

I-64 Exit 91 Interchange Improvements

From: 0.429 Miles West of Route 285
To: 0.438 Miles East of Route 285
Augusta County, Virginia

COPY

STATE PROJECT No.: 0064-007-111, P101,
R-201, C-501, B-627

FEDERAL PROJECT No.: NH-064-2(152)

CONTRACT ID NUMBER: C00075877DB47

TECHNICAL PROPOSAL | VOLUME I

June 29, 2012

SUBMITTED TO:
VIRGINIA DEPARTMENT OF TRANSPORTATION

 **ORDERS**
CONSTRUCTION COMPANY

**CDM
Smith**



I-64
exit 91

4.1 Letter of Submittal



501 6th Avenue
Saint Albans, WV 25177
Tel: (304) 722-4237 Fax: (304) 722-4230

June 29, 2012

Bill Arel, PE
Virginia Department of Transportation
1401 East Broad Street
Richmond, VA 23219

Re: Letter of Submittal: I-64 Exit 91 Interchange Improvements, Augusta County, VA - Request for Proposals, Technical Proposal – Contract ID Number: C00075877DB47

Dear Mr. Arel:

Orders Construction Company (Orders) is pleased to submit to the Virginia Department of Transportation our Technical Proposal for the I-64 Exit 91 Interchange Improvements project. As requested, we are providing the Technical Proposal in two volumes: Volume I contains our responses to Section 4.0 of the RFP; Volume II includes all design concept graphics drawn to an identifiable scale.

Orders will lead this design-build team; our design and engineering partner for this project is **CDM Smith**. Other team members include **Greenhorne & O'Mara** (right-of-way and utility coordination/design); **Quinn Consulting Services, Incorporated** (quality assurance – DBE firm); **Triad Engineering, Inc.** (survey, landscaping, and geotechnical engineering); **Froehling & Robertson** (construction QC testing); and **ECS Mid-Atlantic, LLC** (construction QA testing).

The Orders team is committed to this project and to delivering a successful quality project to VDOT on-time and on-budget.

The Letter of Submittal requirements as set forth in the RFP, Part 1, Section 4.1 are included below. Orders acknowledges and guarantees the information as stated in Tab 4.1 of the technical proposal.

4.1.1 ▶ Nathaniel R. Orders (President) is the official representative and point of contact for the Orders team relative to this RFP. His contact information is listed below. Additionally, Mr. Orders is a Virginia-registered professional engineer (#0402-048999).

*Nathaniel R. Orders, President
Orders Construction Company, Inc.
501 Sixth Avenue
Saint Albans, WV 25177*

*Tel: (304) 722-4237
Fax: (304) 722-4230
Email: nateo@ordersconstruction.com*

4.1.2 ▶ If selected for this contract, the Orders team declares our intent to enter into a contract with VDOT in accordance with the terms of this RFP.

4.1.3 ▶ Pursuant to the RFP, this technical proposal and the forthcoming price proposal will remain in full force and effect for 120 days after the due date (June 29, 2012).

4.1.4 ▶ Nathaniel R. Orders (President) is the principal officer for Orders Construction Company, the legal entity with whom the contract will be written. His contact information is shown in 4.1.1 above.

4.1.5 ▶ Attachment 9.3.1, the proposal payment agreement, is included in the **Appendix**.

Additionally, the Orders team is compliant and shall be with all administrative requirements listed in 11.0 (Part 1) of the RFP, and we intend to comply with these requirements throughout the duration of the projects.

Thank you in advance for your detailed review of our Technical Proposal. We trust that you will find our commitment to VDOT focused and our credentials impeccable. We look forward to partnering with you on this project.

Respectfully submitted,
Orders Construction Company

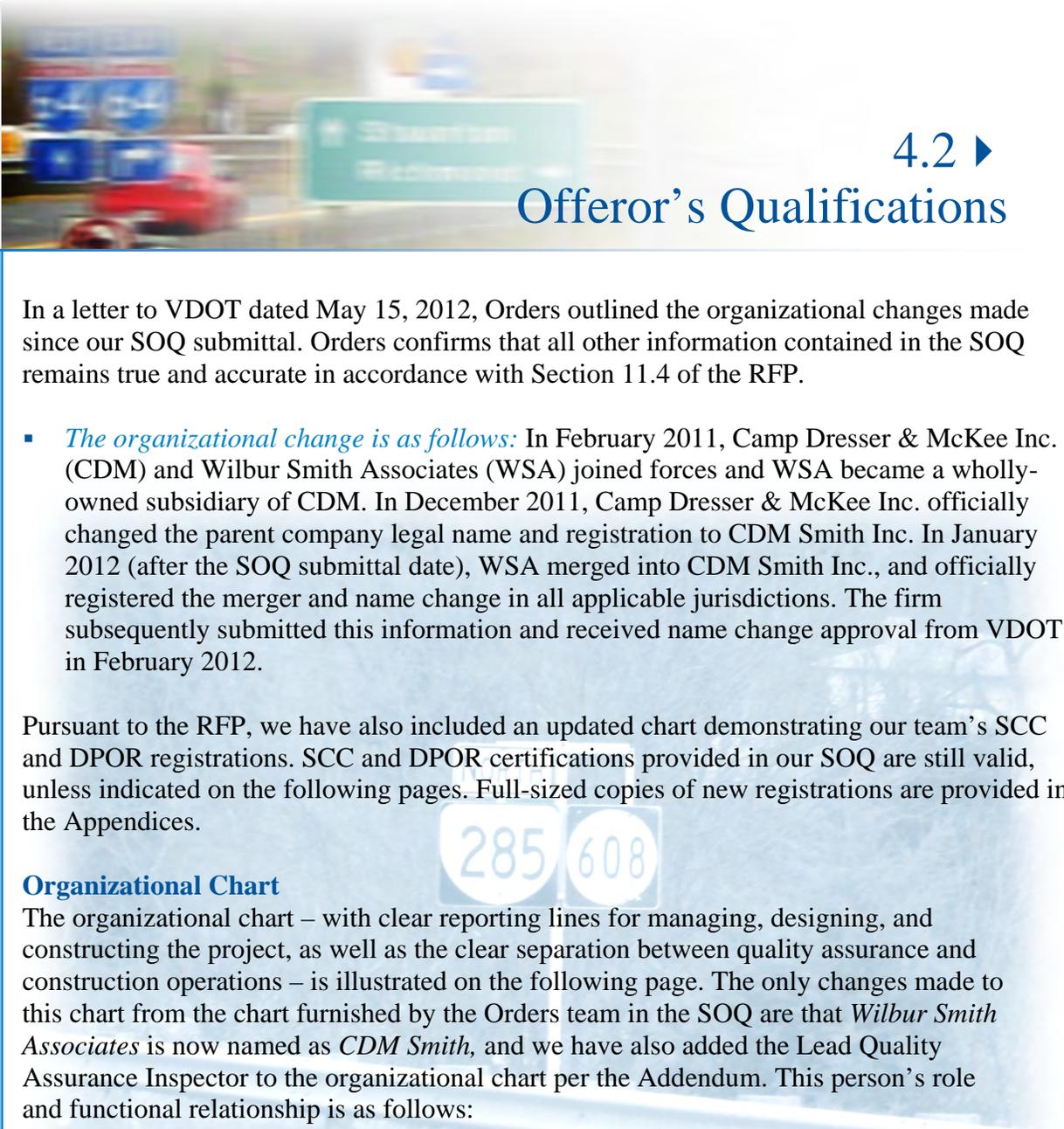


Nathaniel R. Orders, President



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4.2 Offeror's Qualifications



4.2 ▶ Offeror's Qualifications

In a letter to VDOT dated May 15, 2012, Orders outlined the organizational changes made since our SOQ submittal. Orders confirms that all other information contained in the SOQ remains true and accurate in accordance with Section 11.4 of the RFP.

- *The organizational change is as follows:* In February 2011, Camp Dresser & McKee Inc. (CDM) and Wilbur Smith Associates (WSA) joined forces and WSA became a wholly-owned subsidiary of CDM. In December 2011, Camp Dresser & McKee Inc. officially changed the parent company legal name and registration to CDM Smith Inc. In January 2012 (after the SOQ submittal date), WSA merged into CDM Smith Inc., and officially registered the merger and name change in all applicable jurisdictions. The firm subsequently submitted this information and received name change approval from VDOT in February 2012.

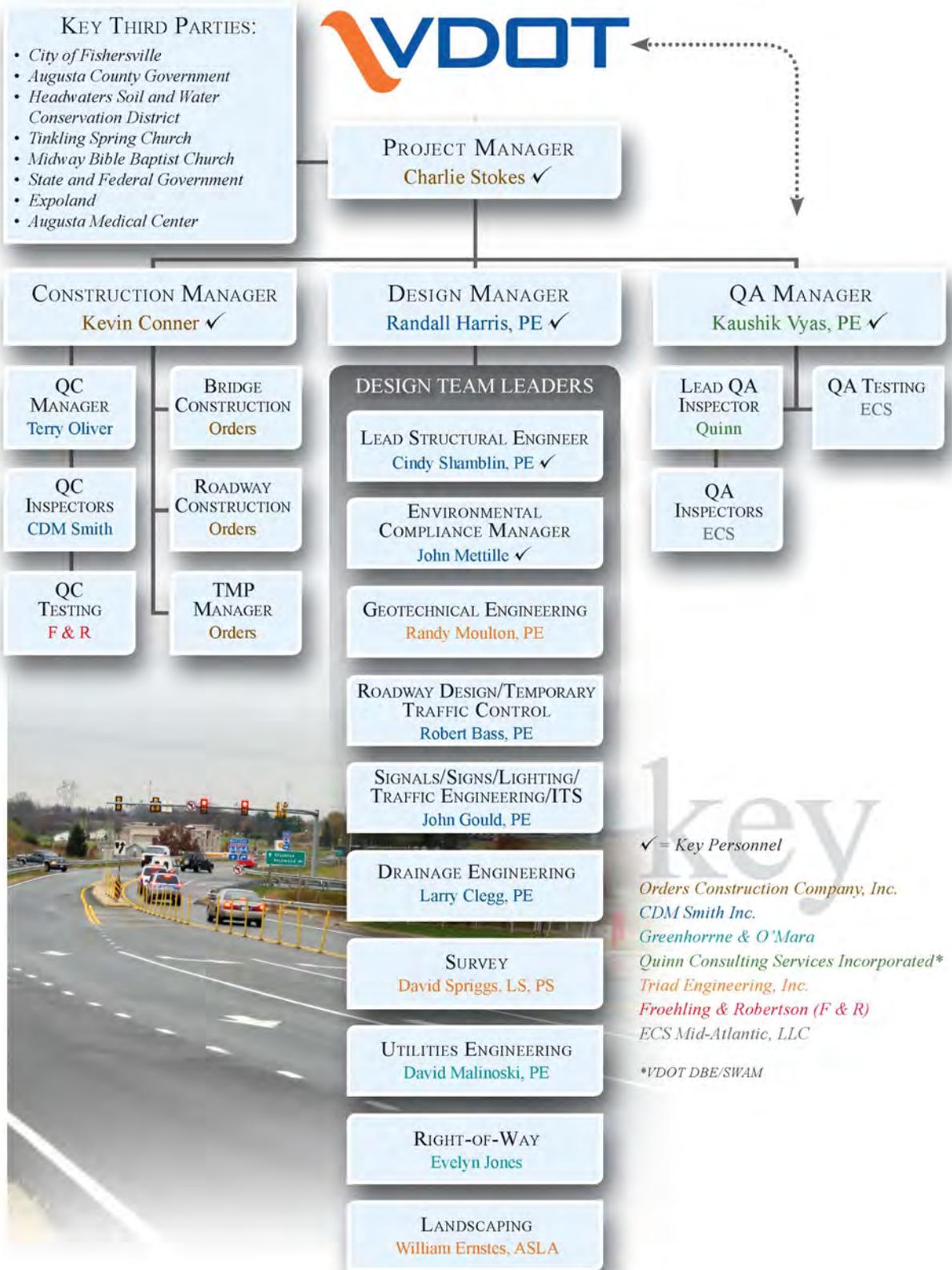
Pursuant to the RFP, we have also included an updated chart demonstrating our team's SCC and DPOR registrations. SCC and DPOR certifications provided in our SOQ are still valid, unless indicated on the following pages. Full-sized copies of new registrations are provided in the Appendices.

Organizational Chart

The organizational chart – with clear reporting lines for managing, designing, and constructing the project, as well as the clear separation between quality assurance and construction operations – is illustrated on the following page. The only changes made to this chart from the chart furnished by the Orders team in the SOQ are that *Wilbur Smith Associates* is now named as *CDM Smith*, and we have also added the Lead Quality Assurance Inspector to the organizational chart per the Addendum. This person's role and functional relationship is as follows:

- *Lead QA Inspector:* Reporting directly to the Quality Assurance Manager, he/she will be on the site for the duration of construction and will be responsible for observing construction as it is being performed, including all QC activities to ensure inspection and testing, and correction of any non-conformance work. He/she will direct other QA inspectors as needed to ensure all construction work and QC activities are being observed.

No roles, functional relationships, or organizational changes have otherwise occurred.



SCC#/Type/ Status	DPOR: Offices Offering Professional Services for this Contract	DPOR Key Personnel	DPOR Non- APELSCIDLA
Orders Construction Company			
See SOQ	N/A	N/A	See SOQ
CDM Smith (replaces Wilbur Smith Associates in SOQ)			
# F154186-3 S-Corp/Active	2112 W. Laburnum Ave, Suite 100 Richmond, VA 23227 APELSCIDLA #0411-000652 Exp. 2/28/2014	Randall Harris, PE APELSCIDLA #0402-025745 (exp. 1/31/2013) 8500 Summit Acres Drive Richmond, VA 23235 <i>Office: CDM Smith Richmond</i> Cynthia Shamblin, PE APELSCIDLA #0402-044608 (exp. 3/31/2014) 51 Copeland Road Charleston, WV 25320 <i>Office: CDM Smith Charleston</i>	N/A
	700 Washington St., East Geary Plaza, Suite 210 Charleston, WV 25301 APELSCIDLA #0411-000903 Exp. 2/28/2014		
	1100 Marion Street, Suite 200 Knoxville, TN 37921 APELSCIDLA #0411-000900 Exp. 2/28/2014		
	1648 McGrathiana Parkway, Suite 340 Lexington, KY 40511 APELSCIDLA #0411-000901 Exp. 2/28/2014		
Greenhorne & O'Mara			
See SOQ	10800 Midlothian Turnpike Suite 310 Richmond, VA 23235 APELSCIDLA #0411-000611 Exp. 2/28/2014	N/A	See SOQ (Real Estate DPOR)
Quinn Consulting Services, Incorporated			
See SOQ	See SOQ	Kaushikkumar Vyas, PE APELSCIDLA #0402-039004 (exp. 6/30/2014) 10170 Spring Drive Gordonsville, VA <i>Office: QCS Chantilly</i>	N/A
Triad Engineering, Inc.			
See SOQ	See SOQ for Winchester office DPOR 21641 Beaumeade Circle Suite 300 Ashburn, VA 20147 APELSCIDLA #0411-000408 Exp. 2/28/2014	N/A	N/A
Froehling & Robertson			
See SOQ	6181 Rockfish Gap Turnpike Crozet, VA 22932 APELSCIDLA # 0411-000052 Exp. 2/28/2014	N/A	N/A
ECS Mid-Atlantic, LLC			
See SOQ	1091 Airport Road Charlottesville, VA 22911 APELSCIDLA # 0411-000662 Exp. 2/28/2014	N/A	N/A



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4.3 Design Concepts



4.3 ▶

Design Concepts

The project consists of widening the existing ramps and increasing acceleration/deceleration lanes along I-64 and replacing/widening the Route 285 bridge and road from a 2-lane rural section to a 4-lane urban roadway to include intersection modifications and signalization. Our team certifies that the design concept presented is fully compliant with all applicable federal and state laws, VDOT standards, specifications, and reference documents. We have considered materials, methods, and functionality, as well as future inspection and maintenance in our design.

As required by the RFP, Conceptual Roadway and Structural Plans are located in Volume II of the Technical Proposal.

4.3.1 ▶ Conceptual Roadway Plans

We will design the project based on the minimum design criteria shown in *Table 1*. Maximum grades have been added to the table based on the latest AASHTO Green Book.

Table 1:
"Table 2.4.A"
Minimum
Design Criteria

Roadway Inventory and Minimum Design Criteria

	Route 285 (Tinkling Spring Road)	Route 935 (Expo Road)	I-64 Auxiliary Lanes	I-64 Exit Ramps (Ramps A and D)	I-64 On Ramps (Ramps B and C)	Route 627 (Tinkling Spring Drive)	Route 636 (Goose Creek Road)	Route 640 (Goose Creek Road)
Roadway Classification	Urban Minor Arterial	Urban Local	Rural Principal Arterial	Interchange Ramp	Interchange Ramp	Urban Local	Urban Collector	Rural Collector
Geometric Design Standard	GS-6	GS-8	GS-1	GS-R	GS-R	GS-8	GS-7	GS-3
Traffic Data:	See Interchange Modification Report							
Terrain	Rolling	Rolling	Level	Rolling	Rolling	Rolling	Rolling	Rolling
Design Speed (mph)	40	35	75	50	50	20	50	50
Superelevation Standard	TC-5.01U	TC-5.01ULS (see Design Waiver)	TC-5.01R	TC-5.01R	TC-5.01R	TC-5.01U	TC-5.01U	TC-5.01R
Vertical Clearance	16'9" over I-64	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Minimum Lane Width	12'	12'	12'	16' and varies	16'	12'	12'	12'
Max Grade	8%	15%	3%	5%	5%	15%	8%	7%



We recognize that grades may have a significant impact on operational performance on urban arterials. Minor adjustments in the grades have been made to meet the 16'-9" clearance over I-64 and meet the minimum grade requirement. Design concept typical sections were developed based on the criteria in *Table 5*, including the pavement design provided in the *Geotechnical Data Report*.

Roadway Concept Details

Value-Added Roadway Elements

Our designs provide the flattest grades practical – recognizing 0.5% desirable and 0.3% minimum grades along Route 285 – since grades may have a significant impact on operational performance on urban arterials, with the high volume of trucks and the need to adequate clearance over I-64 and provide pedestrian access.

We also made the following revisions to the roadway plans:

- Pavement indicated on typical sections
- Realigned Route 636 to provide tie to existing roadway
- Conceptual drainage and SWM design

I-64/Route 285 Interchange Ramps and Acceleration/Deceleration Lanes: I-64 is classified as a rural principal arterial (GS-1) in level terrain with a design speed of 75 mph. The horizontal alignments for the roadway meet the requirement of 75 mph. The typical section for I-64 is composed of two 12-foot-wide travel lanes in each direction. The maximum grade will be 3%.

The I-64/Route 285 interchange ramps have a design speed of 50 mph and are classified as interchange ramps (GS-R) in rolling terrain. The horizontal alignments for the roadways meet the requirement of 50 mph. The typical section for the ramps is composed of 16-foot and variable-width travel lanes. The maximum grade will be 5%.

Route 285 (Tinkling Spring Road): Tinkling Spring Road has a design speed of 40 mph and is classified as an urban minor arterial road (GS-6) in rolling terrain. The horizontal alignments for the roadway meet the requirement of 40 mph. The typical section for the roadway is composed of two 12-foot-wide travel lanes in each direction. The maximum grade will be 8%. Signalized intersections will be located at Expo Road/Ladd Road, interchange ramps, and Goose Creek Road.

Routes 636 and 640 (Goose Creek Road): Goose Creek Road is composed of Route 636 and 640 which both have a design speed of 50 mph and are classified as urban and rural collector roads (GS-7 and GS-3) in rolling terrain. The horizontal alignments for the roadway meet the requirement of 50 mph. The typical section for the roadway is composed of two 12-foot-wide travel lanes. The maximum grade will be 8% on Route 636 and 7% on Route 640.

Route 627 (Tinkling Spring Drive): Tinkling Spring Drive has a design speed of 20 mph and is classified as an urban local road (GS-8) in rolling terrain. The horizontal alignment for the roadway meets the requirement of 20 mph. The typical section for the roadway is composed of two 12-foot-wide travel lanes. The maximum grade will be 15%.

Route 935 (Expo Road): Expo Road has a design speed of 35 mph and is classified as an urban local road (GS-8) in rolling terrain. The horizontal alignment for the roadway meets the requirement of 35 mph. The typical section for the roadway is composed of two 12-foot-wide travel lanes. The maximum grade will be 15% and the design of the roadway will be refined based upon the design waiver with regard to the superelevation.

Development of the roadway plans will be accomplished with the goal of meeting all requirements of the scope of services while benefiting the end users. Particular attention will be given to benefits of the end user by developing a transportation management plan that provides safe operations during construction and by developing a sequence of construction that minimizes construction impacts and provides access to connections and business along the corridor.

Conceptual Hydraulics and Stormwater Management Design

The Orders team will provide the necessary hydraulic services to meet the requirements of the RFP. We will provide and/or perform investigations, evaluations, analysis, coordination, documentation, and design required to meet the hydrologic and hydraulic, drainage, stormwater management (SWM), erosion and sedimentation control (E&S), stormwater pollution prevention, and Virginia Stormwater Management Program permitting requirements of the standards and reference documents listed in Section 2.1.

Hydrologic and Hydraulic Analysis

The Orders team will complete a hydrologic and hydraulic analysis (H&HA), including scour analysis for the Goose Creek Box Culvert, which has a 100-year design discharge of 1530 cfs, as provided in the HEC-2 data provided by VDOT. This is an existing culvert, which will be extended. The backwater analysis will be based upon an HEC-RAS analysis that addresses the 70-foot-long extension. Goose Creek is located within a FEMA detailed study area; therefore, no increase in backwater will be allowed (see Figure 1).

The hydraulic analysis will be submitted to VDOT on LD 293 forms including the files for the approved analysis software. The final H&HA submittal will include VDOT form LD-450. After the installation of this culvert, the Orders team will provide an as-built H&HA based upon the as-built survey. The effects of any deviations from the pre-construction H&HA will be mitigated by the Orders team.

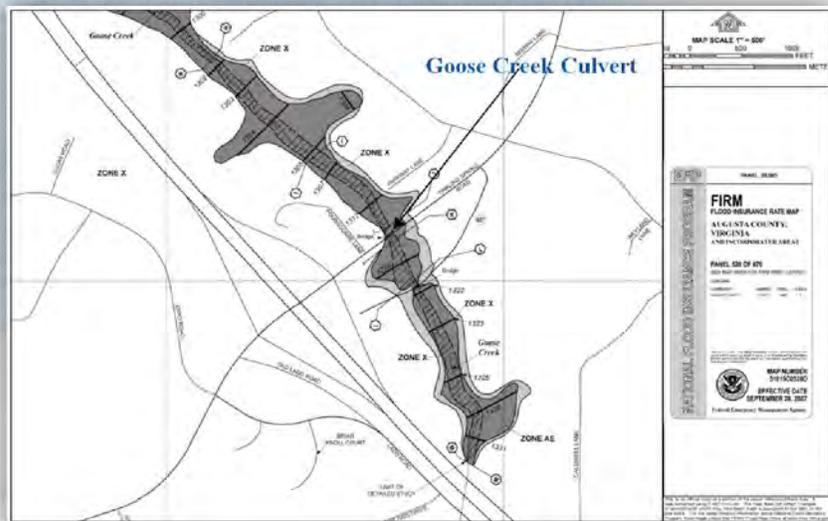
Drainage

The drainage work provided by the Orders team includes the design and construction of culverts, open channels, storm sewer systems, underdrains, bridge deck drainage assemblies and structures, adequate outfall analysis, SWM facilities, and erosion and sediment control measures in compliance with the standards and reference documents listed in Part 2, Section 2.1 and the VDOT Erosion and Sediment Control and Stormwater Management Programs. We will provide the documentation as requested in the RFP and in accordance with the documentation requirements as outlined in the *VDOT Drainage Manual*.

The Orders team will provide VDOT with an existing drainage structures inventory within the project area that will be incorporated into the proposed drainage design. This inventory will occur within the scope validation period. Drainage structures that are deemed unserviceable due to structural defects shall be replaced. Drainage pipes damaged or deteriorated to the point that they are no longer functional (or their functionality has been considerably impacted) shall be replaced or rehabilitated at the discretion of VDOT in accordance with its guidelines including, but not limited to, those as outlined in the latest version of IIM-LD-244.

The drainage design for this project uses stormwater inlets for the curb and gutter sections. The inlet, storm drain, and access hole designs are based upon Tables 9-1, 9-2, and 9-3 respectively in Chapter 9 of the *VDOT Drainage Manual*. The inlets will be spaced to control the spread using a 4-inch rainfall and flooding half a

Figure 1: Goose Creek FIRM



lane. The storm sewer system will be designed for a 10-year storm. Additionally, roadside ditches and drainage channels will be analyzed using criteria from Chapter 7. Hydrology and design storm selection are based upon Chapter 6. Culvert design will be based upon Chapter 8.

Post Construction Stormwater Management Facilities

We will provide the stormwater facilities as recommended in the RFP. The stormwater facilities recommended by VDOT are the removal of the roadway surface on Old Ladd Road and the construction of an extended detention basin in the area between Old Ladd Road and Ramp B. The extended detention basin will be designed according to the requirements of Chapter 11 in the VDOT Drainage Manual. The basin will serve an approximate drainage basin area of 13.9 acres. The Orders team completed a preliminary design for this location. *Table 2* shows the design information for this pond design. *Figure 2* shows a detail of the SWM-1 structure and dam.

Figure 2: SWM Pond Details

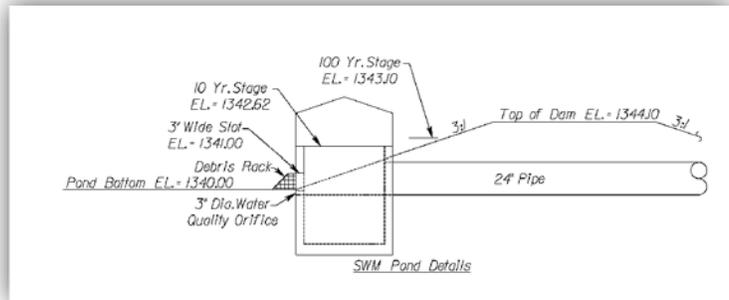


Table 2: SWM Pond Design Data

Basin Data	Water Quality Data	Pond Design Data	Water Quantity Data
Drainage Area = 13.9 ac.	1/2-inch Water Quality Volume = 4,283 cf	Pond Bottom EL = 1340.00	Modified Rational Method
Total Impervious = 5.45 ac.	Required Volume for Extended Detention = 8,466 cf	3' Wide Slot EL = 1341.00	Used Rainfall Data for Augusta County from the National Weather Service
Existing Impervious = 3.09 ac.	Storage Depth = 1.0 ft	Top of Riser EL = 1342.62 (10-year Stage)	Tc = 27 Minutes
New Impervious = 2.36 ac.	Volume Obtained = 9,694 cf	100-year Stage = 1343.10	Critical Duration = 1.5*Tc = 40.5 minutes
	Use 3" diameter orifice to obtain 30 hour Drawdown	Top of Dam = 1344.10	2-year Q Pre = 14.66 cfs Post = 12.99 cfs
		24" Diameter Discharge Pipe	10-year Q Pre = 21.14 cfs Post = 20.73 cfs



4.3.2 Conceptual Structural Plans

This project includes one bridge carrying Route 285 over I-64. Structural design concepts for the bridges include the following:

- The design live load capacity of this structure will be AASHTO HL-93 and the design will be completed in accordance with *AASHTO LRFD Bridge Design Specifications 5th Edition, 2010, 2010 Interims*; VDOT Modifications (IIM-S&B-80.3); and the additional substructure and foundation criteria attachment 2B of the RFP.

- According to the Geotechnical Data Report, the structure is located in AASHTO Seismic Zone 1; therefore, no detailed seismic analysis will be required.
- All concrete for the cast-in-place elements of the superstructure will be VDOT Class A4 and all concrete for the substructure of each bridge will be VDOT Class A3. All concrete will conform to the VDOT Special Provision for Low Permeability Concrete.
- Corrosion resistant reinforcement will be used in the deck, parapets, and integral backwalls in accordance with IIM S&B-81.4. This component will greatly reduce long-term maintenance costs of the bridge. Plain deformed reinforcing bars will conform to ASTM A615 Grade 60.
- All foundations will provide bearing on or in rock.
- To further protect the deck concrete from water (i.e., splash from I-64, etc.), an epoxy surface treatment will be applied to the top of the deck approximately one foot from the face of the fascia barrier on both sides. The epoxy treatment will also be applied underneath on the deck overhang and the deck edge over the full length of the bridge. The epoxy treatment system is a 2-coat system and will be in accordance with Section 243 – Epoxy-Resin Systems, Type EP-3B and Type EP-3T.

Value-Added Structural Elements

Wider girder spacing saves two lines of girders and reduces the number of bearings and diaphragms. It also allows for quicker construction by reducing the number of girders that need to be set, thus reducing impact to the traveling public. VDOT will achieve substantial savings in concrete girder costs as well as future maintenance costs.

Jointless construction will minimize moisture exposure and future maintenance needs by having no joints at the abutments which could potentially leak on the concrete superstructure and bearings.

Closure pour will reduce vibrations during concrete curing providing a better quality deck.

Epoxy surface treatment will greatly reduce long-term maintenance costs.

Route 285 over I-64

The existing bridge that carries Route 285 over I-64 is a tangent bridge with an approximately 6-degree skew. The proposed bridge will consist of two continuous spans with an overall length of 207'-4" as shown on page 58 in Volume II of this submittal. Mechanically stabilized earth (MSE) walls will be used to retain the approach fill and will allow for a shorter bridge without compromising any clear zone or horizontal clearance requirements in the RFP. The proposed horizontal alignment mimics that shown in the preliminary RFP plans. The vertical alignment has to be raised slightly to accommodate an increased superstructure depth. With shortening of the vertical curve, the elevations are raised on the structure and only minimally increase the elevations on the approaches. This will result in little additional material needed on the approaches but will accommodate the vertical clearances required on I-64 both present and future.

The span arrangement accommodates a potential future widening of I-64 eastbound and westbound on the inside and outside of the existing configuration. Clear zone distances as required by AASHTO are met based on the existing I-64, and horizontal clearances are provided for the anticipated future widening of I-64. The bridge will carry four thru lanes (two in each direction) and two turning lanes plus a shared use path. Type B Pedestrian fencing will be used on each fascia barrier in accordance with the RFP. Accommodations for future lighting will be provided for on the bridge by providing conduits in the parapets and blisters for future light poles.

The bridge will be constructed in two phases to accommodate two lanes of traffic at all times. Phase 1 will be constructed in the clear with no disruption to the existing traffic utilizing the existing bridge. Traffic will then be switched onto the new structure which provides two 12-foot traffic lanes. Phase 2 will then be

completed to provide the lane configuration as described above using a deck closure pour. The adjacent traffic will cause vibrations which could have negative impacts on the curing of the deck concrete. The use of a closure pour ensures the vibrations will only impact a small portion of the curing concrete. This will result in a better quality deck, thus reducing long-term maintenance costs. Longitudinal construction joints in the deck will be located over the girder flanges. A staging diagram can be seen on page 59 in Volume II of this submittal.

The superstructure will consist of a concrete deck composite with nine 53-inch prestressed concrete bulb tee girders. The concrete strength for the girders is 8,000 psi at release. The girders will be spaced at 11'-2" and the overall deck width will be 96'-8". By using the 11'-2" spacing, two lines of girders have been eliminated from the typical shown in the Preliminary RFP Plans. This results in substantial savings not only in costs, but future maintenance costs. The deck overhang with this configuration exceeds 30% of the girder spacing; therefore, a yield line analysis will be performed on the overhang (however, the overhang still lends itself to good balance with the girder spacing). This allows for a balanced design between the interior and exterior girders. Additional deck concrete and rebar is required above that needed for the 11-girder system (Preliminary RFP), but a cost analysis demonstrated it is minimal in comparison to the savings achieved by reducing the number of girder lines. Elastomeric bearing pads are anticipated for use at the pier. Load ratings will be performed on both the completed bridge and also on the phased portions of the new bridge carrying traffic temporarily. These ratings will be completed in accordance with IIM S&B-86, AASHTO Manual of Bridge Evaluation (2nd Edition) and the NBIS. All bridge ratings will be performed using VDOT-approved AASHTO software VIRTIS. A transverse section is shown on page 59 in Volume II of this submittal.

To minimize moisture exposure and future maintenance needs, jointless construction details will be incorporated. With a bridge skew of approximately six degrees and span lengths of 103'-8" feet for each span, fully integral abutments will be used in accordance with VDOT S&B Manual Vol. V Part 2. The fully integral cast-in-place abutments are anticipated to consist of a stem supported on a single row of piles. The beam ends are cast into the backwall. EPS material will be used behind each backwall to accommodate the movement of the abutment. Adequate clearances from the back of the MSE wall to the front of the integral abutment will be provided. Casings may be used around piles to avoid any negative skin friction (i.e., down drag forces). The casing will be filled with sand prior to construction of the abutment. Alternatively, a bond breaker may be used on the piles to alleviate the down drag forces in lieu of the casings. Conceptual abutment details are shown on page 60 in Volume II of this submittal.

The center substructure unit will consist of two adjacent multi-column piers and caps. The piers are anticipated to be founded on spread footings. To keep the span lengths balanced and to a minimum, the proposed pier will be shifted slightly from the location of Pier 2 of the existing bridge. To design the most efficient beams, balancing the spans was a priority while maintaining the clear zone and horizontal clearance requirements as per the RFP. In fact, by shifting the pier slightly, any clear zone requirements associated with the widening of I-64 to the inside (median) in the future will be met. The pier will be constructed as two separate piers during Phase 1 and Phase 2 of the construction. Conceptual pier details are shown on page 60 in Volume II of this submittal.

Preliminary analysis indicates that a single scupper will be required near the transition of the median for the left turn lane for vehicles travelling southwest on Tinkling Spring Road. This deck drain will collect and pipe the water to the stormwater collection system for Route 285 (Tinkling Spring Road). It will not be piped or released onto the roadway or roadway drainage system of I-64 beneath the bridge.



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4.4 Project Approach



4.4 ▶

Project Approach

Our team’s proposed plan to implement the design plans is based on a project development process which allows plan development to occur concurrently with other engineering and environmental disciplines. Coordination will begin with monthly design meetings, which will keep the design team and design-build project manager (PM) informed about design, engineering, environmental, and construction-related issues and project developments. Additionally, Greenhorne & O’Mara’s right-of-way specialists will work with the design engineers providing input from the right-of-way perspective as the plans are being developed.

The Orders team will maintain an ftp site that will be the central repository for all project plans and design documents. At each of the different submittal phases, we will perform QA/QC on plan sheets per the approved QA/QC plan. Plan submittals to VDOT and FHWA will include electronic files and hard copy files accompanied by the QA/QC checklist and written notice that the documents have been checked in accordance with the approved QA/QC plan, meet the requirements of the contract documents, and describe the logical subsections of work being reviewed.

4.4.1 ▶ Environmental Management

Based on the information contained within the Categorical Exclusion (4/18/2011) and the reevaluation review (7/21/2011), the Orders team will coordinate with VDOT throughout the design-build process as the outstanding environmental work is completed, and we will provide documentation to update the project reevaluation as appropriate. As design and right-of-way plans are being developed, the

Environmental Manager will be directly involved in the process to ensure that environmental issues and commitments are integrated into the design. Additionally, the Environmental Manager will develop an environmental tracking sheet to track environmental concerns through the design and construction phases.

The following narrative summarizes our approach for this project.

Our approach will be to avoid and minimize any changes to the original environmental findings by staying within the study area evaluated within the NEPA documents to the greatest extent possible.

Environmental Concerns during Design and Right-of-Way

Cultural/Historic Resources: According to the approved categorical exclusion (CE) and its supporting documentation, no archaeological sites were identified within the area of potential effect (APE) and no further work investigations are warranted. If the right-of-way limits change for the project, additional archaeological investigations may be necessary.

The CE and project reevaluation also indicated a determination of “No Adverse Effect” to properties listed or eligible for listing on the National Register of Historic Places and no additional coordination was anticipated. A Section 4(f) *de minimus* finding was made by FHWA for the Tinkling Spring Presbyterian Church property, the only historic property eligible for listing on the National Register of Historic Places within the project’s area of potential effects. We will avoid, to the greatest extent possible, any project-related activities on this historic property, including but not limited to staging, borrow/disposal, and any temporary or permanent easements. We will submit written notification to the VDOT Project Manager if the design plans or construction methods necessitate any activity on the historic property. VDOT will determine whether the Virginia State Historic Preservation Officer (SHPO) must be consulted. We fully understand the impact that deviating from these findings could have on the project schedule and will work to keep from changing the project in the vicinity of the church and its National Register boundaries.

If cultural resource technical studies of compensatory mitigation areas are needed to obtain the water quality permits necessary to construct the project, the Orders team will conduct the necessary studies, coordinate with the SHPO, and implement the appropriate treatment actions resulting from the coordination. We will provide VDOT with the technical studies and results of coordination with the SHPO for VDOT’s coordination with FHWA.

Threatened and Endangered Species: Based upon VDOT’s preliminary environmental information, no waters of the United States (WOUS) or threatened and endangered (T&E) species habitat areas appear to be located within the project limits. If the wetland delineation and updated surveys confirm these findings, the removal of these areas from the permitted project limits will be proposed to the regulatory agencies during the pre-application meeting. This will allow for an expedited design and construction schedule for these sections of the project.

According to the approved CE, VDOT coordinated with U.S. Fish and Wildlife Service (FWS), Virginia Department of Game and Inland Fisheries (DGIF), Virginia Department of Conservation and Recreation (DCR), and Virginia Department of Agriculture and Consumer Services (DACS) regarding the federally endangered Indiana Bat, Northeastern Bulrush, and Virginia Big-eared Bat, as well as the federally threatened Swamp-pink, Madison Cave Isopod, and Eastern Prairie Fringed Orchid. The FWS confirmed that the project would have no effect on any of the species except for the Madison Cave Isopod, which is not likely to be adversely affected by the project as long as strict erosion and sediment control procedures are followed and stormwater basins are appropriately designed and constructed.

Due to the Online Project Review Certification Letter being valid for one year from date of issuance and the Endangered Species Act (ESA) list being valid for 90 days, an updated species list will be requested from the service to validate that no new information is available for the project area prior to the project implementation/construction.

The Orders team will be responsible for ensuring that all T&E species are correctly identified and that impacts are assessed, noting that more or less resources may be present than initially identified. We will provide the VDOT Project Manager with copies of all documentation and correspondence with regulatory agencies.

Water Quality Permits and Agency Coordination

We will seek independent authorization from each respective agency under the Joint Permit Application process. This process allows for concurrent but independent review by the regulatory authorities. Based on preliminary impact analysis, site reconnaissance, and coordination with the design team, wetland impacts are anticipated to be more than 0.5 acres and 450 linear feet of streams may be impacted by the project. This review also indicated that SPGP and WP3 permits will be required. The Orders team will obtain all water quality permits required to construct the project including those for utility relocations—we will be the permittee. If utilities are to be relocated by the utility company, the utility company will be responsible for necessary water quality permits.

An evaluation of design alignment alternatives will be performed to support the avoidance and minimization process. Additionally, any previous alternatives evaluated by VDOT prior to the advertisement of this RFQ will be used as necessary to support avoidance and minimization efforts. All impacts in WOUS (including streams and wetlands) will be appropriately mitigated via measures that the regulatory agencies determined acceptable.

The Orders team will be responsible for compliance with pre-construction, construction-related permit conditions, as well as post-construction monitoring if required by regulatory agencies. Construction of any compensatory mitigation shall be conducted concurrently with the project construction and in accordance with the permit plans and contract documents. We will conduct project compensation construction and/or consider alternative in-lieu fee payment or wetland banking credits purchase in accordance with permits.

We will provide VDOT with copies of all permits, documentation, and correspondence with regulatory agencies. Construction activities will not impact regulated areas within the project limits until all applicable water quality permits have been issued to us. We will not proceed with work covered by the water quality permits until VDOT releases the work in writing. VDOT may release a portion or all of such work not in jurisdictional areas, but may order a suspension of the same work after its release. We will not be allowed to begin work that pre-determines the work required in the jurisdictional areas until the permits are secured.

Compensatory Mitigation

Based on the preliminary impact analysis, wetland impacts will exceed 0.5 acres, and impacts to stream channel may exceed 400 linear feet; therefore, compensatory mitigation will be required. Our approach will be consistent with the Final Rule issued by the U.S.

Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) on April 10, 2008 for Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332 and 40 CFR Part 230) and will include exploring opportunities for purchasing credits from an approved mitigation bank, making a contribution to the Virginia Aquatic Restoration Trust Fund (in-lieu fee), and exploring onsite and offsite mitigation opportunities. Stream restoration/enhancement will be explored as a self-mitigating alternative for streams that need to be relocated or that fail to meet the MS-19 channel adequacy requirements. Stream restoration and/or enhancement efforts will employ natural stream channel design methodologies. Specifically, the physical nature of the stream system will be evaluated through the use of standard geomorphic protocols, such as the Rosgen Stream Classification System. Natural stream channel design techniques that control the grade and protect the bank may include channel bed grade control structures (i.e., plunge pools, step pools, vanes, etc.), streambank armoring (i.e., rock toe protection), and riparian buffer reestablishment. Stream restoration/enhancement plans would be prepared and approved through the required permitting process.

Our approach will allow us to anticipate and mitigate any potential delays to the project schedule.

► **VDOT Supporting Documentation:** We will provide the appropriate documentation supporting the environmental commitments outlined in the approved CE, the PS&E reevaluation, and right-of-way authorization reevaluation, and we will ensure that the environmental certification forms have been carried out during the design and approval process. The appropriate documentation will be provided to VDOT for development of the final Environmental Certification and/or PS&E re-evaluation prior to releasing the project for construction.

Environmental Issues during Construction

Air Quality and Noise: The Orders team will ensure that Virginia Department of Water Quality (DEQ) air pollution regulations will be adhered to during the construction of this project with regard to fugitive dust and open burning precautions. Although noise levels are not predicted to approach or exceed the Noise Abatement Criteria, we will do their best to take all reasonable measures to minimize noise impacts from construction activities.

Hazardous Materials: Although no hazardous issues are anticipated on the project, if petroleum-contaminated soil or groundwater should be encountered during construction, we will notify the Regional Hazardous Manager for assistance in managing these materials. We are aware that the acquisition of additional right-of-way may require additional hazardous materials studies and will work to keep from changing the project to the greatest possible extent.

Asbestos Project Monitoring Services: The Orders team will comply with the Special Provision Copied Note for Demolition Notifications for Structures not requiring asbestos removal on all structures where ACM removal is not required. Each structure to be demolished will be inspected to verify the locations of suspect asbestos-containing materials. Asbestos abatement will be performed by a third-party contractor prior to demolition structures identified as containing ACM. Proper notifications will be made prior to commencement of abatement or demolition activities. Clearances will be done in accordance with the EPA's Asbestos Hazard Emergency Response Act guidelines for schools and analyzed by PCM or Transmission Electron Microscopy. Asbestos TEM clearance samples will be sent to an accredited NVLAP laboratory for analysis with 24-hour turn-around time results. The project monitor will conduct the final visual clearances and air clearances.

Lead-Based Paint Inspection Services: Bridge components that are suspected to contain lead will be tested for LBP using an X-ray fluorescence analyzer. The inspector will collect paint samples from components that have unusual or irregular surfaces that cannot be assayed with an XRF device. The lead concentration for each tested component will be classified as positive or negative. Structures shown to have lead paint shall be removed in accordance with the specifications.

Waste Management/Response Action Services: All solid waste, hazardous waste, and hazardous materials will be managed in accordance with all applicable federal, state, and local environmental regulations. We will notify VDOT immediately of all instances involving the spill, discharge, dumping, or any other releases or discovery of hazardous materials into the environment and shall provide all required notifications and response actions. In the event a release is discovered during AST closure, DEQ regulations will be followed regarding release reporting, characterization, and solid waste disposal. Emergency response services will be provided through a dedicated one-call hotline. Containment and cleanup equipment will be maintained and on-scene coordination with local emergency services officials and DEQ will be provided.

Construction Compliance Monitoring: We will work closely to ensure that all permit conditions are being met and the project remains in compliance. If routine monitoring of construction activities within individual impact areas be required, we will provide the required monitoring and reporting.

4.4.2 ▶ Utilities

We have identified the utility owners having facilities within or adjacent to the project area, including Augusta County Service Authority (ASCA), Columbia Gas of Virginia, Comcast, Dominion Virginia Power, Dominion Transmission, Lumos, and Verizon. The proposed design and construction will affect segments of existing utility facilities and will require either protection or relocation.

As part of the project development engineering, the Utilities Engineer will confirm all utility conflicts and work closely with the Roadway Design Engineer to mitigate impacts on these facilities. Elimination or minimization of the potential conflicts will be the priority objective. Where conflicts are unavoidable, a cost-effective relocation plan will be coordinated with the utility owner.

We are proposing to relocate utilities in conflict to a location outside of the construction limits or to a depth compatible with the proposed roadway design. We will plan and coordinate the necessary utility relocations throughout the project development engineering process to ensure they are properly identified in the construction schedule. Utility designating will be extended on Expo Road and Route 640 for areas where utilities are not currently shown on the plans. Test holes will be obtained to confirm depth of cover relative to the proposed finished grade.

The following steps outline the approach for coordinating the utility adjustments and relocations:

- Coordinate with the Design Manager (DM) to identify utilities not shown on the plans and locations where test holes are needed to evaluate conflicts with grade changes and proposed drainage
- Obtain additional utility designating for areas not covered by existing mapping and test holes to confirm depth at potential conflict locations
- Evaluate and determine utility conflicts, potential plan changes, and alternatives to mitigate the relocation of utility facilities
- Initiate early coordination with all utilities to review each utility's relocation, identify any special requirements, and discuss probable impacts to their facilities
- Evaluate prior rights, determine cost responsibility for each utility's facilities, and submit a preliminary utility status report to VDOT
- Schedule and conduct a utility field inspection to review each utility company's conflicts, examine relocation alternatives, resolve any conflicts between utility companies, and establish a schedule for submittal of the utility relocation plans and estimates and relocation work
- Coordinate with each utility company's engineer during preparation of their relocation; plan and estimate to keep them up to date on any plan revisions affecting their relocation design
- Review each utility company's relocation; plan and estimate for compliance with policies and procedures, project requirements, and reasonableness
- Determine the final cost responsibility and submit the relocation plan to VDOT for approval; after receiving VDOT approval, the Contractor will then authorize each utility to begin their relocation work
- Coordinate the utility relocations with the project schedule
- Monitor utility relocation activities and progress to ensure they meet the schedule milestones
- Provide construction phase support for utility issues
- Review progress and final billings submitted by each utility and make recommendations for payment
- Provide as-built plans to ensure the final location of all utilities is shown

The Orders team will follow VDOT's *Right-of-Way and Utilities Division Right-of-Way Manual, Volume II, Utility Relocation Policies and Procedures* and VDOT's *Land Use Permit Manual* in coordinating utility relocations and prorating cost responsibilities.

Table 3: Utility Facilities

Utilities Issues

The table to the right lists utility facilities within the project limits and the anticipated actions required to confirm or resolve the conflict.

Adjustment of existing underground telecom cables may be accomplished by lift and lay methods depending on the existing depth and available slack.

ACSA has identified several betterments to their water and sewer facilities within the project area. Two of the waterline extensions are not within the project limits. We will plan for relocating the existing facilities and also negotiate with ACSA for installation of the betterments during the construction phase of the project. ACSA has also proposed a new bored crossing of Route 285 to connect to the existing waterline in Tinkling Spring Drive. Installing this line would eliminate the need to adjust or relocate the existing waterline between approximate stations 138+50 and 151+00.

Another ACSA betterment within the project limit is the installation of a gravity sewer from the manhole at approximately 138+50 Right and running north along the right side of Route 285 and then along Route 640 to the project limit.

Utility	Type	Action to be Taken
Sheets 3 and 4 – Route 285		
ACSA	Sewer	No conflict
ACSA	Water	No conflict expected; verify depth under pavement widening
DOM	OH Electric	No conflict
CMC	OH CATV	No conflict
LMS	UG Telecom	Adjust horizontal location as needed
VZN	UG Telecom	Adjust horizontal location as needed
Sheets 5, 6, and 7 – Route 285		
ACSA	Sewer	No conflict [1]
ACSA	Water	Verify depth and adjust as needed [2]
DOM	OH Electric	Adjust horizontal location
VZN	UG Telecom	Verify depth and adjust as needed
Sheet 5B – Tinkling Spring Drive – Route 627		
DOM	UG Elec Service	Verify depth and adjust as needed
VZN	UG Telecom	Verify depth and adjust as needed
Sheet 5B – Route 640		
ACSA	Water	Verify depth and adjust as needed
LMS	UG FO	Verify depth and adjust as needed
Sheets 8 and 9 – I-64 and Ramps A and C		
ACSA	Sewer	No conflict – existing encasement
ACSA	Water	No conflict – existing encasement
DMT	OH Elec Trans	No conflict
Sheets 10 and 11 – I-64 and Ramps B and D		
No utilities		
Sheets 12 and 6 – Route 636		
ACSA	Sewer	No conflict
ACSA	Water	Verify depth and adjust as needed
Adjust hydrants and services		
CMC	OH/UG CATV	Adjust horizontal location as needed
DOM	OH Electric	Adjust horizontal location as needed

NOTES:

[1] The existing casing for the sewer may be extended.

[2] ACSA proposed betterment would eliminate existing waterline from 138+50 to 151+00 left.



Integration into Construction Sequence

We have included the utility relocation process and estimated relocation efforts as activities in the project schedule. These may be adjusted as the extent of relocation effort or mitigation is more clearly defined.

Mitigation of Utility Risks

Utility relocation activities have been included in the project schedule. Relocations will be prioritized to coincide with early construction activities and right-of-way acquisition. Long duration and critical relocations will be scheduled early. The project schedule will be evaluated and adjusted if an unanticipated relocation delay occurs.

4.4.3 ▶ Geotechnical

The Orders team will develop the geotechnical exploration program to supplement the existing subsurface data, to achieve conformance with the requirements of Chapter 3 of the *VDOT Materials Division Manual of Instructions* and to meet the geotechnical requirements cited in the RFP. Field explorations will include conventional soil test borings with Standard Penetration Testing (SPT) and sampling of soils and highly weathered rock. NQ coring tools will be used to sample rock materials where rock coring is considered necessary. All borings will be logged in detail by a geotechnical engineer or geologist, and samples of soil and rock will be collected for laboratory testing to support design recommendations.

We will focus on addressing those issues presented in the *Geotechnical Data Report* published on 7/14/2011.

Information contained in the *Geotechnical Data Report*, as well as data collected during the additional explorations, will be used as a basis for formulating design recommendations and identifying potential impacts that geologic conditions may pose on the project construction. Bridge abutment and pier foundations will be evaluated to optimize the design in terms of

economics, technical performance, and construction practicality and safety. Roadway cut and fill slopes will be evaluated and recommendations will be made for designs, if different from those in the RFP. Embankment fills and retaining walls will be analyzed for stability, and recommendations will be provided for design and construction. Recommendations for design of SWM facilities and drainage facilities will also be provided.

The project site is underlain by the Martinsburg Formation of Ordovician Age. Although this formation includes three distinct units, the site appears to be underlain by basal slate, described as a dark gray to black calcareous slate. This is consistent with the rock cores which were collected during the field exploration. The soils within the project site consist primarily of granular materials (sandy silt), although there are areas of soft cohesive soils, especially in low-lying drainage areas adjacent to wetlands. These areas will be evaluated in more detail to formulate measures to reduce their impact on construction of embankments and culvert and pipe extensions.

Geotechnical Project Elements

Route 285 Bridge Foundations: Rock core descriptions, unconfined compressive strength data, and point load strength index test results contained in the *Geotechnical Data Report* are considered sufficient to establish pile and spread footing capacities based on AASHTO LRFD procedures. Analyses for the bridge site will address foundations, embankment settlement, MSE walls, and global stability.

The existing 2-lane bridge will be replaced by a wider bridge which will include six lanes and a shared-use path. Similar to the existing bridge, the abutments will be supported by H-piles, and the intermediate pier will be supported by spread footings bearing on rock.

The bridge will be constructed in two phases. Shoring will be required to maintain stability of the new approach grades for the western portion of the new bridge and facilitate demolition and removal of the existing bridge components. Accordingly, our analyses will consider new fill loads, as well as vehicular loads, which will be present on the new approaches during construction. Shoring designs will be developed to achieve the minimum required factors of safety as prescribed by current VDOT standards.

Retaining Walls: Retaining structures will be limited to the bridge abutments. For the MSE walls at the abutments, fill material in the reinforced zone will consist of crushed aggregate with properties in accordance with VDOT's Special Provisions for approved proprietary MSE walls. Global stability analyses of MSE walls will consider the backfill, as well as the strength of the underlying soils.

Embankments and Slopes: Analyses and recommendations will cover earthwork and compaction of soils, excavations for cut slopes, slope stability, and drainage analyses where necessary. Several borings were drilled in embankment areas, and some of these encountered soft and/or loose materials. Additional borings will be located in other areas likely to contain soft and/or loose materials and shallow groundwater, so that corrective measures required to enhance embankment foundation stability can be formulated as part of the final design. As noted in the *Geotechnical Data Report*, some of the soils which may be used for embankment construction or are present in subgrade areas exhibit high plasticity, which can be problematic for construction during wetter seasons or after extended precipitation events. Accordingly, we plan to evaluate the possible use of lime or other additives such that construction can continue without delays. We also plan to conduct similar evaluations for any off-site borrow materials which may be considered.

As presented in the *Geotechnical Data Report*, cut and fill slopes have been established at 2H:1V. Where required, the adequacy of these slopes will be confirmed by appropriate stability evaluations as part of the design. Final design slopes will be established such that the minimum factors of safety are maintained as prescribed in the RFP. Any deviations to the recommended 2H:1V slopes will be fully documented and will be submitted to VDOT for review and approval.

Pavement Sections: Minimum pavement sections for new pavement and widening, as well as overlays for existing roads, were prescribed in the *Geotechnical Data Report*. The adequacy of these sections will be checked using the available data, results of additional explorations and additional laboratory CBR testing. Any recommended modifications to the proposed sections, along with supporting documentation and calculations, will be submitted to VDOT for review and approval prior to finalizing the pavement section designs. Off-site borrow soils and materials derived from required site excavations will be carefully evaluated in light of the minimum pavement subgrade properties. Final pavement designs will also incorporate drainage as prescribed by current VDOT standards, as well as the recommendations contained in the *Geotechnical Data Report*.

Stormwater Management Basin: Only one new SWM basin will be needed on this project. The Orders team plans to drill a minimum of two borings at that location according to Chapter 3 of the *VDOT Materials Division Manual of Instructions*. In addition, borings will be drilled at outfall locations as required. Analyses and recommendations for the SWM basin area will address earthwork, slope stability, and seepage from the basin and through the embankment.

Pipes and Culverts Larger than 36 Inches: Several existing pipes and culverts will require extensions to accommodate widening of the existing roads and ramps. Additional explorations will be necessary to fully explore conditions and evaluate the need for removal of unsuitable soils and/or stabilization measures beneath the pipes or culverts. Our analyses and recommendations will cover subgrade preparation and bedding as well as backfill requirements.

We will monitor internal quality assurance on all aspects of work in accordance with the QA/QC plan for the project. In addition, we will use the available FHWA checklists for geotechnical engineering procedures and analyses referenced in Chapter 3 of the *VDOT Materials Division Manual of Instructions* as part of their internal quality assurance review.

The Orders team will also incorporate reliability assessments, in conjunction with standard analysis methods to verify the acceptable settlement, capacity or factor of safety of each foundation, wall, embankment or slope design. (The reference document for these assessments will be Duncan, J.M., April 2000, *Factors of Safety and Reliability in Geotechnical Engineering*, Journal of Geotechnical and Geoenvironmental Engineering, ASCE, Discussions and Closure, August 2001.)

4.4.4 ▶ QA/QC

The Orders team's approach to managing QA/QC provides for complete control of the design and construction of the project. We will develop plans and construction products that conform to the project's standards, procedures, policies, and applicable codes and will be guided by VDOT's *Minimum Requirements for Quality Assurance and Quality Control on Design Build and P3 Projects, January 2012 (Guide)*. **Charlie Stokes**, the Project Manager (PM), will have overall responsibility for establishing and overseeing the design and construction QA/QC programs.

We will provide a QC/QA plan that will ensure no additional oversight will be required by VDOT.

Design QA/QC Approach

Randall Harris, PE, the DM, will report directly to the PM and is responsible for all of the design, inclusive of QA and QC activities. He will develop and implement the project's design

control plan in which all design team members will be required to follow. The DM will also lead the constructability review which will include all design team members, Orders' construction personnel, and the Quality Assurance Manager (QAM). He will prepare a schedule for audits as well as perform the audits to verify that the required checking and review functions are performed.

Prior to each submittal, all QA and QC reviews and the constructability review will be completed and documented. A design QA/QC log will be used to document this process. All design submittals will have written approval by the DM certifying that the plans have been audited and he has approved the submittal. Issued-for-construction design packages submitted to VDOT for review and approval by the Chief Engineer prior to construction of that element will be accompanied by A Release of Deliverable Form that is signed off by the DM certifying that the "construction items" shown on the plans have been audited (for compliance with the design control plan and all requirements of the contract) and have passed.

The DM and the other engineers will also be involved throughout the construction phase as it relates to any changes or design deficiencies that may result on the project. These changes will follow the same QA/QC process as the original design. Field changes will be incorporated into the as-built drawings.

Mitigation of Geotechnical Risks

Unsuitable soils may be located in areas of planned embankment construction to facilitate widening and/or pipe or culvert extensions. Additional explorations will be conducted to evaluate the extent and nature of these materials and formulate prescriptive corrective measures to avoid delays during construction.

Explorations will be conducted to identify potential problem areas. Off-site borrow soils and materials derived from required site excavations will be evaluated in consideration of the minimum pavement subgrade properties. Placement of materials will be planned accordingly to result in acceptable pavement subgrade with the minimum prescribed California bearing ratio (CBR) value.

► **Critical Unique Design Element:** We have chosen to outline the checking of the vertical clearance over I-64 as our critical unique design element in connection with the project. There are a number of steps required to verify adequate vertical clearance over I-64. As stated in the RFP, vertical clearance required is 16'-9". Vertical grades will be established along Route 285 to meet the minimum and maximum grades for an urban minor arterial, GS-6. Following review and checking of all design criteria, grades will be established that meet this criteria. Based on the vertical alignment, a preliminary structural design will be completed to establish the superstructure depth. An updated survey will be established along I-64 in the vicinity of Tinkling Spring Road. The survey will be completed and checked per the project QA/QC plan and incorporated into the roadway and bridge plans.

Following completed survey and structural calculations, grades will be revised along Route 285. All critical points will be identified on the proposed bridge structure to check vertical clearance over I-64. Clearances will be checked for the existing I-64 elevations as well as for future accommodations.

Items to be checked involve multiple disciplines and include proposed vertical curve data on Route 285, PGL elevations and offsets, proposed cross slopes, proposed top of deck elevations, superstructure depth, live load deflection, bottom of girder elevations, and corresponding elevations along I-64 to determine proposed clearances. Once grades are established and clearances are verified, drafting of

Tables 4 and 5: Sample Data Checking

data will be completed with the proper QC checks, independent QA checks, and final audits. Tables 4 and 5 demonstrate roles and responsibilities as well as a sample chart of data required for checking:

QC Reviewer	Checked all data in the spreadsheet and placed a red dot next to each item checked; checked all data transferred to the plans from the spreadsheet
QA Reviewer	Reviewed the checked spreadsheet document and plans to verify all computations were checked and accurately transferred to the plan
Design Manager	Perform oversight review; perform audit to confirm all QC and QA activities were completed and documented

Job: VDOT Exit-91 on I-64

Computed By/Date: *WDS 6-18-2012*
 Checked By/Date: *RJD 6-17-2012*

Vertical Curve Data:
 PVI Sta. = 127+30.00
 PVI EL. = 1374.70
 Length of VC = 750 ft
 G1 = -0.0031 ft/ft
 G2 = -0.0443 ft/ft
 PVC Sta. = 123+55.00
 PVC EL. = 1375.8625 ft
 PVT Sta. = 131+05.00
 PVT EL. = 1358.0875 ft
 Sta. in Question = 127+19.01 on curve
 Elev. Sta. in Question = 1371.09466 ft

Super Structure Depth:
 Deck = 9.00 in
 Build Up/Haunch = 2.00 in
 Girder Depth = 53.00 in
 Structure Depth = 5.3333 ft

Bridge Station	PGL Elev	PGL Offset	Cross Slope	Top of Deck	Super Depth	LL Deflection	Btm of Girder	Corresponding Elev. on I-64	Clearance	Controls
125+83.98 on	1373.7125	41.833	-0.02	1372.876	5.3333	0.0577	1367.485	1349.230	18.255	
126+08.10 on	1373.3184	41.833	-0.02	1372.482	5.3333	0.0577	1367.091	1349.990	17.101	
126+24.18 on	1373.0379	41.833	-0.02	1372.201	5.3333	0.0577	1366.810	1349.700	17.110	
127+07.21 on	1371.3634	41.833	-0.02	1370.527	5.3333	0.0577	1365.136	1347.590	17.546	
127+23.29 on	1370.9953	41.833	-0.02	1370.159	5.3333	0.0577	1364.768	1347.650	17.118	
127+47.42 on	1370.4163	41.833	-0.02	1369.580	5.3333	0.0577	1364.189	1346.900	17.289	
125+74.29 on	1373.8619	54.833	-0.02	1372.765	5.3333	0.0577	1367.374	1348.480	18.894	
125+98.42 on	1373.4804	54.833	-0.02	1372.384	5.3333	0.0577	1366.993	1349.040	17.953	
126+14.50 on	1373.2084	54.833	-0.02	1372.112	5.3333	0.0577	1366.721	1348.700	18.021	
126+49.42 on	1371.5805	54.833	-0.02	1370.484	5.3333	0.0577	1365.093	1346.810	18.283	
127+13.50 on	1371.2211	54.833	-0.02	1370.124	5.3333	0.0577	1364.733	1347.040	17.693	
127+37.63 on	1370.6551	54.833	-0.02	1369.558	5.3333	0.0577	1364.167	1346.100	18.067	
127+19.01 on	1371.0946	38.167	-0.02	1370.331	5.3333	0.0577	1364.940	1347.650	17.290	
Controlling Clearance =									17.101	ft

Roles and Responsibilities of Personnel for Design QA/QC

Design Engineer: A project-specific design criteria checklist for roadway and drainage will be developed and submitted to VDOT for review and approval. The Design Engineer will use this design criteria checklist during the development of his work. As the plans are completed, they will be signed by the design engineer, dated, and marked as ready to be checked.

Quality Control Reviewer: The QC Reviewer will perform the QC review and use the VDOT LD-436 and the same design criteria checklist in his review of the design. The QC Reviewer will perform independent checks of math and engineering computations, technical accuracy, and conformance with contract requirements for each design discipline. Once the plans are reviewed and all corrections are completed by the Design Engineer, the plan documents will be signed, dated, marked, and submitted back to the Design Engineer to forward to the QA Reviewer.

Quality Assurance Reviewer: The QA Reviewer will perform the QA review and will conduct the formal design reviews in preparation for a specific submission. Criteria used in such reviews include conformity of the contract requirements, verifying completeness technical accuracy, and verifying all documents have been checked and signed by the Drafter, Design Engineer, and Reviewer. Once the plans are reviewed and all corrections are completed, the plan documents will be signed, dated, marked, and submitted back to the Design Engineer for submittal to the Engineer-in-Responsible-Charge (EIR).

Engineer-in-Responsible-Charge: The EIR will ensure that the QA and QC reviews are complete and inform the DM that the plans or document is ready for the review or approval by Orders and VDOT.

Design Manager: The DM's responsibilities include performing an audit to confirm that all QA and QC reviews are completed and documented.

Design-Build Project Manager: The PM is responsible for the design of the project and to ensure that the team adheres to the project QA/QC plan.

Supporting the design QA functions will be:

Quality Assurance Manager: The QAM will perform oversight for the QA review function as well as the formal design reviews in preparation for a specific submission. He will work closely with the DM to make sure all design comments from the prior reviews performed for the specific element have been addressed prior to submittal. He will also participate in constructability reviews and he, along with the PM and the DM, will complete a release of deliverable form indicating that the design, drawings, and specifications are in compliance with the requirements of the design QA/QC plan and that the documents are released to VDOT for review and/or to Orders for construction.

Geotechnical Engineer: The Geotechnical Engineer will support QA activities during design and verify that geotechnical requirements are incorporated, observed, and fulfilled. Any subsequent modifications to plans will be reviewed by the Geotechnical Engineer to verify that geotechnical recommendations were not modified nor were new recommendations provided.

► **Independent Design QC and QA:** Each design firm will have separate engineers in their office to review the different elements, thereby achieving an independent review internally for the plans. The team fully understands VDOT's expectations for the independent QA/QC roles for this project. Furthermore, Mr. Harris has implemented design QA/QC plans before and has performed the DM role on numerous projects. He and our entire team are committed to QA/QC and to operating under written QA/QC procedures that all projects must follow.

Construction QA/QC Approach

The Orders team will develop, operate, and maintain a construction QA/QC plan in accordance with VDOT's January 2012 QA/QC Guide. Orders shall have the overall responsibility for both the QA and QC activities and shall be responsible for all QA activities and QA sampling and testing for all materials used and work performed on the project.

Kaushik Vyas, PE, the QAM, will be responsible for the QA program for the entire project. The QAM will establish and maintain the Quality Assurance Auditing and Nonconformance Recovery Plan (AR Plan) for uniform reporting, controlling, and resolution of nonconformance issues that may arise on the project, including rapid reporting of non-compliance to the VDOT Project Manager and the remedial actions to be taken. The AR Plan will outline the team's procedures for addressing construction and design deficiencies. He will also maintain the project's Materials Notebook according to VDOT's Materials Division requirements and documentation of all materials, sources of materials, and method of verification used to demonstrate compliance with the Contract requirements.

During construction, the Geotechnical Engineer, **Randy Moulton, PE**, will support the QA activities to verify that work is being completed consistent with the geotechnical design and recommendations. All documentation to support his testing and verification will be submitted to the QAM for approval and included in the project documentation.

The CM, **Kevin Conner**, will be responsible for the construction QC programs and will coordinate with the QAM. The Quality Control Manager (QCM) will lead the team's QC function and will provide all the necessary documentation regarding inspections and testing of materials and in-place construction to the QAM for approval. The QCM will also coordinate with the CM, the QAM, and his staff on a weekly basis regarding scheduled activities to ensure that he has enough inspectors to properly meet the inspection requirements on the project without impact to the contractor's production schedule.

► **Critical Unique Construction Element:** One significant construction element in connection with the project includes construction of various retaining walls and the inspection of the foundations associated with those structures. The integrity of retaining walls constructed for this project will have a direct and significant impact on the long-term performance of the project.

Prior to the start of construction, the QAM will verify that plans, permits, and erosion control measures associated with the construction of the retaining wall are approved and the location, elevation, and type of wall are in accordance with the approved documents. A preparatory inspection meeting will be held prior to the start of construction; this meeting will correspond to a hold point in the CPM schedule and will include representatives from the production forces, the QC team, the QA team, and members of VDOT's IA and IV teams. The QAM will notify the Geotechnical Engineer of the start of construction activity associated with the retaining wall. The review of a foundation will correspond to a witness point in the CPM schedule.

The Geotechnical Engineer will verify that the foundation material meets or exceeds those modeled during the design phase of the project. The Geotechnical Engineer will provide an inspection checklist, or equivalent project documentation, to the QAM, authorizing the construction to proceed. The QAM or his representative will also witness foundation exploration performed by the contractor prior to releasing for foundation for wall construction.

The stakeout, survey control, and completion of the excavation will be documented through QA and QC inspection reports completed at frequencies identified in the QA/QC plan. The inspection reports will be submitted to the QAM and incorporated into the project records. Below is a table of roles/responsibilities for this element:

QC Inspector	Check contractor’s survey layout and noted within daily report; observe excavation of foundation with measurements and calculations being noted in the daily report
Quality Control Manager	Verify that invoices for materials to be used have been received and that the material has been approved in accordance with the source of materials documentation provided to the QAM; ensure that the QC inspectors have been instructed as to the requirements for foundation testing and documentation; review measurements and calculations listed in the QC inspector daily reports and submit to the QAM for comparison with notes provided by the QA Inspector
QA Inspector	Verify the finished excavated foundation is per the design and include relevant observations within daily report including verification of all measurements
Lead QA Inspector	Notify the QAM for inspection (hold point)
Quality Assurance Manager	Witness foundation exploration performed by the contractor; verify all measurements and calculations as recorded in the daily diaries and prepare information for inclusion in the monthly report
Geotechnical Engineer	Verify that the foundation material is consistent with that encountered during the geotechnical investigation, that the material properties are consistent with those used during the design process, and that the excavation is free of loose material, rock, or other deleterious materials; complete documentation noting his approval of foundations
Design-Build Project Manager	Verify that the design documents related to retaining wall construction have been approved and a copy provided to the construction forces, QAM and inspection teams

Roles and Responsibilities of Personnel for Construction QA/QC

All the team members will ensure QA/QC as per project plans and VDOT specifications. All construction QA and QC personnel will hold current VDOT materials certifications for the types of materials testing that they are assigned to perform. The specific roles and responsibilities of the personnel involved in the construction QC/QA process are as follows:

QC Inspector: The QC Inspector will perform all required visual inspections and will write daily reports and work as per instructions from QCM. He/she will follow the prescribed AR Plan for any noncompliance issues that may arise on the project.

QC Testing Technician: The QC Testing Technician will perform all required sampling and testing frequencies as outlined in the “Guide.” Specific laboratory testing will be performed by the laboratory per the applicable AASHTO procedures. He/she will notify the QC Inspector regarding any noncompliance issues.

Quality Control Manager: The QCM will direct the activities of the QC inspection staff the independent QC testing firm and will report all sampling, testing, visual inspections, certifications, and daily diaries directly to the QAM. He will follow the prescribed AR Plan for any noncompliance issues that may arise on the project.

Construction Manager: The CM will manage the construction QC program and coordinate with the QAM for the preparatory, intermediate, completion, and punch out inspections. He will follow the prescribed AR Plan for any noncompliance issues that may arise on the project.

QA Inspector: The QA Inspector will perform all required sampling, testing, visual inspections, certifications, and daily diaries and work as per directions from QAM.

QA Testing Technician: This person will perform all required sampling and testing frequencies as outlined in the “Guide.” Specific laboratory testing will be performed by the laboratory per the applicable AASHTO procedures.

Lead QA Inspector: The Lead QA Inspector will be assigned by the QAM and will be on the site for the duration of construction of the project, and observe/inspect construction activities and also ensure QC inspection and testing. The Lead QA Inspector will also inspect correction work of any non-conformities, are being performed in accordance with the contract requirements.

Quality Assurance Manager: The QAM is responsible for the QA inspection/testing of all materials used and work performed on the project and is vested with the authority to stop any work not being performed according to the contract requirements. He will review the design documents provided by the PM including the source of materials which will include the testing requirements outlined in detail for all materials. The QAM will schedule and conduct preparatory inspection meetings (hold point) to review the elements of the work.

Design-Build Project Manager: Ultimately, the PM is responsible for the construction of the project and ensuring adherence to the project QA/QC plan.

Supporting the construction QA functions will be:

Geotechnical Engineer: The Geotechnical Engineer will support the quality assurance activities during construction by visiting the site to review all earthwork operations, verifying that work is being completed consistent with geotechnical recommendations, and modifying recommendations, if needed, based on conditions encountered.

Structural Engineer: The Structural Engineer will support the quality assurance activities during construction by visiting the site to review and check the bridge, retaining walls and other structural work at various stages of the work. He/she will also modify designs if necessary due to field conditions and construction activities.

Environmental Compliance Manager: The Environmental Compliance Manager will support the quality assurance manager by reviewing the design based on field conditions and ensure all local, state, and federal environmental regulations are met over the course of the project.

► **Independent Construction QC and QA:** Quinn and ECS will independently sample and test each material type that meets the QA frequencies outlined in the contract documents. All QA inspections, tests, and material sampling will be documented in writing in a separate QA daily reports and separate QA checklists. The QA team will operate independently of all other contractor QC functions and thus, will provide an unbiased opinion to the acceptability of the work.

CDM Smith and F&R will perform the QC inspection for Orders Construction and will sample and test each material type that meets the QC frequencies outlined in the contract documents. All QC inspections, tests, and material sampling will be documented in writing in separate QC daily reports and separate QC checklists.

QA/QC Experience with Large Projects in Virginia

The QC and QA teams proposed for this project have experience with some of VDOT's largest projects including the I-81 Truck Climbing Lanes (Design-Build) in Rockbridge County; the I-495 Capital Beltway Express Lanes Project (PPTA) in Fairfax, VA; the Route 15 Widening (Design-Build) in Prince William County; the Eltham Bridge & Lord Delaware Bridge Replacements (VDOT CEI) in West Point; and the Route 895 (PPTA) Project in Richmond.

These projects are examples of the ability of our team's effectiveness to operate the QA and QC functions for VDOT on projects with little oversight from the department.



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4.5 Construction of the Project



4.5 ▶

Construction of the Project

4.5.1 ▶ *Sequence of Construction*

Our construction work package is divided into four phases of work, consisting of bridge work, interstate work, ramp improvements, and secondary road improvements.

Our sequence of construction and construction operations will allow us to anticipate and mitigate any potential delays to construction of the project.

Phase I involves improvements that may be made while traffic remains on the existing roads, including the relocation of utilities and the installation of E&S and SWM facilities. We will:

- Install traffic control barriers per the approved transportation management plan (TMP) and approved demolition plan ensuring roadway protection
- Construct Route 285 southbound abutments and approach roads 122+00 to 131+00
- Close I-64 median shoulders and construct the southbound bridge pier in the I-64 median
- Construct the southbound lanes of bridge and extend the box culverts under Route 285 and I-64
- Construct the remainder of Route 285 southbound, the left-turn lanes along Ramp A, the additional lane along Ramp B, the additional lane along Ramp C, the left-turn lane along Ramp D, and the right-turn lane along Expo Road
- Construct the realigned at Tinkling Spring Drive, the left-turn lane at Route 640, and the right-turn lane along Route 636
- Extend the speed change lanes along I-64 and construct full depth shoulder pavement on the right sides of all ramps and speed change lanes
- Install temporary signalization before moving on to Phase 2

Phase II shifts all traffic to one side and upgrades the opposite side. We will:

- Shift Route 285 traffic to the newly constructed southbound lanes and demolish the old bridge
- Construct the northbound portion of bridge
- Construct the Route 285 northbound shoulder and then shift Ramp A traffic right and construct the left shoulder; shift Ramp C traffic left and construct the right shoulder; shift Ramp D traffic right and construct the left shoulder; shift the Expo Road traffic right and construct the left shoulder; and shift traffic and finish construction on routes 636 and 640
- Construct full depth pavement in gore areas

Phase III shifts traffic to the outside. We will:

- Shift traffic to Route 285's outside lanes; construct the median and median portion of the bridge
- Construct the ramp curves with new superelevation

Phase IV is clean-up and tying the work together in the middle. We will:

- Complete roadside development, incidentals, seeding, and landscaping
- Install all project signs and lighting fixtures
- Remove temporary signalization and adjust the permanent signal for normal operation
- Install the surface course pavement (entire project) and remove erosion and sediment control measures after the site is stabilized

► **Safety and Operations:** We will accomplish all work behind barriers or away from traffic. As required, we will provide at least four portable changeable message signs and four mobile cameras, controllable from the Staunton Traffic Operations Center, to provide en-route traveler information about planned construction, delays, or other sudden changes in travel conditions during the project duration. In addition, we will have a permanent variable message sign at I-64 mile marker 110. We will provide a safety service patrol truck when lanes or shoulders are restricted, as well as providing a backup vehicle. It is anticipated that this backup vehicle will be a key component of this process—the operator of the back-up vehicle will monitor construction and notify the NWRO Traffic Operations Center of traffic congestion. The vehicle will be equipped to report any queues and react by placing flashing lights and reflective equipment. We will also provide a 3-cubic-yard front end bucket loader and traffic lane control equipment to assist the district maintenance section during inclement weather in the winter when lanes or shoulders are restricted.

We are currently looking at locations in the Expo Road area for temporary office facilities. This location will allow for quick response to any activity on the project site without having to get on and off of the interstate. All construction entrances will be placed at appropriate locations throughout the project using appropriate traffic control means and the haul routes will be along the project right-of-way and in potential waste and borrow locations. The project will have a designated area for safety vehicles to ensure that they can attend to any issue in the most prompt manner.

► **Geotechnical Constraints:** A potential constraint may involve the installation of sheet piling, which will be necessary to demolish the old bridge components. If the H-piles for the new northbound abutments are pre-drilled and/or sleeved through the MSE wall backfill, then the sheet piling should be installed early in Phase I *before* construction of the new southbound approaches and MSE walls. This method would avoid the vibrations associated with pile driving and any of the detrimental effects those vibrations might have on new construction.

► **Environmental Impacts:** We will work to keep from changing the project in the vicinity of the identified environmentally sensitive areas (historic resources, wetlands, streams, and hazardous materials). We are aware that the acquisition of additional right-of-way, temporary construction easements and staging/borrow areas may require additional environmental technical studies and analysis. We will resolve any environmental issues related to the project and complying with the findings presented in the approved CE and reevaluation.

► **Right-of-Way Acquisition:** Our turn-key right-of-way services will accomplish the necessary clearance of right-of-way in a timely manner since several utility relocations require acquisition of easements. These easements will be a priority.

► **Staging/Storage Areas:** All staging/storage areas will be along the project right-of-way, at the office facility, and in potential waste and borrow locations. All cranes for bridge construction will be stored at the bridge behind concrete barrier or in areas with appropriate clear zones.

► **QA/QC Reviews:** Prior to the start of each work package, preparatory inspection meetings will be held to provide coordination and communication between all members of the team. Witness and hold points will be held before any additional construction work is allowed to proceed.

► **Public Involvement/Stakeholder Communication:** We anticipate that certain phases of construction will necessitate lane closures on I-64. Our public communications plan will contain pertinent VDOT contact information and outline a process to contact the appropriate personnel in the event of scheduled and unscheduled traffic delays. Throughout construction, we will monitor and inform the public of the projects process and impacts that might occur, as well as provide coordination with other stakeholders. Our team will use the following strategies:

VDOT Website: We will provide the status reports to the VDOT District Public Affairs Office for posting on VDOT's website. Content will be updated each Thursday throughout the project's duration.

Project Signage: Project signs will be designed and installed at the project termini.

Press Releases: Weekly written information regarding the project's effects on traffic will be provided to VDOT for issuing news releases to the public. Other press releases will be coordinated with VDOT's Staunton Office of Public Affairs, as needed.

Weekly Status Reports: The contractor shall provide weekly status reports to the Staunton District Public Affairs Office and Augusta County. The information shall include plan of work, schedule updates, and traffic information.

Other Informal Meetings: Additionally, we recognize the potential need for informal meetings with affected local citizens, business groups, and schools to answer questions and address concerns. We will conduct a stakeholder kickoff meeting in Fishersville to inform interested parties of VDOT's goals for the project and solicit their input. This and any further meetings will be conducted in accordance with the VDOT Policy Manual for Public Participation in Transportation Projects (August 2011).

Environmental Agencies: Our Environmental Compliance Manager will monitor field operations to confirm that operations on the project are within the requirements of any permits and special provisions for the contract and report any violations immediately to the proper authority. We will also need to coordinate with the Corps, DEQ, DCR, DGIF, DACS, and FWS.

Utility Owners: Our Utilities Engineer will coordinate design and schedule issues with private utility owners for the relocation of utilities within the project area during construction.

State Police: The PM will proactively contact the State Police Division Headquarters to notify them of the project activities, schedule support, and direct them to the website for additional information, as well as provide contact information should they need anything additional.

Emergency Services: The PM and the CM will coordinate and review our TMP with local law enforcement agencies, Augusta Health, and fire and rescue operations so that emergency access is never compromised. The PM will additionally direct them to the website for additional information as well as provide contact information should they need anything additional.

VDOT Maintenance: Because the project will be built under traffic and the traffic phasing for this project, the PM and the CM may need to coordinate maintenance or snow removal operations with the Staunton District. The PM will work with VDOT representatives to coordinate any and all needs.

Augusta County: The PM and other members of our team will be available to brief Augusta County staff and the board of supervisors as needed about the project as well as address any issues that may arise. We also plan on sending regular updates to Augusta County regarding any impacts to traffic and identification of work areas.

Fishersville/Staunton-Waynesboro: Fishersville is a small town in the Staunton-Waynesboro metropolitan area. The PM and other members of our team will be available to brief the Town's representatives as needed about the project, as well as address any issues that may arise. We also plan on sending regular updates to the Town regarding any impacts to traffic and identification of work areas.

4.5.2 ▶ Transportation Management Plan

Our TMP was developed for the safety of the motoring public and the highway workers. The TMP for this project will be a Type B Category III and will be developed in accordance with the *VDOT Work Area Protection Manual, I&I 241.5*, standards and specifications. Additionally, the Traffic Barriers Warrant Analysis will be submitted to VDOT for approval before work has begun.

Maintenance of Traffic

As discussed, the construction has been divided into four phases to minimize the number of major traffic pattern adjustments. During each phase, work zones shall be erected in accordance with Typical Traffic Control (TTC) details. The details selected will accommodate the work as described below.

I-64 Construction: Maintenance of traffic along I-64 will be a major consideration in construction. With full depth pavement replacement required adjacent to traffic, concrete barriers will be required. The barriers will require an offset (two feet) and space to deflect and so the work will require temporary lane closures along I-64 even when working on the shoulder. We do not plan to close I-64 completely for this project. We will always provide at least one lane in each direction at all times.

The bridge construction will require work over the interstate, such as form work and the setting of girders. This work will be completed using a “Slow Roll Temporary Traffic Control Operation.”

The ramp curves adjacent to the gore areas will need to be reconstructed. Construction of these gore area curves will require temporary lane closures and the use of the full depth shoulders will be used to facilitate traffic around these work areas.

Secondary Road Construction: Route 285 – Tinkling Spring Road – with the associated bridge widening is the main secondary road to be improved. Sheet piling will be required protect the existing road while new abutments are constructed. Concrete barriers will be required as well as temporary drainage to provide a safe functional work zone.

The ramps and secondary roads are typically to be widened to one side. In the first phase of construction, while traffic remains on the existing alignment, the major widening will be completed on one side. After new pavement is installed up through the intermediate course, temporary wedge pavement will be required to pass traffic from existing surfaces to the newly widened areas.

The second phase of construction will begin when the traffic is shifted to the newly widened areas. Traffic will be shifted to the new bridge. The opposite shoulders and drainage will then be constructed using shoulder closures and lane closures. All work shall be performed while maintaining access to existing driveways.

When traffic is shifted back and forth during construction, the traffic signals must remain functional, controlling the intersections. We plan to erect the proposed mast arms during Phase I so signal heads may be temporarily set in various configurations to line up with traffic lanes as needed.

Placement of the final layer surface course and final pavement markings shall be applied in Phase IV and traffic will be controlled with lane closures. Roadside development will be completed, traffic signals will be adjusted to the final configuration, all disturbed areas will be stabilized, and traffic control devices and construction signs will be removed.

Transportation Operation Strategies

The Orders team will implement the following strategies:

Incident Management: We will provide a point of contact for emergency notification by the Traffic Operations Center (TOC). A contact list of local emergency response agencies will be compiled. A process to notify pertinent VDOT personnel of any incidents and expected traffic delays will be developed. MOT equipment will be identified in the event that an alternate route is required. We will provide procedures for coordinating incident management activities and coordination with state police. The TMP will also detail the process to review incidents for the purpose of modifying the temporary traffic control plan to reduce the frequency and severity of such incidents. Furthermore, the procedures to clear the incident and restore normal project traffic operations will be defined.

Available Alternate Routes for Incident Management: Our TMP will detail procedures to respond to traffic incidents that may occur in the work zone. The assets described in Section 4.5.1, Safety and Operations, will be made available. Signage requirements for alternate routes along Routes 250 or 340 will be made available in accordance with the VDOT Work Area Protection Manual.

Proposed Ramp or Lane Closures: Lane closures along I-64 will be required for ramp and auxiliary lane improvements. 12-foot lanes shall be maintained with 2-foot offset to the barrier. Slow roll temporary traffic control techniques, in accordance with the *Work Area Protection Manual*, will be used for erecting structural steel and dismantling the existing bridge over I-64 as approved by the Regional Traffic Engineer.

Time of Day Restrictions: Restrictions along I-64 will be coordinated with the VDOT North Western Regional Operations (NWRO) and the *Northwestern Region – Allowable Work Hours for Planned Interstate Lane Closures and Events* chart.

Flagging Operations and Temporary Detours: Construction along the secondary roads will be accomplished with lane closures and flagging operations. Temporary detours are not anticipated. Work zones shall maintain 12-foot lanes along I-64 and 11-foot lanes on the other project roadways. We do not anticipate needing to reduce speeds for construction but if the need arises we shall coordinate with the Northwest Regional Traffic Engineer in accordance with TE-350.

Project Stakeholder Coordination

As discussed in Section 4.5.1, we will include a public communications plan as part of this project. Throughout construction, and as part of our TMP, we will continue to monitor and inform the public of the project's progress and impacts that may occur, as well as provide coordination with other stakeholders. We will also coordinate with Staunton District Office of Public Affairs regarding release of information to the public.

Identified stakeholders include, but are not limited to, area businesses, residents, Augusta Health, Augusta County service providers, Fishersville, and Augusta Expo. Augusta Health is located just north of the project. The TMP and work zones will be prepared to allow emergency vehicles to pass through the work zone even during times of heavy congestion. The traffic control supervisor will monitor construction activities and keep a designated emergency access route clear during construction.

Additionally, we will maintain access to all businesses along the project and provide clear access to the Tinkling Spring Presbyterian Church on Sunday mornings and Augusta Expo during special events.



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4.6 Schedule and 4.7 DBE

4.6 ▶ Schedule and

4.7 ▶ Disadvantages Business Enterprises

4.6 ▶ *Schedule*

The schedule and schedule narrative are provided in the appendices, as required by the RFP.

4.7 ▶ *DBE*

Orders Construction Company, Inc. along with all team members is committed to achieving or exceeding the 12% DBE Participation Goal for this project.

In order to achieve this goal, we have in place **Quinn Consulting Services, Inc.** Quinn Consulting is a registered VDOT DBE/SWAM. As a valued team member, they will be providing all the quality assurance services for this project.

In addition to team member Quinn Consulting services, Orders Construction has reached out to DBE certified companies to join our team as subcontractors on the following items of work:

- Traffic control
- Pavement markings
- Furnish and place bridge deck reinforcing steel
- Furnish and erect bridge beams or girders
- Seeding, mulching, and landscaping
- Pavement demolition and flexible pavement planing
- Guardrail and associated attachments
- Water and sewer line relocation
- Furnishing bearing pile

We are certain that with DBE firms that we have a past and current working relationship with looking to join our team we not only will meet or exceed the 12% goal, we will be able to have a finished product of the highest quality due in part to the excellence of these DBE firms.



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Attachment 3.6 Form C-78-RFP

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

RFQ NO. C00075877DB47
PROJECT NO.: 0064-007-111, P101, RW201, C501, B627

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 March 28, 2012 - RFP
(Date)
2. Cover letter of June 1, 2012 - RFP Addendum #1
(Date)
3. Cover letter of June 21, 2012 - RFP Addendum #2
(Date)



SIGNATURE

6/27/12

DATE



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Attachment 4.0.1.1 Checklist

ATTACHMENT 4.0.1.1
I-64 Exit 91 Interchange Improvements
TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Offerors shall furnish a copy of this Technical Proposal Checklist, including page references, 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	
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	
Letter of Submittal	NA	Sections 4.1		1-2
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	2
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.5	no	
Offeror's Qualifications	NA	Section 4.2		3-5
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2	yes	3, 5
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2	yes	4

ATTACHMENT 4.0.1.1

I-64 Exit 91 Interchange Improvements

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2	yes	3
Design Concept	NA	Section 4.3		6-11, 33-60
Conceptual Roadway Plans and description	NA	Section 4.3.1	yes	6-9, 33-57
Conceptual Structural Plans, description, and renderings	NA	Section 4.3.2	yes	9-11, 58-60
Project Approach	NA	Section 4.4		12-26
Environmental Management	NA	Section 4.4.1	yes	12-15
Utilities	NA	Section 4.4.2	yes	16-18
Geotechnical	NA	Section 4.4.3	yes	18-20
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	20-26
Construction of Project	NA	Section 4.5		27-31
Sequence of Construction	NA	Section 4.5.1	yes	27-29
Transportation Management Plan	NA	Section 4.5.2	yes	30-31
Proposal Schedule	NA	Section 4.6		
Proposal Schedule	NA	Section 4.6	no	
Proposal Schedule Narrative	NA	Section 4.6	no	

ATTACHMENT 4.0.1.1

I-64 Exit 91 Interchange Improvements

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 in electronic format (CD-ROM)	NA	Section 4.6	no	
Disadvantaged Business Enterprises (DBE)	NA	Section 4.7		32
Written statement of percent DBE participation	NA	Section 4.7	yes	32
DBE subcontracting narrative	NA	Section 4.7	yes	32



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Attachment 9.3.1

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this "Agreement") is made and entered into as of this 29th day of June, 2012, by and between the Virginia Department of Transportation ("VDOT"), and Orders Construction Company ("Offeror").

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's **November 3, 2011** Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the **I-64 Exit 91 Interchange Improvements, Project No. 0064-007-111, P101, R201, C501, B627** ("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] Orders Construction Co.

By: *NRO*

Name: Nathaniel R. Orders

Title: President



I-64
exit 91

SCC and DPOR Certifications



Virginia.gov



01/13/12
08:59:13

CISM0180 CORPORATE DATA INQUIRY

CORP ID: F154186 - 3 STATUS: 00 ACTIVE STATUS DATE: 03/19/03

CORP NAME: CDM Smith Inc.

DATE OF CERTIFICATE: 03/19/2003 PERIOD OF DURATION: INDUSTRY CODE: 70

STATE OF INCORPORATION: MA MASSACHUSETTS STOCK INDICATOR: S STOCK

MERGER IND: CONVERSION/DOMESTICATION IND:

GOOD STANDING IND: Y MONITOR INDICATOR:

CHARTER FEE: 2500.00 MON NO: MON STATUS: MONITOR DTE:

R/A NAME: CT CORPORATION SYSTEM

STREET: 4701 COX RD STE 301 AR RTN MAIL:

CITY: GLEN ALLEN STATE : VA ZIP: 23060 6802

R/A STATUS: 5 B.E. AUTH IN VI EFF. DATE: 01/05/04 LOC : 143

ACCEPTED AR#: 211 50 4669 DATE: 02/28/11 HENRICO COUNTY

CURRENT AR#: 211 50 4669 DATE: 02/28/11 STATUS: A ASSESSMENT INDICATOR: 0

YEAR	FEES	PENALTY	INTEREST	TAXES	BALANCE	TOTAL SHARES
12	1,700.00				1,700.00	25,000,000

(Screen Id:/Corp_Data_Inquiry)

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON

02-28-2014

NUMBER

0411000652

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 967-8500

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY BRANCH OFFICE REGISTRATION

PROFESSIONS: ENG

CDM SMITH INC
2112 WEST LABURNUM AVE
SUITE 100
RICHMOND, VA 23227



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Gordon N. Dixon
Gordon N. Dixon, Director

(SEE REVERSE SIDE FOR NAME AND/OR ADDRESS CHANGE)

(POCKET CARD)

COMMONWEALTH OF VIRGINIA

BOARD FOR APELSCIDLA
BUSINESS ENTITY BRANCH OFFICE REGISTRATION
NUMBER: 0411000652 EXPIRES: 02-28-2014
PROFESSIONS: ENG
CDM SMITH INC
2112 WEST LABURNUM AVE
SUITE 100
RICHMOND, VA 23227



(DETACH HERE)

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
9960 Mayland Dr., Suite 400, Richmond, VA 23233

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**DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA**

**EXPIRES ON
02-28-2014**

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

**NUMBER
0411000903**

**BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY BRANCH OFFICE REGISTRATION**

PROFESSIONS: ENG

**CDM SMITH INC
700 WASHINGTON ST., EAST
GEARY PLAZA, SUITE 210
CHARLESTON, WV 25301**



Gordon N. Dixon
Gordon N. Dixon, Director

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(POCKET CARD) **COMMONWEALTH OF VIRGINIA**

**BOARD FOR APELSCIDLA
BUSINESS ENTITY BRANCH OFFICE REGISTRATION
NUMBER: 0411000903 EXPIRES: 02-28-2014**

PROFESSIONS: ENG

CDM SMITH INC

**700 WASHINGTON ST., EAST
GEARY PLAZA, SUITE 210
CHARLESTON, WV 25301**



**DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
9960 Mayland Dr., Suite 400, Richmond, VA 23233**

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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON
02-28-2014

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
0411000900

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY BRANCH OFFICE REGISTRATION

PROFESSIONS: ENG

CDM SMITH INC
1100 MARION ST
SUITE 200
KNOXVILLE, TN 37921



Gordon N. Dixon
Gordon N. Dixon, Director

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COMMONWEALTH OF VIRGINIA

BOARD FOR APESCIDLA
BUSINESS ENTITY BRANCH OFFICE REGISTRATION
NUMBER: 0411000900 EXPIRES: 02-28-2014
PROFESSIONS: ENG
CDM SMITH INC
1100 MARION ST
SUITE 200
KNOXVILLE, TN 37921



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9960 Mayland Dr., Suite 400, Richmond, VA 23233

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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION

COMMONWEALTH OF VIRGINIA

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
02-28-2014

NUMBER
0411000901

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY BRANCH OFFICE REGISTRATION

PROFESSIONS: ENG

CDM SMITH INC
1648 MCGRATHIANA PKWY
SUITE 340
LEXINGTON, KY 40511



Gordon N. Dixon
Gordon N. Dixon, Director

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(POCKET CARD)

COMMONWEALTH OF VIRGINIA

BOARD FOR APELSCIDLA

BUSINESS ENTITY BRANCH OFFICE REGISTRATION

NUMBER: 0411000901 EXPIRES: 02-28-2014

PROFESSIONS: ENG

CDM SMITH INC

1648 MCGRATHIANA PKWY

SUITE 340

LEXINGTON, KY 40511



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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
8960 Mayland Dr., Suite 400, Richmond, VA 23233

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**DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA**

EXPIRES ON
02-28-2014

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
0411000611

**BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY BRANCH OFFICE REGISTRATION**

PROFESSIONS: ENG

**GREENHORNE & O'MARA, INC.
10800 MIDLOTHIAN TNPk STE 310
RICHMOND, VA 23235**



Gordon N. Dixon
Gordon N. Dixon, Director

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(POCKET CARD)

COMMONWEALTH OF VIRGINIA

BOARD FOR APELSCIDLA
BUSINESS ENTITY BRANCH OFFICE REGISTRATION
NUMBER: 0411000611 EXPIRES: 02-28-2014
PROFESSIONS: ENG
GREENHORNE & O'MARA, INC.
10800 MIDLOTHIAN TNPk STE 310
RICHMOND, VA 23235



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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
9960 Mayland Dr., Suite 400, Richmond, VA 23233

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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON
02-28-2014

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
0411000408

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY BRANCH OFFICE REGISTRATION

PROFESSIONS: ENG

TRIAD ENGINEERING INC
21641 BEAUMEADE CIRCLE SUITE 300
ASHBURN, VA 20147



Gordon N. Dixon
Gordon N. Dixon, Director

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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON
02-28-2014

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
0411000052

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY BRANCH OFFICE REGISTRATION

PROFESSIONS: ENG

FROEHLING & ROBERTSON, INC
6181 ROCKFISH GAP TURNPIKE
CROZET, VA 22932



Gordon N. Dixon
Gordon N. Dixon, Director

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COMMONWEALTH OF VIRGINIA

BOARD FOR APESCIDLA
BUSINESS ENTITY BRANCH OFFICE REGISTRATION
NUMBER: 0411000052 EXPIRES: 02-28-2014
PROFESSIONS: ENG
FROEHLING & ROBERTSON, INC
6181 ROCKFISH GAP TURNPIKE
CROZET, VA 22932



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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
9960 Mayland Dr., Suite 400, Richmond, VA 23233

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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON
02-28-2014

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
0411000662

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY BRANCH OFFICE REGISTRATION

PROFESSIONS: ENG

ECS MID-ATLANTIC LLC
1601 AIRPORT RD
CHARLOTTESVILLE, VA 22911



Gordon N. Dixon
Gordon N. Dixon, Director

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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON

01-31-2013

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER

0402025745

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE

RANDALL ALAN HARRIS
8500 SUMMIT ACRES DR
RICHMOND, VA 23235



Gordon N. Dixon
Gordon N. Dixon, Director

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**DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA**

EXPIRES ON
03-31-2014

NUMBER
0402044608

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE

CYNTHIA LYNN SHAMBLIN
51 COPELAND ROAD
CHARLESTON, WV 25320



Gordon N. Dixon
Gordon N. Dixon, Director

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(SEE REVERSE SIDE FOR NAME AND/OR ADDRESS CHANGE)

(POCKET CARD) COMMONWEALTH OF VIRGINIA
BOARD FOR APELSCIDLA
PROFESSIONAL ENGINEER LICENSE
NUMBER: 0402044608 EXPIRES: 03-31-2014

CYNTHIA LYNN SHAMBLIN
51 COPELAND ROAD
CHARLESTON, WV 25320



(DETACH HERE)

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
9960 Mayland Dr., Suite 400, Richmond, VA 23233

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**DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA**

EXPIRES ON
06-30-2014

NUMBER
0402039004

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE

KAUSHIKKUMAR BHUPENDRAPRASAD VYAS
10170 SPRING DRIVE
GORDONSVILLE, VA 22942-7581



Gordon N. Dixon
Gordon N. Dixon, Director

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(SEE REVERSE SIDE FOR NAME AND/OR ADDRESS CHANGE)



I-64
exit 91

Schedule and Schedule Narrative



Schedule Narrative

Project Milestones

Notice to Proceed	October 18, 2012
Construction Start	July 1, 2013
Project Substantial Completion	August 27, 2015
Project Final Completion	August 31, 2015

Work Breakdown Structure

The work breakdown structure (WBS) has been developed and included in the schedule. The schedule is organized into levels to the different major phases of the project. We also include in the schedule organization considerations for logistical and seasonal limitations:

WBS – Level 2

Preparation and Submittals	Environmental Permit Authorization
Design	QA Program
Right-of-Way	QC Program
Utility Coordination/Relocation	Construction

The design work package is broken into three areas.

WBS – Design

Preliminary Design	Final Design
Detail Design	

The construction work package is broken into six areas:

WBS – Construction

Site Set up	Phase 2
Utility Adjustments	Phase 3
Phase 1	Phase 4

Schedule Sequencing and Critical Path

Once the design-build contract is executed and the team receives the notice to proceed, we will immediately commence work as follows:

▶ **Preparation and Submittals:** We will begin to provide all submittals for review by VDOT and other parties. As the design submittals and balance of construction submittals are completed, they will continue to be tracked and coordinated. Construction phase services and major deliveries will also occur throughout this time period

▶ **Design:** We will begin completing preliminary roadway and bridge design so it can be ready for the stakeholder meeting. We will also begin the geotechnical field exploration immediately in order to complete the analysis before the Scope Validation Period. The detail design of the roadway and bridge will be completed so that they can be submitted to VDOT for review and approval. After the plans have been submitted for right-of-way approval, we will begin completing the final design of the roadway and bridge construction plans.

▶ **Right-of-Way:** Necessary title work will begin before the right-of-way plans are submitted to VDOT for review. We will also begin the preparation of the appraisals, so that after the right-of-way plans are approved, we can start to negotiate with property owners and clear the right-of-way so that work can proceed without interruption.

▶ **Environmental Permit Authorization:** We will conduct wetland delineation immediately and submit the wetland delineation report to the USACE. We will then prepare the permit sketches in order to submit for the Corp NWP #23. Compensatory mitigation will be ongoing as necessary. We will begin to develop the Initial Application and Conceptual Plan for the VSMP and SWPPP Permit. As the project design is completed, we will submit a finalized ESC & SWM Plan and SWPPP for the project.

▶ **Utility Coordination:** We will immediately begin preparing the preliminary utility status report. After the report is submitted, we will coordinate with the utilities so that the relocations are complete before construction begins. We will also undertake utility design at this time.

▶ **QA and QC Programs:** Construction QA and QC activities will begin at the beginning of the project and will continue to occur throughout the construction process until after the project is completed.

▶ Construction:

- **Site Set Up:** We will begin mobilization to the project.
- **Utility Adjustments:** Utility adjustments will begin as soon as all appropriate coordination occurs.
- **Phase 1:** Once the bridge and roadway plans are approved, we will commence construction of Phase I, which involves the construction of Route 285 southbound abutments and approach roads 122+00 to 131+00. We will close I-64 median shoulders and construct the southbound bridge pier in the I-64 median. The southbound lanes of bridge will be constructed and the box culverts under Route 285 and I-64 will be extended. We will then construct the remainder of Route 285 southbound, the left-turn lanes along Ramp A, the additional lane along Ramp B, the additional lane along Ramp C, the left-turn lane along Ramp D, and the right-turn lane along Expo Road. We will then construct the realigned at Tinkling Springs Drive, the left-turn lane at Route 640, and the right turn lane along Route 636. As the speed change lanes along I-64 are extended, we will construct full depth shoulder pavement on the right sides of all ramps and speed change lanes and install temporary signalization before moving on to Phase 2.

- *Phase 2:* We will shift Route 285 traffic to the newly constructed southbound lanes and demolish the old bridge as well as construct the northbound portion of the bridge. We will then construct the Route 285 northbound shoulder and then shift Ramp A traffic right and construct the left shoulder; shift Ramp C traffic left and construct the right shoulder; shift Ramp D traffic right and construct the left shoulder; shift the Expo Road traffic right and construct the left shoulder; and shift traffic and finish construction on Routes 636 and 640. The full depth pavement in gore areas will be constructed.
- *Phase 3:* We will shift traffic to Route 285's outside lanes; construct the median and median portion of the bridge as well as the ramp curves with new superelevation.
- *Phase 4:* We will complete the roadside development, incidentals, seeding, and landscaping, install all project signs and lighting fixtures, remove temporary signalization and adjust the permanent signal for normal operation as well as install the surface course pavement and remove erosion and sediment control measures after the site is stabilized. The construction will be substantial completion on August 27, 2015 with a final completion of August 31, 2013.

► **Critical Path:** The project's critical path begins with the preliminary design activities. After the stakeholder's meeting, the critical path resumes through the detail roadway design and the plans are submitted for right-of-way review and approval. Once the right-of-way plans are submitted and approved, the critical path follows the final design of the roadway until the final construction plans are approved. The construction start up activities then become critical and continues through the construction of the southbound bridge. The fabrication of the beams for the southbound B627 bridge is also critical. Once the southbound lanes are complete, the critical path continues through the construction of the northbound B627 bridge. After the entire bridge is complete, the critical path continues through the construction of Route 640 and Route 285 until Phase 2 construction is complete. The critical path then continues through Phase 3 and Phase 4 of the project. The construction will be substantial completion on August 27, 2015 with a final completion of August 31, 2013.

Assumptions made to insure production meets or exceeds the critical path and all critical activities:

- The design activities will be accomplished with the assistance of more than 60 regional CDM Smith resources.
- Bridge construction in the schedule is based on a 40-hour work week. Orders is prepared to increase the work week as needed to mitigate weather or other delays to meet the demands of the project and the schedule. Production rates projected in the schedule for Bridge construction units to include excavation, pile driving, forming, and reinforcing and pouring of concrete are based on historical data compiled over many years.
- Roadway construction is based on a 40-hour work week as well, and Orders is prepared to increase working hours as needed. Production rates for excavation, fine grading, and installation of drainage items are also based on historic data of the company.
- If any critical item lags, Orders will be prepared to add working shifts as necessary.
- Only well-qualified subcontractors will be chosen to team with Orders to insure that all critical items are completed on time.
- Orders owns an extensive fleet based in Saint Albans, WV and will supplement the needs of the project as needed on a daily basis.

Activity ID	Activity Name	Original Duration	Calendar	Early Start	Early Finish	Total Float	2013												2014												2015												2016	
							Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb									
I-64 Exit 91 Interchange Improvem							31-Aug-15, I-64 Exit 91 Interchange Imp																																					
Preparation and Submittals							30-Aug-15, Preparation and Submittals																																					
A1000	Notice of Intent to Award	0	5-10hr Days Workweek	01-Oct-12		12	Notice of Intent to Award																																					
A1020	Design-Build Contract	1	5-10hr Days Workweek	01-Oct-12	01-Oct-12	12	Design-Build Contract																																					
A1030	Notice to Proceed	1	5-10hr Days Workweek	18-Oct-12	18-Oct-12	0	Notice to Proceed																																					
A1090	Prepare QA Plan	20	5-10hr Days Workweek	19-Oct-12	15-Nov-12	578	Prepare QA Plan																																					
A1100	Prepare QC Plan	20	5-10hr Days Workweek	19-Oct-12	15-Nov-12	578	Prepare QC Plan																																					
A1160	Preliminary Utility Review Meeting	1	5-10hr Days Workweek	19-Oct-12	19-Oct-12	731	Preliminary Utility Review Meeting																																					
A1170	Submit Documents Schedule	1	5-10hr Days Workweek	19-Oct-12	19-Oct-12	16	Submit Documents Schedule																																					
A1302	Public Outreach Setup	5	5-10hr Days Workweek	19-Oct-12	25-Oct-12	742	Public Outreach Setup																																					
A1304	Public Outreach	1046	7-Day Workweek	19-Oct-12	30-Aug-15	0	Public Outreach																																					
A1040	Scope Validation Period	120	7-Day Workweek	19-Oct-12	15-Feb-13	927	Scope Validation Period																																					
A1130	Hazardous Material Inspection	2	4-10hr Days Workweek	22-Oct-12	23-Oct-12	284	Hazardous Material Inspection																																					
A1270	Procurement	147	5-10hr Days Workweek	22-Oct-12	31-May-13	16	Procurement																																					
A1110	VDOT Plan Review QA/QC	21	5-10hr Days Workweek	16-Nov-12	21-Dec-12	691	VDOT Plan Review QA/QC																																					
Construction Phase Services							28-Aug-15, Construction Phase Services																																					
A1182	Survey Crew Field Work	731	5-10hr Days Workweek	19-Oct-12	28-Aug-15	0	Survey Crew Field Work																																					
A1220	Construction Period	745	5-10hr Days Workweek	22-Oct-12	28-Aug-15	0	Construction Period																																					
A1222	Shop Drawing Review Beams	5	5-10hr Days Workweek	03-Jun-13	07-Jun-13	37	Shop Drawing Review Beams																																					
A1053	Shop Drawings Review Drainage Materials	5	5-10hr Days Workweek	03-Jun-13	07-Jun-13	16	Shop Drawings Review Drainage Materials																																					
A1073	Fabrication of Rebar	4	5-10hr Days Workweek	03-Jun-13	06-Jun-13	43	Fabrication of Rebar																																					
A1083	Delivery of Rebar	1	5-10hr Days Workweek	07-Jun-13	07-Jun-13	43	Delivery of Rebar																																					
A1054	Fabrication of Drainage Materials	4	4-10hr Days Workweek	10-Jun-13	13-Jun-13	13	Fabrication of Drainage Materials																																					
A2870	Construction Start	0	5-10hr Days Workweek	01-Jul-13	01-Jul-13	0	Construction Start																																					
A1033	Fabricate Beams	40	5-10hr Days Workweek	01-Aug-13	25-Sep-13	0	Fabricate Beams																																					
A1043	Delivery of Beams	1	5-10hr Days Workweek	26-Sep-13	26-Sep-13	1	Delivery of Beams																																					
A1234	Load Ratings	4	5-10hr Days Workweek	07-Mar-14	12-Mar-14	382	Load Ratings																																					
A1224	As-Built Drawings	3	5-10hr Days Workweek	19-Aug-15	21-Aug-15	5	As-Built Drawings																																					
Design							01-Jul-13, Design																																					
A1960	Survey	20	5-10hr Days Workweek	19-Oct-12	15-Nov-12	0	Survey																																					
Preliminary Design							28-Dec-12, Preliminary Design																																					
A1970	Finalize Preliminary Roadway Plans	20	5-10hr Days Workweek	19-Oct-12	15-Nov-12	0	Finalize Preliminary Roadway Plans																																					
A1980	Finalize Type, Size and Location (T,S&L) Plans	20	5-10hr Days Workweek	19-Oct-12	15-Nov-12	0	Finalize Type, Size and Location (T,S&L) Plans																																					
A1990	VDOT Type, Size and Location (T,S&L) Submittal Review	15	5-10hr Days Workweek	16-Nov-12	06-Dec-12	57	VDOT Type, Size and Location (T,S&L) Submittal Review																																					
A2000	Stakeholder Meeting	1	5-10hr Days Workweek	16-Nov-12	16-Nov-12	0	Stakeholder Meeting																																					
Geotechnical Drainage/SWM Structures/E							28-Dec-12, Geotechnical Drainage/SWM Structures/Embankment																																					
A2010	Field Exploration	4	5-10hr Days Workweek	19-Oct-12	24-Oct-12	22	Field Exploration																																					

Remaining Level of Effort
 Critical Remaining Work
 Actual Level of Effort
 Milestone
 Actual Work
 Summary
 Remaining Work

Activity ID	Activity Name	Original Duration	Calendar	Early Start	Early Finish	Total Float	2013												2014												2015												2016	
							Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb									
Environmental Permit Authorizatio							12-Jun-13, Environmental Permit Authorization																																					
Preliminary Field Investigations							06-Dec-12, Preliminary Field Investigations																																					
A2640	Delineation of WOUS, including wetlands	5	5 - 10hr Days Workweek	19-Oct-12	25-Oct-12	26	Delineation of WOUS, including wetlands																																					
A2650	Unified Stream Assessment	5	5 - 10hr Days Workweek	26-Oct-12	01-Nov-12	26	Unified Stream Assessment																																					
A2660	Delineation Report	5	5 - 10hr Days Workweek	02-Nov-12	08-Nov-12	26	Delineation Report																																					
A2670	Delineation Confirmation	0	5 - 10hr Days Workweek	09-Nov-12	09-Nov-12	26	Delineation Confirmation																																					
A2680	Survey locate wetlands and WOUS	20	5 - 10hr Days Workweek	09-Nov-12	06-Dec-12	26	Survey locate wetlands and WOUS																																					
Water Quality Permitting							24-May-13, Water Quality Permitting																																					
A2690	Pre-Application Meeting	20	5 - 10hr Days Workweek	09-Nov-12	06-Dec-12	26	Pre-Application Meeting																																					
A2700	Develop Permit Sketches	20	5 - 10hr Days Workweek	07-Dec-12	03-Jan-13	26	Develop Permit Sketches																																					
A2710	Develop Corps NWP #23 PCN	20	5 - 10hr Days Workweek	04-Jan-13	31-Jan-13	26	Develop Corps NWP #23 PCN																																					
A2720	Submit Corps NWP #23 PCN	20	5 - 10hr Days Workweek	01-Feb-13	28-Feb-13	26	Submit Corps NWP #23 PCN																																					
A2730	Corps Permit Completeness Review	15	5 - 10hr Days Workweek	01-Mar-13	21-Mar-13	26	Corps Permit Completeness Review																																					
A2740	Comments Period	15	5 - 10hr Days Workweek	22-Mar-13	11-Apr-13	26	Comments Period																																					
A2750	Corps Permit Period	30	5 - 10hr Days Workweek	12-Apr-13	23-May-13	26	Corps Permit Period																																					
A2760	Permit Authorization	0	5 - 10hr Days Workweek	24-May-13	24-May-13	26	Permit Authorization																																					
A3540	Hold Point	0	5 - 10hr Days Workweek	24-May-13	24-May-13	26	Hold Point																																					
Compensatory Mitigation							02-May-13, Compensatory Mitigation																																					
A2770	Dev. conceptual stream restoration plans using NSCD	20	5 - 10hr Days Workweek	19-Oct-12	15-Nov-12	41	Dev. conceptual stream restoration plans using NSCD (as necessary)																																					
A2780	Dev. final stream restoration plans using NSCD (as necessary)	20	5 - 10hr Days Workweek	11-Jan-13	07-Feb-13	41	Dev. final stream restoration plans using NSCD (as necessary)																																					
A2790	Obtain stream and wetland mitigation credits (as necessary)	20	5 - 10hr Days Workweek	05-Apr-13	02-May-13	41	Obtain stream and wetland mitigation credits (as necessary)																																					
VSMP and SWPPP Permit							12-Jun-13, VSMP and SWPPP Permit																																					
A2800	Prepare Initial Permit Application	5	5 - 10hr Days Workweek	21-Dec-12	27-Dec-12	36	Prepare Initial Permit Application																																					
A2810	Agency Review (60 calendar days)	44	5 - 10hr Days Workweek	28-Dec-12	27-Feb-13	36	Agency Review (60 calendar days)																																					
A2820	Agency Approve Initial Permit Application	0	5 - 10hr Days Workweek	28-Feb-13	28-Feb-13	36	Agency Approve Initial Permit Application																																					
A2830	Finalize ESC and SWM Plan and SWPPP	3	5 - 10hr Days Workweek	02-Apr-13	04-Apr-13	13	Finalize ESC and SWM Plan and SWPPP																																					
A2840	Prepare VSMP & SWPPP Permit Application	3	5 - 10hr Days Workweek	05-Apr-13	09-Apr-13	13	Prepare VSMP & SWPPP Permit Application																																					
A2850	Agency Review of VSMP & SWPPP Permit (60 calendar days)	45	5 - 10hr Days Workweek	10-Apr-13	11-Jun-13	13	Agency Review of VSMP & SWPPP Permit (60 calendar days)																																					
A2860	VSMP & SWPPP Approved- Hold Point	0	5 - 10hr Days Workweek	12-Jun-13	12-Jun-13	13	VSMP & SWPPP Approved- Hold Point																																					
QA Program							30-Aug-15, QA Program																																					
A1310	QA Program Set-Up	107	4-10hr Days Workweek	26-Nov-12	10-Jun-13	462	QA Program Set-Up																																					
A1320	QA Inspection	811	7-Day Workweek	11-Jun-13	30-Aug-15	0	QA Inspection																																					
QC Program							30-Aug-15, QC Program																																					
A1330	QC Program Set-Up	107	4-10hr Days Workweek	26-Nov-12	10-Jun-13	462	QC Program Set-Up																																					
A1340	QC Inspection	811	7-Day Workweek	11-Jun-13	30-Aug-15	0	QC Inspection																																					
Construction							31-Aug-15, Construction																																					
Site Set Up							24-Jul-13, Site Set Up																																					

Remaining Level of Effort
 Critical Remaining Work
 Actual Level of Effort
 Milestone
 Actual Work
 Summary
 Remaining Work



**CDM
Smith**

I-64 Exit 91 Interchange Improvements

From: 0.429 Miles West of Route 285 | To: 0.438 Miles East of Route 285 | Augusta County, Virginia

COPY

STATE PROJECT No.: 0064-007-111, P101,
R-201, C-501, B-627

FEDERAL PROJECT No.: NH-064-2(152)

CONTRACT ID NUMBER: C00075877DB47

PLAN SET | VOLUME II

June 29, 2012

SUBMITTED TO:
VIRGINIA DEPARTMENT OF TRANSPORTATION



ORDERS
CONSTRUCTION COMPANY

**CDM
Smith**



I-64
exit 91

Conceptual Roadway Plans

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
SURVEYED BY D.L. Burgoon (1000) 000-0000 (Staunton District)
DESIGN SUPERVISED BY Bill Aca, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Lankford, Hankins, Jr. (804) 786-0502 (Central Office)

- ① ASPHALT CONCRETE SURFACE COURSE, TYPE SM-12.5A @ 165LBS. PER S.Y.
- ② 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE IM-19.0A
- ③ 4" ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A
- ④ 6" AGGR. BASE MATL. TYPE I, No. 21-B
- ⑤ 26" SELECT MATERIAL TYPE (SEE SPECIAL PROVISION)

TYPICAL SECTIONS

Interstate 64
GS-1 Rural Principal Arterial
75 MPH Min. Design Speed

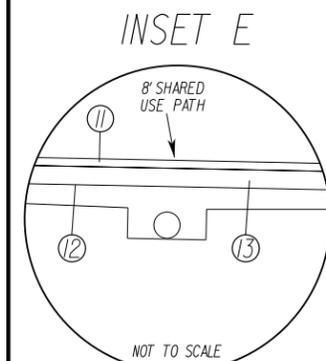
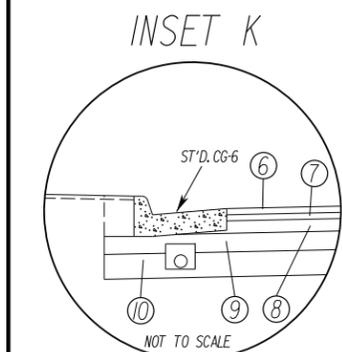
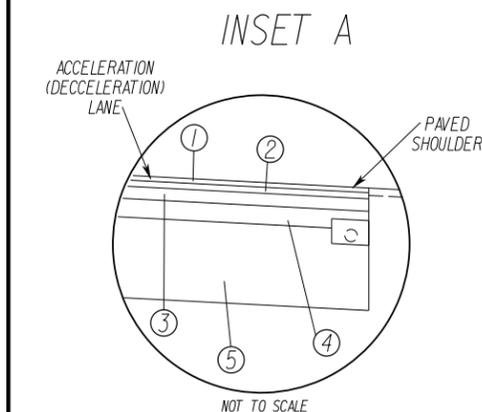
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 C-501	2A

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

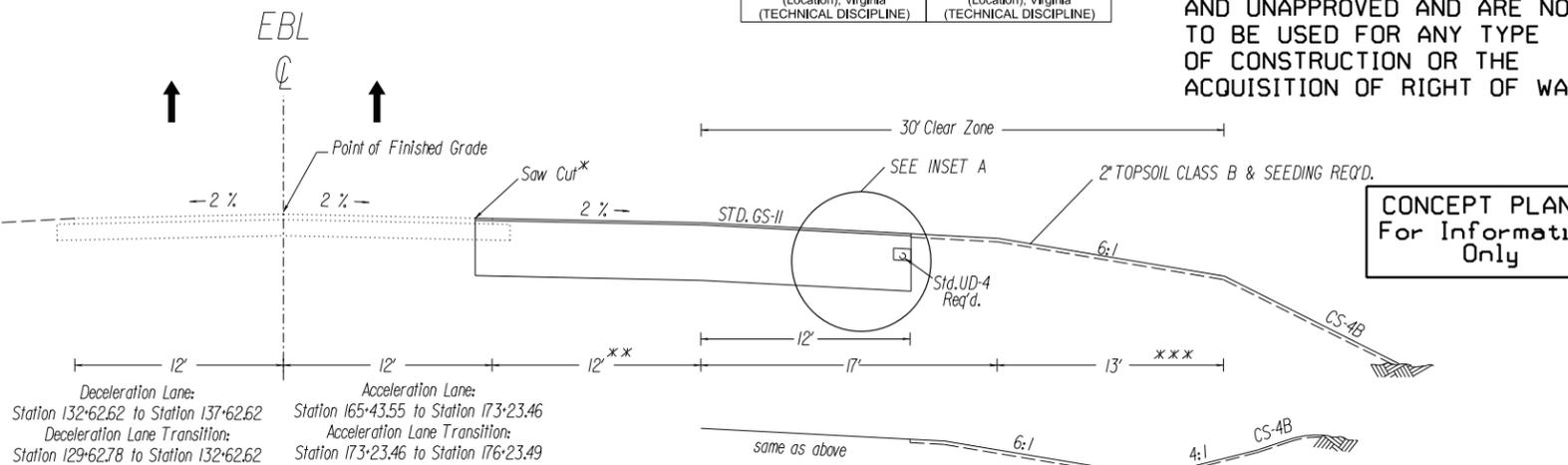
VDOT (Division) or Co. Name (Location), Virginia (TECHNICAL DISCIPLINE)

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

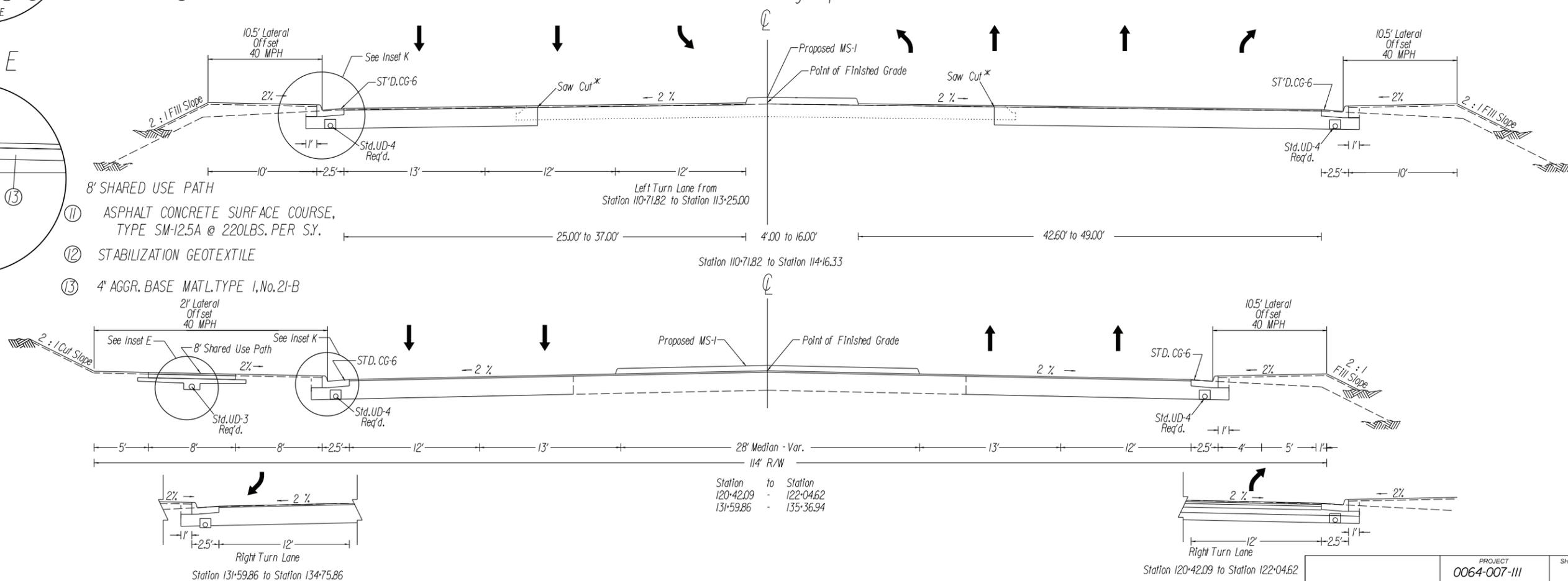
CONCEPT PLANS
For Information Only



- ⑥ ASPHALT CONCRETE SURFACE COURSE, TYPE SM-9.5A @ 220LBS. PER S.Y.
- ⑦ 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE IM-19.0A
- ⑧ 4" ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A
- ⑨ 6" AGGR. BASE MATL. TYPE I, No. 21-B
- ⑩ 8" SELECT MATERIAL TYPE (SEE SPECIAL PROVISION)



Route 285
Tinkling Spring Road
GS-6 Urban Minor Arterial
40 MPH Min. Design Speed



- * - Overlap the existing pavement 1 ft per Std. WP-2
- ** - Existing Accel / Decel lanes to be utilized. Widening to Impact existing lanes as per VDOT Std WP-2
- *** - Not req'd when guardrail is provided.

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
SURVEYED BY D.L. Burgoon (1000) 000-0000 (Staunton District)
DESIGN SUPERVISED BY Bill Aca, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Luskford, Hankins, Jr. (804) 786-0502 (Central Office)

TYPICAL SECTIONS

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 C-501	2B

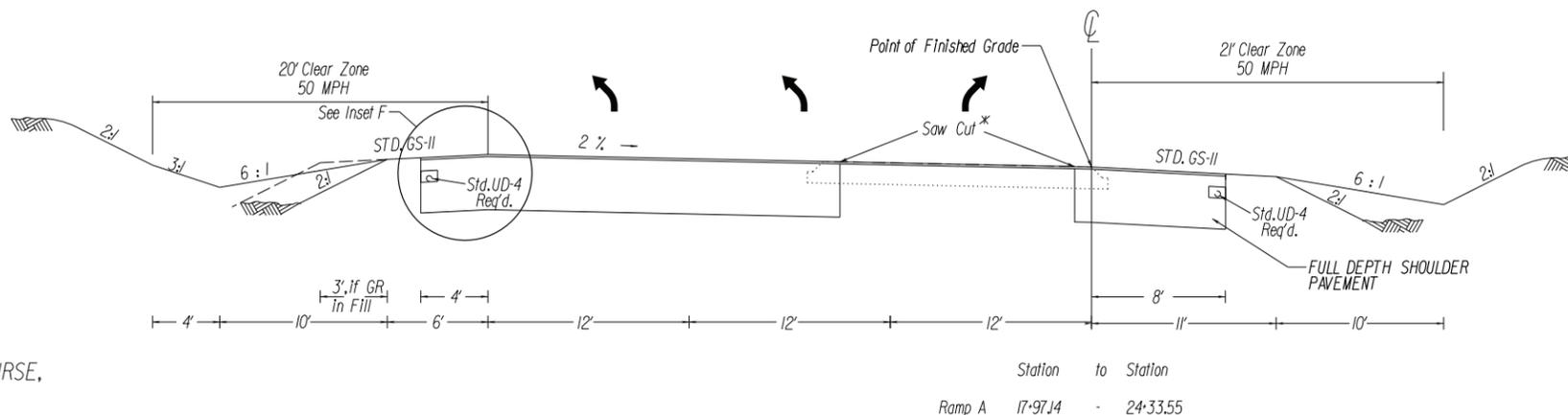
CONCEPT PLANS
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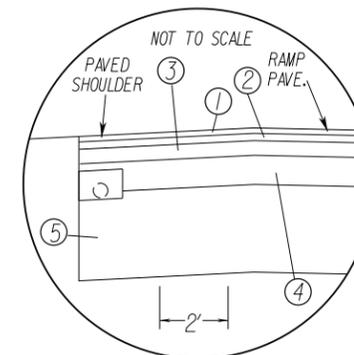
- ① ASPHALT CONCRETE SURFACE COURSE, TYPE SM-12.5A @ 165LBS. PER S.Y.
- ② 2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE IM-19.0A
- ③ 4" ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A
- ④ 6" AGGR. BASE MATL. TYPE I, No. 21-B
- ⑤ 26" SELECT MATERIAL TYPE (SEE SPECIAL PROVISION)
- ⑥ ASPHALT CONCRETE SURFACE COURSE, TYPE SM-9.5A @ 165LBS. PER S.Y.
- ⑦ 10" AGGR. BASE MATL. TYPE I, No. 21-B

- ⑧ 8' SHARED USE PATH
- ⑧ ASPHALT CONCRETE SURFACE COURSE, TYPE SM-12.5A @ 220LBS. PER S.Y.
- ⑨ STABILIZATION GEOTEXTILE
- ⑩ 4" AGGR. BASE MATL. TYPE I, No. 21-B

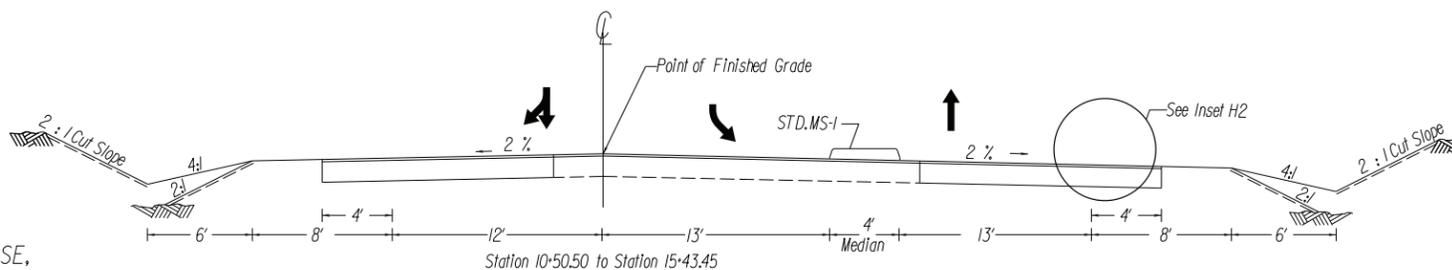
Interstate 64 Ramps
GS-R Interchange Ramp - 50 MPH Min. Design Speed



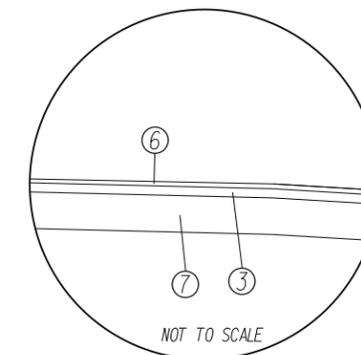
INSET F



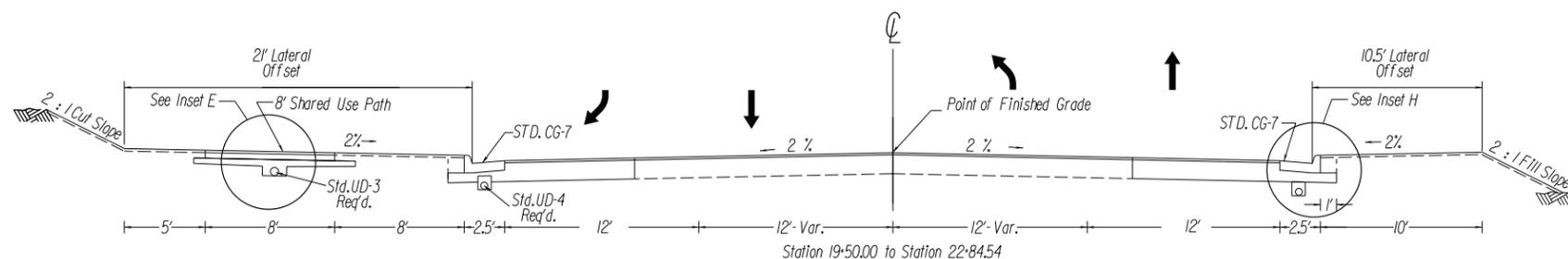
Route 640 - Goose Creek Road
GS-3 Rural Collector - 50 MPH Min. Design Speed



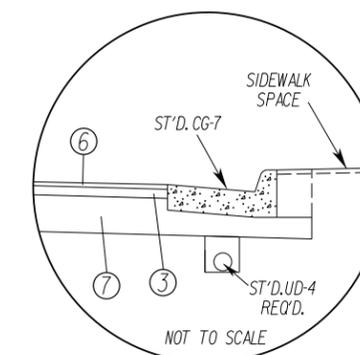
INSET H2



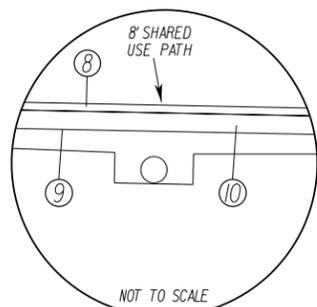
Route 636 - Goose Creek Road
GS-7 Urban Collector - 50 MPH Min. Design Speed



INSET H



INSET E



* - Overlap the existing pavement 1 ft per Std. WP-2

PROJECT 0064-007-III	SHEET NO. 2B
-------------------------	-----------------

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
SURVEYED BY D.L. Burgoon (000) 000-0000 (Staunton District)
DESIGN SUPERVISED BY Bill Aca, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Larksford, Haakins, Jr. (804) 786-0502 (Central Office)

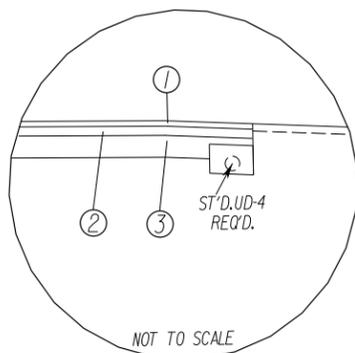
TYPICAL SECTIONS

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 C-501	2C

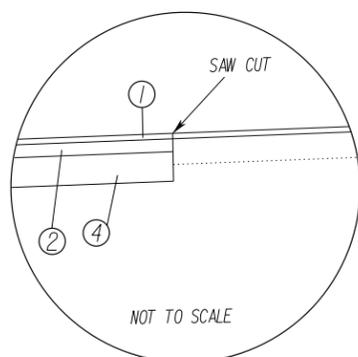
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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

INSET K



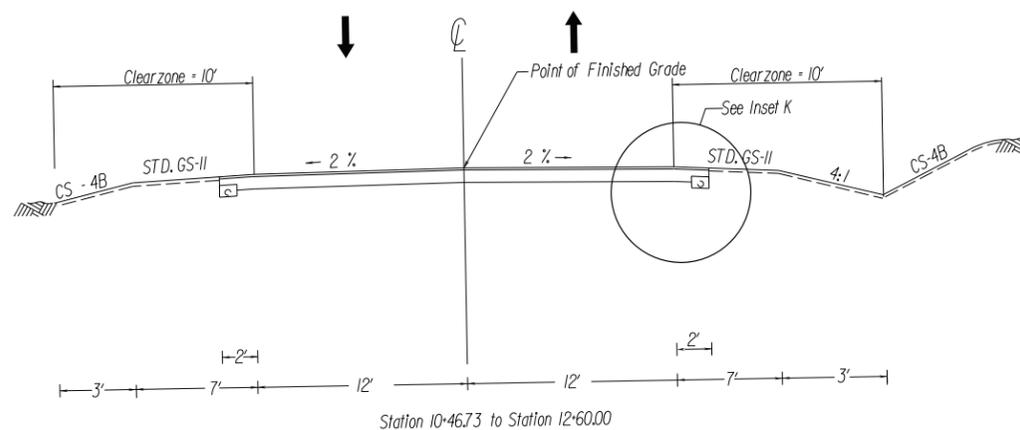
INSET L



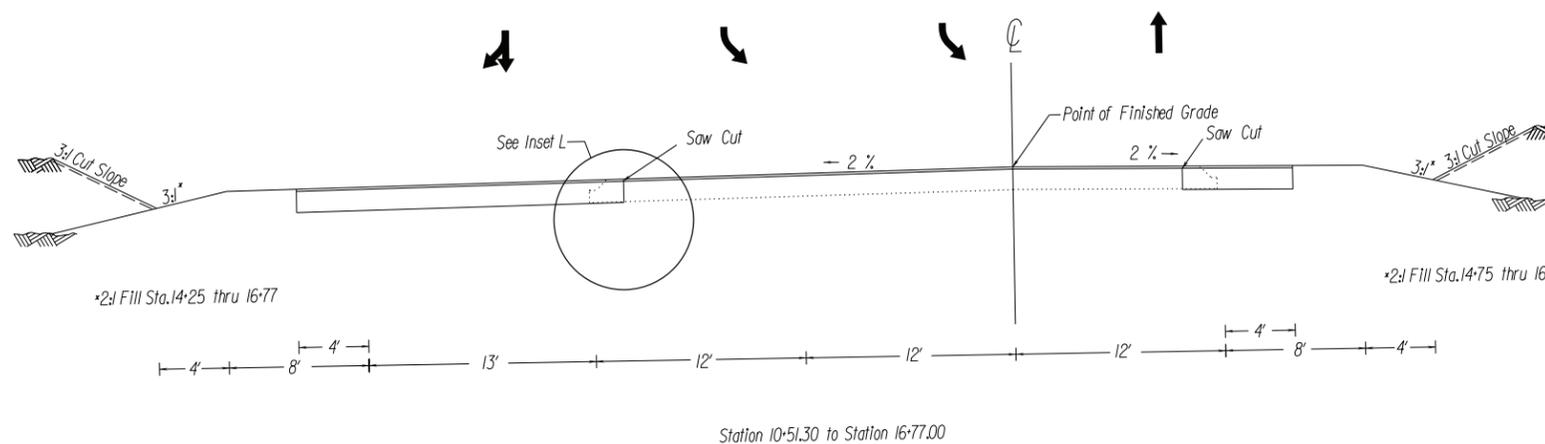
CONCEPT PLANS
For Information
Only

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Route 627 Tinkling Spring Dr.
GS-8 Urban Local - 20 MPH Min. Design Speed



Route 935 Expo Rd.
GS-8 Urban Local - 35 MPH Min. Design Speed



- ① ASPHALT CONCRETE SURFACE COURSE, TYPE SM-9.5A @ 165 LBS. PER SY.
- ② 2.5" ASPHALT CONCRETE BASE COURSE, TYPE BM-25.0A
- ③ 6" AGGR. BASE MATL. TYPE I, No. 21-B
- ④ 12" AGGR. BASE MATL. TYPE I, No. 21-B

PROJECT	SHEET NO.
0064-007-III	2C

CONCEPT PLANS

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
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DESIGN SUPERVISED BY William D. Arel, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Lankford, E., Hankins, Jr., (804) 786-0502 (Central Office)

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24482-0859
(540) 245-5675

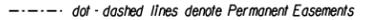
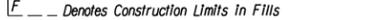
Mr. Rex L. Parker
Columbia Gas of Virginia
1809 Coyote Drive
Chester, Virginia 23836
(804) 768-6428

Mr. Judy Drullia
Verizon Virginia, Inc.
22 Christians Creek Road
Staunton, Virginia 24401
(540) 887-9900

Mr. Randy Gilck
Shenandoah Valley Electric Cooperative
147 Dinkle Avenue
Mr. Crawford, Virginia 22841
(540) 574-7240

Mr. Ralph Boyd
Comcast Cable Communications
2303 North Augusta Street
Staunton, Virginia 24401
(540) 531-4998

Mr. Daryl Martin
Dominion Virginia Power
2 Technology Drive
Staunton, Virginia 24401
(540) 245-4151

-  Denotes overlay
-  Denotes proposed new pavement
-  Denotes demolition of pavement
-  dot - dot - dashed lines denote Temporary Easements
-  dot - dashed lines denote Permanent Easements
-  solid lines denote Right of Way
-  C Denotes Construction Limits in Cuts
-  E Denotes Construction Limits in Fills

Note: Additional Utility Easements may be required.

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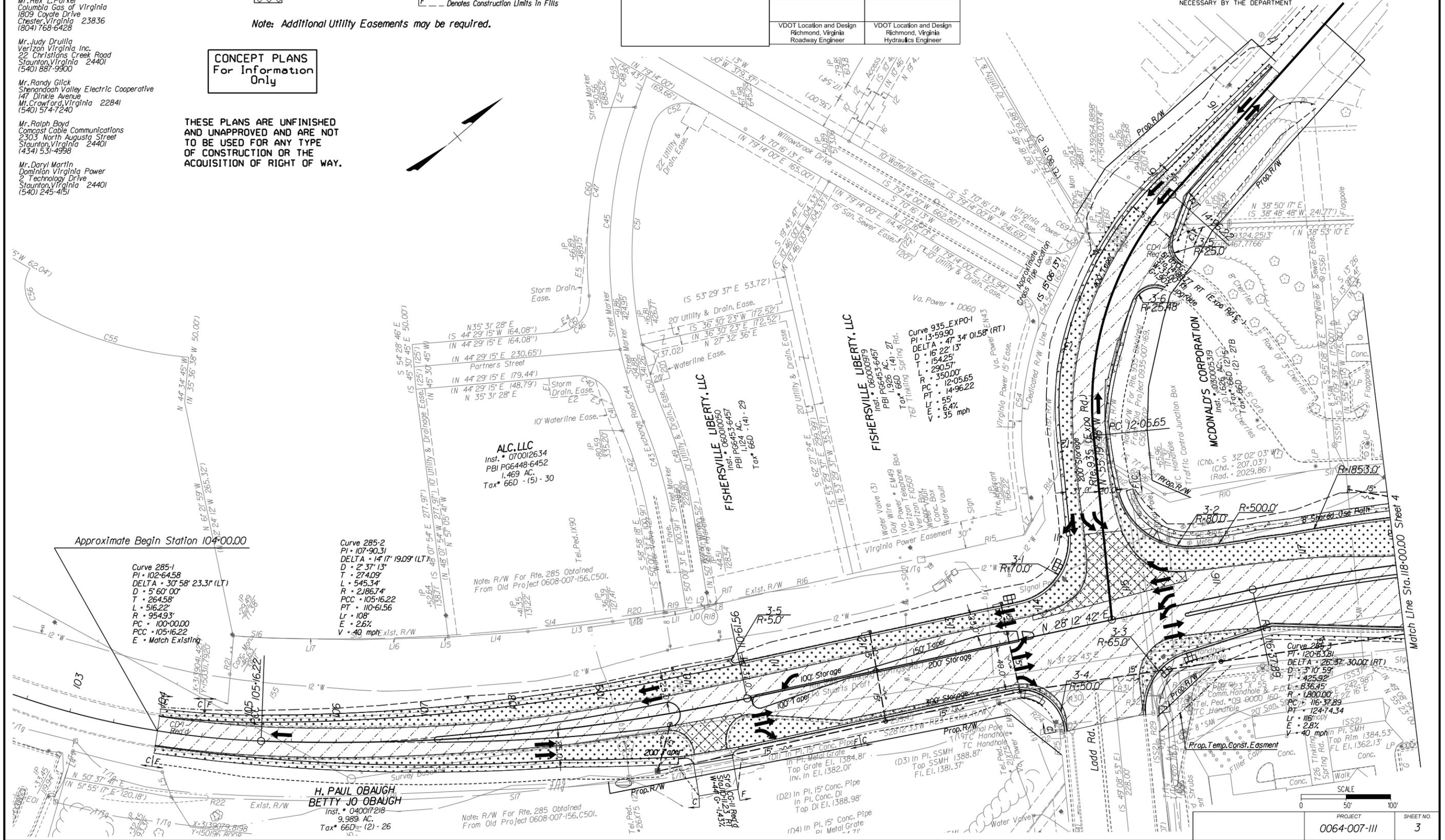
**REFERENCES
(PROFILES, DETAIL & DRAINAGE
DESCRIPTION SHEETS, ETC.)**

Rte. 285 Profile 3A
Expo Road Profile 3B
Entrance Profiles

VDOT Location and Design Richmond, Virginia Roadway Engineer	VDOT Location and Design Richmond, Virginia Hydraulics Engineer
--	---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, PE-101, RW-201, C-501	3

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



PROJECT	0064-007-III	SHEET NO.	3
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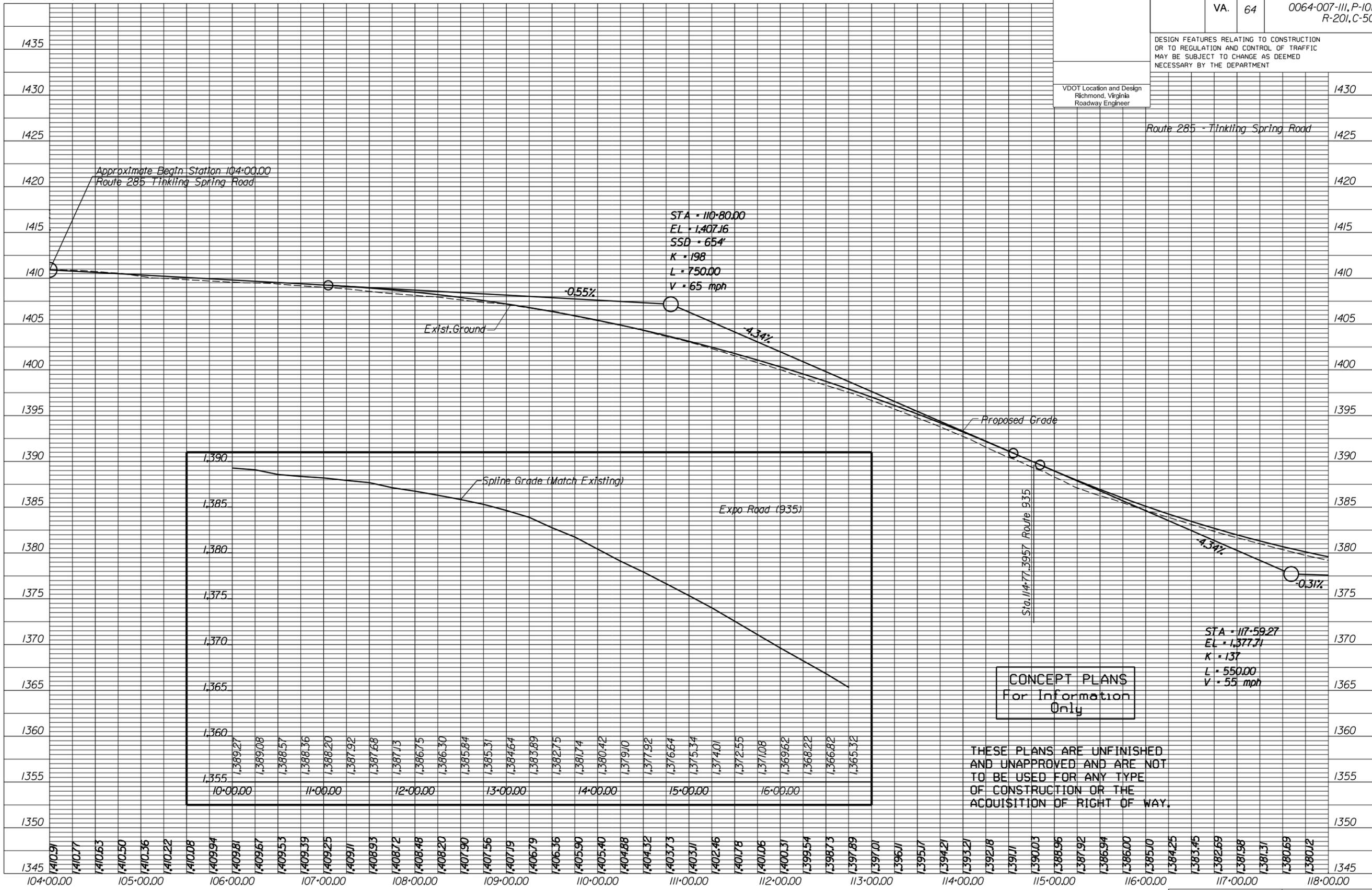
CONCEPT PLANS

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
 SURVEYED BY DL Burgoodline (540) 332-9189 (Staunton District)
 DESIGN SUPERVISED BY William D. Acet, P.E. (804) 786-7428 (Central Office)
 DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-007-III, P-101 R-201, C-501	3A

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer



PROJECT	SHEET NO.
0064-007-III	3A

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
SURVEYED BY D.L. Burgandine (540) 332-9189 (Staunton District)
DESIGN SUPERVISED BY William D. Acal, P.E. (804) 786-7428 (Central Office)
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Mr. Harvey Hamilton
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2 Technology Drive
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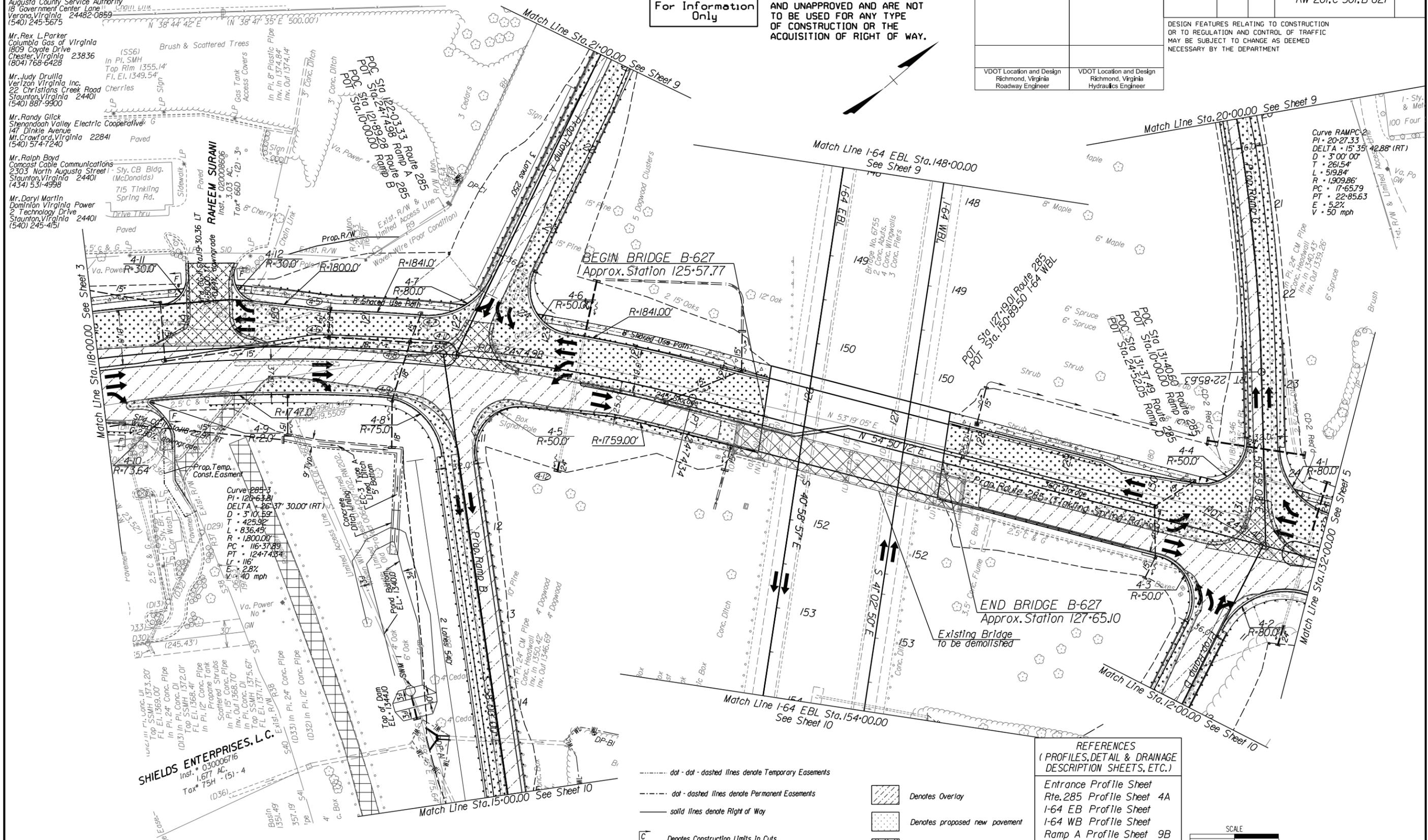
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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-007-III, PE-101 RW-201, C-501, B-627	4

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

VDOT Location and Design Richmond, Virginia Roadway Engineer	VDOT Location and Design Richmond, Virginia Hydraulics Engineer
--	---



SHIELDS ENTERPRISES, L.C.
Inst. # 030006716
1.677 AC.
Tax # 75H - (5) - 4
(D36)

Note: Additional Utility Easements may be required.

- dot - dot - dashed lines denote Temporary Easements
- dot - dashed lines denote Permanent Easements
- solid lines denote Right of Way
- [C] --- Denotes Construction Limits In Cuts
- [E] --- Denotes Construction Limits In Fills
- [Hatched Box] Denotes Overlay
- [Dotted Box] Denotes proposed new pavement
- [Cross-hatched Box] Denotes demolition of pavement

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

Entrance Profile Sheet	
Rte. 285 Profile Sheet	4A
I-64 EB Profile Sheet	
I-64 WB Profile Sheet	
Ramp A Profile Sheet	9B
Ramp C Profile Sheet	9C
Ramp B Profile Sheet	10B
Ramp D Profile Sheet	10C



PROJECT	SHEET NO
0064-007-III	4

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
 SURVEYED BY DL Burgoodline (540) 332-9189 (Staunton District)
 DESIGN SUPERVISED BY William D. Acel, P.E. (804) 786-7428 (Central Office)
 DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-007-III, P-101 R-201, C-501, B-627	4A

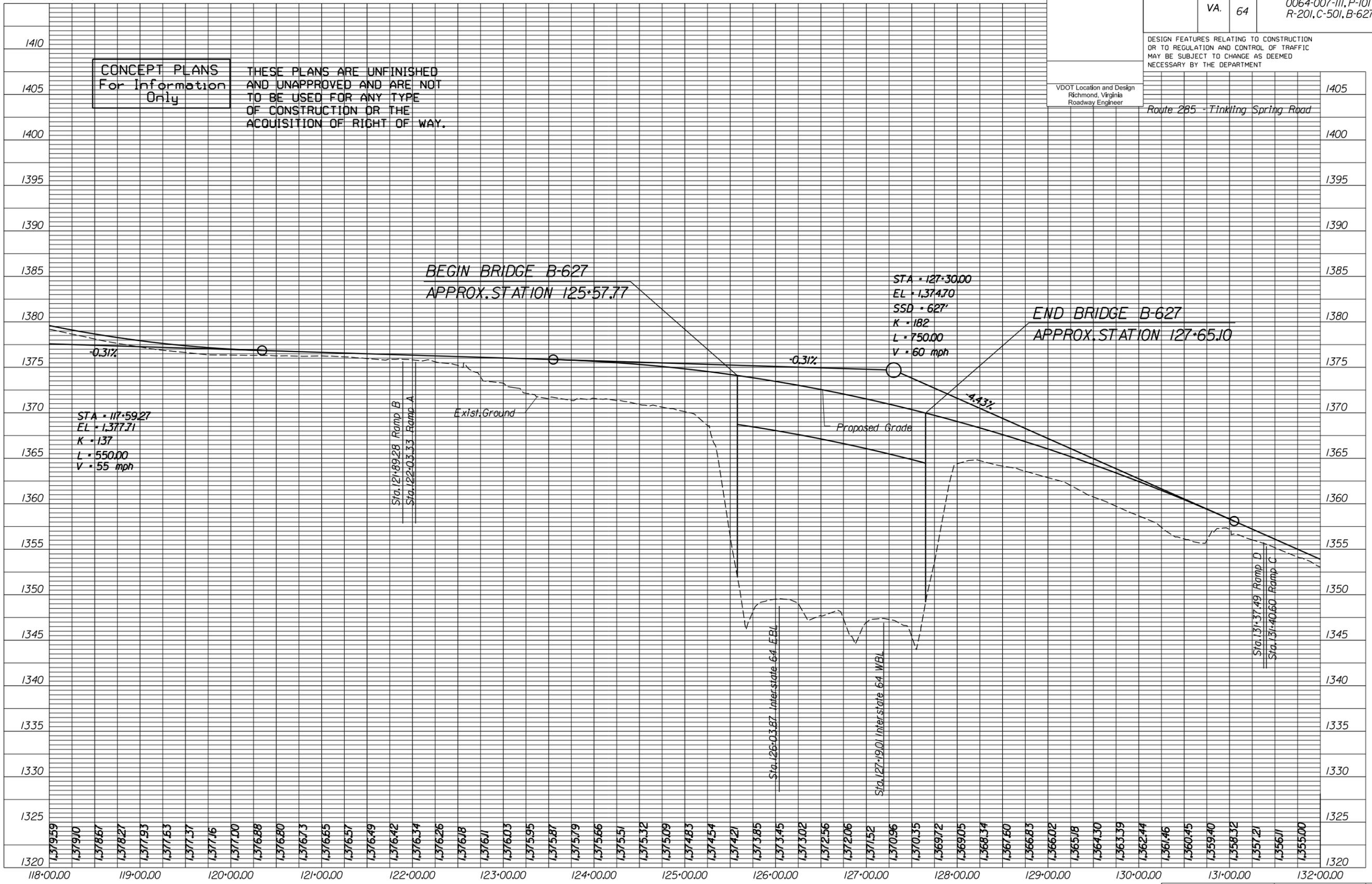
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

Route 285 - Tinkling Spring Road

CONCEPT PLANS
For Information Only

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



PROJECT	SHEET NO.
0064-007-III	4A

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
SURVEYED BY D.L. Burgandine (540) 332-9189 (Staunton District)
DESIGN SUPERVISED BY William D. Acal, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

HI OF WAYNESBORO, LLC
Inst. # 00001790
2.534 AC.
Tax* 66D - (2) - 2A
Ease, VDOT
DB521 PG148
Ease Va. Power
DB535 PG173
DB1212 PG77
DB572 PG482

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24482-0859

Mr. Rex Parker
Columbia Gas of Virginia
1809 Coyote Drive
Chester, Virginia 23836

Mr. Joe Bishop
Verizon
Staunton, Virginia 24401

Mr. Randy Glick
Shenandoah Valley Electric Cooperative
147 Drinkie Avenue
P. O. Box 236
Mt. Crawford, Virginia 22841

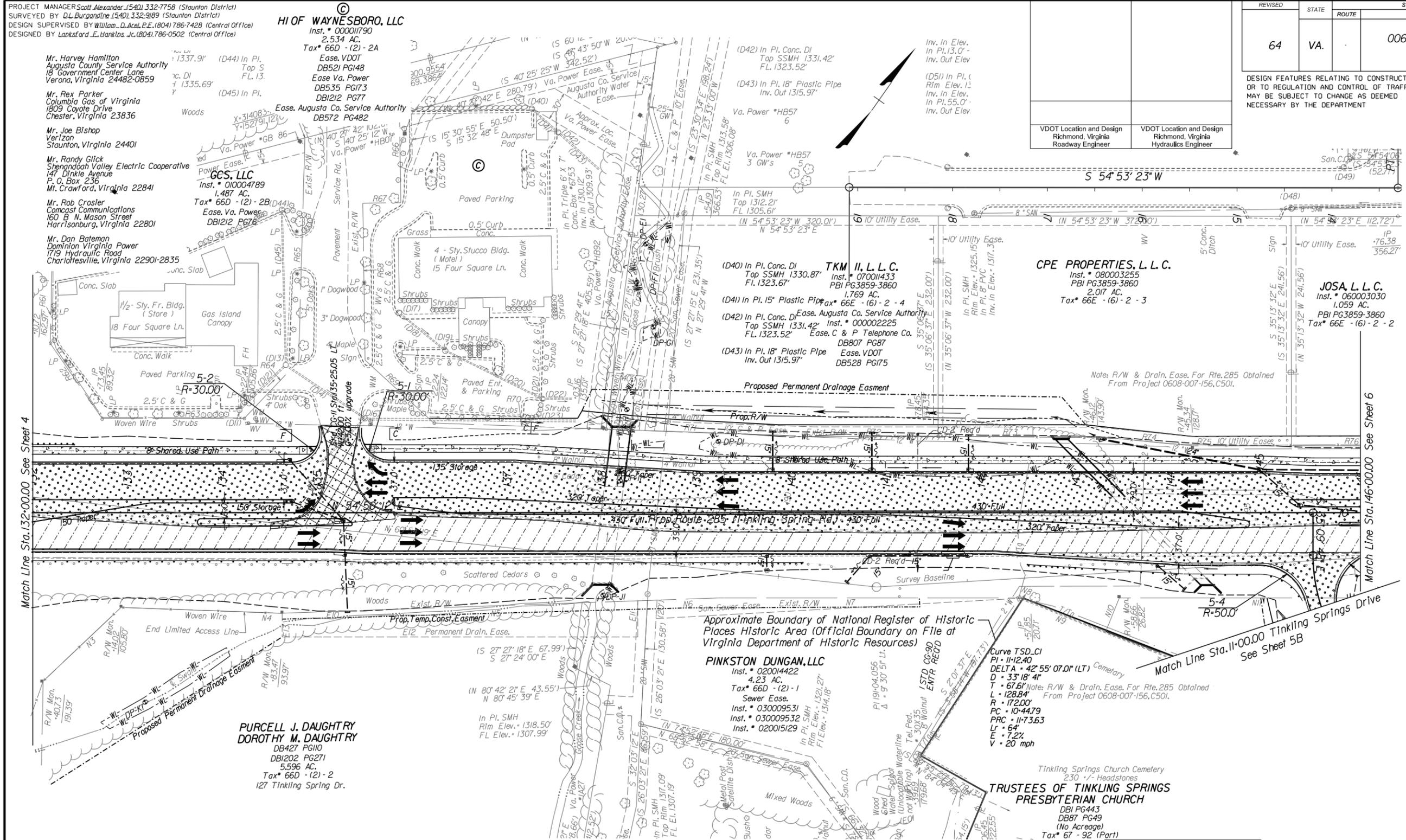
Mr. Rob Crasler
Concast Communications
160 B. N. Mason Street
Harrisonburg, Virginia 22801

Mr. Dan Bateman
Dominion Virginia Power
1719 Hydraulic Road
Charlottesville, Virginia 22901-2835

GCS, LLC
Inst. # 010004789
1.487 AC.
Tax* 66D - (2) - 2B(D44)
Ease, Va. Power
DB1212 PG76

Match Line Sta. 132+00.00 See Sheet 4

Match Line Sta. 146+00.00 See Sheet 6



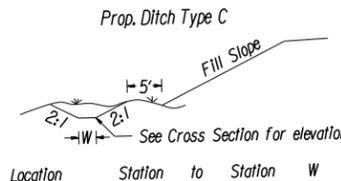
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO
64	VA.		0064-007-III, PE-101 RW-201, C-501	5

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

VDOT Location and Design
Richmond, Virginia
Hydraulics Engineer

**CONCEPT PLANS
For Information
Only**



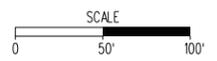
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

- dot - dot - dashed lines denote Temporary Easements
- dot - dashed lines denote Permanent Easements
- solid lines denote Right of Way
- ⌈ ——— Denotes Construction Limits in Cuts
- ⌋ ——— Denotes Construction Limits in Fills

- Note: Additional Utility Easements may be required.
- Denotes Overlay
 - Denotes proposed new pavement
 - Denotes demolition of pavement

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

- Profile Sheet (Rte 285) 5A
- Profile Sheet (Tinkling Springs Dr) 5C
- Entrance Profiles



PROJECT	SHEET NO
0064-007-III	5

CONCEPT PLANS

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
 SURVEYED BY DL Burquandine (540) 332-9189 (Staunton District)
 DESIGN SUPERVISED BY William D. Acet, P.E. (804) 786-7428 (Central Office)
 DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-7428 (Central Office)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 R-201, C-501	5A

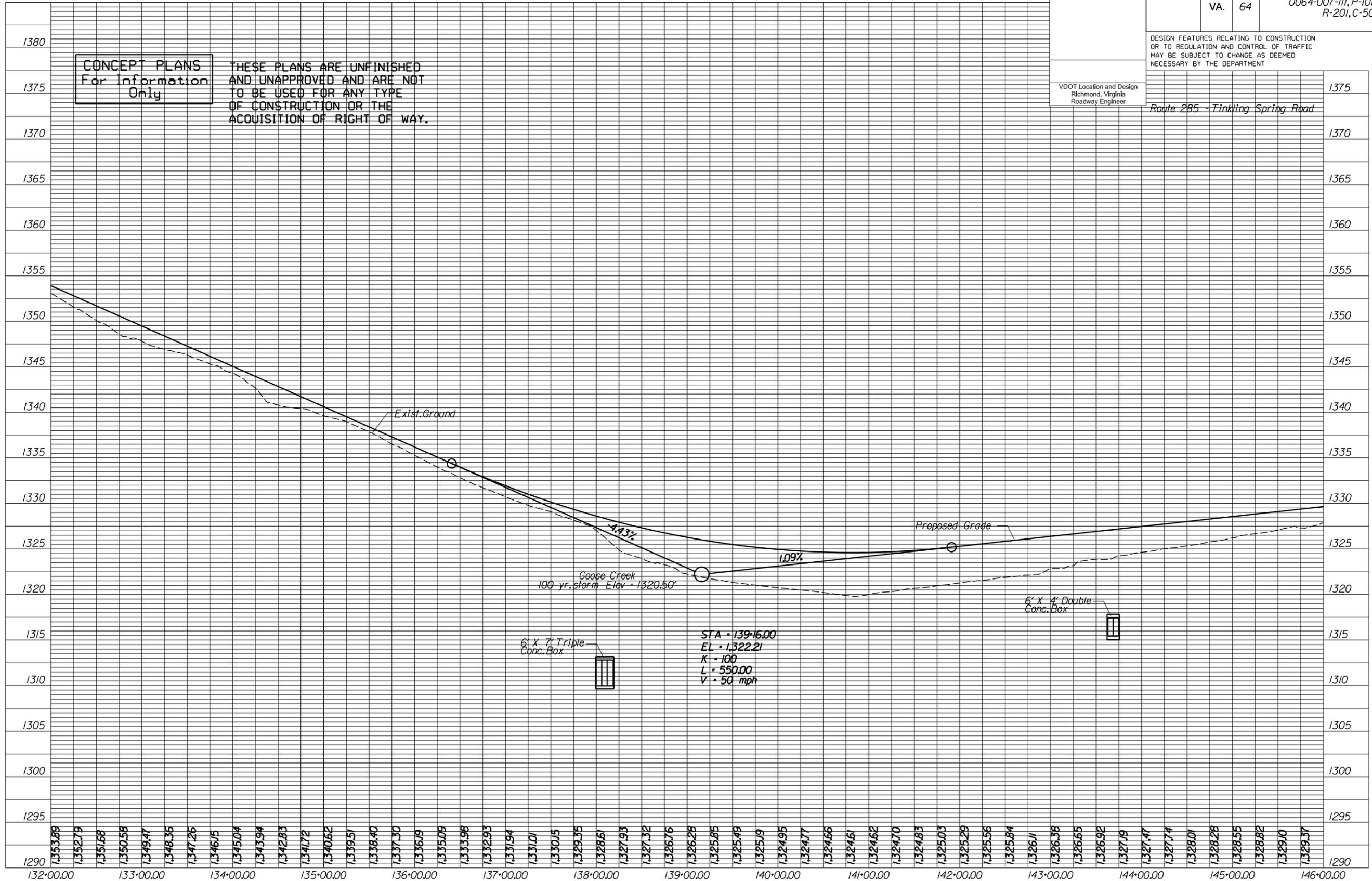
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

Route 285 - Tinkling Spring Road

CONCEPT PLANS
For information
Only

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



6' X 7' Triple
Conc. Box

STA = 139+16.00
EL = 1322.21
K = 100
L = 550.00
V = 50 mph

6' X 4' Double
Conc. Box

PROJECT 0064-007-III	SHEET NO. 5A
-------------------------	-----------------

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
SURVEYED BY D.L. Burgardine (540) 332-9189 (Staunton District)
DESIGN SUPERVISED BY William D. Acal, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24482-0859

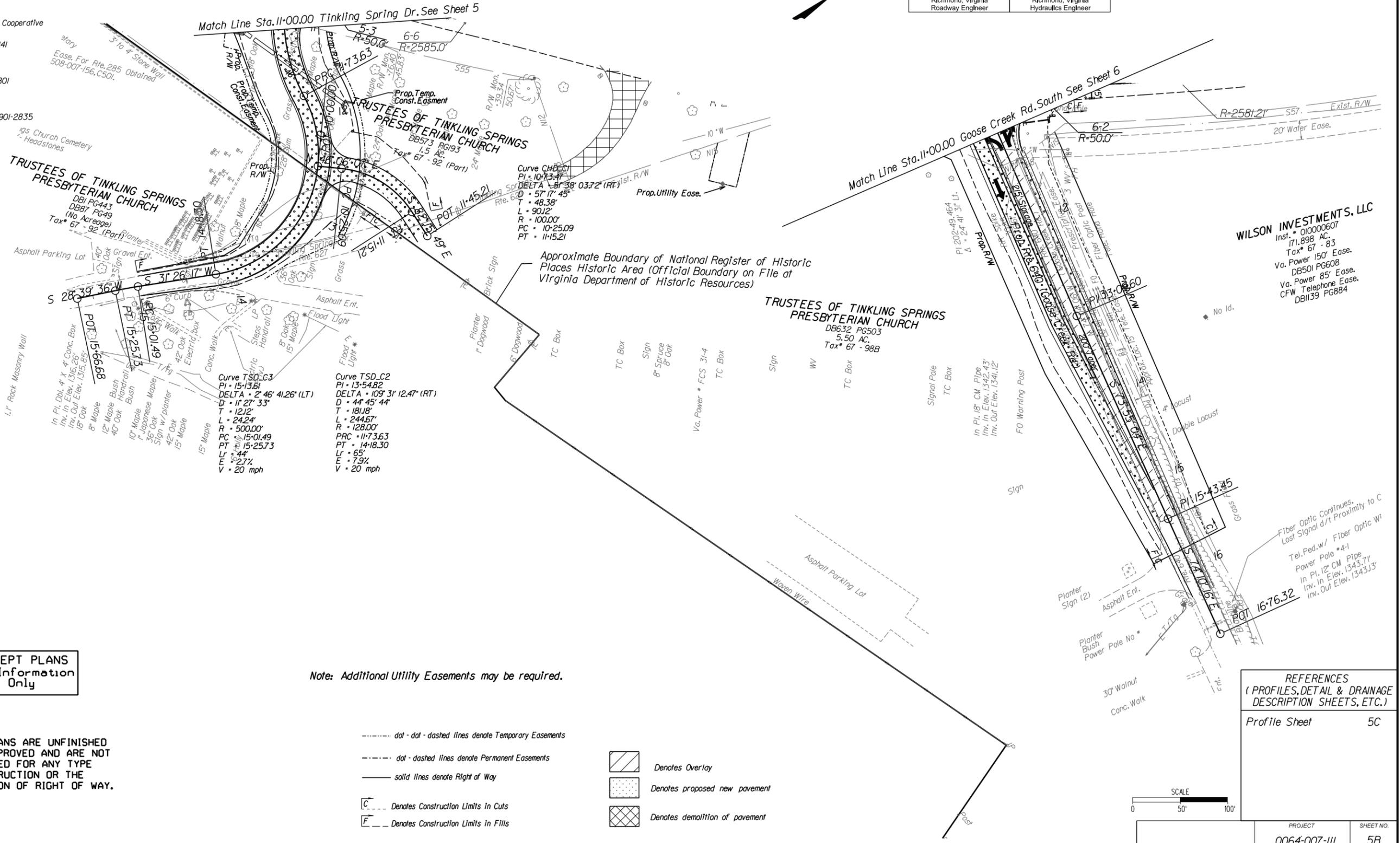
Mr. Rex Parker
Columbia Gas of Virginia
1809 Coyote Drive
Chester, Virginia 23836

Mr. Joe Bishop
Verizon
Staunton, Virginia 24401

Mr. Randy Glick
Shenandoah Valley Electric Cooperative
147 Dinkie Avenue
P. O. Box 236
Mt. Crawford, Virginia 22841

Mr. Rob Crasler
Comcast Communications
160 B N. Mason Street
Harrisonburg, Virginia 22801

Mr. Dan Bateman
Dominion Virginia Power
1719 Hydraulic Road
Charlottesville, Virginia 22901-2835



VDOT Location and Design Richmond, Virginia Roadway Engineer	VDOT Location and Design Richmond, Virginia Hydraulics Engineer
--	---

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
64	VA.		0064-007-III, PE-101 RW-201, C-501	5B

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

**CONCEPT PLANS
For Information
Only**

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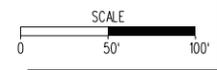
Note: Additional Utility Easements may be required.

- dot - dot - dashed lines denote Temporary Easements
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- solid lines denote Right of Way
- [C] Denotes Construction Limits in Cuts
- [F] Denotes Construction Limits in Fills

- [Hatched Box] Denotes Overlay
- [Dotted Box] Denotes proposed new pavement
- [Cross-hatched Box] Denotes demolition of pavement

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

Profile Sheet	5C
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PROJECT	SHEET NO.
0064-007-III	5B

WILSON INVESTMENTS, LLC
Inst. # 010000607
171.898 AC.
Tax# 67 - 83
Va. Power 150' Easement
DB501 PG608
Va. Power 85' Easement
CFW Telephone Easement
DB1139 PG884

PROJECT MANAGER Scott_Alexander_(540) 332-7758 (Staunton District)
 SURVEYED BY Surveyor_Name_10001000:0000 (District)
 DESIGN SUPERVISED BY William_D_Acel_P.E.(804) 786-7428 (Central Office)
 DESIGNED BY Lankford_E_Hankins_Jr.(804) 786-7428 (Central Office)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 R-201, C-501	5C

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

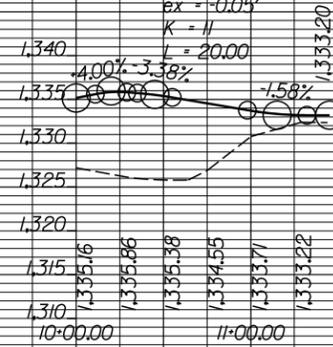
CONCEPT PLANS
For Information Only

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

Entrance, Tinkling Spring
Drive Station 12+50 LT

STA = 10+20.00 STA = 11+15.00
 EL = 1,335.96 EL = 1,333.20
 SSD = 202' ex = 0.14'
 ex = -0.13' K = 10
 L = 18.00 L = 34.00

STA = 10+45.00
 EL = 1,335.57
 SSD = 609'
 ex = -0.03'
 K = 11
 L = 20.00



Goose Creek (640)

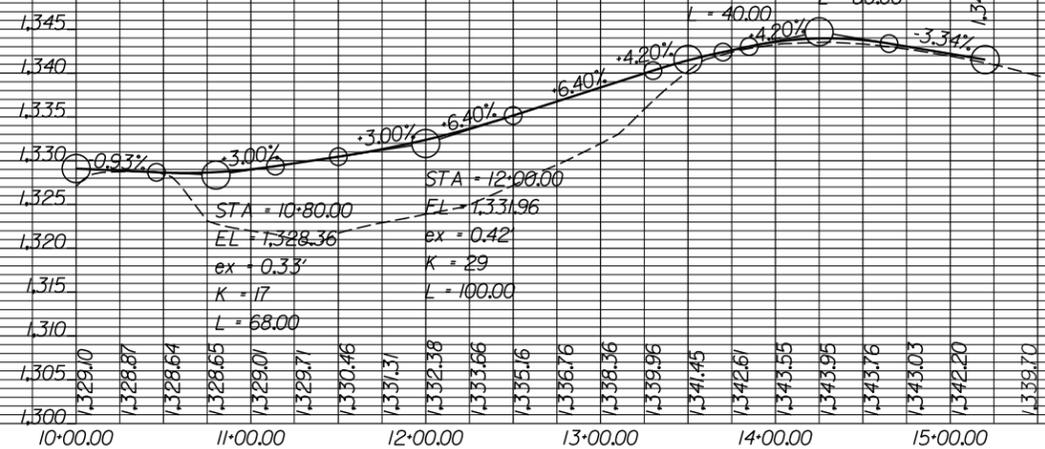
STA = 10+40.00
 EL = 1,346.70
 SSD = 257'
 ex = -0.19'
 K = 8
 L = 34.00

STA = 13+75.00
 EL = 1,350.05
 SSD = 509'
 ex = -0.80'
 K = 85
 L = 232.00

STA = 15+35.00
 EL = 1,347.26
 ex = 0.00'
 K = 204
 L = 10.00

Tinkling Spring Drive

STA = 13+50.00 EL = 1,344.71
 STA = 14+25.00 EL = 1,341.53
 SSD = 183'
 SSD = 510' ex = -0.75'
 ex = 0.11' K = 11
 K = 18 L = 80.00
 L = 40.00



PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
SURVEYED BY DL Burdette (540) 332-9189 (Staunton District)
DESIGN SUPERVISED BY William D. Acal, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Lankford E. Hankins, Jr. (804) 786-0502 (Central Office)

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24482-0859
(540) 245-5675

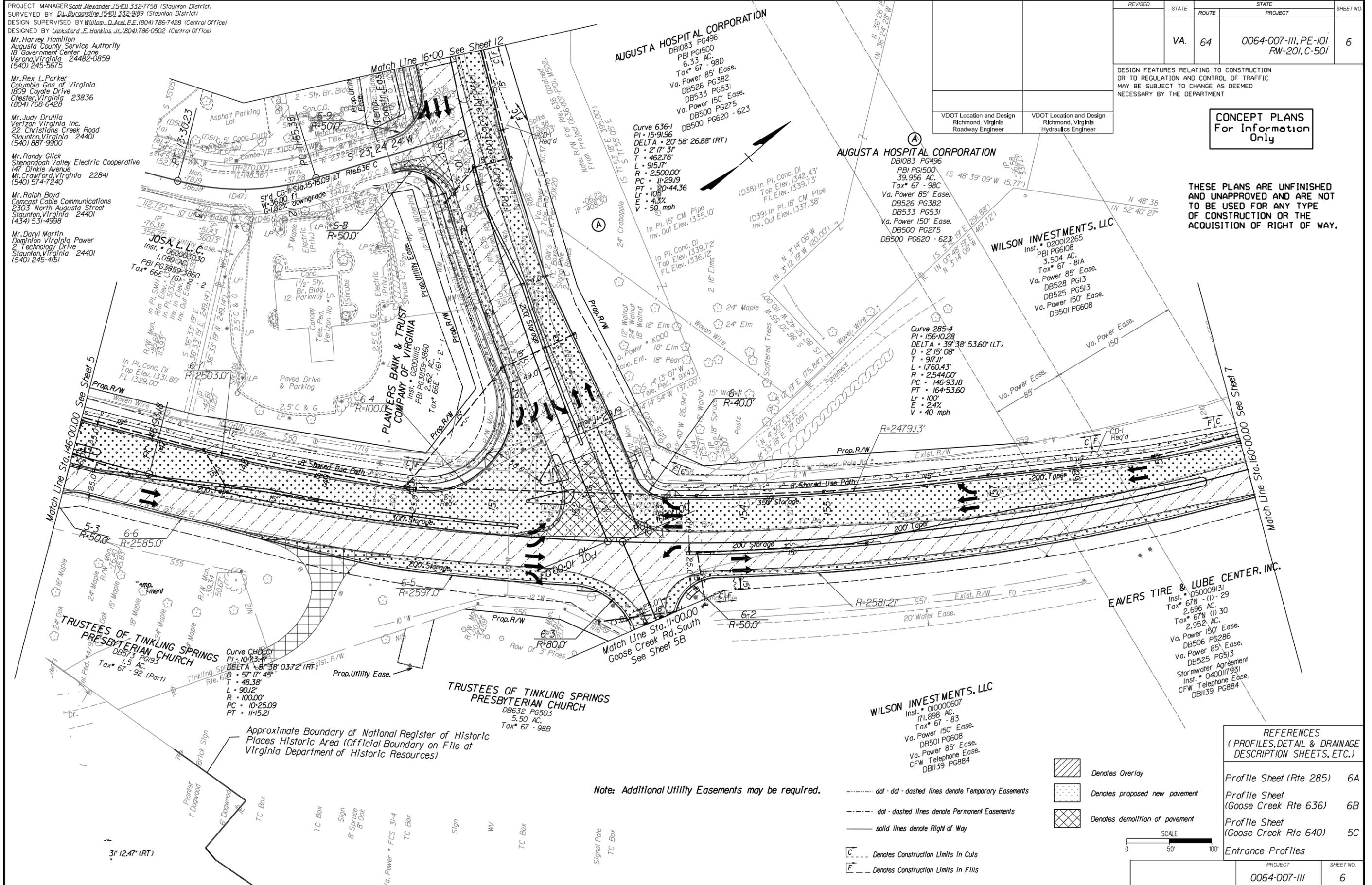
Mr. Rex L. Parker
Columbia Gas of Virginia
1809 Coyote Drive
Chester, Virginia 23836
(804) 768-6428

Mr. Judy Drullia
Verizon Virginia Inc.
22 Christians Creek Road
Staunton, Virginia 24401
(540) 887-9900

Mr. Randy Glick
Shenandoah Valley Electric Cooperative
147 Dinkle Avenue
Mt. Crawford, Virginia 22841
(540) 574-7240

Mr. Ralph Boyd
Comcast Cable Communications
2303 North Augusta Street
Staunton, Virginia 24401
(434) 531-4998

Mr. Daryl Martin
Dominion Virginia Power
2 Technology Drive
Staunton, Virginia 24401
(540) 245-4151



REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, PE-101 RW-201, C-501	6

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

CONCEPT PLANS
For Information
Only

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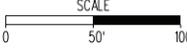
VDOT Location and Design
Richmond, Virginia
Roadway Engineer

VDOT Location and Design
Richmond, Virginia
Hydraulics Engineer

Note: Additional Utility Easements may be required.

- dot - dot - dashed lines denote Temporary Easements
- dot - dashed lines denote Permanent Easements
- solid lines denote Right of Way
- [C] --- Denotes Construction Limits in Cuts
- [F] --- Denotes Construction Limits in Fills

- [Hatched Box] Denotes Overlay
- [Dotted Box] Denotes proposed new pavement
- [Cross-hatched Box] Denotes demolition of pavement



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

Profile Sheet (Rte 285)	6A
Profile Sheet (Goose Creek Rte 636)	6B
Profile Sheet (Goose Creek Rte 640)	5C
Entrance Profiles	

PROJECT	SHEET NO.
0064-007-III	6

CONCEPT PLANS

PROJECT MANAGER Scott Alexander, (540) 332-7758 (Staunton District)
 SURVEYED BY DL Burgandine, (540) 332-9189 (Staunton District)
 DESIGN SUPERVISED BY William D. Acel, P.E., (804) 786-7428 (Central Office)
 DESIGNED BY Lankford, E. Hankins, Jr., (804) 786-7428 (Central Office)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 R-201, C-501	6A

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

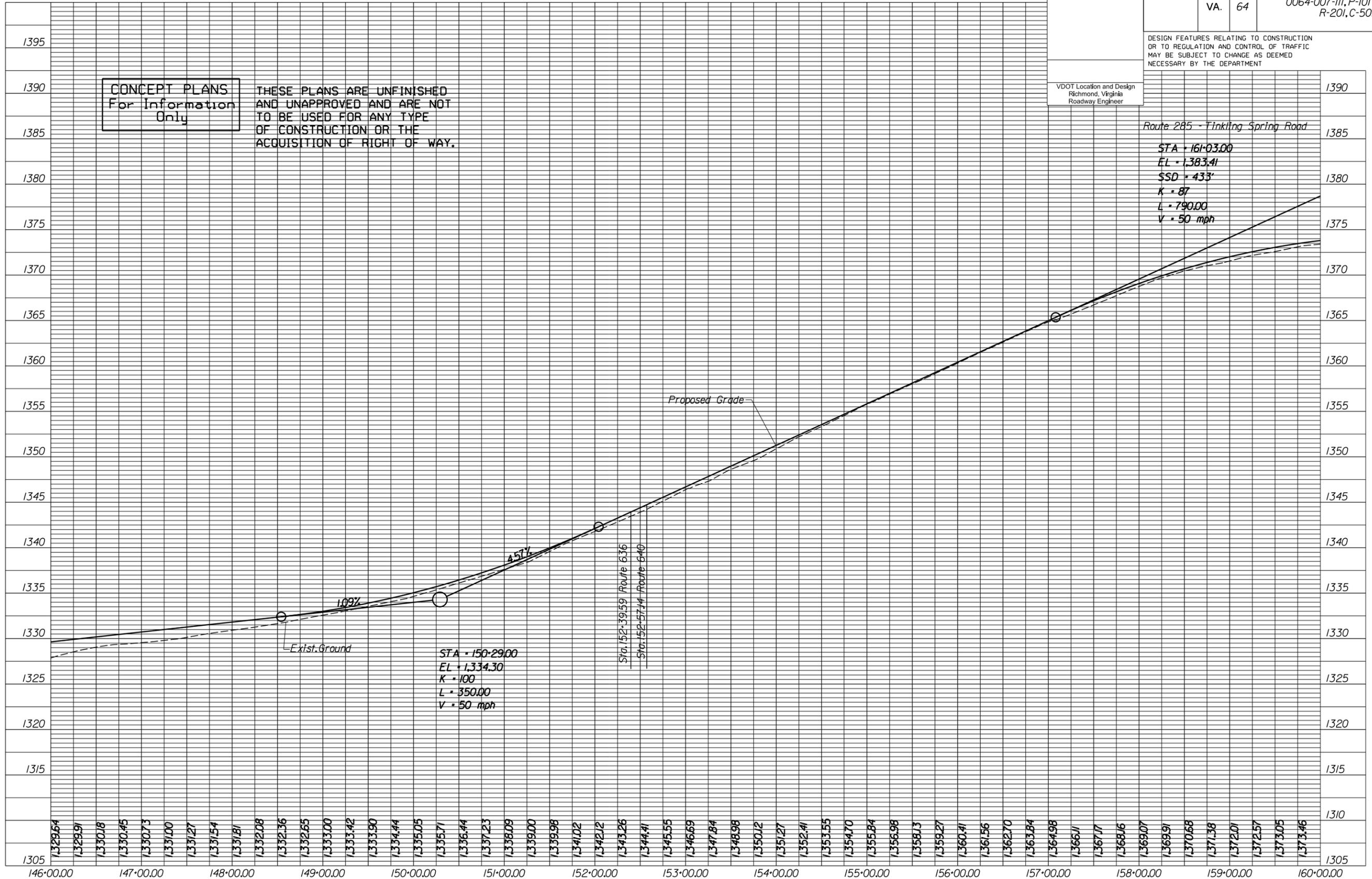
VDOT Location and Design
Richmond, Virginia
Roadway Engineer

CONCEPT PLANS
For Information Only

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Route 285 - Tinkling Spring Road

STA + 161+03.00
EL + 1383.41
SSD + 433'
K + 87
L + 790.00
V + 50 mph



PROJECT	SHEET NO.
0064-007-III	6A

CONCEPT PLANS

PROJECT MANAGER Scott_Alexander_(540) 332-7758 (Staunton District)
 SURVEYED BY Surveyor_Name_10001000-0000 (District)
 DESIGN SUPERVISED BY William_D_Acel_P.E.(804) 786-7428 (Central Office)
 DESIGNED BY Lankford_E_Hankins_Jr.(804) 786-7428 (Central Office)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 R-201, C-501	6B

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

CONCEPT PLANS
For Information Only

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Route 636 - Goose Creek Rd.



PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
SURVEYED BY DL Burdette (540) 332-9189 (Staunton District)
DESIGN SUPERVISED BY William D. Acal, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24482-0859
(540) 245-5675

Mr. Rex L. Parker
Columbia Gas of Virginia
1809 Cayole Drive
Chester, Virginia 23836
(804) 768-6428

Mr. Judy Drullia
Verizon Virginia, Inc.
22 Christians Creek Road
Staunton, Virginia 24401
(540) 887-9900

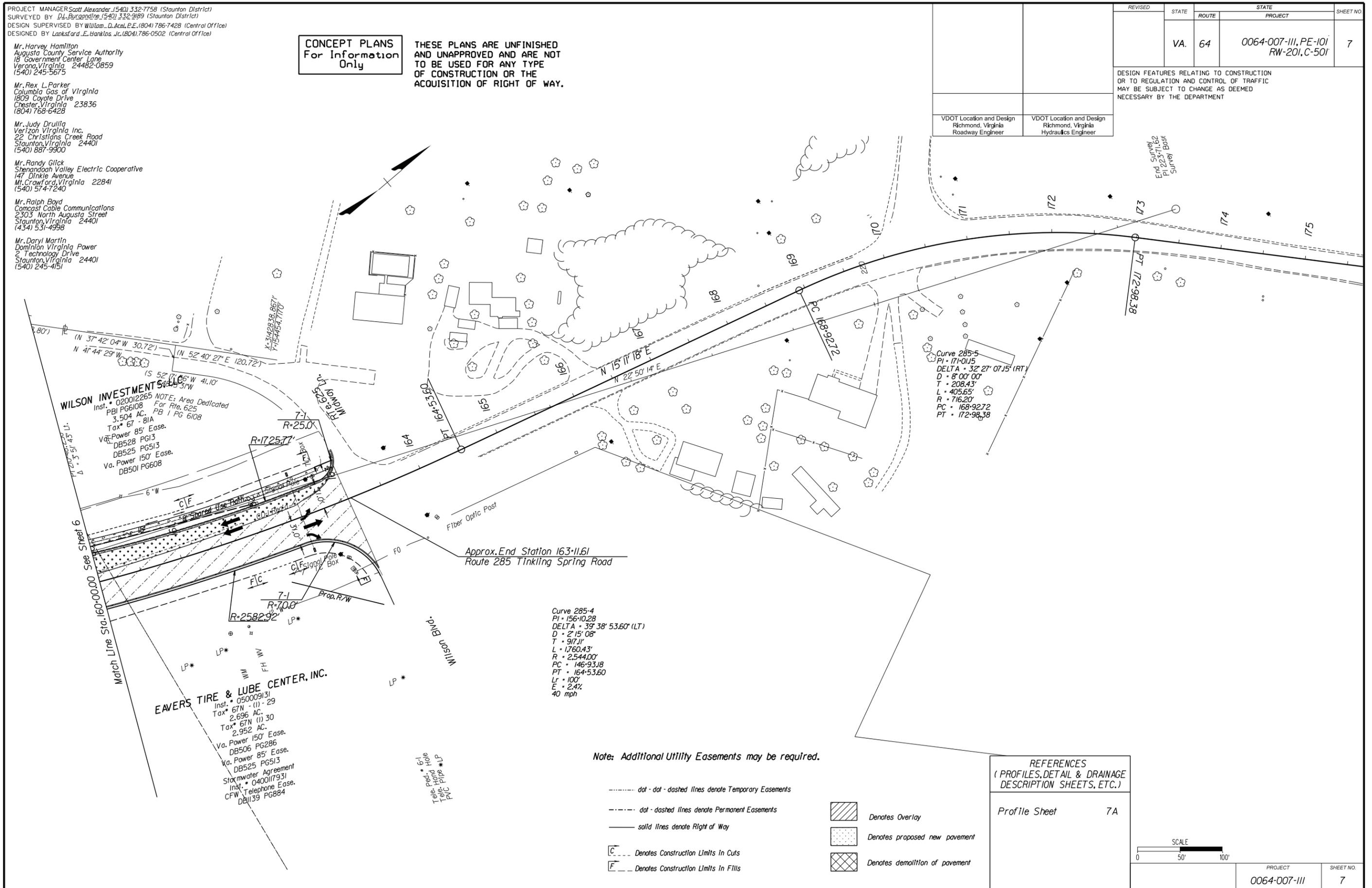
Mr. Randy Glick
Shenandoah Valley Electric Cooperative
147 Dinkle Avenue
Mt. Crawford, Virginia 22841
(540) 574-7240

Mr. Ralph Boyd
Comcast Cable Communications
2303 North Augusta Street
Staunton, Virginia 24401
(434) 531-4938

Mr. Daryl Martin
Dominion Virginia Power
2 Technology Drive
Staunton, Virginia 24401
(540) 245-4151

**CONCEPT PLANS
For Information
Only**

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



REVISED	STATE	PROJECT		SHEET NO.
		ROUTE	PROJECT	
	VA.	64	0064-007-III, PE-101 RW-201, C-501	7

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

VDOT Location and Design
Richmond, Virginia
Hydraulics Engineer

Note: Additional Utility Easements may be required.

- dot - dot - dashed lines denote Temporary Easements
- dot - dashed lines denote Permanent Easements
- solid lines denote Right of Way
- C --- Denotes Construction Limits In Cuts
- F --- Denotes Construction Limits In Fills

- Denotes Overlay
- Denotes proposed new pavement
- Denotes demolition of pavement

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

Profile Sheet 7A



PROJECT	SHEET NO.
0064-007-III	7

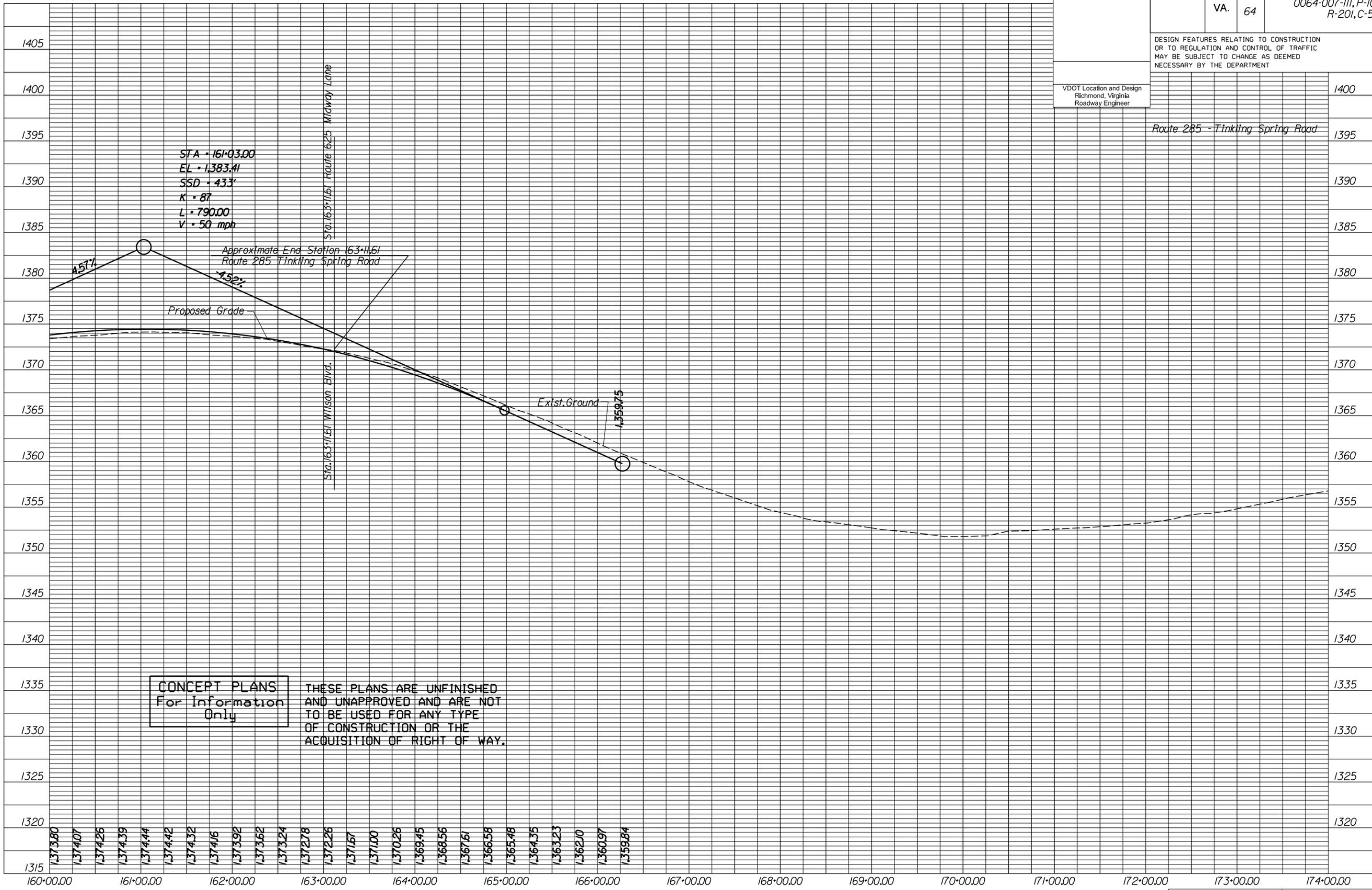
CONCEPT PLANS

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
 SURVEYED BY DL Burdette (540) 332-9189 (Staunton District)
 DESIGN SUPERVISED BY William D. Acet, P.E. (804) 786-7428 (Central Office)
 DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 R-201, C-501	7A

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer



CONCEPT PLANS
For Information
Only

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PROJECT	SHEET NO.
0064-007-III	7A

PROJECT MANAGER Scott Alexander (1540) 332-7758 (Staunton District)
SURVEYED BY DL Burgoon (1540) 332-9189 (Staunton District)
DESIGN SUPERVISED BY William D. Acel, P.E. (1804) 786-7428 (Central Office)
DESIGNED BY Lankford, E. Hankins, Jr. (1804) 786-0502 (Central Office)

**CONCEPT PLANS
For Information
Only**

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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	0064-007-III, PE-101 RW-201, C-501	8

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

VDOT Location and Design Richmond, Virginia Roadway Engineer	VDOT Location and Design Richmond, Virginia Hydraulics Engineer
--	---

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24482-0859
(540) 245-5675

Mr. Rex L. Parker
Columbia Gas of Virginia
1809 Coyote Drive
Chester, Virginia 23836
(804) 768-6428

Mr. Judy Drullia
Verizon Virginia Inc.
22 Christians Creek Road
Staunton, Virginia 24401
(540) 887-9900

Mr. Randy Glick
Shenandoah Valley Electric Cooperative
147 Dinkle Avenue
Mt. Snowford, Virginia 22841
(540) 734-7240

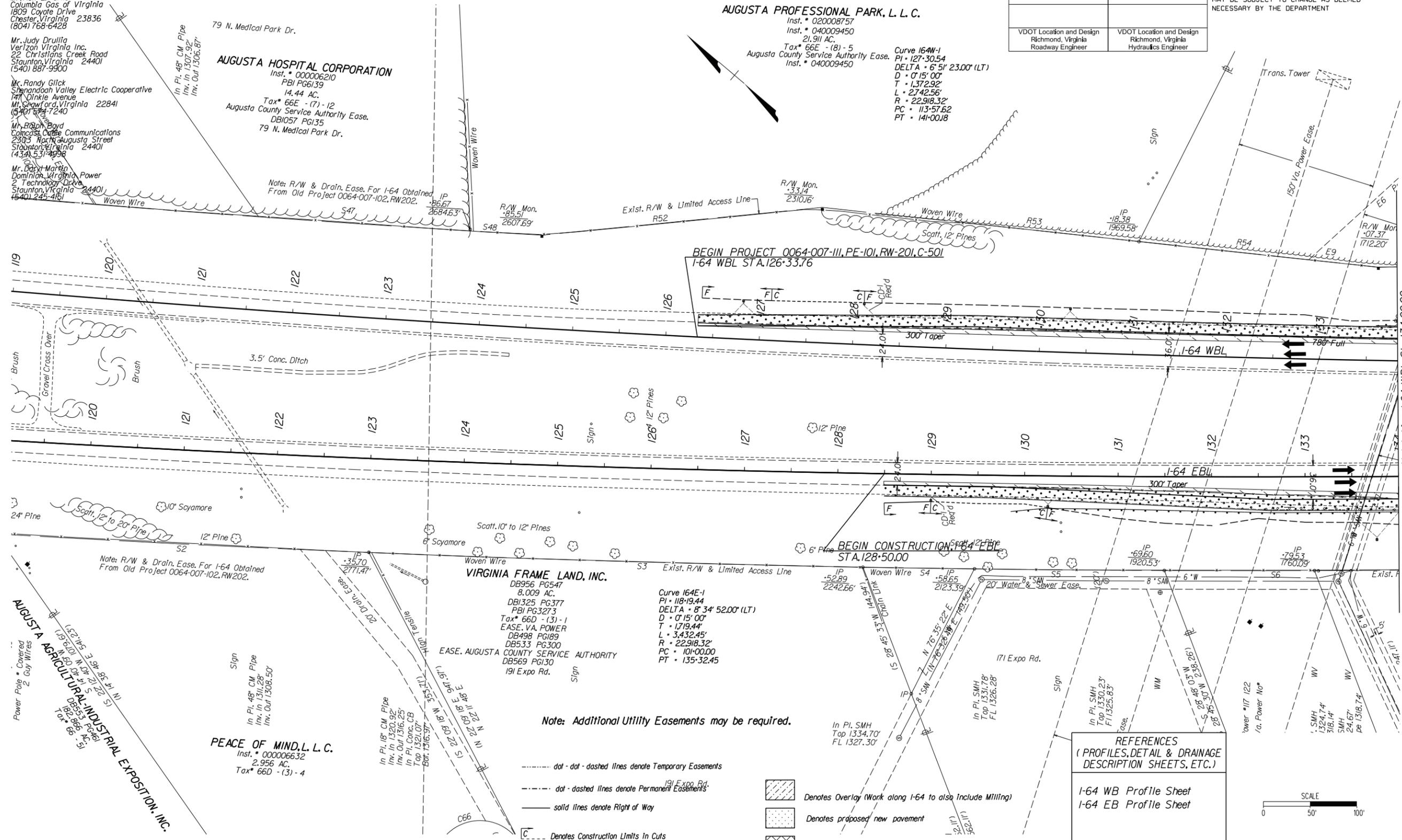
Mr. Brian Boyd
Comcast Cable Communications
2303 North Augusta Street
Staunton, Virginia 24401
(434) 531-4938

Mr. Gary Martin
Dominion Virginia Power
2 Technology Drive
Staunton, Virginia 24401
(540) 245-4161

AUGUSTA HOSPITAL CORPORATION
Inst. # 00006210
PBI PG6139
14.44 AC.
Tax# 66E - (7) - 12
Augusta County Service Authority Easement
DB1057 PGI35
79 N. Medical Park Dr.

AUGUSTA PROFESSIONAL PARK, L. L. C.
Inst. # 020008757
Inst. # 040009450
21.911 AC.
Tax# 66E - (8) - 5
Augusta County Service Authority Easement
Inst. # 040009450

Curve 164W-1
PI = 127+30.54
DELTA = 6° 5' 23.00" (LT)
D = 0' 15' 00"
T = 1372.92'
L = 2742.56'
R = 22918.32'
PC = 113+57.62
PT = 141+00.18



AUGUSTA AGRICULTURAL-INDUSTRIAL EXPOSITION, INC.
Inst. # 000066332
2.956 AC.
Tax# 66D - (3) - 4

PEACE OF MIND, L. L. C.
Inst. # 000066332
2.956 AC.
Tax# 66D - (3) - 4

VIRGINIA FRAME LAND, INC.
DB956 PG547
8.009 AC.
DB1325 PG377
PBI PG3273
Tax# 66D - (3) - 1
EASE, VA. POWER
DB498 PGI89
DB533 PG300
DB569 PGI30
191 Expo Rd.

Curve 164E-1
PI = 118+19.44
DELTA = 8° 34' 52.00" (LT)
D = 0' 15' 00"
T = 1719.44'
L = 3432.45'
R = 22918.32'
PC = 101+00.00
PT = 135+32.45

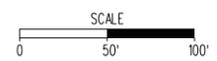
Note: Additional Utility Easements may be required.

- - - - - dot - dot - dashed lines denote Temporary Easements
- - - - - dot - dashed lines denote Permanent Easements
- _____ solid lines denote Right of Way
- [C] Denotes Construction Limits in Cuts
- [F] Denotes Construction Limits in Fills

- [Hatched Box] Denotes Overlay (Work along I-64 to also include Milling)
- [Dotted Box] Denotes proposed new pavement
- [Cross-hatched Box] Denotes demolition of pavement

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

I-64 WB Profile Sheet
I-64 EB Profile Sheet



Match Line I-64 WBL Sta. 134+00.00
See Sheet 9

PROJECT	SHEET NO.
0064-007-III	8

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
SURVEYED BY D.L. Burgardine (540) 332-9189 (Staunton District)
DESIGN SUPERVISED BY William D. Acal, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

**CONCEPT PLANS
For Information
Only**

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

**TRUSTEES OF THE INTERNATIONAL
CHURCH OF THE FOUR SQUARE GOSPEL**

DB772 PG204
26.772 AC.
Tax* 66 - 50N
Ease, Augusta County Service Authority
Inst. # 050013617
Inst. # 080001441
DB1326 PG413
PBI PG3286
DB569 PG130
Ease, Va. Power
DB498 PG189
DB533 PG300

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24482-0859
(540) 245-5675

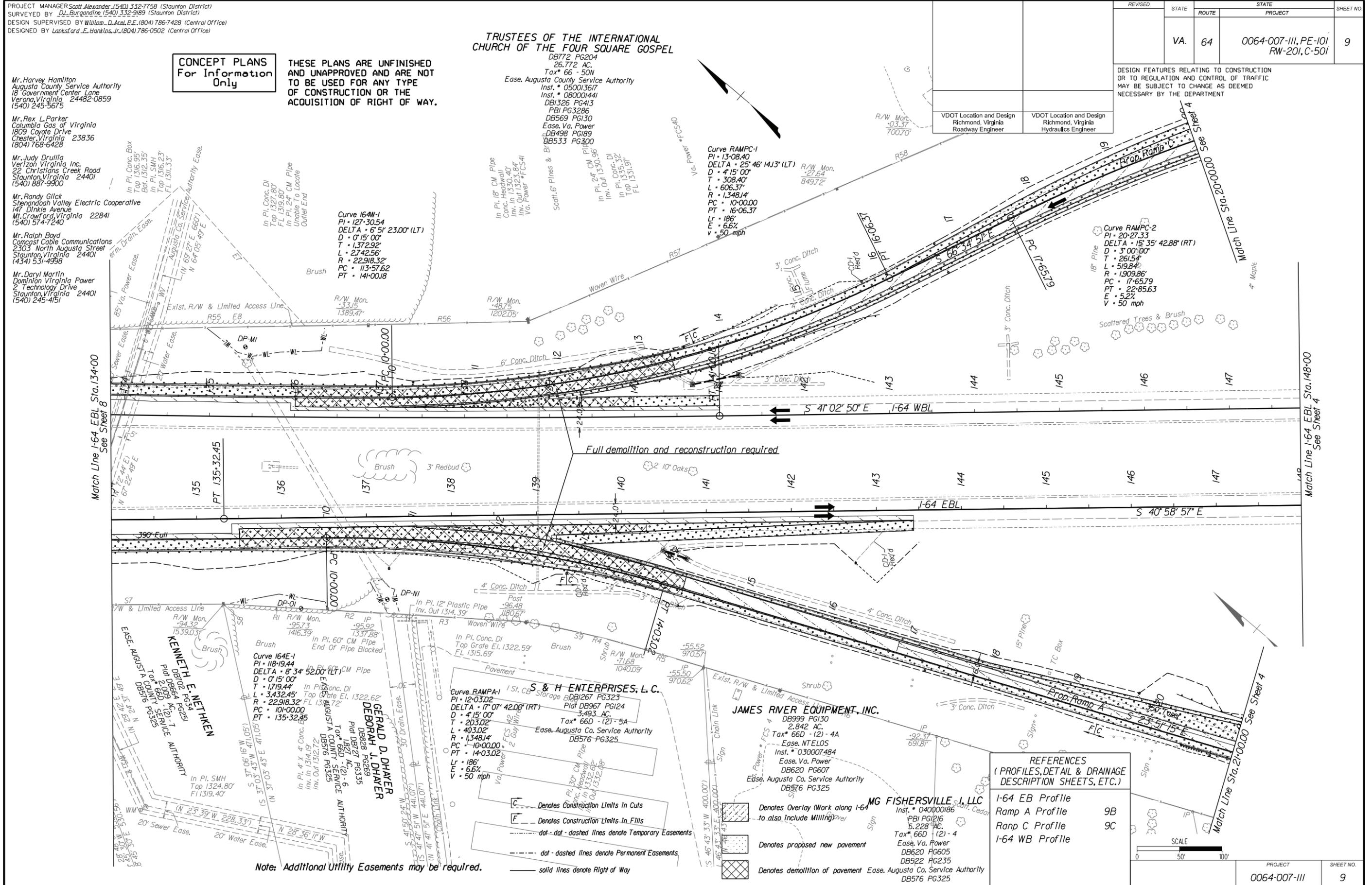
Mr. Rex L. Parker
Columbia Gas of Virginia
1805 Coyote Drive
Chester, Virginia 23836
(804) 768-6428

Mr. Judy Drullig
Verizon Virginia Inc.
22 Christians Creek Road
Staunton, Virginia 24401
(540) 887-9900

Mr. Randy Giltek
Shenandoah Valley Electric Cooperative
147 Dinkle Avenue
Mt. Crawford, Virginia 22841
(540) 574-7240

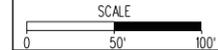
Mr. Ralph Boyd
Comcast Cable Communications
2303 North Augusta Street
Staunton, Virginia 24401
(434) 531-4998

Mr. Daryl Martin
Dominion Virginia Power
2 Technology Drive
Staunton, Virginia 24401
(540) 245-4151



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

I-64 EB Profile	9B
Ramp A Profile	9B
Ramp C Profile	9C
I-64 WB Profile	9C



- C --- Denotes Construction Limits In Cuts
- F --- Denotes Construction Limits In Fills
- - - - - dot - dot - dashed lines denote Temporary Easements
- - - - - dot - dashed lines denote Permanent Easements
- solid lines denote Right of Way
- ▨ Denotes Overlay (Work along I-64 to also include Milling)
- ▩ Denotes proposed new pavement
- ▧ Denotes demolition of pavement

Note: Additional Utility Easements may be required.

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-007-III, PE-101 RW-201, C-501	9

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

VDOT Location and Design Richmond, Virginia Roadway Engineer	VDOT Location and Design Richmond, Virginia Hydraulics Engineer
--	---

PROJECT	SHEET NO.
0064-007-III	9

CONCEPT PLANS

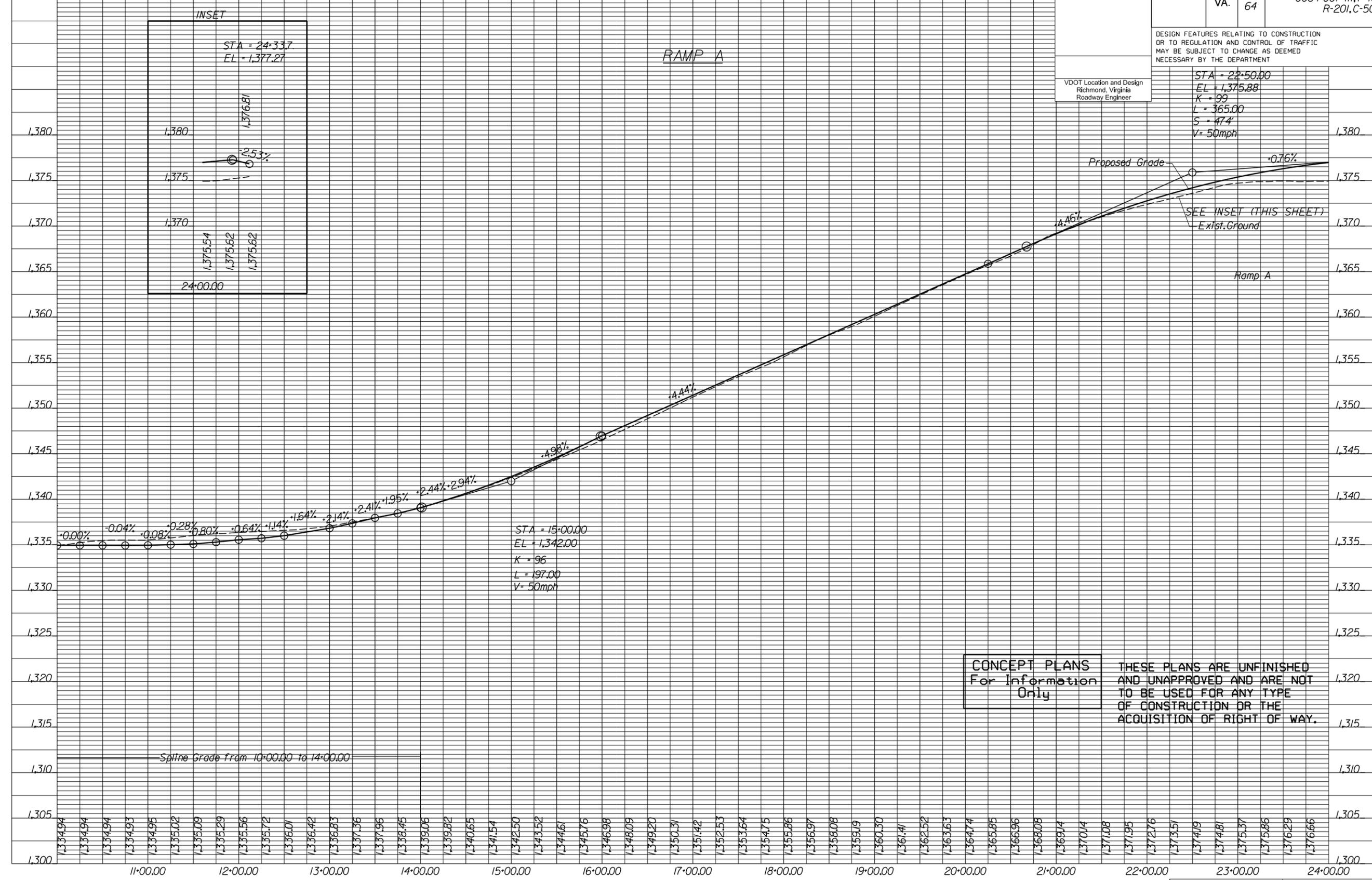
PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
 SURVEYED BY DL Burgard (540) 332-9189 (Staunton District)
 DESIGN SUPERVISED BY William D. Acet, P.E. (804) 786-7428 (Central Office)
 DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101, R-201, C-501	9B

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

STA = 22+50.00
EL = 1,375.88
K = 99
L = 365.00
S = 474'
V = 50mph



CONCEPT PLANS
For Information
Only

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PROJECT	SHEET NO.
0064-007-III	9B

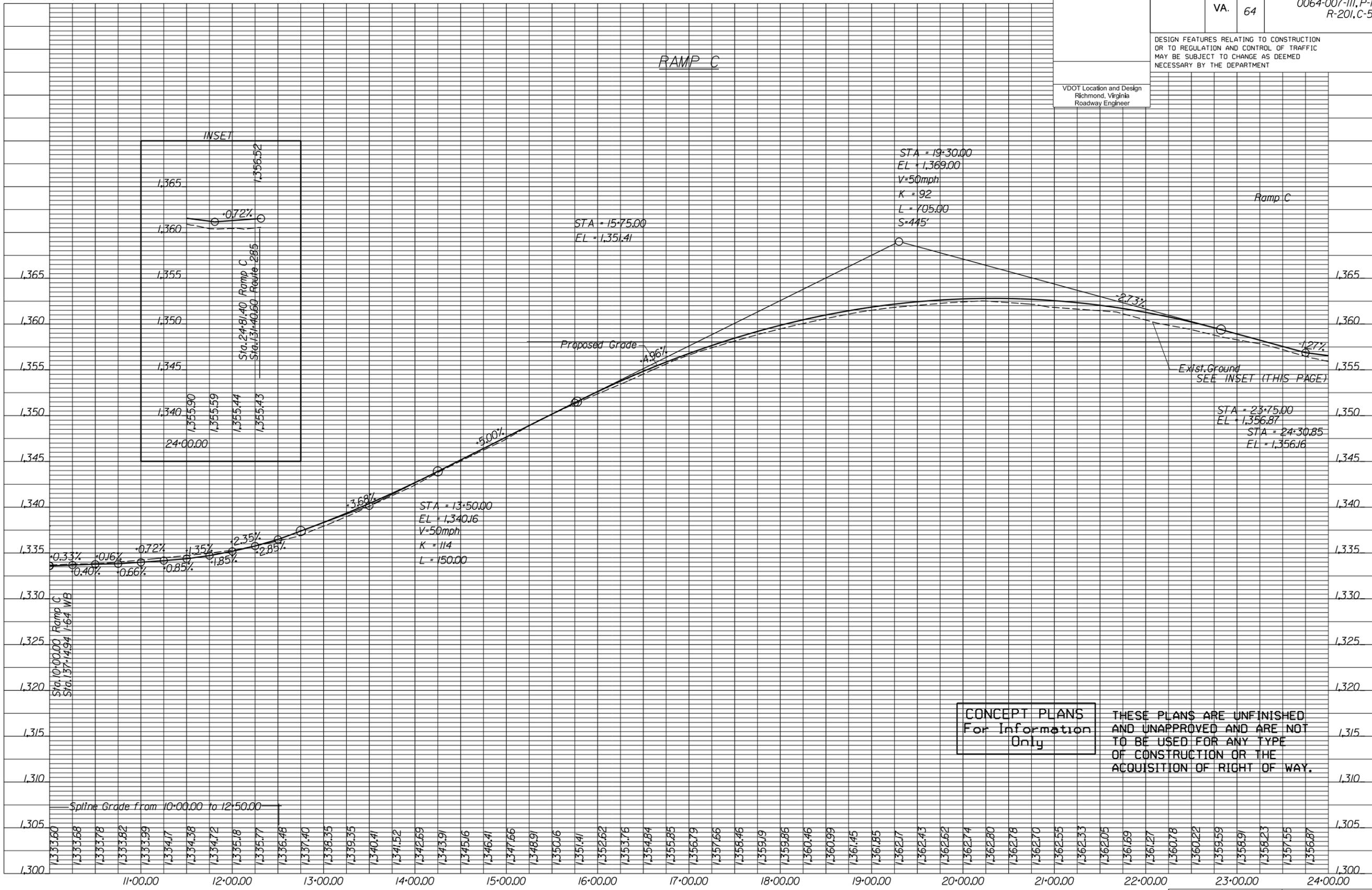
CONCEPT PLANS

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
 SURVEYED BY D.L. Burgood (1540) 332-9189 (Staunton District)
 DESIGN SUPERVISED BY William D. Acet, P.E. (804) 786-7428 (Central Office)
 DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 R-201, C-501	9C

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer



CONCEPT PLANS
For Information
Only

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PROJECT	SHEET NO.
0064-007-III	9C

PROJECT MANAGER Scott Alexander (1540) 332-7758 (Staunton District)
SURVEYED BY D.L. Burgandine (1540) 332-9189 (Staunton District)
DESIGN SUPERVISED BY William D. Acel, P.E. (804) 786-7428 (Central Office)
DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, PE-101 RW-201, C-501	10

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

VDOT Location and Design
Richmond, Virginia
Hydraulics Engineer

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24482-0859
(540) 245-5675

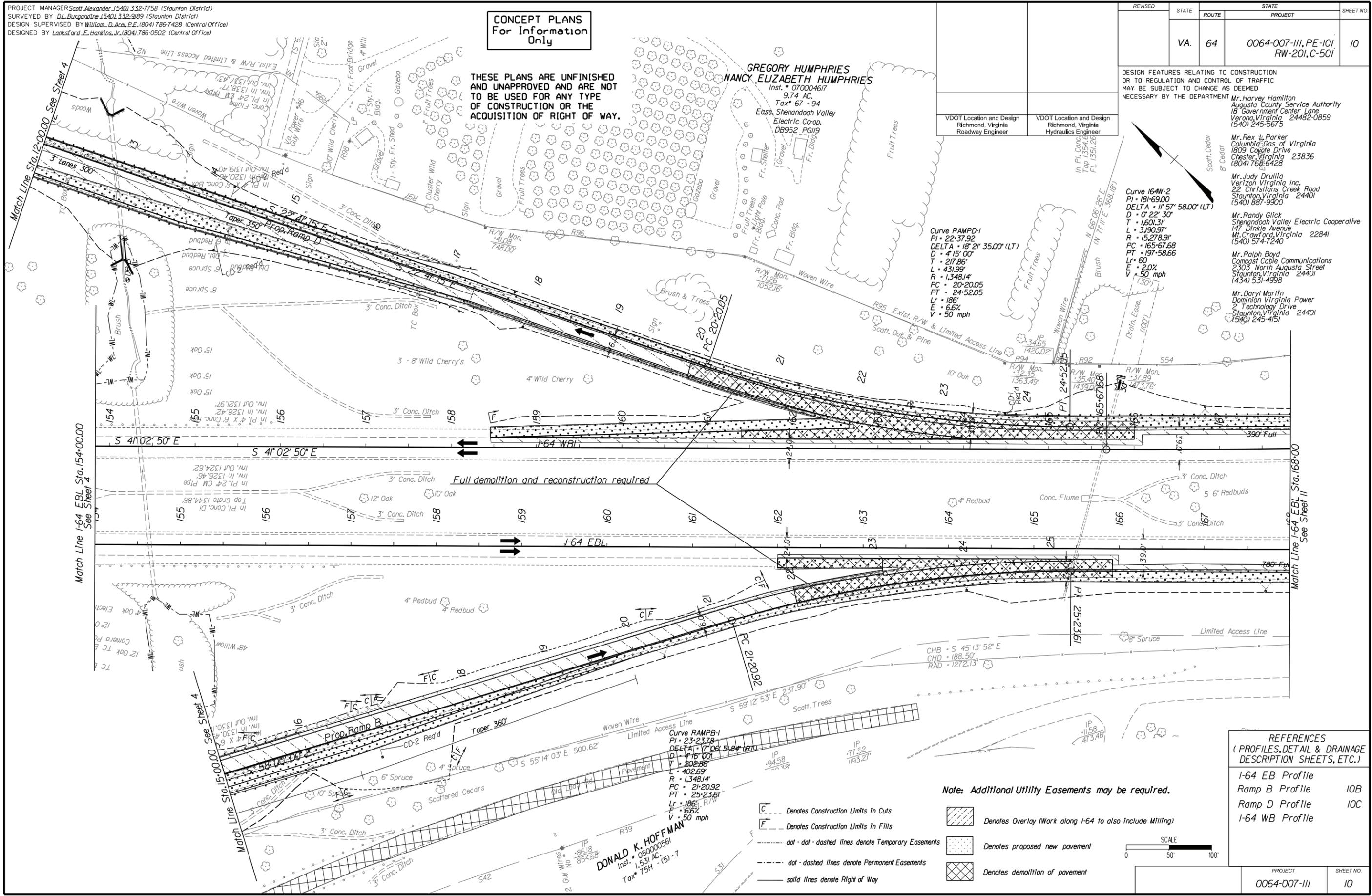
Mr. Rex L. Parker
Columbia Gas of Virginia
1809 Gayle Drive
Chester, Virginia 23836
(804) 768-6428

Mr. Judy Drullia
Verizon Virginia Inc.
22 Christians Creek Road
Staunton, Virginia 24401
(540) 887-9900

Mr. Randy Gilck
Shenandoah Valley Electric Cooperative
147 Dinkie Avenue
Mt. Crawford, Virginia 22841
(540) 574-7240

Mr. Ralph Boyd
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2303 North Augusta Street
Staunton, Virginia 24401
(540) 531-4998

Mr. Daryl Martin
Dominion Virginia Power
2 Technology Drive
Staunton, Virginia 24401
(540) 245-4151



Curve RAMPD-1
PI = 22-37.92
DELTA = 18° 21' 35.00" (LT)
D = 4' 15" 00"
T = 217.86'
L = 431.99'
R = 1,348.14'
PC = 20-20.05
PT = 24-52.05
Lr = 186'
E = 6.6%
V = 50 mph

Curve 164W-2
PI = 181-69.00
DELTA = 11° 57' 58.00" (LT)
D = 0' 22" 30"
T = 160.31'
L = 3,190.97'
R = 15,278.91'
PC = 165-67.68
PT = 197-58.66
Lr = 60'
E = 2.0%
V = 50 mph

Curve RAMPB-1
PI = 23-23.78
DELTA = 17° 06' 51.84" (RT)
D = 4' 15" 00"
T = 202.86'
L = 402.69'
R = 1,348.14'
PC = 21-20.92
PT = 25-23.61
Lr = 186'
E = 6.6%
V = 50 mph

DONALD K. HOFFMAN
Inst. # 050000561
1,531 AC.
Tax # 75H - (5) - 7

Note: Additional Utility Easements may be required.

- C --- Denotes Construction Limits In Cuts
- F --- Denotes Construction Limits In Fills
- · · · · Denotes Temporary Easements
- · - · - Denotes Permanent Easements
- — — Denotes Right of Way

- Denotes Overlay (Work along I-64 to also include Milling)
- Denotes proposed new pavement
- Denotes demolition of pavement



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

- I-64 EB Profile
- Ramp B Profile IOB
- Ramp D Profile IOC
- I-64 WB Profile

PROJECT	SHEET NO.
0064-007-III	10

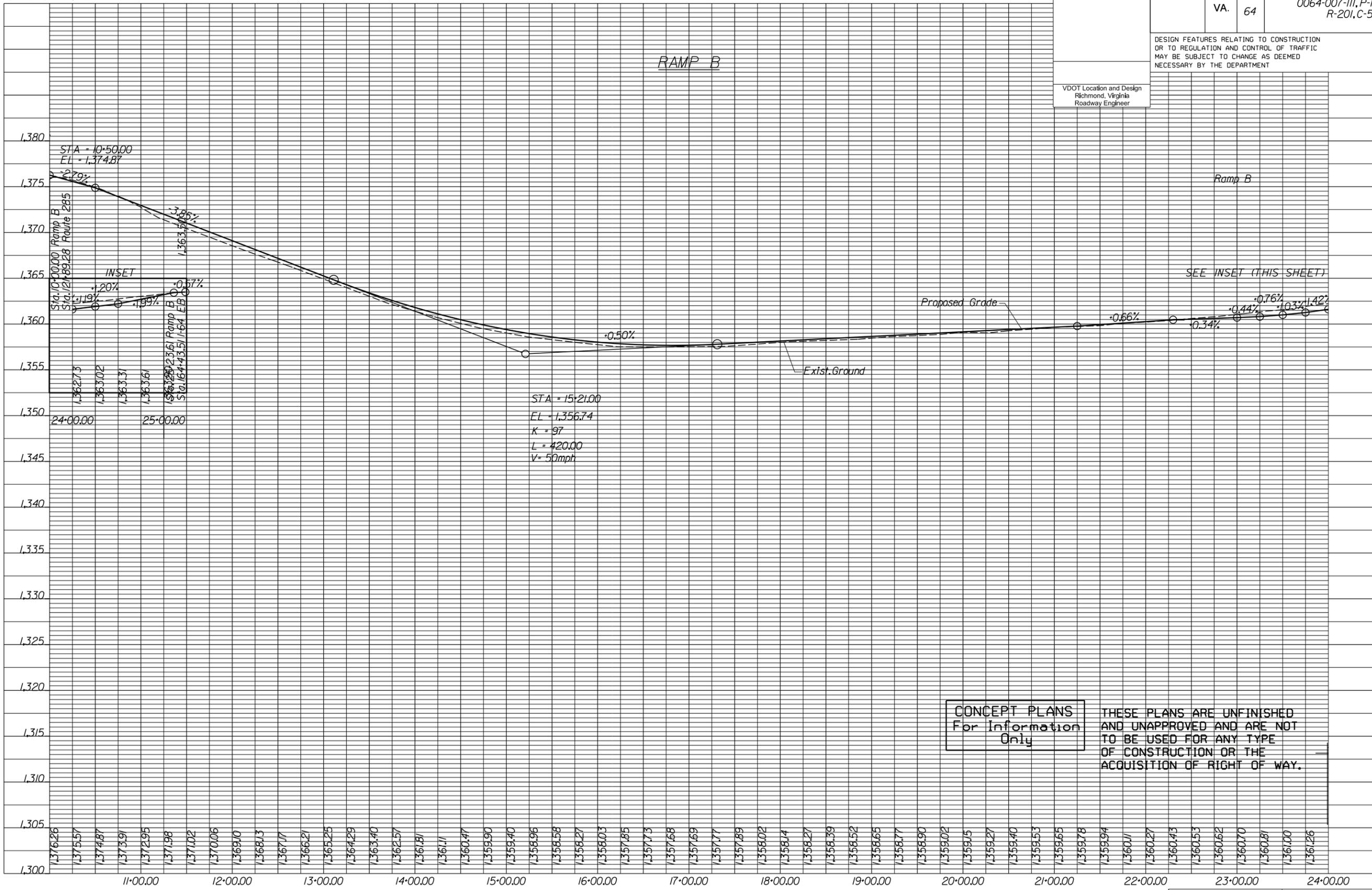
CONCEPT PLANS

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
 SURVEYED BY DL Burgandine (540) 332-9189 (Staunton District)
 DESIGN SUPERVISED BY William D. Acet, P.E. (804) 786-7428 (Central Office)
 DESIGNED BY Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 R-201, C-501	10B

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer



CONCEPT PLANS
For Information
Only

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PROJECT	SHEET NO.
0064-007-III	10B

CONCEPT PLANS

PROJECT MANAGER Scott Alexander (540) 332-7758 (Staunton District)
 SURVEYED BY DL Burgandine (540) 332-9189 (Staunton District)
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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, P-101 R-201, C-501	10C

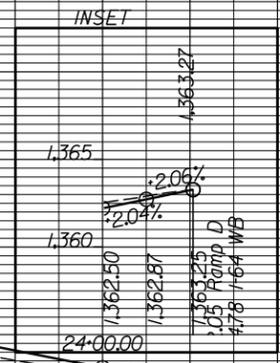
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

RAMP D

Ramp D

STA = 24+00.00
EL = 1,362.21



STA = 10+39.82
EL = 1,356.26

STA = 13+80.00
EL = 1,349.12
V = 50mph
K = 96
L = 332.00

Proposed Grade

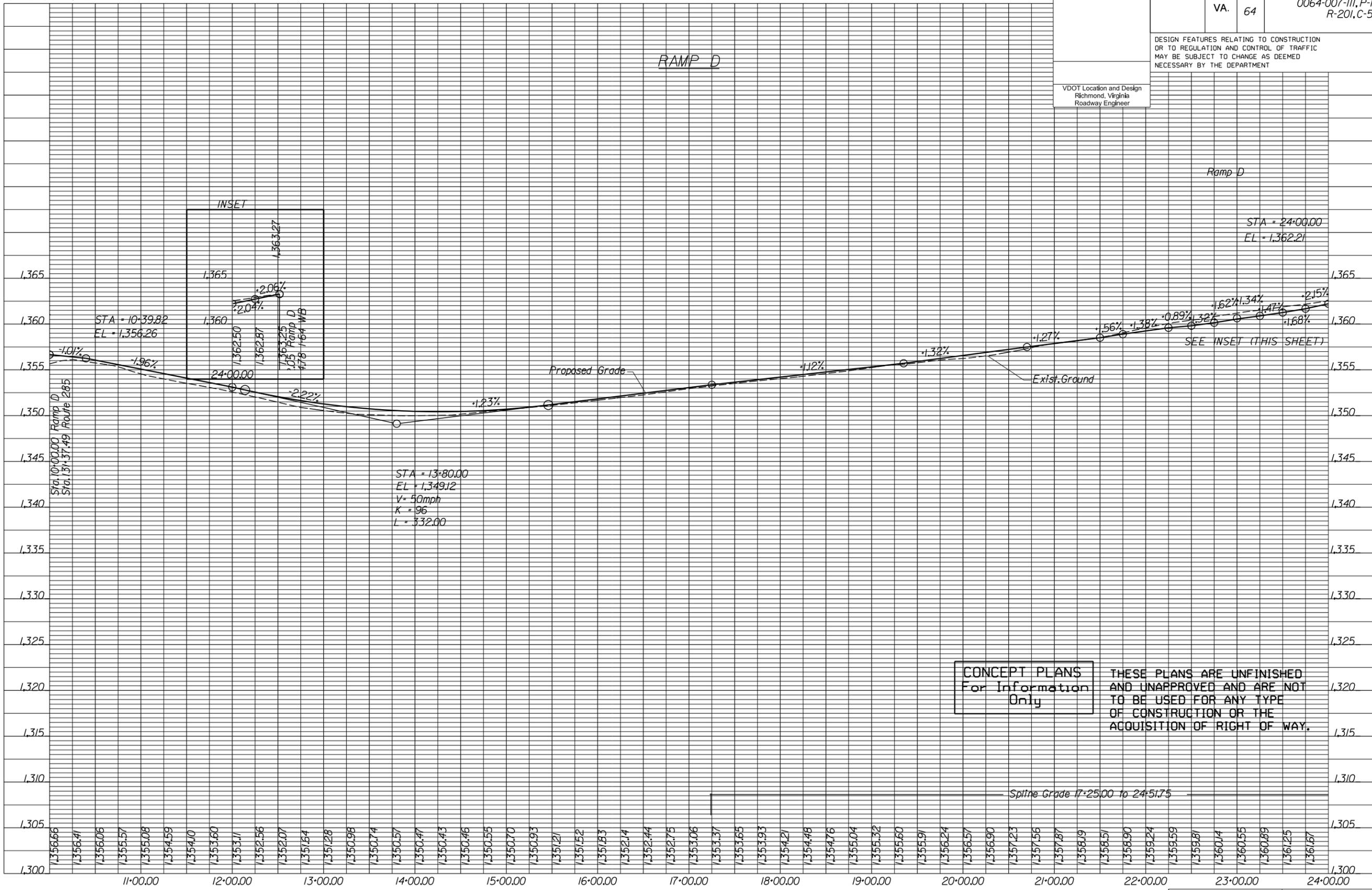
Exist. Ground

SEE INSET (THIS SHEET)

CONCEPT PLANS
For Information
Only

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Spline Grade 17+25.00 to 24+51.75



PROJECT	SHEET NO.
0064-007-III	10C

PROJECT MANAGER: Scott, Alexander (540) 332-7758 (Staunton District)
SURVEYED BY: D.L. Burgandine (540) 332-9189 (Staunton District)
DESIGN SUPERVISED BY: William D. Acal, P.E. (804) 786-7428 (Central Office)
DESIGNED BY: Lankford, E. Hankins, Jr. (804) 786-0502 (Central Office)

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24482-0859
(540) 245-5675

Mr. Rex L. Parker
Columbia Gas of Virginia
1809 Coyote Drive
Chester, Virginia 23836
(804) 768-6428

Mr. Judy Drullia
Verizon Virginia Inc.
22 Christians Creek Road
Staunton, Virginia 24401
(540) 887-9500

Mr. Randy Glick
Shenandoah Valley Electric Cooperative
147 Dinkle Avenue
Mt. Crawford, Virginia 22841
(540) 574-7240

Mr. Ralph Boyd
Comcast Cable Communications
2303 North Augusta Street
Staunton, Virginia 24401
(540) 531-4998

Mr. Daryl Martin
Dominion Virginia Power
2 Technology Drive
Staunton, Virginia 24401
(540) 245-4151

**ANTHONY ALTOMONTE
CECELIA W. ALTOMONTE**
Inst. # 050012663
70.658 AC.
Tax# 67 - 89
Easements
DB740 PG377

**CONCEPT PLANS
For Information
Only**

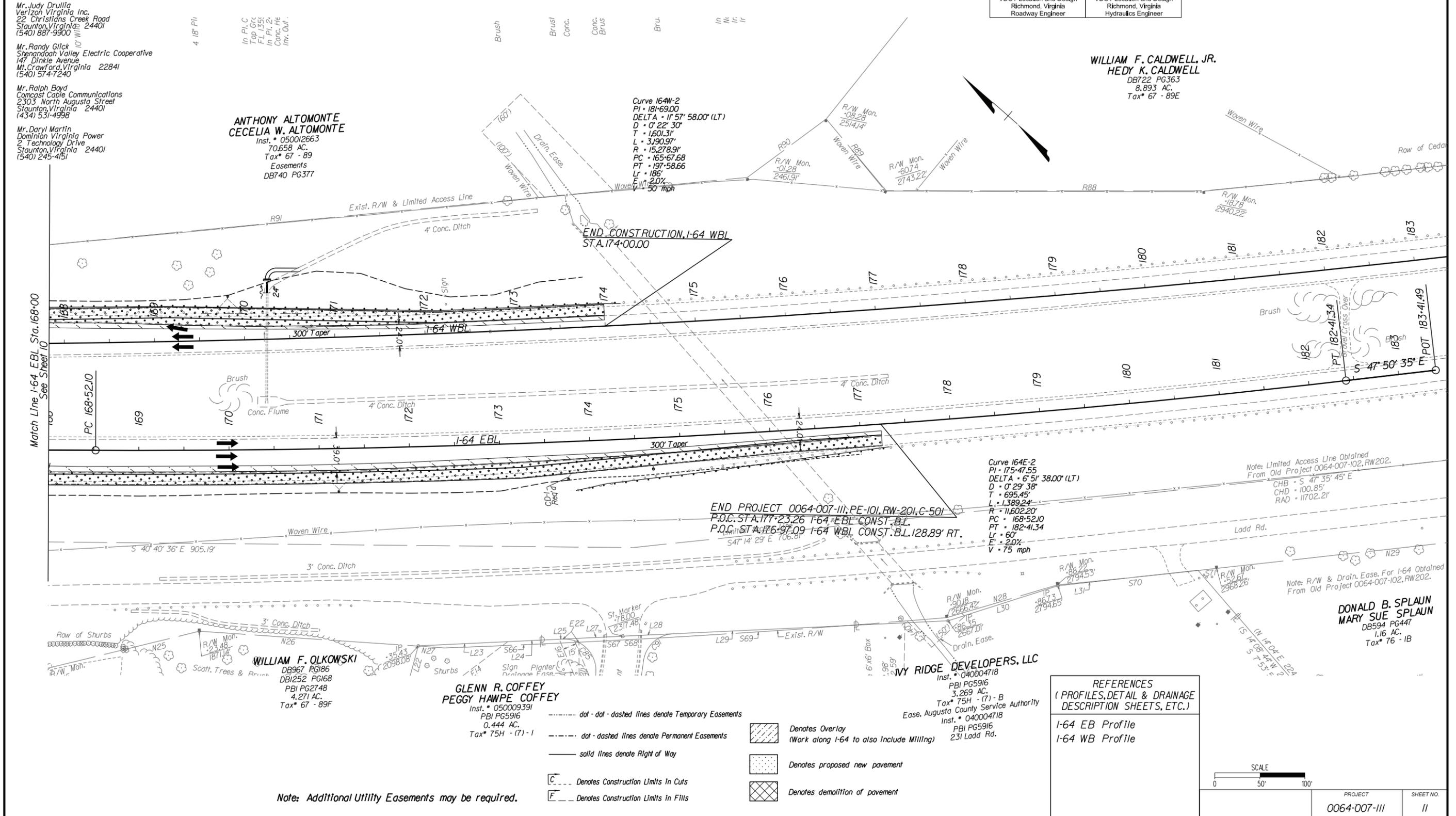
THESE PLANS ARE UNFINISHED
AND UNAPPROVED AND ARE NOT
TO BE USED FOR ANY TYPE
OF CONSTRUCTION OR THE
ACQUISITION OF RIGHT OF WAY.

**WILLIAM F. CALDWELL, JR.
HEDY K. CALDWELL**
DB722 PG363
8.893 AC.
Tax# 67 - 89E

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, PE-101 RW-201, C-501	11

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

VDOT Location and Design Richmond, Virginia Roadway Engineer	VDOT Location and Design Richmond, Virginia Hydraulics Engineer
--	---



Curve 164E-2
PI • 175+47.55
DELTA • 6° 51' 38.00" (LT)
D • 0' 29' 38"
T • 695.45'
L • 1,389.24'
R • 11,602.20'
PC • 168+52.10
PT • 182+41.34
Lr • 60'
E • 2.02%
V • 75 mph

Note: Limited Access Line Obtained
From Old Project 0064-007-102, RW202.
CHB = S 47° 35' 45" E
CHD = 100.85'
RAD = 11702.21'

Note: R/W & Drain. Ease. For I-64 Obtained
From Old Project 0064-007-102, RW202.

**DONALD B. SPLAUN
MARY SUE SPLAUN**
DB594 PG447
1.16 AC.
Tax# 76 - 1B

WILLIAM F. OLKOWSKI
DB967 PG186
DB1252 PG168
PBI PG2748
4.271 AC.
Tax# 67 - 89F

**GLENN R. COFFEY
PEGGY HAWPE COFFEY**
Inst. # 050009391
PBI PG5916
0.444 AC.
Tax# 75H - (7) - 1

MY RIDGE DEVELOPERS, LLC
Inst. # 040004718
PBI PG5916
3.269 AC.
Tax# 75H - (7) - B
Ease, Augusta County Service Authority
Inst. # 040004718
PBI PG5916
231 Ladd Rd.

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

I-64 EB Profile
I-64 WB Profile

- dot - dot - dashed lines denote Temporary Easements
- dot - dashed lines denote Permanent Easements
- solid lines denote Right of Way
- C --- Denotes Construction Limits In Cuts
- F --- Denotes Construction Limits In Fills
- [Hatched Box] Denotes Overlay
(Work along I-64 to also include Milling)
- [Dotted Box] Denotes proposed new pavement
- [Cross-hatched Box] Denotes demolition of pavement

Note: Additional Utility Easements may be required.



PROJECT 0064-007-III	SHEET NO. 11
-------------------------	-----------------

PROJECT MANAGER <Scott.Alexander.15401.332-7758 (Staunton District)>
SURVEYED BY <DL.Burgett.15401.332-9189 (Staunton District)>
DESIGN SUPERVISED BY <William.D.Abraham.P.E.(804)786-7428 (Central Office)>
DESIGNED BY <Lukas.L.Hankins.Jr.(804)786-0502 (Central Office)>

Mr. Harvey Hamilton
Augusta County Service Authority
18 Government Center Lane
Verona, Virginia 24452-0859
(540) 245-5675

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Mr. Randy Gilck
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Mr. Ralph Boyd
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Mr. Daryl Martin
Dominion Virginia Power
2 Technology Drive
Staunton, Virginia 24401
(540) 245-4151

**CONCEPT PLANS
For Information
Only**

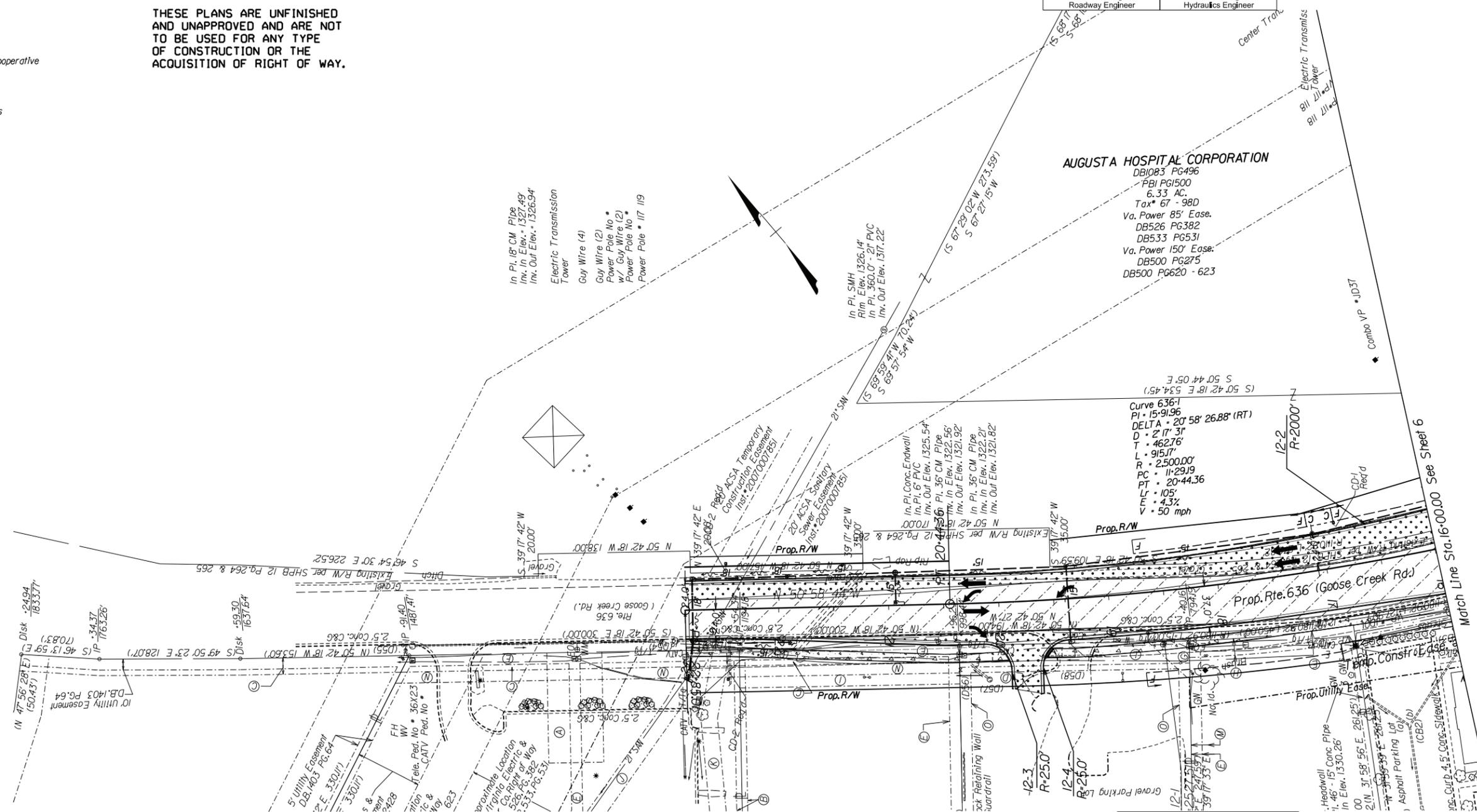
**THESE PLANS ARE UNFINISHED
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ACQUISITION OF RIGHT OF WAY.**

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-007-III, PE-101 RW-201, C-501	12

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

VDOT Location and Design
Richmond, Virginia
Roadway Engineer

VDOT Location and Design
Richmond, Virginia
Hydraulics Engineer



Note: Additional Utility Easements may be required.

- dot - dot - dashed lines denote Temporary Easements
- dot - dashed lines denote Permanent Easements
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- [C] --- Denotes Construction Limits In Cuts
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- [Hatched Box] Denotes Overlay
- [Dotted Box] Denotes proposed new pavement
- [Cross-hatched Box] Denotes demolition of pavement

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

- Profile Sheet (Goose Creek Rte 636) 6B
- Entrance Profiles 3C



PROJECT	SHEET NO.
0064-007-III	12

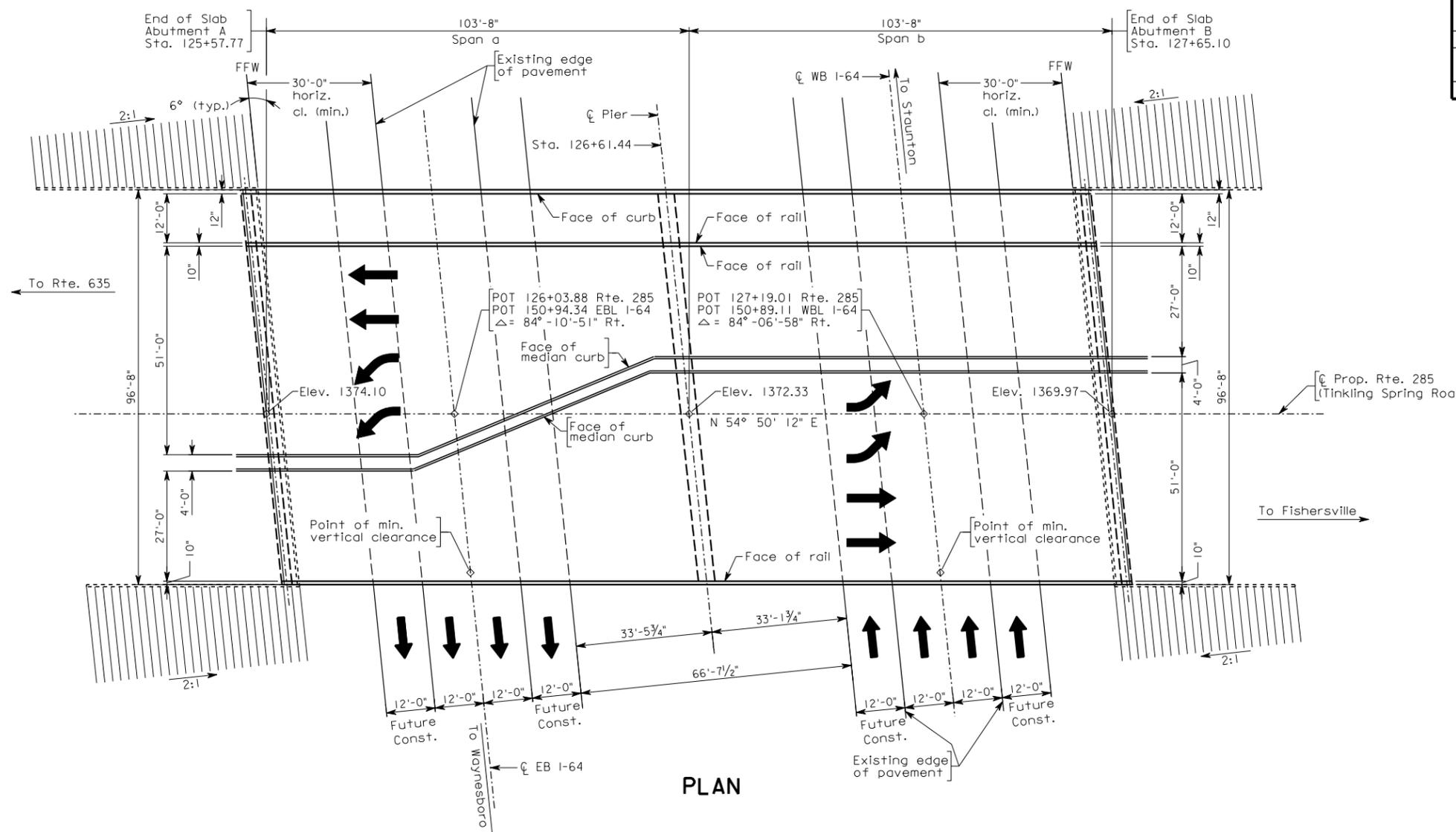


I-64
exit 91

Conceptual Structural Plans



FHWA REGION	STATE	FEDERAL AID		STATE		SHEET NO.
		ROUTE	PROJECT	ROUTE	PROJECT	
VA.				0064	0064-007-111, B627	1
NBIS Number:		00000000029276		UPC No. 75877		
Federal Oversight Code: F0				FHWA Construction and Scour Code: X771-SN		



PLAN

GENERAL NOTES:

Width: 12'-0" Shared Use Path, Varying Roadway, 4'-0" Median, Varying Roadway. Overall width 94'-10" face-to-face of outside rails.

Span layout: 103'-8" - 103'-8" continuous prestressed concrete girder spans.

Capacity: HL-93 loading.

Specifications:

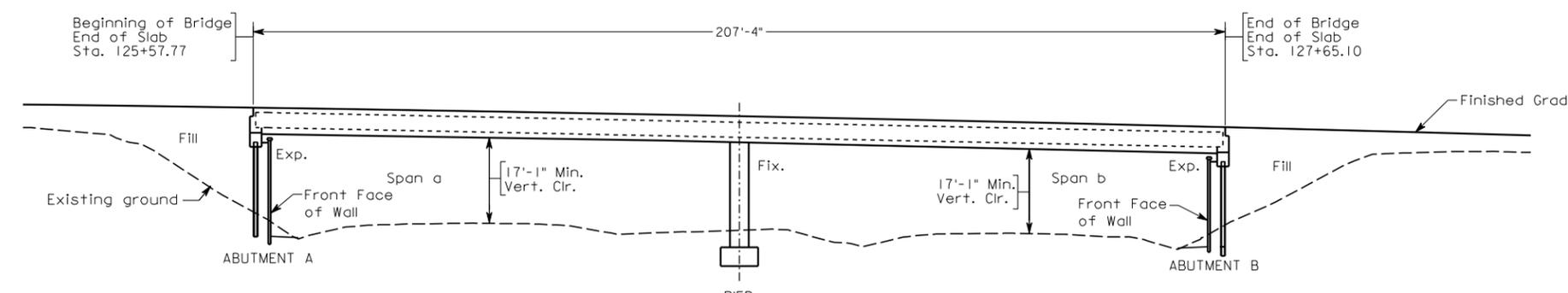
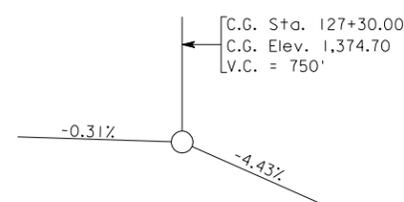
Construction: Virginia Department of Transportation Road and Bridge Specifications, 2007.

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

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

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

Design loading includes 20 psf allowance for construction tolerances and construction methods.



DEVELOPED SECTION ALONG C

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

RTE. 285 TINKLING SPRING ROAD OVER I-64
AUGUSTA COUNTY

PROJ. 0064-007-111

CDM Smith Richmond, VA
PLANS BY:
COORDINATED:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:

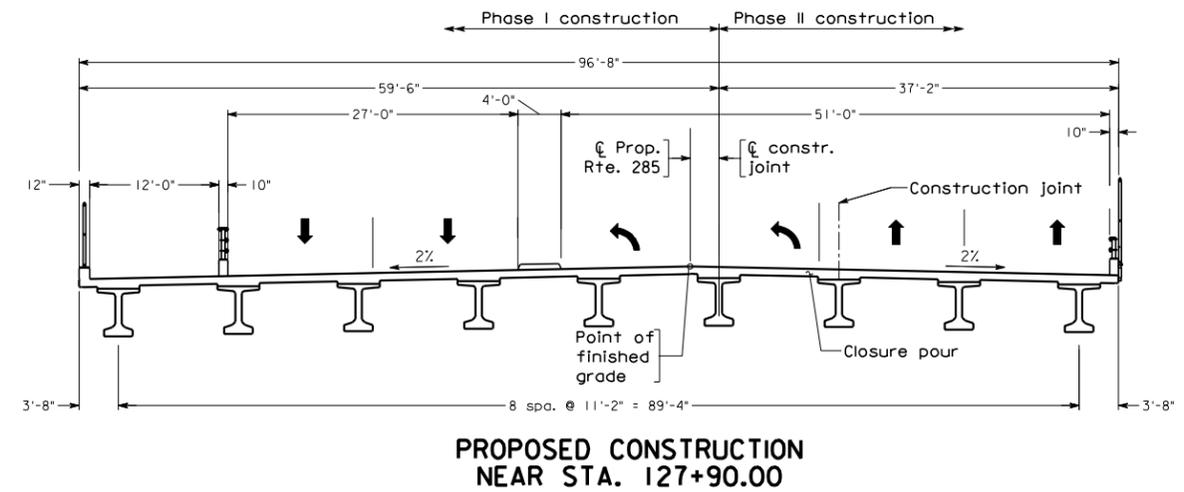
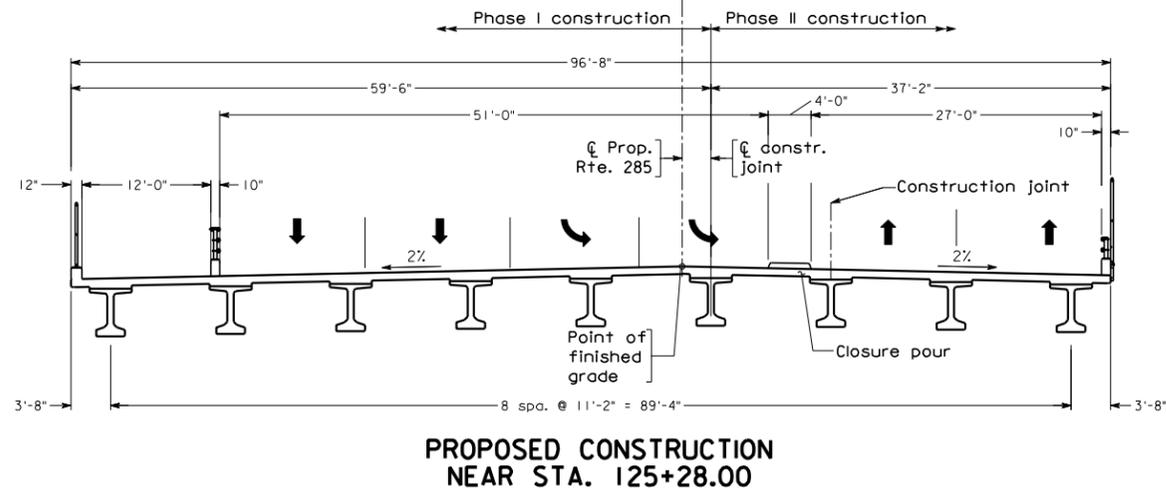
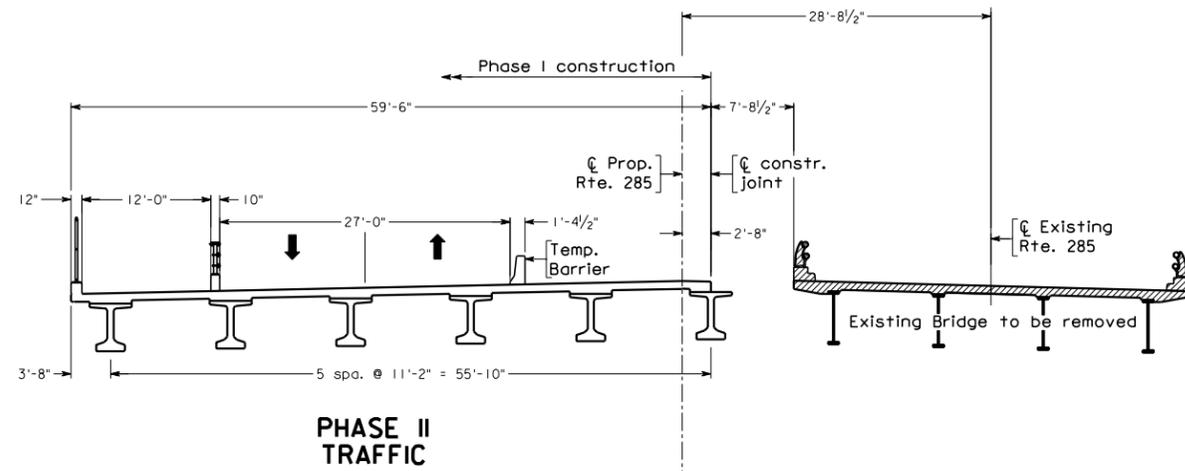
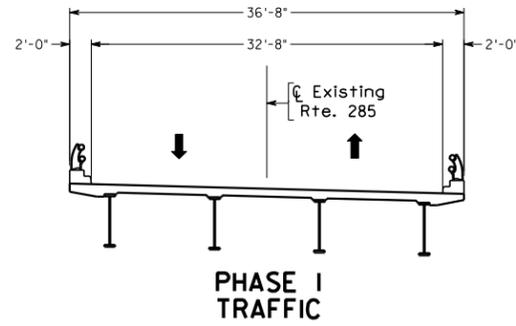
No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 2.		

Recommended for Approval: _____
State Structure and Bridge Engineer Date

Approved: _____
Chief Engineer Date

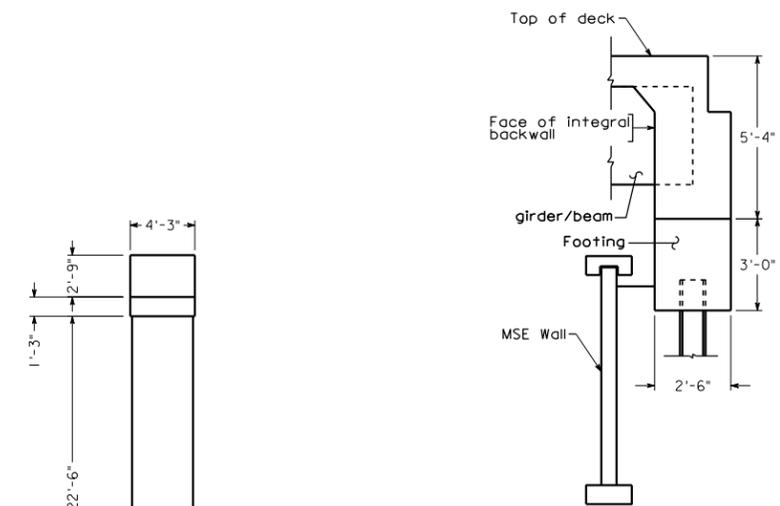
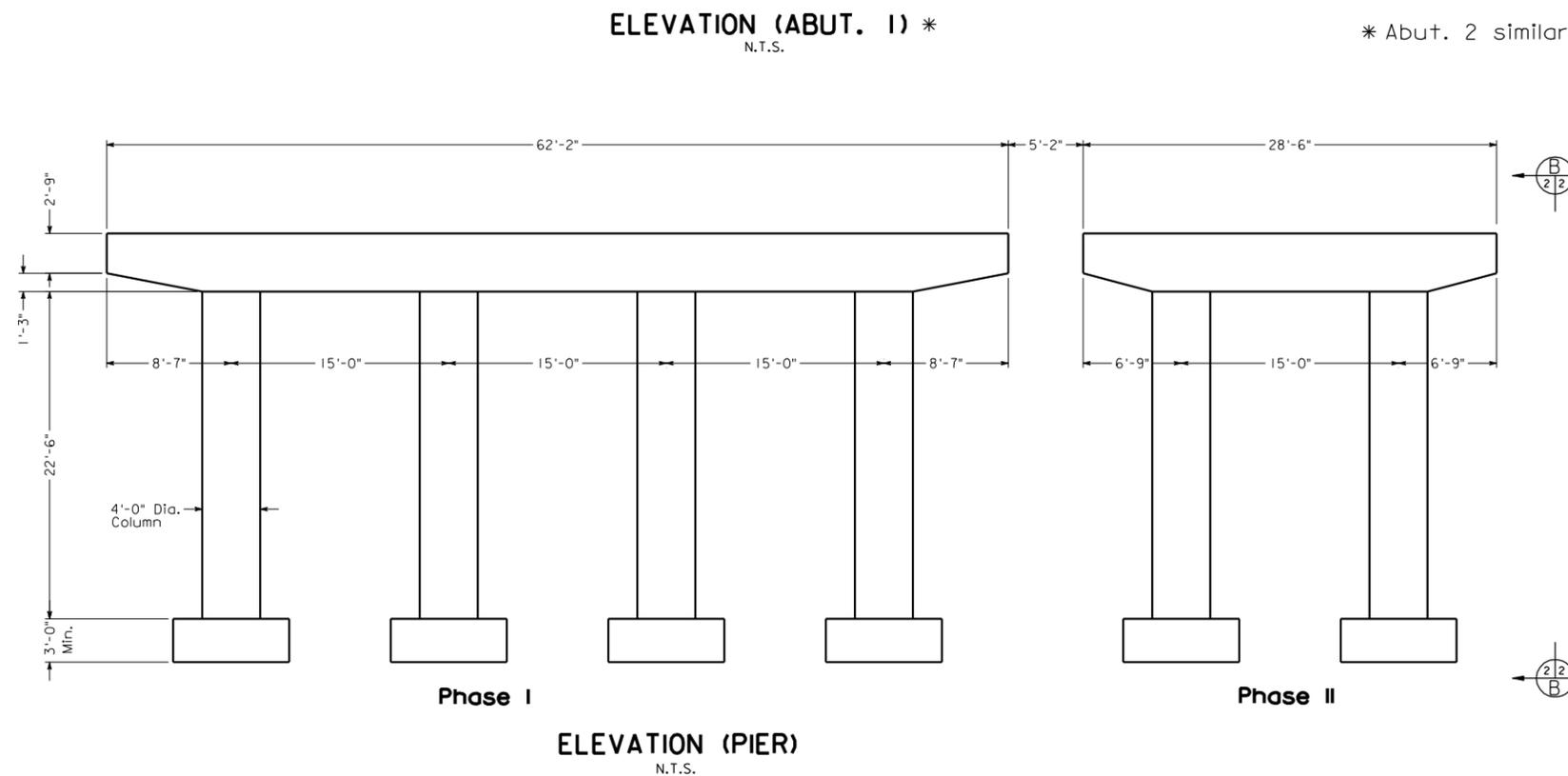
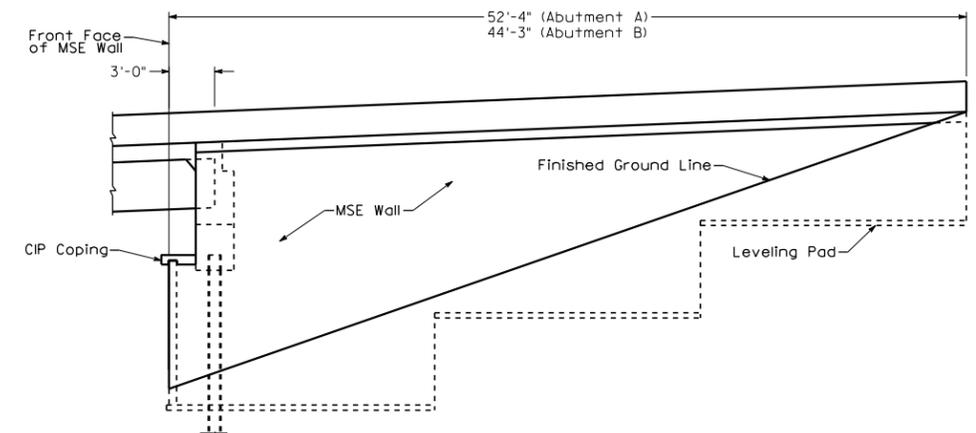
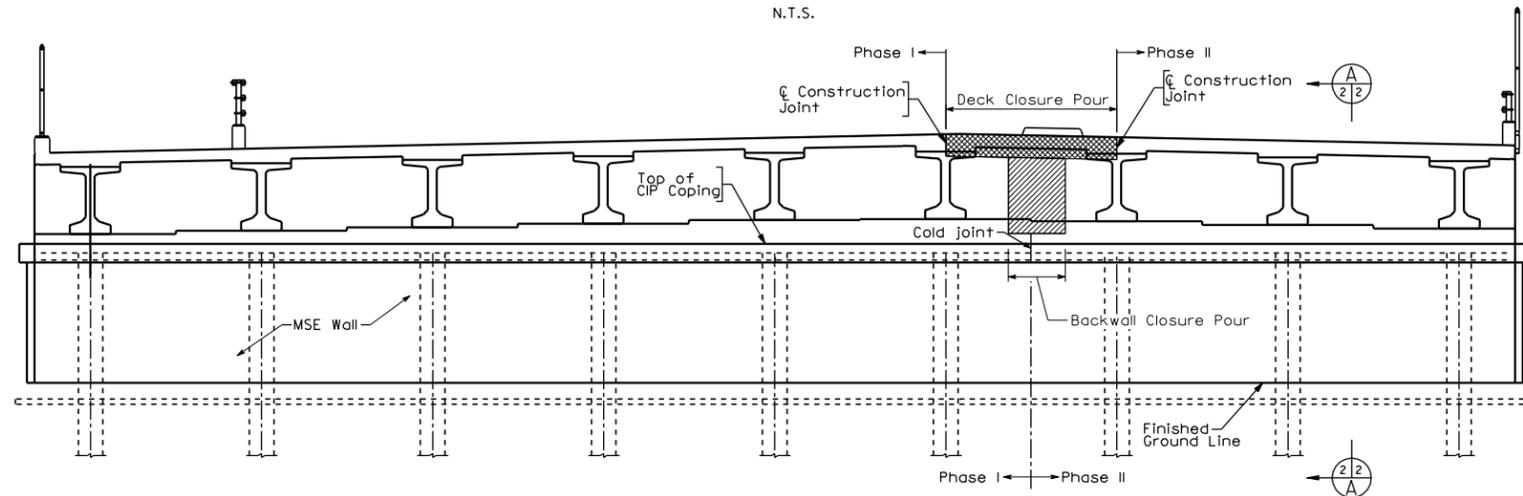
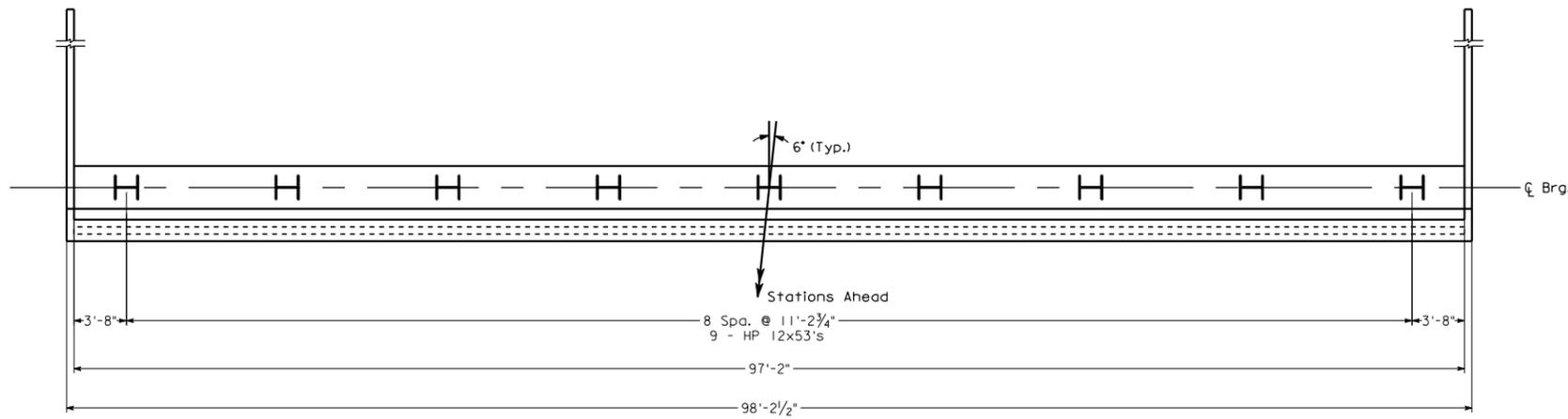
Scale: 1" = 20'

STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	NO.
VA.		0064	2
		0064-007-111, B627	



COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
PROPOSED PHASE CONSTRUCTION			
No.	Description	Date	Designed:
			Drawn:
			Checked:
Revisions			Date: June, 2012
			Plan No. 291-23
			Sheet No. 2 of 3

STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	NO.
VA.		0064	3
		0064-007-111, B627	



COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION				
STRUCTURE AND BRIDGE DIVISION				
SUBSTRUCTURE UNITS				
No.	Description	Date	Designed:	Date
			Drawn:	June, 2012
			Checked:	
Revisions			Plan No.	Sheet No.
			291-23	3 of 3

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