC line and the eastern end of the widening portion of this project. Immediately upon Notice-to-Proceed, we will initiate a dialogue for coordination with the Transcore ITS Team to ensure the systems are properly coordinated to avoid any issues or challenges during or at the completion of the Project.

The conduit and fiber system will be located similar to where it was installed in previous sections of I-66. Components will be located near the existing right-of-way to avoid possible impacts or conflicts with other roadway improvements. The only deviation from this standard placement will be in areas of noise barrier installations, where attempts will be made to locate the conduit in front of the noise barriers for easy access from the roadway, as opposed to through doors in noise barriers or via public roadways.

Placement of ITS devices, such as cabinets, cameras, vehicle detection and CCTV components, and DMS sign supports will be located to ensure easy maintenance access to each device. Where necessary, pull-off areas, openings in guardrail, or widened shoulders will be incorporated to provide safe areas for maintenance, inspection, and access by VDOT staff.

LIGHTING

In accordance with Section 2.8.5 of Part 2 of the RFP documents, lighting will be designed and constructed on Old Carolina Road and Catharpin Road, and lighting will be provided for each of the proposed overhead sign structures, as well as a luminaire retrieval system. Our Team has already analyzed the induction lighting system required for these facilities, and anticipates that 16 poles/fixtures will be required on Old Carolina Road and 6 poles/fixtures will be required on Catharpin Road to meet the Project requirements. Pole locations will be coordinated with the roadway and structural design team, as well as with the Utility Manager to ensure that no conflicts arise during construction, and to ensure that all appropriate details for the parapet mounted poles are included in the plans. Spacing of poles will be kept consistent along each roadway for aesthetic purposes and coloring of the poles and fixtures will be consistent and in compliance with the RFP documents.

SCHEDULE

An overriding factor in development of our conceptual plans was identifying ways in which ultimate improvements could be provided in an accelerated manner. ***As identified in our Letter of Submittal, we have identified early Substantial and Final completion dates for the Project.*** These early dates are possible due to the design modifications we have made to the plans as well as through the detailed analysis our Team has invested in the proposed improvements. ***These early completion dates indicate our level of commitment to this Project, and a way in which we have significantly exceeded the requirements of the RFP.*** Additional details regarding our Team's Proposed Schedule are included in Section 4.6 of our Technical Proposal.

4.4 Project Approach

4.4.1 STAKEHOLDER COORDINATION/PUBLIC OUTREACH

Critical to the success of any project is open, honest, up-front communication and early and continuous coordination with interested parties, stakeholders, and the community. Our Team has extensive first-hand experience communicating with multiple stakeholders on design-build projects, and has conducted community outreach and coordination efforts on many of them. An added benefit to this Project is our Team already has relationships with many of the stakeholders who will be involved with the I-66 Widening project based on our ongoing work on the Phase IV-I-66/Route 29/Linton Hall Road Interchange project.

STAKEHOLDER COORDINATION

We expect to coordinate with numerous stakeholders throughout design and construction of the Project. A comprehensive list of stakeholders will be developed jointly with VDOT before holding any stakeholder coordination meetings. At a minimum, the crucial stakeholders will include:

- The Virginia Department of Transportation (VDOT)
- The Town of Haymarket
- Prince William County
- Fire & Rescue and Local Schools
- Local Residents, Community Organizations and Businesses
- Virginia State Police and Local Law Enforcement
- Traveling Public
- Adjacent Projects

Proper identification of the roles of each of these groups, and the way in which design and construction is coordinated, will be critical to the success and timely delivery of the Project. For each of these stakeholders we plan to undertake the following coordination efforts:

- *VDOT* – As the Owner and client, coordination and partnering with VDOT will occur continuously but will include at a minimum weekly coordination meetings beginning at Notice to Proceed. Initial “kick-off” and coordination meetings will be held and our Team will review and discuss past commitments as design work is initiated. This will allow for specific design elements to be incorporated into the design plans at the outset, avoiding modifications later in the design process. We will also communicate our proposed approach, timeline of design and submittals, and expected work packages. This up-front communication will expedite plan reviews by alerting VDOT to the schedule for submission of deliverables. Also, consistent with recent successful projects, prior to each submission we will hold a meeting with VDOT and the appropriate review staff to describe the project design status, what elements will be included in the plans, and decisions made previously which could affect the review process, and to clarify any design details before they are received. Following receipt of comments from each formal submission, a separate meeting will be set up with VDOT project staff to review the comments, identify any challenges, and determine the best way to receive approval. During construction, regularly scheduled progress meetings will continue to review project status, discuss issues, and to go over upcoming project milestones and anticipated work activities. “Look ahead” schedules will be provided so that inspection staff is aware of upcoming work, and any witness or hold points will be identified. Throughout the construction phase, we will work directly with VDOT’s public outreach group, utilizing the contacts they have with the local community and through the use of the VDOT website to disseminate information in a timely manner. Press releases will be coordinated, and any information required for project updates,

newsletters, and graphics will be prepared by our Team so that information released to the public is current and accurate at all times.

- *The Town of Haymarket* – The I-66 Widening Project will have a daily impact on the residents and businesses in the Town. As such, it will be vital for the Team to maintain close communication with them. Additionally, the Town has plans for several improvement projects of their own that must be integrated into this Project. We have already reached out to their staff and spoken with the Town Engineer Holly Montague, P.E., to begin the coordination efforts which will be required for effective communication between projects. The design improvements our Team has developed, including being able to maintain traffic on Catharpin Road (even though it is outside the Town limits), will be critical to improving traffic flow in and around the Town by alleviating traffic congestion concerns which would have otherwise been introduced to Route 55 and Old Carolina Road due to a partial closure of Catharpin Road. Throughout design and construction, our Team will maintain open lines of communication with the Town to ensure proper coordination with their on-going projects on Route 55, as well as with planned projects on Old Carolina Road. Project limits and pedestrian access will be coordinated during the design stage, and options to improve operations in the Town and along Old Carolina will be explored, including the ability to extend the shared use path to Route 55 and Heathcote Boulevard. Coordination will also be critical for the numerous Town activities such as Haymarket Day, October Fest, and several parades, which introduce traffic restrictions and temporary closures of Route 55. We will work with the Town to broadcast advance notifications to businesses and the public before events in an effort to minimize confusion and additional congestion.
- *Prince William County (PWC)* – Both Shirley and Dewberry have long-standing relationships with Prince William County, and are currently working on several projects for them. These relationships will aid in coordination and communication with key PWC Transportation staff. For our regular coordination meetings, we will invite PWC staff to attend so that they are aware of upcoming activities and remain involved in the Project. Additionally, we recognize that the Gainesville District Supervisor has his primary office located on Heathcote Boulevard just east of Catharpin Road. Critical to success to any project is “getting off on the right foot”, and the effort our Team has made to maintain two-way traffic on Catharpin Road will be a great benefit to the local community, and an improvement that the Supervisor can express to his constituents immediately upon project start-up. We will coordinate with his office throughout design and construction, providing regular project updates so that he is aware of the progress and any upcoming changes which could impact the travel patterns of those he represents.
- *Fire & Rescue and Local Schools*– During construction of any project, changes in travel patterns must be coordinated with fire and rescue staff and with local schools in the event bus routes are disturbed. With the closure of Old Carolina Road, advance notification and coordination will be required with both fire and rescue staff of Station 4 and the local schools which will be impacted through modifications to bus routes. During development of the TMP, and prior to closure of Old Carolina Road, we will meet with fire and rescue and school staff to alert them of the upcoming travel pattern changes. Timing and duration of the closure will be discussed, and alternate routes will be identified so everyone is aware of potential impacts and ways in which those impacts will be mitigated. Prior to reopening of Old Carolina, we will set up additional coordination meetings so that this same staff is aware of the timing of the reopening, and bus routes can be planned and publicized in advance of the opening. The enhancement our Team has made to allow the complete operation of Catharpin Road throughout construction will provide a significant benefit to both of these groups as well. ***Since Fire and Rescue Station 4 is located just west of Catharpin Road on Route 55, maintaining two-lane operation on Catharpin will result in no impacts to response times or return trips for fire and rescue vehicles. This represents a significant improvement from the RFP plans.*** Additionally, bus routes will not be impacted for students who live south of I-66.

While the RFP concept would have maintained the northbound bus routes, the southbound bus routes would have been impacted by partial closure of the road. Our Team's design modification will allow both the northbound and southbound routes to continue without impact during construction.

- *Local Residents, Community Organizations, and Businesses* - A Project of this magnitude must effectively coordinate with local residences, community organizations, such as the Chamber of Commerce, churches, homeowner associations, and businesses, and is an important way to gain support of the Project. Early identification of these groups and development of a comprehensive email distribution list of organizations, businesses, and individuals will aid in the Public Outreach discussed later in this section.
- *Virginia State Police and Local Law Enforcement* - As the Project scope will affect the jurisdictions of both agencies, the Project Team must establish and maintain an effective coordination plan with each. Efforts include communication of lane closures, incident management, detours and changes in traffic patterns, contact information, and assistance when necessary.
- *Traveling Public* - With significant volumes of traffic affected by the Project, continuous coordination and communication will be an absolute necessity. The Team will utilize many tools to do so including the VDOT website, local media, variable message boards, signage, flyers, presentations, and community meetings.
- *Adjacent VDOT Projects* – Our Team is keenly aware of the potential affect of other projects adjacent to the location of this project. Coordination with the ongoing Phase IV-I-66/Route 29/Linton Hall Road Interchange project will be seamless since it is currently being completed by the Shirley/Dewberry Team. Project schedules will be coordinated so that any work which could impact the adjacent project will not result in adverse impacts to the travelling public or local communities or businesses. For the I-66 ATM project, our Team will begin coordination with that project immediately upon Notice to Proceed. We have already had preliminary discussions with the Transcore ITS Team to determine the current status of the ATM project. Previous decisions made between that team and VDOT with respect to material types, ITS device components, and conduit routes will be discussed to ensure the extension of the ITS elements through this project are consistent and coordinated to provide a complete, functioning system. Throughout design and construction, coordination meetings will be established to provide continued coordination between teams. As a courtesy, plan submissions which include details for the proposed ITS system will be shared with the ATM project team for coordination and information. These meetings and sharing of information will provide the opportunity for both teams to coordinate construction activities, timelines for field work, and to ensure designs are coordinated continuously, accounting for any potential revisions or field changes that have already been made. Finally, coordination will be necessary with the future I-66/Route 15 Interchange improvements. Construction of that project will require close coordination since many of its critical components are located over and around the work which will be underway for the I-66 Widening. Similar to the way in which we will coordinate with the ATM project, regular meetings will be set up with staff from the I-66/Route 15 project team to ensure construction and design activities are coordinated. Based on the schedule of that future project, we expect design of the I-66 Widening project to be substantially complete prior to award of the contract. All design information will be shared with that team as necessary to ensure re-work of construction is not required, and to ensure that the latest information is available to everyone involved on both projects.

As noted above, extensive coordination will be required with multiple groups throughout development and completion of the Project. Our Team's goal throughout the life of the Project will be to serve as an extension of VDOT staff, with an emphasis placed on helping to reduce the time demands on the VDOT project management team. Since our Team is already working in this area, we have the contacts needed to ensure the flow of communication is complete and coordinated efficiently.

PUBLIC OUTREACH

In addition to communication and coordination with the stakeholders above, our Team recognizes and understands that open and regular communication with the public is critical to the success of the Project. Public outreach by our Team will use several different methods, all of which have been used by our Team successfully on past and on-going design-build projects. These public outreach efforts include:

- *Citizen Information Meetings* - During the design phase, additional information meetings will be held with local residents to provide updates to the Project design and with respect to upcoming construction activities. Information meetings will be announced through postings in newspapers, online, on VDOT's website, and through direct mailers or email "blasts" to the local HOA groups, citizen groups, and agencies. Based on our Team's on-going work on I-66/Route 29/Linton Hall, we already have the basis for the email distribution lists which will be required for notification of information meetings for this Project. Notice of the meetings will be provided well in advance of each meeting, and graphics, slide presentations, and a combination of formal and informal presentations will be used to disseminate the appropriate information to everyone. Enhancements to the Project, such as the maintenance of two-way traffic on Catharpin Road throughout construction, will be explained to the public to gain additional support for the improvements, and challenges of the Project will also be explained to reduce concerns and address any comments which may be received.
- *Email Distribution List* - Although not required by the RFP, our Team has found that development of a comprehensive email distribution list of project stakeholders, community representatives and organizations, businesses, and individuals including the travelling public, is an effective way to keep the public informed of current Project events. During the Project, our Team will utilize the Email Distribution List to notify the public of upcoming Citizen Information Meetings, Pardon Our Dust meetings, changes in traffic patterns and road closures, and updates to the Project Schedule. An Email Distribution List sign-up sheet is provided at each public meeting and is continually expanded throughout the Project to improve communication. ***Development and use of the list is one way our Team exceeds the requirements for Public Outreach.***
- *Pardon Our Dust Meetings* – During the construction phase, information meetings similar to Citizen Information Meetings will be held to provide updates to construction activities and alert residents and motorists to upcoming traffic pattern changes. These meetings are typically scheduled prior to major traffic switches, and we expect to have meetings immediately prior to the start of construction, prior to the closure of Old Carolina Road, prior to the opening of Old Carolina Road, and prior to the opening of the ultimate lane configuration on I-66. Additional meetings may also be appropriate to provide regular updates to the development of the Project. Similar to the Citizen Information Meetings, graphics, presentations, and photos of project progress will be shared so that everyone is aware of the work which is underway and which will be taking place in the future.
- *Website Updates and Press Releases* – Consistent with our other design-build projects, we will coordinate with VDOT's Public Affairs group to ensure accurate information is always available on VDOT's website. Project photos will be shared with that group for update on the internet, and upcoming traffic pattern changes and impacts will be identified well in advance for public release. Press release documents will be prepared and coordinated with Public Affairs to alert the public of major changes, such as the closure of Old Carolina Road.
- *Additional Meetings with Specific Groups* – In addition to the Public Outreach identified above, this Project has the potential to indirectly affect numerous property owners, businesses and other groups. As these specific groups are identified, the Shirley Team will plan to meet individually with them to address their concerns. An example could be those residents impacted by noise barrier construction. While

the process has already been completed to determine where noise barriers will be installed, additional communication will be appropriate with HOA groups in several locations. While the installation of noise barriers will not directly impact private properties, they will change the view from those properties, and some residents may have concerns about construction activities, installation processes, and temporary disturbance adjacent to their property. As we have done on several past projects, we will reach out to the different HOA groups to see if meetings are desired. Information presented at those meetings will be tailored to the area of the HOA, and project design and construction elements will be explained. Timing of construction will be identified, and ways to address the concerns of the HOA groups and their residents will be discussed if necessary.

The open and honest communication approach our Team has used on all of our design-build projects has greatly contributed to their success. In several instances, our approach of simply listening to concerns, and addressing them in a professional manner has helped to “win over” even the toughest of critics.

4.4.2 UTILITIES/DRAINAGE

UTILITIES

The I-66 Widening Project is located in a highly congested and heavily traveled corridor which involves both private and public utilities necessary for the functionality of the adjacent communities. In preparation of this Technical Proposal, our Team has done a thorough study of the potential existing utility facilities, potential impacts to these facilities, and ways to avoid and/or minimize these impacts.

Our key to the successful completion of utility relocations within the Project schedule is having the experienced resources and relationships in place at the time the Project starts. Through our 11 year history of completing design-build projects for VDOT and other owners, our Team has gained extensive experience working with and coordinating relocations for over 25 different public and private utility owners, including all of the utility owners affected by this project. In addition to the multitude of utility conflicts that we have avoided through alternate design solutions, our Team has successfully completed the relocation of utilities totaling more than \$50 million on our design-build projects. This direct experience has allowed us to form close relationships with the individual utility companies and a working knowledge of their processes and procedures. 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, 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 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:

1. During the design phase, the Utility Manager will work closely with the design engineer(s) to obtain utility designations, test pit information and locations of existing easements. Based on this information, detailed feedback will be provided to the design, permitting and right of way discipline managers in an effort to create design solutions that provide additional avoidance and/or minimization of utility relocations.

2. The Utility Manager will make contact with each utility company to review utility relocation plans, identify relocations that are not necessary due to our Team's avoidance strategies, and communicate the schedule for Project completion. Specific attention will be given to the location of the proposed relocations so that any right of way and easements needed can be integrated into the right of way acquisition process.
3. The Utility Manager will hold UFI Meetings with private utility owners for all utilities that are in conflict with the proposed construction. He will then work closely with the individual utilities to establish a relocation plan, budget and schedule. These relocation plans and individual schedules will be integrated in the overall project schedule and coordinated with the other major project disciplines.
4. The Utility Manager will perform a thorough review of each private utility's prior rights in the early stages of the process. UT-9 forms will be prepared and pro-rata share budgets and relocation schedules will be finalized.
5. For the public utility relocations, the Utility Manager will meet with the utility owners and our Design Team to identify the necessary scope for avoidance and/or relocations. These measures will then be designed by our Team. The plans will be submitted to the utility owner for review and approval and the construction activities coordinated with them to schedule inspections and outages as needed.
6. Once the utility relocation plans are completed and estimates and schedules have been approved by the Utility Manager, he will then notify each utility in writing that relocations can begin. The approved plans and relocation schedule will also be communicated and coordinated with the design, construction and QA/QC teams. Our Team's Preliminary CPM Schedule, included with this Technical Proposal, is already integrated to include all of the utility coordination and relocation activities with appropriate ties to the design, right-of-way acquisition, and construction activities that are dependent on the utility schedule.

Throughout our Team's utility coordination efforts listed above, schedule progress will be closely monitored both by the Utility Manager and the Design-Build Project Manager as to the overall Project Schedule and with the established individual milestones. The CPM Schedule will be updated based on our avoidance and minimization efforts with activities modified and durations adjusted to reflect updated utility relocation plans and the utility companies' work schedules. This detailed schedule integration and constant monitoring will provide our Team the earliest possible notification of potential schedule slippages allowing for more time to implement corrective measures and schedule mitigation techniques. These measures could include use of additional resources by the utility owner, adjustments to the Project schedule and phasing, and/or partial completion of relocation work by other construction staff (for example, placing conduit for cable relocations or drilling holes for placement of utility poles).

SPECIFIC PROJECT UTILITY IMPACTS

At this stage of design, several existing Public/Private utilities are expected to be encountered with potential conflicts during the design and construction of the Project. These utility impacts and potential conflicts are briefly summarized below in Table 4.4.1 "Summary of Potential Utility Conflicts," as well as our Relocation Plan and Avoidance Strategy.

Table 4.4.1 Summary of Potential Utility Conflicts

UTILITY IMPACT SUMMARY			
UTILITY/OWNER DESCRIPTION	APPROXIMATE LOCATION	KNOWN OR POTENTIAL CONFLICT	RELOCATION PLAN / AVOIDANCE STRATEGY
Overhead Power/Communication Lines			
Overhead Dominion Power/Verizon Comm Line	I-66 WB Sta. 184+00, EB Sta. 383+00	Possible conflict with noise barrier on both WB and EB sides	Coordinate with design of noise barrier or place new poles and raise existing utilities
Overhead Dominion Power/Verizon Comm Line	I-66 WB Sta. 157+50, EB Sta. 357+00	Possible conflict with noise barrier on both WB and EB sides	Coordinate with design of noise barrier or place new poles and raise existing utilities
Overhead Dominion Power Line	I-66 WB Sta. 136+75, EB Sta. 336+50 (west of Old Carolina)	Possible conflict with noise barrier on EB side.	Coordinate with design of noise barrier. No conflict based on current design drawings
Overhead Verizon/Comcast Comm Line	I-66 WB Sta. 136+75, EB Sta. 336+50 (west of Old Carolina)	Possible existing overhead clearance may be substandard (18 ft). No conflict with our design	Coordinate with design. No conflict based on current design drawings.
Overhead Verizon/Comcast Comm Lines	Lines Cross I-66 at WB Sta. 206+75 and EB Sta. 406+50 (east of Catharpin Road Sta. 210+00 Rt)	Possible existing overhead clearance may be substandard (18 ft). Possible conflict with proposed fill slope.	Replace pole and relocate utilities out of fill slope area and provide adequate clearance.
Overhead Dominion Power/Comcast Lines	Old Carolina Road Sta. 210+75	No conflict	Current lines in field are cut/dead
Underground Power/Communication Lines			
Verizon - 3 Separate Duct Banks	Across I-66 along east side of Catharpin Road Sta. 209+00 to 212+00	Conflict with Catharpin Road widening	Expose and relocate line without disconnection
Fiber Light/Quest Underground Line	Across I-66 along east side of Catharpin Road Sta. 209+00 to 214+50	Conflict with Catharpin Road widening	Expose and relocate line without disconnection
AT&T Underground Line	Across I-66 along east side of Catharpin Road Sta. 209+50 to 212+50	Conflict with Catharpin Road widening	Expose and relocate line without disconnection
Dominion Power/Verizon Comm/Comcast CATV Lines	I-66 WB Sta. 144+75 to 146+75 Left of B/L at Culvert #12	Conflict with Culvert #12. Depth of 5-8 ft shown on existing pavement. Power line is offset 15 ft from roadway	Expose and relocate line without disconnection
Verizon Telephone Line	I-66 WB Sta. 74+00, EB Sta. 274+00	No conflict	No conflict based on current design drawings
Dominion Power/Verizon Comm Lines	Old Carolina Rd Sta. 211+00	The power line is shown on pavement to be 4-5 ft deep. Possible conflict with road widening	No conflict with road widening in this area based on current design drawings

UTILITY IMPACT SUMMARY

UTILITY/OWNER DESCRIPTION	APPROXIMATE LOCATION	KNOWN OR POTENTIAL CONFLICT	RELOCATION PLAN / AVOIDANCE STRATEGY
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PWC Water

PWC Waterline	I-66 WB Sta. 157+50, EB Sta. 357+00	Possible conflict with noise barrier footings on WB and EB sides	Accurately Locate & Coordinate with design of noise barrier to avoid.
PWC Waterline	I-66 WB Sta. 208+50	Possible conflict with noise barrier footings on WB side	Accurately Locate & Coordinate with design of noise barrier to avoid.
10" PWC Waterline	Catharpin Road Sta. 213+75	Possible conflict with subgrade	No conflict based on current design drawings

Sanitary Sewer

FairfaxCounty Sewer	I-395 NB at Station 292+25 30'	Retaining Wall/Noise Wall at Ramp	Use of Drilled Shaft Foundation - Spacing will avoid conflict
FC Sewer Manhole	I-395 NB at Station 292+25 30'	Retaining Wall/Noise Wall at Ramp	Use of Drilled Shaft Foundation - Spacing will avoid conflict

PWC Sanitary Sewer

10" PWC Sanitary Sewer	I-66 WB Sta. 144+70 (in median)	Possible invert conflict with Culvert #10	Coordinate with installation of culvert (Jack & Bore)
10" PWC Sanitary Sewer (same as above)	I-66 WB Sta. 144+70 (outside)	Possible conflict with noise barrier footings on WB and EB sides	Accurately Locate & Coordinate with design of noise barrier to avoid.
14" PWC Sanitary Sewer Force Main	I-66 WB Sta. 214+60, EB Sta. 414+20	Possible conflict with noise barrier footings on WB side	Accurately Locate & Coordinate with design of noise barrier to avoid.
18" PWC Sanitary Sewer	I-66 WB Sta. 189+30, EB Sta. 388+40	Possible conflict with noise barrier footings on WB and EB sides	Accurately Locate & Coordinate with design of noise barrier to avoid.
4" PWC Sanitary Sewer Force Main	I-66 WB Sta. 144+75 146+75 Left of B/L at Culvert #12 (along Jordan Lane)	Sewer crosses proposed location of culvert #12	Relocate existing facility - alignment offset & lowered

Gas Lines

18" Washington Gas Steel Cased Line	I-66 WB Sta. 107+25, EB Sta. 306+95 median widening	Possible conflict with subgrade	Coordinate with current roadway design to avoid relocation
12" Washington Gas Line	Ramp from Route 15 SB to I-66 WB at Culvert #6	Possible conflict with outfall at Culvert #6 (see RFP Q&A #80)	Modify/match existing culvert outfall to eliminate conflict
8" Washington Gas Line	Catharpin Road Sta. 214+25	Possible conflict with guardrail and subgrade	No conflict based on current design drawings

UTILITY RELOCATION STRATEGIES AND AVOIDANCE

As we have prepared our Team's Proposal in response to the RFP, we have 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 and the traveling public. 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:

- Noise Barriers spanning both Eastbound and Westbound sides along the I-66 corridor require a great amount of detailed design. The footings/caissons will be located in a position that attempts to avoid all underground utilities without compromising the strength of the structure. Overhead utilities may require adjustments to ensure overhead clearance above the barrier is maintained.
- When Jack & Bore methods are required for cross culverts, there will be a significant amount of coordination to ensure that there is no conflict with existing utilities.
- The Utility Poles located near Catharpin Bridge will require relocation to avoid any conflict with the bridge reconstruction. The Project Team believes these lines can be relocated to a newly installed utility pole without disconnecting the utilities. *The overhead utilities adjacent to Old Carolina Road Bridge have been avoided.*
- Comcast CATV, Verizon Communications, and Power lines located at Proposed Culvert #12 will likely need to be relocated to facilitate the construction of this culvert. Relocating a span of approximately 200 ft of these utilities will alleviate the conflict in this area.

These identified conflicts will be further reviewed during our in-depth utility relocation planning and coordination efforts post-Award.

MITIGATION OF UTILITY RISKS

Utilities have the potential to significantly impact the Project schedule and cost. On design-build projects this 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 utility test pits have not been performed. It is virtually impossible at this stage 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 have not begun their design and analysis of the 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 the Shirley Team implementing on the I-66 Widening Project. These strategies include:

A. 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. He has the relationships in place, a fundamental working knowledge of the individual utility companies, an indication of the existing utilities present in the Project corridor, and a thorough understanding of the interaction between the utilities and all other project disciplines. Having an in-house Utility Manager is a key strength that our Team brings to the I-66 Widening Project given the significant utility impacts we have identified. Not having to utilize an outside third party consultant or subcontractor for this function allows our Team to exercise more control of the utility relocation process, provides quicker response and flexibility to adapt to project challenges, and facilitates the overall integration and constructability review functions.

B. 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. Led by the D/B Project Manager, these meetings are an extremely important tool in ensuring that all design build disciplines have input into the design and each other's disciplines. All aspects of the design are reviewed and meeting minutes kept in order to track progress and define responsibility. Issues, and options for their resolution, are discussed and agreed to by all Team members. This interactive process among the various disciplines occurs continuously outside of the scheduled Design Meetings as well. VDOT can be assured that when plans are submitted, they have been created with input and review by all Project disciplines, including utilities.

C. Creating a realistic Project Schedule with input from the utility and other disciplines. As shown in our Proposal Schedule submitted under Section 4.6, we have already reviewed the known utility conflicts and incorporated them into the overall sequence of work. Our Utility Manager has met with each individual utility company and discussed the Project scope and potential conflicts with them. Based on these discussions, our previous experience and the information provided by the utility companies at the Utility Scoping Meeting on June 15, 2012, we have anticipated the timeframes for their relocations and coordinated those with the other disciplines, such as right of way, permitting and construction to arrive at a proposed sequence of work. In addition to this sequence meeting the RFP completion date, it highlights the need to remain focused on the management and coordination of the utility work. Throughout the Project, utility progress will be updated on a regular basis by the D/B PM and the Utility Manager in order to identify schedule slippages as early as possible so that corrective measures can be taken without impacting the construction milestones and completion dates.

D. 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. Open for attendance by the Owner's representative(s), the detailed day-to-day schedule of work is reviewed specifically with the foremen and superintendents responsible. The Utility Manager will also attend, along with specific utility company representatives, so that utility work can be directly coordinated with the construction crews.

E. Supplementing and assisting the utility companies with their work. Because of our close relationship with the individual utility companies, we have employed several techniques that have allowed us to expedite and maintain greater control over their cost and schedule. First, in many cases, we are able to complete the conceptual design for them. This allows us to not only directly integrate their relocation design with that of the overall project's, but also complete this task more quickly. Second, we have also perfected the concept of a "common duct bank" for the relocation of multiple underground utilities, such as fiber optic cables. By negotiating an agreement between multiple utilities allowing us to design and construct the duct bank, each realizes a cost and time savings. VDOT and the Project itself benefits by the cost and time savings, but equally important are the benefits of having a single location for underground utilities instead of many individual locations to deal with for years to come. Finally, we are able to perform portions of the relocation work ourselves, thus saving additional cost and time. Examples include constructing duct banks, drilling and setting of wood poles for aerial relocations, performing the "in-place" relocations described above, and setting up temporary traffic control requirements for the utilities use.

With planning and coordination well underway, our experienced Project Team is poised to successfully implement our well coordinated Utility Relocation Plan.

DRAINAGE

The installation of new drainage crossings of I-66 represents a challenge to the Project, but one which our Team is very experienced with due to our successful completion of the previous section of widening on I-66. As noted before, we have planned for the replacement of each of the existing cross culverts located within project limits.

Installation of new culverts will be via multiple installation methods, depending on the location and depth of the proposed facility. The vertical location of each of the cross culverts will be consistent with the elevations of the existing culverts, so significant grading at the inlets and outlets which would require relocations are less likely.

A benefit of our Team's proposal is our concept for construction phasing, which will be discussed in greater detail in Section 4.5 below. The Project phasing includes construction of the outside widening as the last major stage of construction, which provides benefits with respect to drainage and cross culvert installation. On past sections of I-66, the outside widening was required to be completed first due to the location of the existing travel lane pavement and its relationship to the horizontal alignment of the proposed widening. However, for this section of widening, it is possible to construct the median improvements before the outside widening, thus eliminating the need to provide temporary extensions of the existing cross culverts. By constructing the median improvements first, the median portions of the new cross culverts can be installed and temporarily capped below the existing travel lanes. When construction commences on the outside widening, the existing culverts will be maintained until the remainder of the new culverts are installed and operational. At that time, flow will be switched to the new culvert, and the existing culvert will be removed or abandoned. This resequencing provides several benefits:

- Reduces the cost of additional, temporary pipe.
- Eliminates the need to abandon temporary pipes below the newly constructed widening.
- Avoids multiple impacts to the existing streams and wetlands, once for the temporary extension and again for the regrading to the ultimate location.

These improvements will provide a superior product at the completion of construction and is a benefit of Shirley's concept.

On the cross roads of Old Carolina and Catharpin Road, our proposed designs have also been completed in a way to minimize drainage and utility conflicts. Drainage on both roads is expected to contain closed system drainage improvements at relatively shallow depths, which will not impact the utilities which are located below grade and at the base of the fills placed for the overpass roads and bridge embankments. This will avoid significant time requirements for relocations, and will help to ensure construction can progress as quickly as possible, allowing for the expedited opening of the new overpass structures and approach roadways.

4.4.3 GEOTECHNICAL

In preparation of our proposal, our Team reviewed the geotechnical documents provided with the RFP. We also have the experience in working in this area on our past and ongoing work on I-66 and the adjacent Route 29 corridor, respectively. One of the challenges we have identified on this Project is the presence of shallow bedrock. In several locations, bedrock was encountered at depths less than 5 feet below the existing surface. A second geotechnical challenge for this project is that soils throughout the corridor have highly variable natural moisture content, with values ranging between 0.7% and 80.1%. By anticipating and planning for these challenges, we do not expect either of these conditions to result in schedule delays or problems during construction.

At the outset of design, geotechnical field work will be initiated to ensure borings are completed at spacings and locations which are required by the VDOT Materials Manual of Instruction (MOI). All design information, including drainage design, stormwater management locations, noise barrier locations and heights, cross sections, roadway alignments, and profiles will be provided to our Geotechnical Engineer. Boring layouts will be completed for adequate coverage and adequate identification of existing ground conditions. Borings will be sequenced such that structural borings are completed first, along with borings required for the I-66 westbound ramp improvements which will be staged early in the construction sequence. We have a long working relationship with GeoConcepts

Engineering, and our design and construction teams have open lines of communication with them to identify critical areas of work and areas of concern so that all information necessary for design and construction is coordinated efficiently between all team members.

The geotechnical testing procedures and boring locations will all be selected in order to identify project challenges and risks, and identify ways in which those items can be mitigated. As noted above, there are specific risks which were identified in the preliminary geotechnical data report. Our Team's experience in the corridor and with soils consistent with the types expected have led to the following process and testing techniques which will be used on the Project:

- *Rock Excavation* – Borings will be completed at all locations where deep cuts are required for widening of the roadway, and in areas where deep pipe installations are required. The type of rock identified in each boring will determine whether blasting or ripping techniques are required, and will allow us to plan work activities in advance so that proper equipment is on site and ready to prosecute the work as quickly as possible. In areas of deep pipe installations, profiles for pipes will be developed to determine if jack and bore operations will be located in rock or in materials of different properties. Adjustments to profiles may be made where possible to allow for installation in consistent soil types. Based on preliminary investigation, we do not expect significant problems to arise with the deep culvert crossing locations. Since culverts will be located in close proximity to the existing culverts, over-excavated material for the original, existing pipes may be encountered, and most of the culverts are located at the surface of the original ground, before I-66 was constructed and depressions were filled in to create a smooth, drivable profile. The rock areas are expected to be located in areas where the existing roadway was cut into the undisturbed ground, and rock excavation will therefore be limited to areas of cut in the outside roadway widening areas. If blasting is required, a qualified consultant will be utilized in accordance with the requirements of Section 2.6.3 of the RFP.
- *Variable Moisture Contents* – Highly variable moisture content soils do not pose a problem for construction as long as they are identified in advance. To determine locations of high moisture content soils, borings will be completed at regular intervals for the entirety of the roadway widening area. The moisture content of the existing soils will be identified in the final geotechnical report, and recommendations for drying, disking, or removing the material will be made based on the field investigation. We fully expect that moisture conditioning of in-situ soils will be necessary to obtain proper compaction during earthwork operations. Drying of soils through spreading and aerating or through the introduction of lime may allow soils to be used in the proposed embankment when soils do not have other unsuitable properties which would preclude their use as roadway embankment.
- *Corrosive Soils* – Corrosive soils are a concern at all locations where bridge foundations and large diameter pipes are installed. Highly corrosive soils can damage substructure elements over time, and result in degradation of concrete and steel pipes. To properly identify areas of concern, soil tests at each bridge substructure unit and at each large pipe location will include corrosion series and concrete attack tests to determine the corrosion potential resulting from the presence of sulfate salts in the soil. Where encountered, pipe coating will be identified, and bridge piles will either be encased in concrete, coated with a protective lining, or oversized to provide “sacrificial” steel area to account for the potential degradation of the piles. All of these methods are allowable per VDOT requirements, and we have used each of the techniques on our recent projects. The selection of the preferred way to counteract any corrosive materials will depend on the amount and severity of corrosive soils, and the required installation techniques for the piles and pipes.

- *Settlement of Bridge and Approach Embankments* – For the construction of the roadway embankments and bridge abutments on Old Carolina Road and Catharpin Road, significant fills and widening of existing fills will be required. The bearing capacity of the existing soils will be an important consideration in the design of the embankments and retaining walls adjacent to the roadways. To properly identify potential settlement concerns and for proper design of embankments and walls, our Team will perform consolidation tests, consolidated undrained (CU), and unconsolidated undrained (UU) triaxial tests to determine the bearing capacity in drained and undrained conditions. Our Team will also perform in-situ dilatometer tests in order to determine the shear strength and constrained modulus of in-situ soils particularly existing fills. These tests will allow us to more accurately determine the long term consolidation of the existing fill soils and shear strength at the bridge abutments. If necessary, construction will be staged in a way to allow for proper consolidation or settlement of soils prior to placement of parapets, pavements, and finishing elements. This same procedure has been used on our past projects, such as Pacific Boulevard and Atlantic Boulevard, to ensure long term settlement is within allowable limits and doesn't result in uneven or excessive settlement of the fill material or bridge abutment and wall elements.

The involvement of our Geotechnical Engineer GeoConcepts Engineering, does not stop at the end of the design process. Our Team has specifically chosen the GeoConcepts to perform all of our QC material testing during construction so that the knowledge gained during design and field investigations is carried over to field operations. This is not only the case for this Project, but has been the case for each and every one of our design-build projects completed over the past 11 years. In addition to completing all design level geotechnical investigations, GeoConcepts Engineering will also complete all material testing, compaction testing, slump testing, and other material QC tests required by the VDOT manuals and testing procedures. Unforeseen situations which arise during construction will be dealt with between construction staff, QC staff including GeoConcepts, and QA inspection staff to ensure appropriate solutions are identified which meet the requirements of the geotechnical recommendations as well as VDOT and RFP requirements. Dewberry and GeoConcepts design staff will also remain involved during construction, and will respond to all RFI's as required when they include a geotechnical component. Any changes to geotechnical field work will first be passed through GeoConcepts before acceptance is granted for construction. This process has proven effective and timely on past projects, and has resulted in high quality projects at the completion of construction.

4.5 CONSTRUCTION OF THE PROJECT

4.5 Construction Of The Project

4.5.1 BRIDGE CONSTRUCTION

The concepts the Shirley Team has developed for both the Old Carolina Road and Catharpin Road overpasses have been focused on ways to expedite construction, minimize impacts to the traveling public, minimize impacts and conflicts with existing utilities, and exceed the Project requirements. Each of the bridges includes unique construction elements, but will be constructed with essentially the same means and methods, which are described below:

OLD CAROLINA ROAD

As previously mentioned, the Shirley Team has enhanced the alignment of Old Carolina Road by shifting it from the RFP alignment to avoid utility impacts along the west side of the existing bridge. This approach not only reduces project costs, but also minimizes the time that the bridge will be closed to traffic. The modified alignment also eliminates concerns associated with the risk of utility delays since the impacts to the adjacent overhead utilities are avoided. Sequencing of construction for this new bridge will be consistent with the approach allowed by the RFP documents. Upon approval of the roadway, bridge, and demolition plans, Old Carolina Road will be closed to public traffic at Cheyenne Way to the south of I-66 and at Walter Robinson Lane immediately north of I-66. Once the road is closed to traffic, the existing bridge will be demolished in accordance with the demo plan and guidelines for handling Type B structure(s). A safe construction site will be maintained through placement of concrete barriers and proper road closed signing on Old Carolina Road to prevent both motorists and pedestrians from travelling into the construction site. Bridge deck removal will be performed during daytime hours as much as possible, but removal of the deck above the I-66 travel lanes may be completed at night to allow for temporary lane closures and additional protection of traffic. All demolition will be completed with proper protection, in accordance with VDOT and OSHA requirements. Existing steel girders will be removed during temporary lane closures at night when full, temporary stoppages of traffic are permitted by the allowable work hours. Following removal of the bridge girders, the existing pier and abutments will be demolished and removed to allow for construction of the proposed bridge substructure elements.

The construction of the new Old Carolina Road Bridge will be completed in essentially a single stage. Construction begins with the bridge substructure (piles, MSE abutments, back wall footings/pile caps and pier) that will incorporate the required architectural treatments. Upon completion of the substructure bridge elements, the concrete beams will be erected from right to left (west to east) during the allowable night time hours with temporary full-stoppages of traffic on I-66 as necessary for each span, followed by the installation of SIP forms, overhangs, deck placement, parapets and finishes.

CATHARPIN ROAD

Our Team's concept for this bridge represents a significant improvement to the RFP plans by increasing public safety and minimizing public impacts. With our revised and improved alignment for Catharpin Road, construction of the new bridge can occur in a single stage similar to Old Carolina Road. Two-way traffic (one lane in each direction) will be maintained on the existing Catharpin Road overpass and roadway at all times during construction of the proposed Catharpin Road overpass and roadway approaches. Upon roadway and bridge plan approval, construction of the proposed Catharpin Road bridge substructure (piles, MSE abutments, back wall footings/pile caps and pier) will begin adjacent to the existing bridge. Based on the revised span configuration and abutment locations, there will be no concerns related to support of the existing bridge during excavation for the proposed bridge abutments which will be located closer to I-66 than the existing bridge abutments. Bridge abutments, walls, and pier columns will incorporate the required aesthetic treatments

spelled out in the RFP documents. Concrete girders for the proposed bridge will be placed over I-66 during night time operations when full, temporary stoppages of I-66 traffic are permitted. Then construction of the superstructure elements with the installation of SIP forms, overhangs, deck placement, parapets and finishes. Following completion of the proposed bridge and approach roadway elements, all traffic will be switched to the new bridge and roadway, and the existing bridge will be demolished and removed in a manner consistent with the removal of the Old Carolina Road Bridge.

BENEFITS OF OUR TEAM'S CONCEPT

The alternate roadway alignment proposed for Catharpin Road has numerous benefits to the project schedule as well as to the travelling public:

- Maintaining two-lane, two-way traffic on Catharpin Road throughout construction eliminates the need to stagger construction of the two bridges. As required by the RFP documents, reduction of Catharpin Road to a single lane could not occur at the same time as full closure of Old Carolina Road. By eliminating the single lane operation of Catharpin Road, we will be able to complete construction of both bridges simultaneously. This will provide a schedule improvement, allowing both bridges to be completed earlier in the overall construction period.
- Construction of the new Catharpin Road Bridge in a single stage eliminates construction joints in the substructure and superstructure elements as compared to two-stage construction. The single stage construction also significantly reduces the overall construction duration for the bridge creating additional float in the Project Schedule and reducing the likelihood that delays to the bridge construction will have an impact on the construction completion date.
- Having both bridges under construction at the same time will allow us to use the same temporary night time lane closures and stoppages for both bridges, reducing the number of times the travelling public will be impacted.
- Reducing the bridge span lengths from those shown in the RFP plans allows for the use of concrete girders rather than steel girders which would have been necessary for the RFP concept. Since concrete girders do not require field splices during erection, placement of the girders will be completed more quickly, reducing the amount of time needed for temporary stoppages, further reducing impacts to motorists.
- Keeping Catharpin Road open to all traffic throughout the entirety of the Project will significantly minimize traffic impacts to the traveling public, as lengthy multi-mile detours will be avoided. Also, congestion of detour traffic to the already over-capacity detour routes (Route 15 and Route 29) will be avoided, as well the avoidance of detoured traffic thru the Town of Haymarket on Old Carolina Road. In addition, Public Safety is enhanced by avoiding concerns associated with changes in fire and rescue response times, eliminating the need to change school bus routes on the corridor, and maintaining Catharpin Road as a critical incident management route.

Our Team views our alternate alignment for Catharpin Road as a significant benefit to the Project, and a way in which we have significantly exceeded the requirements of the RFP documents. During construction, the public will also experience what a benefit our Team has made to the operation of local roads during construction of the Project.

4.5.2 SEQUENCE OF CONSTRUCTION

Our Team has developed a sequence of construction for this Project which will meet the goals of the Project and *complete construction well in advance of the Substantial and Final Completion date of 11/11/16 as noted in the RFP documents*. Additionally, we have sequenced the work to allow for advance completion of some of the

critical work elements in an effort to provide immediate safety enhancement and relief to congestion of some of the critical movements within the project limits. Our proposed sequence of construction is shown on sheet 1J of Volume II Design Concept of our submission, and uses the following sequence:

- **Stage 1** – Widen Westbound I-66 Exit Ramp
- **Stage 2** – I-66 Mill and Build-up, and Outside Shoulder Strengthening
- **Stage 3** – Ultimate Median Widening
- **Stage 4** – Ultimate Outside Widening
- **Stage 5** – Place Surface Asphalt and “Finishing” Items

Provided below is a description of each stage and the benefits of this proposed sequence:

STAGE 1

During Stage 1 construction, the existing westbound I-66 exit ramp to Route 15 will be widened on the left side to provide dual-left turn lanes and a single-right turn lane. Additionally, all improvements to Route 15 will be constructed to provide the receiving width necessary for the dual left turn movement. As discussed before, shifting all of the widening to the left side of the ramp allows for construction to be quickly completed in a single stage, avoiding the need to place barrier on both sides of the ramp and eliminating the need for multiple traffic switches. To implement these improvements as quickly as possible, we will develop an advance construction plan set which will allow for approval of the specific elements required for construction of the ramp widening. Shifting the widening to the left side of the ramp eliminates all utility conflicts, avoids acquisition of any easements, and allows for the reuse of the existing traffic signal. Any one of these elements would introduce additional time to complete construction of the improvements. ***As noted before, we believe we can have this ramp improvement open to traffic within seven (7) months of contract execution!*** This is a significant improvement to the RFP plans, and a significant benefit to the travelling public who currently sit in long delays extending well beyond the deceleration lane and on the shoulder of I-66 as they wait to make the left turn movement.

STAGE 2

Stage 2 consists of milling and build-up of the existing travel lanes of I-66. At the same time, the existing outside shoulders on both eastbound and westbound I-66 will be built-up and strengthened to provide the minimum 6” asphalt thickness and required temporary strength to support traffic during Stage 3 construction. By completing the mill and build-up of the existing travel lanes at the same time as the outside shoulder strengthening, our Team will waste less asphalt and eliminate the need to excavate and replace the outside shoulders for temporary traffic operation. This is a significant time savings, since overlay of the shoulders can be completed in greater amounts during night time activity than full depth asphalt removal, removal of subbase stone, and placement of 6” of asphalt which would be required if the travel lanes were not built-up during this initial stage. By being able to complete more build-up and shoulder overlay work in each nighttime work period, we will significantly reduce impacts to the travelling public by minimizing the required number of temporary lane closures, and will accelerate construction of the more significant Stage 3 and Stage 4 work activities.

STAGE 3

Stage 3 work includes construction of the ultimate median widening, median ditch grading, and installation of all median drainage and portions of the new cross culverts which need to be installed via open cut methods. Two 12’ travel lanes will be maintained in each direction on I-66 with a 2’ minimum offset to the temporary barrier by shifting traffic to the outside onto the strengthened shoulder completed in Stage 2. Permanent median pavement construction will be completed to the top of the intermediate pavement layer, and all median guardrail and cable-rail will be installed at this time. In addition to the benefits described above for the sequence of work

our Team has proposed, *sequencing of work in this manner will allow us to complete Stage 1, Stage 2 and Stage 3 all without any utility or right-of-way impacts and without any impacts to jurisdictional streams or wetlands*. In recognition of the time it can take to obtain easement rights and then relocate utilities as required for the outside widening, completion of the first three stages of work without the need for these acquisitions or relocations represents a significant benefit to the project. It also eliminates all risks associated with right-of-way acquisition and utility relocations which could otherwise delay critical construction elements. In addition to the median work in Stage 3, our Team will investigate the ability to install portions of noise barriers which would not be impacted during subsequent construction stages. In general, advance noise barrier construction may be possible in areas of large cuts, where noise barriers will be located at the top of the ultimate cut slope. Analysis of this advance construction potential will be determined during final design. Bridge construction for Old Carolina Road and Catharpin Road will also begin in Stage 3, and will be constructed as described in Section 4.5.1 above. Because all median widening work will be completed behind temporary traffic barriers, we expect only minimal impacts to the travelling public during this stage. Temporary lane closures will only be required for large material deliveries, and openings in construction barriers along with acceleration lanes for construction equipment, will be provided adjacent to the 2-thru lanes. This is consistent with previous sections of I-66 which our Team has designed and constructed and is in conformance with the 2011 Virginia Work Area Protection Manual. Accommodating truck accelerations in the work area as opposed to in a thru lane will result in further reductions in impacts to the travelling public, since trucks will enter the thru lanes at higher speeds, reducing braking and queuing associated with slowing down for slow moving construction equipment. Also by constructing the ultimate median widening prior to the outside widening, an outside (right) shoulder area will be maintained during Stage 3 construction for incident management and enforcement.

STAGE 4

Stage 4 work includes construction of the remaining project elements. Bridge construction on Old Carolina Road and Catharpin Road will continue if it is not already completed, and all permanent drainage crossings of I-66 will be completed – either as part of the second phase of open cut installation, or via jack and bore methods to eliminate impacts to the travelling public. Two 12' travel lanes will be maintained in each direction on I-66 with a 2' minimum left shoulder and a 10' right shoulder (exceeding RFP requirements) by shifting traffic to the median widening completed in Stage 3. Permanent outside pavement construction will be completed to the top of the intermediate layer, and all outside curbs, inlets, guardrail, barriers, noise walls, and stormwater management facilities will be completed. All permanent overhead sign installations will also be completed in this stage, along with completion of installation of permanent ITS elements. Similar to Stage 3 work, all construction activities will take place behind temporary concrete barriers. The results of these accommodations have significant operational and safety benefits to the travelling public similar to those identified in Stage 3.

STAGE 5

Stage 5 represents the completion stage of work. During this stage, all surface pavement will be placed to provide a consistent, clean and smooth finished product for VDOT. Surface pavement placement will begin on I-66 WB with the extended project limits to allow for I-66 WB to be opened up into the ultimate lane configuration so that the traveling public benefits from the additional capacity as quickly as possible. Then construction continues with the remaining surface asphalt permanent pavement markings and markers installation. The ultimate travel lanes, including the HOV lane, will be opened to traffic in this stage.

SEQUENCE OF CONSTRUCTION BENEFITS

A summary of the benefits of our proposed construction sequence is described as follows:

- Our Substantial Completion date of July 23, 2016 and Final Completion date of August 21, 2016 exceeds

the requirements of the RFP. Completing the Project early is a significant benefit to VDOT and the traveling public.

- By shifting the westbound exit ramp improvements to the first stage of construction, we can provide immediate congestion relief and safety enhancement to the travelling public, as exiting traffic queues regulatory extend beyond the length of the existing deceleration lane and onto the right shoulder.
- By completing the mill and build-up of the travel lanes at the same time as the outside shoulder strengthening, we can complete more work in each nighttime period, reduce impacts to the travelling public, reduce wasted materials and avoid demolition of the outside shoulder twice.
- By shifting the outside widening to the later stage of construction, we can eliminate all of the risks associated with possible delays in easement acquisition and utility relocations.
- By shifting the outside widening to the later stage of construction, we will avoid the need for wetland and stream impacts until much later in the process, mitigating the risk that the permitting process will hold up construction activities.
- By shifting the outside widening to the later stage of construction, we are able to provide the safety and operational benefits of maintaining a right (outside) paved shoulder area throughout construction for incident management, vehicle breakdown, and police enforcement use.
- By changing the alignment of Catharpin Road, we can construct both bridges at the same time, maintain both directions of traffic on Catharpin Road, and complete both bridges simultaneously and earlier in the overall construction sequence as opposed to if they were staggered as required by the RFP concept. Traffic safety and operational benefits maintaining two way traffic are enormous, including the avoidance of multi-mile detours, avoiding adding detoured traffic to already over-capacity Route 15 and Route 29 and thru the Town of Haymarket, minimized school and Fire-Rescue impacts, and the maintenance of this critical incident management route during disruptions at the Route 29 and Route 55 railroad crossings.

These benefits are significant improvements to the RFP plans. They provide substantial benefits to the travelling public which will help generate and continue public support for the Project, and they represent areas where we have gone “above and beyond” the requirements of the RFP documents.

4.5.3 TRANSPORTATION MANAGEMENT PLAN

Our Team is very experienced in design and construction of phased improvements on heavily travelled corridors. We understand how development of a complete and accurate Transportation Management Plan (TMP) helps set the stage for a successful and safe project, not only for the travelling public, but for construction, inspection, and VDOT project staff. As noted in Section 2.13 of the RFP, our Team will prepare a Type C TMP in accordance with VDOT I&IM 241.5 as well as a site-specific Temporary Traffic Control (TTC) plan.

All aspects of the TMP and TTC plans will be developed with a focus on maximizing safety for the travelling public and construction personnel while minimizing travel delays throughout construction. TTC and TMP plan development will be led by our Traffic Engineer, Jerry Mrykalo, P.E., who is certified as a VDOT Work Zone Traffic Control instructor. Additionally, all of our design staff are certified in the development of TTC and TMP plans based on successful completion of the VDOT Work Zone Traffic Control Training program.

In order to achieve the goals of maximizing safety and minimizing travel delays, as an initial design activity, we will collect updated 24-hour volume information for eastbound and westbound I-66 as well as for the interchange ramps to and from Route 15. This updated traffic volume information will be utilized in development of the TMP to verify that the lane closure restriction times identified in Section 2.13.1 of the RFP are appropriate for the project area and will not result in unanticipated travel delays. We recognize that the lane closure restriction times

are in accordance with the VDOT Northern Virginia Traffic Engineering Division requirements. However, we also recognize that this project is located well west of the major employment centers of Northern Virginia, and as such the peak hour traffic volumes may occur at earlier times in the morning than are normally expected. Also, as western Prince William County is a rapidly developing area, traffic flow characteristics frequently shift. The intent of the updated traffic counts will be to verify appropriate lane closure restriction times, and help to ensure that traffic impacts to the public are minimized to the fullest extent possible.

An additional component of a successful TMP is a significant public outreach campaign. As noted in Section 4.4.1 above, our Team will endeavor to contact all local citizens, community groups, public officials, fire and rescue, and school staff who could be impacted during critical elements of construction. Advance notification will be provided prior to any significant work activity or temporary lane closures to help reduce congestion and delays through the project site. This will be communicated through our comprehensive public outreach campaign detailed in Section 4.4.1, which will include Citizen Information Meetings, Pardon Our Dust Meetings, website updates, press releases, and special meetings for specific groups/concerns. As with any significant construction project, delays and “headaches” should be expected, but our Team’s goal will be to minimize these concerns for all major stakeholders. As noted above, there are several 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. Provided below is a list of the major Project stakeholders adjacent to the project and how they may be impacted during construction:

- *The Town of Haymarket* – Access to the Town will be impacted during the closure of Old Carolina Road. Route 15 and Catharpin Road will provide the alternate access routes to the Town during the temporary closure. Accelerated construction and the avoidance of existing utilities, as proposed by our Team, will help to reduce the temporary closure duration, and maintaining full travel patterns on Catharpin Road throughout construction will also help to reduce issues associated with the temporary closure of Old Carolina.
- *Fire & Rescue and Law Enforcement* – Based on improvements our Team has made with the layout of Catharpin Road, we do not anticipate any impacts to fire and rescue or police service or response. However, fire and rescue and police staff are always a major stakeholder for significant projects. Coordination will be required with the fire and rescue staff to provide advance notification of temporary lane restrictions and roadway closures. The ability to maintain two-way traffic on Catharpin Road throughout construction is critical to eliminating impacts to response from Station 4, but coordination and communication with Station 15 (located north on Route 15) and Station 24 (located on Antioch Road/ in Dominion Valley to the north on Route 15) will also be critical in case back-up response is provided from either of those stations. Coordination with Town and State police will be required for all temporary lane closures.
- *Schools* – Coordination with the following schools will be necessary since their school boundaries encompass the Old Carolina Road portion of the project, and the temporary closure of Old Carolina Road over I-66 may require adjustments to their bus routes:
 - Buckland Mills Elementary School, located south of the Town of Haymarket off of Old Carolina Road and Carver Road.
 - Reagan Middle School, located north of the Town of Haymarket in Dominion Valley off of Waverly Farm Drive, just west of Route 15.
 - Battlefield High School, located north of the Town of Haymarket in Dominion Valley off of Graduation Drive, just east of Route 15.
 - Bull Run Middle School, off of Catharpin Road.

Coordination efforts will be undertaken with each of these schools to make them aware of temporary road closure times. If possible, closure of Old Carolina Road will occur as much during the summer

months as possible to reduce impacts to travel times and bus routes during the normal school year.

- *Travelling Public* – The general population will be impacted during temporary closure of Old Carolina Road. Additionally, construction activities on I-66 and the westbound exit ramp may introduce “rubber-necking” reactions from drivers who are interested in the progress of the work, and new elements of the Project which are visible to traffic. Keeping all work behind barriers and limiting work to normal business hours will help reduce delays associated with work during peak hours. Maintaining full width lanes throughout construction will help to reduce delays associated with lane width reductions. Temporary lane closures will only occur in off-peak hours, in accordance with the lane closure restriction times identified in the RFP, or as additionally necessary based on updated traffic volume counts.
- *Local Residences* – Homeowners and local businesses immediately adjacent to I-66 will be impacted temporarily with added construction noise and clearing, grading and construction activities close to their properties. Impacts will be minimized as much as possible through the reduction of temporary and permanent easement impacts, and where possible the early installation of noise barriers will provide more immediate relief of both construction and traffic noise.

In addition to these specific stakeholders, constant communication will be maintained with VDOT Public Relations staff, Prince William County supervisor’s staff, and with those involved in design and construction of the adjacent ATM and future I-66/Route 15 Interchange project.

With respect to impacts to the travelling public, our Team will develop a site-specific Temporary Traffic Control (TTC) plan for this Project. Our TTC plans will be developed to include the following design elements, and will account for the following temporary lane restrictions:

ON I-66

- Two (2) 12’ wide travel lanes will be maintained in each direction of travel during all stages of construction, as shown on sheet 1J of our Volume II Design Concept.
- Minimum 2’ wide offsets to temporary barrier will be maintained throughout all stages of construction, and a right shoulder area will also be maintained for incident management as shown on sheet 1J of Volume 2.
- All temporary traffic shifts will be designed to meet the full design speed of the roadway. No speed reductions will be proposed for I-66.
- No temporary detours or ramp closures for I-66 traffic will be proposed.
- Temporary lane closures will be in accordance with the lane closure restriction times identified in the RFP documents, or as further identified based on updated traffic counts our Team will complete. Temporary lane closures are anticipated for night time paving, temporary shoulder build-up, placement of traffic barriers, delivery of materials, and demolition of the existing bridges.
- Temporary short-term, full stoppages on I-66 are expected during overnight hours for Old Carolina Road and Catharpin Road bridge girder removal and erection and for overhead sign structure work.

ON THE INTERCHANGE RAMPS

- Minimum 12’ wide travel lane(s) will be maintained.
- Prior to opening the additional left turn lane on the westbound I-66 exit ramp, the existing single right turn lane and a single left turn lane will be maintained.
- Minimum 2’ wide shoulders will be maintained on both sides of each interchange ramp.
- *No speed reductions will be proposed for temporary ramp configurations.*

- Temporary short-term closure of the eastbound entrance ramp is expected during overnight hours to allow for Old Carolina Road bridge girder work.

ON OLD CAROLINA ROAD

- Temporary closure of the road is expected to last for approximately 12 months. Following reopening of the road and bridge, additional temporary lane closures and/or flagging operations are not anticipated
- On Catharpin Road.
- Two thru lanes on Catharpin Road will be maintained throughout construction to minimize impacts to the traveling public.
- Temporary flagging operations may be required for pavement tie-in at the north and south end of the project following completion of the new bridge and prior to the switch of traffic.
- Minimum 11' wide lanes will be maintained adjacent to the roadway widening areas to the north and south of the bridge.
- ***No speed reductions will be proposed on Catharpin Road.***

Our Team does not anticipate the need for regulatory speed reductions thru the work zone, as all geometry and lane shifts will be designed to meet standards, and 11'-12' lane widths will be maintained throughout construction. Our experience based on similar past projects has found that maintaining existing posted speed limits where geometric conditions permit has multiple benefits. In addition to minimizing motorist delay, research has proven that lowering speed limits where geometric conditions do not require the reduction actually lessen safety, since large deviations between driver's speeds commonly result in increased accidents.

The TTC plans developed for this project will detail each and every specific element required during construction of the Project. Site specific plans will be developed for each stage of construction to identify barrier and channelization locations, temporary sign locations, PCMS message text and PCMS device locations, construction access points, temporary pavement marking requirements and limits, temporary drainage requirements, areas of temporary and permanent construction, and all other requirements per VDOT's I&IM-241.5.

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. On several of our recent projects, we implemented interim improvements aimed solely at improving traffic flow during construction. For example, on Route 28, temporary detour roads were constructed to include dual turn lanes in replacement of single turn lanes, providing immediate relief during construction before the interchange had been completed. On I-95, our temporary traffic patterns resulted in fewer accidents in the work zone than were experienced in the same stretch of roadway prior to construction, without implementing reduced speed limits. On this Project, we have already started on the "right foot" by introducing significant enhancements to the Project and by exceeding the requirements of the RFP as noted with our sequencing of construction and roadway alignment adjustments already identified. We look forward to designing and constructing this Project for VDOT, the local stakeholders, and interested parties, and to another successful design-build project with VDOT.

4.6 PROPOSAL SCHEDULE

4.6 Proposal Schedule

PROJECT MILESTONES

The I-66 Widening Project Proposal Schedule details our plan for all phases of the design/build process based on the following project Milestones (Additional Milestones can be found in the Proposal Schedule Exhibit 4.6.1):

Table 4.6.1a - Proposal Schedule A Dates of Project Milestone

MILESTONE	DATE
CTB Approval/Notice to Award:	August 14, 2013
Design-Build Contract Execution:	September 17, 2013
Notice to Proceed:	September 19, 2013
Begin Stage 1 Construction:	February 13, 2014
Accelerated Completion of I-66 WB Exit to 15	April 29, 2014
Begin Stage 3 Construction	June 11, 2014
Open 3rd Lane WB I-66	December 19, 2015
Substantial Completion Date:	July 23, 2016
Final Completion Date:	August 21, 2016

Table 4.6.1b - Proposal Schedule B Dates of Project Milestones

WORK BREAKDOWN STRUCTURE

Level 1 of the Work Breakdown Structure (WBS) groups the schedule into the phases of the design/build process as follows:

- A. *Project Milestones:* Area reserved for easy review of the Project status.
- B. *Design:* Includes preliminary engineering services, plan development, QA/QC reviews, submittal milestones, and reviews by VDOT, FHWA and other regulatory agencies and approvals of plans. This section of the schedule includes a second level WBS structure to group design activities by type of design submission including right-of-way, roadway, bridge, SWM and culvert design.
- C. *Public Involvement:* This section of the schedule includes milestones for planned public involvement meetings and updates to the Office of Public Affairs for major traffic shifts and the VDOT website.
- D. *Environmental Permitting:* Includes wetland and stream delineations and jurisdictional determination, permit management and preparation, mitigation, and permit submissions, reviews and approvals. Initial efforts will focus on the Corps of Engineers Individual Permit, and department of Environmental Quality General Permit, LD 455/VSMP Permit and the SWPPP submission.
- E. *Right-of-way Acquisition:* This section of the schedule is used to monitor the acquisition of right-of-way and easements for the Project including title searches, appraisals and appraisal reviews, offers, negotiations, and settlements. In order to prioritize groups of properties by order of need, we have included a second level WBS structure that includes separate right-of-way acquisition activities for the four quadrants of the Project. Dividing the right-of-way activities into four separate groups of parcels will enable our Team to focus our right-of-way acquisition efforts on the most schedule critical acquisitions and track these critical acquisitions to ensure on-time completion.
- F. *Utility Relocations:* The utility relocation section of the schedule 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 by utility owner.

- G. Construction:* Includes all components of roadway and bridge construction as well as MOT, construction access, signals, and drainage. The Construction section of the schedule is segmented by three additional levels of WBS structure to divide the construction activities into groups of work packages that can be easily tracked to ensure on-time completion of the Project.

Below is a complete outline of the WBS Structure for the Project:

- A SCHEDULE MILESTONES*
- B DESIGN PHASE*
 - A PRELIMINARY DESIGN & ADVANCED STAGE 1 & 2 PLANS*
 - B ROADWAY DESIGN*
 - C BRIDGE DESIGN*
 - D UTILITY DESIGN*
- C PUBLIC OUTREACH*
- D ENVIRONMENTAL PERMITTING*
- E RIGHT OF WAY ACQUISITION/EASEMENTS*
 - A I-66 WB & EB*
 - B CATHARPIN ROAD - NORTH I-66*
- F UTILITY RELOCATIONS*
 - A DOMINION VIRGINIA POWER*
 - B VERIZON*
 - C AT&T*
 - D FIBERLIGHT (QUEST GOV'T/CENTURY LINK)*
 - E COMCAST - COMMUNICATION*
 - F WASHINGTON GAS*
 - G PRINCE WILLIAM COUNTY SERVICE AUTHORITY*
- G CONSTRUCTION*
 - A GENERAL*
 - B ADMINISTRATION & PIM*
 - 1 STAGE 1 - I66 WB EXIT RAMP TO RTE 15*
 - A GENERAL*
 - B WIDEN TWO LANE EXIT & RIGHT TURN*
 - 2 STAGE 2 - I-66 MILL & OVERLAY-BUILDUP OF EXISTING & OUTSIDE SHOULDER STRENGTHENING*

- A GENERAL
- B I-66 WB & LEFT SIDE SHOULDER STRENGTHENING
- C I-66 EB & RIGHT SIDE SHOULDER STRENGTHENING
- 3 STAGE 3 - I-66 EB & WB MEDIAN CONSTRUCTION
 - A GENERAL - I-66 WB
 - B GENERAL - I-66 EB
 - C I-66 WB (STA. 56+66-108+00)
 - D I-66 WB (STA. 108+00-154+00)
 - E I-66 WB (STA. 154+00-208+00)
 - F I-66 EB (STA. 300+00-354+00)
 - G I-66 EB (STA. 354+00-408+00)
- 4 STAGE 4 - I-66 EB & WB OUTSIDE WIDENING
 - A GENERAL - I-66 WB
 - B GENERAL - I-66 EB
 - C I-66 WB (STA. 56+66-128+00)
 - D I-66 WB (STA. 128+00-168+00)
 - E I-66 WB (STA. 168+00-208+00)
 - F I-66 EB (STA. 300+00-327+00)
 - G I-66 EB (STA. 327+00-368+00) & I-66 EB ON RAMP
 - H I-66 EB (STA. 368+00-408+00)
- 5 STAGE 5 - I-66 ULTIMATE CONFIGURATION/FINISHES
 - A GENERAL
 - B I-66 WB EXTENDED - MILL/OVERLAY & RECONFIGURE (208+00-250+00)
 - C I-66 WB
 - D I-66 EB EXTENDED - MILL/OVERLAY & RECONFIGURE (408+00 - 418+00)
 - E I-66 EB
- C CATHARPIN ROAD & BRIDGE
 - A GENERAL
 - B CATHARPIN ROAD BRIDGE OVER I-66
 - C CATHARPIN ROAD (STA. 203+00-214+50)
- D OLD CAROLINA ROAD & BRIDGE

- A GENERAL
- B OLD CAROLINA ROAD BRIDGE OVER I-66
- C OLD CAROLINA ROAD (STA. 200+00-212+92)

CALENDARS

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

Global Calendar – All calendars are based on 8 hour work days and include the following holidays:

New Year Day Holiday from 7:00 AM December 31st until 7:00 AM the next work day following New Year Day, unless the holiday occurs on a Sunday and then the following Monday is considered the Holiday.

Memorial Day Holiday from 7:00 AM Friday prior to Memorial Day until 7:00 AM Tuesday following Memorial Day.

Easter Holiday from 7:00 AM on Good Friday until 7:00 AM the following Monday after Easter Sunday.

Independence Day Holiday from 7:00 AM July 3rd until 7:00 AM the next work day following Independence Day, unless the holiday occurs on a Sunday and then the following Monday is considered the Holiday.

Labor Day Holiday from 7:00 AM Friday prior to Labor Day until 7:00 AM Tuesday following the Labor Day.

Thanksgiving Day Holiday from 12:00 PM Wednesday prior to Thanksgiving Day until 7:00 AM Monday following Thanksgiving Day.

Christmas Day Holiday from 12:00 PM the day prior to Christmas Day until 12:00 PM the Day following.

Calendar 1 - “C00093577DB49 - I66 DB - 5 DAY WORKWEEK W/HOLIDAYS” – this calendar is based on five working days per week and is used for all design and administrative activities that are unaffected by weather.

Calendar 2 – “C00093577DB49 - I66 DB - 7 DAY WORKWEEK” – Assigned to activities that have durations based on calendar days instead of work days. For example VDOT’s 21 calendar day review duration.

Calendar 3 – “C00093577DB49 - I66 DB - 5 DAY WEATHER” – This calendar is based on working part-time from December 25 to March 15. It is assigned to activities that are anticipated to have reduced productivity during the winter months.

Calendar 4 – “C00093577DB49 - I66 DB - WINTER SD” – Assigned to activities that are anticipated to be shut down during the winter, such as asphalt paving and painting. This calendar contains no working days from December 24 of one year to March 14 of the next year.

SCHEDULE TIMING AND CRITICAL PATH

The following narrative describes key activities in the sequence of design, planning, permitting, pre-construction, and construction phase of the Project. Each of these activities can be found in the attached Proposal Schedule and Schedule Summary found in Exhibit 4.6.1.

Design Phase - The design phase includes preparation, Quality Assurance/Quality Control reviews, and submission of advanced Stage 1 & 2 plans, roadway and bridge plans at multiple stages of the design process with a 21 calendar day activity for VDOT review after each submission. Also included are reviews for FHWA and other regulatory agencies necessary. The design phase also includes non-critical activities for the completion of

surveys, utility designations, test pits, flood plain studies, utility relocation plans, the scope validation period and geotechnical investigations, including a 90 calendar day activity for VDOT's 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 to Proceed to get an early start on identification of right-of-way impacts, maintenance of traffic, and roadway plans. The advanced set of Stage 1 & 2 plans will be provided early on December 17, 2013, which allows for accelerated construction of the I-66 WB exit to Route 15 ramp. Then the next formal plan submission will occur December 18, 2013 and will include right-of-way, maintenance of traffic, and erosion and sediment control plans in an effort to get an early start on the utility relocation phase and construction. The preliminary schedule reflects a critical approval of the advanced Stage 1 & 2 plans on February 12, 2014 to allow for the accelerated completion of this work. The schedule anticipates final approval of all plans by May 18, 2014.

Public Outreach - The public outreach schedule includes submitting our Emergency Contact List and List of Affected Stakeholders upon Notice to Proceed, holding citizen information meetings during the design phase, public information "Pardon our Dust" meetings each March or April at the start of the construction season and prior to major traffic switches, providing updates to the Office of Public Affairs, and additional specific group meetings as necessary. The schedule includes the major milestone activities for the Public Information meetings and major traffic changes. However, there are many other public involvement activities that our Team will perform, including meeting with local businesses and affected property owners, attending meetings with home owners associations, local government representatives, and community groups, and providing information for regular updates at progress meetings and weekly lane closure plans.

Environmental Permitting - Environmental Permitting will begin upon notice of award with the completion of wetland delineations, stream assessments, and jurisdictional determinations. All environmental permitting necessary will be completed by May 18, 2014 ahead of the planned start of construction and the utility relocations which will take place within the Project limits that are impacted by environmental permitting.

Right-of-Way Acquisition - No right-of-way acquisition is anticipated for this project. The administration of the right-of-way or easement acquisitions will start upon Notice-to-Proceed with start of title searches and appraisals for the affected properties. We have been able to minimize the amount of easements required based on our modified roadway and bridge concepts.need to acquire right-of-way/easements within the corridor. In addition, we have sequenced the construction so that right-of-way/temporary & permanent easements aren't needed until Stage 4 construction activities are performed, which provides ample time for our team to obtain the required easements. These activities required for acquisition of the necessary easements include title searches, preparation of fair market value appraisals, appraisal reviews by the independent review appraiser, VDOT review and approval of the appraisals, preparation and delivery of offers to the affected property owners, negotiations with the property owners, and settlements, and relocation assistance, if necessary. The ROW/Easement acquisition process is scheduled to be completed on November 8, 2014, well in advance of Stage 4 construction beginning.

Utility Relocations - To simplify and track the utility relocations on the Project, we have created a work breakdown structure that groups the utility relocation activities by utility owner. Within each utility owner group, we have included activities for holding the Utility Field Investigation (UFI) meeting, followed by 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. Although we have already met with each individual utility company to discuss the proposed relocations and prior rights, the utility relocation schedule starts with formal UFI meetings in February 2014 following completion of all utility test pits. 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 Roadway Plans are coordinated with the utility relocation plans. The utility relocations are anticipated to be completed prior to impacting construction operations and avoiding delays. Below is a summary of the major utilities within the Project and detailed out in the schedule:

DOMINION VIRGINIA POWER:

Dominion Power will have potential conflicts with overhead and underground lines. The overhead lines cross I-66 and are expected to have potential conflicts with the Noise Walls and may have to be raised for clearance. The underground potential conflicts are associated with culvert #12 and run along Old Carolina and may be avoided with design coordination. Dominion will begin relocations as necessary for construction and it is anticipated that should adjustments be unavoidable it will take less than two months to occur, which will be performed prior to Stage 4 construction and should not have any delays to the Project.

VERIZON:

The Verizon facilities are located overhead and underground and will be adjusted or relocated to avoid any delays to construction of the Project. The overhead lines cross I-66 in four locations and are underground crossing I-66, running along Old Carolina and Catharpin, and associated with culvert #12 along I-66 WB.

AT&T AND FIBERLIGHT:

The AT&T and Fiberlight facilities are located underground adjacent to Catharpin road and along I-66 WB culvert #12 and shall be relocated as necessary to avoid delaying construction operations.

WATERLINES/SEWER:

Existing waterline relocations/adjustments may be required for the proposed construction to accommodate storm drainage and Noise wall; the associated offsets will be performed as part of the standard construction operations.

The Shirley Team's proposed sequence of construction results in a maximum of float for the utility relocations, minimizing the risk that the delays by third party utility owners will affect the critical path of the Project. This is evidenced by the fact that none of the utility relocation activities are on the critical path of the Preliminary CPM Schedule.

CONSTRUCTION

The Mobilization and Stage 1 construction will begin in February 2014 upon approval of the advanced Stage 1 & 2 plans. Under this stage of construction the widening of westbound I-66 exit ramp to Route 15 will be constructed/widened to the left side of the existing ramp and improvements to Route 15 will be completed to accommodate the dual left turning movements from the widened ramp. This work is being accelerated to significantly improve the traffic flows and as a benefit to the traveling public. Stage 2 construction consists of milling and build-up of the existing travel lanes on I-66 and the existing outside shoulder strengthening of both eastbound and westbound I-66. Upon completion and final approval of all plans Stage 3 Construction will begin, shifting traffic to the outside strengthened shoulder. Stage 3 includes construction of the ultimate median widening of I-66 both eastbound and westbound. In addition to the median widening on I-66, the Old Carolina and Catharpin Road Bridges and roadway construction will occur. As a significant improvement to the RFP, two lanes of traffic on Catharpin Road will be maintained at all times. After the ultimate median widening is completed, traffic will be shifted to the median allowing for Stage 4 construction operations. Stage 4 work includes construction of the outside I-66 eastbound and westbound widening.

In the final stage of construction (Stage 5) all traffic will be shifted into the ultimate travel lane configuration, surface asphalt will be placed, permanent pavement markings, final signage, and any remaining finishes will be performed. Upon completion of the general construction elements, we will complete the punchlist to achieve

Substantial and Final Completion by July 23, 2016 and August 21, 2016 significantly ahead of the RFP completion date.

CRITICAL PATH

The Project critical path can be tracked within the attached proposal schedule and can also be found summarized below:

The Critical Path of the Project starts with preparation and submission of the advanced Stage 1 & 2 plans, and continues to follow the roadway plan preparation through the beginning of construction. Construction starts with mobilization, preparation of submittals and shop drawings, installation of project wide maintenance of traffic signs/devices, then moves into the Stage 3 construction activities for the median widening along I-66 beginning on the Eastern end of the Project and continuing down station to the west. The critical path then moves to Stage 4 construction along the I-66 westbound widening through the MOT/Temp Concrete Barrier, excavation activities, and into the WB Noise Wall construction. After completion of Stage 4, the critical path is in Stage 5 with construction of the extended portions of I-66 WB mill and overlay and traffic being shifted to the ultimate lane configuration. The critical path then follows surface asphalt placement, permanent pavement markings, remaining finishes and the completion of the Project punch list items for Substantial Completion to be achieved by July 23, 2016 and Final Completion to be achieved by August 21, 2016, ahead of the RFP requirements.

KEY ASPECTS OF THE SHIRLEY TEAM'S PROPOSAL SCHEDULE:

For Several of the significant aspects of our Team's proposal relative to productivity and critical activities are as follows:

- We do have and will dedicate the resources and equipment to prosecute work in multiple areas/locations of the Project concurrently. This is a large project and in order to complete the Project ahead of schedule, construction activities have to be ongoing throughout the Project area and disciplines.
- By shifting the alignment of Catharpin Road to the east and maintaining two lanes of traffic on Catharpin Road at all times, we can construct both bridges in a single phase and concurrently.
- Utilities avoidance with the Noise Walls design. The post spacing and locations will be designed to avoid underground utilities whenever possible.
- Our Team knows the Project area extremely well and has great working relationships with key material suppliers for the Project. This will enable us to get materials delivered timely and in sufficient quantities so that production is high. In addition, knowing the Project area and having operations ongoing adjacent to and in the vicinity of this project we can plan operations extremely efficiently.
- Our Team has assumed that the existing signal for the I-66 westbound exit ramp to Route 15 can be utilized with minor modifications to allow for expedited construction and opening of this critical ramp.
- Our proposed design concept and construction sequencing allows more time to complete right-of-way acquisition, utility relocations, and permitting, thereby mitigating the chance that these risky schedule activities will impact the critical path of the schedule.

PROJECT CONTROLS

Through our experience delivering major design-build roadway projects ahead of schedule, Shirley Contracting 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 extensive right-of-way and utility impacts that must be integrated into the design and construction sequencing. The Shirley Team has developed the Preliminary CPM Schedule, included as Exhibit 4.6.1, that includes a Work Breakdown Structure (WBS) to clearly delineate the tasks of each discipline manager, including Design, Permitting, Right-of-Way, Utilities, and Construction.

Each discipline manager was responsible for producing a schedule to govern their own work and provide insight into how their schedule activities affect and are affected by activities in other disciplines. Once each manager prepared their individual schedule, schedule development meetings were held by the Design-Build Project Manager. These meetings were attended by all discipline managers to review each individual schedule and integrate them into the overall project 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 D/B Project Manager and the other discipline managers; and
- The schedule meets the requirements of the Contract.

These meetings have enabled the Shirley Team to create a detailed Preliminary 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 Preliminary 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 that are run by the Design-Build Project Manager and attended by all of the 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 that 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, Superintendent, Designer of Record, 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 Superintendent 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 our Team 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. Religiously 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.

BASELINE CPM DEVELOPMENT

Our Team will prepare and submit a cost and resource loaded, detailed Baseline CPM Schedule for VDOT’s review and approval in accordance with the Contract Documents, Part 3, Section 11.1.2. Our Team will update the proposal schedule monthly until the Baseline Schedule is approved by VDOT.

MITIGATION OF MAJOR DELAY RISKS

TIMELY REVIEW AND APPROVAL OF SUBMITTALS

Upon Notice of Award, our 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 concrete girder 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, including a minimum of 21 days for review by VDOT and longer durations for approval of environmental permits and utility submissions as applicable.

We will also maintain a submittal log showing the status of all submittals. The log will be updated with the submission and return of each submittal and will show 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 and can easily be sorted to distribute lists of active and overdue submittals. Issues affecting the timely completion of submittal reviews will be discussed 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.

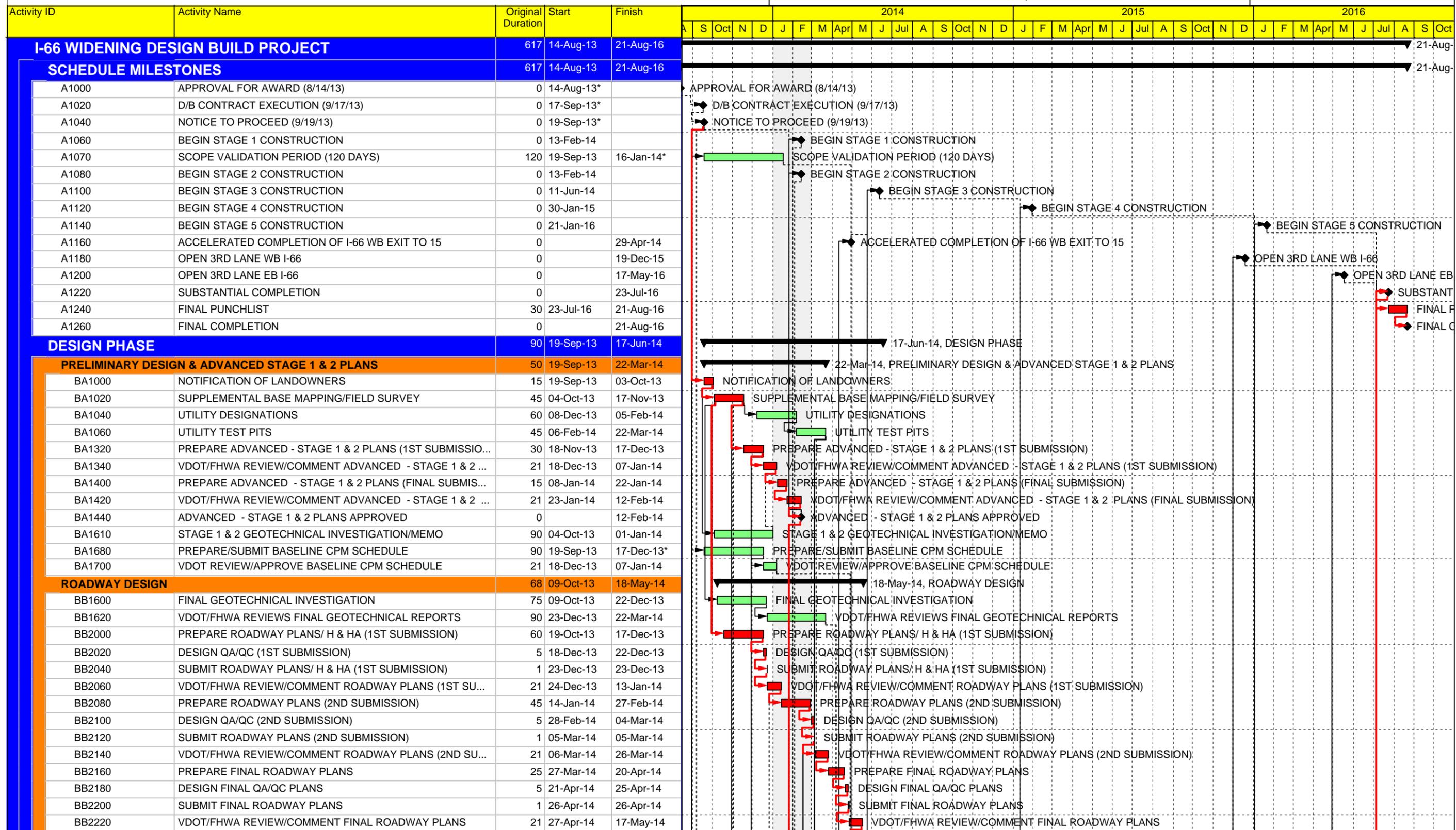
UTILITY RELOCATIONS

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. On the I-66 Widening Project, this risk is spread among several utility locations with the coordination required between three identified utility companies. To mitigate the risk, we have created a sequence of construction and design concept that provides a maximum of float to utility relocation activities in the schedule. These include:

- Revising the design concept at the I-66 eastbound exit ramp to Route 15 to widen the ramp only to the left, eliminating utility conflicts along the right side of the ramp.
- Developing a sequence of construction for mainline I-66 that completes the permanent median widening before the outside widening. Since there are no utilities in the median, this sequence allows extra time to resolve utility conflicts along the outside of I-66 before the start of construction of the outside widening in Stage 4.
- Single phase construction of the Catharpin Road Bridge. This single phase construction allows the construction to be completed in just 12 months allowing more time to relocate the adjacent utilities.

As a result of this early planning, our Preliminary Schedule shows at least 80 days of float in all of the utility relocation activities, thereby minimizing the risk that utility delays will impact the schedule.

Our Team's pre-proposal preparation, proven experience in all phases of design-build, extensive project controls, schedule management and recovery techniques will serve to ensure that the I-66 Widening Project will complete on time or ahead of schedule. Over the years, our Team has earned a solid professional reputation for 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 I-66 Widening Project is a 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 and the public. Allowing us to exceed the RFP Substantial and Final Completion dates.



█ Actual Work
 █ Critical Remaining Work
 ▬ Summary
 █ Remaining Work
 ◆ Milestone

Activity ID	Activity Name	Original Duration	Start	Finish	2014												2015												2016											
					A	S	Oct	N	D	J	F	M	Apr	M	J	Jul	A	S	Oct	N	D	J	F	M	Apr	M	J	Jul	A	S	Oct	N	D	J	F	M	Apr	M	J	Jul
STAGE 4 - I-66 EB&WB OUTSIDE WIDENING																																								
GENERAL - I-66 WB					204 30-Jan-15 11-Nov-15 G4A1000 SURVEY/LAYOUT LOD 7 17-Feb-15 25-Feb-15 G4A1020 INSTALL PERIMETER EROSION CONTROLS 8 26-Feb-15 09-Mar-15 G4A1040 CLEAR AND GRUB 15 10-Mar-15 30-Mar-15 G4A1060 SET TEMPORARY CONCRETE BARRIER 12 30-Jan-15 16-Feb-15 G4A1080 EXCAVATE/ROUGH GRADE SWM PONDS 8 31-Mar-15 10-Apr-15 G4A1100 FINE GRADE/STABILIZE SWM PONDS 4 13-Apr-15 16-Apr-15 G4A1120 REMOVE TEMPORARY CONCRETE BARRIER 12 27-Oct-15 11-Nov-15																																			
GENERAL - I-66 EB					242 17-Feb-15 20-Jan-16 G4B1000 SURVEY/LAYOUT LOD 6 27-Feb-15 06-Mar-15 G4B1020 INSTALL PERIMETER EROSION CONTROLS 6 09-Mar-15 16-Mar-15 G4B1040 CLEAR AND GRUB 12 31-Mar-15 16-Apr-15 G4B1060 SET TEMPORARY CONCRETE BARRIER 8 17-Feb-15 26-Feb-15 G4B1080 REMOVE TEMPORARY CONCRETE BARRIER 8 11-Jan-16 20-Jan-16																																			
I-66 WB (STA. 56+66-128+00)					170 17-Feb-15 12-Oct-15 G4C1000 MOT DEVICES 5 17-Feb-15 23-Feb-15 G4C1020 EROSION CONTROLS 5 31-Mar-15 07-Apr-15 G4C1040 STRIP TOPSOIL 6 22-Apr-15 29-Apr-15 G4C1060 EXCAVATION 26 30-Apr-15 08-Jun-15 G4C1080 STORM DRAINAGE 20 30-Apr-15 29-May-15 G4C1100 SAW CUT EX ASPHALT 12 09-Jun-15 24-Jun-15 G4C1120 GRADING 6 25-Jun-15 02-Jul-15 G4C1140 PLACE AGGREGATE 21-B 18 06-Jul-15 29-Jul-15 G4C1160 UNDERDRAIN 12 30-Jul-15 14-Aug-15 G4C1180 PLACE BASE ASPHALT BM-25.0A 12 17-Aug-15 01-Sep-15 G4C1200 PLACE IM ASPHALT 19.0A 8 02-Sep-15 14-Sep-15 G4C1220 ITS SYSTEMS 12 09-Jun-15 24-Jun-15 G4C1240 GRADE ROW AREAS 6 15-Sep-15 22-Sep-15 G4C1260 RESPREAD TOPSOIL 6 23-Sep-15 30-Sep-15 G4C1280 GUARDRAIL/SIGNS 5 01-Oct-15 07-Oct-15 G4C1300 SEEDING/FINISHES 3 08-Oct-15 12-Oct-15 G4C1320 SECTION COMPLETE/SHIFT TRAFFIC 0 12-Oct-15																																			
I-66 WB (STA. 128+00-168+00)					171 17-Feb-15 13-Oct-15 G4D1000 MOT DEVICES 3 17-Feb-15 19-Feb-15 G4D1020 EROSION CONTROLS 6 20-Feb-15 27-Feb-15 G4D1040 STRIP TOPSOIL 12 22-Apr-15 07-May-15 G4D1060 EXCAVATION 20 08-May-15 08-Jun-15 G4D1080 STORM DRAINAGE 24 08-May-15 12-Jun-15 G4D1100 SAW CUT EX ASPHALT 6 09-Jun-15 16-Jun-15 G4D1120 NOISE WALL 2-1 INSTALL FOUNDATIONS - STA. 146+00-168+00 32 03-Mar-15 21-Apr-15 G4D1140 NOISE WALL 2-1 SET POSTS - STA. 146+00-168+00 32 22-Apr-15 08-Jun-15 G4D1160 NOISE WALL 2-1 ERECT PANELS - STA. 146+00-168+00 34 09-Jun-15 27-Jul-15 G4D1180 GRADING 9 17-Jun-15 29-Jun-15 G4D1200 PLACE AGGREGATE 21-B 18 30-Jun-15 24-Jul-15 G4D1220 UNDERDRAIN 7 27-Jul-15 04-Aug-15 G4D1240 PLACE BASE ASPHALT BM-25.0A 18 05-Aug-15 28-Aug-15																																			

█ Actual Work
 █ Critical Remaining Work
 ▶ Summary
█ Remaining Work
 ◆ Milestone

4.7 Disadvantaged Business Enterprises (DBE)

COMMITMENT TO ACHIEVING THE DBE GOAL

Shirley Contracting Company, LLC (Shirley) is committed to achieving the 13% DBE participation goal for the I-66 Widening Design-Build Project through design and construction activities.

As one of Virginia's largest General Contractors performing Virginia Department of Transportation work, we take pride in our 39 year history of providing opportunities to Disadvantaged Business Enterprises. Our record of compliance in meeting federal, state and local DBE goals on all of our past and present projects is an accomplishment we are proud of.

PLAN TO MEET DBE SUBCONTRACTING GOAL

Concurrent with the preparation of this Technical Proposal, we will, as part of the Price Proposal, solicit firm pricing for the work from potential DBE subcontractors and vendors. As part of the Price Proposal, we will include Form C-111 indicating how we plan to achieve the Project's DBE requirement during design and construction.

The following narrative outlines the steps that will be taken to meet this requirement during the Price Proposal preparation phase:

- Our Team will first examine the Project, the nature of the work, and our internal company DBE database to determine where we believe the opportunities for DBE participation will be available. Once we determine the areas where participation is likely, we will take the necessary steps to ensure that we communicate with and provide adequate notice of the project opportunities to the DBE community.
- Initially, we will contact DBE firms included in our company database to inform them of the opportunity. We will include in an e-mail solicitation the scope of the Project, the construction trades we believe will be able to provide subcontracting opportunities, and notice that plans are available at our company's main office for viewing. We will establish a single point of contact for all potential DBE firms so that questions regarding the Project and potential opportunities will be directed to the contact person and answered promptly.
- In addition to e-mails to subcontractors and vendors in our database, we will continue to make follow-up telephone calls to these firms as a means of determining actual interest in the Project and to answer any questions about possible opportunities.
- We will also post the opportunity on our company website to reach a broader spectrum of contractors, vendors and other potential interested persons. Once again, the name and phone number of a contact person will be included for questions about the opportunity.
- Another method that we will utilize for soliciting interest in the I-66 Widening Design-Build Project will be to place ads in a local newspaper and other media outlets identifying the Project and the potential opportunity to supply materials and services. We will include a contact person and telephone number so that interested firms can make contact with us and discuss the potential opportunities on the Project.
- We will attend industry, major business organization and community group events where we will establish networking relationships to create interest in the Project and attract potential bidders. We also have had previous success soliciting assistance from various trade organizations in communicating with the DBE community.
- We will contact the VDOT Business Opportunity and Workforce Development Center (BOWD) and advise them of the Project and the opportunity for DBE participation. One of the primary goals of the BOWD Center is to provide opportunities for DBE firms to partner with prime contractors.
- Throughout the development and preparation of our Technical and Price Proposals for the Project, we will

track and maintain the status of our expected DBE participation. In this manner, we were immediately and constantly aware of the need to solicit increased participation from the DBE community in order to meet the goal. As the date for submission of the Price Proposal approaches, strategies for meeting the DBE participation goals are evaluated and finalized to ensure that the goal will be met with the submission of the Price Proposal. As we will plan to show on Form C-111 to be submitted with the price Proposal, Shirley plans to exceed the stated DBE goal for the Project.

As an ongoing process, Shirley stays up to date with changes and modifications to applicable DBE program rules so that we are best positioned to meet or exceed the goals established for the Project. Throughout the design and construction phases of the Project, we will continually monitor the status of our Team's DBE participation. The Design-Build Project Manager will be responsible for this task, and will develop a method to do so that will be shared with VDOT on a regular basis.

ATTACHMENT 4.0.1.1
INTERSTATE 66 WIDENING
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
Offeror's Full Legal Name and Address	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
Offeror's Point of Contact Information	NA	Section 4.1.4	yes	1
Principal Officer information	NA	Section 4.1.5	yes	1
Substantial and Final Completion Date	NA	Section 4.1.6	yes	1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.7	no	2
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.8	no	2
Written Statement of Compliance	NA	Section 4.1.9	yes	2

ATTACHMENT 4.0.1.1
INTERSTATE 66 WIDENING
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Offeror's Qualifications	NA	Section 4.2		
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2.1	yes	3
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	3
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	3
Design Concept	NA	Section 4.3		
Conceptual Roadway Plans and description	NA	Section 4.3.	yes	4-8, 36-53
Conceptual Structural Plans and description	NA	Section 4.3	yes	8-12, 54-59
Project Approach	NA	Section 4.4		
Stakeholder Coordination/Public Outreach	NA	Section 4.4.1	yes	13
Utilities/Drainage	NA	Section 4.4.2	yes	17
Geotechnical	NA	Section 4.4.3	yes	23
Construction of Project	NA	Section 4.5		
Bridge Reconstruction	NA	Section 4.5.1	yes	26
Sequence of Construction	NA	Section 4.5.2	yes	27

ATTACHMENT 4.0.1.1
INTERSTATE 66 WIDENING
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Transportation Management Plan	NA	Section 4.5.3	yes	30
Proposal Schedule	NA	Section 4.6		
Proposal Schedule	NA	Section 4.6	no	N/A
Proposal Schedule Narrative	NA	Section 4.6	no	N/A
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.6	no	N/A
Disadvantaged Business Enterprises (DBE)	NA	Section 4.7		
Written statement of percent DBE participation	NA	Section 4.7	yes	34
DBE subcontracting narrative	NA	Section 4.7	yes	34

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

RFP NO. C00093577DB49
 PROJECT NO.: 0066-076-003, P101, R201, C501, B674, B675

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 June 1, 2012 – RFP
(Date)
2. Cover letter of April 5, 2013 – RFP Addendum #1
(Date)
3. Cover letter of May 3, 2012 – RFP Addendum #2
(Date)



SIGNATURE

6/3/13

DATE

Michael E. Post President/CEO/Maanger
 PRINTED NAME AND TITLE

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

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

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications (“SOQs”), to the Virginia Department of Transportation (“VDOT”), pursuant to VDOT’s December 20, 2011 Request for Qualifications (“RFQ”) and was invited to submit proposals in response to a Request for Proposals (“RFP”) for the Interstate 66 Widening, Project No. 0066-076-003, P101, R201, C501, B674, B675 (“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 forty thousand and 00/100 Dollars (\$40,000.00) ("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)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project No.: 0066-076-003, P101, R210, C501, B674, B675

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

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

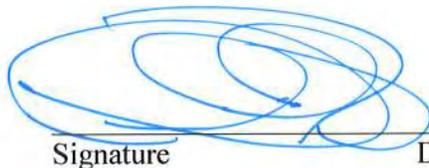
b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under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

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

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

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

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



Signature

6/3/13

Date

President/CEO/Manager

Title

Shirley Contracting Company, LLC

Name of Firm

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

Project No.: 0066-076-003, P101, R201, C501, B674, B675

- 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.

Jack Thompson 5/29/2013 Executive V.P.
Signature Date Title

Dewberry Consultants LLC
Name of Firm

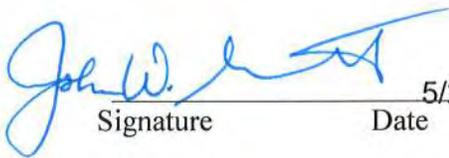
ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0066-076-003, P101, R201, C501, B674, B675

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

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

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



Signature

5/28/13

Date

PRESIDENT, CHIEF OPERATING OFFICER
Title

SKELLY AND LOY, INC.
Name of Firm

ATTACHMENT NO. 3.2.5(b)

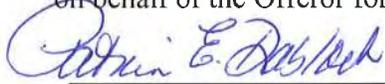
**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0066-076-003, P101, R201, C501, B674, B675

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.



5/23/13

President

Signature

Date

Title

Diversified Property Services, Inc.

Name of Firm

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

Project No.: 0066-076-003, P101, R201, C501, B674, B675

- 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.

	5/24/13	Vice President
Signature	Date	Title

AeroMetric, Inc.
Name of Firm

ATTACHMENT NO. 3.2.5(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0066-076-003, P101, R201, C501, B674, B675

- 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.

Robert Rush 5-23-13 SETTLEMENT OFFICER
Signature Date Title

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

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

Project No.: 0066-076-003, P101, R201, C501, B674, B675

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

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

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

<u>Kunal Gangopadhyay</u>	<u>5-29-13</u>	<u>First Executive Vice President</u>
Signature	Date	Title

EBA Engineering, Inc.

Name of Firm

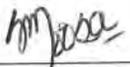
ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0066-076-003, P101, R201, C501, B674, B675

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

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

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

 _____ Signature	May 29, 2013 _____ Date	Principal Engineer _____ Title
---	-------------------------------	--------------------------------------

Engineering & Materials Technologies, Inc. (E.M. Tech)
Name of Firm



**Critical Infrastructure Information (CII)
Sensitive Security Information (SSI)
Individual Non-Disclosure Agreement**



Code of Virginia §36-105.3 and §44-146.22 and 49 CFR Part 1520 stipulates instituting procedures to ensure the safe storage and secure handling of information that should be protected and not disclosed. VDOT CII/SSI includes such information and is not subject to disclosure under FOIA (reference Code of Virginia §2.2-3705.2).

Disclosure of CII/SSI in any manner that permits interception by unauthorized persons is prohibited. CII/SSI may not be released to persons without a need-to-know except with written permission from VDOT (see *Handling CII/SSI* on page 3). CII/SSI includes information marked as such or other information relating to VDOT security or protected systems (see *Guide to Identifying Possible CII* on page 4).

All documents and materials provided are the sole and exclusive property of VDOT. They may not be modified, reproduced, republished, redistributed or presented for sale, completely or in part, and doing so may result in severe civil and criminal penalties. All documents and materials provided are only to be used in conjunction with contract or project # 0066-076-003, P101, R201, C501, B674, B675.

As an employee of (or contractor to) Shirley Contracting Company, LLC I understand that:

1. Certain information which I will receive from Virginia Department of Transportation (VDOT) may contain CII/SSI.
2. I may learn of or have access to some or all of this information through a computer system or through my employment activities.
3. CII/SSI is valuable and sensitive and is protected by law and by strict VDOT policies. The intent of these laws and policies is to assure that CII/SSI will remain confidential - that is, it will be used only as necessary to accomplish VDOT's mission.
4. I have no right or ownership interest in any CII/SSI referred to in this Agreement.
5. Willful violation of this agreement may subject me to discipline which might include, but is not limited to, termination of employment or further VDOT related work and to legal liability.
6. I am obligated to protect this information from unauthorized disclosure in accordance with the terms of this agreement.
7. Unauthorized disclosure of CII/SSI could compromise safety and security of persons and is prohibited.
8. My execution of this agreement shall not nullify or affect in any manner any other agreement, non-disclosure or otherwise, which I have executed or may execute with VDOT or the Commonwealth of Virginia.
9. My obligations with respect to the confidentiality and security of all CII/SSI disclosed to me shall survive the termination of any agreement or relationship with VDOT.
10. I am required to conduct myself in a strict conformance to applicable laws and VDOT policies governing CII/SSI (see *Handling CII/SSI* on page 3).
11. VDOT may at any time revoke my authorization allowing access to CII/SSI.

Accordingly, as a condition of and in consideration of my access to CII/SSI, I agree that:

1. I will only access CII/SSI for which I have a need-to-know
2. I will use any CII/SSI that I obtain only as needed by me to perform my legitimate VDOT related duties.
3. I will not in any way divulge, copy, release, sell, loan, review, alter or destroy any CII/SSI except as properly authorized within the scope of my professional VDOT activities

Last Name, First name:

**Critical Infrastructure Information (CII)
Sensitive Security Information (SSI)
Individual Non-Disclosure Agreement**



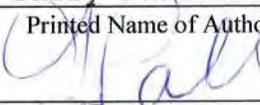
4. I will safeguard the confidentiality of all CII/SSI at all times.
5. I will safeguard and will not disclose my access code or any other authorization I have that allows me to access CII/SSI and I accept responsibility for all activities undertaken using my access code and other authorization.
6. I will be responsible for my misuse or my wrongful disclosure of CII/SSI and for my failure to safeguard my access code or other authorization access to CII/SSI.

Each provision of this agreement is severable. If any administrative or judicial tribunal should find any provision of this agreement to be unenforceable, all other provisions shall remain in full force and effect.

I make this agreement in good faith, without mental reservation or purpose of evasion.

<u>Garry Palleschi</u> Printed name of Individual Staff Member	<u>6/3/13</u> Date
<u>Shirley Contracting Company, LLC</u> Company Name	<u>703-550-8100</u> Phone Number
<u>8435 Backlick Road</u> Company Address	<u>703-550-3558</u> Fax Number
<u>Lorton, VA. 22079</u> Company City, State, Zip	<u>gpalleschi@shirleycontracting.com</u> E-mail Address
<u></u> Signature of Individual Staff Member	

Authorized Agent for Company (person who signed the Company Agreement):

<u>Garry Palleschi</u> Printed Name of Authorized Agent	<u>Vice President</u> Title
<u></u> Signature of Authorized Agent	<u>703-550-8100</u> Phone Number
<u>John C. Daoulas, P.E.</u> VDOT Contact Name	

Return copy of signed agreement to _____.



**Critical Infrastructure Information (CII)
Sensitive Security Information (SSI)
Individual Non-Disclosure Agreement**



(Retain this page and the next for reference)

Handling CII/SSI

You are responsible for safeguarding Critical Infrastructure Information/Sensitive Security Information (CII/SSI) in your custody or under your control.

The extent of protection afforded CII/SSI shall be sufficient to reasonably foreclose the possibility of its loss or compromise.

The terms of this clause (*Handling CII/SSI*), including this paragraph, must be included in any dissemination of any document, in whole or in part, that contains CII/SSI.

Protection - CII/SSI shall be protected at all times, either by appropriate storage or having it under the personal observation and control of a person authorized to receive it. Each person who works with protected CII/SSI is personally responsible for taking proper precautions to ensure that unauthorized persons do not gain access to it.

Use and Storage - During working hours, reasonable steps shall be taken to minimize the risks of access to CII/SSI by unauthorized personnel. After working hours, CII/SSI shall be secured in a secure container, such as a locked desk, file cabinet or facility where contract security is provided.

Reproduction - Documents or material containing CII/SSI may be reproduced to the minimum extent necessary consistent with the need to carry out official duties provided that the reproduced material is marked and protected in the same manner as the original material.

Disposal - Material containing CII/SSI shall be disposed of by any method that prevents unauthorized retrieval (e.g. shredding, burning, returning to original source, etc.).

Transmission - CII/SSI shall be transmitted only by VDOT courier, US first class, express, certified or registered mail, or through secure electronic means.



**Critical Infrastructure Information (CII)
Sensitive Security Information (SSI)
Individual Non-Disclosure Agreement**



Things to consider regarding the need to protect CII/SSI...

- What impact could the information have if it was inadvertently transferred to an unintended audience?
- Does the information provide details concerning security procedures and capabilities?
- Could someone use the information to target personnel, facilities or operations?
- How could someone intent on causing harm misuse the information?
- Could the use of this information be dangerous if combined with other publicly available information?

Before looking at the Guide, answer the following:

Is the information customarily public knowledge? (Information that is accessible to the general public if there has been no deliberate attempt to keep it hidden or secret.)	
Does the general public have a need-to-know? (Access to, or knowledge or possession of, specific information required to carry out official duties) (Note: Contractors should be considered employees, not general public.)	
If "yes" to either, then it is not CII/SSI otherwise, continue to the guide.	X

Guide to Identifying Possible CII/SSI		
If the item under consideration shows, describes or is listed below, it might be CII/SSI.		Y/N
1	<p>Information, the disclosure of which would jeopardize the safety or security of any person or structure, including engineering and construction drawings and plans that reveal:</p> <ul style="list-style-type: none"> <li style="width: 50%;">• Critical structural components <li style="width: 50%;">• Security equipment and systems <li style="width: 50%;">• Ventilation systems <li style="width: 50%;">• Fire protection equipment <li style="width: 50%;">• Elevators <li style="width: 50%;">• Telecommunications equipment and systems <li style="width: 50%;">• Mandatory building emergency equipment or systems <li style="width: 50%;">• Electrical systems <li style="width: 50%;">• Other utility equipment and systems <p><i>(COV § 2.2-3705.2 (2))</i></p>	
2	<p>Documentation or other information that describes the design, function, operation or access control features of any security system, manual or automated, used to control access to or use of any automated data processing or telecommunications system.</p> <p><i>(COV § 2.2-3705.2 (3))</i></p>	
3	<p>Plans and information to prevent or respond to terrorist activity, the disclosure of which would jeopardize the safety of any person, including:</p> <ul style="list-style-type: none"> <li style="width: 50%;">• Critical infrastructure sector or structural components <li style="width: 50%;">• Operational, procedural, transportation, and tactical planning or training manuals <li style="width: 50%;">• Vulnerability assessments <li style="width: 50%;">• Staff meeting minutes or other records <p>Engineering or architectural records or portions of, that reveals the location or operation of:</p> <ul style="list-style-type: none"> <li style="width: 50%;">• Security equipment and systems <li style="width: 50%;">• Elevator equipment and systems <li style="width: 50%;">• Ventilation equipment and systems <li style="width: 50%;">• Fire protection equipment and systems <li style="width: 50%;">• Emergency equipment and systems <li style="width: 50%;">• Electrical equipment and systems <li style="width: 50%;">• Utility equipment and systems <li style="width: 50%;">• Telecommunications equipment and systems <p>The same categories of records submitted to us for the purpose of antiterrorism response planning if accompanied, in writing, a statement that:</p> <ul style="list-style-type: none"> • Invokes the protection of §2.2-3705.2 • Specifically identifies the records or portions thereof which are to be protected • States why the protection of such records from public disclosure is necessary <p><i>(COV § 2.2-3705.2 (4))</i></p>	
4	<p>Information including (drawings, manuals, or other records) which reveals:</p> <ul style="list-style-type: none"> <li style="width: 50%;">• Surveillance techniques <li style="width: 50%;">• Alarm or security systems or technologies <li style="width: 50%;">• Personnel deployments <li style="width: 50%;">• Operational and transportation plans or protocols <p><i>(COV § 2.2-3705.2 (6))</i></p>	
5	<p>Information concerning threats against transportation.</p> <p><i>(USC 49 CFR 1520 (5))</i></p>	

RESPONSE TO REQUEST FOR PROPOSALS

Interstate 66 Widening

A DESIGN-BUILD PROJECT

From: Approximately 1.2 miles west of U.S. Route 15 (James Madison Hwy.)

To: Approximately 0.2 miles west of U.S. Route 29 (Lee Hwy.)

PRINCE WILLIAM COUNTY, VA



State Project No.: 0066-076-003, P101, R201, C501, B674, B675

Federal Project No.: NH--5A01(194)

Contract ID Number: C00093577DB49

Volume II: Design Concept

SUBMITTED TO:



SUBMITTED BY:



IN ASSOCIATION WITH:



PROJECT MANAGER MS.CHRISTIANA BRIGANTI-DUNN, PE - VDOT NOVA DISTRICT - (703) 259-2960
 SURVEYED BY RICE ASSOCIATES - (804) 674-9723
 DESIGN SUPERVISED BY MR.DAVID J.MAHOONEY, PE - DEWBERRY CONSULTANTS LLC - (703) 849-0607
 DESIGNED BY DEWBERRY CONSULTANTS LLC - (703) 289-4796

THIS PROJECT WAS DEVELOPED UTILIZING THE DEPARTMENT'S ENGINEERING DESIGN PACKAGE (GEOPAK).
 GEOPAK Computer Identification No. 93577



COMMONWEALTH OF VIRGINIA
 DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED
 STATE HIGHWAY

VOLUME II PLANS

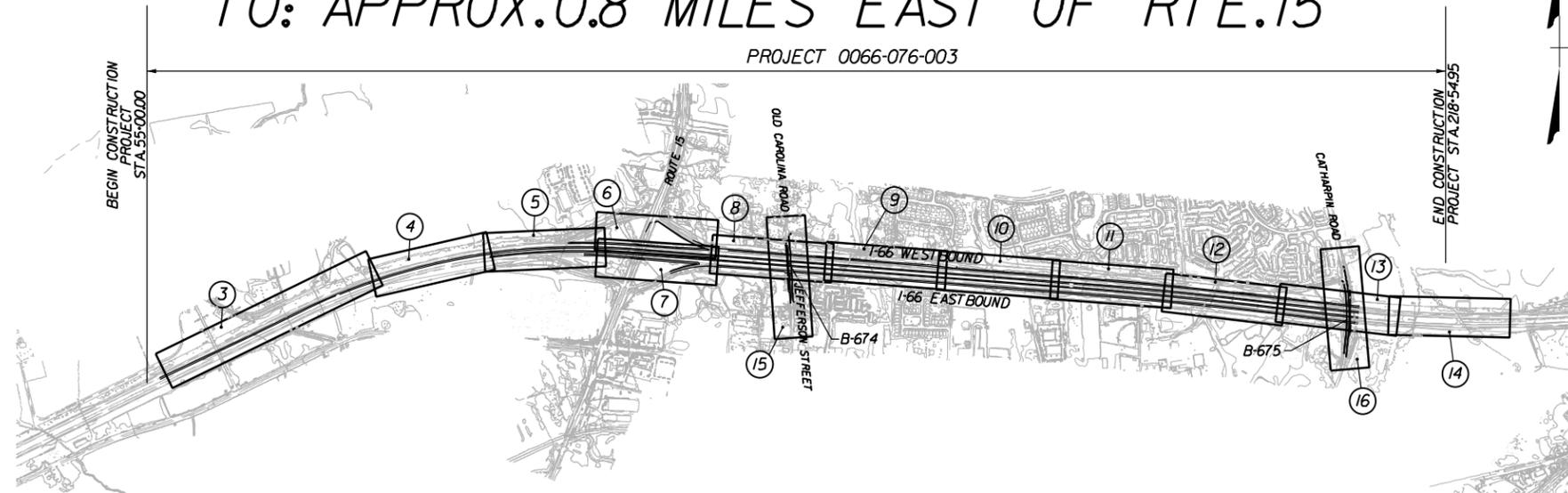
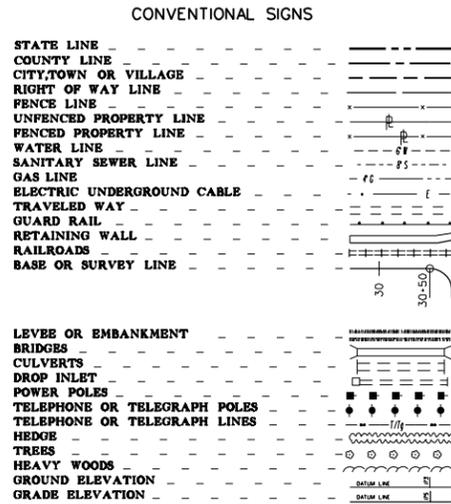
PRINCE WILLIAM COUNTY
 I-66 WIDENING
 FROM: APPROX. 1.2 MILES WEST OF RTE. 15
 TO: APPROX. 0.8 MILES EAST OF RTE. 15

FHWA 534 DATA 4A115

STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	NH-5A01(194)	66	(F0) 0066-076-003 (SEE TABULATION BELOW FOR SECTION NUMBERS)	1

FUNCTIONAL CLASSIFICATION AND TRAFFIC DATA					
	INTERSTATE 66	ENTRANCE RAMP	EXIT RAMP	OLD CAROLINA	CATHARPIN
From:	INT. ROUTE 15	US-15	WB I-66	.03 Mi S Cheyenne Way	.29 Mi S Rte. 55
To:	CATHARPIN RD. ROUTE 676	EB I-66	US-15	.03 Mi S Jordan Lane	.15 Mi S Legend Dr.
FUNCTIONAL CLASSIFICATION	URBAN PRINCIPAL ARTERIAL (GS-5)	INTERCHANGE RAMP (GS-R)	INTERCHANGE RAMP (GS-R)	Local Street (GS-8)	Local Street (GS-8)
DESIGN SPEED	70	40	40	35	45
ADT (2011)	58,000	13,200	12,600	7,000	6,000
ADT (2036)	95,000	20,100	21,200	12,000	13,000
DHV	9,500	2,190	2,160	1,080	1,280
D (%) (design hour)	50	100	100	53	55
T (%) (design hour)	8	1.5	1	1	1
V (MPH)	65	35	35	25	40
TC STD.	TC-5.11	TC-5.11	TC-5.11	TC-5.11	TC-5.11
GEOMETRIC STD.	GS-5	GS-R	GS-R	GS-8	GS-8

* SEE PLAN AND PROFILE SHEETS FOR HORIZONTAL AND VERTICAL CURVE DESIGN SPEEDS



INDEX OF SHEETS

1	COVER SHEET
1J	SEQUENCE OF CONSTRUCTION TYPICAL SECTIONS
2A	TYPICAL SECTIONS
3-16	PLAN AND PROFILE SHEETS
	OLD CAROLINA ROAD BRIDGE PLANS
	CATHARPIN ROAD BRIDGE PLANS

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 DISTRICT CONSTRUCTION ENGINEER OR VDOT PROGRAM MANAGER (PPTA)

APPROVED FOR RIGHT OF WAY ACQUISITION	
DATE	CHIEF OF POLICY AND ENVIRONMENT

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
DATE	(DESIGN-BUILD FIRM) DESIGN MANAGER
DATE	(DESIGN-BUILD FIRM) PROJECT MANAGER
DATE	VDOT PROJECT MANAGER
DATE	VDOT DISTRICT CONSTRUCTION ENGINEER OR VDOT PROGRAM MANAGER (PPTA)

APPROVED FOR CONSTRUCTION	
DATE	CHIEF ENGINEER

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, 2005 WORK AREA PROTECTION MANUAL AND AS AMENDED BY CONTRACT PROVISIONS AND THE COMPLETE ELECTRONIC .PDF VERSION OF THE PLAN ASSEMBLY.

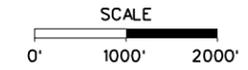
ALL CURVES ARE TO BE SUPERELEVATED, TRANSITIONED AND WIDENED IN ACCORDANCE WITH STANDARD TC-5.11, EXCEPT WHERE OTHERWISE NOTED.

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

Prince William County Population 430,289 (2012 Census)

STATE PROJECT NO.	SECTION	FEDERAL AID PROJECT NO.	TYPE CODE	UPC NO.	EQUALITIES		LENGTH INCLUDING BRIDGE(S)		LENGTH EXCLUDING BRIDGE(S)		BRIDGE PLAN NO.	TYPE PROJECT	DESCRIPTION
					FEET	MILES	FEET	MILES	FEET	MILES			
0066-076-003	P-101	NH-5A01(194)	PENG	93577		4.5		4.5				PREL. ENGN.	FROM: APPROX 1.2 MI. WEST OF RTE 15 TO: APPROX 0.8 MI. EAST OF RTE 29
	RW-201	NH-5A01(194)	ROWA	93577		2.9		2.9				RIGHT OF WAY	FROM: APPROX 1.2 MI. WEST OF RTE 15 TO: APPROX 0.8 MI. EAST OF RTE 29
	C-501	NH-5A01(194)	F000	93577		4.5		4.5				CONSTRUCTION	FROM: APPROX 1.2 MI. WEST OF RTE 15 TO: APPROX 0.8 MI. EAST OF RTE 29
	B674	NH-5A01(194)		93577			310	0.06			292-03		
	B675	NH-5A01(194)		93577			310	0.06			292-04		

Project Lengths are based on the Construction Baselines.



\$TIME\$STAMP\$

Copyright 2011, Commonwealth of Virginia

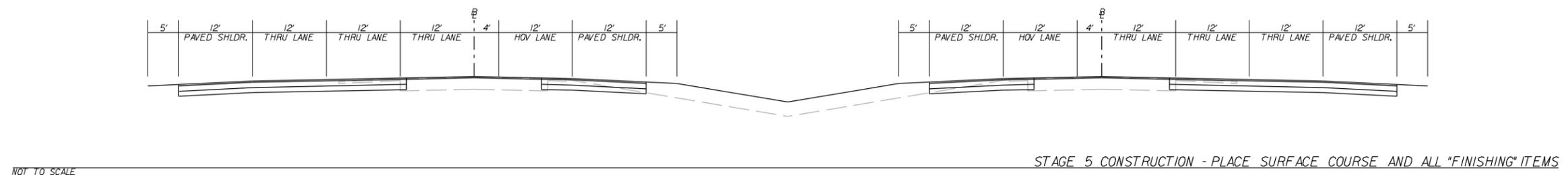
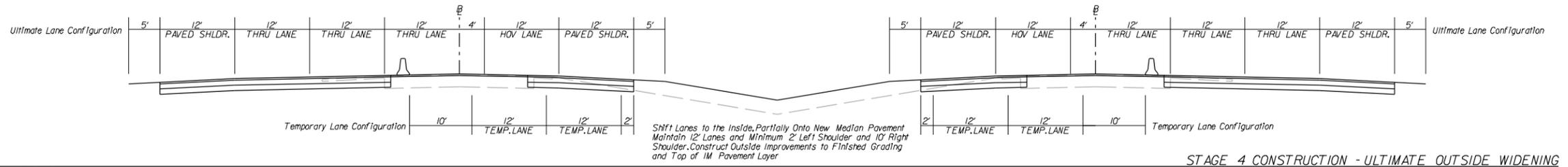
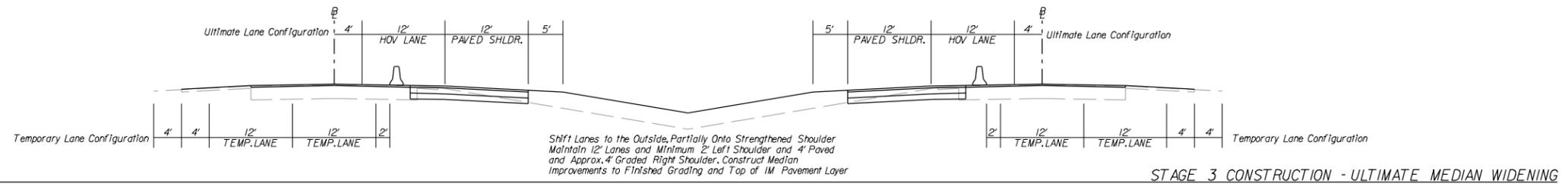
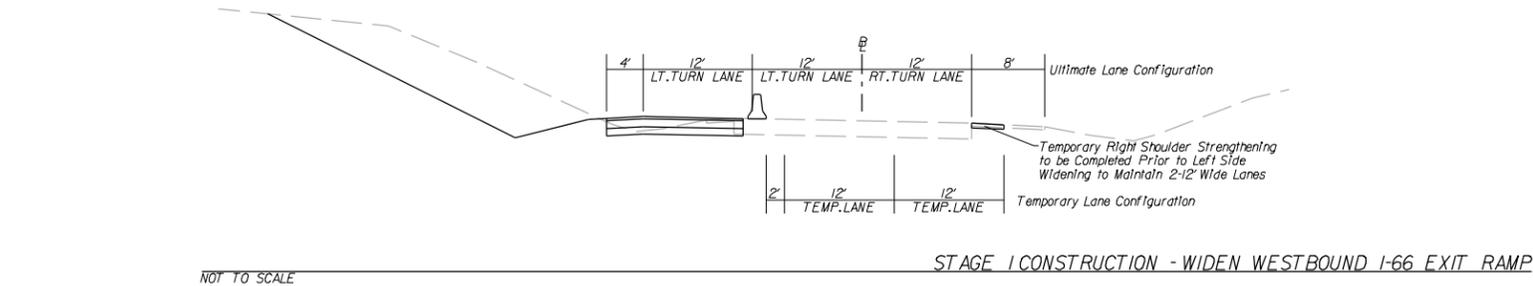
PROJECT SHEET NO.
 0066-076-003 1

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

PROPOSED SEQUENCE OF CONSTRUCTION

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	66	(F0)0066-076-003 P-101	IJ

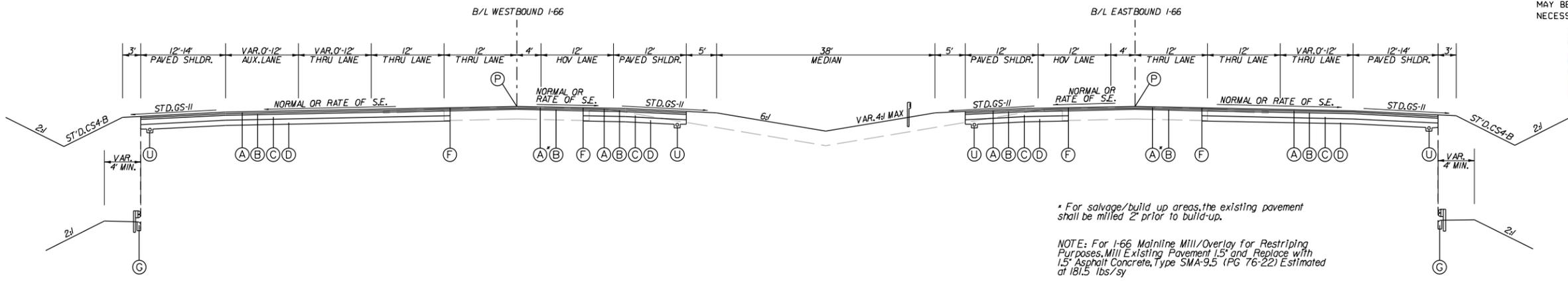
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



TYPICAL SECTIONS

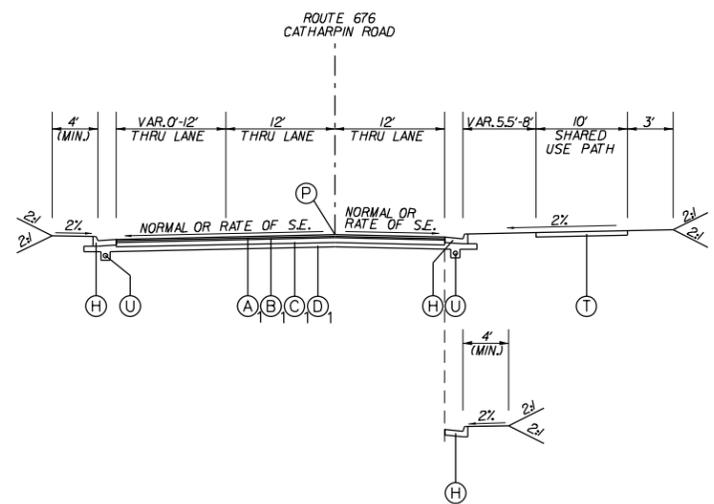
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA	66	(F0)0066-076-003 C-501, RW-201	2A

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

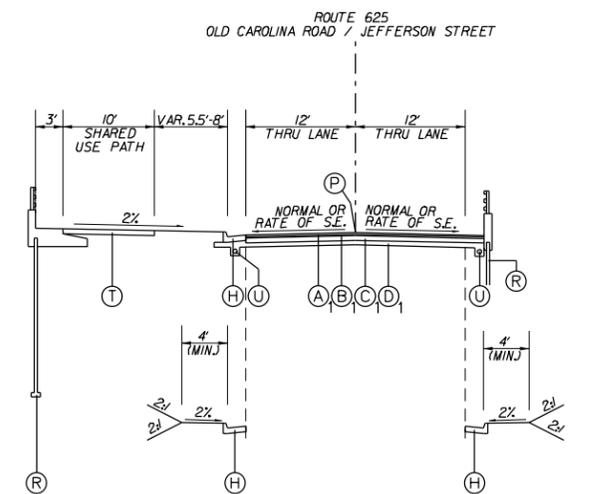


* For salvage/build up areas, the existing pavement shall be milled 2" prior to build-up.
 NOTE: For I-66 Mainline Mill/Overlay for Restriping Purposes, Mill Existing Pavement 1.5" and Replace with 1.5" Asphalt Concrete, Type SMA-9.5 (PG 76-22) Estimated at 181.5 lbs/sy

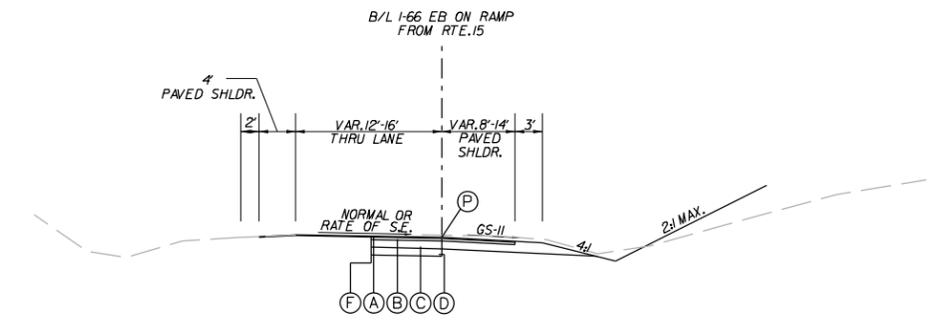
I-66 WIDENING



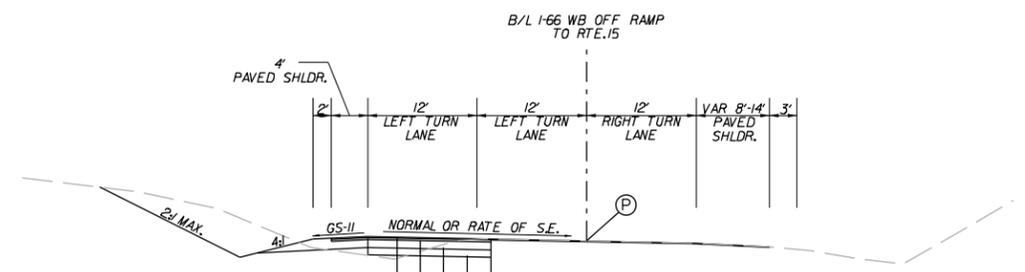
ROUTE 676 - CATHARPIN ROAD



ROUTE 625 - OLD CAROLINA ROAD / JEFFERSON STREET



I-66 EASTBOUND ON RAMP FROM ROUTE 15



I-66 WESTBOUND OFF RAMP TO ROUTE 15

LEGEND

- | | |
|--|--|
| (A) 1.5" Surface Course, Asphalt Concrete, Type SMA-9.5, PG 76-22 at 181.5 lbs./sy | (F) Full Depth Saw Cut |
| (A) 1.5" Surface Course, Asphalt Concrete, Type SM-9.5A at 181.5 lbs./sy | (G) Curb, S'd, CG-3 or S'd, CG-2 per Plans |
| (B) 3" Intermediate Course, Asphalt Concrete, Type IM-19.0D at 244 lbs./sy | (H) Curb and Gutter, S'd, CG-6 or CG-7 per Plans |
| (B) 2" Intermediate Course, Asphalt Concrete, Type IM-19.0A at 244 lbs./sy | (P) Profile Grade Line |
| (C) 10" Base Course, Asphalt Concrete, Type BM-25.0A | (R) Retaining Wall |
| (C) 5" Base Course, Asphalt Concrete, Type BM-25.0A | (T) 2" Asphalt Concrete, Type SM-9.5A at 240 lbs./sy placed above 6" Plain Aggregate Base Material, Type I, Size No. 21B |
| (D) 10" Subbase Course, Aggregate Base Material, Type I, Size No. 21B connected to a standard UD-4 edgedrain located beneath the outer edge of the paved shoulder. Modified UD-1 shall be provided in lieu of UD-4 edgedrain for pavement sub-drainage in areas of high groundwater, springs or deep (>15') cuts; the modification consists of wrapping the aggregate with geotextile drainage fabric. | (U) Underdrain, S'd, UD-4 |
| (D) 6" Subbase Course, Aggregate Base Material, Type I, Size No. 21B connected to a standard UD-4 edgedrain located beneath the outer edge of the paved shoulder. Modified UD-1 shall be provided in lieu of UD-4 edgedrain for pavement sub-drainage in areas of high groundwater, springs or deep (>15') cuts; the modification consists of wrapping the aggregate with geotextile drainage fabric. | |

** On high side of superelevated sections where the new pavement drains toward the existing pavement, provide 10" Aggregate Base Material, Type I, Size No. 21A, pugmill mixed with 4% hydraulic cement by weight.



SCALE	PLAT NO.	PROJECT	FILE NO.	SHEET NO.
0 10' 20'	A		0066-076-003	2A

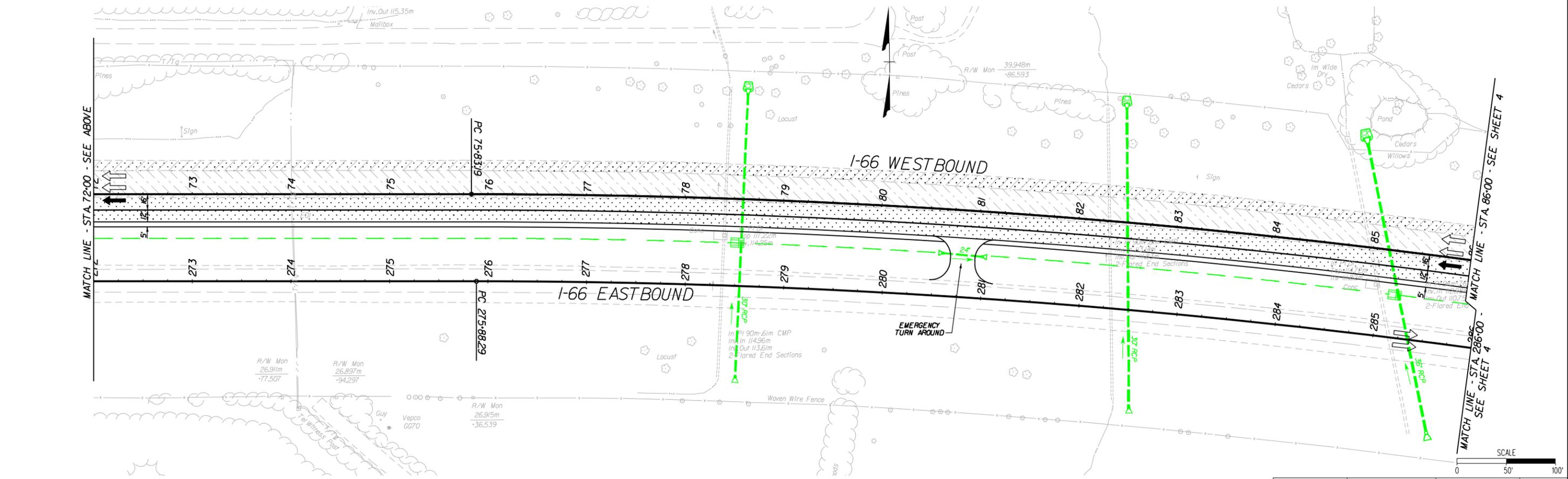
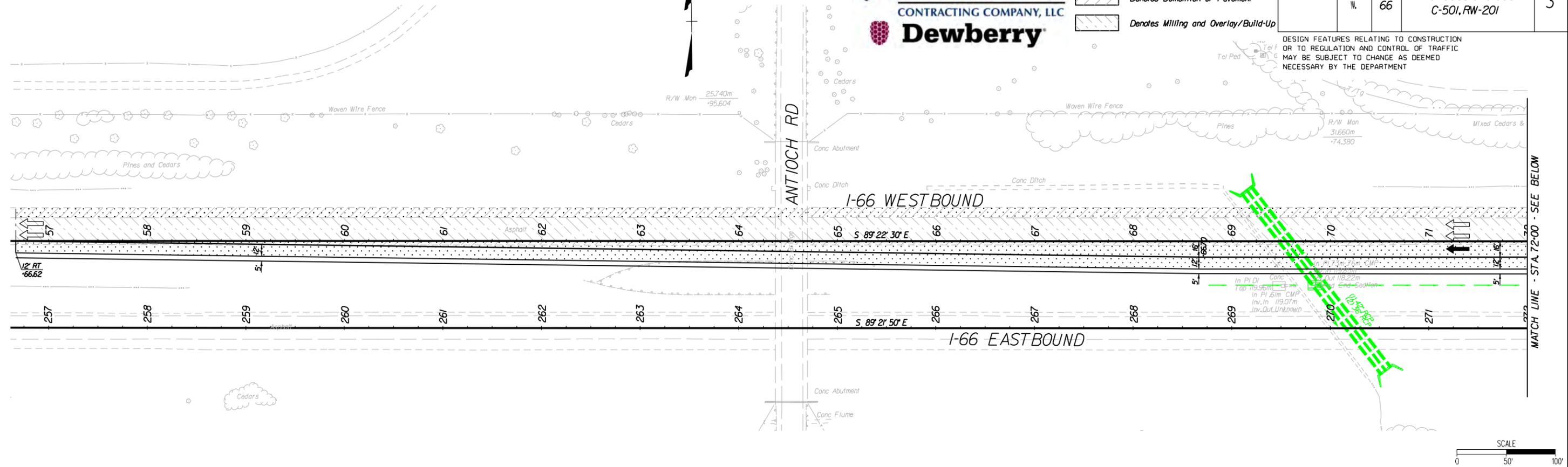
PROJECT MANAGER *Mr. Larry Tomlinson, PE, LS* - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY *Dewberry & Davis, LLC* - (703) 289-4796



- Denotes Full Depth Pavement
- Denotes Demolition of Pavement
- Denotes Milling and Overlay/Build-Up

REVISION	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA	66	(FO) 0066-076-003 C-501, RW-201	3

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



PLAT NO.	PROJECT	FILE NO.	SHEET NO.
A	0066-076-003		3

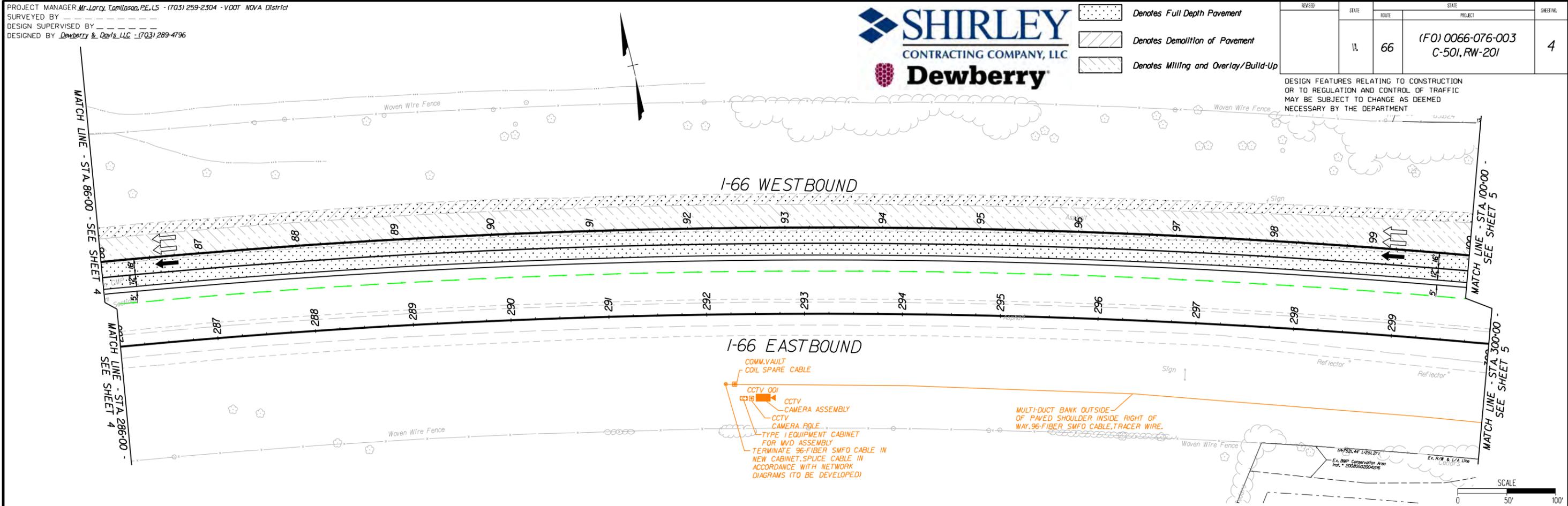
PROJECT MANAGER *Mr. Larry Tomlinson, PE, LS* - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY *Dewberry & Davis, LLC* - (703) 289-4796



-  Denotes Full Depth Pavement
-  Denotes Demolition of Pavement
-  Denotes Milling and Overlay/Build-Up

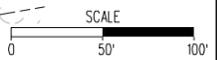
REVISION	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA	66	(FO) 0066-076-003 C-501, RW-201	4

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



- COMM. VAULT
- COIL SPARE CABLE
- CCTV 001
- CCTV CAMERA ASSEMBLY
- CCTV CAMERA POLE
- TYPE 1 EQUIPMENT CABINET FOR MVD ASSEMBLY
- TERMINATE 96-FIBER SMFO CABLE IN NEW CABINET. SPLICE CABLE IN ACCORDANCE WITH NETWORK DIAGRAMS (TO BE DEVELOPED)

MULTI-DUCT BANK OUTSIDE OF PAVED SHOULDER INSIDE RIGHT OF WAY. 96-FIBER SMFO CABLE, TRACER WIRE.



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	0066-076-003		4

PROJECT MANAGER Mr. Larry Tomlinson, PE, LS - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY
 DESIGN SUPERVISED BY
 DESIGNED BY Dewberry & Davis, LLC - (703) 289-4796

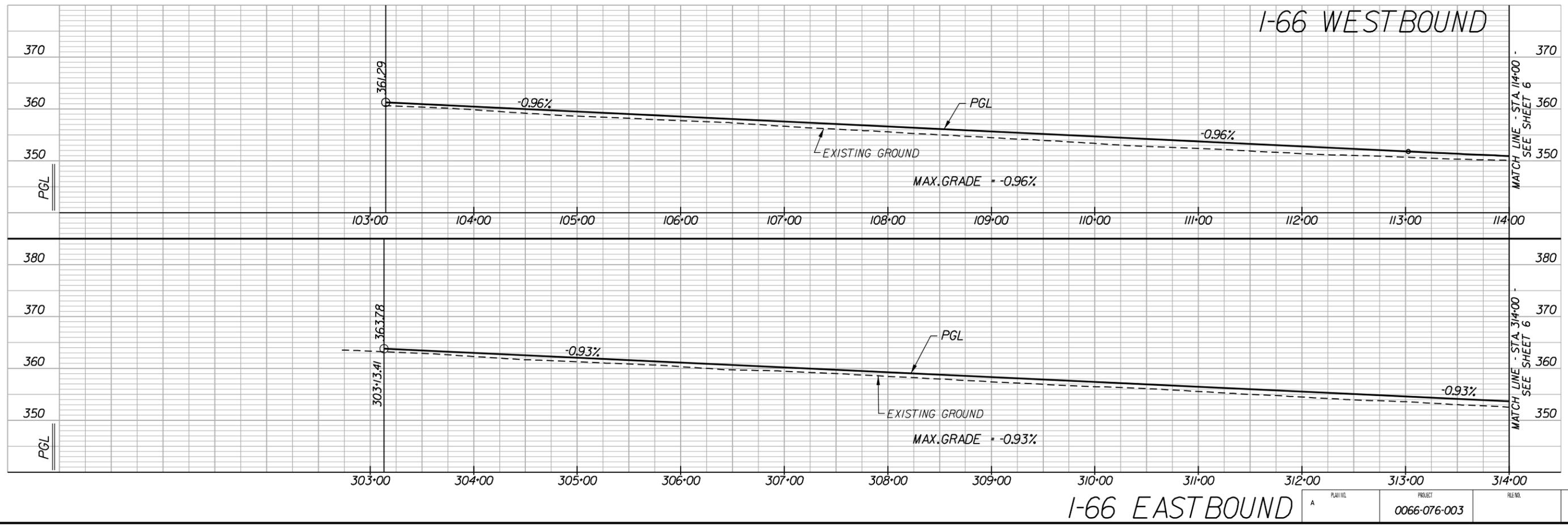
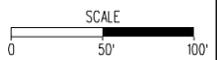
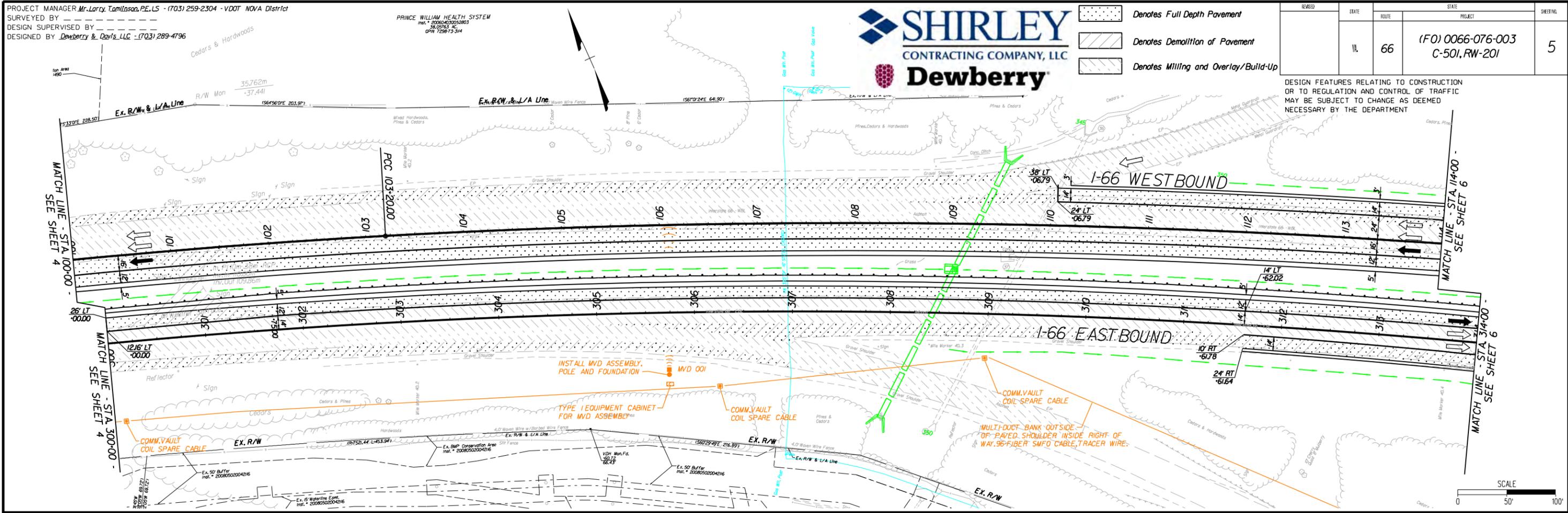
PRINCE WILLIAM HEALTH SYSTEM
 INC. # 20060403052883
 34 02963 AC
 674 728913.314



- Denotes Full Depth Pavement
- Denotes Demolition of Pavement
- Denotes Milling and Overlay/Build-Up

REVISION	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA	66		(F0) 0066-076-003 C-501, RW-201	5

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



PLANNING	PROJECT	FILE NO.	SHEET NO.
	0066-076-003		5

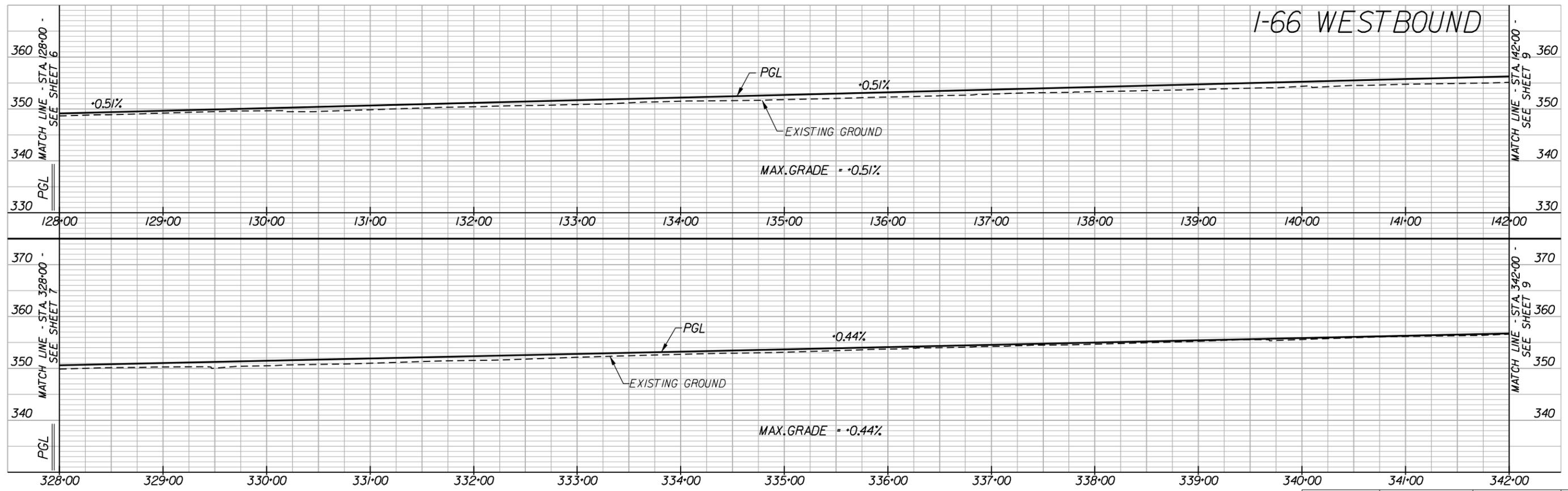
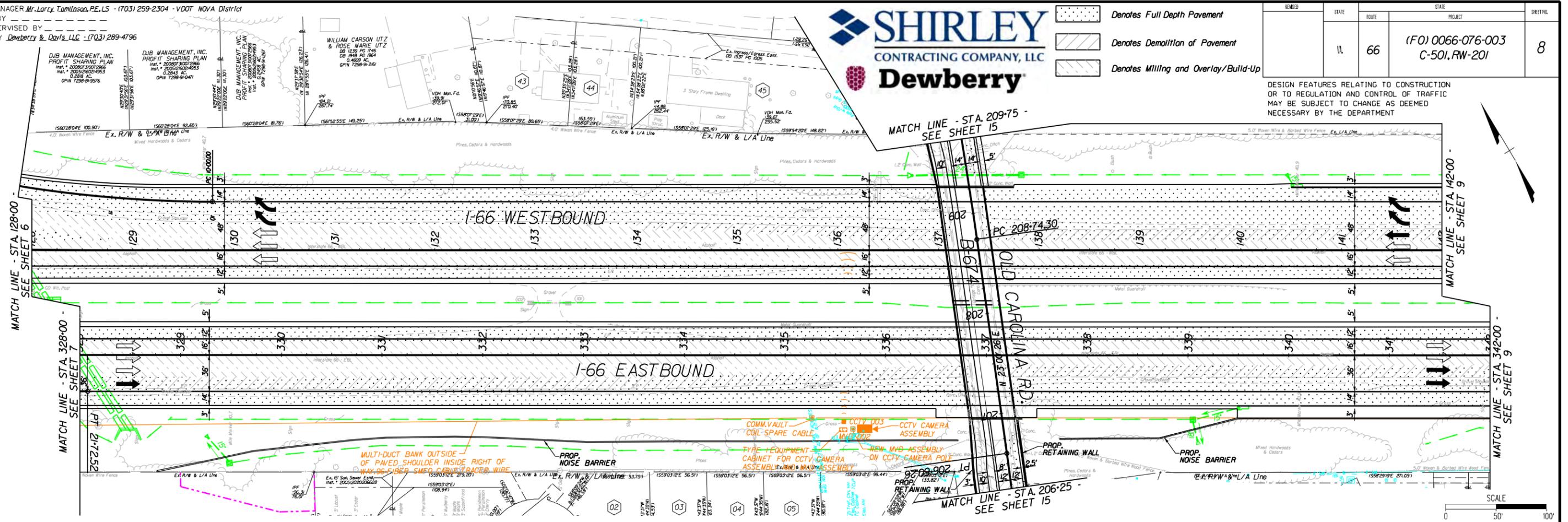
PROJECT MANAGER Mr. Larry Tomlinson, PE, LS - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY
 DESIGN SUPERVISED BY
 DESIGNED BY Dewberry & Davis, LLC - (703) 289-4796



- Denotes Full Depth Pavement
- Denotes Demolition of Pavement
- Denotes Milling and Overlay/Build-Up

REVISION	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA	66		(F0) 0066-076-003 C-501, RW-201	8

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



PLAT NO.	PROJECT	FILE NO.	SHEET NO.
A	0066-076-003		8

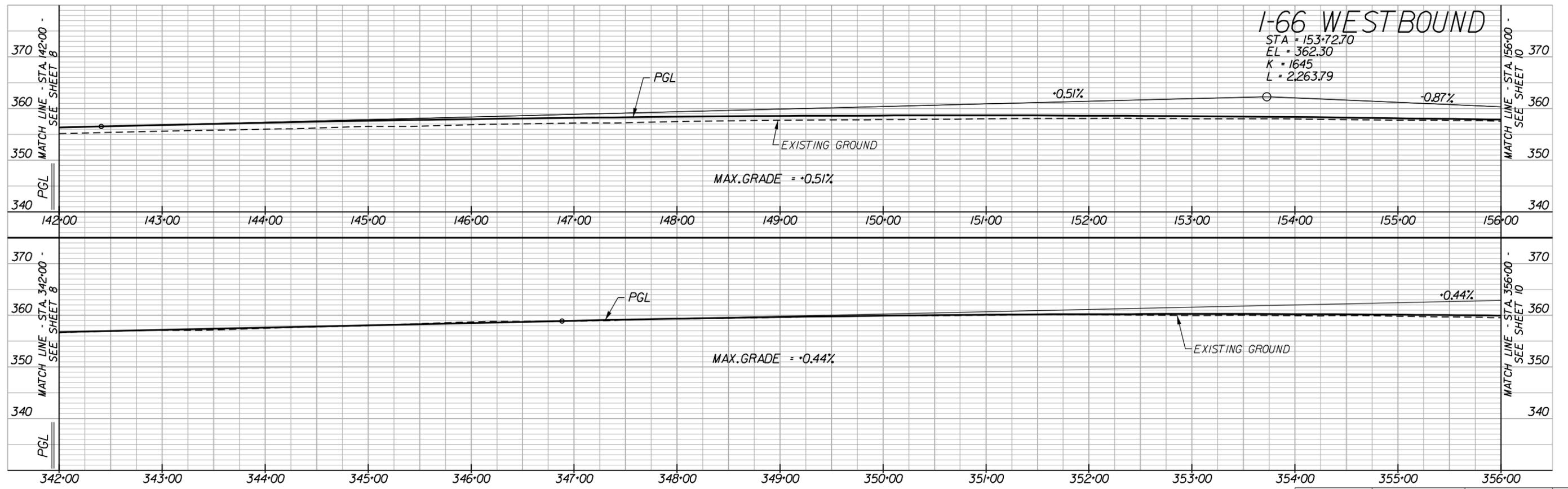
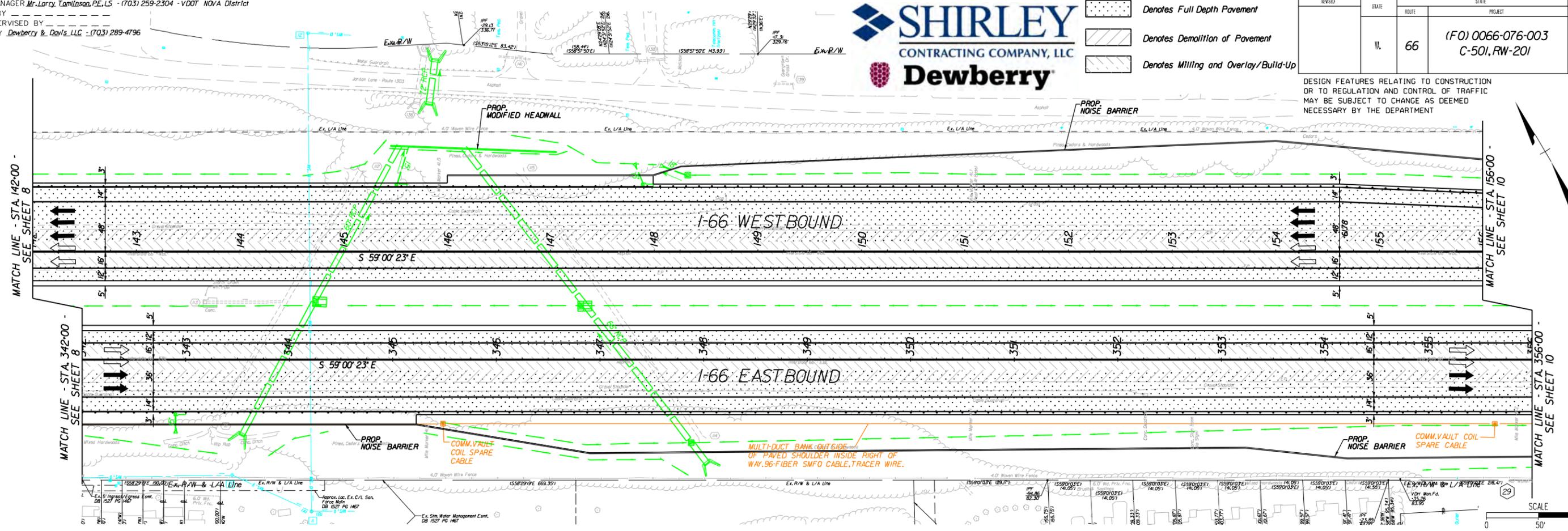
PROJECT MANAGER: Mr. Larry Tomlinson, PE, LS - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY:
 DESIGN SUPERVISED BY:
 DESIGNED BY: Dewberry & Davis, LLC - (703) 289-4796



- Denotes Full Depth Pavement
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REVISION	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA	66		(F0) 0066-076-003 C-501, RW-201	9

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



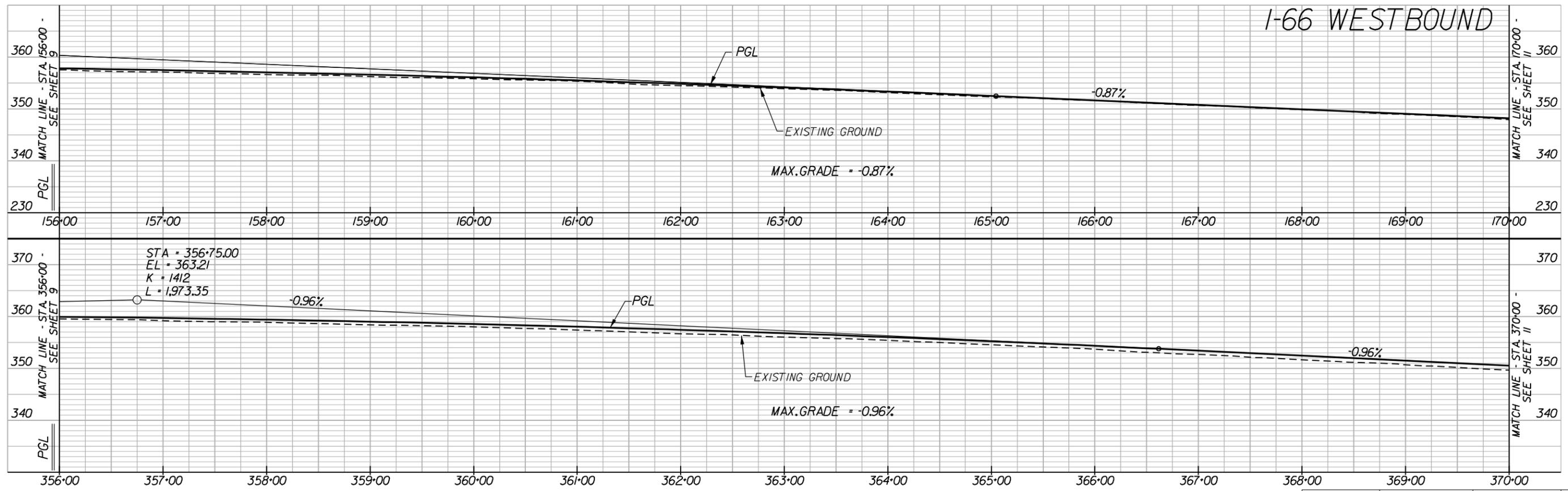
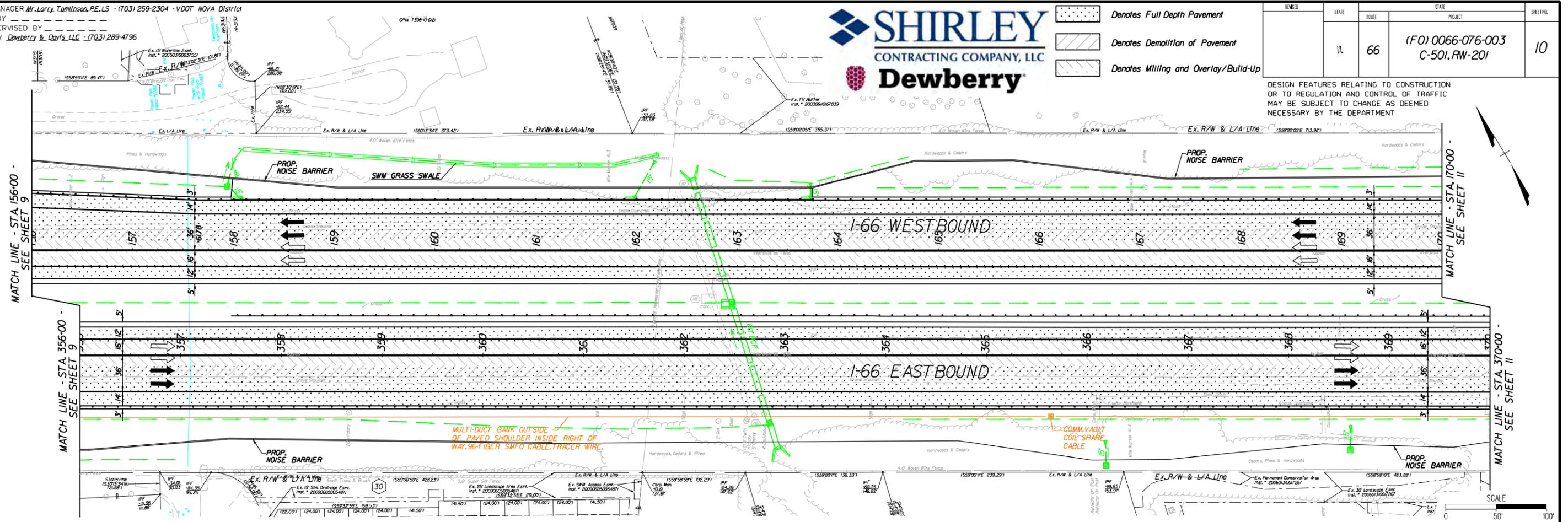
PROJECT MANAGER *Mr. Larry Tomlinson, P.E., LS - (703) 259-2304 - VDOT NOVA District*
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY *Dewberry & Davis, LLC - (703) 289-4796*



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- Denotes Demolition of Pavement
- Denotes Milling and Overlay/Build-Up

REVISION	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA	66		(F0) 0066-076-003 C-501, RW-201	10

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



PLAT NO.	PROJECT	FILE NO.	SHEET NO.
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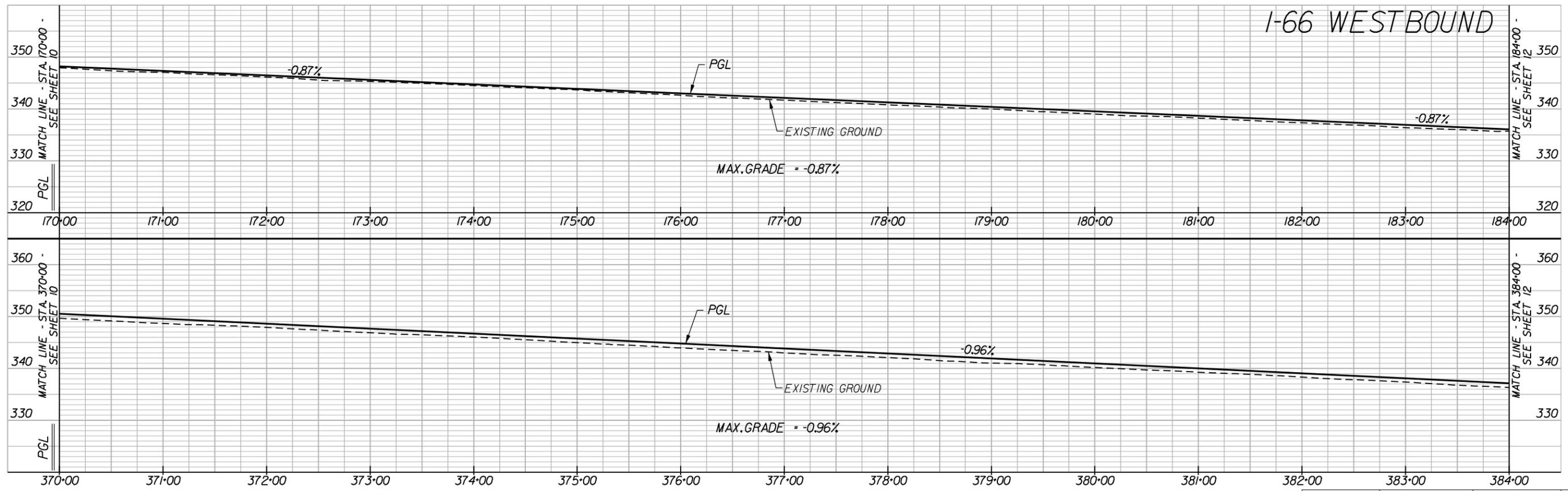
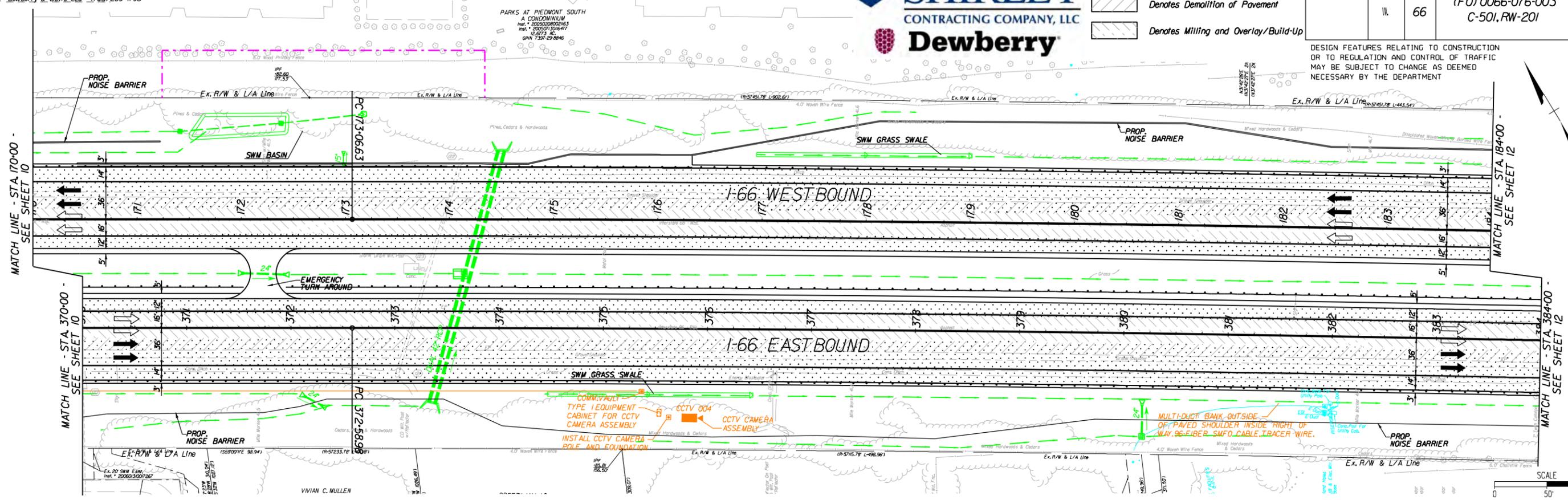
PROJECT MANAGER Mr. Larry Tomlinson, PE, LS - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY
 DESIGN SUPERVISED BY
 DESIGNED BY Dewberry & Davis, LLC - (703) 289-4796



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REVISION	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA	66		(F0) 0066-076-003 C-501, RW-201	11

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



PLANT NO.	PROJECT	FILE NO.	SHEET NO.
A	0066-076-003		11

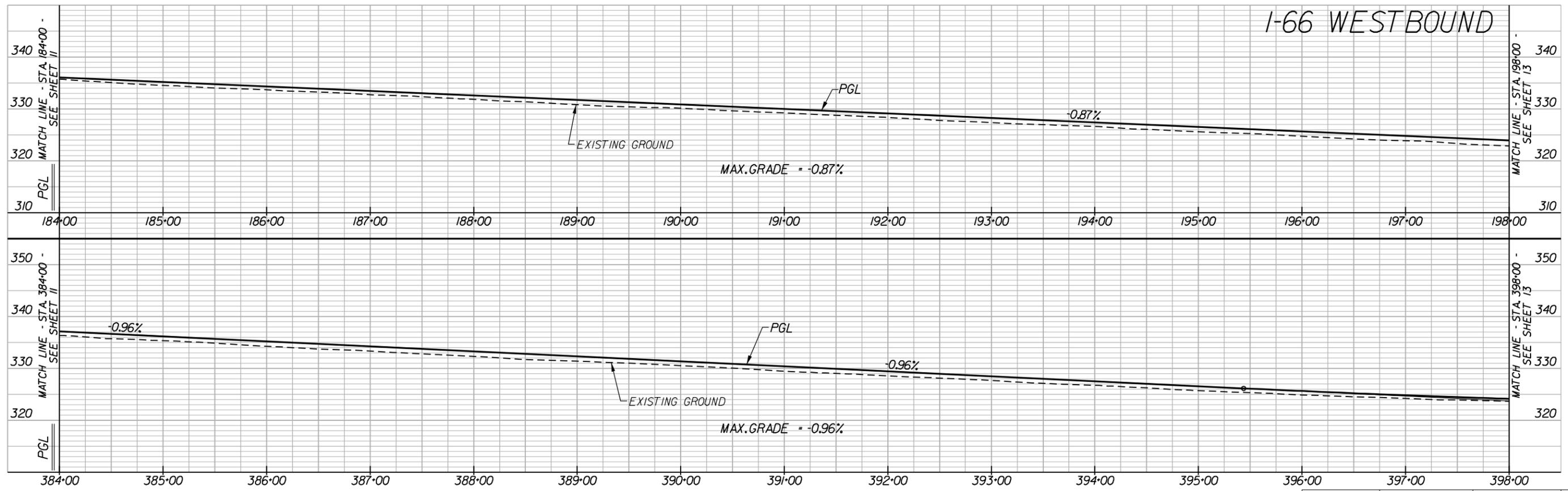
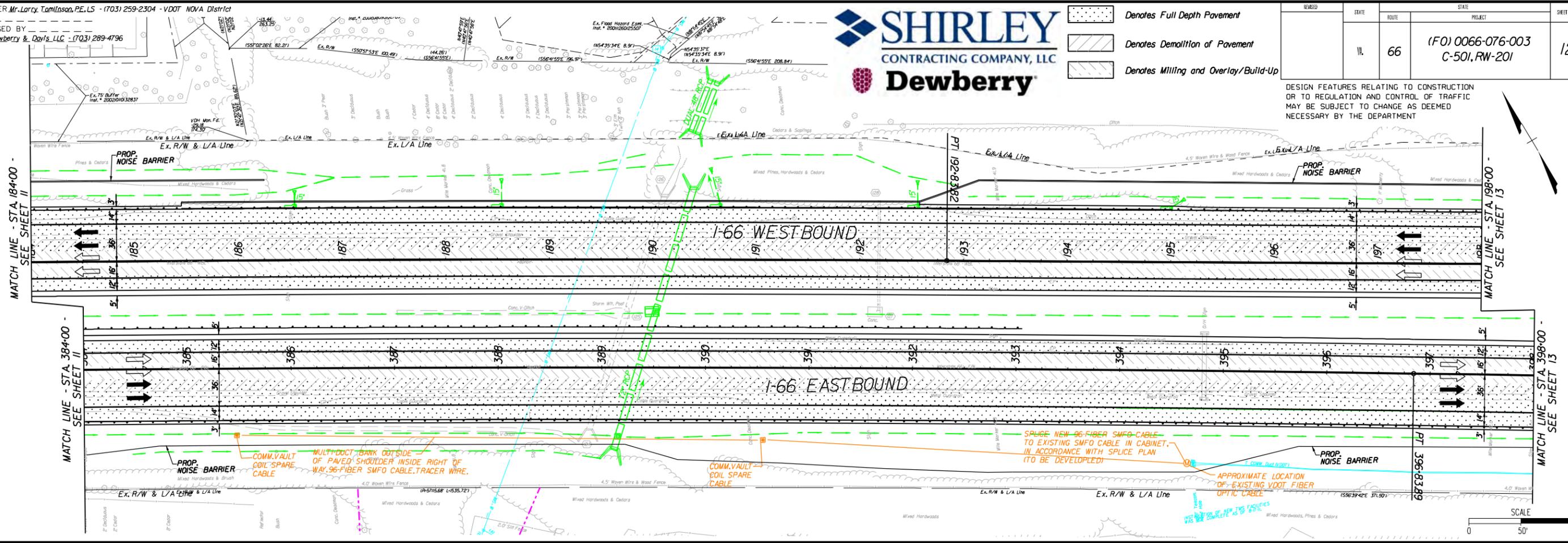
PROJECT MANAGER Mr. Larry Tomlinson, PE, LS - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY
 DESIGN SUPERVISED BY
 DESIGNED BY Dewberry & Davis, LLC - (703) 289-4796



- Denotes Full Depth Pavement
- Denotes Demolition of Pavement
- Denotes Milling and Overlay/Build-Up

REVISION	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA	66		(F0) 0066-076-003 C-501, RW-201	12

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



PLANNING	PROJECT	FILE NO.	SHEET NO.
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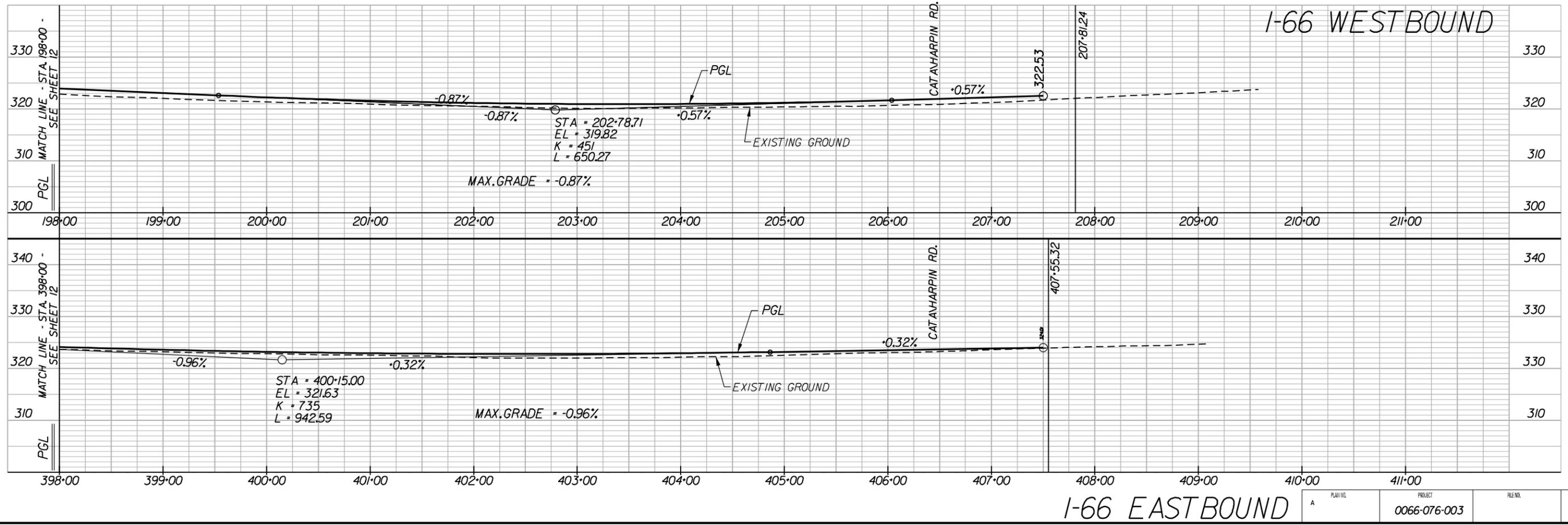
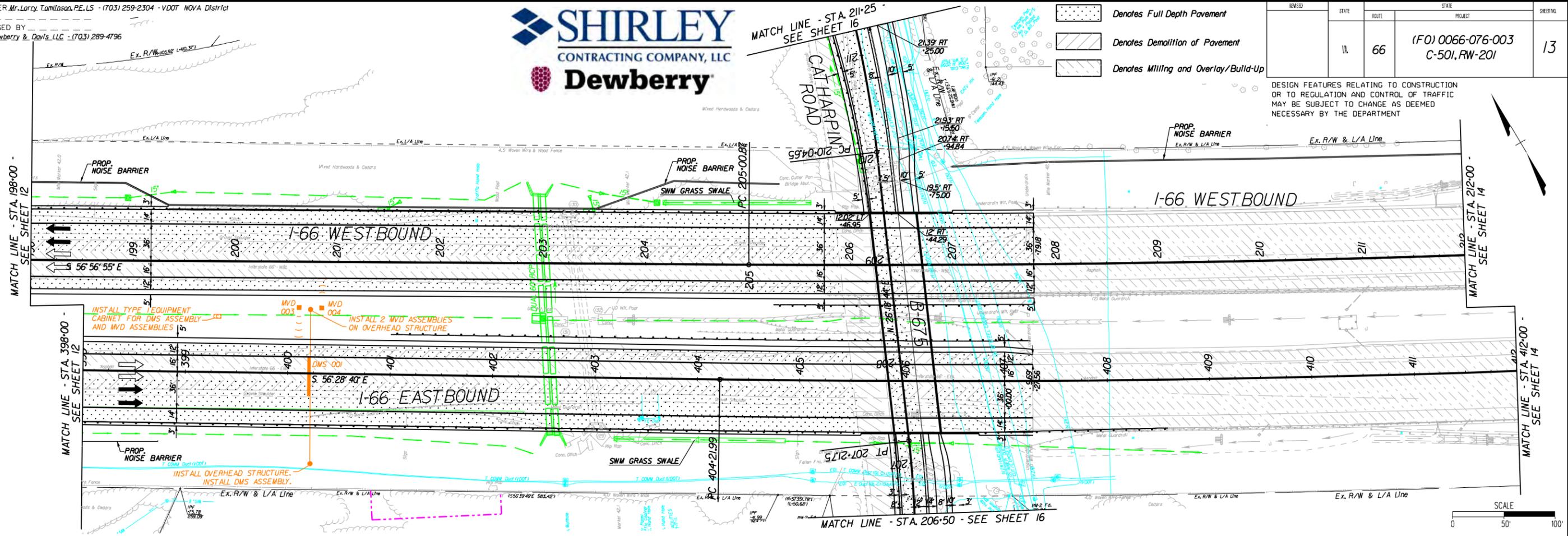
PROJECT MANAGER Mr. Larry Tomlinson, PE, LS - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY
 DESIGN SUPERVISED BY
 DESIGNED BY Dewberry & Davis, LLC - (703) 289-4796



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- Denotes Demolition of Pavement
- Denotes Milling and Overlay/Build-Up

REVISION	STATE	ROUTE	PROJECT	SHEET NO.
	VA	66	(FO) 0066-076-003 C-501, RW-201	13

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



PLANT NO.	PROJECT	FILE NO.	SHEET NO.
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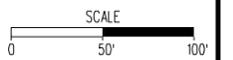
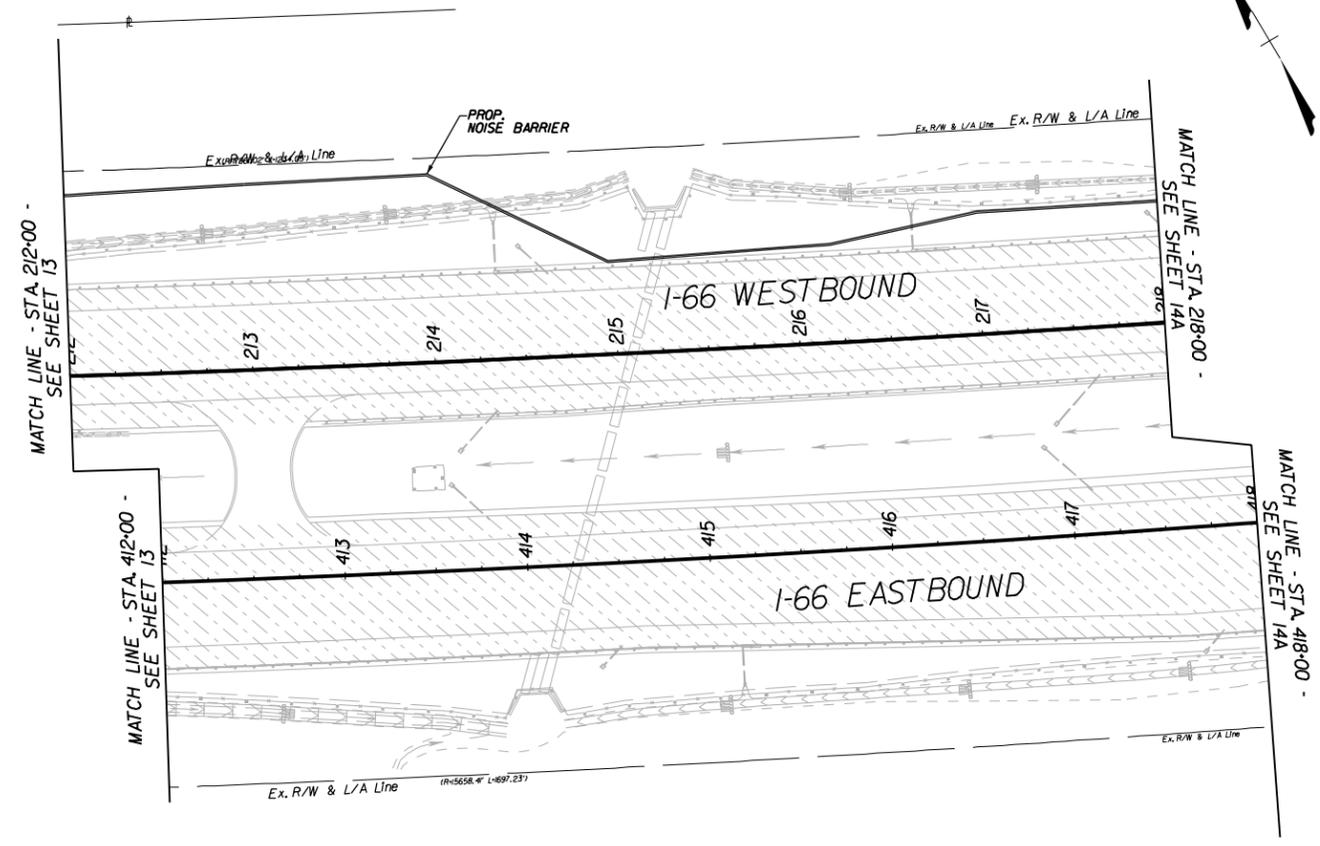
PROJECT MANAGER *Mr. Larry Tomlinson, P.E., LS* - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY *Dewberry & Davis, LLC* - (703) 289-4796



-  Denotes Full Depth Pavement
-  Denotes Demolition of Pavement
-  Denotes Milling and Overlay/Build-Up

REVISION	STATE	ROUTE	PROJECT	SHEET NO.
	VA	66	(FO) 0066-076-003 C-501, RW-201	14

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



PLAT NO.	PROJECT	FILE NO.	SHEET NO.
A	0066-076-003		14

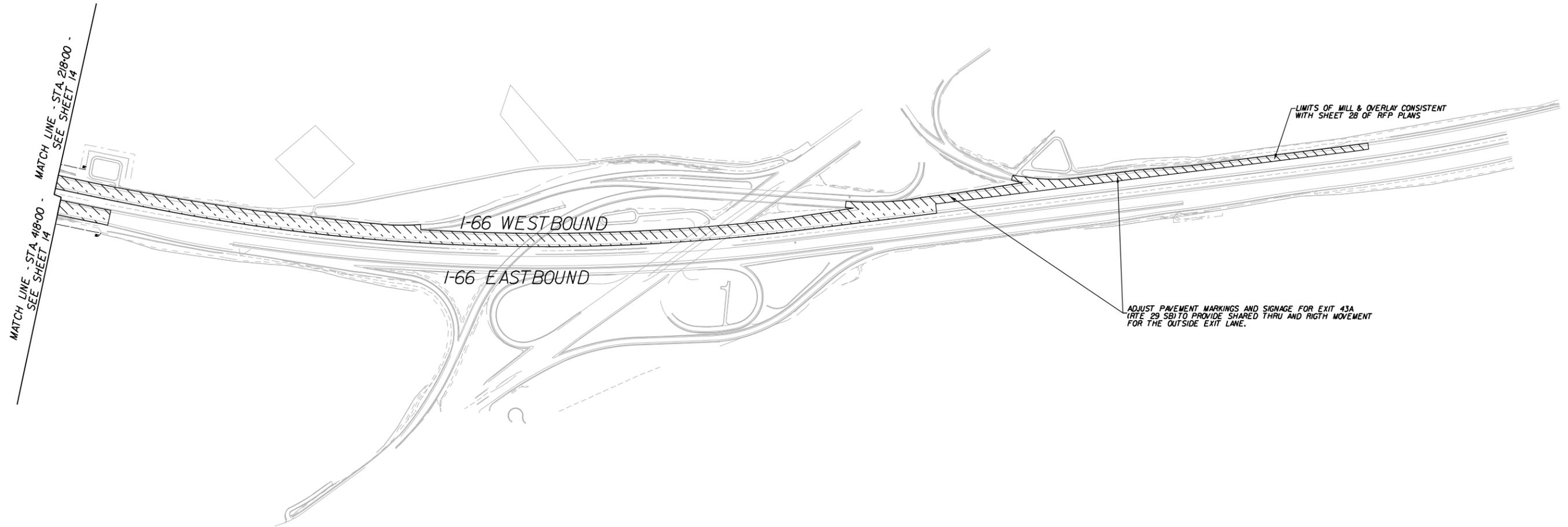
PROJECT MANAGER *Mr. Larry Tomlinson, P.E., LS* - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY _____
 DESIGN SUPERVISED BY _____
 DESIGNED BY *Dewberry & Davis, LLC* - (703) 289-4796



-  Denotes Full Depth Pavement
-  Denotes Demolition of Pavement
-  Denotes Milling and Overlay/Build-Up

REVISION	STATE	ROUTE	PROJECT	SHEET NO.
	VA	66	(FO) 0066-076-003 C-501, RW-201	14A

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



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	0066-076-003		14A

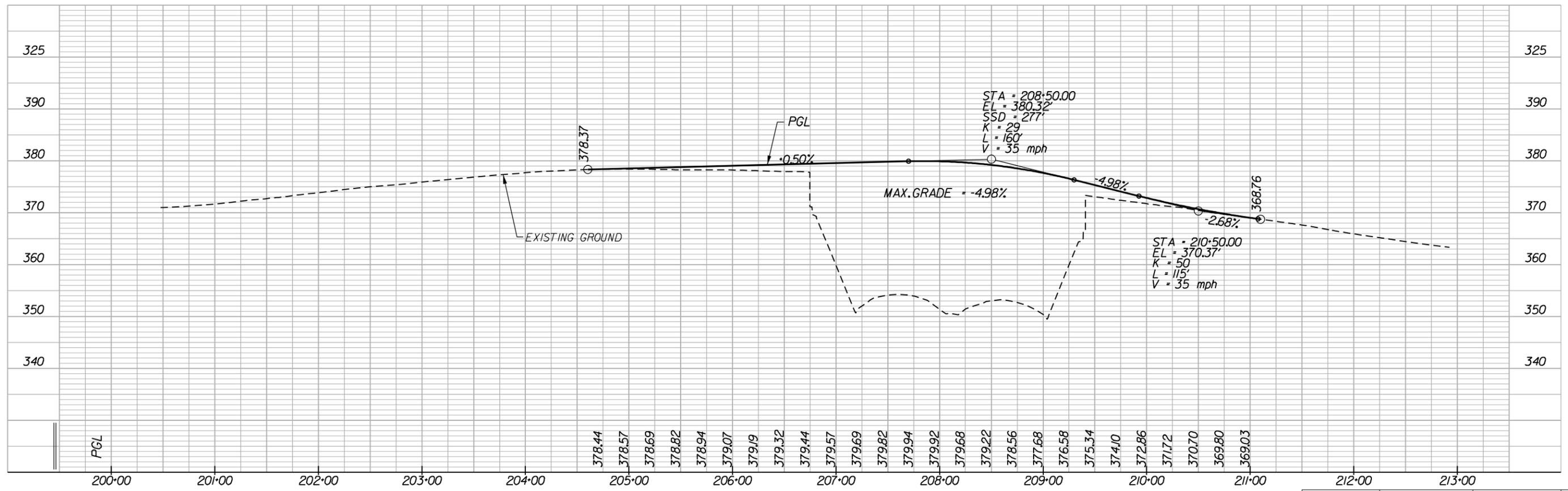
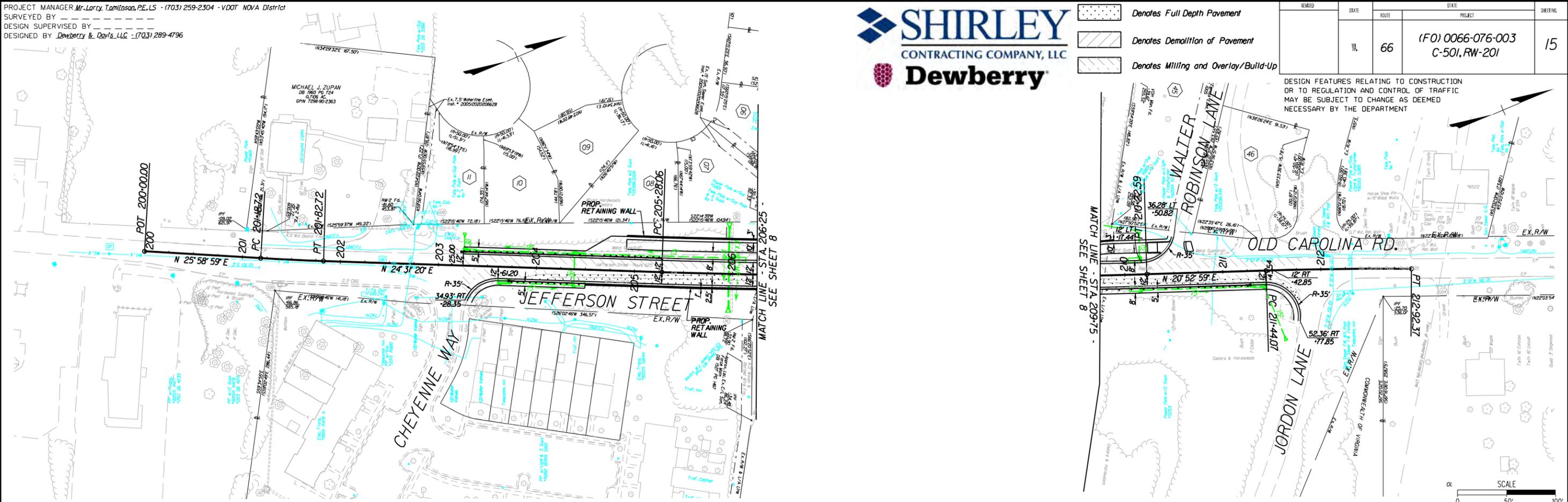
PROJECT MANAGER Mr. Larry Tomlinson, PE, LS - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY
 DESIGN SUPERVISED BY
 DESIGNED BY Dewberry & Davis, LLC - (703) 289-4796



- Denotes Full Depth Pavement
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REVISION	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA	66	(F0) 0066-076-003 C-501, RW-201	15

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



JEFFERSON STREET / OLD CAROLINA ROAD

PLAT NO.	PROJECT	FILE NO.	SHEET NO.
A	0066-076-003		15

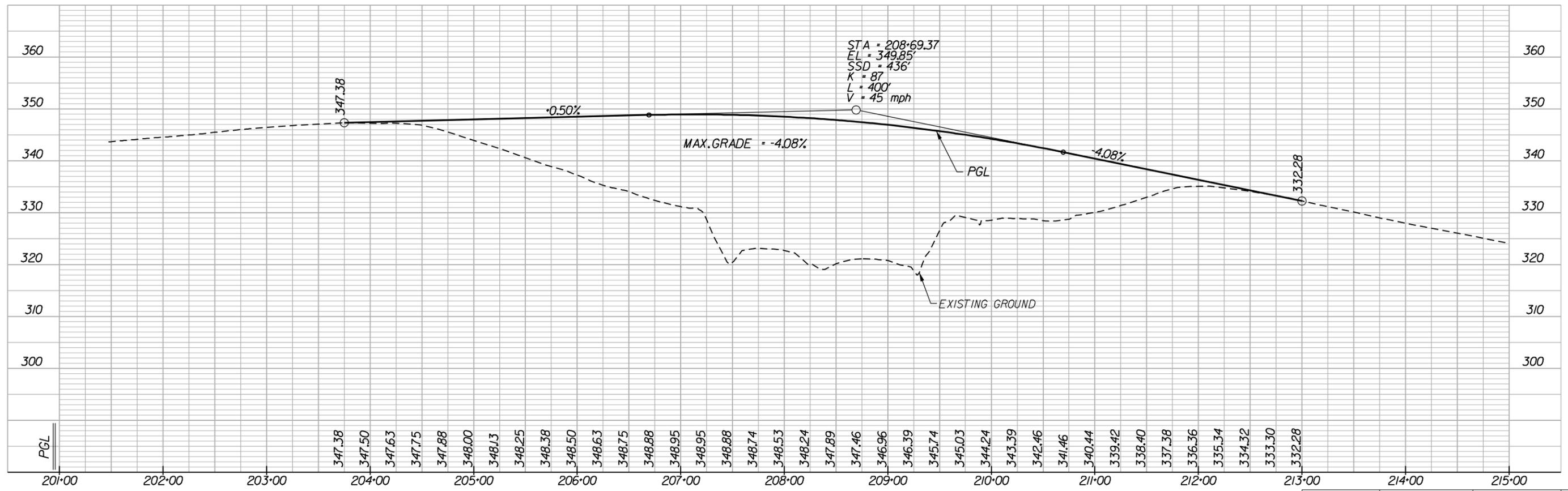
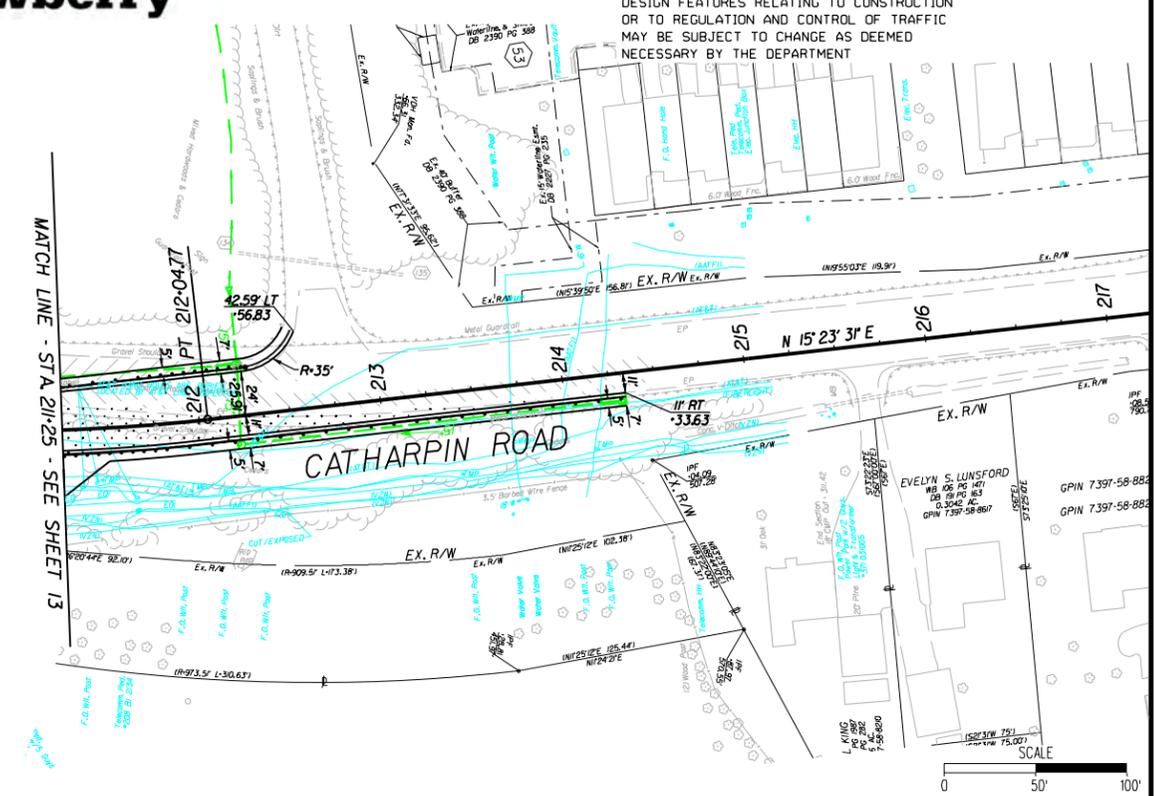
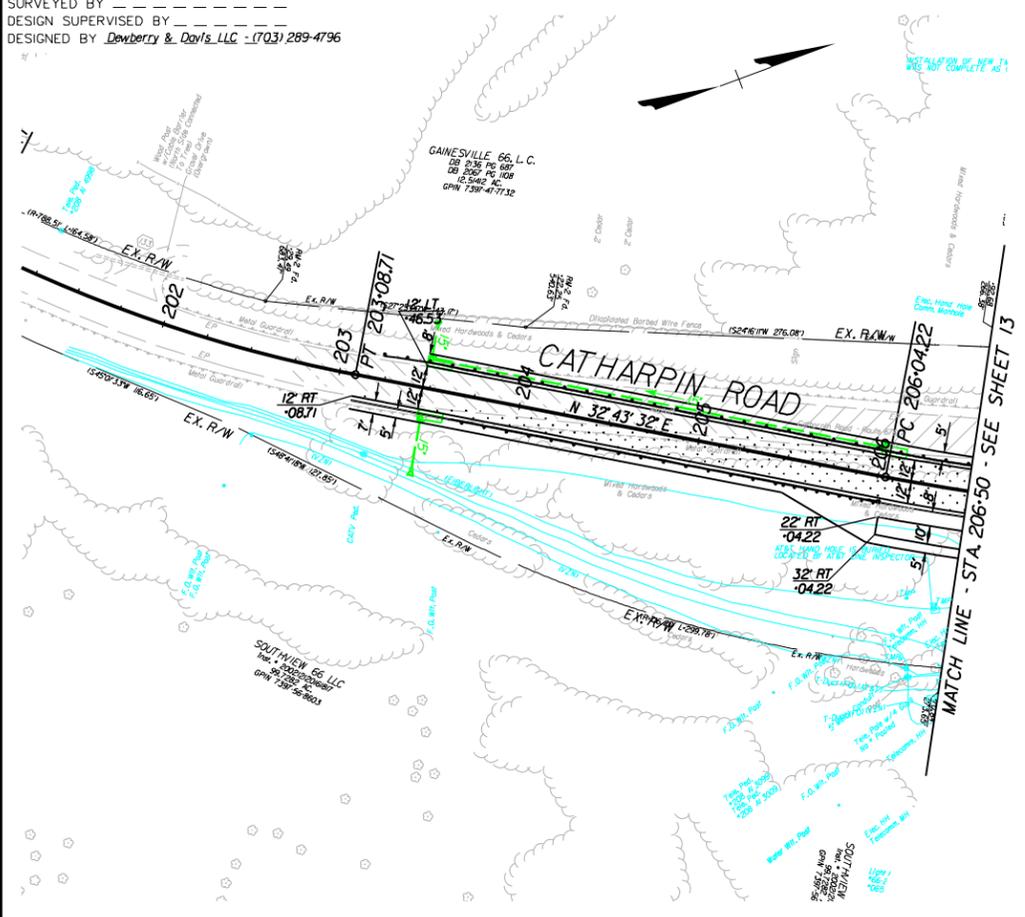
PROJECT MANAGER Mr. Larry Tomlinson, PE, LS - (703) 259-2304 - VDOT NOVA District
 SURVEYED BY
 DESIGN SUPERVISED BY
 DESIGNED BY Dewberry & Davis, LLC - (703) 289-4796



- Denotes Full Depth Pavement
- Denotes Demolition of Pavement
- Denotes Milling and Overlay/Build-Up

REVISION	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA	66	(F0) 0066-076-003 C-501, RW-201	16

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



CATHARPIN ROAD		PLAT NO. A	PROJECT 0066-076-003	FILE NO.	SHEET NO. 16
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STATE	FEDERAL AID	STATE	SHEET NO.
VA.	PROJECT	ROUTE	PROJECT
	NH-5A01(194)	625	0066-076-003, B674
NBIS Number:	00000000014318	UPC No.	93577
Federal Oversight Code:	F0	FHWA Construction and Scour Code:	X281-SN

DESIGN EXCEPTION(S):

None.

GENERAL NOTES:

Width: 44'-6" face-to-face of rails.

Span layout: 122'-1/4" - 122'-2" prestressed concrete 69" deep bulb-T beam continuous for live load.

Capacity: HL-93 loading.

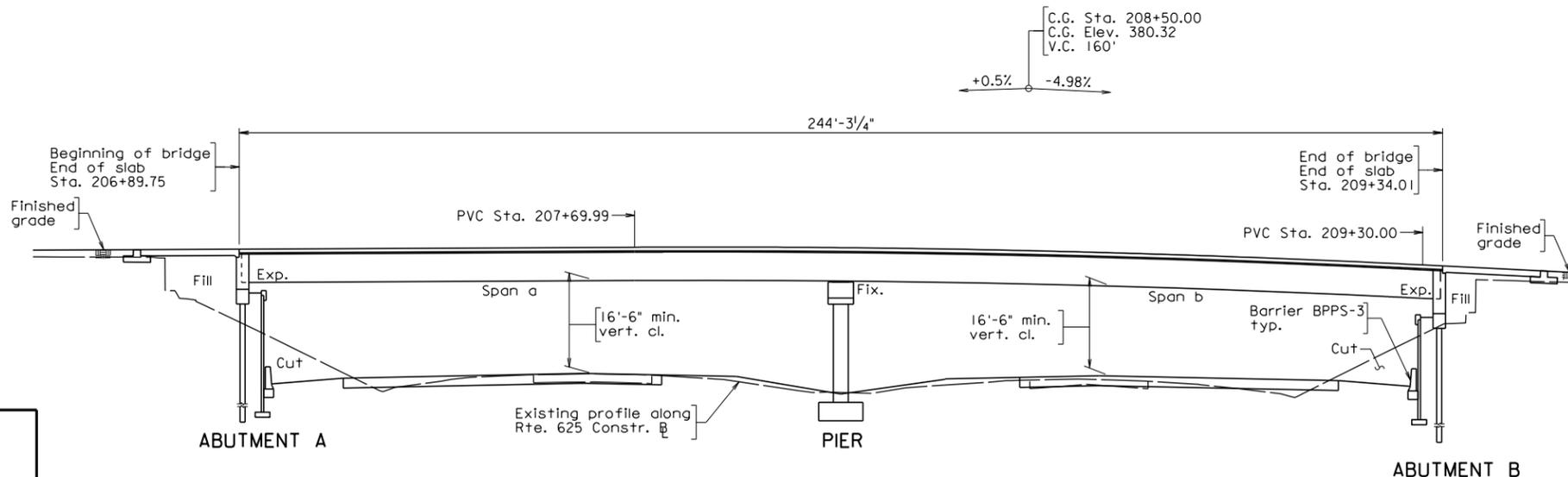
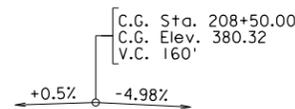
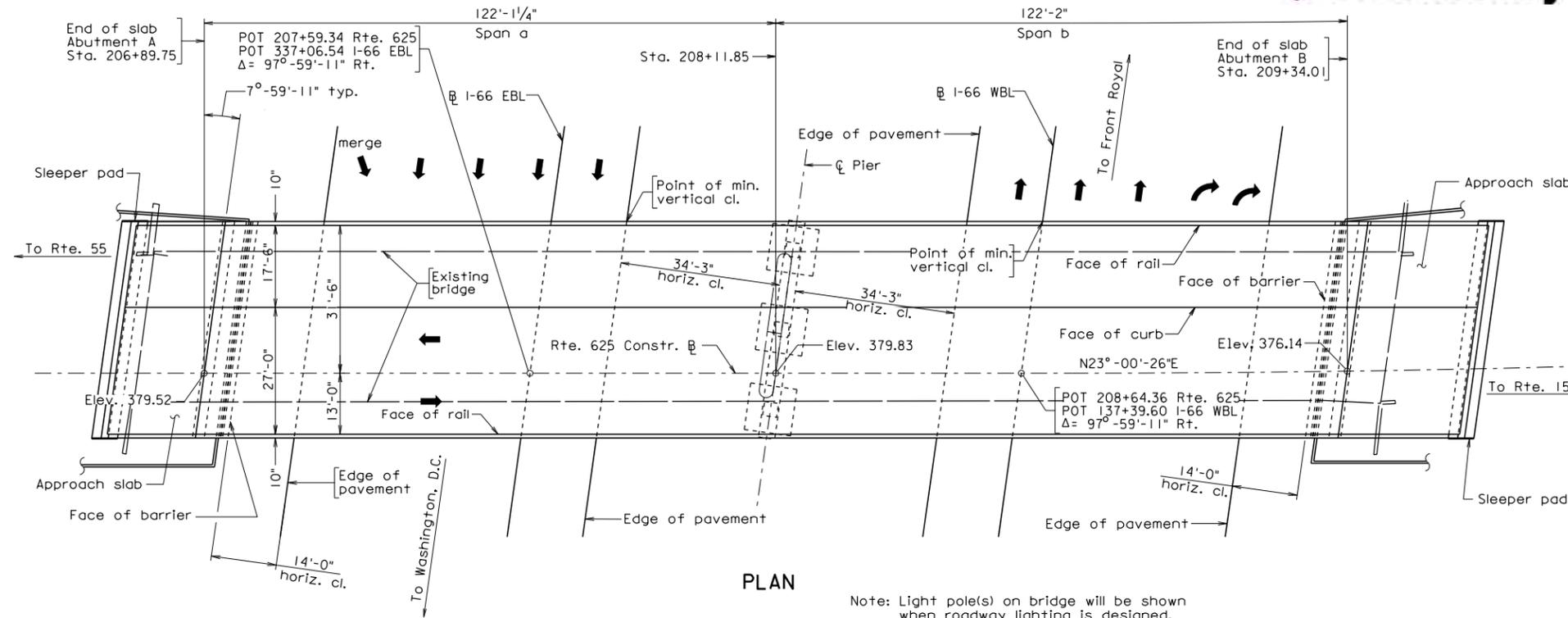
Specifications:

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

Design: AASHTO LRFD Bridge Design Specifications, 5th Edition, 2010; 2010 Interim Specifications; and VDOT Modifications.

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

The existing structure is designated a Type B Structure in accordance with Section 411 of the Specifications.



CONCEPTUAL PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION



COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE ON
RTE. 625 (OLD CAROLINA ROAD)
OVER INTERSTATE 66
PRINCE WILLIAM CO. - 0.1 MI. E. OF RTE. 15
PROJ. 0066-076-003, B674

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

Approved: _____ Date _____
Chief Engineer

Date: May 09, 2012 © 2013, Commonwealth of Virginia Sheet 1 of 3

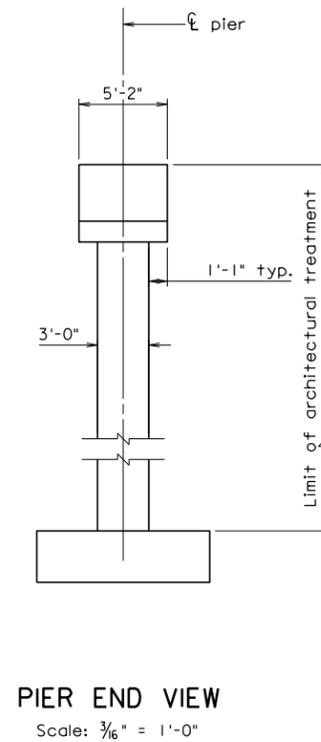
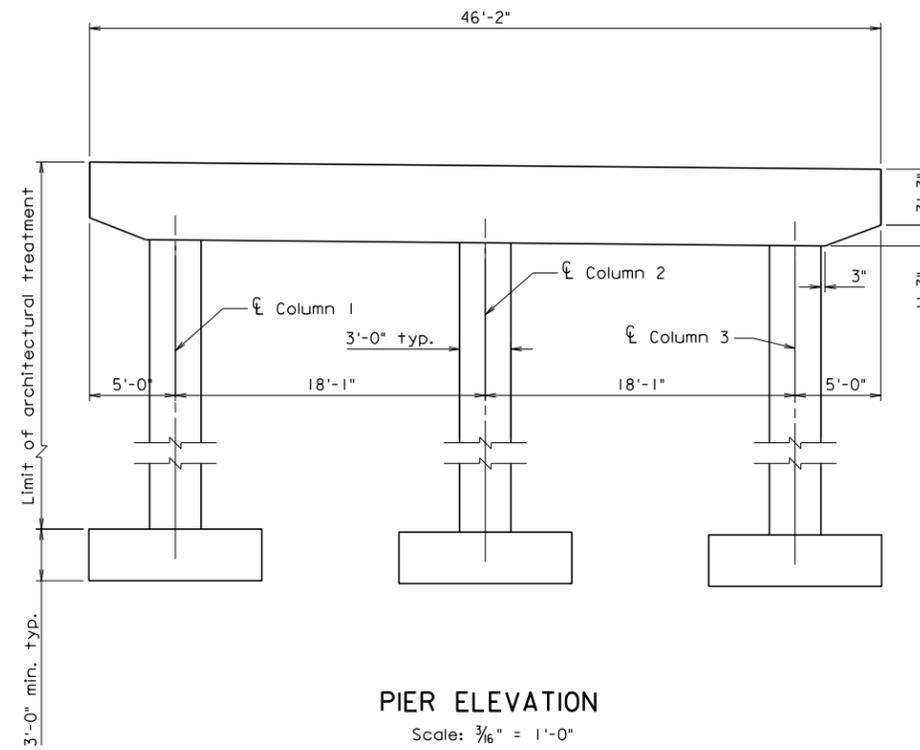
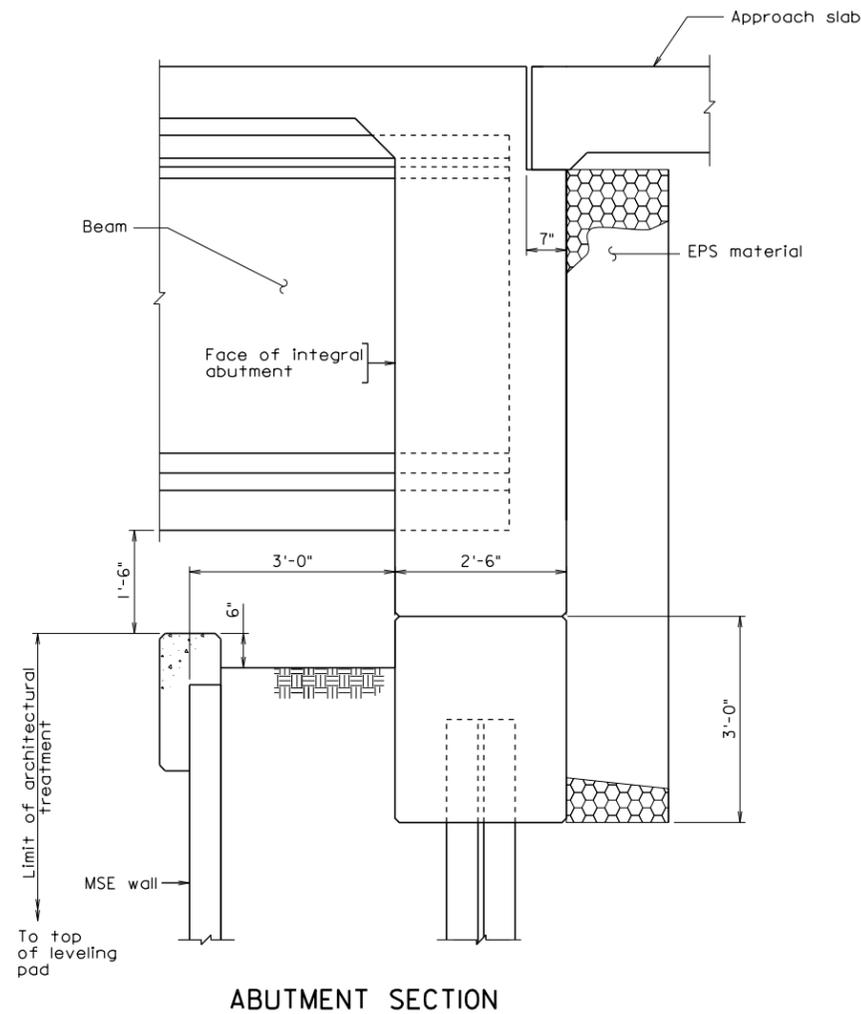
Plan and section.dgn

VDOT S&B DIVISION RICHMOND, VA STRUCTURAL ENGINEER	
PLANS BY:	Consultant
COORDINATED:	Amir Salahshoor
SUPERVISED:	Frederick D. White
DESIGNED:	Brian C. Graham
DRAWN:	Conrad R. Gagnon Jr.
CHECKED:	Frederick D. White

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

Scale: 1/16" = 1'-0"

STATE	FEDERAL AID	STATE	SHEET NO.
ROUTE	PROJECT	ROUTE	PROJECT
VA.	NH-5A01(194)	625	0066-076-003, B674
			3



PIER ELEVATION
Scale: 3/16" = 1'-0"

PIER END VIEW
Scale: 3/16" = 1'-0"

Substructure Detail.dgn

CONCEPTUAL PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

Scale: 3/4" = 1'-0" unless noted otherwise

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COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
SUBSTRUCTURE DETAILS			
No.	Description	Date	Designed: [Signature]
			Drawn: [Signature]
			Checked: [Signature]
Revisions		Date	Plan No. 292-03
			Sheet No. 3 of 3



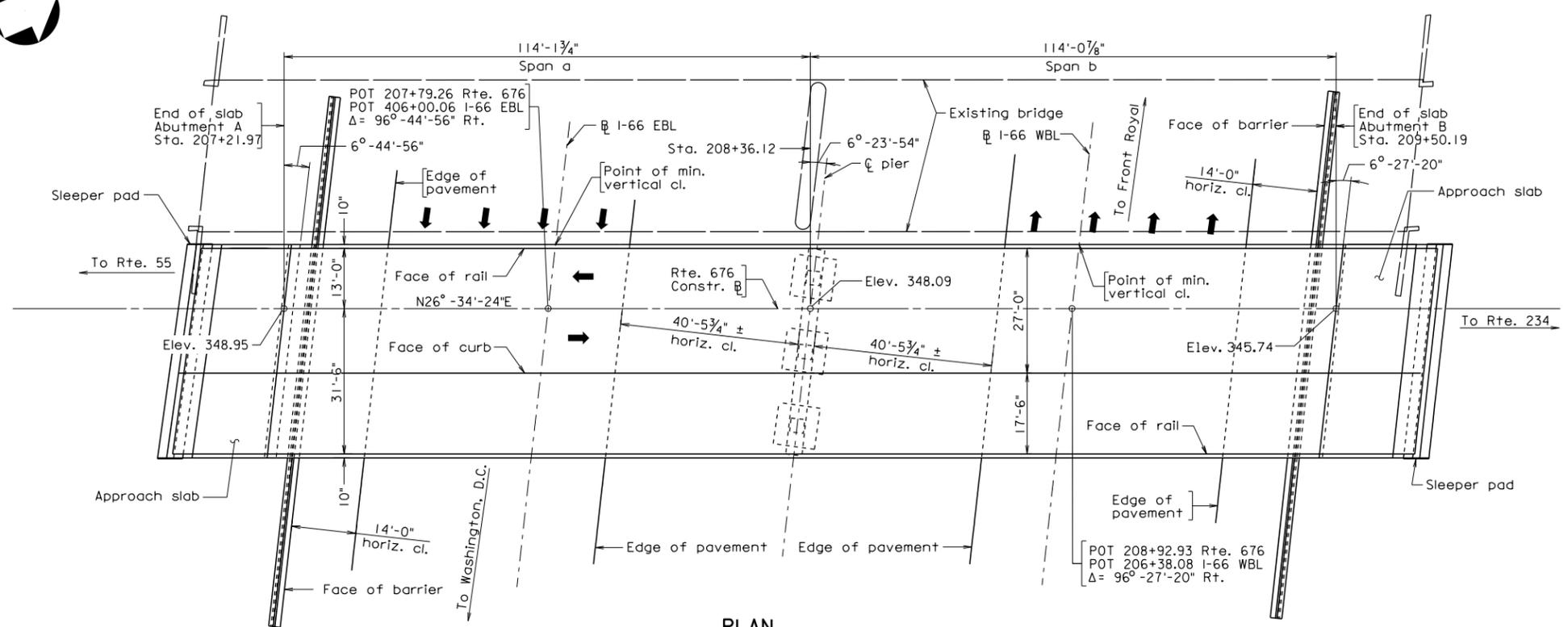
STATE	FEDERAL AID	STATE	SHEET NO.
VA.	PROJECT	ROUTE	PROJECT
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NBIS Number:	00000000014363	UPC No.	93577
Federal Oversight Code:	F0	FHWA Construction and Scour Code:	X281-SN

DESIGN EXCEPTION(S):

None.

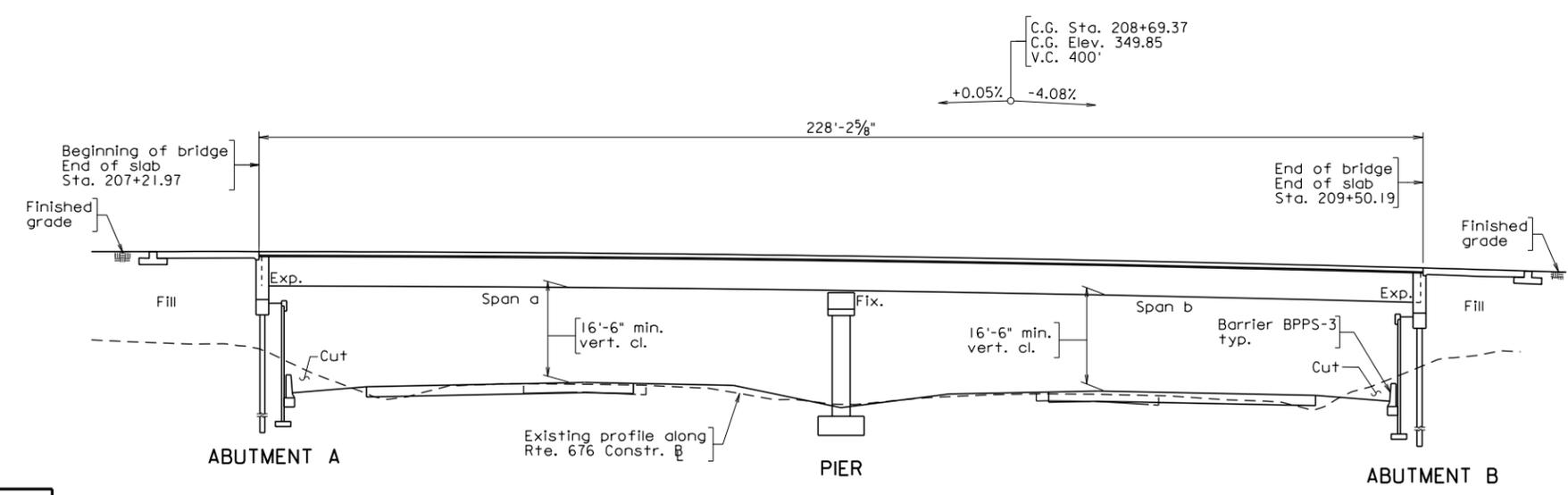
GENERAL NOTES:

- Width: 44'-6" face-to-face of rails.
- Span layout: 114'-1 3/4" - 114'-0 7/8" prestressed concrete 69" deep bulb-T beam continuous for live load.
- Capacity: HL-93 loading.
- Specifications:
 - Construction: Virginia Department of Transportation Road and Bridge Specifications, 2007.
 - Design: AASHTO LRFD Bridge Design Specifications, 5th Edition, 2010; 2010 Interim Specifications; and VDOT Modifications.
- These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.
- The existing structure is designated a Type B Structure in accordance with Section 411 of the Specifications.



PLAN

Note: Light pole(s) on bridge will be shown when roadway lighting is designed.



DEVELOPED SECTION ALONG RTE. 676 CONSTR. B

VDOT
 COMMONWEALTH OF VIRGINIA
 DEPARTMENT OF TRANSPORTATION
 PROPOSED BRIDGE ON
 RTE. 676 (CATHARPIN ROAD)
 OVER INTERSTATE 66
 PRINCE WILLIAM CO. - 0.8 MI. E. OF RTE. 15
 PROJ. 0066-076-003, B675

CONCEPTUAL PLANS
 THESE PLANS NOT TO BE USED FOR CONSTRUCTION

VDOT S&B DIVISION RICHMOND, VA STRUCTURAL ENGINEER	
PLANS BY:	Consultant
COORDINATED:	Amir Salahshoor
SUPERVISED:	Frederick D. White
DESIGNED:	Brian C. Graham
DRAWN:	Conrad R. Gagnon Jr.
CHECKED:	Frederick D. White

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

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

Approved: _____ Date _____
 Chief Engineer

Scale: 1/16" = 1'-0"

Date: May 09, 2013
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 Sheet 1 of 3

