

May 30, 2013

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VOLUME I: Technical Proposal



I-64 Widening and Route 623 Interchange Improvements

A Design-Build Project

From: 0.99 Miles West of Route 623
(WB – Route 622, EB – Route 623)
To: 0.38 Miles West Route 271 (Pouncey
Tract Road) in Short Pump

State Project No.: 0064-964-110, P101, C501, B610-B614, B617,
B616, D601, D606

Federal Project No.: NH-064-2(150)

Contract ID Number: C00070542DB55

Goochland County and
Henrico County, Virginia



IN ASSOCIATION WITH:
Bryant Contracting, Inc. (SWaM)
George Nice & Sons, Inc. (SWaM)
EBA Engineering, Inc. (DBE)
Engineering & Testing Services, Inc. (DBE)
AMEC Environment & Infrastructure, Inc.
H&B Surveying and Mapping, LLC (DBE)

WR&A WHITMAN, REQUARDT
& ASSOCIATES, LLP
ENGINEERS · ARCHITECTS · PLANNERS EST. 1915

May 30, 2013

Mr. Stephen D. Kindy, P.E.
Alternate Project Delivery Office
Virginia Department of Transportation
1401 East Broad Street
Annex Building, 8th Floor
Richmond, Virginia 23219

Request for Proposals/I-64 Widening and Route 623 Interchange Improvements

State Project No.: 0064-964-110, P101, RW201, C501, B610-B614, B616, B617, D601-D606

Federal Project No.: NH-064-2(150) / Contract ID No.: C00070542DB55

Dear Mr. Kindy:

E.V. Williams, Inc. (EVW) is pleased to submit 10 copies of our Technical Proposal in response to your Request for Proposals (RFP) for the I-64 Widening and Route 623 Interchange Improvements Design-Build project.

4.1.1. Offeror's Official Representative Information: *E.V. Williams, Inc.* located at 925 South Military Hwy., Virginia Beach, VA 23464, is the legal entity, which will execute the contract with VDOT.

4.1.2. Declaration of Intent: E.V. Williams hereby declares our intent, if selected, to enter into a contract with VDOT for the project in accordance with the terms of this RFP.

4.1.3. 120-Day Declaration: E.V. Williams hereby declares that our offer as represented by this technical and price proposal will remain in force and effect for a minimum of one hundred and twenty (120) days from the "Technical Proposal Submission date".

4.1.4. Point of Contact: *James A. Openshaw, III – President of E.V. Williams, Inc.*

P.O. Box 65128, Virginia Beach, VA 23467 – (757) 420-1140 Fax: (757) 420-7250

E-mail: jayo@evwilliams.com

4.1.5. The Principal Officer Information:

William Karbach – Chief Executive Officer of The Branch Group, Inc.

P.O. Box 65128, Virginia Beach, VA 23467 – (757) 420-1140 Fax: (757) 420-7250

E-mail: willk@branchhighways.com

4.1.6. Substantial and Final Completion Dates: Substantial completion for this project will be no later than November 20, 2015 and the Final completion for this project will be no later than November 20, 2015.

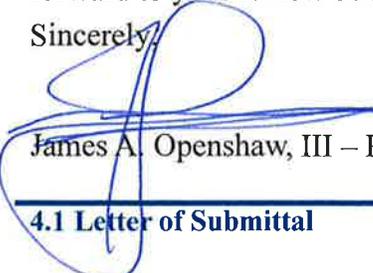
4.1.7. Proposal Payment Agreement: Attached in the Appendices is an executed Proposal Payment Agreement (Attachment 9.3.1).

4.1.8. Certifications Regarding Debarment Forms: Attachments 11.8.6 (a) and 11.8.6 (b) are signed and in the Appendices for the Team.

4.1.9. Design Compliance Statement: The E. V. Williams Technical Proposal is fully compliant with the Design Criteria Table included in the RFP Technical Requirements (Part 2) as Attachment 2.3 and all other requirements of this RFP. In addition, we certify that the limits of construction will include all stormwater management facilities and will be located within the existing right-of-way limits shown in the RFP Plans with the exception of permanent and temporary easements. Further, our design concept does not require any Design Exceptions and/or Design Waivers unless clearly identified and included in the RFP or Addendums.

The *E.V. Williams Team* appreciates the opportunity to provide our Technical Proposal for the I-64 Widening and Route 623 Interchange Improvements Design-Build project in Goochland and Henrico Counties. Our Team of qualified firms brings the experience and expertise that is needed for this challenging project. We look forward to your review of our submittal.

Sincerely,



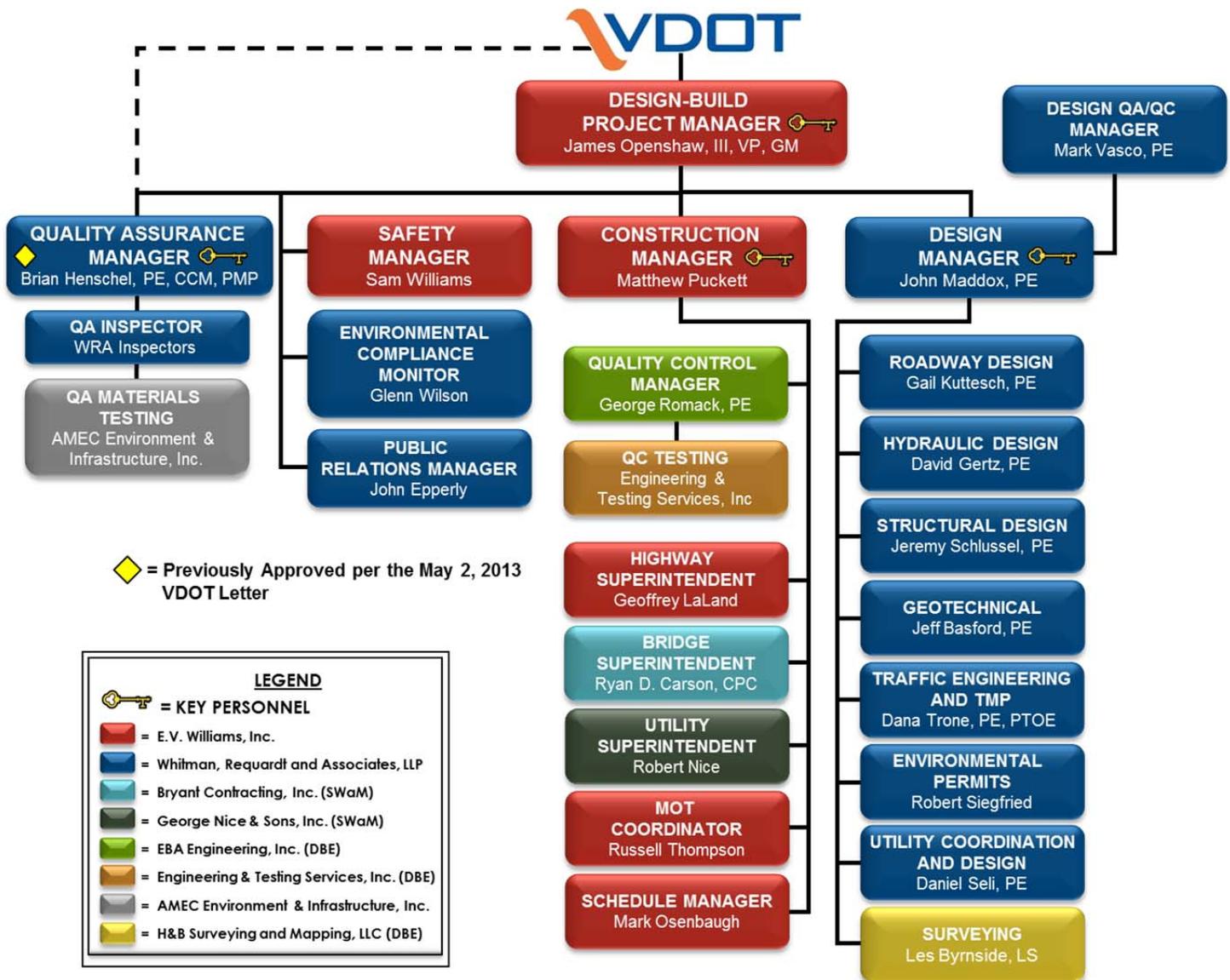
James A. Openshaw, III – President of E.V. Williams, Inc.

4.2 Offeror's Qualifications

4.2.1 The information contained in our SOQ, submitted November 15, 2012, remains true and accurate in accordance with Section 11.4, except for the previously approved change to the Quality Assurance Manager, Brian Henschel, P.E., CCM, PMP per the letter from Mr. Stephen Kindy, P.E. dated May 2, 2013.

4.2.2 Team Organizational Chart and Narrative

This Organizational Chart provides a visual overview of the functional relationships and lines of communication for our Team. The approved change to the SOQ Organizational Chart and Narrative would be to change the QAM to Brian Henschel, P.E., CCM, PMP, which is also denoted with a "Diamond" symbol in the revised Organizational Chart below. A distinct separation of Quality Assurance and Quality Control for construction activities is shown. Key Personnel are denoted with a "key" symbol.



4.3.1 Design Concept

This Design-Build project is located in Goochland and Henrico counties, Virginia, and consists mainly of the widening of Interstate 64 (I-64) for a total of approximately 4.5 miles between Route 622 (Rockville Road) and Route 271 (Pouncey Tract Road). The portion of I-64 involved in this project is currently a 4-lane divided Rural Interstate and the design will follow the VDOT (GS-1) design criteria with an additional auxiliary lane in both directions between the Route 623 and Route 288 interchanges and between the Route 288 and the I-295 interchanges. The posted speed limits are 70 mph west of Route 288 and 65 mph east of Route 288. The design speed will be 75 mph for the entire length of the project. The widening will occur in the median and will consist of an additional 12-foot lane and 12-foot paved shoulder in each direction. As part of this project, we propose to completely replace both eastbound and westbound bridges over Little Tuckahoe Creek. In addition, the outside paved shoulders will be reconstructed in accordance with the RFP Concept Plans and a complete mill and overlay of the existing pavement will be performed.

In addition to the widening of a portion of I-64, this project includes improvements to the interchange of I-64 and Route 623 (Ashland Road). Route 623 is currently a two-lane Rural Collector road meeting the VDOT GS-3 design criteria with a posted speed limit of 45 mph (design speed is 50 mph). The interchange ramps will be designed for the VDOT GS-R design criteria and will have a design speed of 35 to 40 mph. Below is a table that summarizes the design criteria provided in the RFP per *Attachment 2.3: Roadway Inventory and Major Design Criteria*. The interchange improvements will include replacing the existing traffic signal at the intersection of Route 623 and Ramp A, widening the I-64 off ramps to provide an additional turn lane, and adding a left-turn lane on Route 623 southbound to I-64 eastbound.

	DESIGN CRITERIA			
	I-64	I-64 Westbound Off-Ramp	I-64 Eastbound Off-Ramp	Route 623 (Ashland Road)
Roadway Classification	Rural Interstate	Interchange Ramp	Interchange Ramp	Rural Collector
Geometric Design Standard	GS-1	GS-R	GS-R	GS-3
Terrain	Level	Rolling	Rolling	Rolling
Design Speed (mph)	75	40	35	50
Max Rate of Superelevation	8%	8%	8%	8%
Minimum Lane Width (feet)	12	16	16	12

These improvements to I-64 and the Route 623 interchange will enhance safety and improve traffic operations. The additional lanes along I-64 will ease congestion and the additional shoulders will improve safety by providing a place for emergency stopping, when needed. The additional turn lanes on Route 623 and the improved ramps will reduce queues and signal delays. Correcting the superelevation on Route 623, combined with the aforementioned improvements, will improve the safety of this heavily traveled interchange.

We have learned from past projects that early public outreach results in true enhancements to the final project. The EVW Design-Build Team will take the lead role in meetings with the stakeholders to inform the public of project design and construction features. Public information materials and advanced notification of traffic impacts will be provided to VDOT for review and approval. The project Transportation Management Plan (TMP) will ensure the motorists traveling the I-64 corridor are informed of all changes in traffic patterns and temporary lane closures.

The EVW Design-Build Team has carefully reviewed the RFP documents including the roadway and

bridge plans and completed a site inspection of the project to assist the Team in developing a design that meets or exceeds the design standards and criteria defined in the RFP, while providing highly competitive pricing for the project. The EVW Design-Build Team certifies the Design Concept presented is fully compliant with the RFP.

The EVW Design-Build Team's proposed design and construction methods include elements that benefit VDOT and the end users by improving the safety and operations of I-64, while simultaneously reducing construction impacts to the public.

Benefits of the EVW Design-Build Team Design Concept

Recoverable Fill Slopes in the Median – The proposed widening into the median will generate a significant amount of waste material on the project. The EVW Design-Build Team has designed the project to flatten fill slopes to reduce the waste material from the project to the maximum extent possible. This will improve the safety along I-64 and will reduce future maintenance costs. This approach will also improve safety during construction by reducing the number of construction vehicles entering and leaving the I-64 travel lanes from the construction zone along the project.

Totally New Bridge Structures – The EVW Design-Build Team is proposing totally new bridges over Little Tuckahoe Creek, which will reduce future maintenance cost of the bridges and reduce risk during construction (that would be inherent to bridge rehabilitation), while being time neutral in duration.

Jointless Bridge Design – The bridge structures on I-64 over Little Tuckahoe Creek will be designed using jointless bridge technology by providing a new simple span bridge structure that utilizes deck slab extensions at the abutments with a buried approach slab. This will significantly reduce the future maintenance costs that are associated with leaking joints and improve the bridges long-term performance and durability.

Bridge Construction Methods – The EVW Design-Build Team has carefully evaluated the construction methods and proposes to replace the existing 3-span bridge structures with single-span bridge structures which will eliminate the need for pier foundations and related causeways. This approach will minimize the environmental impacts to Little Tuckahoe Creek by reducing the duration of work activities in the creek.

Construction of Outside Paved Shoulders in Initial Phase – We propose to replace the outside paved shoulder with full pavement in all areas except those constructed as part of the recent I-64/I-295 project in the initial phase. Concurrent with this work we will upgrade the guardrail as required. Performing this work in the initial phase will provide maximum safety to the motoring public when the traffic is shifted onto the outside paved shoulder and limit the project to two major traffic shifts in each direction. Constructing the outside paved shoulder in the initial phase will also allow traffic on I-64 to be placed in its final configuration eastbound starting at the Route 288 on ramp roughly midway through the project. Providing full use of portions of the project prior to completion will not only benefit the motoring public but should also improve their perception of the on-going construction.

Transportation Management Plan (TMP) – The EVW Design-Build Team will develop a TMP that will minimize impacts to the traveling public by reducing the number of shifts in traffic during construction and the length of the active work zones to ensure that I-64 traffic can travel through the project site safely and similar to existing conditions.

Additionally, I-64 is a critical link in the regional transportation system on the west side of Richmond with major freeway-to-freeway interchanges at I-295 and Route 288. As such, a Type B Category III TMP will be prepared in accordance with VDOT IIM-LD-241.5/TED-351.2 and will include a Temporary Traffic Control Plan, a Public Communications Plan, and a Transportation Operations Plan. This will include a Work Zone Traffic Impact Assessment to establish appropriate lane closure periods similar to those completed by our Team for several interstate projects in the Richmond area including the I-64 Shockoe Creek Bridge Rehabilitation project that was recently completed. Early in the development of the TMP and the sequence of construction, maintenance of traffic “red flags” will be determined to identify issues including safety in and around the work zone (workers and traveling public), ability to maintain access, impact to emergency services, project schedule, and coordination with utilities.

Based on our Team’s past experience with the design of the rehabilitation of the Route 623 Bridge over I-64 project, the public will have a high degree of interest in the project along the Route 623 corridor. Route 623 is frequently utilized by large farming equipment traveling between fields located on both sides of I-64. This was a major concern of the public during the public meetings for the design of the bridge project.



Environmental Impacts – The EVW Design-Build Team has reviewed the existing streams and wetlands along the project and has provided a design that minimizes the impacts to these resources, while providing significant protection during construction. The impacts to Little Tuckahoe Creek have been significantly minimized by the EVW Team decision to totally replace the existing bridges with new single-span bridges with no piers in the creek.

4.3.1.1 Conceptual Roadway Design Description

RFP (Part 2) Attachment 2.3 – Roadway Inventory and Major Design Criteria was utilized in our design in conjunction with the criteria required within *VDOTs Road Design Manual*. Our proposed design for the project meets or exceeds both sets of criteria, including design speed, super-elevation, shoulder and lane widths, minimum radii, and clear zones. A design waiver was provided for lane tapers on Route 623 and design exceptions were provided for the I-64 westbound median shoulder width under the Route 623 bridge, the I-64 eastbound and westbound outside shoulder widths, the superelevation along VDOT-defined Curve WBETW-1 located just west of the Route 623 overpass, and vertical clearance to existing bridge structures. All mitigations mentioned in the design waiver and exception requests will be included in our design. No additional design waivers and/or exceptions are anticipated for the proposed new construction.

All design features will be contained within the existing right-of-way limits as shown in the survey files provided with the RFP. For more information on utility impacts, see *Section 4.4.2 Utilities*. No temporary construction easements or permanent drainage easements are anticipated.

The 11x17 design concept graphics are located in Volume II and include General Geometry, Horizontal Alignments, Typical Sections (including maximum profile grades), Conceptual Hydraulic and Stormwater Management Design, Right-of-Way Limits and Utility easements.

Roadway: The I-64 horizontal alignment that was provided in the RFP was placed on the left edge of the existing left lane and included multiple breaks and small curves. Our proposed alignment will match the alignment that was created when I-64 was originally constructed in the 1960s. This will provide smooth curves that will run through the center of the existing roadway at the crown-point and will also provide ease of coordination with the bridge design. The alignments of the off ramps at the Route 623 interchange will also be revised to mimic the original I-64 plan baselines. The alignment of Route 623 will not be changed from the plans provided in the RFP.

The vertical alignments of I-64 and the off ramps at the Route 623 interchange will match existing ground and we do not anticipate any build-up of pavement from our review of the project in the field and VDOT's Conceptual Plans. However, to improve the superelevation along Route 623 to current standards, the vertical alignment will be raised along the curve just south of the existing bridge. This will eliminate the need to undercut the pavement and can be done with a simple mill and variable depth overlay of the pavement. The superelevation of 3.9% will transition back to the existing 2% crown without impacting the Route 623 Bridge over I-64.



Based on the survey files provided in the RFP, the existing cross slopes of the innermost travel lane along I-64 vary from approximately +0.09% to -4.12% (The survey files do not appear to meet VDOT standards and will be updated by the EVW Design-Build Team during the scope validation period to verify the existing pavement cross slope). Based on our review of the project in the field, we anticipate the existing cross slopes of the median lane will be within the acceptable range of -1.5% to -2.5%. These cross slopes along the existing pavement will be maintained per the RFP Plans. The additional lane will be widened such that it will fall within a -1.5% to -2.5% range and will match the existing cross slope.

The typical section of I-64 that was provided in the RFP showed a 14.5-foot ditch front slope for sections in cut. Our proposed typical section will provide a 12-foot ditch front slope for sections in cut, as required by the GS-1 Standard and revise the shoulder slopes to provide a 16-foot wide 6:1 recoverable slope in fills to provide an adequate clear zone. This will minimize the need for guardrail in the median of I-64 and the haul of excess material from the median.

Roadway Drainage: The roadway drainage design will comply with the applicable criteria contained in the documents listed in Part 2, Section 2.1 of the RFP. There will be no curb and gutter features on this project; therefore, there will be limited storm drain systems design. The only need for curb inlets may be dictated by the need for asphalt curbing along sections of high fills deemed to need protection by the geotechnical analysis. These areas will be analyzed for limiting spread on the adjacent shoulder, and Standard DI-13 inlets will be specified to pick up gutter flow, which will be conveyed down the slope via corrugated pipe. We will assess the serviceability of the structures by performing a visual/video inspection of the existing pipes and culverts utilizing the assessment criteria for Post Installation Inspections presented in VDOT Supplemental Specification 30203.

Ditches will be the major design element of the roadway drainage, consisting of toe-of-fill ditches in the median. These will be sized for 10-year storm flow capacity and 2-year storm flow erosion control – either with EC-2 matting, EC-3 matting or with riprap depending on the velocities. Ditches will convey runoff to the nearest outfall consistent with the general roadway gradient and/or the natural contours of the median to minimize extensive grading. The method of out falling the ditches in the median will be

dictated by whether the cross culverts will remain separate (in which case the ditch will tie into the channel) or whether they will be connected into one continuous culvert. If continuous, the ditches may not be able to slope to the higher filled median and would require using flanking median sump inlets connecting to the box culverts via storm pipes penetrating the box culvert sides.

Erosion and Sediment Control: The tight median construction footprint will require well-conceived ESC concepts that can adapt to the construction sequence. In lieu of large footprint sediment basins, the ESC will utilize more flexible treatments that can be rearranged easily to match the particular construction phase, such as silt fence, check dams, diversion dikes, slope drains, stabilized construction entrances and access, etc. These will be positioned to pick up limited disturbed runoff and to divert undisturbed runoff around the site.

Post-Construction SWM: The post-construction stormwater management (SWM) plan will utilize Water Quality (WQ) BMPs as outlined in the RFP and as analyzed in the Preliminary Draft SWM Plan report by VDOT. That report recommended a combination of new Water Quality Swales and the use of an existing SWM Basin – all within existing right-of-way. In accordance with the grandfathering provisions of this VDOT project as a Category 2, no new right-of-way is to be obtained for BMPs, and our design will meet the RFP required phosphorus removal rate of 29 lbs./yr. with our proposed BMPs. The use of WQ Swales in the median will be investigated and utilized to the maximum extent practical. The existing SWM Basin will be investigated for its treatment capacity to help obtain the required rate. BMPs will be designed using the DCR Performance-Based methodology. The WQ Swales will utilize check dams (either timber or riprap) to create the required water quality volume storage, and the soil infiltration rates will be determined for deciding whether underdrains will be necessary at the bottom of the soil matrix trench.



H&HA for Bridges and Major Culverts: For the bridge waterways and major culverts with 100-year flows in excess of 500 cfs, we will apply the standard VDOT hydrologic and hydraulic analysis (H&HA). Scour analysis will also be included for the bridges. A final H&HA report for each structure will be submitted for VDOT review and approval prior to commencement of construction, and they will include an established level of construction tolerance to allow for the designed hydraulic performance to be maintained. The design and analyses will also meet FEMA and FHWA requirements and guidelines. The preliminary H&HA report included in the RFP will be reviewed

and used for source information as appropriate, but we will verify and be responsible for all final hydrologic and hydraulic analyses for this Design-Build project. Scour countermeasures are expected to be required and consist of riprap armoring. All of the standard VDOT forms as necessary will be provided for proper documentation. Final as-built surveys, including related upstream and downstream appurtenances, will be provided, and also final H&HA reports that demonstrate the performance of the built structures matches or is better than that of existing conditions.

H&HA analyses will document that no adverse impacts will be created. None of the major waterway crossings are in FEMA detailed Zones (they are in either Zone A or Zone X); therefore, it will be necessary to show that the design will not increase base flood elevations more than one foot and not adversely impact any property beyond the right-of-way. HEC-RAS modeling will be used for the hydraulic analysis of the crossings and will include appropriate lengths of upstream and downstream stream reaches. Discharges for the various storm events (OHW, 2-, 5-, 10-, 25-, 50-, 100- and 500-year)

will be computed using VDOT hydrologic methods outlined in the Drainage Manual, and these will be based on planned future watershed development according to current zoning. The only anticipated modifications to major structures will take place in the median where the inside lane widening will require extensions of the box culverts. Currently, all of these crossing locations have the WBL and EBL culverts separated with some length of open natural stream running between them within the median. A design decision will be made in each case as to whether the culverts will be extended and whether the extension will be made continuous across the entire median. In most cases, we anticipate that if the culverts have to be extended, then it will be more advantageous to make the extensions continuous across the whole median. This will most likely have less hydraulically adverse impact since the exit and entrance losses at the separate culverts will be eliminated, and the additional friction losses will be minimal in comparison.

The EVW Design-Build Team will obtain all required permits for the project including the following:

- Virginia Stormwater Management Program (VSMP) Permit for Discharging Stormwater from a Construction Activity (DCR/VDOT) with accompanying SWPPP
- Land-Disturbing Permit (Erosion and Sediment Control) (VDOT)
- 404 Permit for Impacts to Streams and Wetlands from US Corps of Engineers
- Subaqueous Bed Permit for Crossing Large Stream from Virginia Marine Resources Commission

Signals: The existing span wire traffic signal at the I-64 westbound ramps and Route 623 (Ashland Road) will be fully reconstructed with mast arms, Uninterruptable Power System (UPS), preemption, loop detection, and a new controller. The flashing beacons posted with the Signal Ahead warning signs on the northbound and southbound Route 623 approaches to the westbound I-64 ramps intersection will be replaced with flashers consistent with VDOT's Standard FB-2. The signal design will be in accordance with the items identified in the Technical Requirements of the RFP. Coordination with Dominion Virginia Power will be performed to obtain and maintain power to the traffic signal throughout the duration of construction. Mast arms will be Type I (single) or II (dual) and the arm lengths will be compliant with the special provision. A dual mast arm is proposed for the westbound and southbound approaches to the intersection and a single mast arm is proposed for the northbound approach to the intersection. A broadband communication circuit will be established between the traffic controller at the reconstructed traffic signal and the Richmond Traffic Operations Center (TOC).

Temporary signalization and signal timings will be provided during all phases of construction. Vehicle detection will be maintained on all approaches during all phases of construction. The EVW Design-Build Team will assume full responsibility for the traffic signal until final acceptance of the permanent signal by VDOT.

Signing and Markings: An inventory will be performed of existing signs within the project limits. All ground-mounted signs within the project limits will be replaced. It is anticipated that the overhead sign structure on eastbound I-64 approaching the ramp to southbound Route 288 will be impacted and replaced with lighting as a result of widening into the median. Other existing overhead sign structures are not anticipated to be impacted by the proposed widening. Impacts to the Integrated Directional Signing Program (IDSP) will be coordinated and reviewed with the VDOT IDSP Manager before fabrication and installation. Proposed signs will be designed in accordance with the MUTCD and the Virginia Supplement to the MUTCD. GuidSIGN software will be used to design the sign panels.

Pavement markings and markers will be installed in compliance with the MUTCD, the Virginia Supplement to the MUTCD, and the VDOT Traffic Engineering Design Manual. Pavement marking materials will be as specified in the Technical Requirements of the RFP. Lane line widths along I-64 will

be 6 inches. In accordance with the design exception, markings along the I-64 ramps shall be 8 inches. Raised pavement markers (RPMs) will be installed along all new lane lines and center lines in accordance with VDOT Standard PM-8 and PM-9. Rumble strips will be installed along both the left and right shoulders along both eastbound and westbound I-64 within the project limits in accordance with VDOT Standard RS-1.

ITS: The existing CCTV cameras at westbound I-64 (MM 177) and eastbound I-64 (MM 175) are not expected to be impacted by construction and will remain in service during and after construction. New CCTV cameras are proposed on 45 and 80-foot steel poles, which will give full coverage of both directions of I-64 within the project limits when combined with the viewing capabilities of the existing cameras noted above. Cameras are proposed at the Route 623 interchange, between Route 288 and Gayton Road, and between Gayton Road and Route 271. These sites will allow for maintenance access from the shoulders of I-64. Based on conversations with Verizon and field-collected information, T-1 telephone service is currently available along the I-64 right-of-way. The T-1 telephone service will be used to provide communications for the cameras with a Network Interface Device being installed at each camera location. Hardwired and/or solar power is being considered depending on the proximity of hardwired power to each camera location. The camera system will communicate with the Richmond Traffic Operations Center (TOC) to view camera images and for remote control of the camera using the existing TOC software interface. The traffic cameras will be installed as early as feasible based on material fabrication and Verizon availability to perform the connections, so that they may be utilized for monitoring traffic during the remainder of construction.

Public Involvement: The proposed I-64 widening and Route 623 interchange improvements were presented to the public at a Design Public Hearing on July 11, 2012. The proposed project does not require the purchase of right-of-way and has received positive support from the public. Therefore, we are proposing the EVW Design-Build Team efforts to focus on the notification of construction activities as outlined in the RFP. We will include a “Pardon our Dust” meeting prior to beginning construction and invite all identified project stakeholders. These efforts will be led by **John Epperly**, the Public Relations Manager, who has over 30 years of experience leading public involvement efforts



on major VDOT transportation projects. VDOT will have final approval of all information provided to the public. If requested by VDOT, we will hold additional stakeholder meetings during construction. Beginning with our design plan approval, we will provide the Richmond District Office of Public Affairs information for the VDOT website including a project overview, SOC, schedules and contact information.

During construction the Construction Manager, **Matthew Puckett** will function as a liaison between VDOT and local government officials and citizens. The TMP will require notifications and traffic alerts to VDOT and media outlets as outlined in the RFP Section 2.11. Emergency contacts will be provided to the public, VDOT, police, fire and rescue providers from both Goochland and Henrico counties and an incident management plan will be established for the project to address any on-site emergency.

4.3.1.2 Conceptual Structural Design Description

Bridges on I-64 over Little Tuckahoe Creek

The existing bridge structures on I-64 (EBL and WBL) over Little Tuckahoe Creek are comprised of three 57-foot simple composite steel beam spans. The cross section consists of six WF 36x135's with cover plates spaced at 7'-9" with 8-inch thick reinforced concrete deck and an out-to-out width of 42'-0". These

structures were built in 1967 and are currently rated as structurally deficient.

The original VDOT concept was to widen the existing bridge structures an additional 26 ft. (12 ft. traffic lane and 14 ft. shoulder) to the median side while performing the necessary repairs and strengthening the existing portions of abutments and piers that are to remain in service. After review of the existing conditions to determine the extent of work for repairs to the existing elements and to retrofit the entire bridge structure to meet the LRFD code, and close coordination with *Bryant Contracting, Inc.* (the Bridge Contractor for the EVW Design-Build Team) for constructability, it was determined that it would significantly lower risk of added scope being identified during the scope verification phase and thus potentially be more cost effective for the project and for long-term maintenance considerations to totally replace the existing bridge structures.



After discussions between Bryant Contracting and the hydraulic and bridge engineers, it was decided that the proposed bridge structure for this replacement be a single 150'-0" prestressed concrete Bulb-T beam span. The cross section will be comprised of seven (7) – 77-in. deep Bulb-T beams using 9 ksi concrete spaced at 9'-6" with an 8½-in thick reinforced concrete deck and an out-to-out width of 62'-8". The use of a single span jointless bridge structure will eliminate the need for cofferdams to construct pier foundations, thereby minimizing the environmental impacts to Little Tuckahoe Creek and it will provide an efficient hydraulic opening all with the low chord still above the 100-year flood elevation. The new bridge structure will also reduce the time and expense of repairing and strengthening the existing substructure that would be required to meet LRFD design specifications, including earthquake requirements. The new bridge structures will be entirely constructed of low permeability concrete and the required corrosion resistant reinforcing steel will be used per I&IM S&B 85.1. The proposed beams will require a special hauling permit for weight and length; however, after careful evaluation and discussions with multiple fabricators, these beams are within their means to manufacture and haul to the project site

Bridge construction will be accomplished in two stages utilizing concrete traffic barrier service to maximize the temporary travel conditions. Highway traffic for the first stage will be shifted to the outside shoulders of the existing bridge where two 11'-0" travel lanes and 10¾" barrier offsets will be used. Designated portions of the existing bridge structure and abutment will be removed to facilitate the construction of the proposed bridge structure. The proposed abutments, which will be located in front of the existing abutments, will be constructed along with a 31'-4" width of new superstructure. This newly constructed portion of the bridge will handle two 12'-0" travel lanes with 2'-0" offsets to barrier for Phase 3 traffic, while constructing the remaining 31'-4" of bridge width. The final bridge width configuration will consist of a 1'-8" F-shape parapets, 14'-0" median shoulder, 3-12'-0" travel lanes, and 9'-4" outside shoulder (Design Exception for non-standard outside shoulder width dated January 29, 2013). The concept plans provided in Volume II, includes a sequence of construction graphic for the proposed bridge over Little Tuckahoe Creek.

The EVW Design-Build Team evaluated the use of prestressed bulb-tee beams versus structural steel and ultimately chose the 77-in deep Bulb-T beam design for its low maintenance and long-term durability. Additional analysis will be performed to determine the optimum beam design during the final design.

To support the Bulb-T beams, the abutments are proposed to be shelf abutments supported by end bearing H-piles. The new bridge structure will incorporate the details for deck slab extensions even though the

skew exceeds the bridge skew limit (Design Wavier dated August 1, 2012). Back walls will be designed and detailed to accept buried approach slabs. New approach embankments placed in the widened median areas at the abutments will be protected by riprap slope protection.

This proposed replacement bridge structure with the use of the concrete beam, in combination with corrosion resistance reinforcing steel and deck slab extensions at the abutments will provide jointless bridges, which will reduce the long-term maintenance for these proposed bridge structures for the expected 100-year service life.

4.4 Project Approach

The EVW Design-Build Team was assembled with members who have a record of delivering successful projects to VDOT, both in design and construction. This success is based on the project team members' history of implementing a partnering style approach that encourages and empowers each team member throughout design and construction. The team members have already applied the partnering approach in the development of the design concepts, construction methods and schedules included in this Technical Proposal, which has identified several project features that improve safety, long-term maintenance and reduce costs and schedule. This collaboration of personnel maximizes the Design-Build process and ensures that issues are resolved at the lowest level and long before they become problems. Below we have discussed four elements of the project as requested in the RFP by VDOT.

4.4.1 Environmental Management

The EVW Design-Build Team has reviewed the Categorical Exclusion (CE) and our natural resource staff has visited the project site to ensure we have a complete understanding of the environmental commitments required for the design and construction of the project by the environmental document and current regulations. Below is a summary of key environmental elements for the I-64 project.

CE Document – The CE has addressed hazardous materials, cultural resources and protected species within the project limits and impacts to these resources are not anticipated. VDOT is scheduled to complete additional habitat surveys for the Small Whorled Pogonia and the Smooth Coneflower before the Notice to Proceed for the project. VDOT information indicates the project does impact wetlands and streams that will need to be mitigated by the EVW Design-Build Team.

Hazardous Materials – The existing bridges are classified as Type B structures per the VDOT Road and Bridge Specifications. Dismantling and removing the existing structural elements will be performed in accordance with Supplemental Section 413 included in the RFP.

Water Quality Permits and Compensatory Mitigation

WR&A will identify wetlands and streams in the field, prepare appropriate field forms, flag and GPS locate the boundaries and coordinate the approval of these boundaries with representatives of the United States Army Corps of Engineers (USACE). During design development, efforts will be made to avoid and minimize impacts to streams, wetlands will be evaluated, and reductions in impacts will be documented. The EVW Design-Build Team will ensure the permit identifies all permanent and temporary impacts needed to construct the project. For each stream crossing, stream assessments will be conducted to determine mitigation steps that will be required. During the field review with the USACE, the permit requirements will be finalized. Upon receipt of a boundary confirmation from the USACE, the Design-Build Team will prepare the permit sketches and the Joint Permit Application based on 65% design plans for submission to the state and federal regulatory agencies. It is anticipated that mitigation credits would be purchased to offset unavoidable impacts to wetlands and streams.

The project may have time of year restrictions on work within the streams due to the presence of Anadromous fish (February 15 to June 30).



Construction Monitoring

During construction, impacts to wetlands and streams will be closely monitored to ensure that they are in compliance with permit conditions. Wetlands which were avoided during the design process, will be

marked before construction activities begin. **Glenn Wilson**, Environmental Compliance Monitor will work closely with **Geoffrey Laland**, Highway Superintendent to install orange safety fence in the field to prevent unintentional entry during construction. Any construction access changes or design modifications, which could affect environmental conditions will be communicated between the field crews and **Bob Siegfried**, Environmental Permits Coordinator to ensure any work plan changes will not affect active permits or threaten any overall environmental quality. All construction activities requiring permits will be identified as a hold points in the CPM schedule for the project.

Environmental Document Re-evaluation

The EVW Design-Build Team Environmental staff will assist VDOT with the Environmental Document Re-evaluation Authorization when the design is complete. We are not proposing any changes to the preliminary design that would impact the environmental re-evaluation of the project.

4.4.2 Utilities

The EVW Design-Build Team will be responsible for all utility coordination, adjustments and relocations required as part of the project. This effort will be led by **Daniel Seli, P.E.**, Utility Coordination and Design Manager. Mr. Seli’s VDOT utility relocation and coordination work, experience includes designs of facilities for Verizon Virginia, Dominion Virginia Power, Richmond Gas and Comcast Cable. The designs include both aerial and buried facilities. In addition to our VDOT utility experience, WR&A has provided engineering services to Henrico County DPU, Richmond DPU and Goochland County on annual engineering services contracts.

In preparation for this submittal, WR&A has contacted each of the known utilities within the project limits to confirm existing facility type, size, location and preliminary determination of conflict. A summary table of the existing utilities is listed below.

Utility Owner	Facility Location and Description	In Easement/ROW	In Conflict/ Not in Conflict
Goochland County Utilities Mr. Todd Kilduff (804) 556-5869	Sh. 6 – 8” SFM in 14” Casing 3.5’ Min. Cover at Station 1606+58	In ROW	Not in Conflict
	Sh. 7 – Left Rte. 623 Constr. 16” Water Main in 30” Casing 4’ Min. Cover	In ROW	Not in Conflict
	Sh. 7A – Left of Rte. 623 Constr. 16” Water Main	In ROW	Adjust F.H. in Fill Left of Sta. 62+50
	Sh. 12 – 24” San. Sewer in 48” Casing – 5’ Min. Cover – Sta. 1687+89 EB Lanes	In ROW	Not in Conflict
Henrico County DPU Mr. Dennis Farmer (804) 501-4514	Sh. 14 – 15” Conc. San. Sewer Sta. 1716+49	In ROW	Not in Conflict
	Sh. 16 – Conc. San. Sewer – Sta. 1750+22 Eastbound Lane	In ROW	Not in Conflict
	Sh. 17 – 16” D.I. Water Main in 30” Steel Casing East side of Gayton Rd. 3.5’ Min. Cover	In ROW	Not in Conflict
	Sh. 18 – 10” Conc. San. Sewer 17’ East of 48” Pipe Culvert	In ROW	Not in Conflict
	Sh. 21 – 24” D.I. Water Main in 36” Steel Casing on West side of Pouncey Tract Road	In ROW	Not in Conflict
	Sh. 21 – 24” D.I. Water Main in 36” Steel Casing on East side of Pouncey Tract Road	In ROW	Not in Conflict

Utility Owner	Facility Location and Description	In Easement/ROW	In Conflict/ Not in Conflict
	Sh. 20 – 4” D.I. San. Sewer S.F.M. in 14” Casing on East side of Pouncey Tract Road	In ROW	Not in Conflict
City of Richmond DPU Mr. Nick Georges (804) 646-8321	Sh. 20 – 12” SE Gas Main on West side of Pouncey Tract Road	In ROW	Not in Conflict
Verizon Virginia Mr. Mike Ziegler (804) 772-7306	No Known Utilities Crossing I-64 (Coordination for Service to Cameras and Signals)	N/A	N/A
Dominion Virginia Power (Distribution) Mr. Rick McDonald (804) 921-2646	Sh. 8 – 4 Overhead Power Lines Sta. 1630+81	In ROW	Not in Conflict
	Sh. 21 – Overhead Power Lines on East side of Pouncey Tract Road	In ROW	Not in Conflict
Dominion Technical Solutions (Transmission) Ms. Stephanie Bagby (804) 771-6282	Sh. 18 – Multiple Overhead Power Lines (Transmission) Sta. 170+00	In ROW	Not in Conflict
Comcast Cable Mr. Gordon Mower (804) 640-4322	No Known Utilities Crossing I-64	N/A	N/A

***Note: The utilities that are highlighted in yellow represent utilities that WR&A discovered through our research and discussions with the utility owners that exist, but are not currently shown on the drawings.**

Utility Concerns/Mitigation Strategies – The project in general is clear of existing utility conflicts. The existing water and sanitary sewer facilities that cross I-64 are currently encased from limited access line to limited access line and are not in conflict with proposed improvements. Minor adjustments of an existing fire hydrant may be required. Existing Verizon facilities are also not impacted by proposed improvements. Sanitary sewer crossings are also encased from limited access line to limited access line and are not in conflict. The one utility concern that does present itself is Dominion Virginia Power’s crossing of I-64. The poles themselves are not in conflict with the proposed improvements; however, clearances from the wires for construction equipment working on the project are a safety concern. During construction, **Robert Nice**, the Utility Superintendent, will ensure the Contractor takes precautions, such as marking aerial lines to ensure the safe distance requirements are met for all construction equipment on the project. The Utility Coordination and Design Manager, **Daniel Seli, P.E.** will also assist the design staff for planning electrical service to the proposed signs and Verizon service to the proposed traffic cameras and signals. Early coordination with Verizon will occur to ensure that the proposed traffic cameras are operational as early as possible during construction. During construction of the traffic control devices, we will ensure all utility designation with the utility owners and VDOT Asset Management has been completed before construction begins by coordinating with the utility owners identified above and all subcontractors.



Utilities Project Approach

As mentioned earlier, WR&A has extensive experience in the coordination and design of utility

relocations. Although the utility impacts are minor, there still remains the goal of the EVW Design-Build Team to ensure that the utilities do not impact the design or construction schedule. To avoid unexpected utilities within the limits of work and reduce potential of issues affecting utilities not known at this time, a utility mosaic will be prepared at the start of the project to identify all utilities on the project (including those currently not shown). This mosaic will be utilized by the entire Project Team to coordinate any design modifications and changes with the existing utilities and confirm that we are not creating a conflict or issue that would cause delay. The entire Project Team will strive to keep the utility conflicts to a minimum and if a conflict arises, come up with the quickest, most cost effective relocation alternative that keeps the project moving with minimal impact to the traveling public and utility. Our goal is to minimize utility conflicts and any potential delays by impacts to utilities. This will be accomplished through personalized attention from our Utility Coordinator, *Daniel Seli, P.E.* Through our experience with VDOT on utilities and our relationship with the existing utility owners, we propose frequent communication and honest discussion on utility concerns and potential solutions, to quickly resolve issues and keep the project moving. All procedures will follow requirements listed in the VDOT Utilities Manual of Instruction, Utility Relocation Policies and Procedures and the VDOT Land Use Permit Manual and will follow the project utility coordination efforts below.

- *Pre-Utility Field Investigation*
- *Utility Field Inspection*
- *Plan and Relocation Coordination*

Although there are only minor adjustments required to the water facilities on the project, we will coordinate the adjustments for the facilities with the owners and include the work with the roadway plans.

In summary, the key elements of the Utility Coordination and Relocation efforts are as follows:

- Confirm location, type, and size of utility.
- Determine if a conflict exists with existing utilities.
- Coordinate project with utility owners early and often through the entire project duration.
- Identify cost responsibilities and prior rights early in the process.
- Coordinate with the Project Team and discuss modifications to the design, schedule or construction methods to eliminate or reduce utility conflicts and potential delays to the schedule.
- Identify any required easements early in the process to avoid potential delays in the process/construction.
- Coordinate with the existing utility owners frequently during the process to ensure they are fully aware of the conflicts, impacts of the project on their utilities, project schedule and required relocations.

4.4.3 Geotechnical

The EVW Design Build Team has reviewed the preliminary plans and the project jointly in the field to identify the major geotechnical risks associated with the project. The majority of the project construction is fairly low risk, there does not appear to be rock present in the cut slopes and the existing embankments are in fairly good condition. The widened embankments will need to be benched into the existing slope per the Standard Specifications to minimize the risk of constructing the fills for the project. We have identified considerable risk in the following items:

I-64 Outside Paved Shoulder Design and Construction – The EVW Design-Build Team has developed a Sequence of Construction (SOC) for the widening of I-64 that will require building the outside paved shoulders as the first phase of construction. Traffic will then be shifted to the outside to facilitate placement of the temporary concrete median barrier along the median edge of pavement. The risk is related to both design and construction of the outside paved shoulder pavement. Our approach to the

design will begin with an effective material testing program of the existing shoulders to determine the characteristics of the existing shoulder section and subgrade.

The location of the existing underdrain system will be confirmed to ensure the proposed paved shoulder section will not impact the existing system. If impacted, the EVW Design-Build Team will provide a new underdrain system. This information will be a critical factor in the design and construction of the shoulder, since the EVW Design-Build Team plans to build the complete outside paved shoulder in segments under temporary lane closures during weekend periods.



The EVW Design-Build Team's extensive material testing program will significantly reduce the risk of not completing the outside shoulder reconstruction during the planned timeframe for weekend lane closures. EVW and WR&A will jointly evaluate the constructability and prepare a work zone impact assessment to ensure traffic operations are not impacted during peak periods and the safety of motorists and workers.

Proposed Abutments and Approaches – Since the EVW Design-Build Team will be replacing the entire bridge structure, the proposed construction of the new abutments were reviewed from a geotechnical approach to determine what are the most appropriate means and methods to build this element with minimal impact to the existing conditions. To facilitate the construction of the proposed bridge structure and widening of the roadway, fill material will be required to be placed adjacent to the existing roadway. Since the proposed bridge structure abutments are located in front of the existing abutments, temporary shoring will be required to support the fill during this stage. The shoring and the proposed fill will be designed in such a fashion to not induce any settlement of the existing roadway and to account for any potential long-term settlement with the underlying in-situ soil. The EVW Design-Build Team will obtain borings in the proposed fill area and of the existing conditions to properly design each respective element; once installed the shoring system and fill will be carefully monitored to ensure it is not impacting the existing roadway. For the backfill located directly behind the abutment, per Volume V, Part 2, Chapter 17.13, will be select backfill to reduce the potential for long-term settlement and to allow for proper drainage.



After the first phase of bridge construction is completed and traffic is on the median portion of the roadway, the existing substructure elements will be removed. Using the same temporary shoring system used to support the construction, it will now be used to support the roadway with active traffic. The existing abutment will be removed down to a level such that the proper fill material can be placed and the remaining elements of the abutment can be constructed.

To support the new abutments, it is proposed that steel H-piles be used and will be driven to rock; this feature will eliminate the potential for settlement of the proposed abutments. The geotechnical engineer will remain engaged during construction to mitigate risks and provide the required approvals.

4.4.4 Quality Assurance/Quality Control (QA/QC)

Quality in all phases of the project is a hallmark of the EVW Design-Build Team and a top priority, and

will be planned into each component of the I-64 Widening and Route 623 Interchange Improvements project. This quality planning and follow-through begins with a detailed Quality Assurance/Quality Control Plan (QA/QC Plan) that will establish a uniform and consistent process approach to design and construction quality management from project development through final delivery of the facility to VDOT.

The QA/QC Plan, and the Team that will ensure its successful implementation, is structured to meet or exceed the Minimum Requirements for Quality Assurance and Quality Control on Design-Build and Public-Private Transportation Act Projects dated January 2012 (Minimum Guidelines), and is designed to ensure *minimum intervention* needed from VDOT to achieve the desired quality standards. The EVW Design-Build Team will provide VDOT this confidence through a Plan containing well-structured and repeatable processes designed to produce and maintain a quality product in both design and construction.

To achieve this goal of minimum VDOT contract administration effort, the plan will include:

- Completely independent Quality Assurance and Quality Control Organizations.
- Clear standards of oversight, accountability, and testing/acceptance that tighten in the event of quality non-compliances, at least as stringent as required by the Minimum Guidelines.
- A detailed Communication Plan to keep VDOT informed of quality outputs and involved only to the extent required and desired. VDOT will be invited to provide regular input.
- Complete transparency and auditability of the quality management program and documentation, with regular dialogue to ensure VDOT quality priorities are met as the project progresses.
- A project intranet site allowing all project team members to have continual access to quality documents.
- A well-structured filing system with a monthly certification of completeness from the QAM.
- Adjustment of this ‘living document’ for continuous improvement throughout the project.

QA/QC Staffing

The QA and QC Organizations consist of highly qualified team members with extensive experience on Design Build projects. On this project, the QA Organization will be headed by Quality Assurance Manager **Brian A. Henschel, P.E., CCM, PMP**. Mr. Henschel has served previously in the QAM role, assuring quality of workmanship and materials incorporated into the project; he also previously served as a VDOT Design-Build Project Manager and in this role gained valuable insight on how to implement quality processes to minimize VDOT’s added efforts in the quality process. He will ensure that his fully VDOT certified QA inspectors assure that the QC procedures and tests are performed and documented properly. Mr. Henschel will be authorized to stop work and/or initiate corrections when needed. In another key quality team role, **George Romack, P.E.** will serve as the Quality Control Manager, assessing and adjusting production and construction processes to ensure conformance with contract requirements and to control the level of quality being produced on the Project. Finally, **Mark Vasco, P.E.** will serve as the Design Quality Manager, assuring that the QA/QC process is administered according to the plan, and verifying that designs have acceptable content, meet VDOT design standards and requirements, and produce the design solutions that best meet the project needs.

Under the overall quality leadership these three Quality Team leaders will function independently guided by the DBPM **James Oppenshaw, III** and will be responsible for adequately staffing the project to ensure all quality standards are met. The EVW Design-Build Team will utilize the Minimum Guidelines and Tables A-3 and A-4 to develop a QA/QC Plan that will define inspection and testing frequencies and requirements that, in coordination with the project CPM Schedule, will identify QA and QC manpower required during each phase of the project necessary to meet the standards. The Quality Team managers

will be responsible for adjusting staffing if schedules are accelerated or re-sequenced, or if repeated non-conforming work results in the additional frequency of inspection and testing. The QA/QC Plan will provide for VDOT input on the non-conformance resolution process, including the opportunity to make recommendations for additional QA and QC staffing. This involvement is designed to provide VDOT confidence that the staffing on the project will always be sufficient to meet the quality needs.

Specifically for this project, the EVW Design-Build Team anticipates full-time QC and QA staff to cover grade work, including traffic control, E&S control, drainage, grading, and paving, and full-time staff to cover bridge and structure work during the replacement of Bridges B-616 and B-617 and the box culvert extensions. In addition, due to the extensive work schedule anticipated on this project, including night-time operations and weekend work, some part-time staff is anticipated during peak periods of activity to provide complete coverage of critical work. Finally, both QA and QC organizations will have independent laboratories available to assist with field testing and to perform all laboratory testing required by the Minimum Guidelines.

Design QA/QC

The quality process will begin during the design phase; the EVW Design-Build Team believes that the most critical unique project element from the design perspective is the evaluation of a complete bridge replacement versus the RFP standard to replace the superstructure only. Senior Engineering staff with extensive design experience, particularly for VDOT, were involved in the evaluation of the bridge alternatives and verifying that all of the bridge, hydraulic and staged construction requirements were met with each alternative. The QA/QC personnel look critically at the design alternatives to verify that they are in compliance with the RFP documents, AASHTO LRFD Bridge Design Specifications and VDOT modifications, S&B IIM's and Structure and Bridge Manual – Volume V Series. The QA staff will verify that the design is being conducted and the plans are developed in accordance with these references. This experienced staff provides over-the-shoulder reviews of the design process and plan development early in the process and at critical points of design and plan development. The EVW Design-Build Team selected a full bridge replacement in order to produce a superior product that minimizes future maintenance costs, meets AASHTO LRFD loading requirements, and eliminates potential unknowns inherent with existing bridge rehabilitations, all while remaining time neutral or reducing the construction duration. The EVW Design-Build Team is confident this is an appropriate choice because the QA/QC process was implemented throughout the proposal process. This same process will be used throughout the development of plan submittals, shop drawing review and construction of this project.

The role of the Design QC in evaluating design on this element and any other similar element will include review of computations, technical accuracy, conformance to contract documents, form, content and coordination with other disciplines including roadway, hydraulic, geotechnical and construction. The Design QA process for this element will evaluate whether the designers assessed the design parameters appropriately, applied the correct analyses, and that the designs are performed by qualified personnel. Design QA will also ensure that the proposed solution meets the contract requirements and ensure that the work required by the contract documents is completed by applying appropriate skill and experience. The Design QA/QC Plan will specifically include constructability reviews to evaluate features such as setting the large bridge beams while minimizing impact to interstate traffic and providing low maintenance structures.

Construction QA/QC

The Construction QA/QC Plan will ensure the quality of workmanship and the materials incorporated into the Project meet the RFP requirements. The EVW Design-Build Team believes the most critical element

for applying the QA/QC Plan will be during the excavation and construction of the I-64 outside paved shoulders in single closures using a 3,000-foot long moving train, primarily utilizing weekend lane closures. This plan will require a high level of planning and coordination, including well planned delivery of equipment and materials, communication with design personnel during nights and weekends to respond to conditions encountered in the field (especially shoulder subgrade conditions), a high degree of public relations and communication among project stakeholders and a detailed MOT plan to reduce impacts to the traveling public, including reviews and adjustments during the closures. The Team believes the benefits will be a greatly reduced time of traffic impact, improved safety for the public and workers, fewer total lane shifts and a greatly decreased time of construction, all while maintaining quality.

Key interactions with the QA and QC program will include a detailed preparatory meeting (hold point) where the detailed plan for implementation will be discussed and all project stakeholders will provide input into the planning. The QAM will identify expected QA and QC testing and inspection frequencies. Public Relations Outreach will be agreed upon and implemented. EVW will identify the planned schedule, to allow for the necessary QA and QC staffing. Appropriate submissions and forms will be verified, such as the C-25 Source of Materials. During the construction, the QC Inspectors and QC Lab, and the QA Inspectors and QA Lab, will perform sampling and testing at the rates required by Tables A-3 and A-4 of the Minimum Guidelines. Non-conforming work will be handled according to the Quality Assurance Auditing and Nonconformance Recovery Plan, which is addressed at the project level for minor and immediately correctable items and will involve the QAM, DBPM and VDOT for more significant non-conformances that might require rejection or penalties for acceptance. Maintenance of Traffic will be continuously monitored for minimum impact. Appropriate test records and documentation will be recorded and the required intervals, and uploaded to the project website for continual access and monitoring by VDOT and other project stakeholders.

In summary, the EVW Quality Assurance-Quality Control Plan is established to design and construct all I-64 Design-Build improvements according to VDOT's standard requirements, while reducing the need for significant VDOT oversight or expanding of VDOT contract administration efforts.

4.5 Construction of the Project

Project Safety – Safety is the unquestioned top priority of the EVW Design-Build Team, from Notice to Proceed through final delivery of the project to VDOT. The Team will set a culture of safety as a standard, defined through the Health, Safety and Welfare Plan submitted shortly after Notice to Proceed. This plan will ensure the protection of the workers and traveling public during all field operations during design and construction activities, establish a project safety plan, and ensure effective communication to all employees. Team Leaders will communicate this plan early and often, at every organized meeting, including the Preconstruction Conference, weekly safety meetings, weekly scheduling meetings and monthly progress meetings. The plan will include specific features of the project that pose the greatest safety risks, such as location of low hanging overhead power lines, procedures for trucks to enter and pull off the Interstate from the project, and safety procedures for setting up temporary traffic control devices and signage for temporary closures.

The EVW Design-Build Team includes *Sam Williams* as our Safety Manager for this project. Sam, a seasoned veteran, will report directly to the DBPM to ensure compliance with all applicable laws and regulations and to promote a safe and healthy working environment. He will have complete authority to suspend any operation deemed unsafe or outside the parameters of pertinent laws and regulations governing the project until a viable solution can be reached. Sam will work closely with our Design Team to ensure the Transportation Management Plan maximizes the safety of the motoring public as well as the construction and support personnel on the project. Our commitment to safety is exemplified by EMR's for the past five years ranging from .75 to .82 with no serious OSHA violations in that same five year time period. Our Team has the track record to prove safety is a major element of our culture.

Benefits of the Proposed Sequence of Construction – The Construction Sequence proposed by the EVW Design-Build Team has two major advantages. The first advantage is that by completing the outside shoulder reconstruction in Phase 1 we limit our project to two major traffic shifts. Doing so creates less confusion and thus a higher level of safety for the motoring public. The second major advantage is our ability to permanently open the added eastbound lane east of the 288 on-ramp during Phase 2. Providing the added lane in this area will ease traffic congestion during the middle of the project duration as opposed to near the end of the project. Providing this partial benefit long before project completion will be a positive from a public relations stand point.

Pre-Construction Activities – The EVW Design-Build Team upon Notice to Proceed will begin developing the roadway and bridge design plans, Transportation Management Plan (TMP) and environmental permits on an accelerated schedule. The Team will begin the development and approval of the project QA/QC Plan in accordance with the Minimum Guidelines. Once the approvals of all documents required in the RFP have been received, then construction can begin. Additionally, the EVW Design-Build Team will schedule and hold a “Pardon Our Dust” public meeting to inform the public of the project features, construction sequence and schedule. This meeting will begin a comprehensive effort to keep Project Stakeholders and the traveling public aware of impacts resulting from the project.

4.5.1 Sequence of Construction

The EVW Team's planned sequence was developed to efficiently and safely prosecute the work on the project, minimizing the duration of impacts to the traveling public and thereby reducing safety risks. The approach to sequencing and phasing the project is influenced by the need to maintain traffic in accordance with the MUTCD (Manual for Uniform Traffic Control Devices) and the Virginia WAPM (Work Area Protection Manual) current editions meeting the criteria for a Type B Category III project, with the utmost importance placed on the safety of the traveling public, workers in the areas of construction and the need

to minimize impacts to traffic throughout the project limits. For example, the Route 623 Interchange is used by large-sized trucks needing to access the multiple quarries, asphalt plants, Goochland County Solid Waste and Recycling and other businesses, and is important in the preparation of our plan of work for the project. All work will be performed in accordance with RFP Part 2, Section 2.1.1 standards and reference documents.

In another sequencing decision made to address safety and operations, the EVW Design-Build Team recognized that the outside paved shoulders constructed in connection with the I-64/I-295 project #0064-43-125 are capable of handling traffic loads associated with the required traffic shift to the outside. The balance of the outside shoulder is required to be reconstructed as a full shoulder as a part of the RFP. To minimize traffic shifts and the associated inconvenience to traffic, we have elected to complete reconstruction of the required sections of outside paved shoulder as Phase 1 of the project construction. By completing this work prior to shifting traffic, including any upgrades to the existing guardrail, we will eliminate any risk of the existing shoulder failing under traffic loads and provide maximum safety to the traveling public, as they drive closer than normal to the roadway edge. This approach also reduces the total number of traffic shifts and considers the geotechnical conditions of the existing subgrade.

As no right-of-way is to be acquired for this project, sequencing did not play a role in minimizing acquisition and the plans have been developed to avoid the need for temporary construction, permanent drainage, and utility easements. The Team has minimized the environmental impacts resulting from the bridge construction by designing a full bridge replacement with a single-span configuration, which will also reduce the time required to acquire the permits. Reducing risk of delay during the permitting stage was considered a factor in this decision. Other impacts to jurisdictional waterways have been minimized to the maximum extent possible through the sequencing.

All plan development and sequencing has and will have an eye towards safe and efficient completion of the work in order to deliver the project to VDOT as early as possible, and at or before the Substantial and Final Completion dates. The EVW Design-Build Team’s approach for completing the project with the sequencing narrative is to generalize the scheduled activities with an emphasis on safety to all parties impacted and to maximize the flow of traffic through the project limits. Our planned Sequence of Construction will proceed as follows:

Planned Sequence of Construction	
Initiation Phase – Mobilization and Project Start-up	
Description: Construction Mobilization, staging, document existing conditions and project start-up	
MOT Impacts:	Public Awareness campaign, temporary traffic control for sign installation
Construction Activity:	<ul style="list-style-type: none"> • Begin public outreach and awareness campaign to affected stakeholders, including installing Message Boards along the project corridor. • Install project construction signs. • Mobilize and stage equipment and materials. • Coordinate with the VDOT Project Manager and install the field office. • Photographically document the existing conditions of all pavements. • Contact Miss Utility before any excavation begins on the project.

Mitigation Strategies:	Public Awareness campaign including 'Pardon Our Dust' public involvement and outreach meetings and other media alerts; planning and scheduling; geotechnical investigations and environmental impact minimization studies
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Phase 1 – Outside Shoulder Construction	
Description: Reconstruct I-64 outside shoulders to full pavement section outside of previous I-64/I-295 project	
MOT Impacts:	Night and weekend lane closures of I-64 outside lanes
Construction Activity:	<ul style="list-style-type: none"> • Night-time lane closure operations will be utilized to perform the saw-cut operation and required guardrail upgrades. • Perform weekend lane closures beginning on Friday at 8:00PM to excavate and construct the required pavement section. • Place temporary pavement markings and complete outward shift of traffic. • While the above construction is on-going, median site preparation will be proceeding behind existing guardrail during <i>weekday daytime hours</i>. • Advance preparation for Rte. 623 temporary signal. Installation of Video Detection equipment for traffic monitoring through Rte. 623 Interchange.
Mitigation Strategies:	Maintain public awareness; limit lane closures to off-peak hours as studied and approved; coordinate with Virginia State Police (VSP); implement paving train plan in coordination with geotechnical engineers.

Phase 2 – Inside Lane/Shoulder and Bridge Construction	
Description: Shift traffic and build the inside I-64 EB and WB lanes and shoulders, including B-616 and B-617	
MOT Impacts:	Shift I-64 EB and WB traffic to outside lane and shoulder for inside lane work behind barrier; maintain 12' lanes on roadway and 11' lanes on the bridges.
Construction Activity:	<ul style="list-style-type: none"> • Install traffic cameras to monitor traffic flow throughout the project limits. • Shift traffic to the I-64 EB and WB outside lane and shoulder, and install concrete traffic barrier along the median side of I-64. • Demolish inside portion of existing bridges and construct initial phase of Bridges B-616 and B-617. <ul style="list-style-type: none"> a. Remove inside portions of substructure and superstructure. b. Install temporary sheeting and build new abutments. c. Place beams and complete bridge deck and parapet. • Construct new inside travel lane, inside shoulder and all median improvements. <ul style="list-style-type: none"> a. Clearing and erosion control devices. b. Drainage structures and box culvert extensions. c. Grading and paving operations, including cross-overs. d. Sign structure foundations and bridge pier protection systems. e. Guardrail and pavement markings.

Mitigation Strategies:	Maintain public awareness; limit lane closures to off-peak hours as studied and approved; provide for emergency pull-off on outside shoulders; limit environmental impacts via single span bridge replacement design.
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Phase 3 – Complete B-616 and B-617 and Reconstruct I-64/Rte. 623 Interchange
Description: Complete construction of B-616 and B-617, and reconstruct Route 623 and Ramps A and B.

MOT Impacts:	Shift I-64 EB and WB traffic to inside lanes for outside lane bridge construction; maintain 12' lanes on roadway and 12' lanes on the bridges; temporary lane closures on Ramp A, Ramp B and Route 623 for phased construction.
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Construction Activity:	<ul style="list-style-type: none"> • Shift traffic to allow construction of outside portions on bridges B-616 and B-617. • Complete demolition and reconstruction of Bridges B-616 and B-617. <ul style="list-style-type: none"> a. Remove remaining portions of existing substructure and superstructure b. Install temporary sheeting and build new abutments c. Place beams and complete bridge deck and parapet. • Reconstruct Ramp A, portions of Ramp B and Route 623. <ul style="list-style-type: none"> a. Utilize existing left shoulders for maintaining traffic, widen Ramp A and portions of Ramp B using phased construction. b. Install new signalization at Ramp “A”/Route 623 intersection. c. Widen and resurface Route 623.
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Mitigation Strategies:	Widening Ramps A and B to the right of Baseline to lessen impacts to traffic and reduce land disturbance; limit environmental impacts via single-span bridge replacement.
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Phase 4 - Mill and Overlay, Project Close-out
Description: Remove Traffic Controls, Mill and Overlay I-64, Complete project punchlist

MOT Impacts:	Remove traffic controls and shift traffic to final alignment; perform mill and overlay and punchlist work under temporary traffic controls at night using Virginia State Police.
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Construction Activity:	<ul style="list-style-type: none"> • Set up temporary nighttime lane closure operations as required and pave final overlay. • Install permanent pavement markings and rumble strips. • Install new cable gates, permanent signs. • Complete punchlist work.
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Mitigation Strategies:	Limit lane closures to night-time hours as studied and approved; coordinate with Virginia State Police. Continue public awareness plan.
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Public Involvement

The EVW Design-Build Team will coordinate with the VDOT Project Manager and Richmond District Public Affairs office to prepare all material and conduct a “Pardon Our Dust” public involvement program prior to any construction activities. These efforts will include obtaining a location for the meeting, advertisement, displays for the meeting and information for VDOT to update the web site. The purpose of the meeting will be to familiarize the public and project stakeholders with the project goals,

features, schedule and contact information during construction.

The EVW Design-Build Team will coordinate all meetings and public information with VDOT prior to releasing to the public. The I-64 project does not have any right-of-way impacts and VDOT has previously held a Public Hearing. Key stakeholders such as fire, rescue, police and County staff will be invited to all partnering meetings and will be informed of all major traffic shifts during construction. The EVW Design-Build Team will also coordinate with the Field Day of the Past Event to ensure all lanes are open to traffic during this event and that any oversized equipment for the event has appropriate access.

The EVW Design-Build Team's public involvement representative will address all correspondence and phone calls received concerning the project and coordinate these efforts with the Richmond District Public Affairs office. Any correspondence by a government official will be coordinated with VDOT and a draft response will be provided to VDOT within five business days. Monthly project updates will also be provided to VDOT and any project stakeholders.

4.5.2 Transportation Management Plan

A Type B Category III Transportation Management Plan (TMP) will be prepared in accordance with the requirements of IIM-241.5 and will include a temporary traffic control plan, a public communications plan, and a traffic operations plan, as described below and meeting the requirements of Section 2.10 of the RFP.

The development of the TMP will be led by *Dana Trone, P.E., PTOE* of WR&A in close coordination with EVW MOT Coordinator, *Russell Thompson* and EVW Safety Manager, *Sam Williams*. This collaboration has already begun with the development of the Technical and Price Proposals for this project. We have preliminarily analyzed the existing traffic data volumes along the corridor and determined appropriate lane closure periods for the project, in accordance with our recent experience along the I-64 corridor.

The critical element of the project is the reconstruction of the I-64 outside paved shoulders. To minimize the cost, impact to the traveling public and improve safety, we developed a plan that will allow the outside shoulders to be reconstructed as the first phase of construction. This required a detailed evaluation of the resources, means and methods by the EVW Design-Build Team members. We are confident this collaborative effort will provide VDOT a safe, low cost and low risk phase of construction.

As part of the development of the TMP, a Work Zone Traffic Impact Assessment will be performed to establish allowable work hours for lane closures. Traffic volume data will be collected for a seven day period and supplemented by the VDOT count station located along I-64 between Route 623 and Route 288. Analysis of traffic volumes along I-64 will be performed using QuickZone software and/or spreadsheet-based tools to establish appropriate time periods for lane closures in compliance with the RFP. Along Route 623, analysis will be performed to determine appropriate work hours for lane closures using a flagging operation.

Temporary Traffic Control Plan

A detailed Temporary Traffic Control Plan (TTCP) will be prepared in accordance with the MUTCD and Virginia Work Area Protection Manuals that address the safety and traffic control through the work zone during each construction phase. The TTCP will include all necessary traffic control devices including temporary signage, pavement markings, barrier, type and location of impact attenuators/end treatments, and temporary pavement. Twelve (12) foot travel lanes will be maintained along I-64 and ramps, and 11-

foot travel lanes will be maintained along Route 623 as specified in the RFP. The location of staging areas and construction access points will be identified for each stage of construction in addition to route and time of day restrictions for the delivery of materials and equipment to the site to minimize impacts to traffic.

A work zone speed limit of 55 mph will be requested along I-64 in accordance with TE-350 and submitted for approval by the Central Regional Traffic Engineer. A Work Zone Speed Analysis will be prepared to document conditions that would justify the need for a speed reduction including access to work areas and elimination of outside shoulders.

Public Communication and Outreach Plan: Multiple strategies will be utilized to minimize work zone impacts and to notify road users, the general public, area residents, and local businesses of the work zone and any proposed lane closures or detours that will be implemented during construction. Along I-64 specifically, the strategies will consider that many out-of-state motorists or drivers otherwise unfamiliar with the area may be traveling through the work zone. Work zone impact management strategies to improve work zone safety and reduce delay will include:

- Informal meetings will be held with affected stakeholders including the farming community located along Route 623 on both sides of I-64. The Field Day of the Past event is typically held on a weekend in September each year at the intersection of Route 623 and Route 622. This event results in very heavy traffic volumes along both I-64 and Route 623 and it will be critical that the EVW Design-Build Team coordinate with event organizers to ensure that lane closures and/or reduced lane widths do not impact accessibility to the event. A partial list of key stakeholders in the area include the multiple quarries (Vulcan, Luck and Martin Marietta), Route 623 Landfill, Short Pump Mall, Goochland County Fire & Rescue (Centerville Company 3) and Henrico County Fire & Rescue (Station 22) and the Park and Ride commuters that utilize the lot on the northeast corner of the Route 623 interchange.
- Information suitable for posting on VDOT's website will be provided to VDOT Public Affairs on a monthly basis beginning with the first plan submittal to include a project overview, sequence of construction, schedule, anticipated impacts to traffic, and contact information.
- Information will be provided to the Richmond District Office of Public Affairs for Traffic Alerts to notify motorists of anticipated impacts to traffic including lane closures, detours, etc.
- Coordination with affected property owners.
- Placement of changeable message signs will be used to notify motorists when lane closures and traffic shifts are planned along I-64, Route 623 and the Route 623 ramps.

Transportation Operations Plan

This component of the TMP will define strategies to facilitate operations throughout the construction duration. The following transportation operations strategies will be utilized:

- An incident management plan will be prepared describing emergency contacts, procedures to respond to traffic incidents in the work zone, detour routes in the event of an incident within various areas of the work zone, equipment to be utilized in the event of a detour, procedures for coordination with VDOT Richmond District Maintenance Section, Virginia State Police, and other local authorities.
- Traffic cameras will be installed at approximately four (4) locations to achieve visual coverage of the project limits early during construction to allow for continuous monitoring of the project from the Richmond TOC.
- VSP presence will be requested during critical periods including lane closure and major traffic shifts.
- In the event of a crash or other incident, the TMP will be reviewed to determine whether modifications should be made to improve safety in and around the work area.

4.6 Disadvantaged Business Enterprises

The EVW Design-Build Team is committed to achieving a minimum of a 10% DBE participation for the entire value of the contract. EVW will meet or exceed this participation rate based on our long history of meeting DBE goals and our aggressive outreach into the DBE community. In addition to successfully meeting or exceeding DBE participation requirements on numerous projects, *Jay Openshaw*, the DBPM, serves on the Transportation DBE Advisory Committee. EVW is also a supporter of many of Transportation DBE Advisory Committee functions and initiatives. Further, EVW has worked closely with Ms. Ida McPherson of DMBE, including supporting their many programs. EVW, in cooperation with DMBE has also hosted two open houses in the past year to increase our recognition in and of the DBE community.

The EVW Design-Build Team currently includes three DBE firms. They are *EBA Engineering Inc.*, as Quality Control Manager; *Engineering and Testing Services, Inc.* for QC Testing and *H&B Surveying and Mapping, LLC* for Design Survey. Additionally we anticipate clearing, pavement markings, guardrail, signalization, milling and trucking as high probability DBE scopes of work. Upon award and prior to the Purchase Order and Subcontract phase we will review our goals and prepare an action plan for DBE participation. This plan will include the following as minimum:

- Review VDOT and DMBE websites to search out DBE firms that match scope and geographical location.
- Solicit DBE vendors and contractors through SmartBidNet. This software allows tracking mass notification of appropriate DBE firms by e-mail or facsimile. Additionally the software tracks who has been solicited and their response to the solicitation. This same software provides access to all construction documents for their use.
- Area newspaper advertising soliciting proposals from DBE firms.
- Provide the option to accept pricing on a unit price or lump sum basis. While the EVW Design-Build Team is obligated to a lump sum contract, many subcontractors and suppliers are more comfortable with unit price as opposed to lump sum contracting.
- Review possibility of breaking scopes into smaller segments to allow smaller firms to be successful.
- Review payment options with potential subcontractors. Many smaller subcontractors do not have the financial wherewithal to wait for payment until 7 days after payment by the owner as prescribed by the contract. For this reason we provide options to accelerate payment to our subcontractors as necessary.
- Work with our subcontractors to encourage their use of DBE vendors as second tier subcontractors and suppliers.

Utilizing this plan will allow the EVW Design-Build Team to meet or exceed the 10% commitment on this project.

4.7 Proposal Schedule

Detailed Work Plan and Narrative

The Project Schedule was developed using Primavera Project Management software P6™. The purpose of the schedule is to illustrate the key milestones for the design, review, and construction of this project as well as provide a schedule of activities, durations, relationships and calendar impacts to the planned execution of the contract. The detailed schedule indicates our thorough understanding of the scope of work required to complete this project, our commitment to complete this project as safely and quickly as possible, and our understanding of the VDOT’s Design-Build process.

In order to manage this project we are proposing to schedule and track work based on a Work Breakdown Structure (WBS) focused on Project Start-up/Milestones, Contract Administration and Design, Submittals and Procurements, Phases 1, 2, 3 and 4 followed by Project Close-out. Key activities are listed below. Our schedule includes 7 day calendars for design and submittal reviews, 5 day per week calendars with anticipated monthly weather impacts and holidays, a weekend calendar (for work performed behind weekend lane closures, such as the outside shoulder widening) and a weather calendar for asphalt paving.

The weather calendar was assigned to most activities to assume for normal weather anticipated during the construction duration. Days of non-work were randomly assigned based on the anticipated number of days per month when work activities will be prohibited by weather and the effects of weather. The weather days per month assumed for this calendar are as follows:

- | | | | |
|------------|--------|-------------|--------|
| • January | 8 days | • July | 2 days |
| • February | 8 days | • August | 2 days |
| • March | 6 days | • September | 3 days |
| • April | 5 days | • October | 3 days |
| • May | 4 days | • November | 4 days |
| • June | 3 days | • December | 5 days |

In addition, a 7-day calendar was set up for activities that were not affected by weather, such as review, approval and fabrication of materials, curing, and contract execution. A paving calendar was developed that restricted all paving from around December 15th through the following March 15th. Finally, a 7-day work-week calendar was set up for anticipated work during weekend lane closures. This calendar was only applied to the Phase 1: Outside Shoulder Widening activities.

Key activities associated with each element are as follows:

Project Start-up

- Notice of Award (Milestone)
- Contract Execution
- Notice to Proceed (Milestone)
- Shift Traffic to Outside Lane and Shoulder (Milestone)
- Shift Traffic to Inside Lane and Shoulder (Milestone)
- Remove Barrier and Shift Traffic to Final Alignment (Milestone)
- Substantial and Final Completion (Milestone)

Contract Administration and Design

- QA/QC Plan
- Scope Validation
- Environmental Permits

- Geotechnical Field Work and Survey
- Public Outreach Plan and Execution
- “Pardon our Dust” Meeting (Milestone)
- Traffic Management Plan
- Design, Review and Approval of Work Package 1-Outside shoulder reconstruction
- Design, Review and Approval of Work Package 2a.-B-616 and B-617 Stage 1 Report
- Design, Review and Approval of Work Package 2a.-B-616 and B-617 Final Design
- Design, Review and Approval of Work Package 3 Inside Lane and Shoulder and Balance of Project

Phase 1

- Sawcut outside shoulder/outside lane joint where outside shoulder pavement reconstruction is required.
- Upgrade guardrail along outside shoulder as needed.
- Construct roughly 14,450 lineal feet of full depth pavement on entire width of the outside shoulder of westbound I-64.
- Construct roughly 10,170 lineal feet of full depth pavement on entire width of the outside shoulder of eastbound I-64.
- Restripe I-64 eastbound and westbound to shift traffic outward to allow Phase 2 median and bridge construction.

Phase 2

- Shift traffic outward
- Install concrete barrier

Median Road Work

- Install Erosion and Sediment control concurrent with clearing
- Perform cut and fill operations and rough grade for new lanes and shoulders
- Construct box culvert extensions
- Install storm drainage pipe and structures
- Perform demolition of median section of bridges
- Install Traffic Cameras
- Begin Traffic Monitoring (Milestone)

Median Bridge Work

- Install Temporary Sheeting
- Demo Portion of Bridges
- Construct Abutment A at Bridges
- Construct Abutment B at Bridges
- Erect Beams
- Construct Bridge Decks and Approach Slabs

Phase 3

- Shift traffic to inside lanes
- Install concrete barrier

Route 623 Interchange

- Install Route 623 Temporary Signals.
- Widen Ramps and Overlay Route 623
- Install and test new Signals

Median Bridge Work

- Install Temporary Sheeting

- Demo Portion of Bridges
- Construct Abutment A at Bridges
- Construct Abutment B at Bridges
- Erect Beams
- Construct Bridge Decks and Approach Slabs
- VDOT inspection of bridges

Phase 4

- Remove Barrier and shift traffic to final alignment
- Perform mill & overlay
- Install final pavement markings

Submittals and Procurement

- Temporary Signal
- Permanent Signals, Foundation and Pole
- Concrete Bridge Beams
- Sign Structures
- Precast Box Culverts (Where applicable)

Project Closeout

- Punchlist
- Substantial and Final Completion

Critical Path

The critical path is defined as the “Longest Path.” A list of Critical Path items is included below. The longest path in the Baseline Schedule begins with Notice of Award and Contract Execution followed Notice to Proceed. The next activities on the critical path are related to the QA/QC plan followed by Phase 1 full outside shoulder reconstruction and shifting traffic to the outside shoulder and lane. Construction of the two phases of Bridges B-616 and B-617, separated by a traffic shift, are the dominant activities on the critical path until the bridges are complete and the remaining temporary barrier can be removed. Phase 4, the mill and overlay becomes the critical path at this point followed by permanent pavement markings and closeout activities of punchlist work and final completion.

Activity ID	Activity Name	Original Duration	Early Start	Early Finish
1000	Notice of Award	0	18-Sep-13	
1010	Contract Execution	87	18-Sep-13	17-Oct-13
1020	Notice to Proceed / Commencement	0	17-Oct-13	
1030	Mobilization & Staging	120	2-Jan-14	11-Feb-14
1040	Construction Signs	10	11-Feb-14	27-Feb-14
1060	Shift Traffic to Inside Lane & Shoulder at Bridges	0	17-Dec-14	
1070	Remove Barrier & Shift Traffic to Final Alignment	0		8-Oct-15
1080	Punchlist & Project Dress-up	6	11-Nov-15	20-Nov-15
1090	Substantial & Final Completion	0		20-Nov-15
Contract Administration & Design		37	17-Oct-13	2-Jan-14
1100	Develop QA/QC Plan & Submit to VDOT	90	17-Oct-13	16-Nov-13
1110	VDOT Review of QA/QC Plan	63	16-Nov-13	7-Dec-13

	1120	QA/QC Plan Revisions	15	7-Dec-13	12-Dec-13
	1130	VDOT QA/QC Plan Review & Approval	63	12-Dec-13	2-Jan-14
Phase 1			18	28-Feb-14	5-Apr-14
Outside Shoulder Construction			18	28-Feb-14	5-Apr-14
	1510	Install Temporary Traffic Controls	2	28-Feb-14	3-Mar-14
	1520	Erosion Controls & Clearing	5	4-Mar-14	11-Mar-14
	1530	Sawcut I-64 WB Shoulders - Night Lane Closure	7	10-Mar-14	18-Mar-14
	1540	Full Depth I-64 WB Shoulders	14	20-Mar-14	5-Apr-14
Bridge Construction			0		
Phase 2			130	7-Apr-14	17-Dec-14
Inside Lane and Shoulder Widening			4	7-Apr-14	14-Apr-14
	2000	Shift WB Traffic & Set Concrete Barrier	5	7-Apr-14	14-Apr-14
Bridge B-616 & B-617 Construction - Inside			126	15-Apr-14	17-Dec-14
	2300	Build Pier 1 & 2 Access Ramps - B617	4	15-Apr-14	21-Apr-14
	2310	Build Pier 1 & 2 Access Ramps - B616	4	22-Apr-14	25-Apr-14
	2315	Install Sheet Piling Between Phases	4	29-Apr-14	2-May-14
	2320	Rem. Portion Existing Superstructure - B616/7	17	5-May-14	3-Jun-14
	2330	Remove Portion Existing Pier 1 - B616/7	15	5-Jun-14	26-Jun-14
	2340	Remove Portion Existing Pier 2 - B616/7	15	27-Jun-14	22-Jul-14
	2350	Remove Pier 1 Access Ramps - B616/7	3	23-Jul-14	25-Jul-14
	2360	Construct Abutment A - B616	15	28-Jul-14	20-Aug-14
	2370	Construct Abutment A - B617	15	5-Aug-14	27-Aug-14
	2380	Place Riprap Abutment A - B616/7	4	28-Aug-14	4-Sep-14
	2390	Remove Pier 2 Access Ramps - B616/7	3	28-Aug-14	3-Sep-14
	2400	Construct Abutment B - B616	15	4-Sep-14	26-Sep-14
	2410	Construct Abutment B - B617	15	12-Sep-14	7-Oct-14
	2420	Place Riprap Abutment B - B616/7	3	8-Oct-14	10-Oct-14
	2430	Erect Beams - B616/7	6	10-Oct-14	17-Oct-14
	2440	Construct Bridge Deck B616	20	20-Oct-14	20-Nov-14
	2450	Construct Bridge Deck B617	20	28-Oct-14	4-Dec-14
	2460	Build Approach Slabs - B616/7	6	2-Dec-14	10-Dec-14
	2470	Install Concrete Parapets - B616/7	4	9-Dec-14	17-Dec-14
	2480	Install Joint Sealer	2	12-Dec-14	17-Dec-14
Phase 3			136	17-Dec-14	29-Sep-15
Route 623 Interchange			7	17-Dec-14	30-Dec-14
	3000	Shift Traffic to Inside Lane & Shoulder at Bridges	5	17-Dec-14	30-Dec-14
Bridge B616 & B617 Construction - Complete			129	31-Dec-14	29-Sep-15
	3500	Build Pier 1 Access Ramps - B616/7	3	31-Dec-14	6-Jan-15
	3510	Build Pier 2 Access Ramps - B616/7	3	8-Jan-15	13-Jan-15
	3520	Install Sheet Piling between Phases	4	14-Jan-15	20-Jan-15
	3530	Rem. Portion Existing Superstructure - B616/7	22	27-Jan-15	10-Mar-15
	3540	Remove Portion Existing Pier 1 - B616/7	15	11-Mar-15	10-Apr-15
	3550	Remove Portion Existing Pier 2 - B616/7	15	13-Apr-15	6-May-15
	3560	Remove Pier 1 Access Ramps - B616/7	3	7-May-15	11-May-15

3570	Construct Abutment A - B616	14	12-May-15	3-Jun-15
3580	Construct Abutment A - B617	14	19-May-15	10-Jun-15
3590	Place Riprap Abutment A - B616/7	3	11-Jun-15	16-Jun-15
3600	Remove Pier 2 Access Ramps - B616/7	3	15-Jun-15	17-Jun-15
3610	Construct Abutment B - B616	14	18-Jun-15	10-Jul-15
3620	Construct Abutment B - B617	14	24-Jun-15	16-Jul-15
3630	Place Riprap Abutment B - B616/7	3	17-Jul-15	21-Jul-15
3640	Erect Beams - B616/7	6	21-Jul-15	28-Jul-15
3650	Construct Bridge Deck B616	20	30-Jul-15	28-Aug-15
3660	Construct Bridge Deck B617	20	6-Aug-15	3-Sep-15
3670	Build Approach Slabs - B616/7	6	2-Sep-15	14-Sep-15
3680	Install Concrete Parapets - B616/7	6	11-Sep-15	18-Sep-15
3690	Deck Grooving	4	21-Sep-15	24-Sep-15
3700	Install Joint Sealer	2	25-Sep-15	29-Sep-15
Phase 4 - Mill and Overlay		24	30-Sep-15	10-Nov-15
4000	Rem. Barrier & Shift Traffic to Final Alignment	6	30-Sep-15	8-Oct-15
4010	Perform Final Mill & Overlay	15	9-Oct-15	3-Nov-15
4020	Install Final Pavement Markings	5	4-Nov-15	10-Nov-15
1080	Punchlist & Project Dress-Up	6	11-Nov-15	20-Nov-15

Means and Methods

There is no anticipation of extraordinary construction means and methods on this project with the exception of delivery and setting of the bridge beams. Outside shoulder reconstruction will utilize excavators, dozers, rollers and on road trucks for excavation, grading and stone placement. Standard means and methods are anticipated for all underdrain and asphalt paving. To ensure an ability to safe-up the outside shoulder in the event of a problem such as weather we anticipate executing this work with a “train” concept. We intend to close the outside lane at 8:00 PM on Friday evening. The intent is to have one excavation crew (Excavator, dozer, roller, one foreman, three operators and two laborers) starting at the end of the project with a second one beginning roughly 1,000 feet ahead with both crews working in the same direction. Each crew will excavate/grade 1,000 feet of the shoulder per shift to prepare a total of 2,000 feet per shift for stone placement. A geotechnical inspector would be on site to allow any undercutting to be completed as the crew advanced. Stone placement would occur with one crew and cover the entire 2,000 feet excavated. This crew would begin as soon as there was 750 feet of grade available. The first underdrain crew would then begin immediately after 500 feet of stone has been placed with the second being added as soon as work area allowed. Immediately behind the underdrain crews would be a fine grade crew to prep the stone to receive base asphalt. By our calculations we will need two crews placing asphalt. In the event of unanticipated weather or any other event we will have the option of temporarily filling the shoulder with stone prior to opening the outside lane of I-64 prior to 6:00 AM on Monday morning.

Off-road trucks and pans will be used to move dirt within the median. Workers will be protected by existing guardrail and temporary barrier for this work. The bridge work is anticipated to use standard means and methods with the exception of setting the beams. These beams will be permitted loads and as such will be delivered to the site as allowed by the permits. Once on site the beams will be delivered out of traffic by placing them behind the temporary barrier in the vicinity of the bridge. Setting of these

beams will likely require multiple cranes on each pick and will require a lane to be closed adjacent to the bridge, thus dictating either night or weekend work to set the beams.

Key Assumptions:

- VDOT will be receptive to weekend lane closures to perform portions of the work, particularly the outside shoulder widening.
- No Right-of-Way will need to be acquired, and there will be no significant utility relocation.
- Coordination with Verizon to hook-up the proposed traffic cameras will require approximately 75 calendar days.

RFP Proposal Schedule **Project: 0064-964-110, C501, B610-B614, B616-B617, D601-D606** **I-64 Widening & Rte. 623 Interchange Improvements**

Activity ID	Activity Name	Orig. Dur'n	Early Start	Early Finish	Total Float	Predecessors	Successors	2014												2015												2016					
								S	O	N	D	J	F	M	A	M	J	Jul	A	S	O	N	D	Jan	F	M	Apr	M	J	Jul	A	S	O	N	D	Jan	F
0064-964-110, C501, B616, B617		448	18-Sep-13	20-Nov-15	0			Sep-13 → 20-Nov-15																													
Project Start-up and Close-out		448	18-Sep-13	20-Nov-15	0			Sep-13 → 20-Nov-15																													
1000	Notice of Award	0	18-Sep-13		0		1010	◆ Notice of Award																													
1010	Contract Execution	29	18-Sep-13	17-Oct-13	0	1000	1020	Contract Execution																													
1020	Notice to Proceed / Commencement	0	17-Oct-13		0	1010	1030, 1100, 1150, 1180, 1220, 1300	◆ Notice to Proceed / Commencement																													
1030	Mobilization & Staging	40	02-Jan-14	11-Feb-14	0	1020, 1130	1040	Mobilization & Staging																													
1040	Construction Signs	10	11-Feb-14	27-Feb-14	0	1030	1510	Construction Signs																													
1050	Shift Traffic to Outside Lane & Shoulder	0	22-Apr-14		324	1560	2005	◆ Shift Traffic to Outside Lane & Shoulder																													
1060	Shift Traffic to Inside Lane & Shoulder at Bridges	0	17-Dec-14		0	2480	3000	◆ Shift Traffic to Inside Lane & Shoulder at Bridges																													
1070	Remove Barrier & Shift Traffic to Final Alignment	0		08-Oct-15	0	4000	4010	◆ Remove Barrier & Shift Traffic to Final Alignment																													
1080	Punchlist & Project Dress-up	6	11-Nov-15	20-Nov-15	0	4020	1090	◆ Punchlist & Project Dress-up																													
1090	Substantial & Final Completion	0		20-Nov-15	0	1080, 1140, 2060, 1170,		◆ Substantial & Final Completion																													
Contract Administration & Design		426	17-Oct-13	13-Nov-15	4			17-Oct-13 → 13-Nov-15																													
1100	Develop QA/QC Plan & Submit to VDOT	30	17-Oct-13	16-Nov-13	0	1020	1110	◆ Develop QA/QC Plan & Submit to VDOT																													
1110	VDOT Review of QA/QC Plan	21	16-Nov-13	07-Dec-13	0	1100	1120	◆ VDOT Review of QA/QC Plan																													
1120	QA/QC Plan Revisions	5	07-Dec-13	12-Dec-13	0	1110	1130	◆ QA/QC Plan Revisions																													
1130	VDOT QA/QC Plan Review & Approval	21	12-Dec-13	02-Jan-14	0	1120	1030, 1140	◆ VDOT QA/QC Plan Review & Approval																													
1140	QA/ QC & Project Management	660	02-Jan-14	24-Oct-15	27	1130	1090	◆ QA/ QC & Project Management																													
1150	Scope Validation Period	120	17-Oct-13	14-Feb-14	605	1020	1160	◆ Scope Validation Period																													
1160	Scope Validation Findings Report	7	14-Feb-14	21-Feb-14	605	1150	1170	◆ Scope Validation Findings Report																													
1170	VDOT Scope Validation Submission Review	21	21-Feb-14	28-Mar-14	342	1160	1090	◆ VDOT Scope Validation Submission Review																													
1180	Environmental Permits - Permit Development	45	15-Jan-14	01-Mar-14	100	1020, 1420	1190	◆ Environmental Permits - Permit Development																													
1190	Environmental Permits - Agency Review & Approval	30	01-Mar-14	31-Mar-14	100	1180	2030	◆ Environmental Permits - Agency Review & Approval																													
1200	Field Survey and SUE	75	17-Oct-13	31-Dec-13	674	1020	1210	◆ Field Survey and SUE																													
1210	Utility Relocation (Fire Hydrant)	5	12-Mar-14	18-Mar-14	343	1200, 1520	1560	◆ Utility Relocation (Fire Hydrant)																													
1215	Initial Geotechnical Investigation	16	17-Oct-13	11-Nov-13	34	1020	1220	◆ Initial Geotechnical Investigation																													
1220	Complete Geotechnical Field Work & Survey	30	11-Nov-13	11-Dec-13	70	1020, 1300, 1215	1230	◆ Complete Geotechnical Field Work & Survey																													
1230	Geotechnical Report Review	30	11-Dec-13	10-Jan-14	70	1220	1540	◆ Geotechnical Report Review																													
1240	Public Outreach Plan Develop. & Implement.	120	17-Oct-13	14-Feb-14	13	1020	1250	◆ Public Outreach Plan Develop. & Implement.																													
1250	Public Involvement / 'Pardon Our Dust' Mtg	0		17-Feb-14	8	1240	1510, 1260	◆ Public Involvement / 'Pardon Our Dust' Mtg																													
1260	Ongoing Public Outreach	610	17-Feb-14	20-Oct-15	31	1250	1090	◆ Ongoing Public Outreach																													
1270	TMP - Traffic Analysis	30	17-Oct-13	16-Nov-13	57	1020	1280	◆ TMP - Traffic Analysis																													
1280	TMP - Report Submission	30	16-Nov-13	16-Dec-13	57	1270	1290	◆ TMP - Report Submission																													
1290	TMP - VDOT Review & Approval	21	16-Dec-13	06-Jan-14	57	1280	1330	◆ TMP - VDOT Review & Approval																													
1300	Design - Work Pkg 1 - Outside Shoulders	45	17-Oct-13	01-Dec-13	46	1020	1310, 1420, 1220	◆ Design - Work Pkg 1 - Outside Shoulders																													
1310	Work Package 1 - VDOT Review	21	01-Dec-13	22-Dec-13	46	1300	1320	◆ Work Package 1 - VDOT Review																													
1320	Work Package 1 - Revise & Resubmit	5	22-Dec-13	27-Dec-13	46	1310	1330	◆ Work Package 1 - Revise & Resubmit																													
1330	Work Package 1 - VDOT Approval	21	27-Dec-13	17-Jan-14	46	1320, 1290	1510	◆ Work Package 1 - VDOT Approval																													
1340	Design - W.P. 2a - B616 & B617 Stage I Report	45	17-Oct-13	01-Dec-13	8	1020	1350, 1380	◆ Design - W.P. 2a - B616 & B617 Stage I Report																													
1350	Work Package 2a - VDOT Review	21	01-Dec-13	22-Dec-13	41	1340	1360	◆ Work Package 2a - VDOT Review																													
1360	Work Package 2a - Revise & Resubmit	5	22-Dec-13	27-Dec-13	41	1350	1370	◆ Work Package 2a - Revise & Resubmit																													
1370	Work Package 2a - VDOT Approval	21	27-Dec-13	17-Jan-14	41	1360	1380	◆ Work Package 2a - VDOT Approval																													
1380	Design - W.P. 2b - B616 & B617 Final Design	80	01-Dec-13	19-Feb-14	8	1340, 1370	1390	◆ Design - W.P. 2b - B616 & B617 Final Design																													
1390	Work Package 2b - VDOT Review	21	19-Feb-14	12-Mar-14	8	1380	1400	◆ Work Package 2b - VDOT Review																													
1400	Work Package 2b - Revise & Resubmit	5	12-Mar-14	17-Mar-14	8	1390	1410	◆ Work Package 2b - Revise & Resubmit																													
1410	Work Package 2b - VDOT Approval	21	17-Mar-14	07-Apr-14	8	1400	5030, 2300	◆ Work Package 2b - VDOT Approval																													
1420	Design - W.P. 3 - Inside Lane/Shldrs - FI Submiss	45	01-Dec-13	15-Jan-14	50	1020, 1300	1430, 1180	◆ Design - W.P. 3 - Inside Lane/Shldrs - FI Submiss																													

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

UPC 70542 / Contract ID C00070542DB55

Page 1 of 4

ATTACHMENT 4.0.1.1

I-64 Widening and Route 623 Interchange Improvements

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	Appendices
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	Appendices
Letter of Submittal	NA	Sections 4.1		Vol. I: Page 1
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	Vol. I: Page 1
Offeror's official representative information	NA	Section 4.1.1	yes	Vol. I: Page 1
Authorized representative's original signature	NA	Section 4.1.1	yes	Vol. I: Page 1
Declaration of intent	NA	Section 4.1.2	yes	Vol. I: Page 1
120 day declaration	NA	Section 4.1.3	yes	Vol. I: Page 1
Point Of Contact	NA	Section 4.1.4	yes	Vol. I: Page 1
Principal Officer information	NA	Section 4.1.5	yes	Vol. I: Page 1
Substantial and Final Completion Date(s)	NA	Section 4.1.6	yes	Vol. I: Page 1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.7	no	Appendices
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.8	no	Appendices
Design Compliance Statement	NA	Section 4.1.9	yes	Vol. I: Page 1

ATTACHMENT 4.0.1.1

I-64 Widening and Route 623 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
Offeror's Qualifications	NA	Section 4.2		Vol. I: Page 2
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2.1	yes	Vol. I: Page 2
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	Vol. I: Page 2
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	Vol. I: Page 2
Design Concept	NA	Section 4.3		Vol. I: Pages 3-11
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	Vol. I: Pages 5-9 *Plans in Vol. II: Pages 27-53
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	Vol. I: Pages 9-11 *Plans in Vol. II: Pages 54-59
Project Approach	NA	Section 4.4		Vol. I: Pages 12-19
Environmental Management	NA	Section 4.4.1	yes	Vol. I: Page 12-13
Utilities	NA	Section 4.4.2	yes	Vol. I: Pages 13-15
Geotechnical	NA	Section 4.4.3	yes	Vol. I: Pages 15-16
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	Vol. I: Pages 16-19

ATTACHMENT 4.0.1.1

I-64 Widening and Route 623 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
Construction of Project	NA	Section 4.5		Vol. I: Pages 20-25
Sequence of Construction	NA	Section 4.5.1	yes	Vol. I: Pages 20-24
Transportation Management Plan	NA	Section 4.5.2	yes	Vol. I: Pages 24-25
Disadvantaged Business Enterprises (DBE)	NA	Section 4.6		Vol. I: Page 26
Written statement of percent DBE participation	NA	Section 4.6	yes	Vol. I: Page 26
DBE subcontracting narrative	NA	Section 4.6	yes	Vol. I: Page 26
Proposal Schedule	NA	Section 4.7		Vol. I: Pages A1-A10
Proposal Schedule	NA	Section 4.7.1	no	Vol. I: Pages A7-A10
Proposal Schedule Narrative	NA	Section 4.7.2	no	Vol. I: Pages A1-A6
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.7	no	Original Copy 1 of 10 contains CD attached to 4.7 Schedule Section Tab

ATTACHMENT 3.6

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**

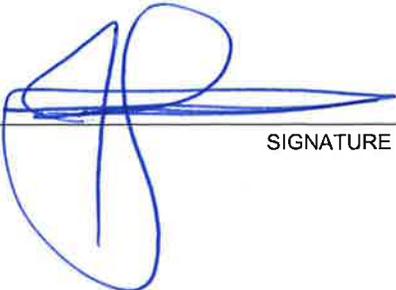
RFQ NO. C00070542DB55
PROJECT NO.: 0064-964-110, P101, RW201, C501

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 7, 2013 – RFP
(Date)
2. Cover letter of April 23, 2013 - Addendum No. 1
(Date)
3. Cover letter of May 17, 2013 - Addendum No. 2
(Date)


SIGNATURE

5/30/2013
DATE

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

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

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's **August 14, 2012** Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the **I-64 Widening and Route 623 Interchange Improvements, Project No. 0064-964-110** ("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 and 00/100 Dollars (\$30,000.00)** ("Proposal Payment"), which payment constitutes payment in full to Offeror for the conveyance of Offeror's Intellectual Property to VDOT in accordance with this Agreement. Payment of the Proposal Payment is conditioned upon: (a) Offeror's Proposal being, in the sole discretion of VDOT, responsive to the RFP; (b) Offeror complying with all other terms and conditions of this Agreement; and (c) either (i) Offeror is not awarded the Design-Build Contract, or (ii) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror.

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

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

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

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

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

9. **Miscellaneous.**

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

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

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

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

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

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

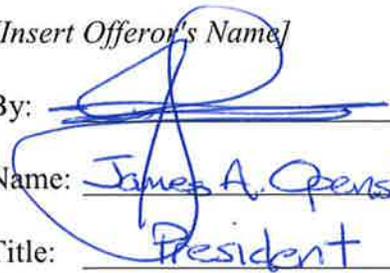
VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

[Insert Offeror's Name]

By:  _____

Name: James A. Openshaw

Title: President

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project No.: 0064-964-110

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

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

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

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

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

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

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

 _____ Signature	5/30/2013 _____ Date	President _____ Title
E. V. Williams Inc. _____ Name of Firm		

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

Project No.: 0064-964-110

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

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

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



Signature

May 22, 2013

Date

Senior Vice President

Title

Whitman, Requardt & Associates, LLP

Name of Firm

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

Project No.: 0064-964-110

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

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

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

 Signature	5/17/2013 Date	PRESIDENT Title
---	-------------------	--------------------

BRYANT CONTRACTING, INC.
Name of Firm

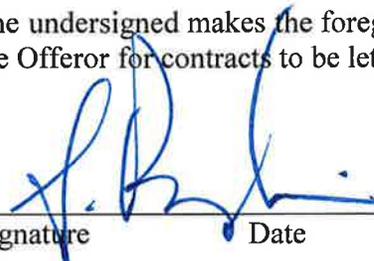
ATTACHMENT 11.8.6(b)
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project No.: 0064-964-110

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

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

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

	05/17/2013	
_____ Signature	_____ Date	_____ Vice President Title

George Nice and Sons, Inc.

Name of Firm

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

Project No.: 0064-964-110

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

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

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

 Signature	<u>05-14-13</u> Date	<u>First Executive Vice President</u> Title
--	-------------------------	--

EBA Engineering, Inc.
Name of Firm

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

Project No.: 0064-964-110

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

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

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



Signature

5/14/13

Date

Vice President

Title

Engineering and Testing Services, Inc

Name of Firm

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

Project No.: 0064-964-110

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

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

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



Signature

Paul A. Baginski, PE

May 23, 2013

Date

Area Manager

Title

AMEC Environment & Infrastructure, Inc.

Name of Firm

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

Project No.: 0064-964-110

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

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

Jedee R. Bynside 5/14/13 Vice President
Signature Date Title

H & B Surveying and Mapping, LLC
Name of Firm

VOLUME I: Technical Proposal



I-64 Widening and Route 623 Interchange Improvements

A Design-Build Project

From: 0.99 Miles West of Route 623
(WB – Route 622, EB – Route 623)
To: 0.38 Miles West Route 271 (Pouncey
Tract Road) in Short Pump

State Project No.: 0064-964-110, P101, C501, B610-B614, B617,
B616, D601, D606

Federal Project No.: NH-064-2(150)

Contract ID Number: C00070542DB55

Goochland County and
Henrico County, Virginia



May 30, 2013



CD COPY

VOLUME II: Roadway and Structural Design Concept Plans

I-64 Widening and Route 623 Interchange Improvements

A Design-Build Project

From: 0.99 Miles West of Route 623 (WB – Route 622, EB – Route 623)
To: 0.38 Miles West Route 271 (Pouncey Tract Road) in Short Pump

State Project No.: 0064-964-110, P101, C501, B610-B614, B617, B616, D601, D606
Federal Project No.: NH-064-2(150)
Contract ID Number: C00070542DB55

Goochland County and Henrico County, Virginia



IN ASSOCIATION WITH:

Bryant Contracting, Inc. (SWaM)
George Nice & Sons, Inc. (SWaM)
EBA Engineering, Inc. (DBE)

Engineering & Testing Services, Inc. (DBE)
AMEC Environment & Infrastructure, Inc.
H&B Surveying and Mapping, LLC (DBE)

PROJECT MANAGER: _____
 SURVEYED BY: _____
 DESIGN SUPERVISED BY: *John E. Maddox*
 DESIGNED BY: *Whitman, Bequardt & Associates, LLP (804) 272-8700*

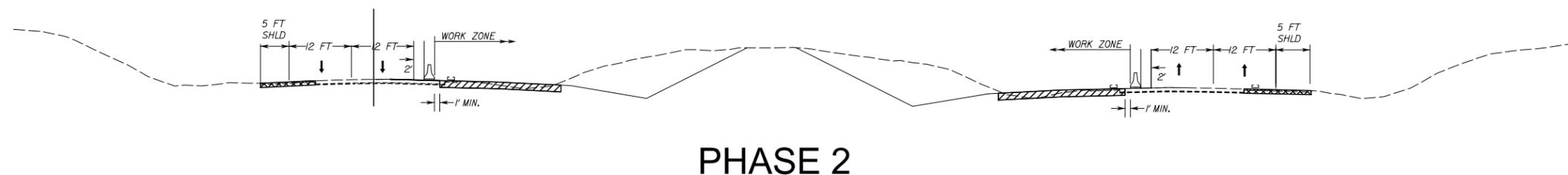
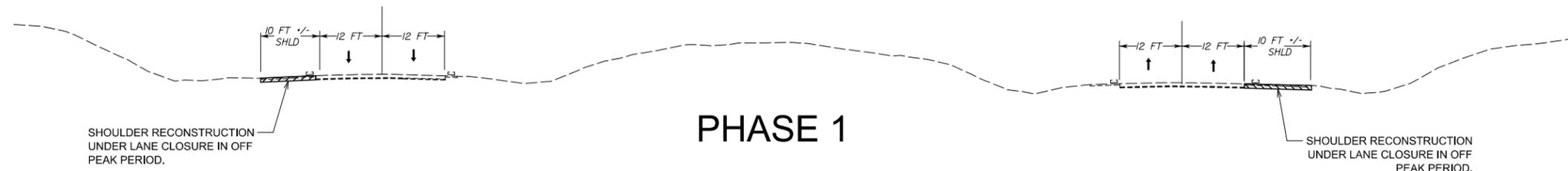
REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	1K(1)

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

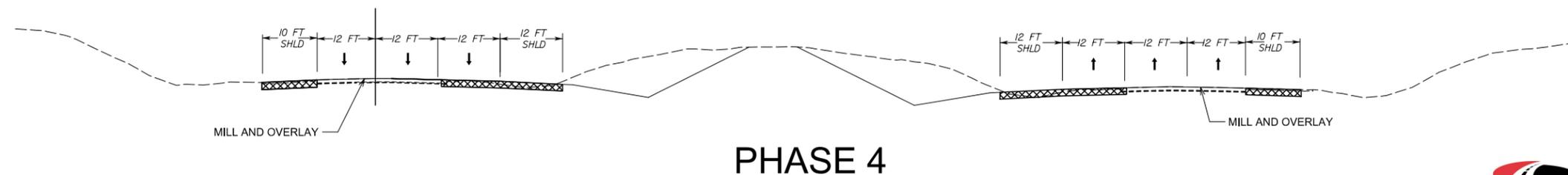
SEQUENCE OF CONSTRUCTION

WEST OF RTE. 623 (1572+00 TO 1640+50)
 WITHIN RTE. 288 INTERSECTION (1670+00 TO 1704+00)

* NO WIDENING ON EASTBOUND LANES BETWEEN 1572+00 AND 1622+00



NOTE PHASE 3 - ROUTE 623 WIDENING, ROUTE 623 RAMP CONSTRUCTION, AND BRIDGE CONSTRUCTION AT LITTLE TUCKAHOE CREEK



PROJECT	SHEET NO.
0064-964-110	1K(1)

d70542001k1.dgn

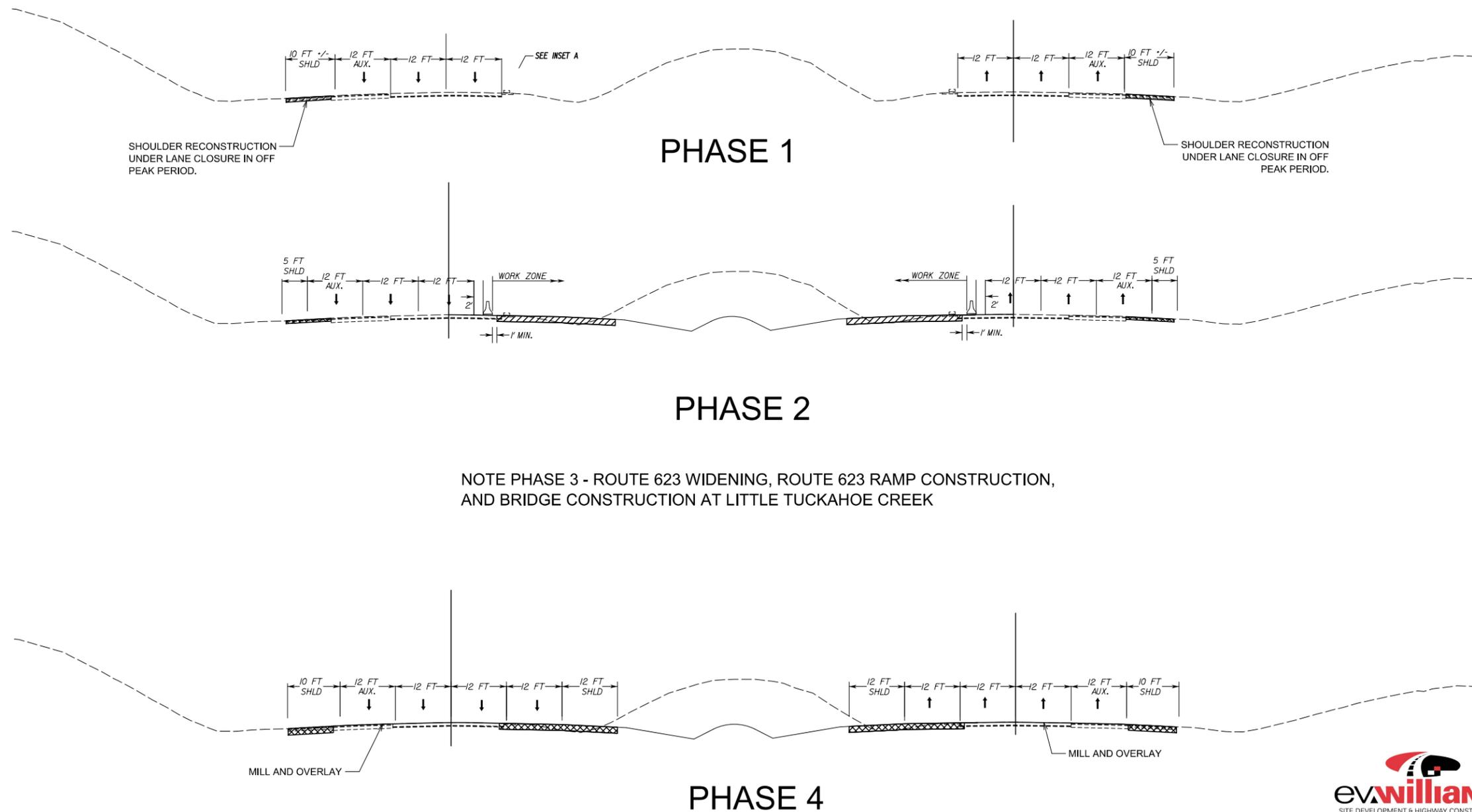
PROJECT MANAGER: _____
 SURVEYED BY: _____
 DESIGN SUPERVISED BY: *John E. Maddox*
 DESIGNED BY: *Whitman, Beardard & Associates, LLP (804) 272-8700*

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	1K(2)

SEQUENCE OF CONSTRUCTION

RTE. 623 TO WEST OF RTE. 288 (1640+50 TO 1670+00)
 EAST OF RTE 288 INTERSECTION TO WEST OF
 RTE 295 INTERCHANGE (1704+00 TO 1728+50)

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



NOTE PHASE 3 - ROUTE 623 WIDENING, ROUTE 623 RAMP CONSTRUCTION, AND BRIDGE CONSTRUCTION AT LITTLE TUCKAHOE CREEK



PROJECT	SHEET NO.
0064-964-110	1K(2)

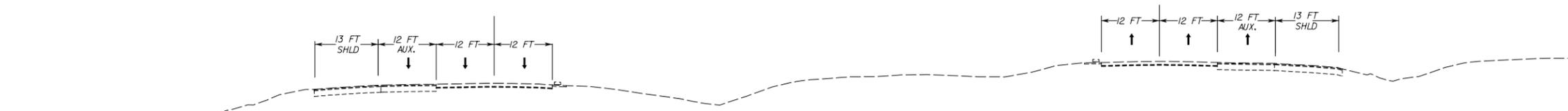
PROJECT MANAGER: _____
 SURVEYED BY: _____
 DESIGN SUPERVISED BY: *John E. Maddox*
 DESIGNED BY: *Whitman, Bequard & Associates, LLP (804) 272-8700*

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	1K(3)

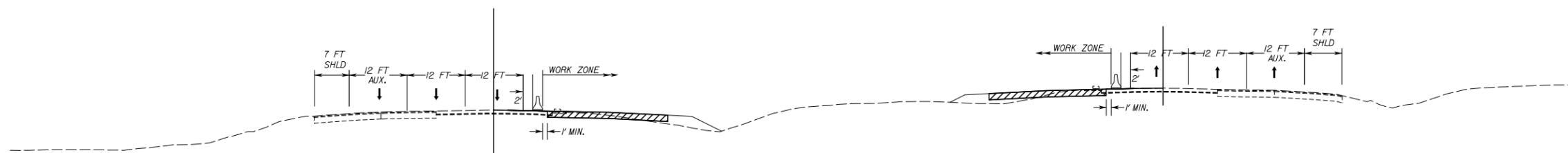
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SEQUENCE OF CONSTRUCTION

WEST OF RTE 295 INTERCHANGE TO PROJECT LIMITS (1728+50 TO 201+00)

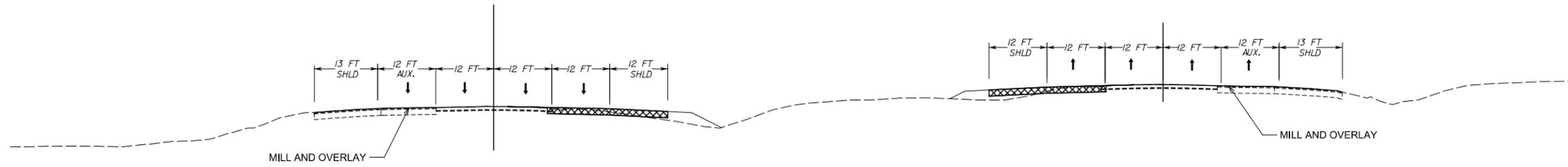


PHASE 1 (EXISTING)



PHASE 2

NOTE PHASE 3 - ROUTE 623 WIDENING, ROUTE 623 RAMP CONSTRUCTION, AND BRIDGE CONSTRUCTION AT LITTLE TUCKAHOE CREEK



PHASE 4

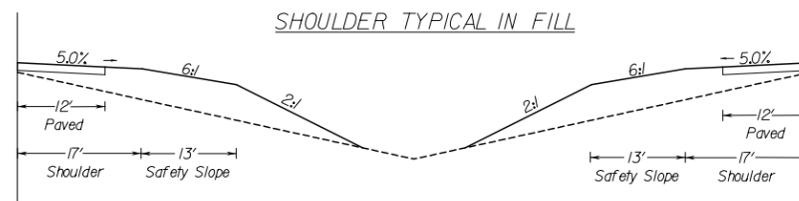
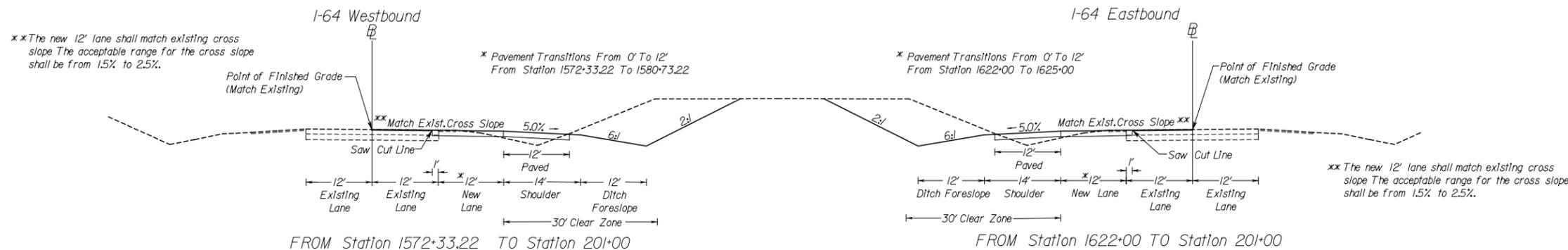


PROJECT	SHEET NO.
0064-964-110	1K(3)

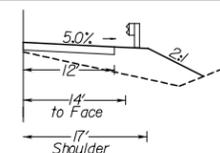
PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond District)*
 DESIGN BY *Whitman, Requardt & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

TYPICAL SECTIONS

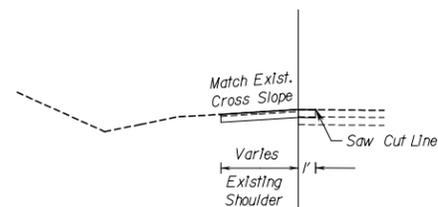
REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	64	0064-964-110, RW-201, C-501	2A(1)
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT				
Whitman, Requardt & Associates Richmond, Virginia ROADWAY ENGINEER		Whitman, Requardt & Associates Richmond, Virginia HYDRAULIC ENGINEER		



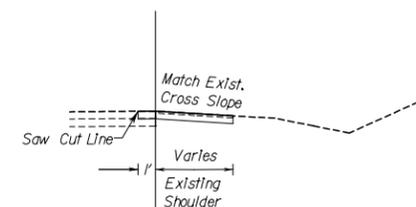
SHOULDER TYPICAL with GUARDRAIL



OUTSIDE SHOULDER REPLACEMENT



OUTSIDE SHOULDER REPLACEMENT



NOTES:

- 1) See The Geotechnical Engineering Data Report For Proposed Pavement Design Recommendations
- 2) See Sheet 5 of 5 for Transverse Section of Route 64 over Little Tuckahoe Creek.
- 3) Profile Grades for I-64 Match Existing Grades. Maximum Westbound Profile Grade is +2.88% +/- and Maximum Eastbound Profile Grade is +2.35% +/-.

TECHNICAL PROPOSAL

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.
0064-964-110	2A(1)

PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

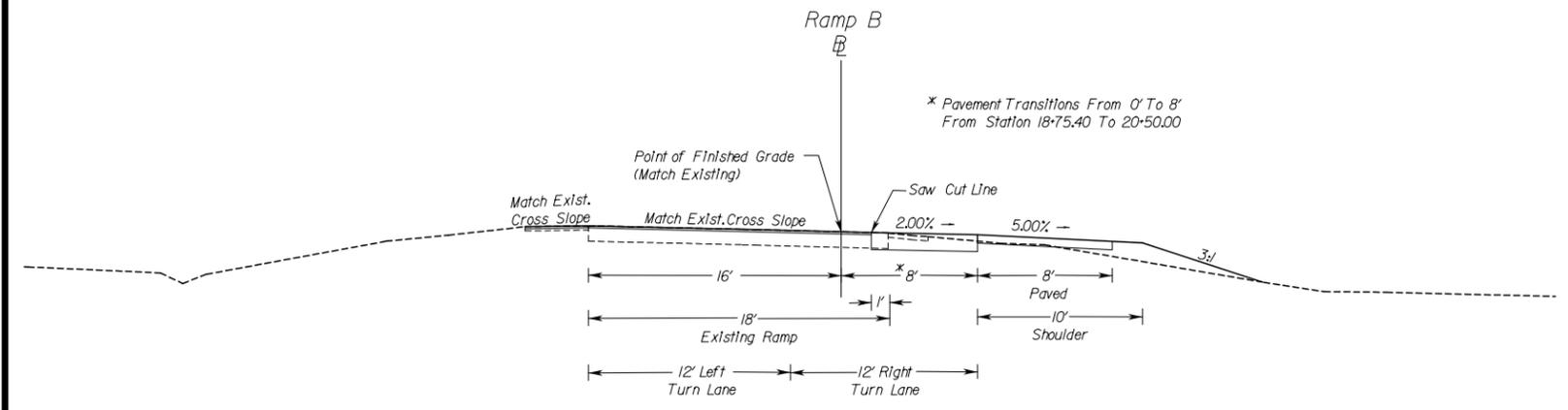
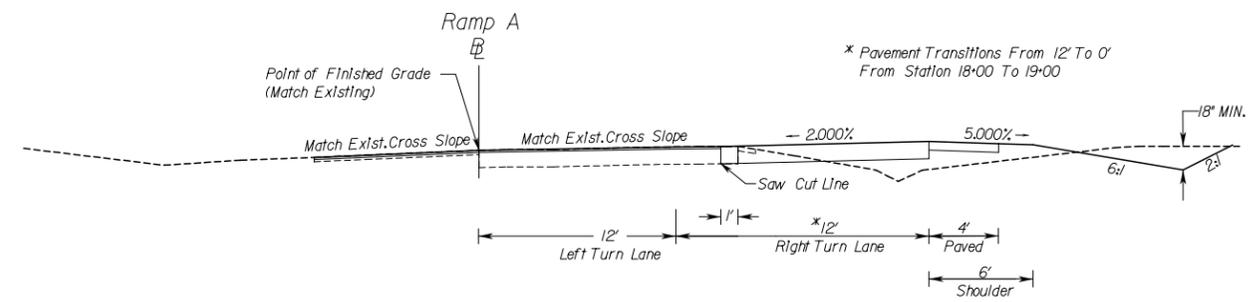
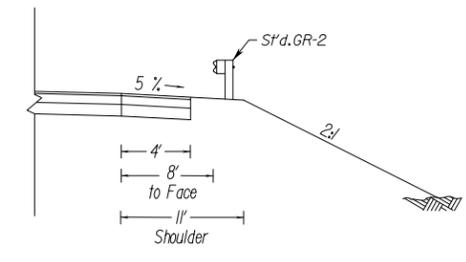
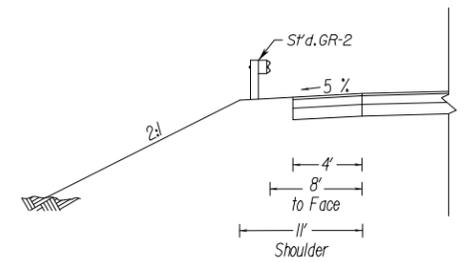
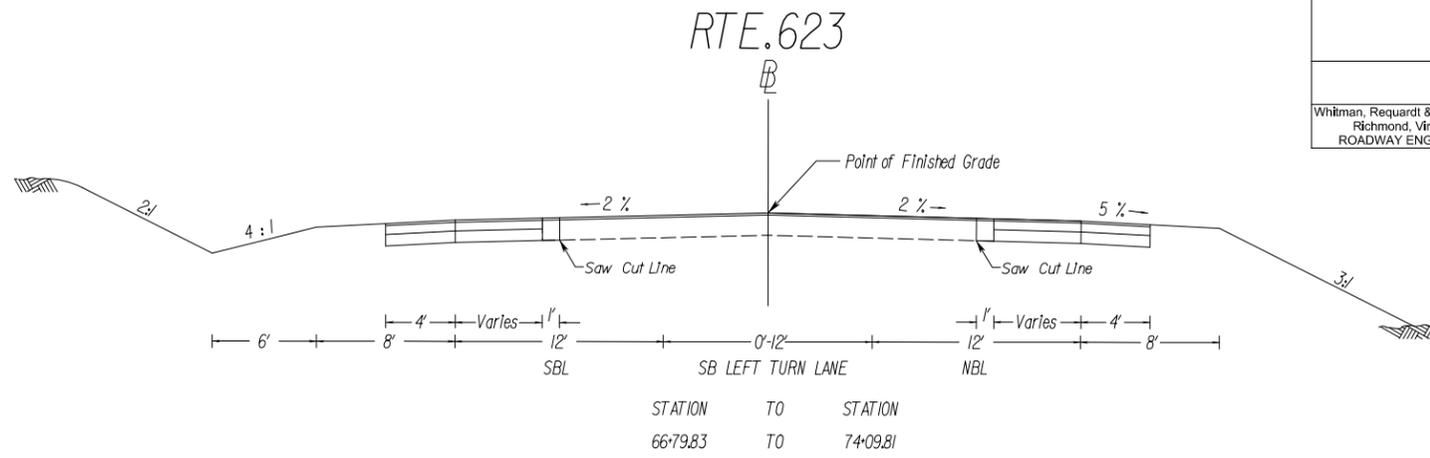
TYPICAL SECTIONS

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	2A(2)

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

Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER



- NOTES:
- 1) See The Geotechnical Engineering Data Report For Proposed Pavement Design Recommendations
 - 2) Profile Grades for Ramp A and Ramp B Match Existing Grades. Maximum Ramp A Profile Grade is -5.0% +/- and Maximum Ramp B Profile Grade is +2.5% +/-.

TECHNICAL PROPOSAL

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.
0064-964-110	2A(2)

5/29/2013

PROJECT MANAGER: *Kevin Relbeck, PE* (804) 225-3799 (Richmond District)
 SURVEYED BY, DATE: *David Burch* (804) 524-6157 (Richmond District)
 DESIGN BY: *Whitman, Requardt & Associates, LLP* (804) 272-8700
 SUBSURFACE UTILITY BY, DATE: *Surveyor Name: 0001.0000.0000* (District)

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	64	0064-964-110, 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

TECHNICAL PROPOSAL

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

Whitman, Requardt & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Requardt & Associates
Richmond, Virginia
HYDRAULIC ENGINEER

UTILITY OWNERS

Power Poles are Property of **Dominion Virginia Power**
7500 West Broad Street
Richmond, Va. 23294

Water Lines are Property of **Goachland County**
W. Doug Harvy, PE
1800 Sandy Hook Road
Goachland, Va. 23063

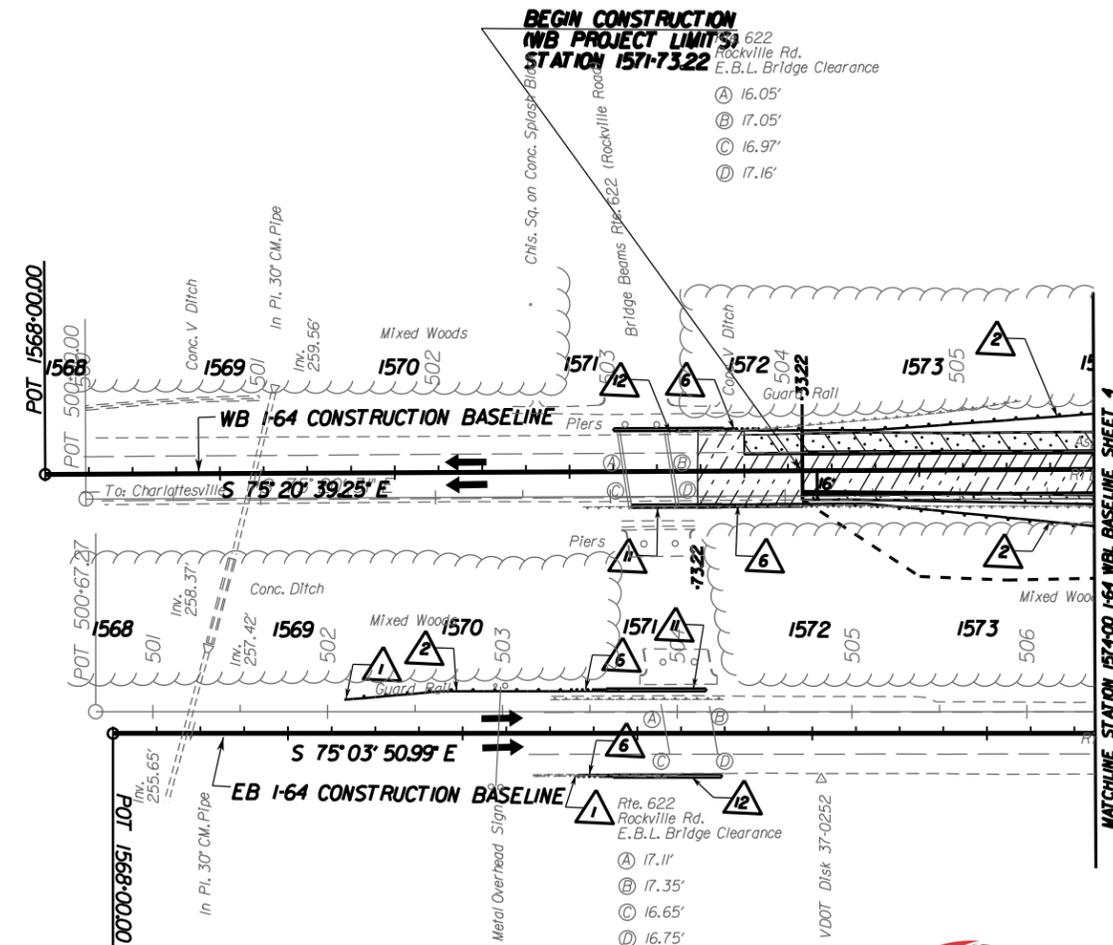
Telephone Poles are Property of **Bell Atlantic**
2600 Britton Hill
Richmond, Va. 23230
Contact: Greer Ulley
Telephone: (804) 755-5483

Note: Water Line Designated By Goachland County

Route : 0064
Project : 0064-037-110, PE101, C501
District : Richmond
County : Goachland County
From : 0.96 Miles West Rte. 623
To : 0.38 Miles West Rte. 295
Horizontal Datum Based On NAD 83
Vertical Datum Based On NGVD 29
Survey By : W.T. Savage
Operator : W.D. Freeman
Date : 08 - 27 - 07
Scale : 1" = 50'
PPMS* : 70542
Revised : 01 - 05 - 12

Route : 0064
Project : 0064-037-110, PE101, C501
District : Richmond
County : Goachland County
From : 0.96 Miles West Rte. 623
To : 0.38 Miles West Rte. 295
Horizontal Datum Based On NAD 83
Vertical Datum Based On NGVD 29
Survey By : W.T. Savage
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Date : 08 - 27 - 07
Scale : 1" = 50'
PPMS* : 70542
Revised : 01 - 05 - 12

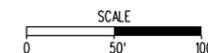
W	Water Line	W Duct	Water Line Duct	Water Valve	Goachland County
o	Water Meter	o	Water Manhole	o	Fire Hydrant
o	Fire Hydrant	o	Fire Hydrant	o	Goachland County
CATV	Underground Television Cable	CATV Duct	Underground Television Cable Duct	CAFO	Fiber Optic Cable Television
o	Television Hand Hole	o	Television Pedestal	o	TV Manhole
o	TV Manhole	T/Tg	Underground Telephone Cable	T/Tg Duct	Underground Telephone Cable Duct
TFO	Telephone Fiber Optic	FO	Underground Fiber Optic	FO Duct	Underground Fiber Optic Duct
o	Fiber Optic Marker	o	Telephone Pedestal	o	Telephone Manhole
o	Telephone Pedestal	o	Telephone Manhole	o	Telephone Pole
o	Telephone Manhole	o	Telephone Hand Hole	o	Bell Atlantic
TC	Underground Traffic Control	TC Duct	Underground Traffic Control Duct	TCFO	Traffic Control Fiber Optic
TCFO	Traffic Control Fiber Optic	TCFO	Traffic Control Hand Hole	TCFO	Traffic Control Manhole
o	Traffic Control Manhole	o	Traffic Signal Pole	o	Virginia Department of Transportation
E	Underground Power Cable	E Duct	Underground Power Cable Duct	o	Power Pole
o	Power Pole	o	Dominion Va. Power	o	Electric Box
o	Electric Manhole	o	Combination Pole	o	Light Pole
o	Electric Meter	o	Electric Hand Hole	o	Gas Line
o	Gas Line	G Duct	Gas Line Duct	o	Gas Manhole
o	Gas Manhole	o	Gas Valve	o	Gas Meter
o	Gas Valve	o	Gas Well	SFM	Sanitary Force Main
S	Gravity Sewer	o	Sanitary Manhole	o	Sewer Clean Out
o	Sewer Clean Out	o	Storm Manhole	o	Rail Road Signal / Gate
o	Storm Manhole	o	Rail Road Telephone Pole	o	Utility End Point
o	Utility End Point	VS	Vacuum Sewer	FUEL	Fuel Line (above or below ground)
o	Fuel Line (above or below ground)	CHEM	Chemical Line (above or below ground)	UNK	Unknown Utility Line
(DATUR)	Depleted According To Utility Records	(AATUR)	Abandoned According To Utility Records	(AATFI)	Abandoned According To Field Inspection



- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-11 REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.

LEGEND

- [Symbol] DENOTES DEMOLITION OF PAVEMENT
- [Symbol] DENOTES RESURFACING OF PAVEMENT
- [Symbol] DENOTES PROPOSED PAVEMENT
- [Symbol] WATER QUALITY SWALE



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



PROJECT	SHEET NO.
0064-964-110	3

PROJECT MANAGER: Kevin Relbeck, PE (804)225-3799 (Richmond District)
 SURVEYED BY, DATE: David Burch (804)524-6157 (Richmond District)
 DESIGN BY: Whitman, Reardon & Associates, LLP (804) 272-8700
 SUBSURFACE UTILITY BY, DATE: <Surveyor Name> (000)000-0000 (District)

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	4

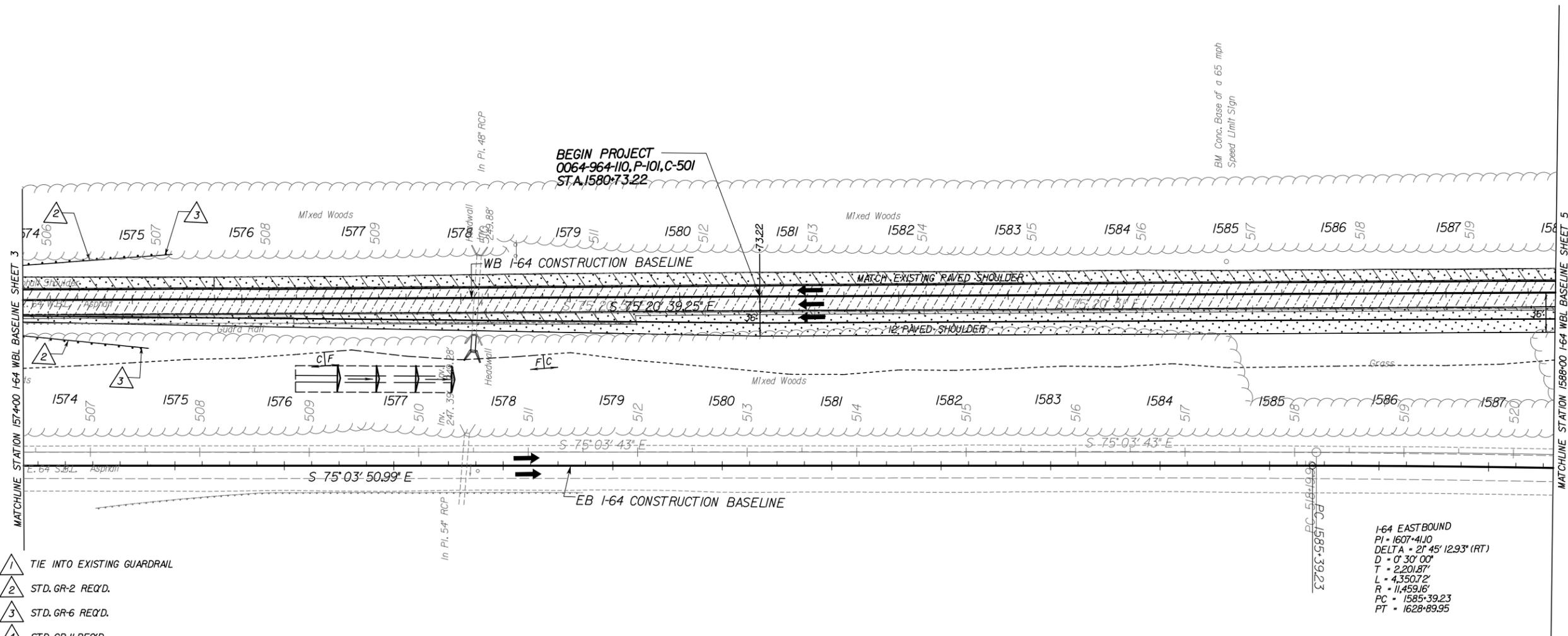
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER

TECHNICAL PROPOSAL

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



- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-II REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT.
(STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.



- LEGEND**
- DENOTES DEMOLITION OF PAVEMENT
 - DENOTES RESURFACING OF PAVEMENT
 - DENOTES PROPOSED PAVEMENT
 - WATER QUALITY SWALE



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

PROJECT	SHEET NO.
0064-964-110	4

PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	5

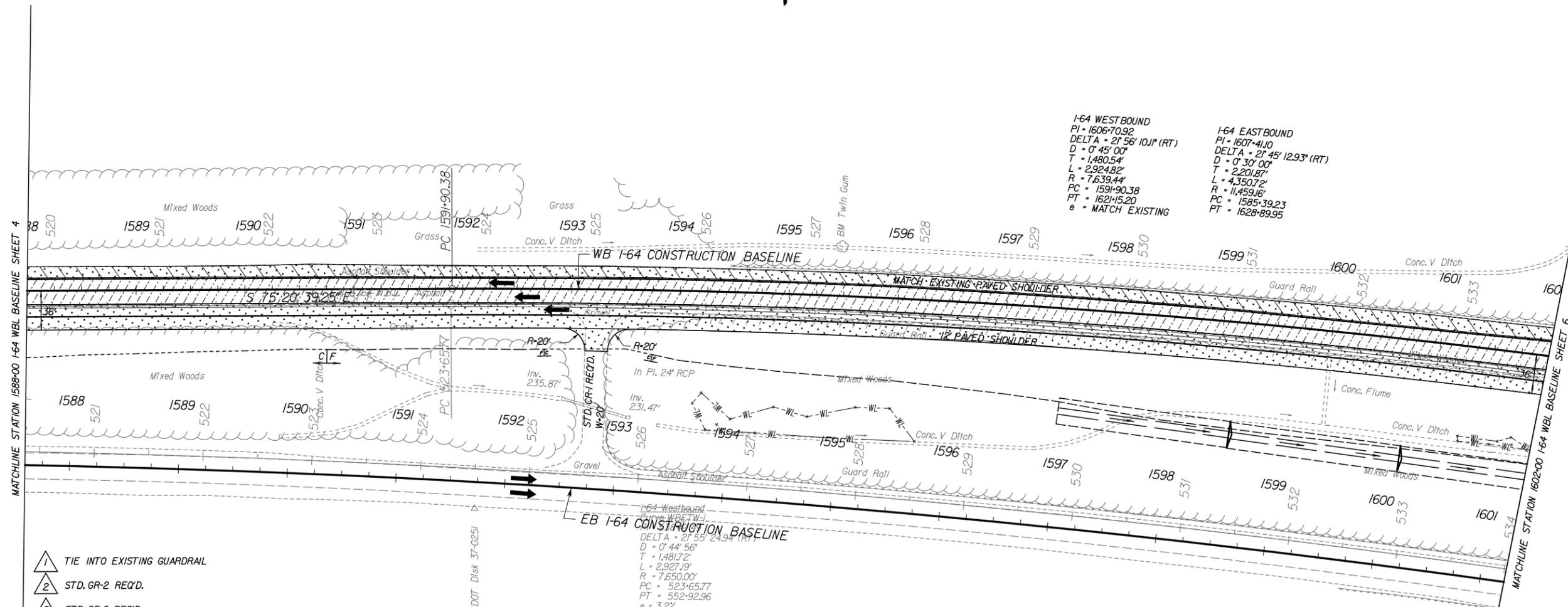
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER

TECHNICAL PROPOSAL

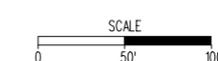
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-11 REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 4" BPPS-3 REQ'D.
- 12 5" BPPS-1 REQ'D.



- LEGEND
- DENOTES DEMOLITION OF PAVEMENT
 - DENOTES RESURFACING OF PAVEMENT
 - DENOTES PROPOSED PAVEMENT
 - WATER QUALITY SWALE



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

PROJECT	SHEET NO.
0064-964-110	5

PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond, District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond, District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-964-110, 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

Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

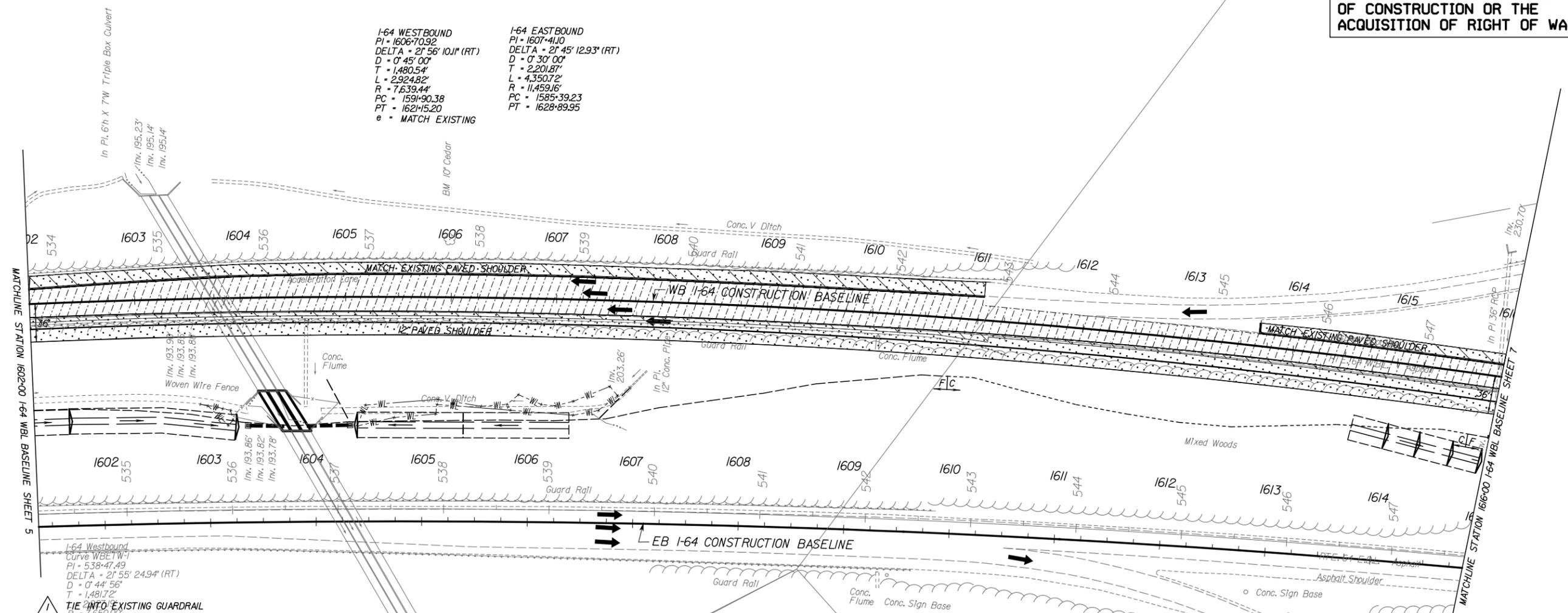
Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER

TECHNICAL PROPOSAL

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

I-64 WESTBOUND
 PI = 1606+70.92
 DELTA = 2° 56' 10.1" (RT)
 D = 0' 45' 00"
 T = 1,480.54'
 L = 2,924.82'
 R = 7,639.44'
 PC = 1591+90.38
 PT = 1621+5.20
 e = MATCH EXISTING

I-64 EASTBOUND
 PI = 1607+41.0
 DELTA = 2° 45' 12.93" (RT)
 D = 0' 30' 00"
 T = 2,201.87'
 L = 4,350.72'
 R = 11,459.16'
 PC = 1585+39.23
 PT = 1628+89.95



I-64 Westbound
 Curve WB1 W-1
 PI = 538+47.49
 DELTA = 2° 55' 24.94" (RT)
 D = 0' 44' 56"
 T = 1,481.72'
 R = 7,650.00'
 PC = 523+65.77
 PT = 553+30.00
 e = 3.2%

- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-11 REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.



LEGEND

	DENOTES DEMOLITION OF PAVEMENT
	DENOTES RESURFACING OF PAVEMENT
	DENOTES PROPOSED PAVEMENT
	WATER QUALITY SWALE



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

BOX CULVERT	22
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PROJECT	0064-964-110
SHEET NO.	6

5/29/2013

PROJECT MANAGER: Kevin Relbeck, PE (804)225-3799 (Richmond, District)
SURVEYED BY: DATE David Burch (804)524-6157 (Richmond, District)
DESIGN BY: Whitman, Requardt & Associates, LLP (804) 272-8700
SUBSURFACE UTILITY BY: DATE <Surveyor Name> (000)000-0000 (District)

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-20, C-501	7

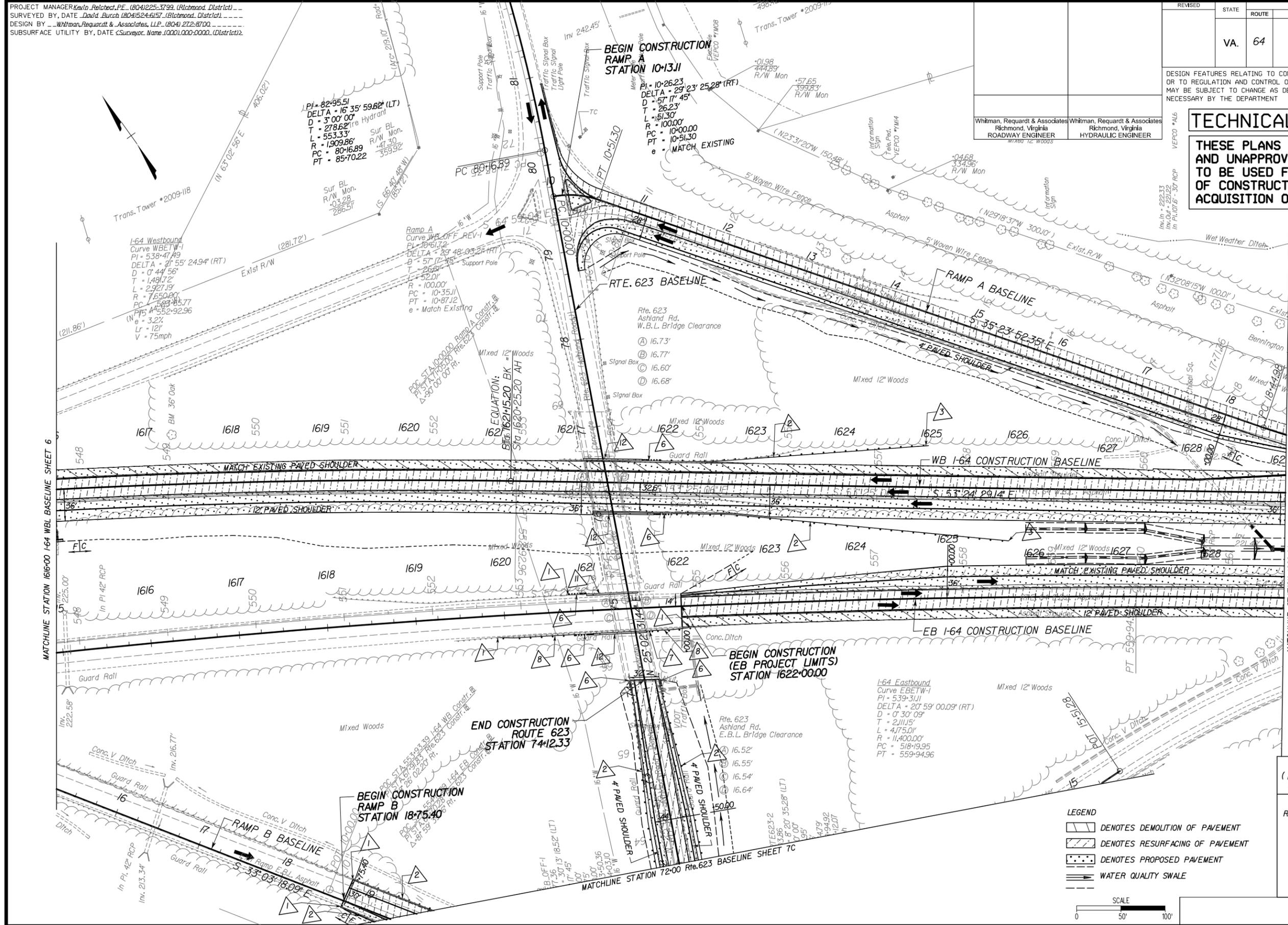
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

TECHNICAL PROPOSAL

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

Whitman, Requardt & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Requardt & Associates
Richmond, Virginia
HYDRAULIC ENGINEER



- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-II REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.

- LEGEND**
- DENOTES DEMOLITION OF PAVEMENT
 - DENOTES RESURFACING OF PAVEMENT
 - DENOTES PROPOSED PAVEMENT
 - WATER QUALITY SWALE



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

ROUTE 623 PROFILE 7B

PROJECT	SHEET NO.
0064-964-110	7

PROJECT MANAGER *Kevin Felbeck, PE (804)225-3799 (Richmond, District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond, District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

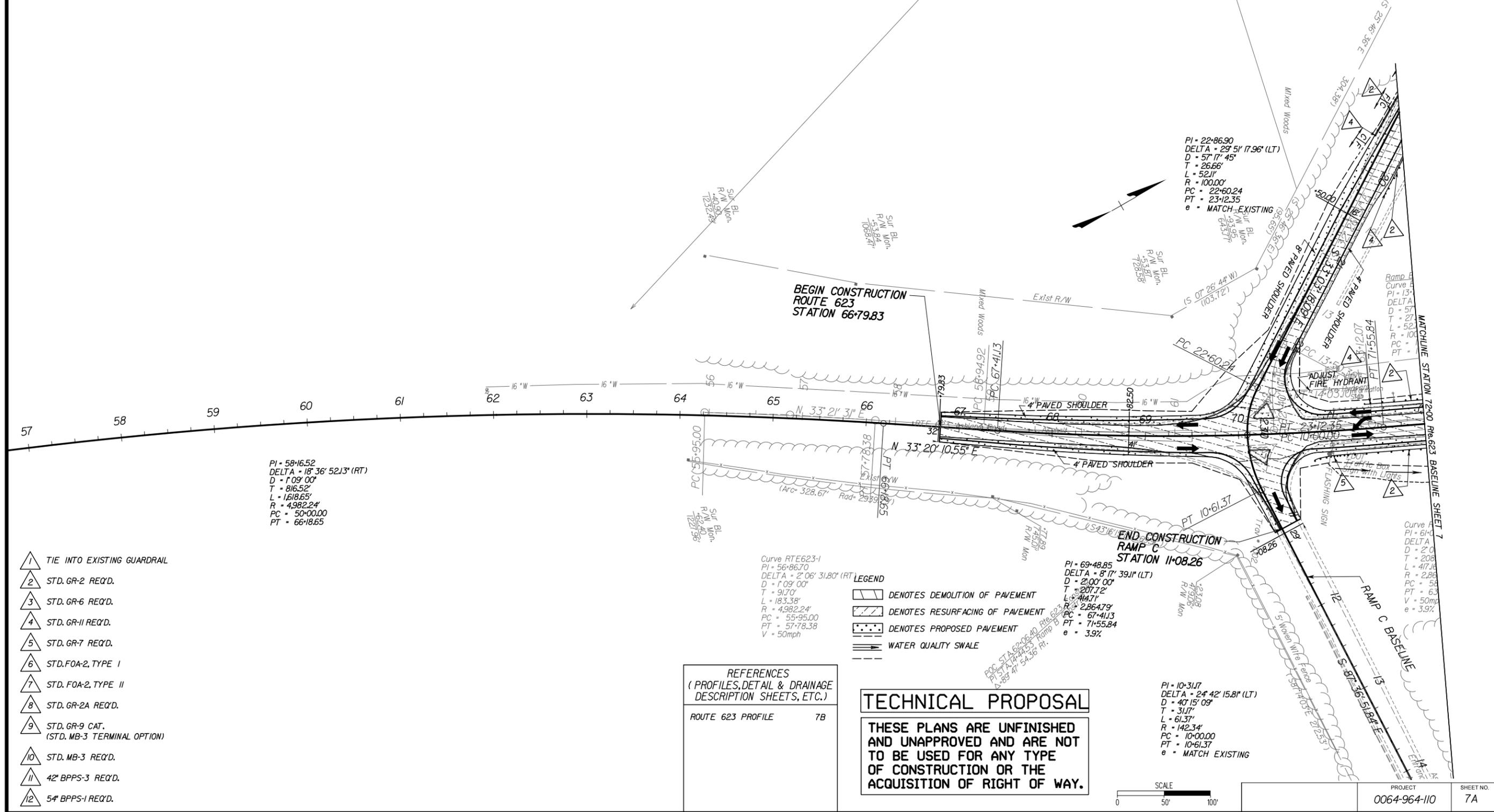
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	7A

Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER



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



- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-II REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 4" BPPS-3 REQ'D.
- 12 5" BPPS-1 REQ'D.

LEGEND

- DENOTES DEMOLITION OF PAVEMENT
- DENOTES RESURFACING OF PAVEMENT
- DENOTES PROPOSED PAVEMENT
- WATER QUALITY SWALE

TECHNICAL PROPOSAL

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

ROUTE 623 PROFILE	7B
-------------------	----

PROJECT MANAGER *Kevin_Relbeck_PE (804)225-3799 (Richmond_District)*
 SURVEYED BY, DATE *David_Burch (804)524-6157 (Richmond_District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *<Surveyor Name>(000) 000-0000 (District)*

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	7B

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

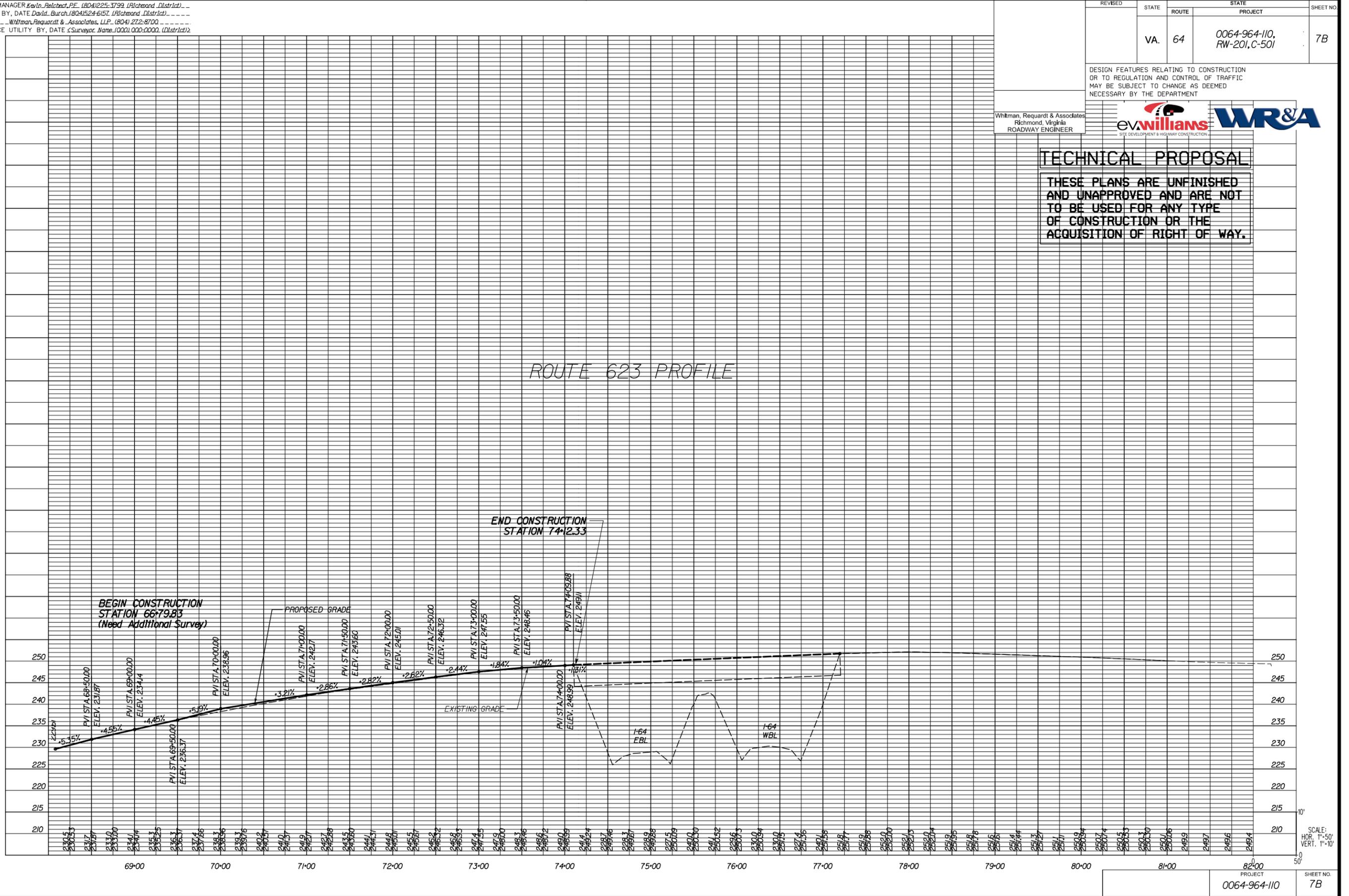
Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER



TECHNICAL PROPOSAL

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

ROUTE 623 PROFILE



5/29/2013

SCALE:
HOR. 1"=50'
VERT. 1"=10'

PROJECT
0064-964-110
SHEET NO.
7B

PROJECT MANAGER: Kevin Relbeck, PE (804)225-3799 (Richmond, District)
 SURVEYED BY, DATE: David Burch (804)524-6157 (Richmond, District)
 DESIGN BY: Whitman, Reardon & Associates, LLP (804) 272-8700
 SUBSURFACE UTILITY BY, DATE: Surveyor Name (000)000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-964-110, RW-20I, C-50I	8

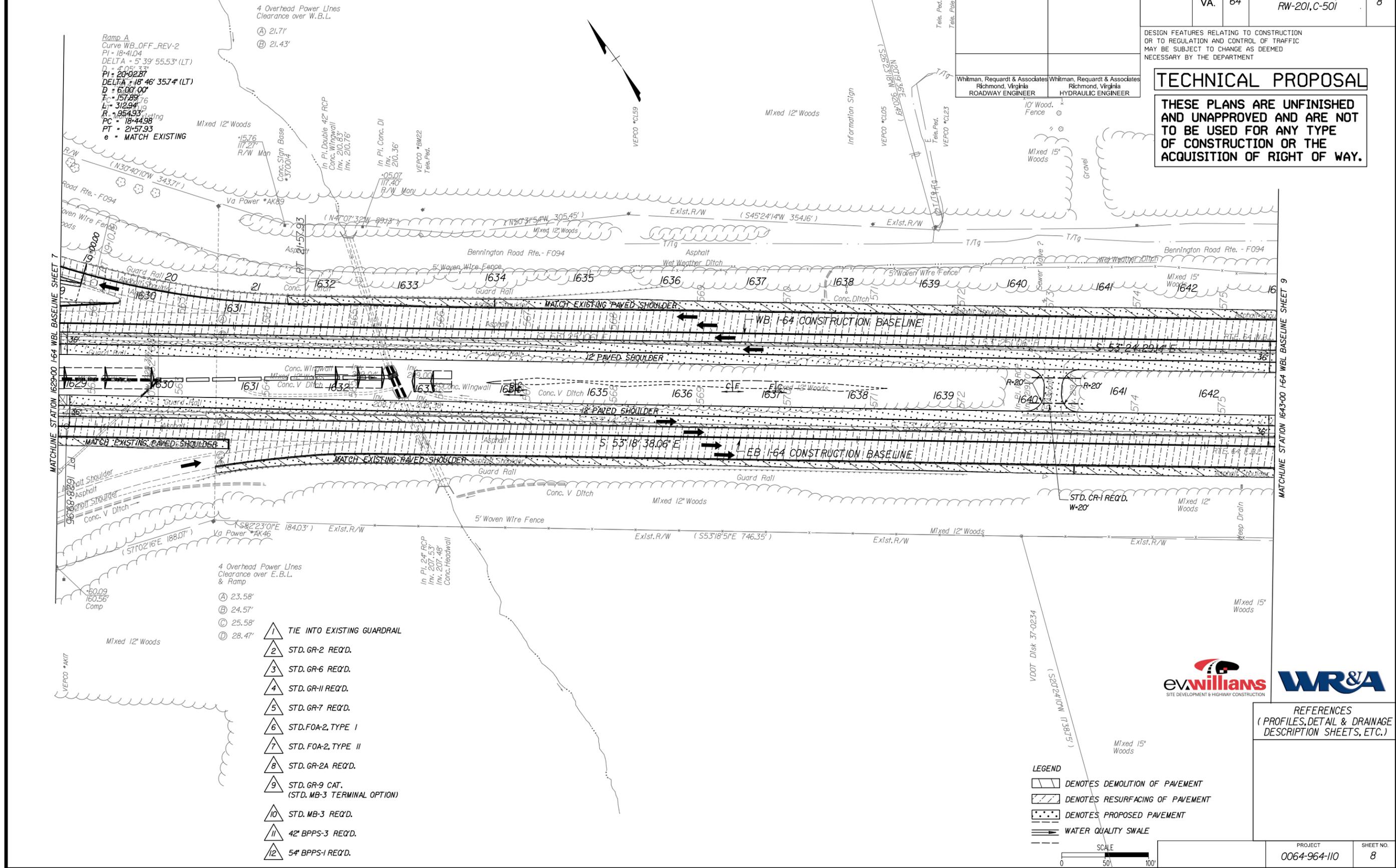
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

TECHNICAL PROPOSAL

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Whitman, Reardon & Associates
 Richmond, Virginia
 ROADWAY ENGINEER

Whitman, Reardon & Associates
 Richmond, Virginia
 HYDRAULIC ENGINEER



- 4 Overhead Power Lines
 Clearance over E.B.L.
 & Ramp
- (A) 23.58'
 - (B) 24.57'
 - (C) 25.58'
 - (D) 28.47'
- 1 TIE INTO EXISTING GUARDRAIL
 - 2 STD. GR-2 REQ'D.
 - 3 STD. GR-6 REQ'D.
 - 4 STD. GR-11 REQ'D.
 - 5 STD. GR-7 REQ'D.
 - 6 STD. FOA-2, TYPE I
 - 7 STD. FOA-2, TYPE II
 - 8 STD. GR-2A REQ'D.
 - 9 STD. GR-9 CAT.
(STD. MB-3 TERMINAL OPTION)
 - 10 STD. MB-3 REQ'D.
 - 11 42" BPPS-3 REQ'D.
 - 12 54" BPPS-1 REQ'D.

LEGEND

- DENOTES DEMOLITION OF PAVEMENT
- DENOTES RESURFACING OF PAVEMENT
- DENOTES PROPOSED PAVEMENT
- WATER QUALITY SWALE



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

PROJECT	SHEET NO.
0064-964-110	8

PROJECT MANAGER: Kevin Relbeck, PE (804)225-3799 (Richmond District)
 SURVEYED BY, DATE: David Burch (804)524-6157 (Richmond District)
 DESIGN BY: Whitman, Reardon & Associates, LLP (804) 272-8700
 SUBSURFACE UTILITY BY, DATE: Surveyor Name (000)000-0000 (District)

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	9

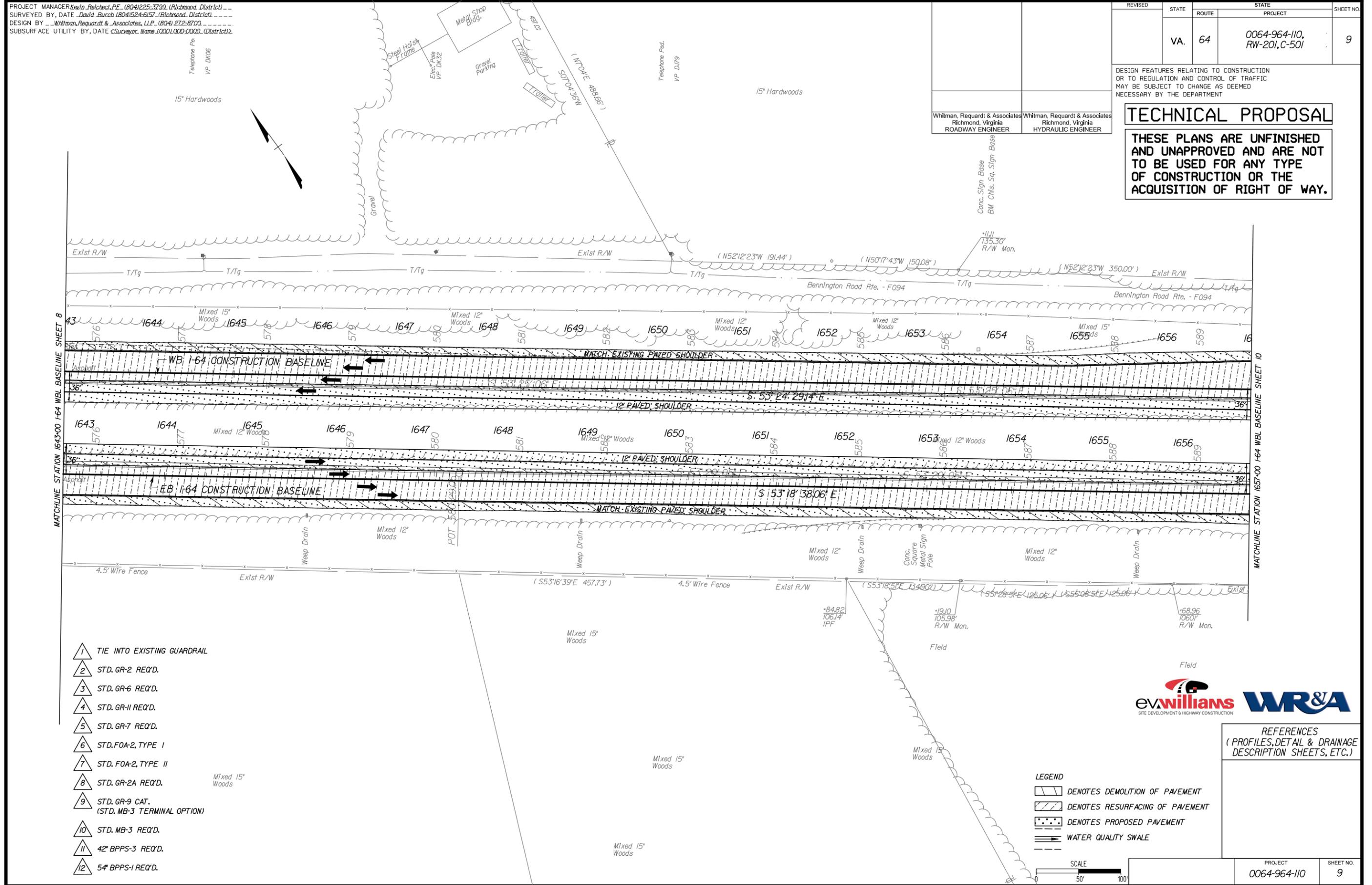
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

TECHNICAL PROPOSAL

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Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

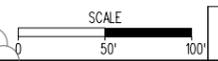
Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER



- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-II REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.

LEGEND

- DENOTES DEMOLITION OF PAVEMENT
- DENOTES RESURFACING OF PAVEMENT
- DENOTES PROPOSED PAVEMENT
- WATER QUALITY SWALE



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



PROJECT	SHEET NO.
0064-964-110	9

5/29/2013

Call Revised 12/11/12

PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond, District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond, District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	11

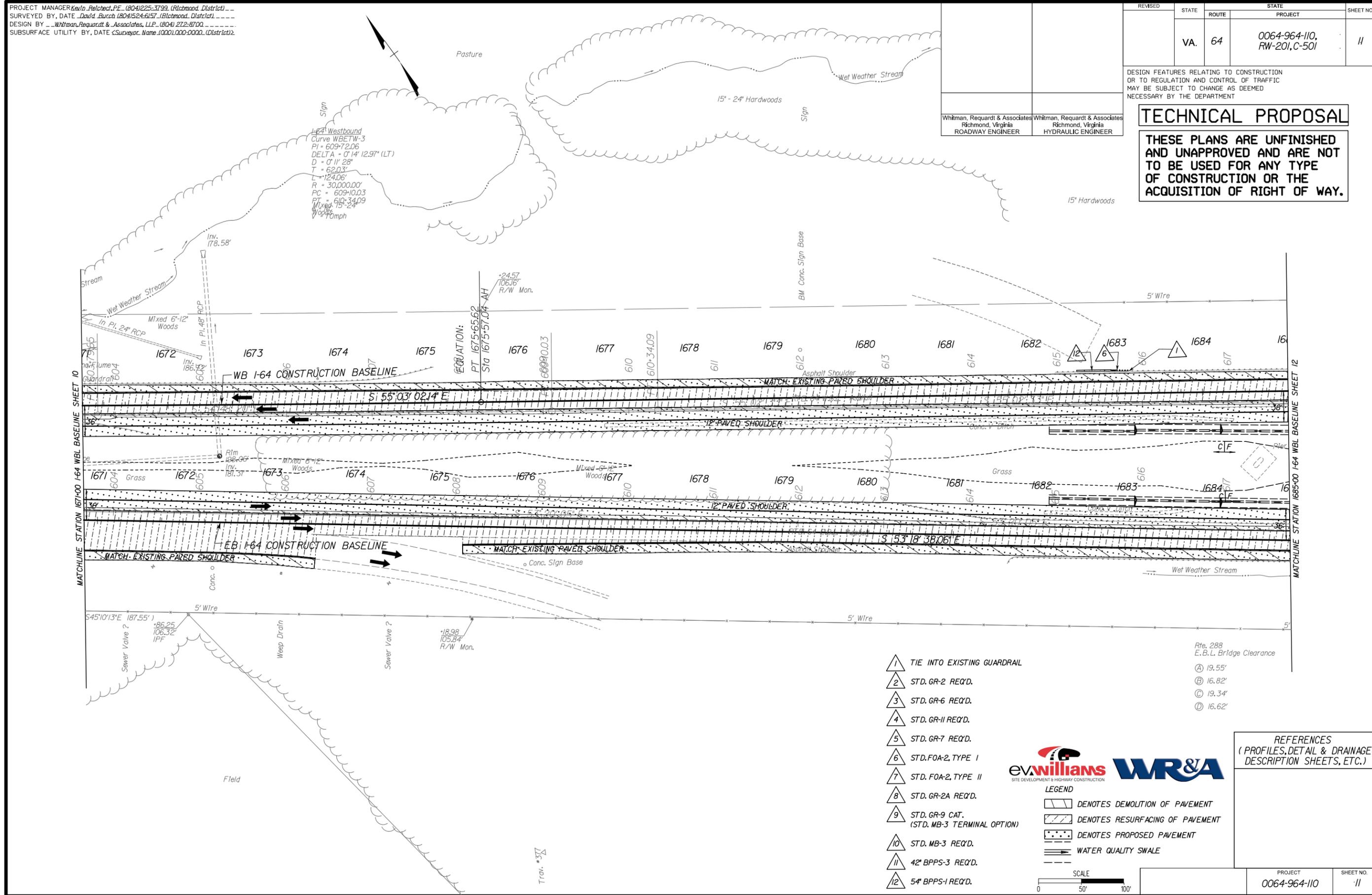
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

TECHNICAL PROPOSAL

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Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

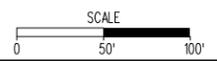
Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER



- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-II REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.



- LEGEND**
- DENOTES DEMOLITION OF PAVEMENT
 - DENOTES RESURFACING OF PAVEMENT
 - DENOTES PROPOSED PAVEMENT
 - WATER QUALITY SWALE



- Rte. 288
E.B.L. Bridge Clearance
- A 19.55'
 - B 16.82'
 - C 19.34'
 - D 16.62'

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

PROJECT	SHEET NO.
0064-964-110	11

PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond, District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond, District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	12

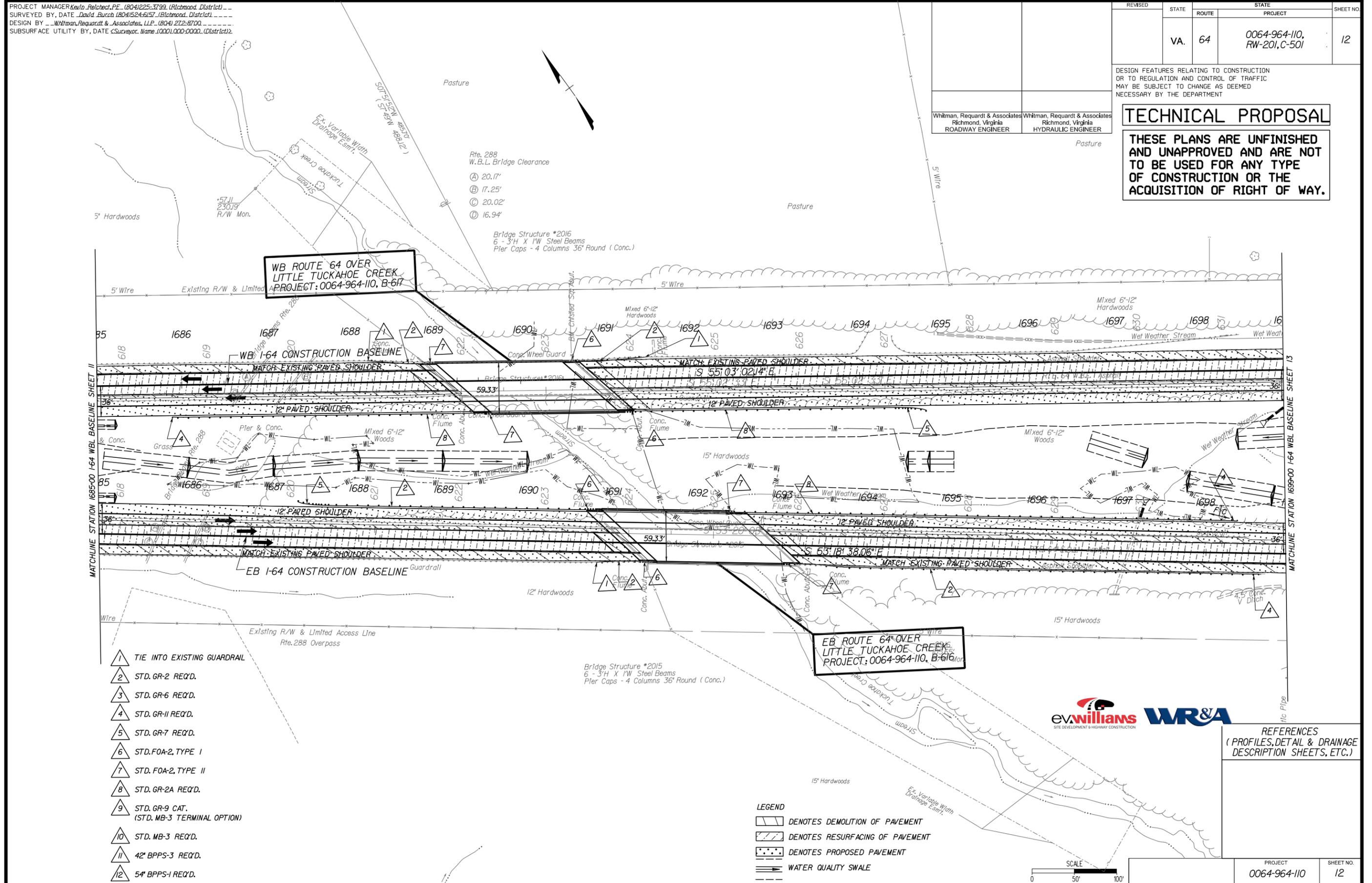
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

TECHNICAL PROPOSAL

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

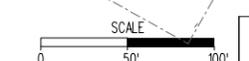
Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER



- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-II REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.

- LEGEND
- [Symbol] DENOTES DEMOLITION OF PAVEMENT
 - [Symbol] DENOTES RESURFACING OF PAVEMENT
 - [Symbol] DENOTES PROPOSED PAVEMENT
 - [Symbol] WATER QUALITY SWALE



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

PROJECT	SHEET NO.
0064-964-110	12

PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond, District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond, District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-964-110, RW-20, C-501	13

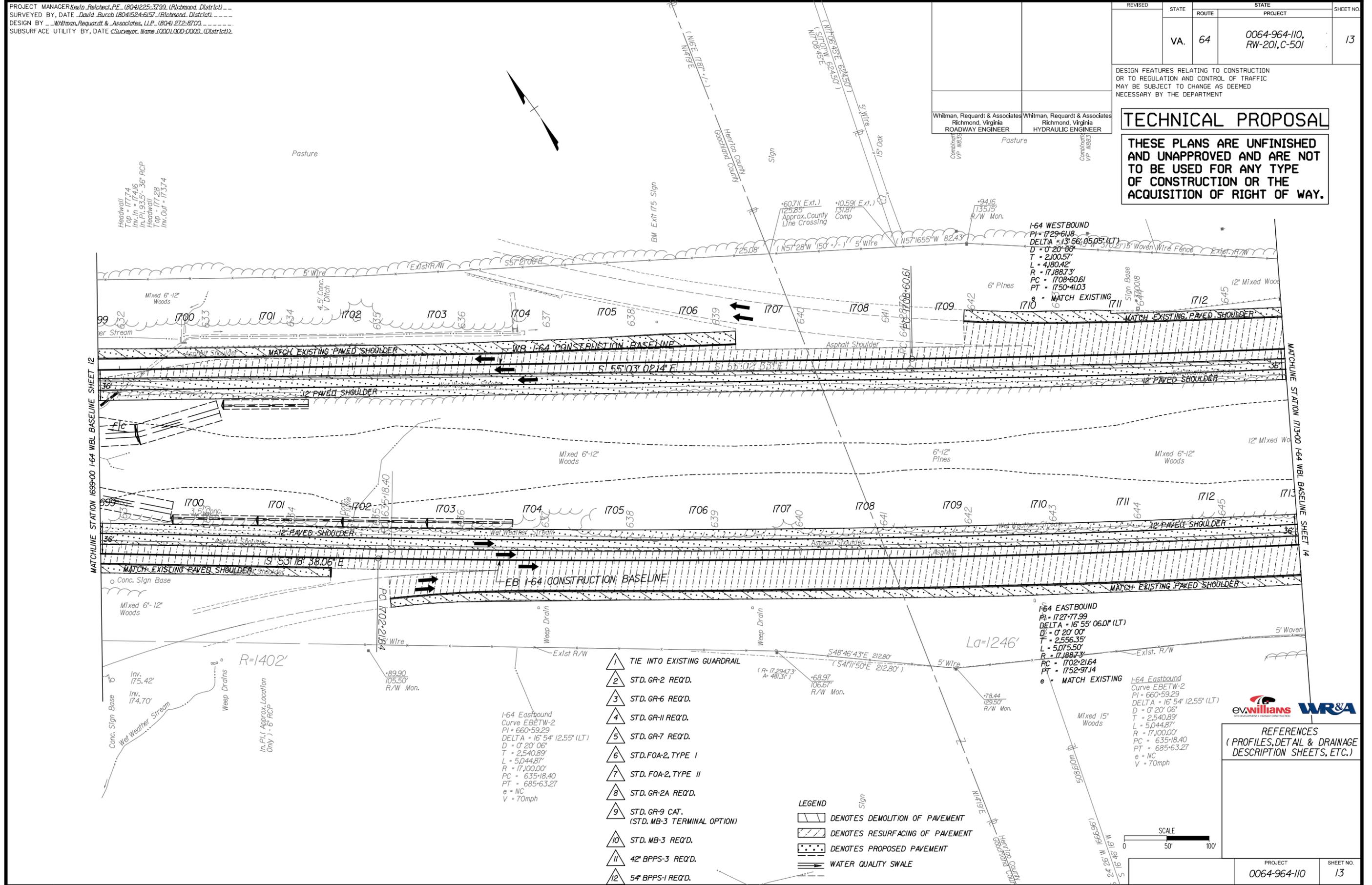
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Whitman, Reardon & Associates
 Richmond, Virginia
 ROADWAY ENGINEER

Whitman, Reardon & Associates
 Richmond, Virginia
 HYDRAULIC ENGINEER

TECHNICAL PROPOSAL

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- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-II REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.

LEGEND

- DENOTES DEMOLITION OF PAVEMENT
- DENOTES RESURFACING OF PAVEMENT
- DENOTES PROPOSED PAVEMENT
- WATER QUALITY SWALE

I-64 EASTBOUND
 PI = 1727+77.99
 DELTA = 16°55'06.01" (LT)
 D = 0°20'00"
 T = 2556.35'
 L = 5075.50'
 R = 17188.73'
 PC = 1702+21.64
 PT = 1752+97.14
 e = MATCH EXISTING



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



PROJECT	SHEET NO.
0064-964-110	13

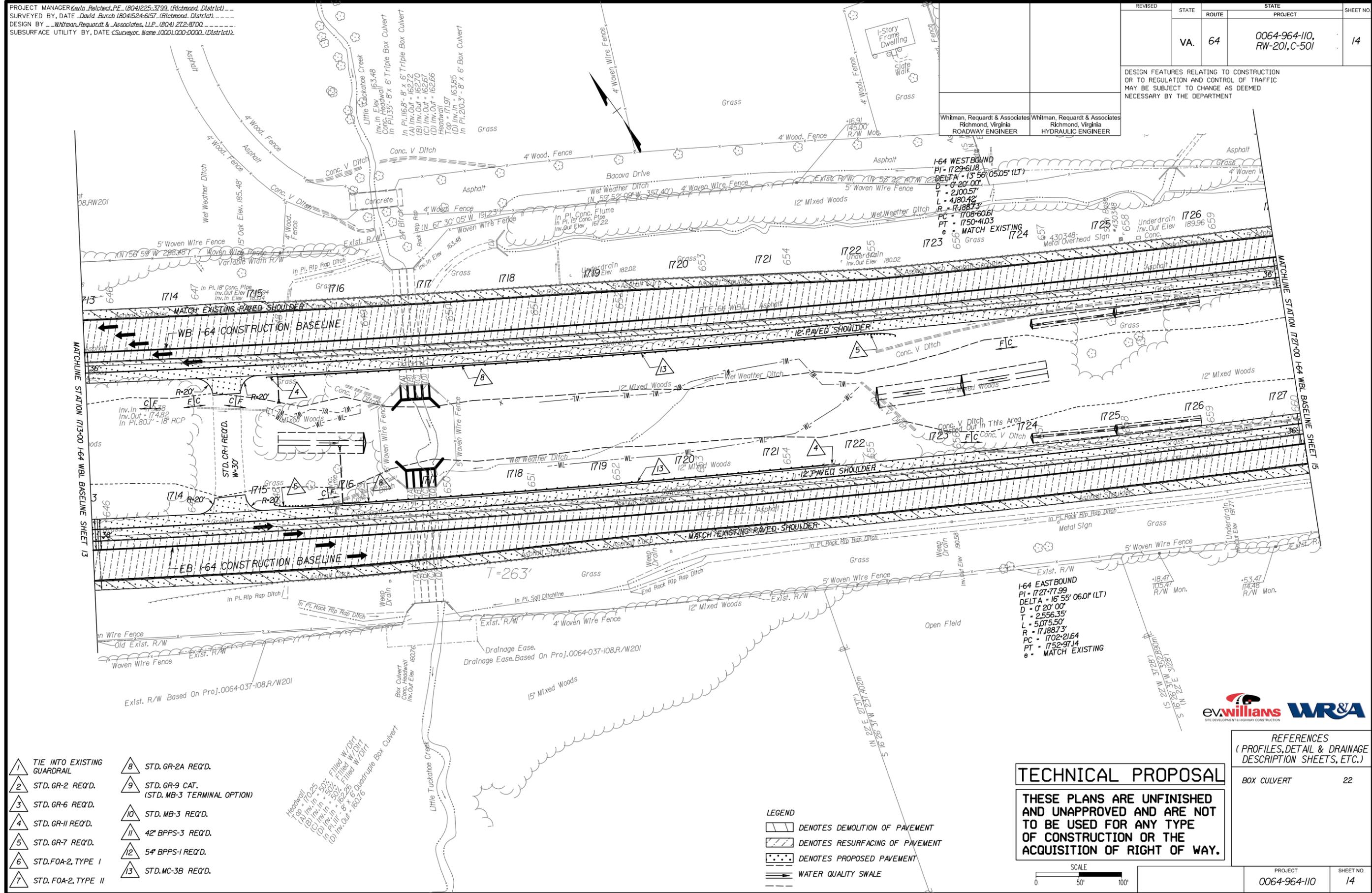
PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond, District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond, District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-964-110, RW-20, C-501	14

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

Whitman, Reardon & Associates
 Richmond, Virginia
 ROADWAY ENGINEER

Whitman, Reardon & Associates
 Richmond, Virginia
 HYDRAULIC ENGINEER



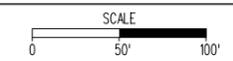
- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-II REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.
- 13 STD. MC-3B REQ'D.

Headwall
 Top Inv. = 170.26
 12' x 12' x 12' Filled w/ DIRT
 (A) Inv. In = 150.00
 (B) Inv. In = 150.00
 (C) Inv. In = 150.00
 (D) Inv. In = 150.00
 (E) Inv. In = 150.00
 (F) Inv. In = 150.00
 (G) Inv. In = 150.00
 (H) Inv. In = 150.00
 (I) Inv. In = 150.00
 (J) Inv. In = 150.00
 (K) Inv. In = 150.00
 (L) Inv. In = 150.00
 (M) Inv. In = 150.00
 (N) Inv. In = 150.00
 (O) Inv. In = 150.00
 (P) Inv. In = 150.00
 (Q) Inv. In = 150.00
 (R) Inv. In = 150.00
 (S) Inv. In = 150.00
 (T) Inv. In = 150.00
 (U) Inv. In = 150.00
 (V) Inv. In = 150.00
 (W) Inv. In = 150.00
 (X) Inv. In = 150.00
 (Y) Inv. In = 150.00
 (Z) Inv. In = 150.00

- LEGEND
- ▭ DENOTES DEMOLITION OF PAVEMENT
 - ▨ DENOTES RESURFACING OF PAVEMENT
 - ▤ DENOTES PROPOSED PAVEMENT
 - WATER QUALITY SWALE

TECHNICAL PROPOSAL

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

BOX CULVERT	22
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PROJECT	0064-964-110	SHEET NO.	14
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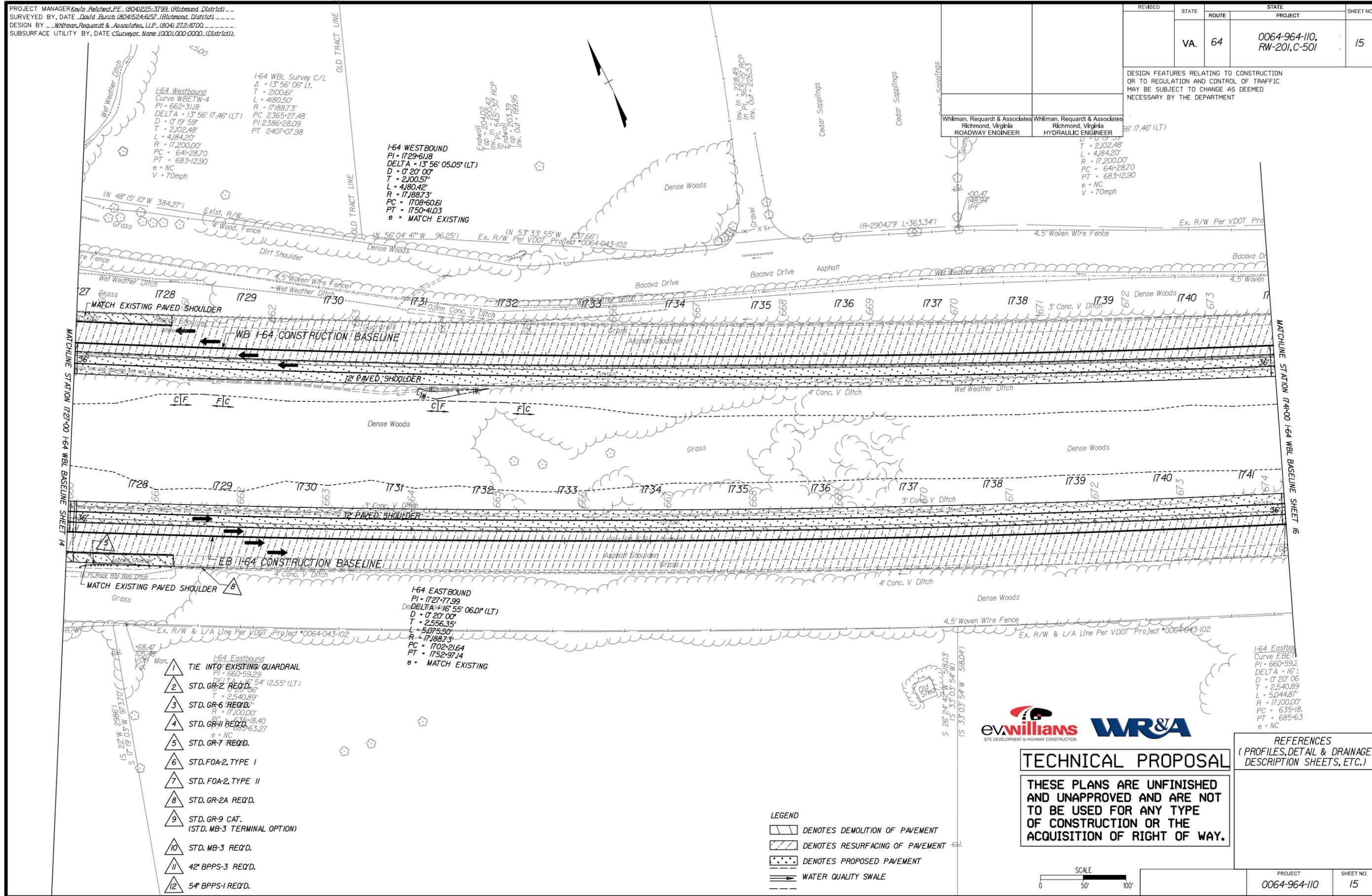
PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond, District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond, District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-964-110, RW-20, C-501	15

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

Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER



PROJECT MANAGER: Kevin Relbeck, PE (804)225-3799 (Richmond, District)
 SURVEYED BY, DATE: David Burch (804)524-6157 (Richmond, District)
 DESIGN BY: Whitman, Requardt & Associates, LLP (804) 272-8700
 SUBSURFACE UTILITY BY, DATE: Surveyor Name (000)000-0000 (District)

REVISION	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	16

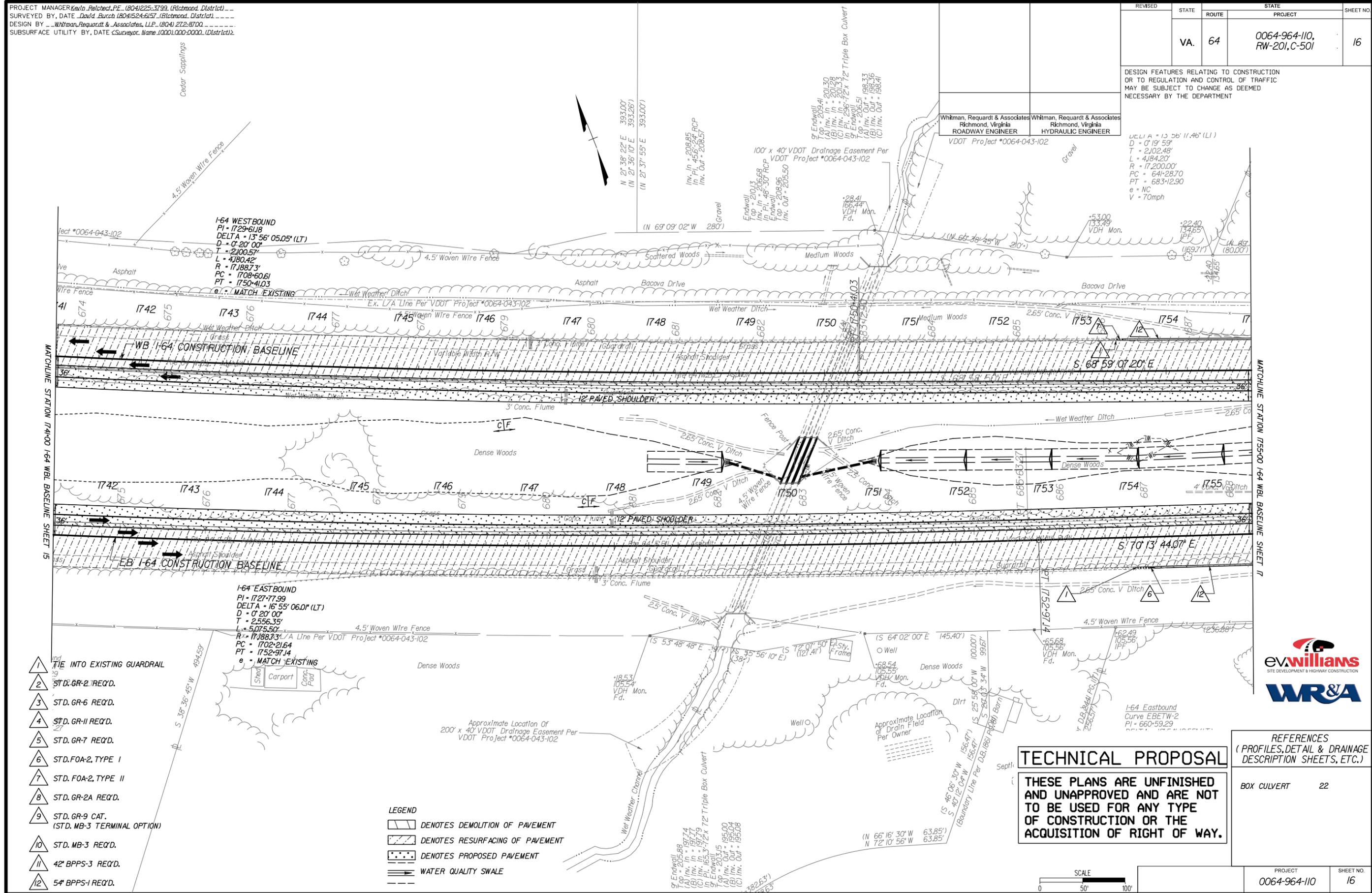
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Whitman, Requardt & Associates
 Richmond, Virginia
 ROADWAY ENGINEER

Whitman, Requardt & Associates
 Richmond, Virginia
 HYDRAULIC ENGINEER

VDOT Project #0064-043-102

ELLI A = 13.56' 11.46" (LI)
 D = 0' 19' 59"
 T = 2102.48'
 L = 4184.20'
 R = 17,200.00'
 PC = 641+28.70
 PT = 683+12.90
 e = NC
 V = 70mph



- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-11 REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.

LEGEND

- DENOTES DEMOLITION OF PAVEMENT
- DENOTES RESURFACING OF PAVEMENT
- DENOTES PROPOSED PAVEMENT
- WATER QUALITY SWALE

TECHNICAL PROPOSAL

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

BOX CULVERT 22



PROJECT	0064-964-110
SHEET NO.	16



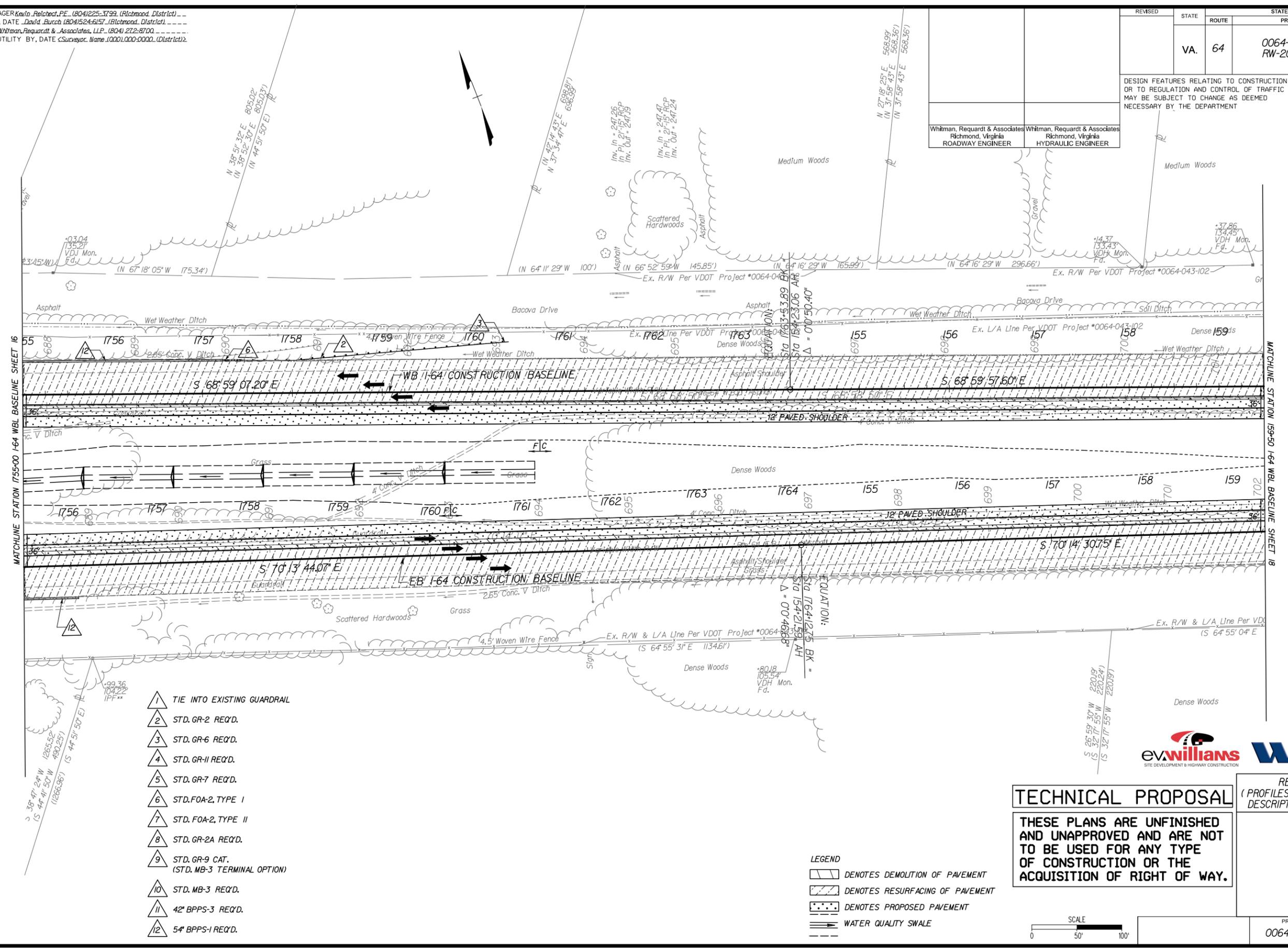
PROJECT MANAGER: Kevin Relbeck, PE (804)225-3799 (Richmond, District) ---
 SURVEYED BY, DATE: David Burch (804)524-6157 (Richmond, District) ---
 DESIGN BY: Whitman, Reardon & Associates, LLP (804) 272-8700 ---
 SUBSURFACE UTILITY BY, DATE: <Supervisor Name> (000)000-0000 (District) ---

REVISION	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-964-110, RW-201, C-501	17

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

Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER



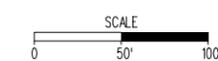
- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-11 REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.

TECHNICAL PROPOSAL

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REFERENCES
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PROJECT	0064-964-110
SHEET NO.	17

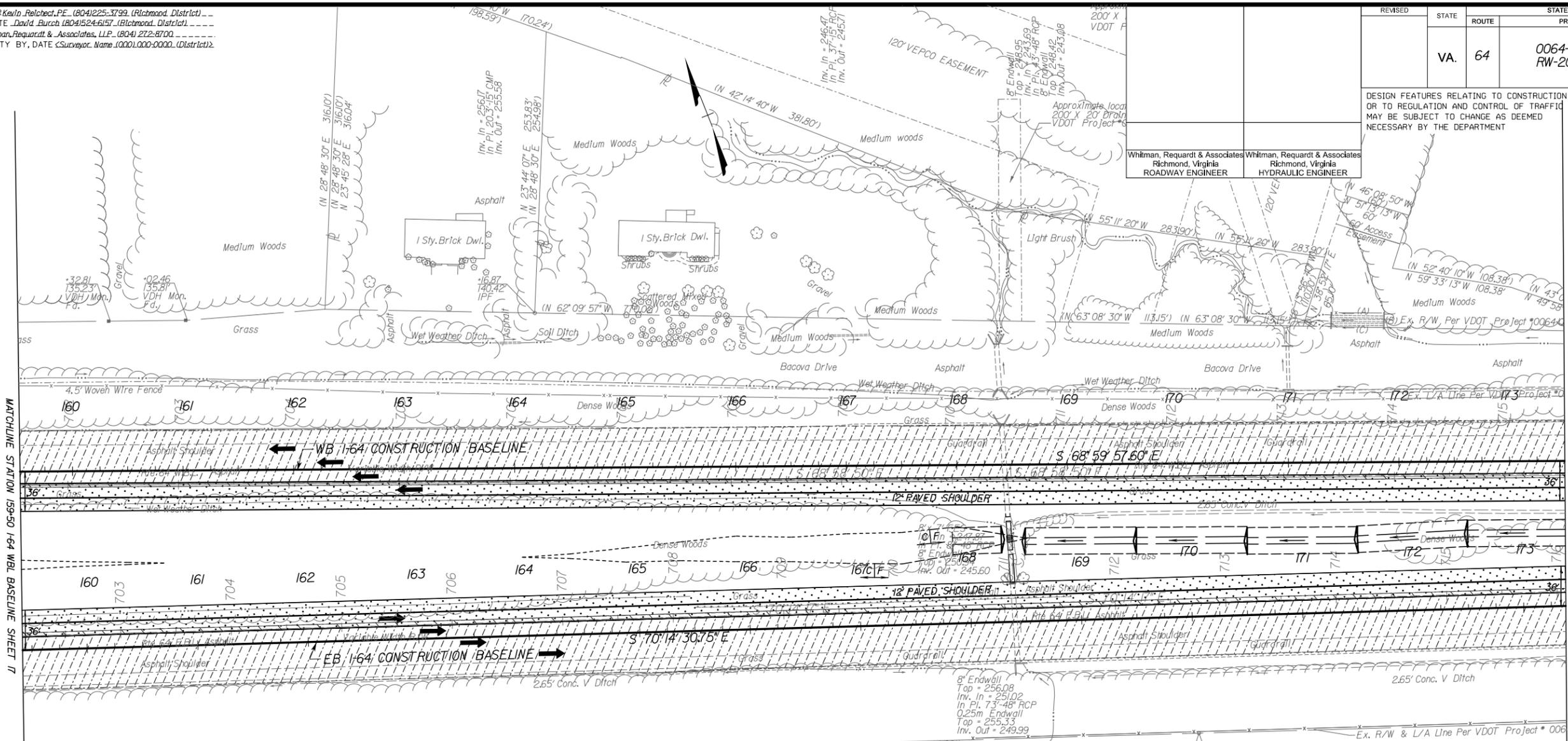
PROJECT MANAGER *Kevin Relbeck, PE (804)225-3799 (Richmond, District)*
 SURVEYED BY, DATE *David Burch (804)524-6157 (Richmond, District)*
 DESIGN BY *Whitman, Reardon & Associates, LLP (804) 272-8700*
 SUBSURFACE UTILITY BY, DATE *Surveyor Name (000)000-0000 (District)*

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	64		0064-964-110, RW-20, C-501	18

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

Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER



MATCHLINE STATION 159+50 164 WBL BASELINE SHEET 17

MATCHLINE STATION 173+50 164 WBL BASELINE SHEET 19

- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-II REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT.
(STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.

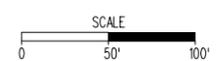
- LEGEND
- DENOTES DEMOLITION OF PAVEMENT
 - DENOTES RESURFACING OF PAVEMENT
 - DENOTES PROPOSED PAVEMENT
 - WATER QUALITY SWALE



TECHNICAL PROPOSAL

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



PROJECT	SHEET NO.
0064-964-110	18

PROJECT MANAGER: *Kevin Relbeck, PE (804)225-3799 (Richmond, District)*
 SURVEYED BY, DATE: *David Burch (804)524-6157 (Richmond, District)*
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 SUBSURFACE UTILITY BY, DATE: *Surveyor Name (000)000-0000 (District)*

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-964-110, RW-201, C-501	21

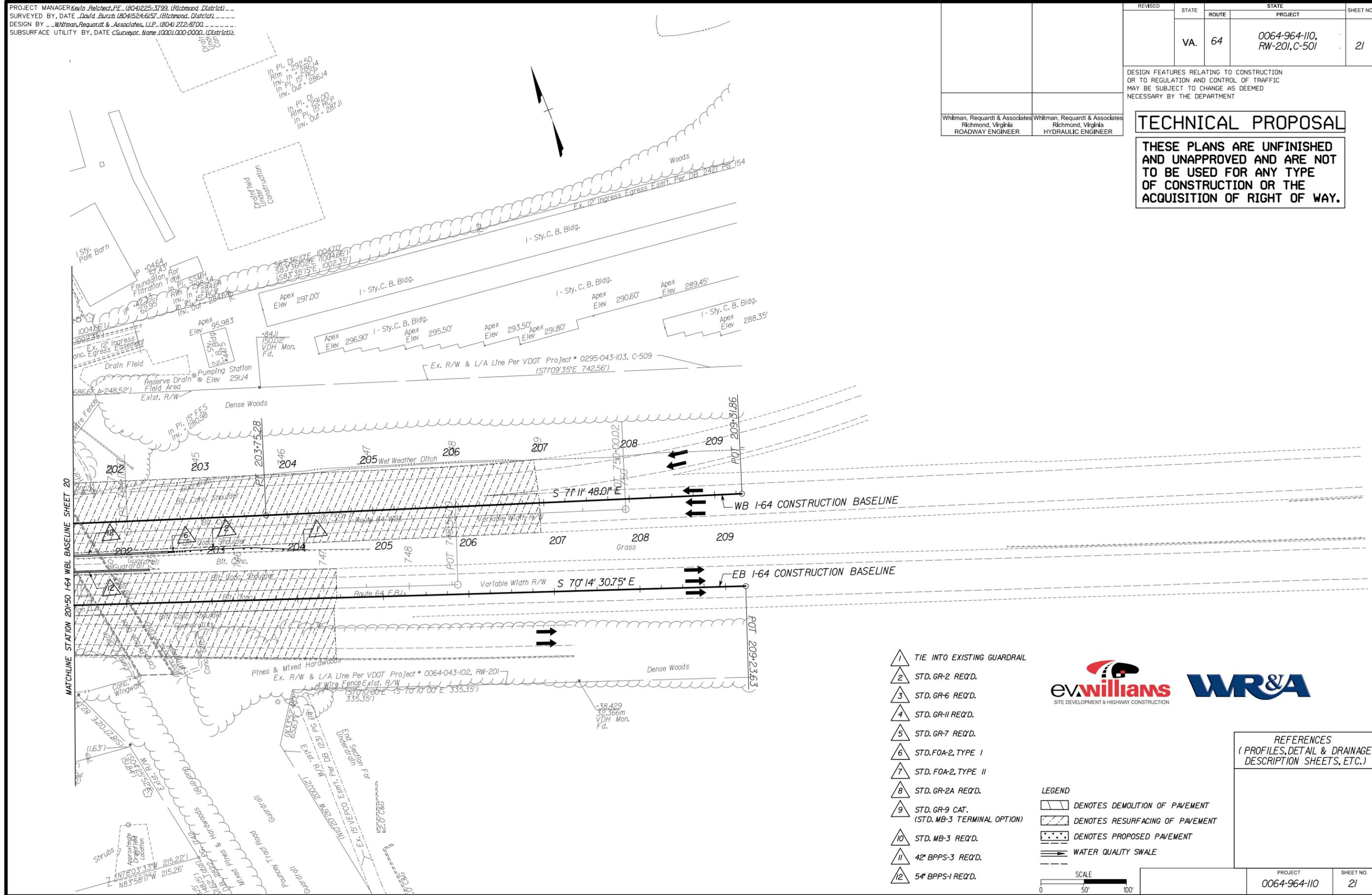
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Whitman, Reardon & Associates
Richmond, Virginia
ROADWAY ENGINEER

Whitman, Reardon & Associates
Richmond, Virginia
HYDRAULIC ENGINEER

TECHNICAL PROPOSAL

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



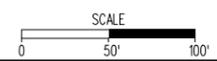
- 1 TIE INTO EXISTING GUARDRAIL
- 2 STD. GR-2 REQ'D.
- 3 STD. GR-6 REQ'D.
- 4 STD. GR-11 REQ'D.
- 5 STD. GR-7 REQ'D.
- 6 STD. FOA-2, TYPE I
- 7 STD. FOA-2, TYPE II
- 8 STD. GR-2A REQ'D.
- 9 STD. GR-9 CAT. (STD. MB-3 TERMINAL OPTION)
- 10 STD. MB-3 REQ'D.
- 11 42" BPPS-3 REQ'D.
- 12 54" BPPS-1 REQ'D.



LEGEND

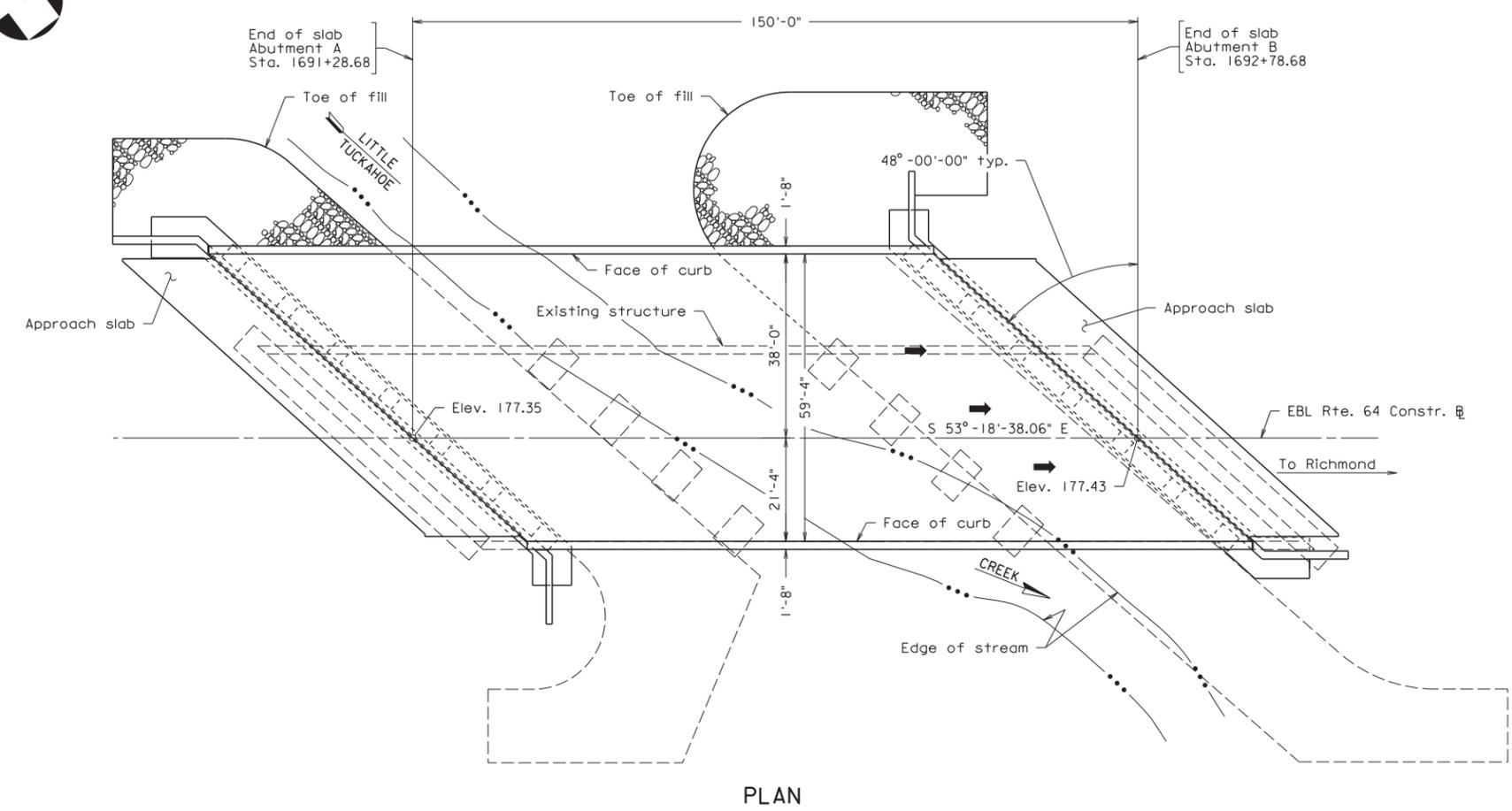
	DENOTES DEMOLITION OF PAVEMENT
	DENOTES RESURFACING OF PAVEMENT
	DENOTES PROPOSED PAVEMENT
	WATER QUALITY SWALE

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

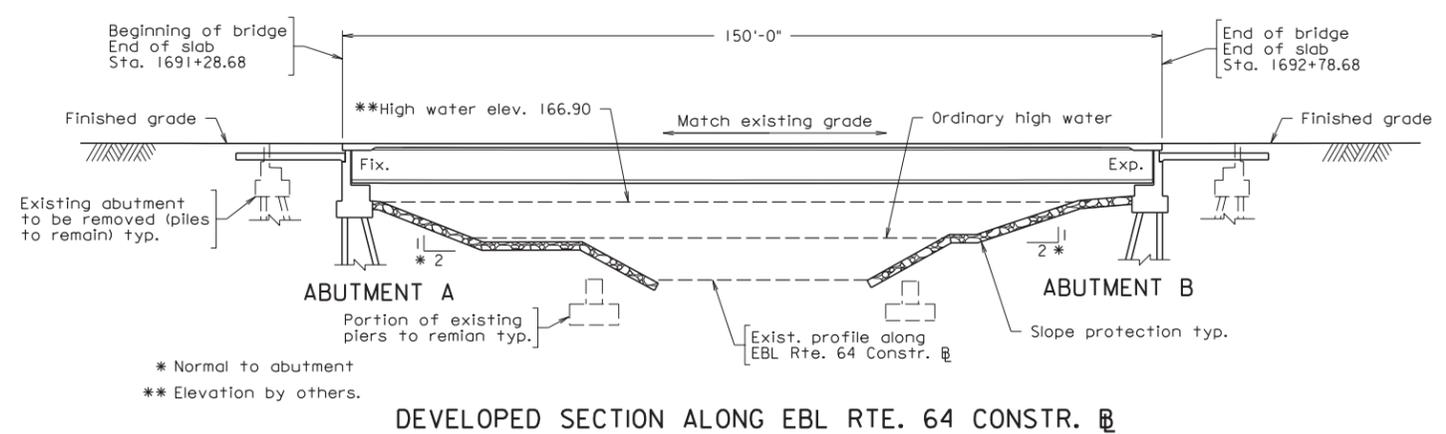


PROJECT	SHEET NO.
0064-964-110	21

STATE	FEDERAL AID	STATE	SHEET NO.
VA.	PROJECT	ROUTE PROJECT	I
NBIS Number:	0000000000XXXX	64 0064-964-110, B616, B617	70542
Federal Oversight Code:	F0	UPC No.	70542
		FHWA Construction and Scour Code:	X081-S9



PLAN



DEVELOPED SECTION ALONG EBL RTE. 64 CONSTR.

DESIGN EXCEPTION(S):
 Reduced outside shoulder width from 14'-0" to 9'-4". Approved by State Structure and Bridge Engineer.

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

Width: 59'-4" face-to-face of curb.
 Span layout: 150'-0" Prestressed Concrete Bulb-T span (EBL - B616)
 150'-0" Prestressed Concrete Bulb-T span (WBL - B617)
 Capacity: HL-93 loading.
 Drainage area: 5.10 sq. mi.
 Specifications:

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

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

The existing structure is designated a Type B structure in accordance with Sec. 411.

Bridge No. of existing bridge in EBL is 2015 and in WBL is 2016. Plan No. is 168-07.



COMMONWEALTH OF VIRGINIA
 DEPARTMENT OF TRANSPORTATION
 PROPOSED BRIDGE ON
 RTE. 64 OVER LITTLE TUCKAHOE CREEK
 GOOCHLAND CO. - 2.9 MI. NW OF SHORT PUMP
 PROJ. 0064-964-110, B616, B617

WHITMAN REQUARDT & ASSOCIATES RICHMOND, VA STRUCTURAL ENGINEER	
PLANS BY:	WR&A
COORDINATED:	WR&A
SUPERVISED:	WR&A
DESIGNED:	WR&A
DRAWN:	WR&A
CHECKED:	WR&A

PRELIMINARY PLANS
 THESE PLANS NOT TO BE USED
 FOR CONSTRUCTION

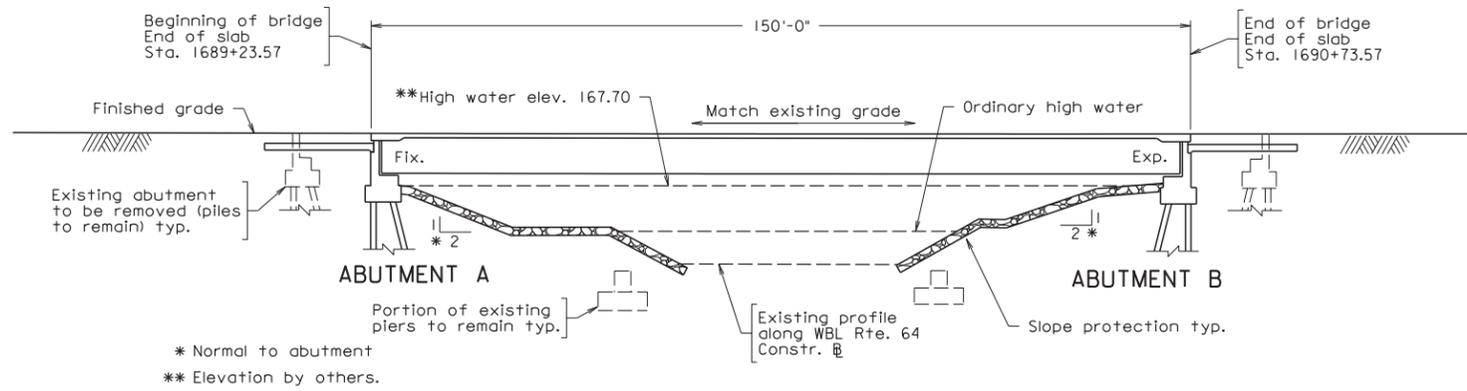
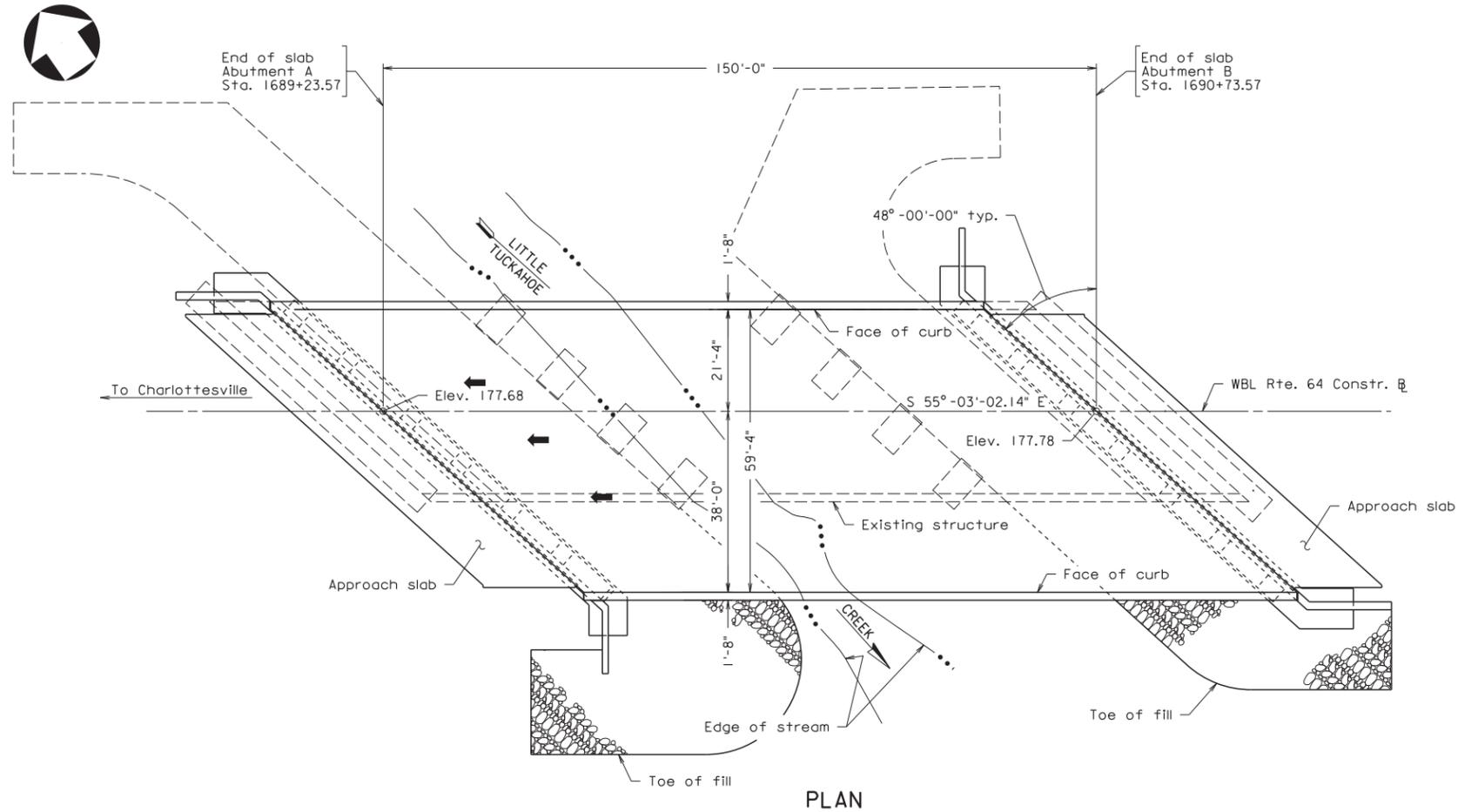
Scale: 1/16" = 1'-0"

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

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

Approved: _____ Date _____
 Chief Engineer

STATE	ROUTE	FEDERAL AID	PROJECT	STATE	ROUTE	PROJECT	SHEET NO.
VA.				64	0064-964-110, B616, B617		2



* Normal to abutment
 ** Elevation by others.

DEVELOPED SECTION ALONG WBL RTE. 64 CONSTR. B



PRELIMINARY PLANS
 THESE PLANS NOT TO BE USED
 FOR CONSTRUCTION

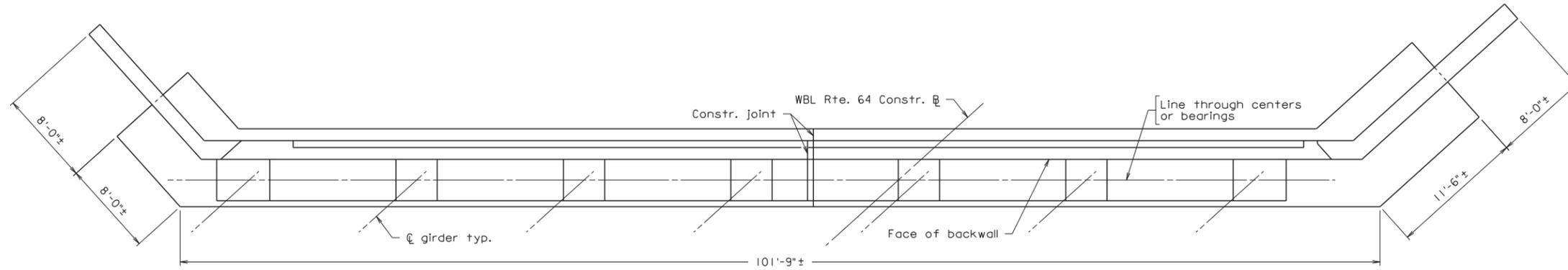
COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
PLAN AND ELEVATION WBL			
No.	Description	Date	Revisions
Designed: WR&A...	Drawn: WR&A...	Checked: WR&A...	Date: May 2013
Plan No.	Sheet No.	2 of 5	

WHITMAN REQUARDT & ASSOCIATES
 RICHMOND, VA
 STRUCTURAL ENGINEER

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

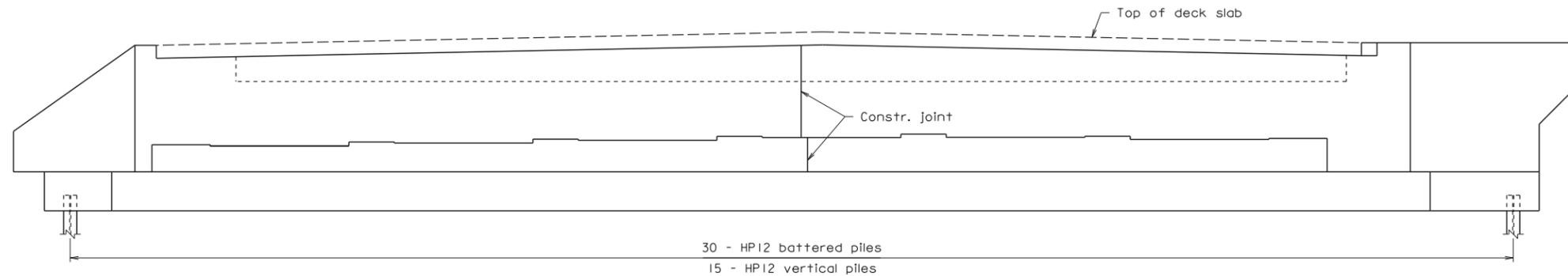
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STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	PROJECT
VA.		64	0064-964-110, B616, B617
			4



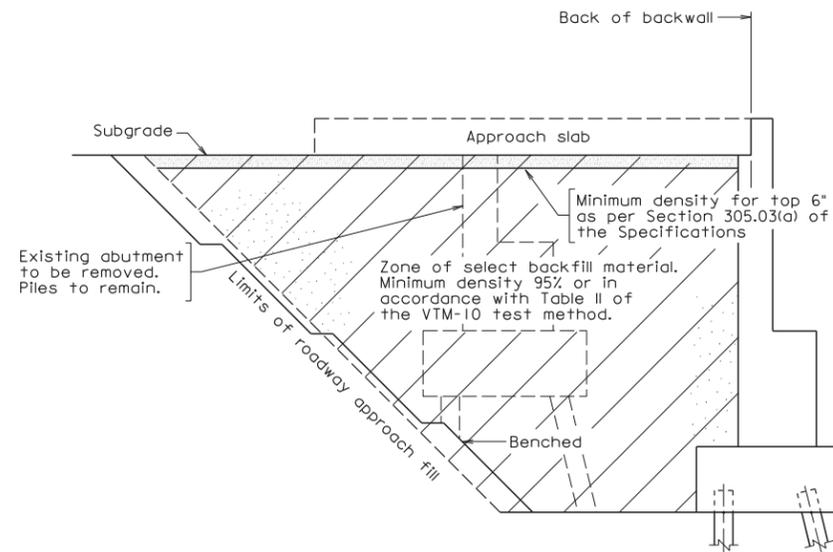
PLAN

(WBL Abutment A shown. All other abutments similar.)



ELEVATION

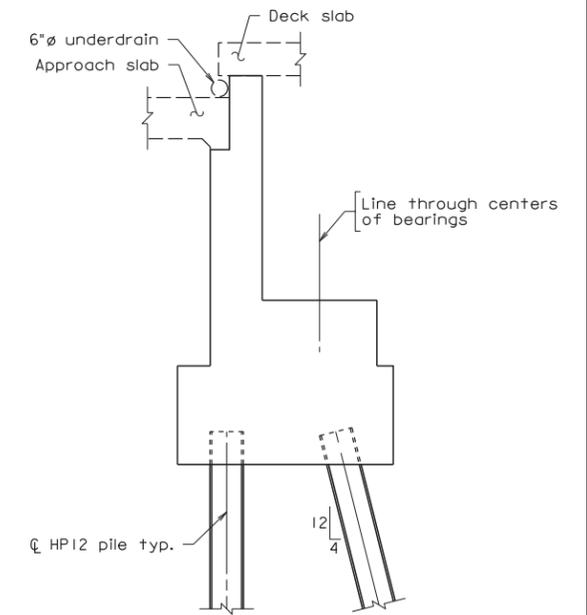
(WBL Abutment A shown. All other abutments similar.)



SECTION THROUGH ABUTMENT - CUT SECTION

Abutment drainage not shown
Not to scale

To be paid for as structural excavation



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



PRELIMINARY PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

COMMONWEALTH OF VIRGINIA DEPARTMENT OF TRANSPORTATION			
STRUCTURE AND BRIDGE DIVISION			
ABUTMENT DETAILS			
No.	Description	Date	Revisions
Designed: WR&A	Drawn: WR&A	Checked: WR&A	Date: May 2013
			Plan No.
			Sheet No. 4 of 5

WHITMAN REQUARDT & ASSOCIATES
RICHMOND, VA
STRUCTURAL ENGINEER

Scale: 3/8" = 1'-0" unless otherwise noted.

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VOLUME II: Roadway and Bridge Design Concept Plans

I-64 Widening and Route 623 Interchange Improvements

A Design-Build Project

From: 0.99 Miles West of Route 623 (WB – Route 622, EB – Route 623)

To: 0.38 Miles West Route 271 (Pouncey Tract Road) in Short Pump

State Project No.: 0064-964-110, P101, C501, B610-B614, B617, B616, D601, D606

Federal Project No.: NH-064-2(150)

Contract ID Number: C00070542DB55

Goochland County and
Henrico County, Virginia



IN ASSOCIATION WITH:

Bryant Contracting, Inc. (SWaM)

George Nice & Sons, Inc. (SWaM)

EBA Engineering, Inc. (DBE)

Engineering & Testing Services, Inc. (DBE)

AMEC Environment & Infrastructure, Inc.

H&B Surveying and Mapping, LLC (DBE)