

RESPONSE TO REQUEST FOR PROPOSALS

Copy 1 of 10

I-64 ROUTE 15 (ZION CROSSROADS) INTERCHANGE IMPROVEMENT

A DESIGN-BUILD PROJECT

From: 0.30 Miles West Int. Route 15 (I-64 Eastbound & Westbound)

To: 0.35 Miles East Rout 15 (I-64 Eastbound & Westbound)

Louisa County, Virginia

Volume I: Technical Proposal



State Project No.: 0064-054-703, P101, R201, C501

Federal Project No.: IM-064-2(155)

Contract ID Number: C00086453DB48

SUBMITTED TO:



SUBMITTED BY:



IN ASSOCIATION WITH:



July 6, 2012

Mr. Ian Millikan, PE
Virginia Department of Transportation
1401 East Broad Street
Richmond, VA 23219

RE: I-64/Route 15 (Zion Crossroads) Interchange Improvement Project - From: 0.30 Miles West Int. Route 15 (I-64 Eastbound & Westbound) to: 0.35 Miles East Route 15 (I-64 Eastbound & Westbound)
Louisa County, Virginia, Contract ID Number C00086453DB48
Section 4.1 - Letter of Submittal

Dear Mr. Millikan:

Shirley Contracting Company, LLC, (Shirley) 8435 Backlick Road, Lorton, Virginia 22079, as the Offeror, is pleased to submit this Technical Proposal for the I-64/Route 15 Interchange Improvement Design-Build Project (the Project) to the Virginia Department of Transportation (VDOT). Together with Dewberry and Davis 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 and will exceed the priorities established.

Our Point of Contact will be:

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 will be:

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

Offeror's Intent: Should VDOT select Shirley for award of the I-64/Route 15 Zion Crossroads Interchange Improvement Design-Build Project, Shirley will enter into a contract with VDOT for the Project in accordance with the terms of the Request for Proposal.

Declaration: 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.

Final Completion Date: April 15, 2014

Proposal Payment Agreement: An executed Proposal Payment Agreement (Attachment 9.3.1) is included in the Appendix.

Debarment Forms: Debarment forms as set forth in Part 1, Section 11.8.6 are included in the Appendix.

On behalf of our Team, we thank the Virginia Department of Transportation 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
Shirley Contracting Company, LLC

4.2 Offeror's Qualifications

4.2.1 TRUE, ACCURATE, AND UPDATED INFORMATION OF SOQ

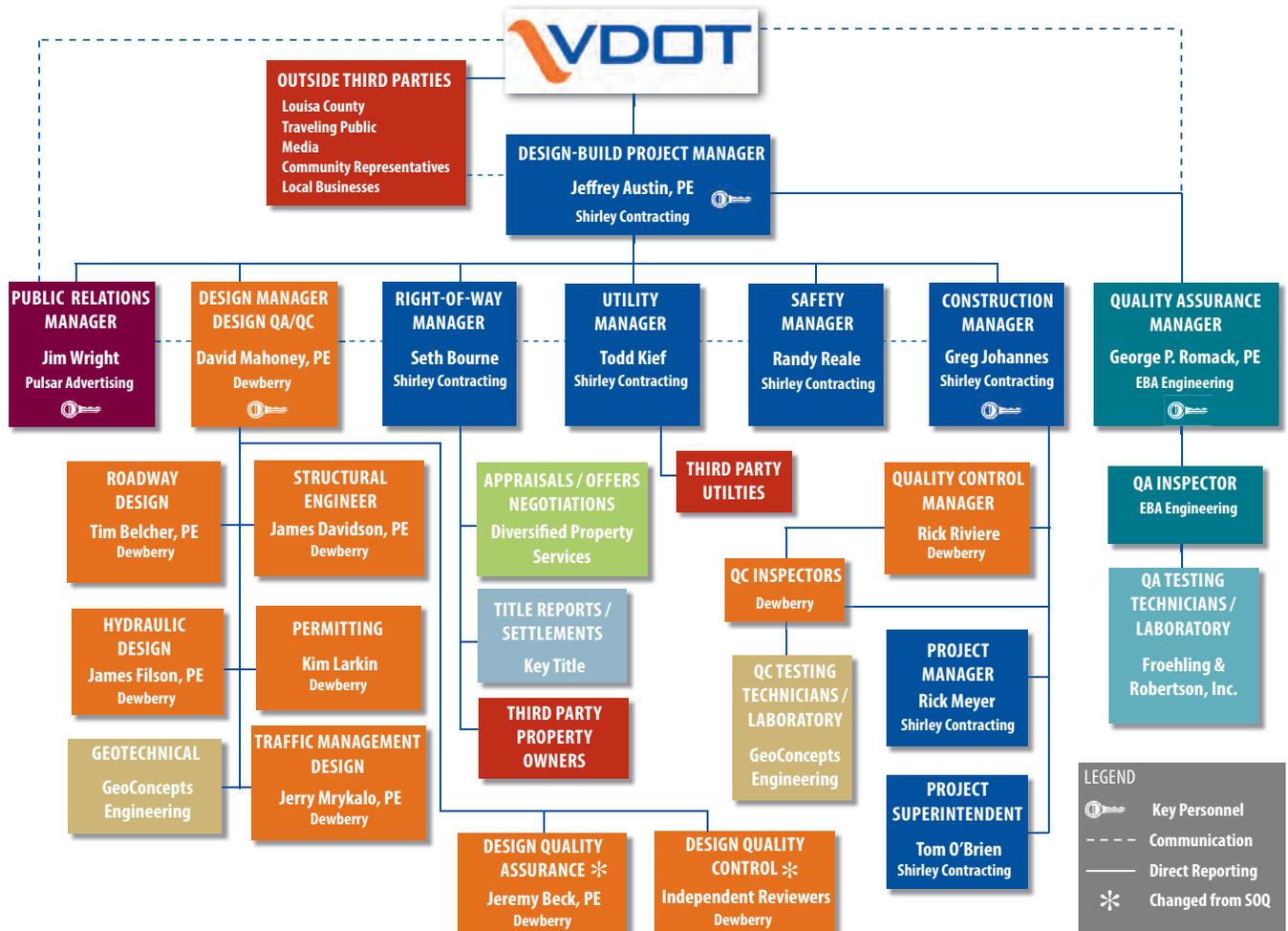
Shirley Contracting Company, LLC hereby confirms that the information submitted in Section 3.2 (Letter of Submittal) and 3.3 (Offeror's Team Structure) of the RFQ remains true and accurate.

4.2.2 ORGANIZATION CHART

The Project Organization Chart shown 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 is one change to the Organization Chart at this time. We have added positions for Design Quality Assurance and Design Quality Control. This change is required as at the time of the submission of our response to the Request for Qualifications, VDOT had not finalized its changes to the Minimum Requirements for Quality Assurance and Quality Control for Design-Build and P3 Projects Manual. As a result of the changes to the manual, we added the two required positions and are in full compliance with the revisions to the manual. The position descriptions and their reporting relationships are included below. Otherwise, there have been no changes to the Organization Chart so a revised narrative is not applicable.

Design QA (Jeremy Beck, PE): Mr. Jeremy Beck, PE will report directly to the Design Manager to lead the Design QA efforts and will not be involved in the design production or QC efforts for the project. Following completion of the Design QC reviews and prior to submission to the Department, Mr. Beck will complete a QA review of each design document.

Design QC: For each design discipline the Design Manager will assign a qualified independent QC reviewer, who is not involved in the production of the design document, to complete a detailed QC review to ensure technical accuracy and conformance with the contract requirements.



4.3 Design Concept

4.3.1 CONCEPTUAL ROADWAY PLANS

Our Team will design and construct the conversion of the existing I-64/US Route 15 interchange into a Diverging Diamond Interchange (DDI) and extend improvements to the Crossing Pointe commercial center to the west and Spring Creek Parkway/Camp Creek Parkway to the east as shown in the RFP. **Our concept meets the design criteria table requirements provided in Attachment 2.3 of the RFP for all roadways and ramps.** The general geometry including number and widths of lanes, shoulders, and pedestrian facilities, horizontal alignment information, vertical grades for all roadways, typical sections for all roadways, and conceptual hydraulic layout are provided in Volume II of this submission. The following is a list of the various roadways to be improved and our Team's design concept to solve the challenges associated with each one:

- US Route 15 (James Madison Highway) is a Rural Minor Arterial, GS-2 roadway with a 50 mph design speed outside of the I-64 ramps and an Urban Low Speed, GS-6 roadway with a 30 mph design speed in between the I-64 ramps. The four-lane existing section will be modified to four lanes that are a minimum of 15' wide to make the DDI transitions. The travel lanes will be a minimum of 12' wide everywhere else. Our Team has adjusted the profile of Route 15 to only require overlay of the existing travel lanes, which will reduce the impact to traffic during construction and reduce overall project costs. There are no existing pedestrian facilities, but this project will maintain a minimum 8' paved shoulder on either the left or right side to allow for any pedestrian movements. Due to the proximity of the Crossing Pointe and Spring Creek/Camp Creek intersections, Route 15 will be widened into the existing median to provide channelized left turn lanes to these intersections. Access to the VDOT Louisa Residency will be maintained at all times. The proposed profile will meet 50 mph and 30 mph design criteria, and the steepest vertical grade proposed is 1.73% and 2.76% respectively, well less than the 5% maximum identified in AASHTO for 50 mph Rural Arterials (2004, page 446, Exhibit 7-2, Rolling Terrain) and well less than the 9% maximum identified in AASHTO for 30 mph Urban Arterials (2004, page 472, Exhibit 7-10, Rolling Terrain).
- The I-64 ramps to and from Route 15 are GS-R with a 60 mph design speed with 16' minimum lane widths. **A major enhancement with our Team's concept is the shifting of Ramps A and C to be widened solely to the inside.** This shift was performed to maximize the use of existing pavement, reduce both the number of traffic shifts, and reduce overall project costs. Also, we are providing full-depth paved shoulders in widened areas in accordance with the RFP. Our plan includes widening off of the existing ramps and, therefore, maintains the existing vertical grade.

The roadway concept included in Volume II of this submission meets the overall project purpose to provide additional service life out of the existing diamond interchange by converting it to a DDI. Our extensive design-build experience has enabled our Team to develop a plan of design and construction that will minimize disruptions to traffic while meeting all documented environmental and stakeholder commitments which will help to increase public acceptance of this project.

Our Team's concept minimizes disruptions to traffic in several ways. First, we have slightly adjusted the vertical profile to maximize the use of existing pavement. Therefore, transitions between new and existing construction will be accomplished by mill and overlay which eliminates areas of full depth pavement reconstruction, and reduces the durations. Also, we have provided a conceptual drainage design that minimizes the number of perpendicular pipe crossings. This simplifies the maintenance of drainage during construction and provides for easier long-term maintenance of storm sewer pipes for VDOT. Finally, we have enhanced the signal layout for the RFP plans by providing mast arm locations that are outside of existing pavement. **This will allow for the ultimate mast arm poles to be built without detouring traffic or waiting until traffic is shifted into the DDI configuration. This also eliminates the need for temporary signalization, further reducing project costs.**

Other items in compliance with the RFP include:

- All pavement sections will meet the minimum pavement sections specified in the RFP.
- Turning movements are designed to accommodate a WB-67 vehicle per Addendum #1.
- Four overhead signs (one on Ramp A, one on Ramp C, one prior to NB Route 15 left exit, and one prior to SB Route 15 left exit) will be provided.
- Lighting will be provided along Route 15 from Spring Creek Parkway to Crossing Pointe Drive.
- The two existing signals at the ramps will be completely replaced due to the DDI configuration. The existing signal at Spring Creek Parkway/Camp Creek Parkway will remain in place with only minor impacts to existing signal equipment and with only the replacement of the EB existing mast arm pole.

Our drainage concept maintains existing drainage patterns. Existing structures are utilized to the greatest extent possible to reduce cost to the Department and improve the construction schedule. No stormwater ponds are anticipated based on the minimal increase in impervious area. Since the Public Hearing and RFP release were prior to October 1, 2012, this project is grandfathered into the old water quality criteria per SWPA 12-01 dated April 5, 2012.

Although there are no major modifications to the existing bridges required for this project per the RFP, two items must be considered. The existing bridge was constructed to accommodate future lighting by including conduit and three light pole pedestals on the outside fascia of each bridge. As part of the pedestal construction, anchor bolts were installed as well. Our Team will analyze the existing bridge utilizing the light poles designed as part of this project to ensure that the bridge can accommodate these loads and that the existing pedestal and anchor bolts are adequate. Additionally, the ends of the existing parapets, which do not already have fixed object attachments will be modified to accept the attachments. Once the locations and configuration of the new attachments are finalized, plans will be prepared utilizing the attachment details provided in Addendum #1.

Our Team has studied DDI implementation from other states and our design concept has incorporated “lessons learned” from those projects and our previous DDI design experience. The approach angles (set at approximately 50°) to the crossover intersections are designed in a manner to prevent accidental right turns into oncoming traffic. We have eliminated the reverse curves which would introduce additional challenges of pavement widening and placement of superelevation. Finally, free flow right turn lanes for Ramps A and C are being provided for traffic operations so that drivers will be positioned to view oncoming traffic instead of incorrectly looking at departing traffic on the other side of the crossover intersection. As part of detailed and final design, our Team will continue to look for ways to improve the DDI layout including methods to reduce glare from oncoming headlights, increasing the entrance curve radii to use adverse crown Urban Low Speed, and increasing the tangents outside of the intersection to allow vehicles to be better aligned when exiting the intersection.

In summary, the conceptual roadway plans have been developed in a way that will:

- Minimize disruptions to traffic
- Increase public acceptance of the project
- Minimize environmental impacts
- Ensure on-time completion of the project
- Minimize long-term maintenance

4.4 Project Approach

4.4.1 PUBLIC RELATIONS MANAGEMENT

A transportation project can have a significant impact on residents, businesses employees and tourists/travelers. Communication will be crucial to the success of the I-64/Route 15 Zion Crossroads Project. This includes knowing precisely what to share, how to put it in language that will resonate with users, and knowing when is the best time to share it. In this era of immediate communications such as Twitter and smart phones, public involvement should be utilized as collaborative tools. Communications is even more important when it's along a major commuting and state travel corridor like I-64 and Route 15, and when it involves a new traffic configuration for this region like the proposed Diverging Diamond Interchange.

Our Public Relations partner, Pulsar Advertising, Inc. (a MBE/DBE firm), has extensive experience in implementing communications as well as providing public involvement as a part of a transportation management plan and in a collaborative environment. For this Project, the Shirley Team will implement a plan that will include creative services, public participation and education opportunities and digital communications tools.

The Shirley Team will work closely with VDOT's Culpeper District Office to ensure that the Project website is informative and timely with photos and video postings as needed to help educate the public about the potentially confusing operation of a Diverging Diamond Interchange (DDI) as well as with Project updates and alerts. Our Team will produce collateral materials to help support informal meetings with stakeholders including schools, police, fire and EMS Departments. Additionally, our Team recommends going to the stakeholders where possible in lieu of holding separate meetings and expecting them to come to us. For example, we could get on the local school's and emergency management groups planning calendars to present during regularly scheduled meetings. By giving them the "home team advantage," we are already disarming potential critics and getting key stakeholders on our side early in the process.

The Shirley Team will conduct at least one "Navigating the Diverging Diamond" Citizen Information Meeting prior to construction commencement to give everyone an opportunity to see the roadway plans and detailed Transportation Management Plan (TMP). We will actively promote this (and all public meetings) through online advertising, out of home advertising (signing in the corridor), as well as direct mail (and email where possible) to the key citizens and business in the affected corridor.

In addition, our Team will also conduct at least one partnering meeting with local stakeholders and businesses (e.g., businesses, schools, county officials, police, fire, and EMS services) prior to construction commencement. As a part of this education workshop, the maintenance of traffic (temporary traffic control) plans and the transportation management plan as well as the construction sequencing will be shared with the attendees.

Finally, the key to any successful public participation and education program is flexibility. The Shirley Team will adapt and size the outreach program appropriately for the anxiety and pushback experienced during the Project. We will not be reactive, but proactive, and anticipate the key touch points where information will be shared throughout the term of the Project. The critical goal is to give the key target audiences the information they need, when they need it and in the "language" and context that they understand. All meetings will be conducted in accordance with VDOT Policy Manual for Public Participation in Transportation Projects.

A successful public involvement program must be carefully tailored to the communities and cultures within the community and invite input from all citizens as well as from organized groups, businesses and other stakeholders throughout the process. The very nature of Louisa County and the Zion Crossroads community, as well as Fluvanna, Albemarle and Orange Counties, invites an active and open dialogue with various constituencies including:

- Citizens (Civic associations, community and faith-based organizations, etc.) including:

- Spring Creek Homeowners Association
- Cross Roads Community Church
- Businesses (Chamber of Commerce, business associations, Rotary, Jaycees, etc.) including:
 - Walmart (including the Walmart distribution center)
 - UVA Health System
 - The Shoppes at Spring Creek
 - Chips, Inc.
- Traveler/tourist organizations (AAA, Virginia Trucking Association, Louisa Chamber, etc.)
 - Pilot Truckers Service Center
 - Best Western and Crescent Inn
- Key stakeholders/policy leaders (DMV, County officials, Police, Fire and EMS leaders, etc.)

By engaging the targeted constituencies in an active ongoing dialogue, it's easier to diffuse the arguments and polarizing effects of the opponents to the process or the Project. Having an open and transparent process with several opportunities and ways to provide input and gather information will ensure that the public will feel they had their "say." While they may not agree with the result, they will feel satisfied that the process was fair and open and they got the information they needed, when they needed it.

4.4.2 UTILITIES

One of the biggest risks to the successful completion of a design-build Project can be third party public/private utilities that are impacted by design and construction. To combat this risk, the Shirley Team focuses on the planning and coordination process for these third party utilities during this Technical Proposal Phase to identify design solutions that avoid these impacts to the greatest extent practical. Our Team dedicates an in-house Utility Manager, who has performed these duties on more than \$1 billion of design-build work over the last 10 years. This Manager has already reviewed the Project site, made early personal contact with each utility, and coordinated these utilities with the design to arrive at the most efficient and economical utility relocation plan possible. This feedback is reflected in not only our design, but our budget, and most importantly, our Team's schedule for completion. A specific example of how our efforts so far will mitigate relocation impacts on the Project is the underground Verizon fiber optic system in the NW and SW quadrants. **In discussions with Verizon, we have determined that the facility can be relocated "in place" by trenching alongside the existing utility and moving it to the new trench.** This will avoid any cutting and splicing, thus keeping costs to a minimum, and most importantly, can be performed by our forces, providing the highest assurance that the relocation can be performed within the Project's schedule limitations. Other design efforts include minimizing profile changes to existing roadways, and coordinating the placement of storm crossings and inlets in order to avoid any other underground conflicts.

After award, we continually include the Utility Manager as an integral part of the design, right-of-way, permitting, scheduling, and construction disciplines. As the design progresses, we review utility designations and potential impacts to arrive at solutions that, as a first priority, avoid impacts and relocations. If unavoidable, we focus on solutions that minimize these impacts in order to finalize our Utility Relocation Plan and Schedule. As part of this effort, the Utility Manager will ensure that test pits are completed where necessary. All of this information is then coordinated directly with the right-of-way and permitting disciplines, and consequently, into the overall Project schedule. This allows the Team to prioritize acquisitions, permits, and the construction schedule to ensure that utilities are relocated on time. The Utility Manager will hold UFI Meetings, determine prior-rights and cost responsibility, and coordinate with the utilities to complete their design. Once construction is underway, our Utility Manager will remain an integral part of the process, managing these relocations and coordinating with the construction Teams.

Having the Utility Manager directly involved with the Project from the earliest stages on conceptual development

to completion of construction will serve to mitigate one of the risks to maintaining the Project schedule - unknown utility conflicts. A key to minimizing this risk is constant and detailed communication with the utility providers throughout the design and construction process to fully understand the facilities and systems present. Further, as a result of our significant design-build experience, our Team has developed close, positive relationships with all of the utilities located within the Project limits. A thorough designation and test pitting program, including multiple test pits in advance of construction activities, also mitigate these risks. Finally, we have strategies to perform portions of the relocations by our own forces, including the above mentioned “in place” Verizon relocations, ductbank construction and drilling for utility poles, in an effort to expedite the relocation activities.

The following table summarizes the utilities that we anticipate will require relocation:

UTILITY DESCRIPTION	APPROXIMATE LOCATION	RELOCATION DESCRIPTION	QTY	UNIT
Virginia Power - OH Electric	Service to Signals	Shift Pole Location	2	POLES
Virginia Power - U/G	Service to Walmart	Relocate with OH Pole	100	LF
Verizon - U/G	NW and SW Quadrants	Relocate Fiber Optic	600	LF

4.4.3 GEOTECHNICAL

EXISTING SUBSURFACE CONDITIONS

Referencing the 1993 Geologic Map of the State of Virginia the subject site is located in the Western Piedmont subdivision of the Piedmont Physiographic Province. The Western Piedmont Sub-Province consists of highly faulted and fractured metamorphic and igneous rocks dating from the Proterozoic through the Early Paleozoic Geologic age, and includes some of the most ancient rocks exposed in the State of Virginia.

The Project site is mapped as underlain exclusively by an unnamed metagraywacke consisting of quartzose chlorite and biotite schist, with fine to coarse granules of blue quartz. The metagraywacke is accompanied by lesser amounts of quartzose schist and a mélange (a mappable body of rock characterized by a lack of continuous bedding and the inclusion of fragments of rock of all sizes, contained in a fine-grained deformed matrix). The unit is considered to be Late Proterozoic to Cambrian in age.

The existing fill soils encountered in the test borings already completed on-site are believed to be related to previous site grading. The natural soils encountered in the test borings are believed to be residual soils derived from the physical and chemical weathering of the underlying bedrock.

IDENTIFICATION OF PROJECT GEOTECHNICAL CHALLENGES

- Several test borings completed at the Project site indicated the presence of fat clay and elastic silt in existing fill embankments.
- Maximum cut and fills-up to about 15 feet will be required for this Project.
- Due to the presence of elastic silt and fat clay, it will be necessary to determine the stability of the existing and proposed slopes.
- Dealing with the evaluation of the potential long term settlement of elastic silt and fat clay, which may result from to the placement of embankment fills for the widening of the existing roadways will be a priority.
- The Project will require evaluation of the excessively wet soils, soft or loose soils, soils that classify CH and MH, and soils with CBR values less than 5. Removal and replacement of these unsuitable soils are recommended to limit potential total and differential settlement of structures.

PROPOSED GEOTECHNICAL PLAN

- Our Team will complete additional geotechnical investigations as per VDOT’s Manual of Instructions (MOI) to supplement the information provided with the RFP documents.

- The additional geotechnical investigations will include test borings as well as the laboratory testing. Our Team will review the proposed depths of cut and fill, and determine if the depths of previously drilled borings are sufficient. Our Team also plans on shooting the elevations of the as drilled borings after making a rough estimate of the as drilled boring locations in the field.
- Geotechnical and construction reports are not available for the existing ramps and roadways. In order to minimize this risk, our Team plans to drill additional borings at existing critical locations to estimate and verify the existing conditions of the roadway structures.
- During our subsurface exploration program, we will collect undisturbed soil samples of natural fat clays and elastic silts for consolidation and direct shear testing.
- The direct shear test results will be used for slope stability analysis of existing and planned slopes and the consolidation tests data will be used to determine the soil design parameters for the compressible fine grained soils.
- One of the critical challenges of this Project will be to keep the post construction settlement less than one-inch. In addition to conducting consolidation testing of representative soil materials and settlement analysis, this challenge will be met by using proper construction methods and following the recommendations of VDOT Road and Bridge Specifications Section 303.04 (h).

TREATMENT OF UNSUITABLE MATERIALS

A review of the geotechnical data report indicated that soils with CBR value less than five were encountered in two out of five soil samples tested. Wet soils and high plasticity clay and silt soils were encountered in several test borings completed at the site. Treatment of wet soils encountered during construction will include one of the following three methods:

- Disc soils to a minimum of 3 feet below subgrade, leave uncovered and allow to dry in-place prior to use as embankment material.
- Excavate unsuitable material to a minimum of 3 feet below subgrade and allow to dry prior to use as embankment.
- Dry to a minimum depth of 3 feet below subgrade using pelletized quicklime, 4% by weight.

If low CBR soil is encountered at pavement subgrades, it will be removed to at least 3 feet below pavement subgrade or in their entirety to competent subgrade material, whichever is less, and replaced with properly compacted material with a minimum CBR value of 5. High plasticity or soft or loose soil encountered at fill or pavement subgrades will be removed to at least 3 feet depth and replaced with properly compacted material with a minimum CBR value of 5. All earthwork procedures will conform to Section 303 of the VDOT Road and Bridge Specifications.

PAVEMENTS

According to the requirements of the Project RFP, a minimum CBR value of 5 will be used for the design. Where final pavement subgrades will consist of materials with CBR values less than 5, these materials will need to be undercut to a depth of at least 3 feet and backfilling with compacted fill material with a minimum CBR value of 5. Our Team will validate the minimum pavement section provided in the Project RFP. The pavement analysis will be performed using the pavement analysis software DARW in 3.1, the 1993 AASHTO Guide for Design of Pavement Structures, and VDOT Manual of Instruction (MOI) Chapter VI – Pavement Evaluation and Design.

MINOR STRUCTURES

Depending on the final design additional borings may also be required for drainage pipes equal to or greater than 36-inch. Recommendations about pipe bedding will be in accordance with the VDOT Road and Bridge Standards PB-1 and Section 302 of the VDOT Road and Bridge Specifications.

4.4.4 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Shirley Contracting Company, LLC (Shirley) is committed to providing VDOT with a Project that is of the highest quality. Our extensive experience in design-build has led to the development of a proven QA/QC Program, complete with comprehensive procedures which address all aspects of quality from document inception to construction completion and final acceptance. This Program has been customized for I-64/Route 15 (Zion Crossroads) Interchange Improvement Project to incorporate all of the Project specific contract requirements and the requirements of VDOT's Minimum Quality Control & Quality Assurance Requirements for Design Build & Public-Private Transportation Act Projects, (hereafter VDOT's Minimum QA/QC Requirements). Our Team has successfully implemented this Program, including utilization of an independent Quality Assurance Manager (QAM), on numerous Design-Build Projects for VDOT over the past ten years. As a result of our performance and commitment to QA/QC, VDOT has been able to reduce costs by minimally staffing these Projects with only the basic oversight needed to confirm that quality standards are exceeded.

DESCRIPTION OF DESIGN QA/QC PROCEDURES

Providing a completed Project which meets VDOT's requirements and standards for plan development and long term cost effectiveness requires thorough QA and QC processes that are performed separately by independent staff not involved in the other quality role. As identified in our Team's organizational structure, the Design Manager will be Dave Mahoney, PE of Dewberry. Mr. Mahoney will be responsible for oversight of all design disciplines, ensuring that each discipline coordinates with other disciplines to minimize rework and conflicts. He will also be responsible for monitoring Design QA for all design documents, verifying that design QC was performed, preparing final design certifications and signing and sealing of all final and construction documents. Design QA will be performed by Jeremy Beck, PE and Design QC will be completed by competent design engineers who were not involved in development of the specific design elements they are reviewing.

Our Team's Design QA/QC plan includes the following four Phases of coordination and review:

INTERDISCIPLINARY COORDINATION

The interaction between the designers of the various disciplines and the Right-of-Way Manager, Utility Manager, Permitting Manager, and Construction Manager, is a vital part of our Design QA/QC Program to make the Project comprehensive and complete and to minimize inter-discipline conflicts.

DESIGN QUALITY CONTROL

Formal QC checking of the plans, calculations, and other project documents (traffic reports, traffic analysis, hydraulic analysis, etc.) will be performed for each design submission. Qualified engineers not involved in the development of the design work will perform these checks and reviews, and provide comments back to the original design engineer for incorporation and revision, or explanation before design documents are finalized. The procedure undertaken by the QC engineer takes into consideration all of the information on the plans and in the computations, in comparison to contractual requirements and current VDOT standards and criteria.

CONSTRUCTABILITY REVIEWS

The constructability review will be conducted by qualified construction staff, designated by the Construction Manager, to ensure that the proposed design does not introduce unnecessarily difficult, unsafe, or costly work for the construction staff, and to ensure that the proposed design and sequence of construction maintains the contract schedule.

DESIGN QUALITY ASSURANCE (QA) PROCEDURE

This final QA review will not take place until all constructability and QC comments have been completed. The purpose of the Design QA Review will be to verify that the design engineer assessed the design accurately, applied

correct analysis and design solution is practical and cost effective; verify implementation of and conformance to constructability reviews; confirm interdisciplinary reviews have been completed; confirm that final design documents conform to the design scope of work and the contract requirements; and verify application of the seal, signature and date of the responsible registered VA Professional Engineer.

QA/QC APPROACH TO UNIQUE DESIGN ELEMENT/WORK ACTIVITY

One of the most complex design elements of the I-64/Route 15 Interchange Improvement Project is the development and completion of a Transportation Management Plan (TMP) and a Temporary Traffic Control (TTC) plan (maintenance of traffic plan) which maintains access to adjacent properties and developments, maintains the existing travel lanes throughout the Project, maximizes safety for the public and construction personnel, accommodates construction of the Project and relocation of utilities, and recognizes the sequence of right-of-way acquisitions all while maintaining the Project schedule. This design element is unique as all of these requirements must be carefully planned and accomplished while also implementing a major switch in traffic patterns (switch to the DDI), without producing significant impacts to existing traffic operations.

QC of the TMP, TTC (including temporary signing and pavement markings) will begin early in the design development process with both design Team and construction Team reviews. The design review will be completed by a senior engineer who is well versed in all aspects of roadway design, who is certified by VDOT in advanced level work zone traffic control design, who has been involved in substantial Design-Build Projects, who is cognizant of the utility relocation and right-of-way acquisition process and schedule, and who is also fully understands the traffic engineering principals of the diverging diamond interchange. For each submission of the TMP and TTC plans, one copy will be forwarded to the QC Reviewer to begin the QC Check, and two copies will be sent to the Construction Team to complete a constructability review.

The Construction Team will complete a formal comprehensive review of the TMP and TTC plans to identify any potential construction problems, safety concerns, or coordination challenges resulting from the construction phasing or traffic control device locations (such as temporary barrier). This constructability review will also include reviews of temporary construction items needed to safely complete the construction, including drainage, signals, signing, and pavement markings.

The QC review of the Transportation Management Plan (TMP) and a Temporary Traffic Control (TTC) plans will begin with verification that the design requirements are met, specifically that the number of through and turn lanes are maintained for each construction Phase, and that acceptable levels of service will be provided through verification with work zone traffic analysis software. If design elements are verified to be accurate and in conformance with the contract requirements, the TTC plans will be checked against both the existing and ultimate roadway profiles to ensure that all proposed pavement (both permanent and temporary) can be installed without unacceptable impacts to existing traffic patterns, and will be usable during the later stages of pavement and drainage facility construction.

QC checks will also ensure that adequate temporary drainage is maintained throughout construction. The QC reviewer will ensure any temporary connections necessary between permanent and existing drainage facilities adequately maintain the flow of drainage are detailed, and that temporary extensions of pipe outfalls are identified in the plans. Also the reviewer will ensure that existing utilities which remain operational in a given stage of TTC are not impacted by construction, and that all proposed construction elements can be safely constructed without impacting existing travel lanes for each given stage.

The QC reviewer will also check Project-wide TTC elements including temporary traffic signalization and signing and marking, ensuring that adequate temporary traffic control and motorist guidance is maintained throughout construction, and that necessary sight distance is provided at each approach to the intersections,

taking into account work zone sight distance obstructions (such as temporary barrier and materials) which may be in close proximity to the intersections throughout the Project limits.

The Constructability reviewer and QC reviewer will review the check-print and document their comments on the “Review Comment Summary and Resolution Sheet” developed by our Team and similar to the VDOT review form. Once comments are completed the Constructability and QC reviewers will meet with the design engineer to discuss the comments and identify the corrective action required. At this meeting, they will discuss the comments and agree on the acceptable resolution and necessary plan changes. Following this meeting and as the required design changes are implemented, the design engineer will complete the response section of the Review Comment Summary and Resolution Sheet. After the plan is revised, the design engineer will forward the revised plan back to the Constructability and QC reviewer for final review and final disposition of the comments. This back and forth process will continue until all comments are resolved and documented on the Review Comment Summary and Resolution Sheet.

Once the Constructability and Design QC reviews have been completed with plans revised by the design engineer and re-checked by the QC Reviewer and Construction Team, the updated plans and forms will be forwarded to Jeremy Beck, PE who will complete the Design QA reviews for each document. Jeremy will verify that the document originator was qualified to perform the design and assess the design to ensure the appropriate analysis was performed and the design solution is consistent with the contract documents. Additional elements which will be considered and double checked by the QA Reviewer will be the phasing of construction and the relationship to the acquisition of right-of-way, ensuring that the design Team accurately understood the timing of right-of-way acquisitions in relation to the timing of construction. The QA Reviewer will also ensure that the appropriate permits have been obtained for the early construction elements, and that necessary utility relocations are accounted for by the permits. Once the Design QA check is completed, the Design QA Reviewer and Design Manager will sign and complete the “Design QA Review Memorandum” and include a record of it in the Project file. An example of the “Design QA Review Memorandum” is included as Figure 4.5.3.

FIGURE 4.5.3

As verification of the completion of the QA and QC reviews, each submission will be accompanied by copies of the completed Design QC Checkprint Sign-off Sheets and Design QA Review Memorandum in addition to the standard VDOT LD-436 form showing that plans have been audited and approved and include all appropriate elements for each plan submission.

DESCRIPTION OF CONSTRUCTION QA/QC PROCEDURES

The Shirley Team’s Construction QA/QC Procedures, found within our QA/QC Plan, have been established to conform to VDOT’s Minimum QA/QC Requirements. Our Plan stipulates the specific requirements of the Project and implements appropriate Witness and Hold Points for inspection of work at critical stages. These critical inspection points allow for VDOT review and approval and identify inspection requirements by the key members from the Design Team prior to construction activities continuing. Having this level of Design Team involvement in construction activities allows the engineer to confirm that actual construction conditions

conform to the parameters anticipated during design.

During construction, the QA and QC Teams will follow the established and approved QA/QC Plan. The QA/QC plan is structured to ensure that QC and QA functions are performed independently and that procedures and work products are regularly audited. Key elements of the Construction QA/QC Procedures are summarized in the following paragraphs.

CONSTRUCTION QUALITY ASSURANCE

The Quality Assurance Manager (QAM), George Romack, PE of EBA Engineering is independent of the Designer, Contractor and QC Team, and is responsible for the Quality Assurance of the roadway, bridge and other physical construction operations, including the independent QA testing technicians. The QAM will report directly to the Design-Build Project Manager and have the authority and responsibility to stop work and withhold payment for any work not being performed in accordance with the Contract requirements or lacking the QA/QC documentation necessary to prove that the work meets the Contract requirements. This authority is given to the QAM in writing by the Design-Build Project Manager prior to the start of construction and a copy of the letter is included in the QA/QC Plan. The QAM will oversee and direct the personnel responsible for performing QA inspections and testing of all materials used and work performed on the Project. He will have personnel representing the QA Team that reports directly to him and are not part of the QC Team.

The QAM will maintain the QA records of the QA Team and will compare QA tests to QC, Independent Assurance (IA) and Independent Verification (IV) tests to ensure consistency and accuracy at all testing levels. The QAM will determine and certify to VDOT whether the materials and work are in compliance with the approved drawings, specifications, and applicable VDOT standards and reference documents as outlined in the Contract. The QAM will also ensure that all inspectors have adequate certifications for the testing performed and that copies are maintained in the QAM Project files on site. The QAM has autonomy and the responsibility to coordinate QA inspections and report findings directly to VDOT.

The QAM oversees the establishment and maintenance of a comprehensive system for Project documentation that will organize, track and disseminate all Construction QA and QC information. The records will present a factual representation of the work performed by the Design-Builder on the Project and allow a determination by the QAM that all work was completed and tested in accordance with the plans and specifications. All documentation will be adequately identified and cross-referenced to support a field audit by the QAM and VDOT during the life of the Project as well as final audit after Project completion. At a minimum, the QAM will audit the QC and QA testing and inspection records each month prior to certifying the monthly payment application.

CONSTRUCTION QUALITY CONTROL

The Construction Quality Control Manager (QCM), Rick Riviere, with Dewberry, will manage the day-to-day QC inspections and material testing of the construction as directed by the Construction Manager and will report directly to the Construction Manager. The QCM and the QC Team are responsible for inspection of the construction activities and all QC sampling, testing and analysis of materials on the Project to ensure that construction quality is verified at frequencies exceeding those required by the VDOT Construction Manual, the Materials Manual of Instructions and Tables 105-4 & 105-5 of VDOT's Minimum QA/QC Requirements. As the QCM, he assures that the QC materials sampling and testing is consistent with the QC plan and documented in the Project records.

QA/QC APPROACH TO SIGNIFICANT CONSTRUCTION ELEMENT/WORK ACTIVITY

The I-64/Route 15 (Zion Crossroads) Interchange Improvement Project will require the QA/QC Team to

monitor the installation of new drainage pipes and structures throughout the Project work limits. Once the drainage plans are approved, a Preparatory Inspection Meeting (PIM) will be held in accordance with Section 105.04 of the VDOT's Minimum QA/QC Requirements to ensure that all Project personnel have a thorough understanding of the upcoming work. This meeting will be run by the QAM and attended by the QCM, Construction Manager, construction superintendent/foreman, appropriate members of the Design Team, VDOT representatives, and the QA and QC staff members who will perform the inspections and testing required for the work package. Each PIM is included in the CPM Schedule as a Hold Point and must be held prior to the start of the applicable work activity. Items that will be discussed at this preparatory drainage inspection meeting include but are not limited to: verification of required materials submittals including Source of Materials Form C-25 for pipe, structures, and bedding; both offsite and on-site materials inspections including the VDOT QA/QC stamp requirements for all pipe and structures delivered to the jobsite; inspection of materials as they are unloaded and stored on the Project; a job safety analysis that specifically addresses unloading pipe and structures, excavation, installing pipe and structures, and confined space entry requirements; public information considerations; environmental concerns and/or restrictions; materials testing and inspection frequencies required by QC, QA, IA, and IV per Tables 105.4 and 105.5 of the VDOT's Minimum QA/QC Requirements; test reports and checklists required; applicable permits; contractor's schedule and approach to the work; and finally any witness or hold points that are identified, such as the review of the foundation of a box culvert by VDOT and the geotechnical engineer from the Design Team prior to placement of bedding material. After the PIM, the Quality Assurance Manager will distribute meeting minutes to all attendees and the Department's Project Manager and IA/IV personnel within two business days.

Once the construction of drainage work begins, the QC inspectors will utilize pipe and drainage structure checklists and testing frequency logs to inspect and document the contractor's work. For pipe and drainage work, these checklists will require the QC inspection staff to check off items for each inspection Phase (i.e. preparatory, intermediate, and completion) and will include items for checking pipe subgrade, pipe bedding, pipe alignment, and backfill. Materials testing frequencies will be as shown in Appendix 1 Table 105.4 of VDOT's Minimum QA/QC Requirements. For example, in place density tests for pipe installation will require QC to perform one test (VTM-10) per 100 LF of length, each lift, alternating sides and one test per 150 CY; minimum one test per work shift at each location and whenever there is a change in material or compaction equipment/method. These inspections will be documented on the inspector's daily report (IDR) with the completed standard materials testing forms attached. The testing frequency logs will be updated daily and reviewed by the QCM and QAM to ensure that the QC testing frequencies required by VDOT's Minimum QA/QC Requirements are exceeded.

The QA testing and inspections will be performed by independent inspectors and testing technicians that are not with the same firms as the QC inspection and testing staff. The QA inspections will be completed daily and recorded in the QA inspectors IDR with QA testing completed at the frequency required by Table 105.4 of VDOT's Minimum QA/QC Requirements. For the pipe and structure installation, the frequency will be one test per 1500 CY, minimally one test every ten days of production (10% of QC frequency). In addition, VDOT's Minimum QA/QC Requirements require Independent Assurance (IA) testing on 10% of the QA testing frequency and Independent Verification (IV) testing on 10% of IA testing frequency. Having a testing frequency log that is updated daily enables the QAM and VDOT to easily audit the testing frequencies and schedule the IA and IV tests.

A Project materials notebook will be maintained to ensure proper documentation of materials used, to include but not limited to, source of materials, invoices, certifications, and test reports. The materials notebook will be maintained in accordance with the VDOT Materials Division Manual of Instructions and stored at the Project field office so that it will be easily accessible for review and audit by the QAM and VDOT.

Once inspection and testing of drainage items are complete, the QAM shall approve all materials testing reports prior to submission to the Department. The QAM will also cross check IA/IV tests with QA/QC records to make certain testing tolerances are within the variances permitted per Table 105-2 of VDOT's Minimum QA/QC Requirements. For work that is not completed in accordance with the approved QA/QC plan, the QA/QC Team will issue deficiencies on approved QA/QC plan forms and perform re-tests or re-inspections as necessary to correct the deficiencies. For items of a more serious nature that may require correction, removal, and replacement of the non-conforming work, the QAM will issue a non-conformance report and the contractor will be required to respond with the root cause of the non-conformance, the proposed disposition of the non-conformance, and how a recurrence of the problem will be avoided. The QA/QC Team will develop a punch list during the course of drainage construction and this list will be maintained by the QAM. At the completion of construction, the QAM shall review the Project records to ensure that all items addressed by non-conformance reports, deficiencies, and IA and IV reports have been corrected.

Finally, on the monthly payment application the QAM will certify that each work package was completed in accordance with the Contract documents before the request for payment is submitted to VDOT. This certification and payment will be withheld for any work package that has outstanding non-conformances.

PROJECT STAFFING

The QA Team will consist of the QAM, supported by a testing technician(s) and QA laboratory testing from Froehling & Robertson. The QC Team will consist of the QCM and a senior inspector/office engineer, supported by testing technician(s) and laboratory testing from GeoConcepts Engineering with additional staff added, as needed, during peak construction timeframes.

All of the QC and QA Inspection Staff will have VDOT Certifications for hydraulic cement concrete, asphalt concrete, soils and aggregate, pavement markings, flagging, and safety and use of nuclear testing equipment, as well as the Department of Conservation and Recreation (DCR) Erosion and Sedimentation Control Inspection Certification and Intermediate Work Zone Traffic Control Training. In addition, they will have completed the 10-hour OSHA Safety course.

The Quality Assurance and Quality Control procedures outlined in this section are the result of many years of successfully completing Design-Build and PPTA Projects for VDOT including the Route 28 Corridor Improvements, Battlefield Parkway Design-Build, Pacific Boulevard Design-Build, Fairfax County Parkway Phase III, and other Projects. With each new Project we have improved upon the QA/QC process based on Project experience, VDOT expectations and feedback, and changes in VDOT QA/QC specifications. The Shirley Team has a focused commitment to quality both to minimize rework during construction and reduce long term maintenance costs.

4.5 Construction Of The Project

4.5.1 SEQUENCE OF CONSTRUCTION

When preparing our sequence of construction, our Team worked to provide for and maximize the safety of the traveling public, adjacent property owners, construction staff and other project stakeholders as our first priority, all the while, creating an efficient design and plan to meet the RFP and contract requirements. During all Phases of construction our Team will strive to minimize impacts to traffic and provide public notices and schedule updates to keep all stakeholders informed. As part of the planning process, we have broken the Project into three (3) Phases. Phase I is to construct primarily the median widening of Route 15 and the insides of the Ramps (sides closest to I-64). This allows for most construction operations in this Phase to avoid right-of-way and utility conflicts, which helps to mitigate any potential delays should the ROW and utility relocation activities be delayed. Phase II construction involves the ramp finishes on the outside (sides furthest from I-64) and Route 15 widening to the outside. Upon completion of Phase II, traffic is to be shifted into the Diverging Diamond Interchange (DDI) configuration, which moves into Phase III construction involving the finishes (concrete medians, islands, surface asphalt, permanent pavement markings and remaining finishes). The following sequence of construction summarizes our planned approach to complete the Project:

PHASE I: The first Phase of construction is to widen Ramps A, B, C and D to the inside (I-64 side) of the existing roadway and to widen the median of Route 15, which is going to be broken into four sections. Also, most of the spur (A-1, B-1, C-1, D-1 & D-2), and portions of Route 15 southbound and northbound outside widening will be constructed during Phase I. All cross street traffic will be maintained and operations are detailed further in Section 4.5.2. The major sections of Phase I are described further below.

South of I-64/Route 15 Bridge: Begin with installing construction signing, temporary pavement markings to shift traffic to the outside (South) of the existing Ramps A & B and to the outside of the Route 15 median from approximately station 208+00 to 216+00, install group II channelizing devices and/or temporary concrete traffic barrier along the outside edge of the existing roadway, which will be followed by installation of erosion and sediment controls and clearing and grubbing (this may be done throughout the Project along Route 15 on both sides to expedite utility relocations and construction). Once the work area is safe and stabilized, multiple construction activities will be performed concurrently. This includes earthwork operations, drainage and rough grading of the roadway widening, which will be performed linearly beginning on Ramp A to Spur A-1 to the Route 15 northbound left side widening from approximately station 119+00 to 121+40 then Ramp B to Spur B-1 to the Route 15 southbound left side widening from approximately station 219+00 to 221+40. These operations will be followed by construction of the concrete flatwork, pavement section - up to the intermediate asphalt course (including wedging & leveling to meet the existing roadway grade to facilitate traffic shift/transition to Phase II) and guardrail followed by final grading and seeding. Then, the construction operations for the median widening at the crossing point of Route 15 at approximately station 208+00 to 216+00 will be performed. The remaining signing and construction operations will be completed in preparation to shift traffic onto the newly constructed widening. As soon as substantial sections/areas are completed (Ramp A, Ramp B and the Median of Route 15), they will be opened to traffic if possible to improve vehicular flow and mitigate disruptions.

North of I-64/Route 15 Bridge: Begin with installing construction signing, temporary pavement markings to shift traffic to the outside (North) of the existing Ramps C & D and to the outside of the Route 15 median from approximately station 130+00 to 137+00, install group II channelizing devices and/or temporary concrete traffic barrier along the outside edge of the existing roadway, which will be followed by installation of erosion and sediment controls and clearing and grubbing. Once the work area is safe and stabilized, multiple construction activities will be performed concurrently. This includes earthwork operations, drainage and rough grading of the roadway widening, which will be performed linearly beginning on Ramp C to Spur C-1 to the Route 15 southbound right side widening from approximately station 224+50 to 227+50 then Ramp D to Spur D-1 to the Route 15 northbound left side widening from approximately station 124+50 to 127+50. These operations will be followed by construction of the concrete flatwork, pavement section - up to the intermediate asphalt course (including wedging & leveling) and guardrail followed by final grading and seeding. Then, the construction

operations for the median widening at the crossing point of Route 15 at approximately station 130+00 to 137+00 will be performed. Next is the left side widening of Route 15 southbound from approximately station 231+00 to 239+45 and continuing into Spur D-2. The remaining signing and construction operations will be completed in preparation to shift traffic onto the newly constructed widening. As soon as substantial sections/areas are completed (Ramp C, Ramp D and the Median of Route 15), they will be opened to traffic if possible and improve vehicular flow and mitigate disruptions.

After completion of each roadway section through intermediate asphalt and tie-ins to the existing roadway, traffic will be shifted to the newly constructed widened portions and temporary drums and/or concrete barrier will be installed to allow for the construction of Phase II.

PHASE II: The second Phase of construction is to complete finishes to Ramps A, B, C and D to the outside (away from I-64) of the existing roadway, to widen Route 15 to the outside, which again is going to be broken into four sections and the construction of the new signals. Also, the remaining spurs (A-2, B-2 & C-2) will be constructed during this Phase. All cross street traffic will be maintained and operations are detailed further in Section 4.5.2. The major sections of Phase II are described further below.

South of I-64/Route 15 Bridge: Temporary maintenance of traffic items will be installed as necessary to the inside (North) of the existing Ramps A & B and towards the Route 15 median from approximately station 208+00 to 216+00, which will be followed by installation of erosion and sediment controls and clearing and grubbing. Once the work area is safe and stabilized, multiple construction activities will be performed concurrently. This includes earthwork operations, drainage and rough grading of the roadway widening, which will be performed linearly beginning on the right side of Ramp A to Spur A-2 to the Route 15 southbound left side widening from approximately station 206+00 to 215+18 then to the right side of Route 15 northbound widening from approximately station 107+00 to 115+21 to Spur B-2 to right side Ramp B widening. These operations will be followed by construction of the concrete flatwork, pavement section - up to the intermediate asphalt course (including wedging & leveling) and guardrail followed by final grading and seeding. Also, the Route 15/I-64 EB signal installation will be performed. The remaining signing, including overheads, and construction operations will be completed in preparation to shift traffic into the DDI configuration. As soon as substantial sections/areas of widening are completed (Ramp A, Ramp B and the outside of Route 15), they will be opened to traffic if possible and to improve vehicular flow and mitigate disruptions.

North of I-64/Route 15 Bridge: Temporary maintenance of traffic items will be installed as necessary to the inside (South) of the existing Ramps C & D and towards the Route 15 median from approximately station 129+00 to 139+45, which will be followed by installation of erosion and sediment controls and clearing and grubbing. Once the work area is safe and stabilized, multiple construction activities will be performed concurrently. This includes earthwork operations, drainage and rough grading of the roadway widening, which will be performed linearly beginning on the left side of Ramp C to Spur C-2 to the Route 15 northbound right side widening from approximately station 129+00 to 139+45 then to the left side of Ramp D widening. These operations will be followed by construction of the concrete flatwork, pavement section - up to the intermediate asphalt course (including wedging & leveling) and guardrail followed by final grading and seeding. Also, the Route 15/I-64 WB signal installation will be performed. The remaining signing, including overheads, and construction operations will be completed in preparation to shift traffic into the DDI configuration. As soon as substantial sections/areas of widening are completed (Ramp C, Ramp D and the outside of Route 15), they will be opened to traffic if possible to improve vehicular flow and mitigate disruptions.

After completion of all the roadway sections construction activities through intermediate asphalt, tie-ins to the existing roadway and the new signals are operational, traffic will be shifted into the ultimate DDI configuration. This switch will be performed at off peak hours to minimize the disruption to vehicular traffic. Prior to the switch schedule date, ample notice will be provided to all stakeholders in accordance with the Public Relations plan.

PHASE III: The final Phase of construction involves the demolition/obscuring of the existing roadway surface that is not needed as part of the new DDI configuration, installation of the remaining concrete median sections along Route 15 and construction of the islands at the northern and southern DDI intersections. Temporary traffic control measures will be installed as necessary for milling and overlaying of the existing Route 15 and Ramp portions that remain, placement of the final surface asphalt, installation of permanent pavement markings, remaining finishes, final grading/dress up and punch list activities for final acceptance and completion of the Project.

4.5.2 TRANSPORTATION MANAGEMENT PLAN

Our Team fully understands that a thoroughly planned and well implemented Transportation Management Plan (TMP) is critical for a successful Project. Therefore our TMP will be focused on the principals of maximizing safety (both for the travelling public and construction personnel) and of minimizing travel delays during construction. In order to meet these principals, we will prepare a comprehensive “Type B” Category III Transportation Management Plan (TMP) and site-specific Temporary Traffic Control (TTC) plans per VDOT’s IIM-241.5 (Work Zone Safety and Mobility) requirements.

Our Team has extensive experience working together on work zone design and construction on congested arterials and interchange reconstruction Projects. The TMP and TTC plan will be designed, implemented, and inspected by staff certified in VDOT Work Zone Traffic Control, and our Team has an in-house VDOT approved Work Zone Traffic Control training program for our staff for all three certification levels (Advanced, Intermediate, and Basic). We are also well versed in the principals and requirements of both the new 2009 MUTCD and the new 2011 Virginia Work Area Protection Manual.

GOING BEYOND “MAINTAINING” EXISTING TRAFFIC OPERATIONS

Our Team is committed to going above and beyond maintaining minimum RFP required traffic operations during construction. We are focused on expediting the opening of traffic operational improvements during construction. Therefore, we have developed our sequence of construction in a way that prioritizes the construction of new lanes and lengthened turn lanes. Also, our Team will redesign corridor traffic signal phasing and timings throughout construction in order to expedite the travel time improvements for the motoring public. For example, Phase I of the ramp construction will be designed in order to accommodate additional/lengthened lanes during Phases II and III, even prior to the implementation of the DDI. Our preliminary traffic analysis projections show that additional ramp lanes and additional lane length will have a noticeable improvement on operations on both the ramp and Route 15 due to the additional capacity and traffic optimization signal timings for all movements.

PUBLIC AWARENESS AND DRIVER EDUCATION FOR DDI

We fully understand the importance of an especially robust public awareness campaign for this unique Project, given that the DDI configuration will be new to drivers. Therefore, our Team will implement an extensive public communication campaign in order to educate drivers on how to safely and efficiently navigate the diverging diamond prior to implementation. This campaign will also be designed to effectively communicate Project information to both the local community as well as long distance travelers through the work zone. Our Public Relations Plan as described in more detail in Section 4.4.1 will be an important component of our TMP.

COMMITMENT TO DETAIL AND COORDINATION

In order to accomplish our safety and mobility goals, we will pay careful attention to design details during TTC development. We understand that the maintenance of driveway and intersection sight distance is critical, as substandard sight distance is one of the leading contributors to work zone crashes. Our Team has significant experience on past Projects maintaining full access while ensuring sight distance is not blocked by work zone features such as barrier, equipment, and materials. Also, we will design all lane shifts and tapers to meet the full desirable “L” length (double the minimum length) wherever possible in an effort to maximize driver safety and mobility when navigating temporary traffic patterns. In addition, we understand the dangers of improper drop-off

protection, and will design all work areas to be protected by temporary barrier or with a safety wedge with no hazards within the clear zone. Other TTC design elements that will be thoroughly detailed include maintenance of positive drainage during construction, detailed temporary signing and pavement marking plans, detailed maintenance of pedestrian traffic and temporary sidewalk plans, and detailed temporary traffic signal plans.

Our TMP will also be carefully coordinated with other design and construction elements, such as the schedule for right-of-way acquisition and utility relocation, which commonly have a significant influence on construction schedule. The construction personnel will also be actively engaged in the TMP and TTC development process, and will regularly complete constructability reviews for potential construction challenges, such as the implementation of the switch from the existing interchange configuration to the DDI configuration.

MITIGATION OF PROJECT IMPACTS

To promote traffic mobility during construction, we will maintain (at minimum) all existing turn lanes, all existing ramp lanes, and at least one lane in each direction on Route 15 throughout construction. Our Team is committed to maintaining at least 12' travel lane width on I-64 and 11' wide travel lane width on all other roadways during construction. Lanes on I-64 will remain in their current configuration throughout construction in order to maximize motorist safety and minimize impacts to mobility. In addition, our Team is committed to maintaining an unrestricted shoulder along I-64 whenever possible.

Temporary lane closures/width restrictions to facilitate construction will be limited to off-peak temporary lane closures per RFP requirements (and approved as part of our TMP). Our Team will verify that all lane closures (both temporary and long term) will result in acceptable operations as part of the work zone traffic analysis included in the Transportation Operations Plan section of the TMP. Using analysis software such as Synchro, Quick Zone, and HCS+, we will ensure that lane closures are limited to hours which align with the smallest impacts to the travelling public based on traffic volumes collected by our Team just prior to the start of construction. Through this process we ensure that construction efficiency is maximized while also limiting motorist delay.

No long-term detours will be implemented to facilitate the construction of the proposed roadway and bridge improvements. Instead, temporary overnight "slow roll" closures of a maximum duration of 15 minutes will be utilized with police assistance in order to facilitate activities such overhead sign structure and traffic signal work. Similar to the temporary lane closure hours, the planned "slow roll" closures will be analyzed as part of the TMP to ensure they occur at the least disruptive hours.

Our Team does not anticipate the need for regulatory speed reductions through 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, we are well aware that research has proven that lowering speed limits where geometric conditions do not require the reduction actually lessen safety, as large deviations between driver speeds commonly result in increased accidents. Although no speed reductions are proposed at this time, a full Work Zone Speed Analysis will be prepared during TMP and TTC design, and possible reductions will be thoroughly analyzed and discussed with VDOT.

Mitigation strategies will include a thorough public communications plan as traveler awareness of changes to traffic patterns (such as implementation of the DDI), and lane restrictions have significant safety and mobility benefits. Proposed mitigation will include use of Portable Changeable Message Signs (PCMS) throughout construction, use of an emergency tow wrecker service, and use of a backup vehicle with a "BE PREPARED TO STOP" sign during temporary lane closures.

In addition to the mitigation strategies required by the RFP, our Team will employ site-specific impact management strategies in order to further increase safety and mobility. For example, temporary raised pavement markers will

be used to supplement lane line pavement markings for increased visibility, especially at night and during wet pavement conditions. Also, full-width paved shoulders will be provided during construction wherever possible for vehicle refuge and enforcement. Other strategies include the use of wider than normal lane lines for increased delineation of lane shifts, use of temporary transverse rumble strips for alert motorists of unusual conditions, the use of tighter than required channelizing device spacing for increased work zone delineation and construction safety.

STAKEHOLDER ACCOMMODATIONS

We understand that in addition to the general public, there are major project stakeholders located near the Project. It is our goal to minimize impacts to these stakeholders to the greatest extent possible, and to maintain open and regular lines of communication. These stakeholders are listed below, along with their anticipated impacts during construction:

- **Walmart Distribution Center** – Our Team recognizes that this facility located along Route 15 north of the interchange is a significant community stakeholder. As this regional product distribution center accounts for hundreds of daily trips, minimization of impacts to this facility will be one of the priorities of the TMP. As discussed earlier, all existing turn lanes will be maintained throughout construction in an effort to minimize impacts to the distribution center. In addition, we will use Auto TURN software during our temporary traffic control plan design to ensure that we accommodate WB-67 semi-trailer trucks throughout all Phases of construction. Our Team will also establish regular lines of communication with the distribution center, and provide construction updates and impact notifications directly to them for distribution to their employees and business partners.
- **Spring Creek Community, Spring Creek Golf, and The Shoppes at Spring Creek** – Our Team also recognizes that the Spring Creek development located on Route 15 north of the interchange is a significant local and regional traffic generator and a major community stakeholder. Construction activities and temporary traffic control plans will be designed in an effort to minimize impacts to Spring Creek residents and business patrons. Also, our Team will be available to present directly at Spring Creek community association meetings. The Shoppes at Spring Creek retail shopping center is anchored by Lowe's and Walmart and generates thousands of trips per day. As the shopping center and golf course generate significant out of town traffic, care will be taken to ensure clear guide signing is maintained throughout construction to/from I-64 and the development. Additionally regular lines of communication with the shopping center will be established and information will be provided for their dissemination.
- **Local Businesses** – Our Team is committed to providing continuous driveway access throughout construction for all businesses and driveways affected by this Project. Also, as we recognize that several businesses located within the project limits rely as pass-by traffic for a significant portion of their revenue. Care will be taken in design of the TTC plans to provide clear and inviting guidance into these businesses. As with all major stakeholders, regular lines of communication will be established with these businesses.

In addition to the major stakeholders discussed in detail above, applicable agencies will be included in our public outreach effort. These include Louisa County Public Schools, Police, Fire & Rescue, and JAUNT transit.

I-64 CONSIDERATIONS

Finally, our Team recognizes that maintenance of I-64 mobility throughout construction is critical as it is a vital commercial and long-distance travel route. Therefore we are committed to maintaining full 12' travel lanes with geometry meeting at least 70 mph throughout construction. In addition, our Team will prepare a comprehensive Incident Management Plan as part of the TMP, which is especially critical on I-64 given the high traffic volumes. The TMP will clearly detail roles and responsibilities for an incident and the implementation of emergency detours utilizing pre-staged equipment if necessary.

Please see Proposal Schedule & Narrative included in the Appendix.



4.7 Disadvantaged Business Enterprises (DBE)

COMMITMENT TO ACHIEVING THE DBE GOAL

The Shirley Team is committed to achieving the 17% DBE participation goal for the I-64/Route 15 (Zion Crossroads) Interchange Improvement Design-Build Project through design and construction activities.

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 outlines the steps that have or 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, working with our design partner Dewberry, we will take the necessary steps required to ensure that we communicate with and provided 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 have to date and 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 *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, the Shirley Team 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. Based on our experience and efforts we will put forward on this Project, *we commit to meeting the 17% DBE goal for the I-64/Route 15 (Zion Crossroads) Interchange Improvement Design-Build Project.*

ATTACHMENT 3.6

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**

RFP NO. C00086453DB48
PROJECT NO.: 0064-054-703

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 April 13, 2012 – RFP
(Date)
2. Cover letter of June 25, 2012 – RFP Addendum #1
(Date)
3. Cover letter of _____
(Date)



SIGNATURE

July 6, 2012
DATE

ATTACHMENT 4.0.1.1

I-64/ Route 15 (Zion Crossroads) Interchange Improvement Project

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	Appendix
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	Appendix
Letter of Submittal	NA	Sections 4.1		
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	1
Offeror's official representative information	NA	Section 4.1.1	yes	1
Authorized representative's original signature	NA	Section 4.1.1	yes	1
Declaration of intent	NA	Section 4.1.2	yes	1
120 day declaration	NA	Section 4.1.3	yes	1
Principal Officer information	NA	Section 4.1.4	yes	1
Substantial Completion and Final Completion date(s)	NA	Section 4.1.5	yes	1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.6	no	Appendix
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.7	no	Appendix
Offeror's Qualifications	NA	Section 4.2		
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any	NA	Section 4.2.1	yes	2

ATTACHMENT 4.0.1.1

I-64/ Route 15 (Zion Crossroads) Interchange Improvement Project

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
requested changes were previously approved by VDOT				
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	2
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	2
Design Concept	NA	Section 4.3		
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	3, 21-30
Project Approach	NA	Section 4.4		
Public Relations Management	NA	Section 4.4.1	yes	5
Utilities	NA	Section 4.4.2	yes	6
Geotechnical	NA	Section 4.4.3	yes	7
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	9
Construction of Project	NA	Section 4.5		
Sequence of Construction	NA	Section 4.5.1	yes	15
Transportation Management Plan	NA	Section 4.5.2	yes	17
Proposal Schedule	NA	Section 4.6		

ATTACHMENT 4.0.1.1

I-64/ Route 15 (Zion Crossroads) Interchange Improvement Project

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Proposal Schedule	NA	Section 4.6	no	Appendix
Proposal Schedule Narrative	NA	Section 4.6	no	Appendix
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.6	no	CD
Disadvantaged Business Enterprises (DBE)	NA	Section 4.7		
Written statement of percent DBE participation	NA	Section 4.7	yes	20
DBE subcontracting narrative	NA	Section 4.7	yes	20

4.6 Proposal Schedule

PROJECT MILESTONES

The I-64/Route 15 (Zion Crossroads) Interchange Improvement Schedule details our plan for all phases of the design/build process based on the following project Milestones:

Notice of Intent to Award Date:	August 28, 2012
CTB Approval/Notice to Award:	September 19, 2012
Design-Build Contract Execution:	October 17, 2012
Notice to Proceed:	October 18, 2012
Begin Phase 1 Construction:	July 10, 2013
Begin Phase 2 Construction:	October 15, 2013
Traffic Switch DDI Configuration	January 15, 2014
Begin Phase 3 Construction:	January 22, 2014
Substantial Completion Date:	April 15, 2014
Final Completion Date	April 15, 2014

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, 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, and permit submissions, reviews and approvals. These efforts will focus on LD 455/VSMP Permit and the SWPPP submission required for the project.
- 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. Our Team anticipates that no fee take right-of-way will be necessary for the project. Only easements will be required and this section of the schedule allows us 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 construction as well as MOT, construction access, signals, signage 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:

Level 1	Levels 2, 3, 4, & 5
A	Schedule Milestones
B	Design Phase B.A Preliminary Design: Right-of-Way/Maint. of Traffic Plans B.B Roadway Design B.C SWM/Culvert Design
C	Public Outreach - Involvement C.A Public Involvement & Affairs Meetings
D	Environmental Permitting D.A General Environmental Permitting
E	Right of Way Acquisition/Easements E.A Right of Way Acquisitions/Easements
F	Utility Relocations F.A Dominion Virginia Power F.B Verizon
G	Pre-Construction G.A General Pre-Construction Activities
H	Construction H.1 Phase I H.1.A South of I-64/Route 15 Bridge H.1.A.1 Ramp A Widening – Left Side (13+00-25+00) H.1.A.2 Spur A-1 (10+00-11+50) & Route 15 Northbound – Left side (119+00-121+40) H.1.A.3 Ramp B Widening – Left Side (13+00-23+00) H.1.A.4 Spur B-1 (10+00-13+13) & Route 15 Southbound – Left side (219+00-221+40) H.1.A.5 Route 15 Crossing Pointe Median H.1.A.6 Route 15 Median Widening (208+00-216+00) H.1.B North of I-64/Route 15 Bridge H.1.B.1 Ramp C – Right Side (13+00-22+75) H.1.B.2 Spur C-1 (10+00-11+46) & Route 15 Southbound – Left side (224+50-227+50) H.1.B.3 Ramp D – Right Side (12+00-26+00) H.1.B.4 Spur D-1 (0+00-3+17) & Route 15 Northbound – Left side (124+50-127+50) H.1.B.5 Spur D-2 (10+00-13+32) H.1.B.6 Route 15 Crossing Pointe Median H.1.B.7 Route 15 Median Widening (130+00-137+00) H.1.B.8 Route 15 Southbound – Left Side (231+00-239+45) H.2 Phase II H.2.A South of I-64/Route 15 Bridge H.2.A.1 Ramp A Widening – Right Side (14+00-25+00) H.2.A.2 Spur A-2 (10+00-13+00) H.2.A.3 Route 15 Southbound – Left Side (206+00-215+18) H.2.A.4 Route 15 Northbound – Right Side (107+00-115+21) H.2.A.5 Spur B-2 (10+00-13+13) H.2.A.6 Ramp B – Right Side (10+00-23+00) H.2.B North of I-64/Route 15 Bridge H.2.B.1 Ramp C – Left Side (12+00-25+00) H.2.B.2 Spur C-2 (10+00-13+22) H.2.B.3 Route 15 Northbound – Right Side (129+00-139+45) H.2.B.4 Ramp D – Left Side (12+00-27+00)

H.2.B.5	Spur D-2 (10+00-13+32)
H.2.B.6	Route 15 Crossing Pointe Median
H.2.B.7	Route 15 Median Widening (130+00-137+00)
H.2.B.8	Route 15 Southbound – Left Side (231+00-239+45)
H.3	Phase III
H.3.A	South of I-64/Route 15 Bridge
H.3.A.1	Route 15
H.3.A.2	Ramps & Spurs
H.3.B	North of I-64/Route 15 Bridge
H.3.B.1	Route 15
H.3.B.2	Ramps & Spurs

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.

Calendar 1 - “5-Day Workweek” – 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 – “7-Day Calendar” – 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 – “5-Day Winter Imp” – 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 – “5-Day Winter SD” – Assigned to activities that are anticipated to be shut down during the winter, such as asphalt paving, pavement marking, and painting. This calendar contains no working days from December 25 of one year to March 10 of the next year.

SCHEDULE TIMING AND CRITICAL PATH

The following describes key activities in the design phase, public involvement, permitting, utility relocations, pre-construction, and construction of the project. All of this is detailed further in the proposal schedule included as Exhibit 4.6.1.

Design Phase:

The design phase includes preparation, Quality Assurance/Quality Control reviews, and submission of right-of-way/temporary traffic control (maintenance of traffic) and roadway 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 plans. Our Team will begin the design phase of the project immediately upon Notice to Proceed to get an early jump on flood plain studies, right-of-way, temporary traffic control (maintenance of traffic), and roadway plans. The first formal roadway plan submission will occur February 21, 2013. The preliminary schedule reflects a critical approval of all plans by June 6, 2013.

Public Involvement:

The public involvement schedule includes submitting our Emergency Contact List upon Notice to Proceed, holding public information meetings each March at the start of the construction season, and providing updates to the Office of Public Affairs. The schedule includes the major milestone activities for the Public Information meetings and major traffic changes, including education and outreach program(s) for the Diverging Diamond Interchange and a public information meeting prior to the Diverging Diamond Interchange switch. 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. Shirley Contracting will acquire the LD 455/VSMMP Permit and the SWPPP submission ahead of the planned start of construction and the utility relocations, which will take place within project limits.

Right-of-Way Acquisition:

Our Team anticipates that no fee take right-of-way will be necessary for the project. Only easements will be required and the administration of the right-of-way acquisitions or temporary construction easements will start upon Notice-to-Proceed with start of title searches and appraisals for affected properties. We have identified the need to acquire temporary construction easements from only two properties within the corridor. Our Team will work to obtain these acquisitions to match the project phasing and avoid any potential delays. To effectively prioritize and track the status of these acquisitions, we have included a detailed schedule of right-of-way acquisition activities. These activities 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, settlements, and relocation assistance, if necessary. With the minimal amount of easements needed in conjunction with the project, all are scheduled to be obtained well in advance of the 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 January 2013 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 Right-of-Way and 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.

Dominion Virginia Power:

Dominion Power relocations are anticipated to be necessary in two (2) locations for construction of the project. The relocations are associated with shifting of existing power poles and minimal underground power adjustments in the Spur C-2/Ramp C area. Dominion's relocation will take approximately four weeks.

Verizon/Communication:

The Verizon facilities to be adjusted are located underground in the NW quadrant (Spur D-1) and the SW quadrant (Spur A-1/Ramp A) of the project. These relocations involve adjustment of marker posts, pedestals, conduit/duct, and junction box(s)/vault(s) as necessary to accommodate the grading and widening. The facility can be relocated "in place" by trenching alongside the existing utility and shifting it to the new trench.

Construction:

Upon completion of the general construction elements (earthwork, grading, drainage, pavement section, signals, signage & finishes), we will complete the punchlist to achieve Substantial and Final Completion by April 15, 2014.

Critical Path:

The Critical Path of the project is detailed and included as Exhibit 4.6.2 and is described hereafter, starting with preparation and submission of the Right-of-Way / Temporary Traffic Control (Maintenance of Traffic) Plans and follows the plan approval(s) process to the beginning of construction. Construction starts with mobilization, installation of project wide maintenance of traffic signs/devices, and then moves into the Phase I construction activities North of I-64/Route 15 Bridge starting construction at Ramp C/Spur C-1 continuing to Ramp D/Spur D-1/Spur D-2, then Route 15 Crossing Pointe median and other Route 15 median widenings and paralleling the construction activities in areas South of I-64/Route 15 Bridge with construction starting at Ramp A/Spur A-1 and continuing to Ramp B/Spur B-1, then Route 15 Crossing Pointe median and other Route 15 median widenings. Traffic then will be shifted onto the widened portions, following Phase II construction South of I-64/Route 15 Bridge from Ramp A/Spur A-2 to Route 15 Southbound widening, Route 15 Northbound widening and Spur B-2. The critical path then follows switching traffic into the ultimate diverging diamond interchange (DDI) configuration into the start of Phase III construction of concrete flatwork (medians/islands) items, construction of the DDI islands, milling & build up of the existing roadway, surface asphalt placement, permanent pavement markings, final grading and seeding, lighting, remaining finishes and the completion of the project punch list items for Substantial and Final Completion to be achieved by April 15, 2014.

PROJECT CONTROLS AND SCHEDULE RISK MITIGATION

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 Design-Build 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, the Shirley 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 Project Manager, Construction Manager, 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 Construction Manager will review the work performed during the previous week and outline the schedule activities that will be performed during the following two weeks.

An additional technique that Shirley 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.

Procedures for Rescheduling Activities and Schedule Recovery

If during the course of the Project, delays to the Project critical path are encountered, we will complete a Time Impact Analysis (TIA), re-sequence the schedule, and prepare a schedule recovery plan to reclaim lost time. This plan may include increasing work shifts, adding crews and resources to construct critical path activities concurrently, and changing MOT schemes or modifying the design to remove activities from the critical path. If it is early in the Project at the time the delay is encountered, schedule recovery may require adjustments by any or all of discipline managers including, Design, Permitting, Right-of-Way, Utility Relocation, and Construction. However, if all other design-build disciplines have completed their tasks, re-sequencing the construction schedule by the Construction Manager will be the primary focus in order to mitigate the delay.

Baseline CPM Development

Within 90 days from the Date of Commencement, the Shirley 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.

MITIGATION OF MAJOR DELAY RISKS

Timely Review and Approval of Submittals

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

following submittals will be included:

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

Submittals deemed critical to the success of the Project including design and permitting submissions and major materials submissions (such as structural steel shop drawings) will be included in the Project CPM Schedule where the progress can be monitored concurrently with the affected construction activity.

Each submittal will include a transmittal cover sheet identifying the submittal's priority level. For submittals between the contractor and design firm, normal priority submittals will be returned within four weeks, high priority submittals within two weeks and urgent submittals within three days. This also allows the Team to prioritize multiple submittals that are turned in concurrently. For submittals to government agencies and utilities we will include adequate review time frames 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.

Right-of-Way Acquisition

The I-64/Route 15 (Zion Crossroads) Interchange Improvement project requires acquisition of Right-of-Way and easements from multiple individual properties. In order to mitigate the potential delays stemming from the late acquisition of right-of-way our Team shall take several preventative measures to minimize the risks of delayed acquisitions.

Separate right-of-way plan submissions shall be made to gain early approval for acquisitions providing an early start on appraisals and offers to landowners allowing more time for negotiations. Individual properties, once defined, shall be prioritized for acquisitions and relocations by order of need to optimize schedule float. We have included right-of-way activity durations based on extensive right-of-way acquisition experience including independent appraisal reviews, VDOT appraisal reviews, and extended negotiation and settlement durations.

With these preventative measures in place we will be able to easily track the status of acquisitions and identify potential concerns prior to impacting the schedule. After Notice to Proceed and completion of property definitions, we will begin contacting property owners to inform them of the project and how their property will be affected. These meetings have been very effective on other Design-Build Projects to develop relationships

with the property owners, address their concerns with the project, and to identify opportunities to work with landowners to negotiate right-of-entry agreements that allow early construction, which further mitigates the potential for right-of-way delays.

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-64/Route 15 (Zion Crossroads) Interchange Improvement Project, this risk is spread among several utility locations with the coordination required between two identified utility companies. To mitigate the risk, we have started our planning and coordination process for these utilities by meeting with each affected utility and discussing the project, the utilities impacts, potential relocation options, and discussing ways to accelerate the utility relocations after award of the project.

These discussions have been facilitated by the preexisting relationships that we have developed through other Design-Build Projects in Virginia. This early coordination has enabled us to identify the following opportunities to advance the utility relocations and minimize the risk for utility delays after Notice to Proceed:

- We have identified utility corridors, and easements that can be easily added to the right-of-way plans early in the design phase to advance the utility easement acquisitions.
- We have agreed to include the environmental impacts of the utility relocations in our Joint Permit Application to avoid potential delays resulting from utilities acquisition of a separate permit.
- We have identified utilities that will allow our Team to design their utility relocations to minimize the risk of delay or coordination issues resulting from a third party design.
- We have initiated discussions with the utility companies to allow Shirley to use its own subcontractors to install the utility infrastructure where possible.

This early personal contact with each utility will enable us to manage their issues/concerns and provide the potential to accelerate utility relocation activities on the project.

Shirley'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-64/Route 15 (Zion Crossroads) Interchange Improvement 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-64/Route 15 (Zion Crossroads) Interchange Improvement 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.

Exhibit 4.6.1

C00086453DB48: I-64/Route 15 (Zion Crossroads) Interchange Improvement_Proposal Schedule

Shirley Contracting Company, LLC

05-Jul-12 09:44

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2013												2014												
							Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
C00086453DB48: I-64/Route 15 (Zion Crossroads) Interchange Improvement...							15-Apr-14																								
SCHEDULE MILESTONES							15-Apr-14																								
A1000	NOTICE OF INTENT TO AWARD (8/28/12)	0	28-Aug-12*		0	0%	NOTICE OF INTENT TO AWARD (8/28/12)																								
A1040	CTB APPROVAL/NOTICE TO AWARD (9/19/12)	0	19-Sep-12*		0	0%	CTB APPROVAL/NOTICE TO AWARD (9/19/12)																								
A1060	DESIGN-BUILD CONTRACT EXECUTION (10/17/12)	0	17-Oct-12*		0	0%	DESIGN-BUILD CONTRACT EXECUTION (10/17/12)																								
A1080	NOTICE TO PROCEED (10/18/12)	0	18-Oct-12*		0	0%	NOTICE TO PROCEED (10/18/12)																								
A1100	BEGIN PHASE I CONSTRUCTION	0	10-Jul-13		3	0%	BEGIN PHASE I CONSTRUCTION																								
A1120	BEGIN PHASE II CONSTRUCTION	0	15-Oct-13		3	0%	BEGIN PHASE II CONSTRUCTION																								
A1140	TRAFFIC SWITCH DDI - CONFIGURATION	5	15-Jan-14	22-Jan-14	10	0%	TRAFFIC SWITCH DDI - CONFIGURATION																								
A1150	BEGIN PHASE III CONSTRUCTION	0	22-Jan-14		20	0%	BEGIN PHASE III CONSTRUCTION																								
A1160	SUBSTANTIAL COMPLETION (4/15/14)	0		15-Apr-14*	0	0%	SUBSTANTIAL COMPLETION (4/15/14)																								
A1180	COMPLETE VDOT PUNCHLIST	15	26-Mar-14	15-Apr-14	0	0%	COMPLETE VDOT PUNCHLIST																								
A1200	FINAL COMPLETION (4/15/14)	0		15-Apr-14*	0	0%	FINAL COMPLETION (4/15/14)																								
A1220	SCOPE VALIDATION PERIOD (90 DAYS)	90	18-Oct-12	15-Jan-13	125	0%	SCOPE VALIDATION PERIOD (90 DAYS)																								
DESIGN							18-Oct-12 to 21-Jun-13																								
PRELIMINARY DESIGN - RIGHT OF WAY/MAINTENANCE OF TRAFFIC PLANS							18-Oct-12 to 10-May-13																								
BA1000	NOTIFICATION OF LANDOWNERS - NOI LETTERS	15	18-Oct-12	01-Nov-12	10	0%	NOTIFICATION OF LANDOWNERS - NOI LETTERS																								
BA1020	BASE MAPPING/FIELD SURVEY	40	02-Nov-12	11-Dec-12	10	0%	BASE MAPPING/FIELD SURVEY																								
BA1040	UTILITY DESIGNATIONS	40	02-Nov-12	11-Dec-12	58	0%	UTILITY DESIGNATIONS																								
BA1060	UTILITY TEST PITS	40	17-Dec-12	25-Jan-13	53	0%	UTILITY TEST PITS																								
BA1080	PREPARE TTC PLANS	60	18-Oct-12	16-Dec-12	5	0%	PREPARE TTC PLANS																								
BA1100	VDOT REVIEW/COMMENT TTC PLANS	21	17-Dec-12	06-Jan-13	5	0%	VDOT REVIEW/COMMENT TTC PLANS																								
BA1120	APPROVE TTC PLANS	0		06-Jan-13	5	0%	APPROVE TTC PLANS																								
BA1140	GEO TECHNICAL INVESTIGATION	60	12-Dec-12	09-Feb-13	10	0%	GEO TECHNICAL INVESTIGATION																								
BA1160	VDOT REVIEWS GEO TECHNICAL REPORTS	90	10-Feb-13	10-May-13	10	0%	VDOT REVIEWS GEO TECHNICAL REPORTS																								
ROADWAY DESIGN							07-Jan-13 to 06-Jun-13																								
BB2000	PREPARE ROADWAY PLANS (1ST SUBMISSION)	40	07-Jan-13	15-Feb-13	5	0%	PREPARE ROADWAY PLANS (1ST SUBMISSION)																								
BB2020	DESIGN QA/QC (1ST SUBMISSION)	5	16-Feb-13	20-Feb-13	5	0%	DESIGN QA/QC (1ST SUBMISSION)																								
BB2040	SUBMIT ROADWAY PLANS (1ST SUBMISSION)	1	21-Feb-13	21-Feb-13	5	0%	SUBMIT ROADWAY PLANS (1ST SUBMISSION)																								
BB2060	VDOT REVIEW/COMMENT ROADWAY PLANS (1ST SUBMISSION)	21	22-Feb-13	14-Mar-13	5	0%	VDOT REVIEW/COMMENT ROADWAY PLANS (1ST SUBMISSION)																								
BB2080	PREPARE ROADWAY PLANS (2ND SUBMISSION)	20	15-Mar-13	03-Apr-13	5	0%	PREPARE ROADWAY PLANS (2ND SUBMISSION)																								
BB2100	DESIGN QA/QC (2ND SUBMISSION)	5	04-Apr-13	08-Apr-13	5	0%	DESIGN QA/QC (2ND SUBMISSION)																								
BB2120	SUBMIT ROADWAY PLANS (2ND SUBMISSION)	1	09-Apr-13	09-Apr-13	5	0%	SUBMIT ROADWAY PLANS (2ND SUBMISSION)																								
BB2140	VDOT REVIEW/COMMENT ROADWAY PLANS (2ND SUBMISSION)	21	10-Apr-13	30-Apr-13	5	0%	VDOT REVIEW/COMMENT ROADWAY PLANS (2ND SUBMISSION)																								
BB2160	PREPARE FINAL ROADWAY PLANS	10	01-May-13	10-May-13	5	0%	PREPARE FINAL ROADWAY PLANS																								
BB2180	DESIGN FINAL QA/QC PLANS	5	11-May-13	15-May-13	5	0%	DESIGN FINAL QA/QC PLANS																								
BB2200	SUBMIT FINAL ROADWAY PLANS	1	16-May-13	16-May-13	5	0%	SUBMIT FINAL ROADWAY PLANS																								
BB2220	VDOT REVIEW/COMMENT FINAL ROADWAY PLANS	21	17-May-13	06-Jun-13	5	0%	VDOT REVIEW/COMMENT FINAL ROADWAY PLANS																								
BB2240	FINAL ROADWAY PLANS APPROVED	0		06-Jun-13	5	0%	FINAL ROADWAY PLANS APPROVED																								
SWM/CULVERT DESIGN							07-Jun-13 to 21-Jun-13																								
BD4000	SUBMIT SWPPP (LD-455E)	15	07-Jun-13	21-Jun-13	24	0%	SUBMIT SWPPP (LD-455E)																								
BD4020	VDOT APPROVE SWPPP (LD-455E) (HOLD PT)	0		21-Jun-13	24	0%	VDOT APPROVE SWPPP (LD-455E) (HOLD PT)																								
PUBLIC OUTREACH							18-Oct-12 to 15-Apr-14																								
PUBLIC INVOLVEMENT & AFFAIRS MEETINGS							18-Oct-12 to 15-Apr-14																								
C1000	SUBMIT EMERGENCY CONTACT LIST	5	18-Oct-12	22-Oct-12	264	0%	SUBMIT EMERGENCY CONTACT LIST																								
C1020	HOLD PRECONSTRUCTION CITIZEN INFORMATION MEETING	1	07-Jun-13	07-Jun-13	37	0%	HOLD PRECONSTRUCTION CITIZEN INFORMATION MEETING																								

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

Exhibit 4.6.2

C00086453DB48: I-64/Route 15 (Zion Crossroads) Interchange Improvement_Proposal Schedule

Shirley Contracting Company, LLC

05-Jul-12 09:44

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2013												2014												
							Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
C00086453DB48: I-64/Route 15 (Zion Crossroads) Interchange Improvement...							15-Apr-14																								
SCHEDULE MILESTONES							15-Apr-14																								
A1080	NOTICE TO PROCEED (10/18/12)	0	18-Oct-12*		0	0%	◆ NOTICE TO PROCEED (10/18/12)																								
A1100	BEGIN PHASE I CONSTRUCTION	0	10-Jul-13		3	0%	▶ BEGIN PHASE I CONSTRUCTION																								
A1120	BEGIN PHASE II CONSTRUCTION	0	15-Oct-13		3	0%	▶ BEGIN PHASE II CONSTRUCTION																								
A1140	TRAFFIC SWITCH DDI - CONFIGURATION	5	15-Jan-14	22-Jan-14	10	0%	▶ TRAFFIC SWITCH DDI - CONFIGURATION																								
A1150	BEGIN PHASE III CONSTRUCTION	0	22-Jan-14		20	0%	▶ BEGIN PHASE III CONSTRUCTION																								
A1160	SUBSTANTIAL COMPLETION (4/15/14)	0		15-Apr-14*	0	0%	◆ SUBSTANTIAL COMPLETION (4/15/14)																								
A1180	COMPLETE VDOT PUNCHLIST	15	26-Mar-14	15-Apr-14	0	0%	▶ COMPLETE VDOT PUNCHLIST																								
A1200	FINAL COMPLETION (4/15/14)	0		15-Apr-14*	0	0%	◆ FINAL COMPLETION (4/15/14)																								
DESIGN							06-Jun-13, DESIGN																								
PRELIMINARY DESIGN - RIGHT OF WAY/MAINTENANCE OF TRAFFIC PLANS							06-Jan-13, PRELIMINARY DESIGN - RIGHT OF WAY/MAINTENANCE OF TRAFFIC PLANS																								
BA1080	PREPARE TTC PLANS	60	18-Oct-12	16-Dec-12	5	0%	▶ PREPARE TTC PLANS																								
BA1100	VDOT REVIEW/COMMENT TTC PLANS	21	17-Dec-12	06-Jan-13	5	0%	▶ VDOT REVIEW/COMMENT TTC PLANS																								
BA1120	APPROVE TTC PLANS	0		06-Jan-13	5	0%	▶ APPROVE TTC PLANS																								
ROADWAY DESIGN							06-Jun-13, ROADWAY DESIGN																								
BB2000	PREPARE ROADWAY PLANS (1ST SUBMISSION)	40	07-Jan-13	15-Feb-13	5	0%	▶ PREPARE ROADWAY PLANS (1ST SUBMISSION)																								
BB2020	DESIGN QA/QC (1ST SUBMISSION)	5	16-Feb-13	20-Feb-13	5	0%	▶ DESIGN QA/QC (1ST SUBMISSION)																								
BB2040	SUBMIT ROADWAY PLANS (1ST SUBMISSION)	1	21-Feb-13	21-Feb-13	5	0%	▶ SUBMIT ROADWAY PLANS (1ST SUBMISSION)																								
BB2060	VDOT REVIEW/COMMENT ROADWAY PLANS (1ST SUBMISSION)	21	22-Feb-13	14-Mar-13	5	0%	▶ VDOT REVIEW/COMMENT ROADWAY PLANS (1ST SUBMISSION)																								
BB2080	PREPARE ROADWAY PLANS (2ND SUBMISSION)	20	15-Mar-13	03-Apr-13	5	0%	▶ PREPARE ROADWAY PLANS (2ND SUBMISSION)																								
BB2100	DESIGN QA/QC (2ND SUBMISSION)	5	04-Apr-13	08-Apr-13	5	0%	▶ DESIGN QA/QC (2ND SUBMISSION)																								
BB2120	SUBMIT ROADWAY PLANS (2ND SUBMISSION)	1	09-Apr-13	09-Apr-13	5	0%	▶ SUBMIT ROADWAY PLANS (2ND SUBMISSION)																								
BB2140	VDOT REVIEW/COMMENT ROADWAY PLANS (2ND SUBMISSION)	21	10-Apr-13	30-Apr-13	5	0%	▶ VDOT REVIEW/COMMENT ROADWAY PLANS (2ND SUBMISSION)																								
BB2160	PREPARE FINAL ROADWAY PLANS	10	01-May-13	10-May-13	5	0%	▶ PREPARE FINAL ROADWAY PLANS																								
BB2180	DESIGN FINAL QA/QC PLANS	5	11-May-13	15-May-13	5	0%	▶ DESIGN FINAL QA/QC PLANS																								
BB2200	SUBMIT FINAL ROADWAY PLANS	1	16-May-13	16-May-13	5	0%	▶ SUBMIT FINAL ROADWAY PLANS																								
BB2220	VDOT REVIEW/COMMENT FINAL ROADWAY PLANS	21	17-May-13	06-Jun-13	5	0%	▶ VDOT REVIEW/COMMENT FINAL ROADWAY PLANS																								
BB2240	FINAL ROADWAY PLANS APPROVED	0		06-Jun-13	5	0%	▶ FINAL ROADWAY PLANS APPROVED																								
SWM/CULVERT DESIGN																															
PUBLIC OUTREACH																															
PUBLIC INVOLVEMENT & AFFAIRS MEETINGS																															
ENVIRONMENTAL PERMITTING																															
GENERAL ENVIRONMENTAL PERMITTING																															
RIGHT OF WAY ACQUISITIONS/EASEMENTS																															
RIGHT OF WAY ACQUISITIONS/EASEMENTS																															
UTILITY RELOCATIONS																															
DOMINION VIRGINIA POWER																															
VERIZON/COMMUNICATION																															
PRE-CONSTRUCTION							10-Jul-13, PRE-CONSTRUCTION																								
G1000	QA/QC PREPARATORY INSPECTION MEETING(S)	5	06-Jun-13	13-Jun-13	3	0%	▶ QA/QC PREPARATORY INSPECTION MEETING(S)																								
G1020	MOBILIZATION FOR CONSTRUCTION	7	13-Jun-13	24-Jun-13	3	0%	▶ MOBILIZATION FOR CONSTRUCTION																								
G1040	INITIAL SURVEY CONTROLS	10	24-Jun-13	10-Jul-13	3	0%	▶ INITIAL SURVEY CONTROLS																								
G1060	INITIAL MOT DEVICES	10	24-Jun-13	10-Jul-13	3	0%	▶ INITIAL MOT DEVICES																								
CONSTRUCTION							25-Mar-14																								

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

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this “Agreement”) is made and entered into as of this 6th day of July, 2012, by and between the Virginia Department of Transportation (“VDOT”), and Shirley Contracting Company, LLC (“Offeror”).

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications (“SOQs”) pursuant to VDOT’s **December 6, 2011** Request for Qualifications (“RFQ”) and was invited to submit proposals in response to a Request for Proposals (“RFP”) for the **I-64/ Route 15 (Zion Crossroads) Interchange Improvement, Project No. 0064-054-703** (“Project”), under a design-build contract with VDOT (“Design-Build Contract”); and

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

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

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

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

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

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

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

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

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

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

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

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

9. Miscellaneous.

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

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

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

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

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

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

VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

[Insert Offeror's Name]

By:  _____

Name: Michael E. Post _____

Title: President/CEO/Manager _____

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project No.: 0064-054-703

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.

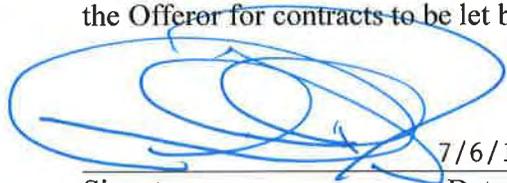
b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under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

7/6/12

Date

President/CEO

Title

Shirley Contracting Company, LLC

Name of Firm

ATTACHMENT NO. 3.2.5(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0064-054-703, P101, R201 & C501

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

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

Dave Mahoney _____
Signature Date July 2, 2012

Executive Vice President
Title

Dewberry & Davis LLC _____
Name of Firm

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

Project No.: 0064-054-703

- 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.

	July 3, 2012	President
Signature	Date	Title

Diversified Property Services, Inc.

Name of Firm

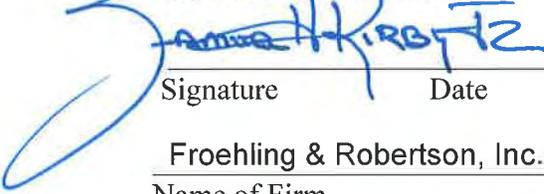
ATTACHMENT NO. 3.2.5(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0064-054-703, P101, R201 & C501

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

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

 7/2/2012 President
Signature Date Title

Froehling & Robertson, Inc.
Name of Firm

ATTACHMENT NO. 3.2.5(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0064-054-703, P101, R201 & C501

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

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

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

Paul Gubalt 07/02/12 Principal
Signature Date Title

GeoConcepts Engineering, Inc.
Name of Firm

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

Project No.: 0064-054-703

- 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>R Robert Ruske</u>	<u>7-2-12</u>	<u>Settlement Officer</u>
Signature	Date	Title

Old Dominion Settlements T/A Key Title
Name of Firm

ATTACHMENT NO. 3.2.5(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0064-054-703, P101, R201 & C501

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

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

 7/2/12
Signature Date

PRINCIPAL/ REGIONAL DIRECTOR
Title

PULSAR ADVERTISING
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 # C00086453DB48.

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)
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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.

Michael E. Post
Printed name of Individual Staff Member

July 6, 2012
Date

Shirley Contracting Company LLC
Company Name

703-550-8100
Phone Number

8435 Backlick Road
Company Address

703-550-7897
Fax Number

Lorton, VA 22079
Company City, State, Zip

mpost@shirleycontracting.com
E-mail Address


Signature of Individual Staff Member

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

Printed Name of Authorized Agent

Title

Signature of Authorized Agent

Phone Number

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 I-64/Route 15 (Zion Crossroads) Interchange Improvement

A DESIGN-BUILD PROJECT

From: 0.30 MI. W. Int. Rte. 15 (I-64 EB & WB)

To: 0.35 MI E. Rte. 15 (I-64 EB & WB)

LOUISA COUNTY, VIRGINIA

Volume II: Design Concept



State Project No.: 0064-054-703, P101, R201 & C501

Federal Project No.: IM-064-2(155)

Contract ID Number: C00086453DB48

SUBMITTED TO:



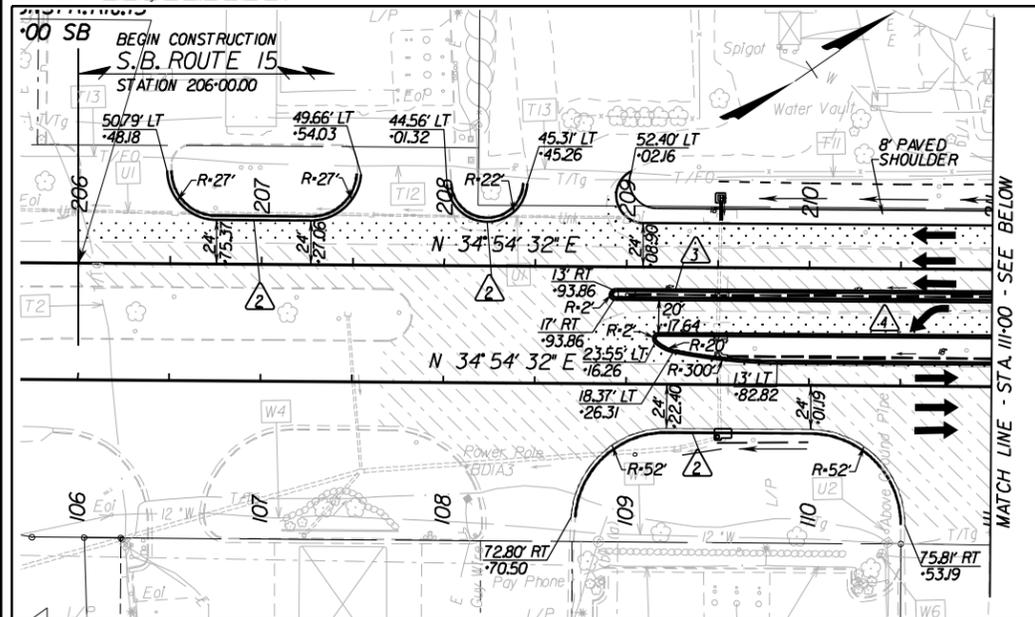
SUBMITTED BY:



IN ASSOCIATION WITH:

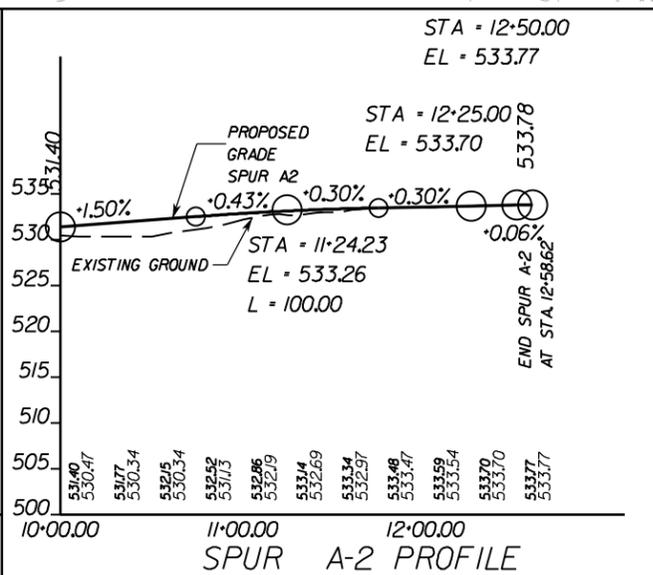
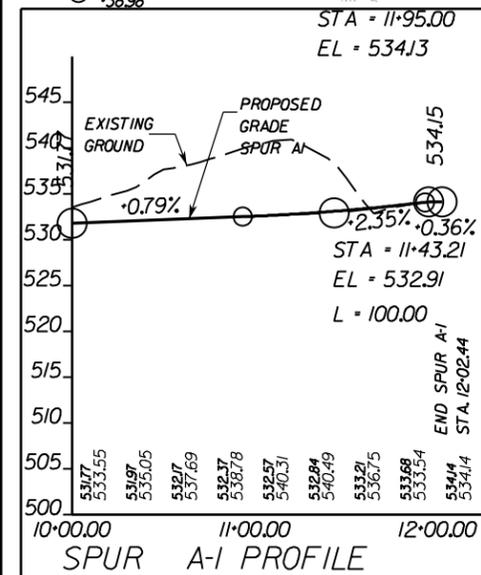


INSET A



S. GLASS COMMERCIAL CENTER L.C.
 Parcel # 51-29
 D.B. 1073, PG. 496
 2315 Acres.

- (A) 16' LT (SB-RTE. 15) -48.19
- (B) 15' RT (SB-RTE. 15) -60.23
- (C) 19' LT (SB-RTE. 15) -9.07
- (D) 19.67' LT (SB-RTE. 15) -92.48
- (E) 15.9' RT (SB-RTE. 15) -09.22
- (F) 15' LT (SB-RTE. 15) -41.25
- (G) 19' RT (SB-RTE. 15) -13.49
- (H) 15' LT (NB-RTE. 15) -60.42
- (I) 15.92' RT (NB-RTE. 15) -92.47
- (J) 15' RT (NB-RTE. 15) -41.45
- (K) 16' LT (NB-RTE. 15) -85.00
- (L) 19' RT (SPUR A-1) -62.13
- (M) 4' RT (SPUR A-2) -12.59
- (N) 19' LT (SPUR A-2) -74.25
- (O) 1' RT (SPUR A-2) -83.37
- (P) 6.48' RT (SPUR A-2) -14.16
- (Q) 4' RT (SPUR B-1) -60.59
- (R) 1' RT (SPUR B-1) -38.98



Curve SPUR A-2-1
 PI - 11-73.54
 DELTA - 85° 00' 00.00" (RT)
 D - 38' 11" 50"
 T - 137.45'
 L - 222.53'
 R - 150.00'
 PC - 10-36.09
 PT - 12-58.62

Curve DDISB-1
 PI - 217-27.62
 DELTA - 24° 56' 29.44" (RT)
 D - 20' 50" 05"
 T - 60.82'
 L - 119.71'
 R - 275.00'
 PC - 216-66.80
 PT - 217-86.51

Curve DDINB-1
 PI - 117-26.50
 DELTA - 25° 03' 30.56" (LT)
 D - 20' 50" 05"
 T - 60.82'
 L - 119.71'
 R - 275.00'
 PC - 116-65.39
 PT - 117-85.66

Curve SPUR B-2-1
 PI - 12-57.66
 DELTA - 88° 59' 39.26" (RT)
 D - 36' 57" 54"
 T - 152.30'
 L - 240.75'
 R - 155.00'
 PC - 11-05.36
 PT - 13-46.11

Curve RAMP A-3
 PI - 26-13.62
 DELTA - 85° 00' 00.00" (RT)
 D - 38' 11" 50"
 T - 137.45'
 L - 222.53'
 R - 150.00'
 PC - 24-76.17
 PT - 26-98.70

Curve SPUR A-1
 PI - 11-0.85
 DELTA - 57° 59' 41.63" (LT)
 D - 28' 38" 52"
 T - 110.85'
 L - 202.44'
 R - 200.00'
 PC - 10-00.00
 PT - 12-02.44

Curve DDINB-2
 PI - 118-75.93
 DELTA - 25° 03' 30.56" (RT)
 D - 20' 50" 05"
 T - 61.11'
 L - 120.27'
 R - 275.00'
 PC - 118-14.81
 PT - 119-35.08

Curve SPUR B-1
 PI - 11-68.04
 DELTA - 89° 00' 00.00" (LT)
 D - 33' 30" 23"
 T - 168.04'
 L - 265.62'
 R - 171.00'
 PC - 10-00.00
 PT - 12-65.62

Curve RAMP B-1
 PI - 11-23.41
 DELTA - 18° 18' 22.54" (LT)
 D - 9' 32" 57"
 T - 96.68'
 L - 191.70'
 R - 600.00'
 PC - 10-26.73
 PT - 12-18.43

- KEYS**
- 1 Curb, S'd, CG-2 Req'd.
 - 2 Curb and Gutter, S'd, CG-6 Req'd.
 - 3 Raised Med. S'd, MS-1A Req'd.
 - 4 Raised Grass Med. S'd, MS-2 Req'd.
 - 5 Detectable Warning Surface, S'd, CG-12 Req'd.
 - 6 Guardrail, S'd, GR-2 Req'd.
 - 7 Guardrail Terminal, S'd, GR-9 Req'd.

- LEGEND**
- Denotes Full Depth Pavement
 - Denotes Demolition of Pavement
 - Denotes Overlay Pavement
 - Denotes Milling and Overlay

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-054-703, RW-201 C-501	22

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



Dewberry & Davis LLC
 Fairfax, Virginia
 ROADWAY ENGINEER

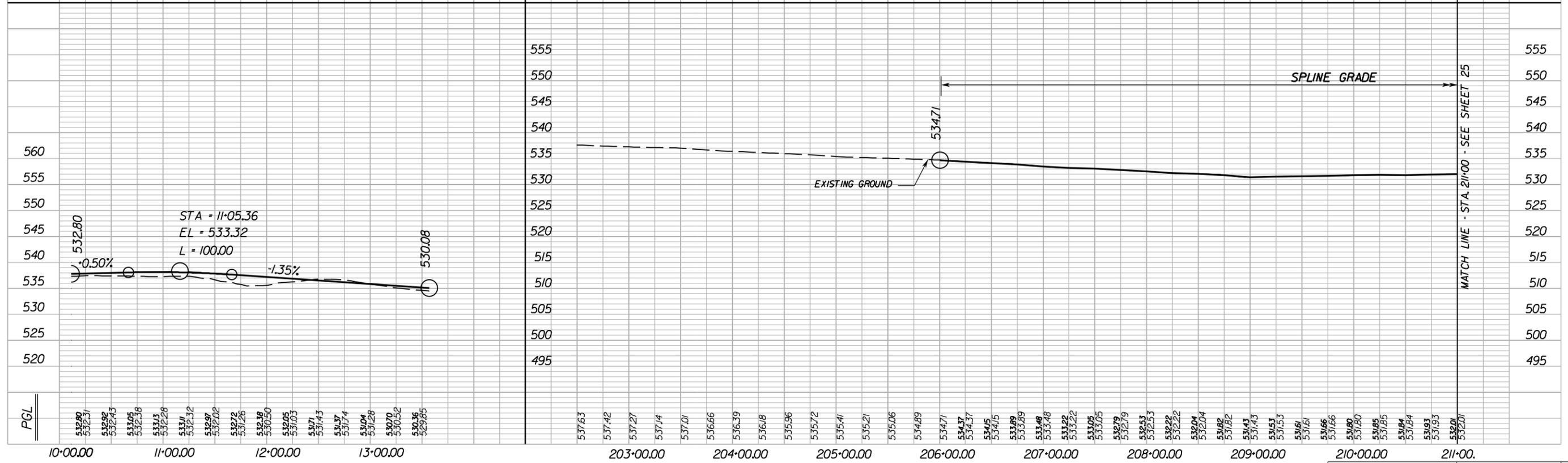
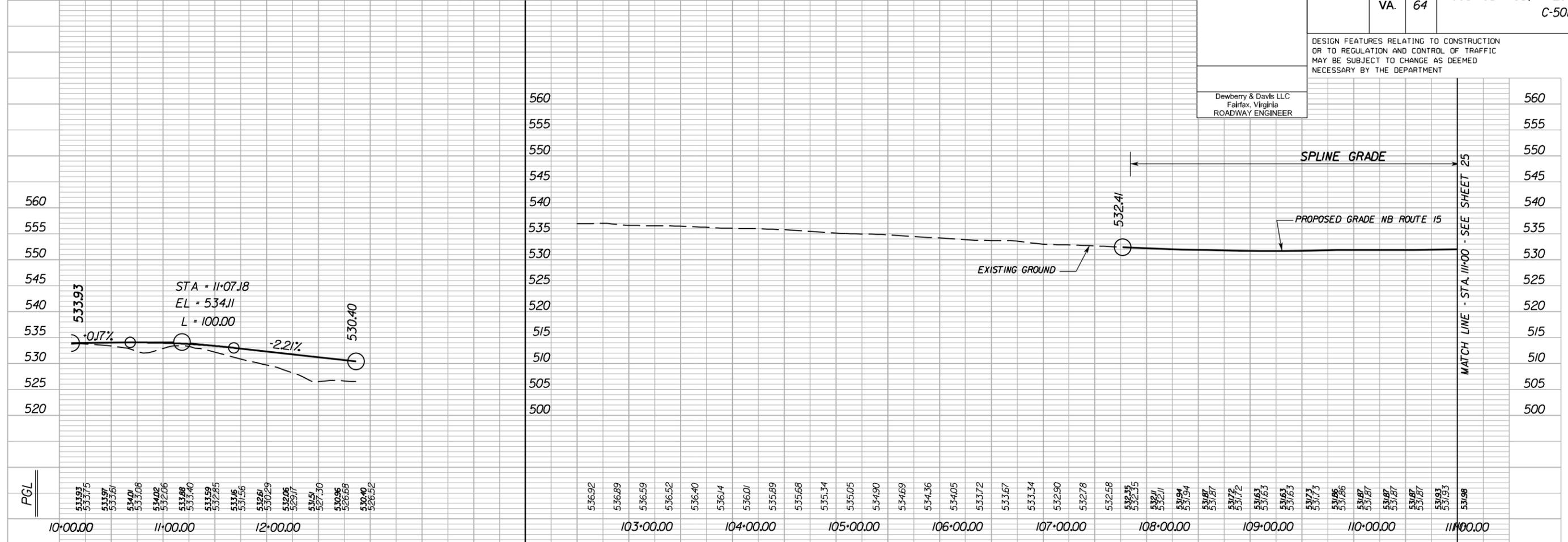
Dewberry & Davis LLC
 Fairfax, Virginia
 HYDRAULIC ENGINEER

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

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-054-703, RW-201 C-501	23

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

Dewberry & Davis LLC
 Fairfax, Virginia
 ROADWAY ENGINEER

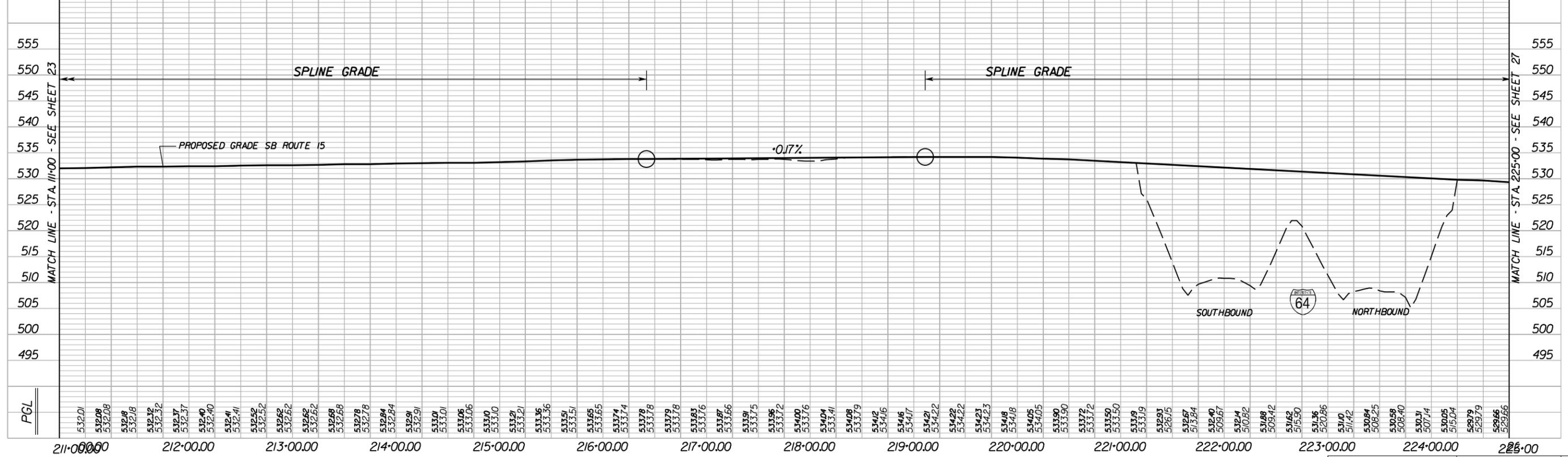
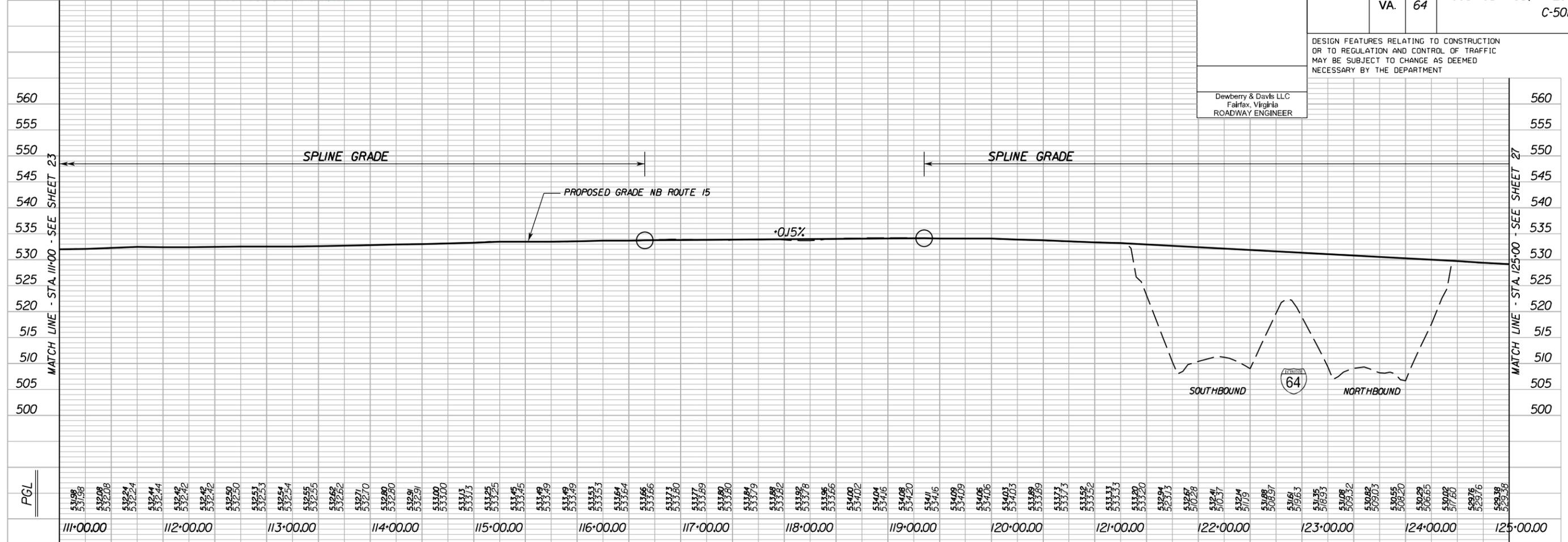


ROUTE 15-NB

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-054-703, RW-201 C-501	25

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

Dewberry & Davis LLC
 Fairfax, Virginia
 ROADWAY ENGINEER



ROUTE 15-SB

PROJECT	SHEET NO.
0064-054-703	25

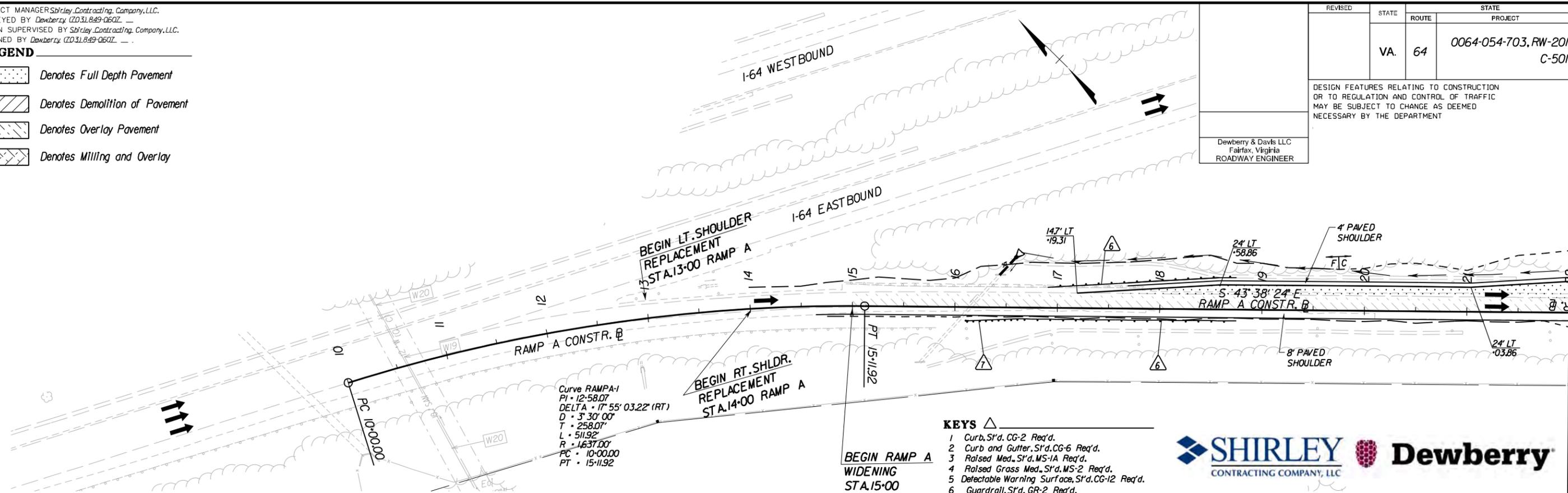
LEGEND

-  Denotes Full Depth Pavement
-  Denotes Demolition of Pavement
-  Denotes Overlay Pavement
-  Denotes Milling and Overlay

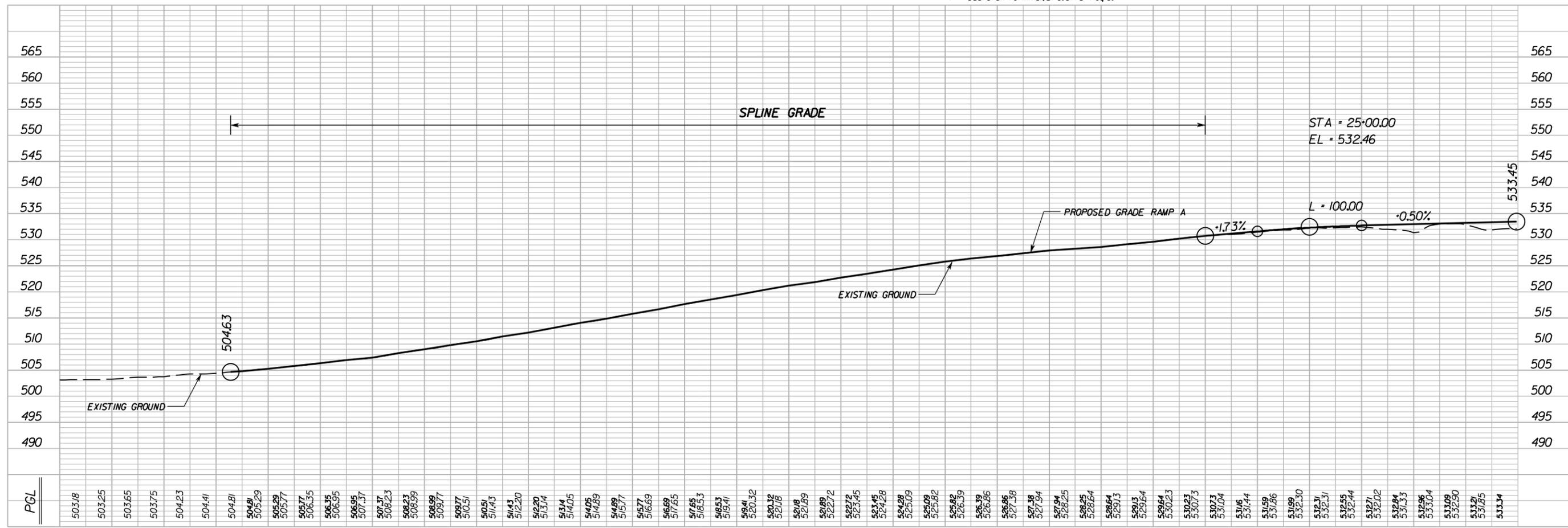
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-054-703, RW-201 C-501	26

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

Dewberry & Davis LLC
 Fairfax, Virginia
 ROADWAY ENGINEER



MATCH LINE - STA. 22+00 - SEE SHEET 22



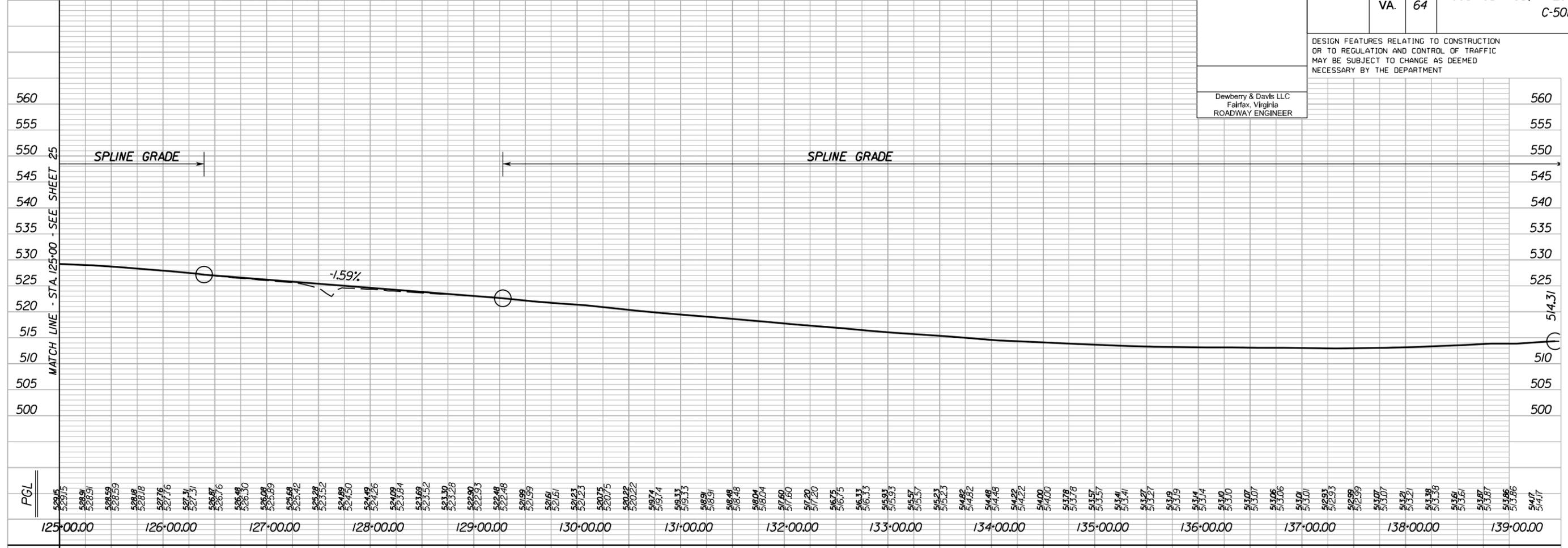
PGL	503.18	503.25	503.65	503.75	504.23	504.41	504.81	504.81	505.29	505.29	505.77	505.77	506.35	506.35	506.95	507.37	507.37	508.23	508.23	508.99	508.99	509.77	509.77	509.77	510.51	510.51	511.43	511.43	511.43	512.20	512.20	513.14	513.14	514.05	514.05	514.05	514.89	514.89	515.77	515.77	516.69	516.69	517.65	517.65	517.65	518.53	518.53	519.41	519.41	519.41	520.32	520.32	521.18	521.18	521.89	521.89	522.72	522.72	523.45	523.45	523.45	524.28	524.28	524.28	525.09	525.09	525.82	525.82	526.59	526.59	526.59	527.38	527.38	527.38	528.25	528.25	528.25	529.13	529.13	529.13	529.64	529.64	529.64	530.23	530.23	530.23	530.73	530.73	531.04	531.04	531.04	531.66	531.66	531.66	532.30	532.30	532.30	532.91	532.91	532.91	533.55	533.55	533.55	534.24	534.24	534.24	534.96	534.96	534.96	535.64	535.64	535.64	536.34	536.34	536.34	537.05	537.05	537.05	537.76	537.76	537.76	538.48	538.48	538.48	539.21	539.21	539.21	539.94	539.94	539.94	540.68	540.68	540.68	541.42	541.42	541.42	542.17	542.17	542.17	542.92	542.92	542.92	543.68	543.68	543.68	544.44	544.44	544.44	545.21	545.21	545.21	545.98	545.98	545.98	546.76	546.76	546.76	547.54	547.54	547.54	548.33	548.33	548.33	549.12	549.12	549.12	549.92	549.92	549.92	550.72	550.72	550.72	551.52	551.52	551.52	552.33	552.33	552.33	553.14	553.14	553.14	553.95	553.95	553.95	554.76	554.76	554.76	555.58	555.58	555.58	556.40	556.40	556.40	557.22	557.22	557.22	558.05	558.05	558.05	558.88	558.88	558.88	559.71	559.71	559.71	560.55	560.55	560.55	561.39	561.39	561.39	562.23	562.23	562.23	563.08	563.08	563.08	563.93	563.93	563.93	564.78	564.78	564.78	565.63	565.63	565.63	566.49	566.49	566.49	567.34	567.34	567.34	568.20	568.20	568.20	569.06	569.06	569.06	569.92	569.92	569.92	570.79	570.79	570.79	571.66	571.66	571.66	572.53	572.53	572.53	573.41	573.41	573.41	574.29	574.29	574.29	575.17	575.17	575.17	576.06	576.06	576.06	576.95	576.95	576.95	577.84	577.84	577.84	578.74	578.74	578.74	579.64	579.64	579.64	580.54	580.54	580.54	581.45	581.45	581.45	582.36	582.36	582.36	583.27	583.27	583.27	584.18	584.18	584.18	585.10	585.10	585.10	586.02	586.02	586.02	586.94	586.94	586.94	587.87	587.87	587.87	588.80	588.80	588.80	589.73	589.73	589.73	590.67	590.67	590.67	591.61	591.61	591.61	592.55	592.55	592.55	593.50	593.50	593.50	594.44	594.44	594.44	595.39	595.39	595.39	596.34	596.34	596.34	597.29	597.29	597.29	598.24	598.24	598.24	599.20	599.20	599.20	600.15	600.15	600.15	601.11	601.11	601.11	602.07	602.07	602.07	603.03	603.03	603.03	604.00	604.00	604.00	604.96	604.96	604.96	605.93	605.93	605.93	606.90	606.90	606.90	607.87	607.87	607.87	608.85	608.85	608.85	609.82	609.82	609.82	610.80	610.80	610.80	611.78	611.78	611.78	612.76	612.76	612.76	613.75	613.75	613.75	614.74	614.74	614.74	615.73	615.73	615.73	616.72	616.72	616.72	617.72	617.72	617.72	618.71	618.71	618.71	619.71	619.71	619.71	620.70	620.70	620.70	621.70	621.70	621.70	622.70	622.70	622.70	623.69	623.69	623.69	624.69	624.69	624.69	625.69	625.69	625.69	626.68	626.68	626.68	627.68	627.68	627.68	628.68	628.68	628.68	629.68	629.68	629.68	630.67	630.67	630.67	631.67	631.67	631.67	632.67	632.67	632.67	633.66	633.66	633.66	634.66	634.66	634.66	635.66	635.66	635.66	636.65	636.65	636.65	637.65	637.65	637.65	638.65	638.65	638.65	639.64	639.64	639.64	640.64	640.64	640.64	641.64	641.64	641.64	642.63	642.63	642.63	643.63	643.63	643.63	644.63	644.63	644.63	645.62	645.62	645.62	646.62	646.62	646.62	647.61	647.61	647.61	648.61	648.61	648.61	649.60	649.60	649.60	650.60	650.60	650.60	651.59	651.59	651.59	652.59	652.59	652.59	653.58	653.58	653.58	654.58	654.58	654.58	655.57	655.57	655.57	656.57	656.57	656.57	657.56	657.56	657.56	658.56	658.56	658.56	659.55	659.55	659.55	660.55	660.55	660.55	661.54	661.54	661.54	662.54	662.54	662.54	663.53	663.53	663.53	664.53	664.53	664.53	665.52	665.52	665.52	666.52	666.52	666.52	667.51	667.51	667.51	668.51	668.51	668.51	669.50	669.50	669.50	670.50	670.50	670.50	671.49	671.49	671.49	672.49	672.49	672.49	673.48	673.48	673.48	674.48	674.48	674.48	675.47	675.47	675.47	676.47	676.47	676.47	677.46	677.46	677.46	678.46	678.46	678.46	679.45	679.45	679.45	680.45	680.45	680.45	681.44	681.44	681.44	682.44	682.44	682.44	683.43	683.43	683.43	684.43	684.43	684.43	685.42	685.42	685.42	686.42	686.42	686.42	687.41	687.41	687.41	688.41	688.41	688.41	689.40	689.40	689.40	690.40	690.40	690.40	691.39	691.39	691.39	692.39	692.39	692.39	693.38	693.38	693.38	694.38	694.38	694.38	695.37	695.37	695.37	696.37	696.37	696.37	697.36	697.36	697.36	698.36	698.36	698.36	699.35	699.35	699.35	700.35	700.35	700.35	701.34	701.34	701.34	702.34	702.34	702.34	703.33	703.33	703.33	704.33	704.33	704.33	705.32	705.32	705.32	706.32	706.32	706.32	707.31	707.31	707.31	708.31	708.31	708.31	709.30	709.30	709.30	710.30	710.30	710.30	711.29	711.29	711.29	712.29	712.29	712.29	713.28	713.28	713.28	714.28	714.28	714.28	715.27	715.27	715.27	716.27	716.27	716.27	717.26	717.26	717.26	718.26	718.26	718.26	719.25	719.25	719.25	720.25	720.25	720.25	721.24	721.24	721.24	722.24	722.24	722.24	723.23	723.23	723.23	724.23	724.23	724.23	725.22	725.22	725.22	726.22	726.22	726.22	727.21	727.21	727.21	728.21	728.21	728.21	729.20	729.20	729.20	730.20	730.20	730.20	731.19	731.19	731.19	732.19	732.19	732.19	733.18	733.18	733.18	734.18	734.18	734.18	735.17	735.17	735.17	736.17	736.17	736.17	737.16	737.16	737.16	738.16	738.16	738.16	739.15	739.15	739.15	740.15	740.15	740.15	741.14	741.14	741.14	742.14	742.14	742.14	743.13	743.13	743.13	744.13	744.13	744.13	745.12	745.12	745.12	746.12	746.12	746.12	747.11	747.11	747.11	748.11	748.11	748.11	749.10	749.10	749.10	750.10	750.10	750.10	751.09	751.09	751.09	752.09	752.09	752.09	753.08	753.08	753.08	754.08	754.08	754.08	755.07	755.07	755.07	756.07	756.07	756.07	757.06	757.06	757.06	758.06	758.06	758.06	759.05	759.05	759.05	760.05	760.05	760.05	761.04	761.04	761.04	762.04	762.04	762.04	763.03	763.03	763.03	764.03	764.03	764.03	765.02	765.02	765.02	766.02	766.02	766.02	767.01	767.01	767.01	768.01	768.01	768.01	769.00	769.00	769.00	770.00	770.00	770.00	771.00	771.00	771.00	772.00	772.00	772.00	773.00	773.00	773.00	774.00	774.00	774.00	775.00	775.00	775.00	776.00	776.00	776.00	777.00	777.00	777.00	778.00	778.00	778.00	779.00	779.00	779.00	780.00	780.00	780.00	781.00	781.00	781.00	782.00	782.00	782.00	783.00	783.00	783.00	784.00	784.00	784.00	785.00	785.00	785.00	786.00	786.00	786.00	787.00	787.00	787.00	788.00	788.00	788.00	789.00	789.00	789.00	790.00	790.00	790.00	791.00	791.00	791.00	792.00	792.00	792.00	793.00	793.00	793.00	794.00	794.00	794.00	795.00	795.00	795.00	796.00	796.00	796.00	797.00	797.00	797.00	798.00	798.00	798.00	799.00	799.00	799.00	800.00	800.00	800.00	801.00	801.00	801.00	802.00	802.00	802.00	803.00	803.00	803.00	804.00	804.00	804.00	805.00	805.00	805.00	806.00	806.00	806.00	807.00	807.00	807.00	808.00	808.00	808.00	809.00	809.00	809.00	810.00	810.00	810.00	811.00	811.00	811.00	812.00	812.00	812.00	813.00	813.00	813.00	814.00	814.00	814.00	815.00	815.00	815.00	816.00	816.00	816.00	817.00	817.00	817
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ROUTE 15-NB

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-054-703, RW-201 C-501	27

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

Dewberry & Davis LLC
 Fairfax, Virginia
 ROADWAY ENGINEER



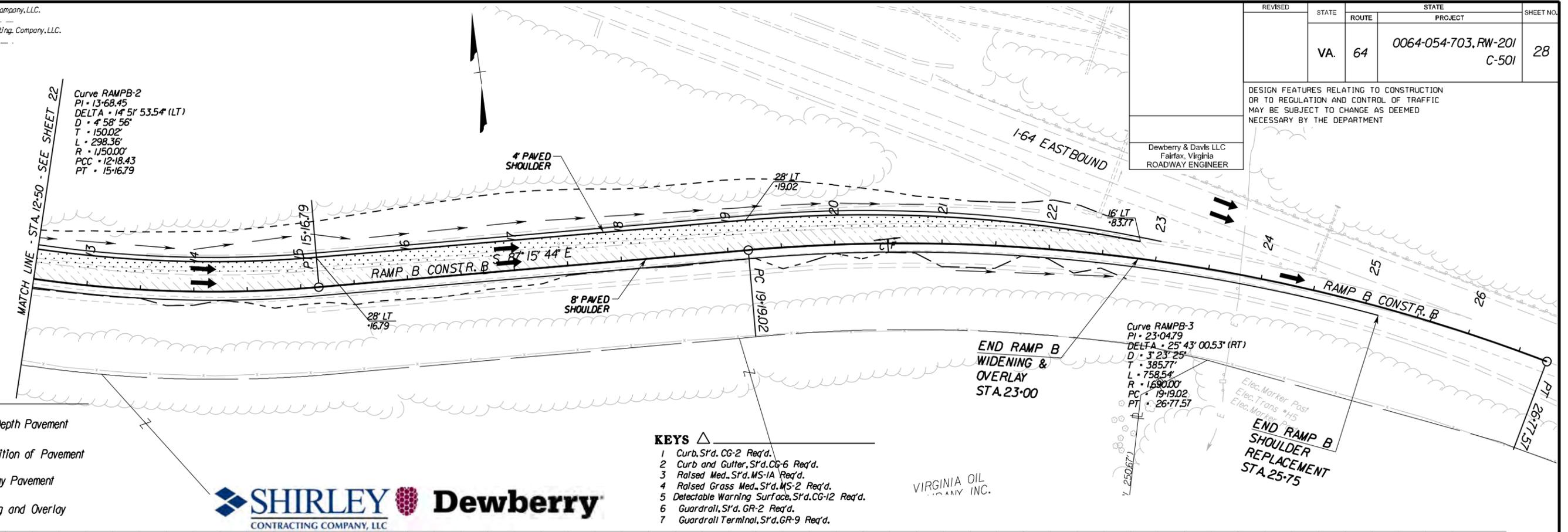
ROUTE 15-SB

PROJECT MANAGER Shirley Contracting Company, LLC.
 SURVEYED BY Dewberry (203) 849-0602
 DESIGN SUPERVISED BY Shirley Contracting Company, LLC.
 DESIGNED BY Dewberry (203) 849-0602

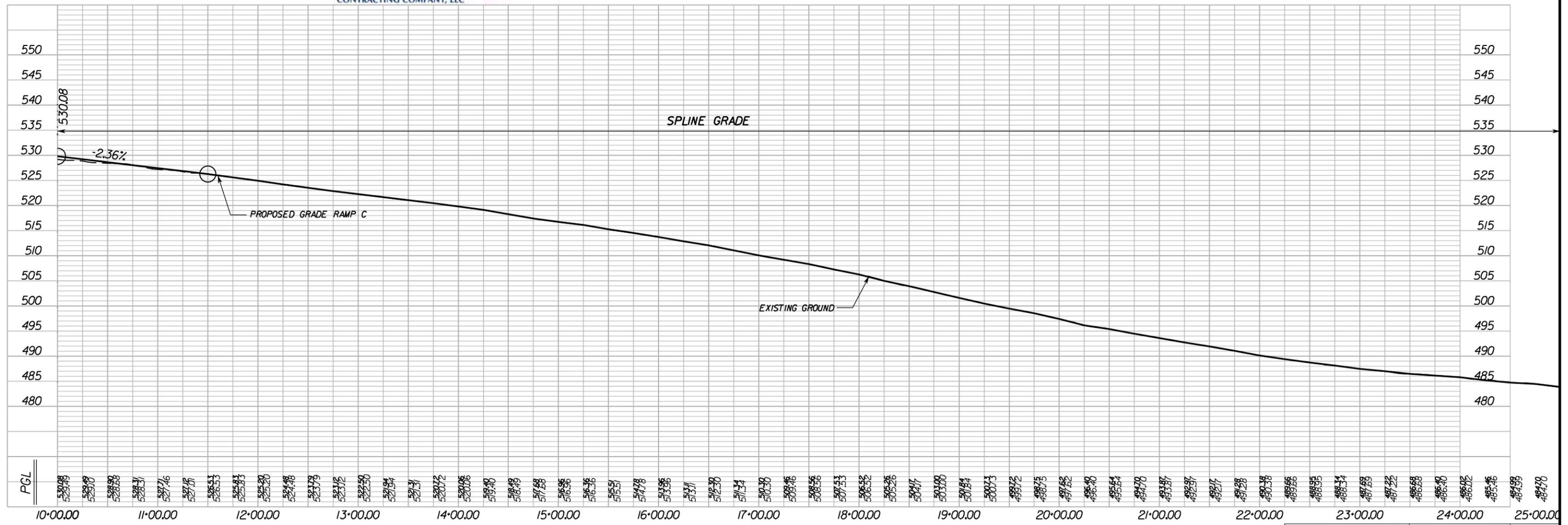
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-054-703, RW-201 C-501	28

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

Dewberry & Davis LLC
 Fairfax, Virginia
 ROADWAY ENGINEER



- LEGEND**
- Denotes Full Depth Pavement
 - Denotes Demolition of Pavement
 - Denotes Overlay Pavement
 - Denotes Milling and Overlay



PROJECT MANAGER Shirley Contracting Company, LLC.
 SURVEYED BY Dewberry (203) 849-0602
 DESIGN SUPERVISED BY Shirley Contracting Company, LLC.
 DESIGNED BY Dewberry (203) 849-0602

- KEYS** Δ
- 1 Curb, S'd. CG-2 Req'd.
 - 2 Curb and Gutter, S'd. CG-6 Req'd.
 - 3 Raised Med., S'd. MS-1A Req'd.
 - 4 Raised Grass Med., S'd. MS-2 Req'd.
 - 5 Detectable Warning Surface, S'd. CG-12 Req'd.
 - 6 Guardrail, S'd. GR-2 Req'd.
 - 7 Guardrail Terminal, S'd. GR-9 Req'd.

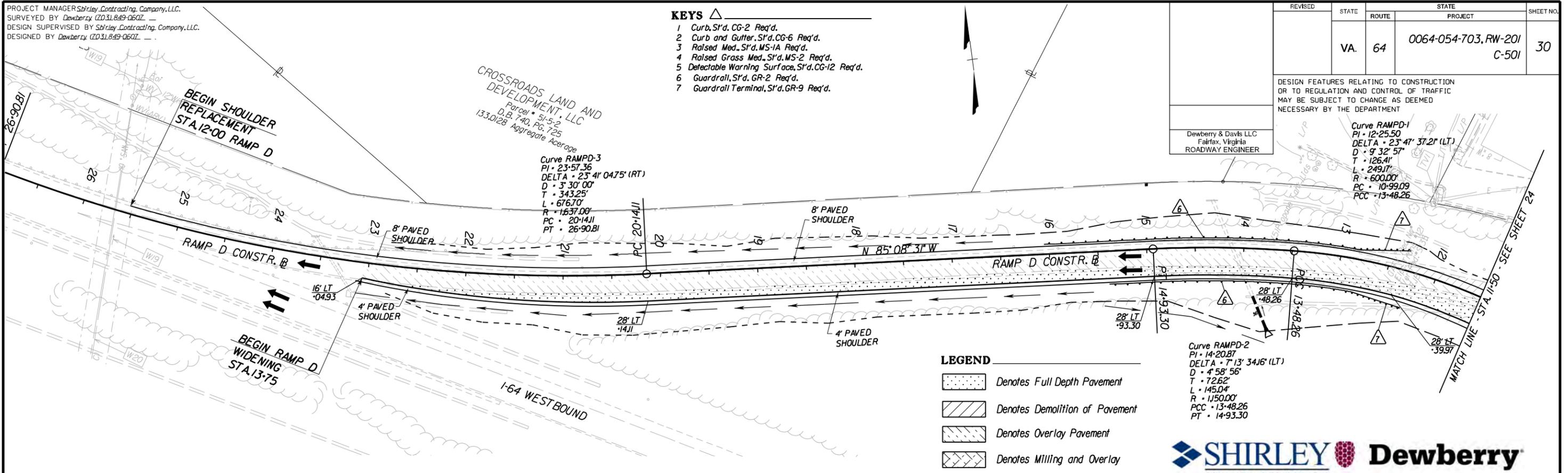
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-054-703, RW-201 C-501	30

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

Dewberry & Davis LLC
 Fairfax, Virginia
 ROADWAY ENGINEER

Curve RAMPD-1
 PI - 12+25.50
 DELTA - 23° 47' 37.2" (LT)
 D - 9° 32' 57"
 T - 126.41'
 L - 249.17'
 R - 600.00'
 PC - 10+99.09
 PCC - 13+48.26

Curve RAMPD-2
 PI - 14+20.87
 DELTA - 7° 13' 34.16" (LT)
 D - 4° 58' 56"
 T - 72.62'
 L - 145.04'
 R - 1150.00'
 PCC - 13+48.26
 PT - 14+93.30



LEGEND

- Denotes Full Depth Pavement
- Denotes Demolition of Pavement
- Denotes Overlay Pavement
- Denotes Milling and Overlay

