A DESIGN-BUILD PROJECT

Interstate 66 Widening

VOLUME I: TECHNICAL PROPOSAL

From: approximately 1.2 miles west of U.S. Route 15 (James Madison Highway)
To: approximately 0.2 miles west of U.S. Route 29 (Lee Highway)

Prince William County, Virginia

June 3, 2013

Technical Proposal submitted to the Virginia Department of Transportation

Submitted by

LANE *in association with* rda

VDOT

State Project No.: 0066-076-003, P101, R201, C501, B674, B675
Federal Project No.: NH-5A01(194)
Contract ID Number: C00093577DB48

4.1 Letter of Submittal

LANE

June 3, 2013

Mr. John C. Daoulas, P.E.
Virginia Department of Transportation
1221 East Broad Street
Main Building, 8th Floor
Richmond, Virginia 23219

RE: **Interstate 66 Widening, Prince William County, Virginia**
State Project No.: 0066-076-003, P101, R201, C501, B674, B675
Federal Project No.: NH-5A01(194)
Contract ID Number: C00093577DB49

Dear Mr. Daoulas:

The LANE Construction Corporation (LANE) is pleased to submit our Technical Proposal for the above referenced Design-Build project. Our response contains all information requested in the RFP dated June 1, 2012 and Addenda No. 1 and No. 2. LANE is teamed with Rinker Design Associates, P.C. (RDA), Lead Design Consultant, to provide the Virginia Department of Transportation (VDOT) a team with a solid reputation for completing complex projects innovatively, on time, and often ahead of schedule. Our Team's experience enables us to deliver a high quality and technically-sound project that VDOT and the public deserve.

4.1.1 Offeror's Full Legal Name and Address

The LANE Construction Corporation
14500 Avion Parkway, Suite 200
Chantilly, VA 20151

4.1.2 Declaration of Intent

It is the Offeror's intent, if selected, to enter into a contract with VDOT for the Project in accordance with the terms of this respective RFP.

4.1.3 120 Day Declaration

Pursuant to Part 1, Section 8.2, we declare that the offer represented by this Proposal will remain in full force and effect for one hundred twenty (120) days after the date the Proposal is actually submitted to VDOT.

4.1.4 Offeror's Point of Contact Information

Mr. Richard A. McDonough is an authorized representative and point of contract of the Offeror, LANE, and has executed this Letter of Submittal by original signature. His contact information is included on the following page:

Mr. Richard A. McDonough
District Manager
14500 Avion Parkway, Suite 200, Chantilly, VA 20151
Tel: (703) 222-5670 (office)
(703) 898-3811 (cell)
Fax: (703) 222-5960
Email: RAMcdonough@laneconstruct.com

4.1.5 Principal Officer Information

Mr. Mark A. Schiller is the individual who will serve as the Principal Officer of LANE. His contact information is as follows:

Mr. Mark A. Schiller
Regional Vice President, Mid-Atlantic Region
14500 Avion Parkway, Suite 200, Chantilly, VA 20151
Tel: (703) 222-5670

4.1.6 Substantial and Final Completion Date

In accordance with RFP Section 2.4.1, LANE proposes a substantial completion date of November 11, 2016 and a final completion date of November 11, 2016.

4.1.7 Proposal Payment Agreement

An executed Proposal Payment Agreement (Attachment 9.3.1) may be found in the Appendix of Volume 1.

4.1.8 Certification Regarding Debarment Forms

Certifications for Debarment for both Primary and Lower Tier Covered Transactions have been completed and executed for the Offeror and all subconsultants, subcontractors and other entities as identified as members of the LANE Team. These may be found in the Appendix of Volume 1.

4.1.9 Written Statement of Compliance

LANE's Technical Proposal is fully compliant with the Design Criteria Table included in RFP Technical Requirements (Part 2) as Attachment 2.2 and all other requirements of the RFP. We certify that LANE's proposed limits of construction include the location of all stormwater management (SWM) facilities are within the right of way limits shown on the RFP plans with the exception of easements (other than permanent drainage easement associated with SWM facilities). LANE's design concept does not require Design Exceptions and/or Design Waivers other than those identified or included in the RFP.

The LANE Team appreciates the opportunity to propose on this critically important project. We look forward to partnering with the Department to make the I-66 Widening project a landmark success for the citizens of Virginia.

Respectfully submitted,

Richard A. McDonough
District Manager
The LANE Construction Corporation

4.2 Offeror's Qualifications

4.2 OFFEROR'S QUALIFICATIONS

4.2.1 Confirmation of SOQ Information

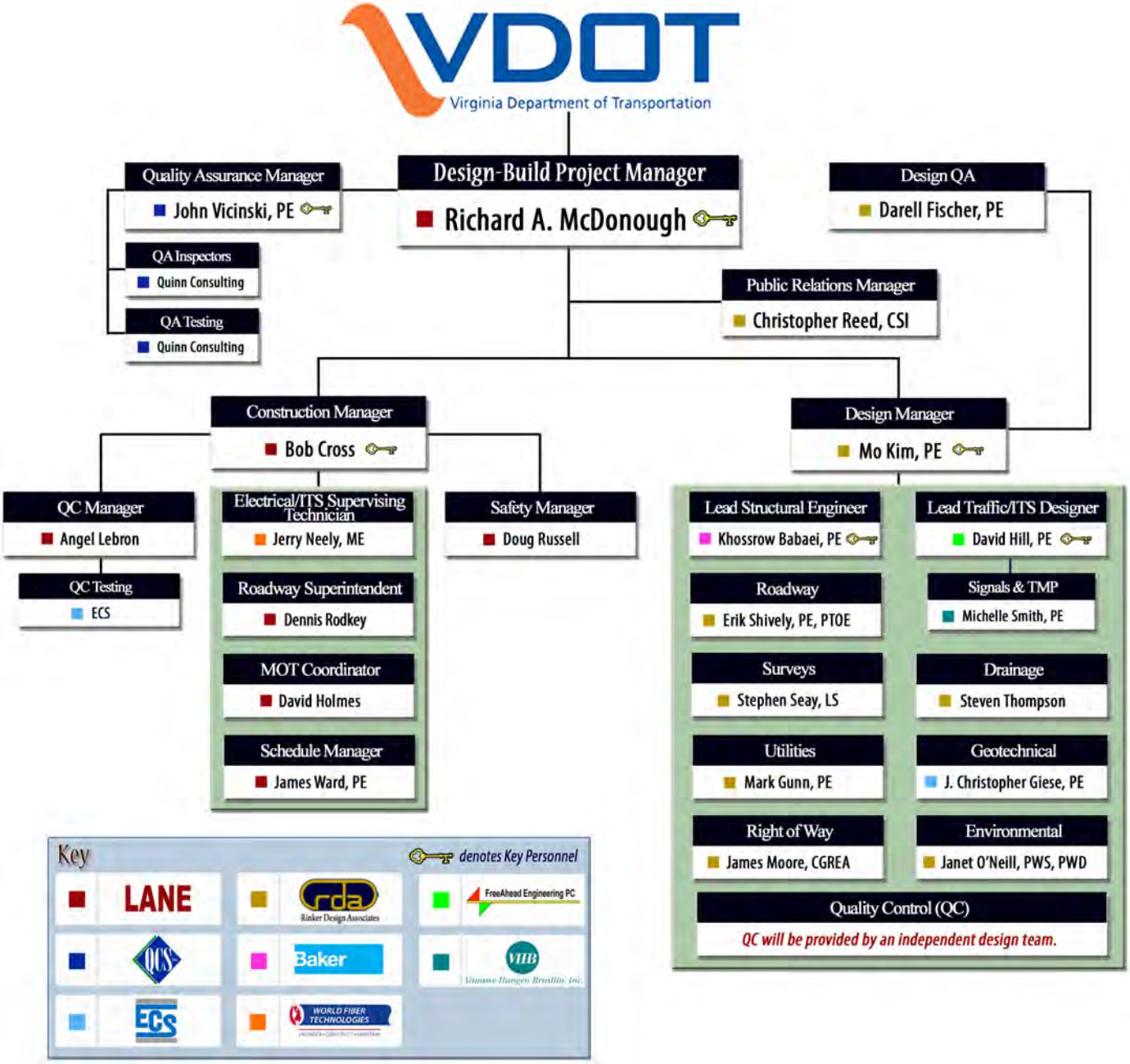
Under the leadership of our Design-Build Project Manager, Mr. Richard McDonough, the LANE Team is structured to effectively manage and deliver the design and construction of this project. LANE confirms that the information presented in the Statement of Qualifications (SOQ) dated February 13, 2012 remains true and accurate in accordance with RFP Section 11.4. As demonstrated in the organizational chart presented on the following page, the Team proposed by LANE, including but not limited to our organizational structure, lead contractor, lead designer, key personnel, and other individuals identified pursuant to Part 1, Section 4.2, will remain intact for the duration of the contract.

4.2.2 Organizational Chart

The LANE Team is organized to provide VDOT with a single-source point of contact, responsible for all design and construction activities. Our team organization has a straightforward chain of command, with individual tasks and functional responsibilities clearly identified. Our organizational chart identifies key personnel and major functions to be performed for the successful management, design, and construction of the project. Though reporting relationships are rigid, the lines of communication within the team are fluid and flexible enough to meet the requirements of each individual project task. In order to prevent unnecessary project delays, it may sometimes be prudent for other members within the LANE Team to communicate directly with their counterparts at VDOT, as directed and authorized in advance by Mr. McDonough and the VDOT Project Manager.

There are no changes from Section 3.3.2 of the Statement of Qualifications (SOQ) submitted to VDOT and dated February 13, 2012.

4.2 OFFEROR'S QUALIFICATIONS



4.3 Design Concept

4.3 DESIGN CONCEPT

4.3.1 Conceptual Roadway Plans

The LANE Team has developed a conceptual roadway plan that is economical and safe to improve operational efficiency of the corridor while minimizing impacts and disruption to the public. Our plan widens I-66 from a four-lane divided freeway to an eight-lane divided freeway by adding a High Occupancy Vehicle (HOV) lane and a Single Occupancy Vehicle (SOV) lane in each direction through the limits of the project as defined by the RFP and RFP plans. Our plan also replaces the existing bridges carrying Old Caroline Road/Jefferson Street and Catharpin Road over I-66, as well as ramp improvements and signal modifications to the I-66 westbound off-ramp at the Route 15 interchange.

Our proposed conceptual roadway plans incorporate the requisites of the RFP and **meet the design criteria table requirements provided in Attachment 2.2 of the RFP for all roadways and ramps**, while providing value-added features that will help reduce long-term maintenance costs for VDOT (i.e. full-depth shoulders under guardrail). Our plan exhibits provided in Volume II of this submission clearly depict the number of lanes, widths, shoulders, and where the widening occurs along with maximum profile grades for each segment of roadway, location of drainage features (including SWM facilities), sound walls, and shared use paths. Additionally, typical sections have been included for each roadway/ramp to provide additional information and roadway features not depicted in the plan view. Each element of the plan as identified in the RFP is discussed in greater detail below.

(a) I-66 Widening to Include One HOV Lane, a 4’ Buffer, One SOV Lane, and Widened Shoulders

The preponderance of work is along I-66, has a design speed of 70 mph and utilizes a GS-5 Geometric Design Standard and a TC-5.11R (8% max) superelevation. The westbound alignment has three curves with a maximum superelevation of 2.8% while the eastbound alignment only has two curves and a maximum superelevation of 2.7%.

Curve	WBL	Super	EBL	Super
1	R=7,730.00’	2.8%	R=8,8048.00’	2.7%
2	R=8,646.53’	2.5%	R=54,948.00’	N/C
3	R=55,052.00’	N/C		

The road system is largely being widened for an additional general-purpose lane and an HOV lane in each direction. The lane widths are 12’ with a 4’ buffer between the left general purpose lane and the HOV lane. Additionally, shoulder widths, per the RFP, will be improved to a total width of 17’ (12’ paved, 5’ graded) with the paved width increasing to 15’ when guardrail is required. Although the RFP allows us to only extend the surface course the additional 3’ (1’ behind the guardrail), it is our intention to extend the entire pavement section in order to lessen future maintenance. Widening is accomplished by adding roadway to both left and right of centerline while maintaining (or exceeding) a minimum median width of 55’ from edge of travelway to edge of travelway.

As part of our due diligence, our Team checked each design feature as it related to the intended criteria. This included ramp acceleration and deceleration lanes for adequacy of length and HOV taper lengths to ensure that transitions are accomplished in a safe and efficient manner. Additional consideration was given to future widening and future maintenance costs which may occur. In keeping with the Guide for High-Occupancy Vehicle (HOV) Facilities, a continuous access, concurrent flow HOV design does not require a 1400’ acceleration taper in the eastbound direction as shown in the RFP plans. Our design concept introduces a shorter taper into the HOV lane to improve driver expectancy while providing additional pavement through the transition area for easier future expansion to the west.

(b) Demolition and Reconstruction of Two Bridges

The Catharpin Road and Old Carolina Road Bridges will be demolished in total and reconstructed as part of this project. The first, Old Carolina Road Bridge over I-66, will be constructed in one phase while traffic is completely detoured off of the structure. The second, Catharpin Road Bridge over I-66, will be constructed in two stages while maintaining one lane of traffic at all times. In relation to these bridges, the roadway approaches will be reconstructed as described below.

Old Carolina Road. Old Carolina Road provides two 12' lanes (one in each direction) with curb and gutter using the GS-8 Geometric Design Standard and a design speed of 35 mph. Additionally, a 10' shared use path is provided on the west side of the roadway.

Catharpin Road. Catharpin Road also provides two 12' lanes (one in each direction) with curb and gutter using the GS-8 Geometric Design Standard and a design speed of 45 mph. Similarly, a 10' shared use path is provided along the roadway, except on the east side of the roadway.

(c) Ramp Widening

I-66 Westbound Off-Ramp at Route 15. The Route 15 off-ramp is designed using the GS-R Geometric Design Standard, a design speed of 40 mph, and TC-5.11R superelevation (R=1,200.00', e=5.4%). For this dual lane exit, two 24' lanes have been provided along with 4' and 8' paved shoulders (left and right respectively), which have been widened to 1' behind the guardrail where guardrail is proposed. The ramp improvements extend to the intersection with Route 15. Additionally, we analyzed the turning movements of dual WB-67 trucks turning left onto southbound Route 15 simultaneously, provided adequate pavement widening to accommodate, and adjusted guardrail and drainage accordingly thus eliminating the need for special design signing restricting left turning trucks to the right-most left turning lane.

I-66 Eastbound On-Ramp at Route 15. The Route 15 on-ramp to I-66 eastbound is designed using the GS-R Geometric Design Standard, a design speed of 40 mph, and TC-5.11R superelevation (R=1,200.00', e=5.4%). In accordance with the GS standards, the ramp width provided is 16'. No acceleration lane is specifically provided since the on-ramp is used to add the additional general-purpose lane in the eastbound direction.

(d) Mill and Overlay and/or Buildup of Existing Pavement

Throughout the I-66 corridor (within the limits of the project), the existing pavement will be utilized by milling and overlaying unless the cross slope requires superelevation correction in which case buildup will also be provided. At a minimum, a 2½" buildup will occur in keeping with the pavement recommendations and the RFP typical sections. In order to maintain costs, minimize construction issues, and maximize efficiency, spline grades (meeting or exceeding design speed) will be used for design and construction.

(e) Retaining Walls

There are several planned locations for retaining walls based on right of way constraints. Along Old Carolina Road (both bridge approaches and both side of the roadway) and Catharpin Road (both bridge approaches and all but one side of the roadway) retaining walls will be used to avoid impacts to private property. Additionally, where appropriate and in order to maintain compliance with the RFP documents, we will provide retaining walls to avoid additional impacts.

(f) Sound Barrier Walls

The sound barriers that have been identified with the RFP plans have been carefully examined along with the TNM model provided. The LANE Team is confident that we will be able to significantly improve the barrier's horizontal locations to best utilize existing topography without compromising the attenuation line or safety.

(g) Overhead Sign Structures

Our design has incorporated overhead signage appropriate to meet the 2009 MUTCD Manual and the 2011 Virginia Supplement to the 2009 MUTCD. This includes a ground mount sign (see photo right) whose message will be placed on a new panel and mounted to the proposed sign bridge truss with the DMS sign. Similarly, the one mile ahead ground mount sign for US Route 29 will be replaced with a new sign on a cantilever overhead structure at the one-mile mark.

Per the RFP Questions and Answers (Q&A), the Exit Only sign for the US Route 29 South exit will be modified to replace the lower portion of the sign message as shown in the graphic to the left. Additionally, all westbound signs for the US Route 15 interchange (see examples below) will be on overhead cantilever structures, conforming to the requirements discussed in the Q&A.

At the Gore

½ Mile Before Exit

One Mile Before Exit

(h) Storm Drainage

Watersheds. The project limits are located in the Bull Run-Catlett's Branch Watershed (PL32) and the Little Bull Run Watershed (PL43) as designated by The Virginia Department of Conservation and Recreation Hydrologic Unit Code System (HUC). PL32 flows into the North Fork and Lake Manassas which outfalls into Broad Run and ultimately the Occoquan River. PL43 flows north into Bull Run and ultimately outfall into the Occoquan River as well.

Approximately 90% of the project stormwater outfalls north into small tributaries which drain into Little Bull Run. The remaining 10%, located in the western sector of the project, flows into small tributaries running south and outfalls into the North Fork.

According to FEMA mapping, the project limits and subsheds located on this project are not located within a FEMA designated 100-year floodplain limit. There are only two designated subsheds within the project limits, which are located within the PL32 watershed, while 22 subsheds located within the project limits are within the PL43 watershed.

Hydrologic and Hydraulic Analysis. According to VDOT criteria, Hydrologic and Hydraulic Analysis will be required to model existing and proposed conditions of the individual subsheds. Elements requiring consideration:

- Drainage Analysis of existing and proposed culverts
- Stormwater Management (SWM)

- Adequate Outfall analysis
- Erosion and Sedimentation Control design
- A Stormwater Pollution Prevention Plan and Virginia Stormwater Management Program permit

Culverts and Roadway Drainage. Roadway drainage design will include the design and construction of culverts, open channels, storm sewer systems, underdrains, and bridge deck drainage and structures. Existing culverts, in accordance with the RFP, are required to be abandoned in-place or removed as necessary. New culverts will be installed and will replace existing culverts. As defined in the RFP, our Team will evaluate the potential of utilizing existing culverts to minimize disruption to the traveling public and reduce upstream and downstream construction impacts. There are 14 major culverts that are required to be constructed and will replace the existing culverts currently serving I-66. All design will be per VDOT criteria.

Adequate Outfall. The project includes 25 individual outfalls, which are required to meet adequate outfall in accordance with MS-19 requirements of the Virginia Department of Conservation and Recreation. Adequacy of downstream channels includes meeting the minimum required 2-year storm erosive velocity based on existing soil types and meeting capacity for the 10-year storm event within the bed and banks of the existing channel.

As required by MS-19, if a channel is proven inadequate, then additional measures are necessary to improve the post-developed conditions such that the receiving downstream channels become adequate by definition. Methods of meeting channel adequacy will include providing SWM facilities to control the post-developed drainage to the pre-developed rate for the 2-year and 10-year storm events. Also, channel improvements to a point downstream where the Project Area is 1% of the total drainage shed, or to a point where the erosive velocities and the channel capacity are satisfied. Our design will accommodate SWM facilities which will attenuate the 2-year and 10-year storms to provide adequate outfall for the downstream receiving channels to the extent practical so that no additional construction or channel improvements will be necessary beyond the Area of Potential Effect (APE) currently established with this project. To the extent practical, roadside ditches will convey and divert drainage to the SWM facilities so that the requirements of MS-19 are met for all receiving channels.

Permit Sketches. Wetland delineation and permitting by the Design-Build Team for this project is required. All disturbances that will occur as a result of this project that require permitting and mitigation are the responsibility of the Team.

Temporary Drainage (TMP). TMP drainage will be provided for all construction phases. SWM facilities will be utilized as sediment basins where feasible during the construction phase. The erosion control plans, Phases 1 and 2, will address the temporary drainage conditions.

(i) Storm Water Management Facilities

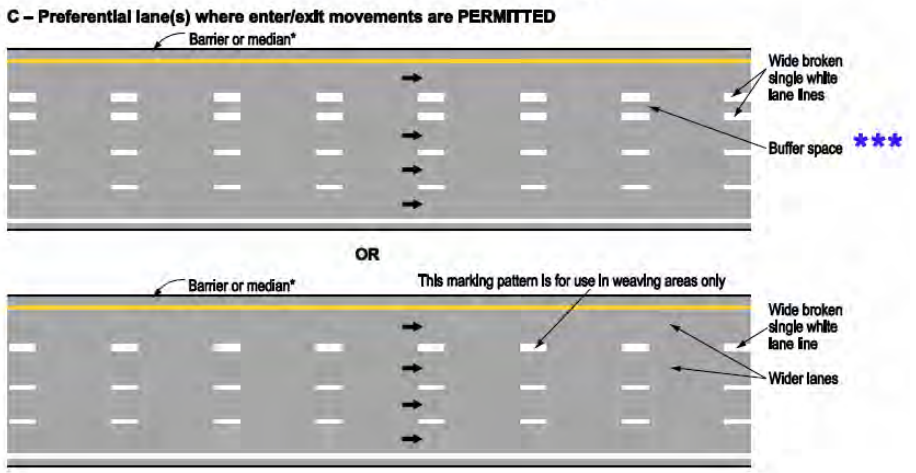
Runoff water quality and quantity will be addressed by new SWM ponds designed based upon new project impervious area. Water quality, per the RFP, will be in accordance with the most current VDOT IIM-LD-195.7. Stormwater quantity will control the 2-year and 10-year storms, as well as assist in attenuating these storms to the pre-developed rate to provide adequate outfall for the downstream receiving channels. We anticipate six (6) SWM/BMP extended detention “dry” ponds as shown on our Conceptual Plans.

(j) Traffic Signal Modifications

We will modify/reconstruct the signal at the Route 15 intersection with I-66 WBL Off-/On-Ramp. This signal modification is necessitated by the northern widening of the I-66 WBL Off-Ramp to Route 15. The modification will include the probable replacement of the signal pole for the identified Off-Ramp and addition of signal heads to accommodate the dual left turns and dedicated right turn lanes.

(k) Pavement Markings, Markers and Signs

The LANE Team's concept provides for pavement markings, markers and signage in keeping the requirements of the RFP. Of note, the pavement marking between the general purpose lanes and the HOV lane will consist of a single 12" wide skip line. The MUTCD and the VA Supplement allow for either a dual or a single "wide broken" white lane line (see graphic right). However, in keeping with the existing HOV lanes built and designated to the east, a single wide broken white lane line will be used.



**Virginia Supplement to the 2009 Manual on Uniform Traffic Control Devices for Streets and Highways* 2011 Edition; Figure 3D-2(VA). Markings for Buffer Separated Preferential Lanes (Sheet 2 of 2)

(l) ITS Components

The LANE Team's involvement in the I-66 Active Traffic Management (ATM) Design-Build proposal process has given us significant insight as to what has been proposed and is to be implemented from an ITS perspective along the I-66 corridor. We fully understand that for this I-66 widening project, we will be extending the concepts for the I-66 ATM throughout the limits of this project. Our design concept will be coordinated with the I-66 ATM project to ensure compatibility of equipment and installation for VDOT.

Careful consideration has been given to mitigate impacts to traffic operations and safety. We have included installation of new CCTV poles, cameras, cabinets and junction boxes at the two existing locations in our cost proposal to be compliant with the plans and technical requirements. However, we have looked closely at the two existing CCTV locations and are confident that these locations, which were installed only a few years ago, can be retained in the system design, providing major cost savings to the project. We will coordinate our design efforts with the Route 15 interchange project to ensure there are no conflicts with the CCTV location 002 that might be created by that project.

Our project approach for the ITS elements of the project is to first confirm the location of all proposed ITS devices, CCTV, DMS and MVD. As indicated in our design concept, we are confident that the two existing CCTV installations can be retained and will provide cost savings to the project. For all equipment locations, we will need to design the conduit routing to access either the new or existing junction boxes while avoiding other utilities and the proposed noise barriers. All equipment cabinets, junction boxes, and conduit runs will be accessible from the roadway side of the noise barriers. The existing power feeds to the two existing CCTV locations will be impacted by the noise barrier foundations and will need to be relocated. We will also ensure that the existing telephone drops providing communications to these devices remain active until the new fiber optics connection to the VDOT fiber backbone is operational.

For all the CCTV locations, the final placement will be determined by bucket-truck field surveys and developing optimal placements to meet the field of view coverage desired by VDOT. For the new 80' CCTV 002, the optimal placement will take into consideration the Route 15 interchange improvement project. The location indicated in the RFP plans is nearly 300' offset from I-66, which will significantly impact the field of view of I-66 that can be achieved. Locating this camera further to the north and closer to I-66 would improve the field of view but will need to be located so it is not disturbed during the Route 15 interchange construction. A location closer to I-66 would still offer good visibility of the Route 15 interchange ramps as well as the intersection of Route 15 and Route 55.

Since there is no roadway lighting included in this section of I-66, the power feed to the ITS devices will be through individual power service connections to each cabinet rather than through a 480-volt power distribution system, as is used primarily along I-66 to the east of this project. We will coordinate with NOVEC to obtain the new power service that is required as well as relocation of existing power service that will be impacted by the noise barrier installation. We will also ensure that the existing VDOT communications network at the east end of the project is protected throughout construction. We will design our tie into the VDOT fiber to be consistent with the overall network design. Throughout this project, we will coordinate closely with VDOT, its system integrator, and the I-66 ATM activities to ensure a seamless integration of the ITS elements of this project into the I-66 ATM.

(m) Lighting

Per the RFP, our Team's design includes lighting along Old Carolina/Jefferson Street from Cheyenne Way to and including the Old Carolina Road Bridge. Additionally, lighting will be provided on the Catharpin Road Bridge. The lighting design will be done in compliance with the American National Standard Practice for Roadway Lighting (RP-8-00) and in accordance with VDOT's Traffic Engineering Design Manual. The light pole will be of a decorative nature as identified in the RFP. The design will use the industry-accepted software (AGI-32).

(n) Right of Way Acquisition

The LANE Team's concept design stays within the existing right of way as mandated by the RFP to include the entirety of our SWM facilities and project approach to drainage. However, as indicated in the RFP, we anticipate that easements for utilities will be necessary and as a result will require acquisition from adjacent property owners where utility impacts dictate. We acknowledge that our right of way services will strictly adhere to the policies and procedures of VDOT's Right of Way Division. Our Team's lead design firm is VDOT pre-qualified to provide right of way acquisitions. As a result, they are very familiar with VDOT, state and federal requirements regarding acquisition.

(o) Utility Relocations

Our approach to utility relocations is to avoid them where possible. Where avoidance is not achievable and feasible/reasonable accommodations can be made, our team intends to work with the utility companies to provide a mutually beneficial design. Our Team's Utility Manager, Mr. Mark Gunn, P.E., will proactively and regularly discuss project schedule, impacts and easement acquisitions with each utility company in order to establish an effective communication plan which keeps utility risks at a minimum and progress at a maximum. Our utility approach is discussed in detail in Section 4.4.2.

(p) Guardrail

The LANE Team's design ensures that the clear zone, within the Project limits, is free from hazards and fixed objects to the extent feasible. Where hazards or fixed objects cannot be avoided, we have evaluated guardrail needs (and length of need) to determine the most appropriate and feasible treatment. Where 4:1 and flatter slopes can be achieved and 9' or more of deflection can be accommodated, a high-tension cable rail barrier system will be implemented. Otherwise, standard GR-2 will be used to protect against fixed objects and hazards. However, during our analysis of guardrail need, we discovered that the center pier for the Antioch Road Bridge over I-66 would be within 30' of the roadway (pavement) based on the design presented in the RFP plans. In accordance with the Road and Bridge Standards, a Bridge Pier Protection System (BPPS) must be implemented or the limits of the project and HOV lane must be shortened to avoid any median widening under the Antioch Road Bridge. Changing the Project length/limit is allowed based on the RFP, Part 1, Section 2.1 (end of the first paragraph). We acknowledge that this will require VDOT's approval. Based on logic and sound engineering principles, believe that shortening the limits/HOV lane does not reduce the

capacity or functionality of the roadway. As a result, the money that would have been spent on a Test Level 5 (TL-5) BPPS can be spent on other improvements. The current horizontal clearance to the bridge pier is 30', which avoids the need for anything more that standard guardrail. If the HOV is extended in the future, then the TL-5 system or a bridge replacement with a crashworthy pier will be included. Our design will not preclude future widening. Finally, it is unclear, based on available information, whether vertical clearance requirements can be met if widening under the bridge was provided. Ultimately, shortening the project limits by approximately 850' provides the best use of money and removes concerns over uncertain conditions associated with the Antioch Road Bridge.

(q) Transportation Management Plan

The LANE Team will provide a Transportation Management Plan (TMP) in accordance with IIM-241/TED-351 and incorporate all the strategies outlines for a Type C project. Safety (for all) will be our highest priority. Our detailed approach is discussed in Section 4.5.3.

(r) Erosion and Sediment Control

Erosion control design will be phased to address TMP and temporary drainage conditions during the construction phase. Permanent SWM facilities will be utilized to the extent practical as sediment basins during the construction phase. Sediment traps will be located where necessary to control drainage areas that do not exceed 3 acres during the construction phase. Other erosion control measures may include, but not be limited to silt fence, super silt fence, diversion dikes, check dams, inlet and outlet protection, and construction entrances where necessary.

(s) Stakeholder Coordination and Public Outreach

The LANE Team has developed a comprehensive plan (detailed in Section 4.4.1) for ensuring stakeholder coordination and public outreach. We have identified a host of probable stakeholders to include: VDOT, FHWA, the public, Prince William County, Town of Haymarket, adjacent property owners, police, fire & rescue, various utility companies, active construction project contractors, and permitting agencies. Our plan and approach is simple yet comprehensive; we will disseminate information early and often while continuously gathering data to ensure that our success is also a success from the stakeholders' perspective.

(t) Quality Assurance and Quality Control

Quality assurance and quality control for both design and construction will be implemented in strict accordance with VDOT's *Minimum Requirements for Quality Assurance and Quality Control on Design Build and Public-Private Transportation Act Projects*, January 2012.

(u) Overall Project Management

As the lead contractor and Design-Builder, LANE will maintain and provide overall project management for the project. Mr. Richard McDonough, Design-Build Project Manager, will ensure that all requirements and commitments are met in accordance with the RFP documents. In order to effectively manage all aspects of the project, Mr. McDonough will rely on his management staff (i.e., Design Manager, Construction Manager, Quality Assurance Manager, Utility Manager and Public Relations Manager) to oversee their areas of expertise and to keep him informed of all design and construction matters.

(v) Coordination with Other Ongoing Projects within the Corridor

As part of our overall project management strategy and stakeholder coordination, we recognize that coordination with adjacent projects and contractors will be an integral part of our successful approach. In particular, the Route 29/Linton Hall Road Interchange construction, the I-66 Active Traffic Management construction, and the I-66/Route 15 Interchange construction will require close coordination. We propose to

meet with each of these contractors or teams on a regular basis to ensure that design and construction elements tie seamlessly between each project.

(w) Environmental Considerations

The LANE Team understands that VDOT has already completed a NEPA Categorical Exclusion (CE) for the project. **Based on the preliminary design evaluated in the CE**, there would be no adverse effects on known cultural resources and no impacts on threatened or endangered species. There are no known recognized environmental conditions in terms of hazardous wastes or contamination within the project area. However, we recognize the need to conduct investigations for asbestos containing materials (ACM) and lead-based paint for Type B structures as detailed below. There are no 4(f)/6(f) properties and no cultural resources that would be adversely affected. Impacts on wetlands and waters at this stage appear to be minor, and qualify for authorization under Nationwide Permit 23.

The current NEPA document does not include the eastern terminus of the project which was extended by approximately 1 mile during the RFP process to accommodate milling and overlay through the US Route 29 interchange. These limited operations qualify for a Blanket CE which can be coordinated as such or rolled into the overall NEPA re-evaluation for P, S. & E and Right of Way. However, if portions of our design and construction staging require us to go outside of the NEPA envelope, we will accelerate the re-evaluation earlier in the process to minimize/mitigate any schedule risks.

Further evaluation of the environmental documents revealed that the VDHR 2012 No Adverse Effect Determination does not include the western ½ mile of the project. As a result, the Section 106 analysis will be expanded to incorporate any limits beyond those defined in the current determination.

The LANE Team will coordinate these changes with VDOT, VDHR, and the natural resources agencies to re-evaluate and update the NEPA document, the cultural resources "No Adverse Effect" determination, and the threatened and endangered species "No Effect" determination. The wetland delineation will cover these additional areas, as well.

Our Team has extensive experience with NEPA documentation, agency coordination, and permitting for roadway and other types of projects. We have provided VDOT-format EAs for the Route 28 Widening Improvements and Purcell Road projects, CEs for the Prince William Parkway Widening and the Northfax Intersection Improvements Projects, and PCEs for the Georgetown Pike Walkway, the Gideon Sidewalk Extension, the 7 Corners Transit Center, and Kamp Washington Intersection projects. In many cases these projects had previous NEPA documentation, and it was a matter of updating or re-evaluating the project impacts to cover an increase in the project impact area.

The LANE Team is extremely familiar with the surrounding project area. Our lead designer has provided design and wetland permitting services for the Route 15 PPTA Project through Haymarket and are currently working with the Town of Haymarket as the designer for the Jefferson Street Sidewalk that will connect to the Old Carolina Road sidewalk and eventually Heathcote Boulevard.

We will continue to identify and assess design changes and the need for additional field surveys and coordination as soon as these changes happen. We will first evaluate what we can do to keep the design within the limits of the project impact area already evaluated—to avoid the need to re-evaluate and re-coordinate. We will keep the VDOT Environmental POC apprised of any changes that cannot be avoided as early in the schedule as they become known. We will also have project status meetings regularly which our environmental manager will attend, to identify early on any changes to the plans or construction process that

could trigger the need to re-evaluate the environmental documents or re-coordinate with the resource agencies.

Our Team will honor the following environmental commitments:

1. Ensure that the final ROW plans and the 100% design plans are provided to the District Environmental Manager to finalize the Environmental Reevaluations for ROW and PSE (EQ-200 forms), as well as the Environmental Certifications (see below).
2. Delineate wetlands and other "waters of the US" and state waters, and obtain the necessary water quality permits/authorizations. The environmental manager will work with the designers to avoid and minimize impacts on wetlands and waterways to the greatest extent practicable. Based on the permit determination provided by VDOT and the fact that the Categorical Exclusion has been approved by the FHWA, the project is likely to be authorized under Nationwide Permit 23 (Approved Categorical Exclusions), provided the impacts to wetlands remain less than ½ acre when staging areas and SWM areas are considered. The NWP 23 is the preferred permitting strategy because it would take less effort to obtain authorization, and construction monitoring would not be required. We will obtain wetland and stream mitigation credits, as required, through a mitigation banks servicing the appropriate HUC. If the project cannot be permitted under the Nationwide Permit, we will ensure compliance with any water quality permit conditions, including pre-construction, construction period, and post-construction monitoring and notifications. We have obtained water quality permits for dozens of transportation and other projects in Northern Virginia and other areas.

   We will ensure that the VDOT Project Manager gets copies of all permits. If no water quality permit is required, we will notify the VDOT Project Manager of this in writing, so that VDOT can authorize us to proceed. We will also provide the Virginia Stormwater Management Program (VSMP) Permit registration statement and the Stormwater Pollution Prevention Plan (SWPPP). We do the VSMPs/SWPPPs for virtually all our transportation and site development projects. We will provide monitoring of VSMP permit conditions during construction.
3. Retain an independent asbestos inspector licensed by the Virginia Department of Professional and Occupational Regulation (DPOR) to check previously unsampled materials on Type B structures in the project area (e.g., materials within the two bridges that were not previously sampled because they are inaccessible before demolition and any other structures in the project area that may contain hazardous materials) prior to demolition, according to the *Special Provision for Inspection of Structures for ACM on Design-Build Projects*. Copies of all inspection results shall be provided to the VDOT Project Manager. If asbestos containing materials (ACM) are discovered, we will obtain estimates from a certified asbestos abatement and removal company prior to demolition or renovation and in accordance with the *Special Provision for Asbestos Removal and NESHAP-Related Demolition Requirements for Structures on Design-Build Projects* and with all Federal and State regulations. It is understood that VDOT will cover the cost of remediation, if necessary, through a separate work order. (The Design-Builder shall comply with the *Special Provision Copied Note for Demolition Notifications for Structures Not Requiring Asbestos Removal* on all structures where ACM removal is not required.) We will provide a Health and Safety Plan for the removal process to submit to the VDOT Project Engineer for review and approval.
4. Manage solid waste, hazardous waste, and hazardous materials removal and disposal in accordance with all applicable state and federal standards and regulations. We will be responsible for ensuring that the construction conforms to the *Special Provision for Dismantling and Removing Structures or Removing Portions of Existing Structures*, and signing the manifest and bills of lading for shipment

of such waste. We will prepare a Spill Prevention, Control, and Countermeasures Plan for submittal to the VDOT Project Engineer prior to beginning construction.

5. Ensure continued avoidance of impacts to historic properties when planning staging areas, borrow or disposal areas, or easements.
6. Construct a total of four noise barrier systems as defined in the RFP. Ensure that the RFP *Special Provision for Sound Walls* is implemented. If during the design process, our team identifies a need to shift the locations/positions of any of the sound walls depicted on the Conceptual Plans, or propose another design alternative, the environmental manager will ensure the necessary revision to the Noise Abatement Design Report is provided to VDOT's Noise Abatement staff for review and approval.
7. Ensure that the Department of Environmental Quality air pollution regulations applicable to an ozone non-attainment area and a volatile organic compounds (VOC) and nitrogen oxides (NOx) emissions control area (*9 VAC 5-40-5490 et seq*., Cutback Asphalt restrictions; *9 VAC 5-50-60 et seq*., Fugitive Dust precautions, and *9 VAC 5-40-5600* et seq., Open Burning restrictions.) All reasonable precautions will be taken to limit the emissions of VOC and NOx.
8. Even without any changes in the project impact area or Area of Potential Effect, we will re-coordinate with the Virginia Departments of Conservation and Recreation and Game and Inland Fisheries, and the US Fish and Wildlife Service, prior to beginning construction, to update information on threatened and endangered species. We will also comply with any water quality permit conditions that the regulatory agencies require to protect such species.
9. Ensure compliance with all federal and state environmental laws and regulations, as outlined in bullets 1 through 8 above, as well as Exhibit 3.5.1 of Part 4 of the RFP. Should any noncompliant items be identified during construction, we will take immediate and continuous corrective action to bring the items back into compliance. We have conducted such monitoring on road (e.g., Route 15 PPTA) and other types of projects (e.g., Liberia Interceptor).

4.3.2 Conceptual Structural Plans

The LANE Team proposal provides bridges that will meet the VDOT RFP requirements for this Design-Build contract that are both cost effective and low maintenance. Our design completely removes and replaces the existing bridges as described in the following pages.

EXISTING BRIDGES

Geometry. Old Carolina Bridge is 266' long and Catharpin Bridge is 260' long. The bridges are 32' wide (out-to-out). They carry one traffic lane in each direction. The horizontal alignments of both bridges are on tangent and vertical alignments on a crest curve.

Structure. The bridges are 2-span, continuous, haunched steel plate girder structures with concrete decks. The substructure consists of a solid concrete wall pier and stub abutments with the wingwalls parallel to I-66. The substructure units are skewed slightly.

Old Carolina Road over I-66	
Profile View	Approach View
** Catharpin Road over I-66 has similar Profile and Approach View configuration.*	

PROPOSED BRIDGES

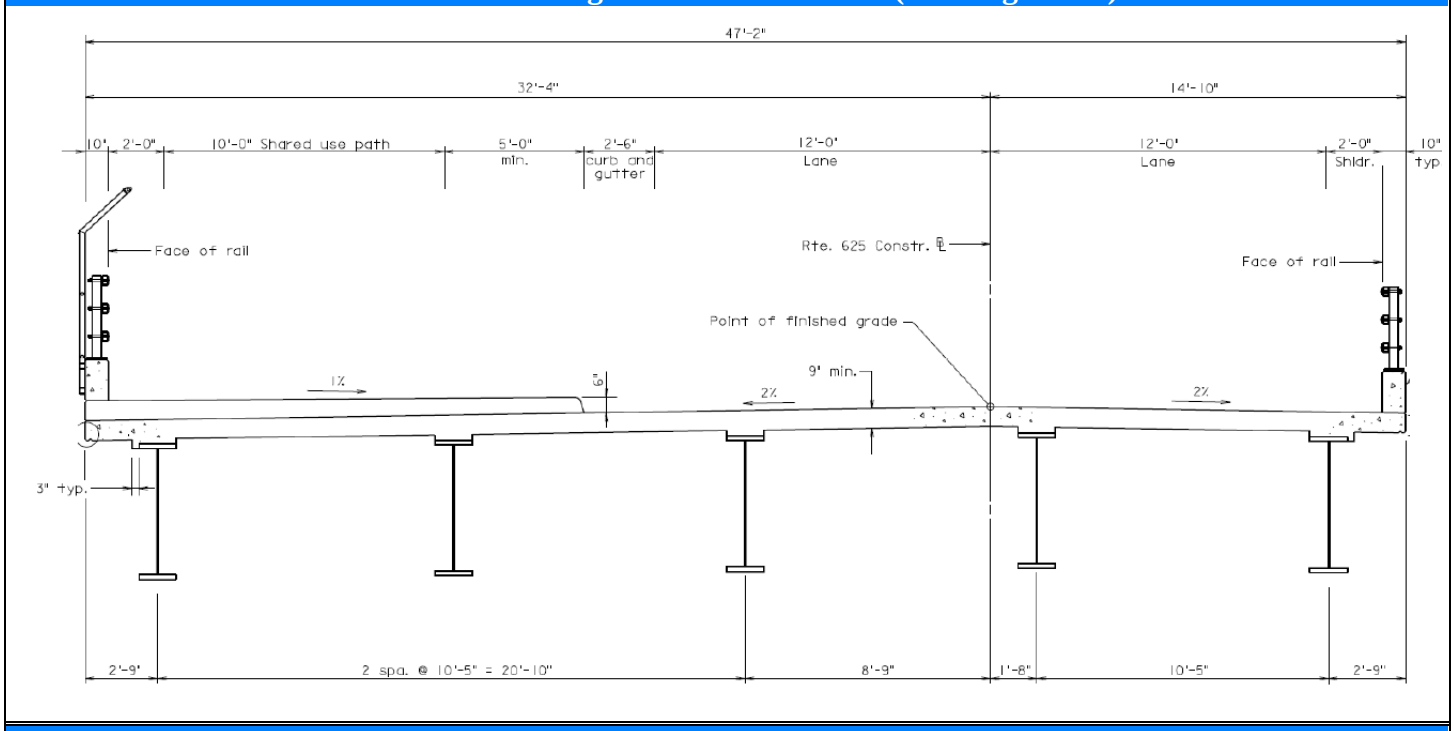
See Volume 2: Technical Proposal Exhibits for preliminary structural plans and elevations for the Old Carolina and Catharpin Bridges.

Structure. The proposed bridges are 2-span, continuous, steel plate girder structures with composite concrete decks. The substructure consists of a 3-column pier bent and stub abutments. Elephant ear wingwalls retain fill behind the stub abutments. The substructure units are skewed following the skew of the existing structures (less than 10 degrees). A retaining wall, parallel to I-66, is installed in front of each abutment, in order to reduce the length of the bridges and to minimize cost. Bridges are jointless at the abutments with the approach slabs supported on sleeper pads, following the VDOT concept for semi-integral abutments.

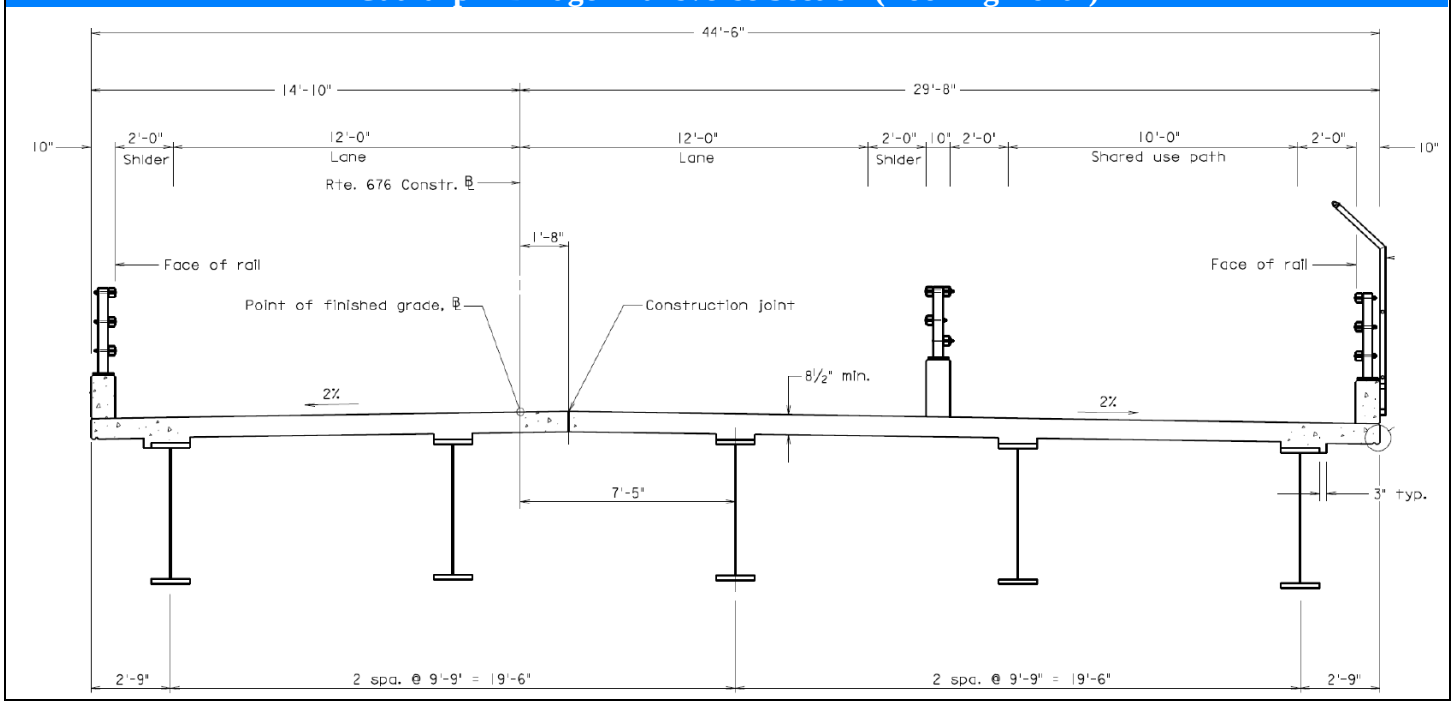
Bridge Elevation and Length. The proposed bridges are long enough to allow the widening of I-66 underneath. At the same time, the length of the bridges was minimized to reduce the cost. This was achieved by: (1) placing retaining walls at the edge of proposed I-66 shoulders protected by an MB-7F, and (2) placing the stub abutments far enough from the retaining walls so the abutment batter piles will not interfere with the walls. The height of the retaining wall is determined by a 2:1 fill slope descending from the abutment and toward the wall. Following this rational, Old Carolina Bridge is 268’ long, and Catharpin Bridge is 244’ long. Old Carolina Bridge is 24’ longer, since it accommodated two more I-66 lanes underneath (i.e., five lanes in each direction versus four lanes for Old Carolina Bridge).

Bridge Transverse Section and Width. The out-to-out width of the proposed bridges is 47’-2” for Old Carolina and 44’-6” for Catharpin. Each proposed bridge provides two 12’ traffic lanes with two 2’ shoulders and a shared use path (SUP). The Old Carolina Bridge has a raised SUP, 17’-6” wide including the buffers and 6” curb width. The SUP on Catharpin is not raised, but it incorporates a physical barrier, protecting the SUP from the adjacent traffic. As a result, the latter SUP has a reduced width of 14’ including buffers, plus the 10”-wide barrier.

Old Carolina Bridge Transverse Section (Looking North)



Catharpin Bridge Transverse Section (Looking North)



On the deck, both railings, as well as the physical barrier where used, are BR27D Railing (10” wide) with the steel railings galvanized and painted. Bridge railings include blisters and conduits, to accommodate roadway lighting. A pedestrian fence (ornamental, welded wire) is attached to the railing on the SUP side. The guardrail from the roadway will be attached to the BR27D terminal wall on the approach slab.

Structural steel plate girders, Grade 50W, are proposed for both bridges due to economy and lower girder depth, as compared to prestressed concrete beams. It is anticipated the steel beams will be 66” in depth,

whereas the concrete beams would be 77" in depth (VDOT PCBT-77" with the strength of 7,000 or 8,000 psi). The higher depth of the prestressed beams would require raising the profile to maintain the minimum vertical clearance. The steel girders will be designed as composite with the cast-in-place deck, and they will be weathering steel.

Alignment. The horizontal alignment of the replacement bridges is on tangent, same as the existing bridges. The existing vertical crest curves will be adjusted, if needed, in consideration for the 16'-6" minimum vertical clearance and other roadway factors. For Old Carolina Bridge, the centerline of the proposed bridge will be 8'-9" west of the centerline of the existing bridge, and for Catharpin Bridge, it will be 15'-7" east of the centerline of the existing bridge.

Aesthetics. All exposed, vertical faces of concrete bridge elements will receive Architectural Treatments in accordance with the Special Provision for Architectural Finish, Concrete Form Liners and Color Stain Coating. This will include both faces of railings, terminal walls, and exterior faces of wingwalls and earth retaining structures. The pattern, to be submitted and approved by VDOT, will be Beverly Mill dry stack (or equivalent). Due to the presence of formliner relief, the actual width of the railings will be more than 10".

An important aspect of the bridge aesthetics is the appearance of the middle pier of the Catharpin overpass. This pier is built in two separate segments, due to phased construction to satisfy the MOT requirements of the RFP. In the LANE Team concept, the two pier segments in Phase I and Phase II construction are integrated into one aesthetically pleasing symmetrical pier.

Durability. Bridge type and layout is based on reducing long-term maintenance costs: (1) continuous span units and jointless bridge design are utilized, (2) the proposed structures will utilize low permeability concrete in accordance with the Special Provision for Low Permeability Concretes for Design-Build Projects, and (3) the structures will utilize Corrosion Resistant Reinforcing Steel, where applicable, in accordance with VDOT Standards.

Drainage. Bridge deck drainage will utilize, to the extent possible, pipes and downspouts that are hidden to avoid interference with aesthetics of the bridge. They will be pitched at the minimum (4%) or greater slope to achieve self-cleansing velocities. Galvanized steel hardware components will be used.

PROPOSED FOUNDATIONS

The existing bridge plans show the foundation configuration of the both existing bridges as described in the following: The piers are supported on a spread footing with the top of the footing a minimal depth below ground level. The stub abutments are supported on pile foundation with two rows of piles, battered piles (3/12) in front and vertical piles behind.

It is anticipated that the proposed bridges foundations will be similar to the existing bridges (i.e., the piers will be founded on spread footings and the abutments on pile foundations).

RFP REQUIREMENTS AND LANE TEAM CONCEPT FEATURES

VDOT RFP Requirements	LANE Team Concept Features
Bridge Design per AASHTO LRFD Bridge Design Specifications , 6th Edition, and VDOT Modifications.	All aspects of the design will be per AASHTO LRFD Bridge Design Specifications and applicable VDOT modifications.
Bridge Load Rating per AASHTO LRFR and VDOT IIMSB86.	The entire structure will be load rated per LRFR, for both Phase I and II structures that will be carrying traffic in a temporary configuration, as well as the final, as-Built, new structure reflecting traffic in its final configuration.
Each bridge carrying two 12' traffic lanes and a shared use path.	Each bridge will be carrying two 12' traffic lanes and a shared use path. A shared-use path with physical barrier will be installed on Catharpin Bridge, and a raised shared use path without physical barrier on Old Carolina Bridge.

VDOT RFP Requirements		LANE Team Concept Features
Vertical Clearance over I-66 = 16'-6"		Vertical Clearance over I-66 will be 16'-6"
Bridge Railings shall be VDOT Standard BR27D and accommodate lighting. An ornamental fence shall be installed on the shared-use path side.		Bridge Railings will be VDOT Standard BR27D and accommodate lighting. An ornamental fence will be installed on the shared-use path side.
Bridge Durability	Jointless bridge per VDOT Bridge Design Manual	Bridges will be made continuous and jointless at the pier. Joints at the abutments will be removed by utilizing semi-integral abutments.
	Corrosion Resistant Reinforcing Steel (CRR) per VDOT IIMSB81.	CRR per IIMSB81 will be utilized in the entire deck and in the railings. Due to the jointless nature of the structure, piers do not need CRR per VDOT IIMSB81. CRR will also be utilized in the jointless abutments.
	Low permeability concrete shall be used per VDOT requirements.	The entire bridge deck and railings will be cast with Low Permeability concrete. Also, the pier and abutments will utilize low permeability concrete.
	Steel beams shall be weathering steel and Composite with concrete deck.	Steel beams will be weathering steel and composite with concrete deck.
Approach slabs shall be provided. Sleeper pads shall be provided with semi-integral abutments.		Approach slabs will be provided. Sleeper pads will be provided with semi-integral abutments.
Collision Protection of pier and abutment shall meet the AASHTO LRFD Bridge Design Specifications and VDOT Modifications.		Protection of pier and abutment will meet the AASHTO LRFD Bridge Design Specifications and VDOT Modifications: Pier will be at least 30.0' from the edge of the roadway; Stub Abutments will be protected by the embankments.
Bridge shall receive architectural treatment per RFP Attachment 2.3.4.		Bridge will receive architectural treatment per RFP Attachment 2.3.4, including both faces of railings and exterior faces of wingwalls and earth retaining structures.
Maintenance of Traffic during Construction: • Detour for Old Carolina • Construction Staging for Catharpin to maintain a minimum of one signalized lane in two directions at all times.		**Maintenance of Traffic during Construction:** • Detour for Old Carolina • Construction Staging for Catharpin to maintain a minimum of one lane in the north direction at all times.

4.4 Project Approach

4.4 PROJECT APPROACH

LANE is one of the nation's leading contractors—ranked 6th among the 'Top Transportation Contractors' by *Engineering News-Record* for 2013. This level of success has been achieved by paying specific attention to detail in controlling and managing our work. LANE'S history of successful projects, including local Design-Build projects and projects of similar size and complexity, further demonstrates our ability to undertake this I-66 Widening project for VDOT.

The LANE Team's approach to project management for design and construction minimizes the risk of delays and maximizes safety through:

- Assignment of work tasks to qualified personnel
- Recording and retention of all project documents to ensure that design and construction work is performed according to sound engineering practices, contractual agreements, and client directions
- Periodic review of work in progress to identify and resolve any deficiencies affecting the quality of work
- Monitoring and control of all work activities
- Scheduling and identification of long lead time/critical path items
- Sequencing of work to reduce the number of lane closures
- Coordination of multiple crews
- Backup/contingency plans
- Managing material and equipment procurement
- Clear and continuous communication

Our experience and effective project management will successfully coordinate the many facets of the design and construction of this project to minimize impacts to the traveling public. Design associated risks will be mitigated by inter-disciplinary constructability reviews, over-the-shoulder reviews with VDOT, and partnering with stakeholders. Risks during construction will be mitigated by committing the resources necessary to meet or exceed the required schedule, implementing an efficient sequence of construction, and executing a transportation management plan that will minimize incidents and maximize public awareness.

4.4.1 Stakeholder Coordination/Public Outreach

Our Public Relations Manager, Mr. Chris Reed, has extensive experience in the I-66 corridor and will serve as liaison with VDOT's public affairs department, reporting directly to the Design-Build Project Manager. Because the I-66 Widening project has potential to impact a broad range of stakeholders, our communications plan will employ many tactics to reach each of these stakeholders individually and as a group throughout the lifecycle of the project. We anticipate that our communications plan and approach will be a continually evolving program that will require Mr. Reed's regular attendance at Design and Construction progress meetings. Our Team's familiarity with each of the primary and secondary stakeholders will be pivotal in keeping the necessary parties abreast of the project. VDOT, Prince William County, Town of Haymarket, utility owners, community associations, churches, business owners, police, fire and rescue, school bus transportation, transit operators, and adjacent VDOT project contractors (I-66 ATM, US Route 29/Linton Hall Road Interchange, I-66/Route 15 Interchange,

The I-495 Express Lanes project team received the *VDOT and Megaprojects, Commonwealth of Virginia Award of Excellence, Integrated Communications* award for their continuous efforts to ensure the public was involved and informed throughout the duration of the project.

and Route 55, Washington Street Enhancement Project) will all be an integral part of our coordination and outreach process.

Approach to ensure stakeholder interests are identified and accommodated. The LANE Team believes that an effective public outreach process must be integrated into both design and construction. Our approach to the project will encourage multiple communication channels that both push information out to the public and pull it in to find news and information. This kind of open and transparent process that deals honestly with VDOT and stakeholders will help to create community buy-in on project timetables and milestones. This will help ease concerns and avoid potential issues regarding lane closures, detours and impacts to the traveling public and any affected property owners. The project team will have professional communications staff available and on-call to respond quickly and effectively to any issues that arise. We will use both proactive and reactive communications to address safety and environmental issues, while seeking to enhance mobility, even during peak construction periods.

Members of the LANE Team have proven experience in coordination and outreach with identical stakeholders within the Haymarket community. Effective coordination and communication with adjacent developments, parks, schools, and government agencies were successfully led by our Team's lead designer on the recently completed Route 15 Prince William County PPTA project.

Partnering. The LANE Team will facilitate communications amongst project stakeholders, of which the major ones are identified in the Stakeholder Communication table below, by engaging in a partnering meeting within two weeks of the Notice to Proceed (NTP). This initial partnering meeting will establish an understanding of individual stakeholder expectations to arrive at common goals surrounding the project schedule, issue resolution, the communication plan, and public outreach. Subsequent meetings will be held as needed to discuss major changes in maintenance of traffic, lane closures, and detours. Additionally, the LANE Team will meet and partner with contractors of other active construction projects to facilitate achievement of the I-66 construction program milestones.

Coordination and Partnering Between the LANE Team and Contractors of Active Construction Contracts

LANE Team ⟷ Lines of Communication

- I-66 ATM
- US Route 29/Linton Hall Interchange
- I-66/Route 15 Interchange
- Route 55/Washington Street Enhancement

Development of communications plan. The communications plan would be refined with input from the Design-Build Project Manager and Team engineers. To ensure success, we will tailor our message and our delivery method based on stakeholder needs and convenience.

Stakeholder identification. Working with VDOT and the project management team, we will highlight audiences within the project area and use digital technologies to identify online influencers. Compiling a comprehensive list of audiences at the outset of the project will allow us to engage stakeholders immediately upon project kick-off.

Stakeholder Communication

Stakeholders	Frequency	Regular Reporting/ Meetings	Citizen Information Meetings	Newsletter	Project Website	Phone Hotline	Social Media	Variable Message Signs	Partnering	Discipline-Specific Meetings
VDOT/FHWA	As Needed	●							●	●
Traveling Public (including School Bus Transportation and Transit Operators)	Daily		●	●	●	●	●	●		
VDOT TOC	Weekly	●							●	●
Prince William County	Weekly	●	●	●	●				●	
Town of Haymarket	Weekly	●	●	●	●				●	
VDOT Public Affairs	Monthly	●	●	●	●				●	
VDOT Maintenance Snow Removal	As Needed								●	●
Adjacent Property Owners, Churches, Community Associations, Business Owners	As Needed		●	●	●	●	●			
Police/Fire & Rescue	As Needed		●	●	●	●	●		●	●
Utilities	As Needed								●	●
Environmental Permit Agencies	As Needed								●	●
Active Projects in Vicinity	As Needed								●	●

Informal meetings. These meetings will be attended by key team members and serve as a consistent method of engaging with stakeholders. All meetings will feature detailed materials and information about the project, and we will offer updates from each of these meetings online for community members and project stakeholders not able to physically attend the meetings. Within the first three months from the NTP we will schedule a Citizen Information Meeting to present our proposed design concepts, explain the construction sequencing, and discuss the project schedule. We envision this initial meeting to be held in a "Town Hall" format allowing for "two-way communications" that would include a presentation from our team and an opportunity for participants to ask questions. At this meeting we will also introduce our communication plan, project website, social media, and phone hotline and register stakeholders for e-mail and/or postal newsletters.

Project news and updates. Stakeholders will be able to maintain contact with the project team members and keep up with project developments through a variety of communications channels, which may include: project website, Project Manager blog, social media (Twitter, Facebook groups, engagement of local community members' blogs), project phone hotline, and email newsletters.

Regular reporting to VDOT on project development. Internal project communications will be consistent and thorough, and will include regular summaries provided to VDOT of all project stakeholder engagements via phone, email and digital technology, as well as written summaries of community feedback from each public meeting. In particular, Mr. Reed will provide weekly updates to VDOT's Northern Virginia District Office of Public Affairs for posting on VDOT's website. These updates, at a minimum, will include a project

overview, plan of work for the upcoming week(s), extended schedule of anticipated activities, potential impacts to traffic on I-66 and other roadways within the project limits, current progress photos, and up to date contact information.

The LANE Team understands and appreciates the role that each stakeholder will play in the successful delivery of this project.

4.4.2 Utilities/Drainage

Utilities. During the RFP phase, our Team performed a thorough evaluation of utilities within the project corridor. We contacted each utility owner with facilities within the project limits, obtained utility records, and performed field reconnaissance to confirm utility locations and evaluate potential conflicts. We completed preliminary conflict analyses and discussed potential relocation schedules with affected utility owners. The detailed analysis we performed, allowed our Team to minimize risk to the project due to utility relocations by integrating utility relocations into our project concept plan, sequence of construction, and project schedule. A critical element of our utility analysis is performing a thorough evaluation of overhead utilities within the project limits. We completed an analysis of the proposed noise barriers and overhead facilities to verify that adequate clearance exists at each overhead crossing.

Sound Barrier Utility Conflict Analysis					
Sheet	Barrier #	Utility Owner	Station	Barrier Height	Clearance OK?
15	4	Dominion Power	336+84	12.8’	Yes
15	4	Verizon	336+95	12.0’	Yes
18	5	Dominion Power	357+50	13.6’	Yes
18	2-1	Dominion Power	157+71	13.0’	Yes
21	5	Dominion Power	380+30	17.5’	Yes
21	2-2	Dominion Power	180+05	14.5’	Yes

Additionally, the LANE Team developed a construction approach to avoid replacement of overhead lines adjacent to the Old Carolina Road Bridge over I-66. Our Utility Coordinator, Mr. Mark Gunn, PE, and the construction team evaluated the clearances from the existing overhead lines to the proposed construction area and determined a method of bridge construction that avoids impacting the utility lines. This approach minimizes risk to the project schedule due to utility relocation and reduces project cost, as the relocation cost for these lines would be 100% project cost.

A summary of the utility conflicts for overhead and underground utilities is provided below.

Utility Conflict Analysis				
Sheet	Utility Owner	Potential Conflict	Conflict?	Notes
15(1)	Dominion Power	Svc. Pole and Span Guy Pole in Conflict with Prop. SWM	Yes	
15(1)	Verizon	25 Pair Copper Line in Conflict with Prop. SWM	Yes	
15(1)	Verizon	900 Pair Copper in Conflict with Retaining Wall	No	
16	PWCSA	10” Sanitary Sewer Crossing Prop. Drainage	No	No conflict per invert analysis
18	PWCSA	18” Water Crossing Prop. Sound Barrier	No	
22	PWCSA	18” Sanitary Sewer Crossing Prop. Drainage	No	No conflict per invert analysis
22	PWCSA	18” Sanitary Sewer Under Prop. Temp. Sediment Basin	No	
25	Fiberlight	UG Crossing in Conflict with Prop. Retaining Wall	Yes	Assumed Conflict – Test Pit Confirmation Needed
25	AT&T	UG Crossing in Conflict with Prop. Retaining Wall	Yes	Assumed Conflict – Test Pit Confirmation Needed
25(1)	Fiberlight	UG Duct in Conflict with Prop. Retaining Wall	Yes	Assumed Conflict – Test Pit Confirmation Needed

Mr. Gunn will manage the relocations of all utilities necessary for project construction in accordance with VDOT's Utility Manual of Instructions. Through strict adherence to the Utility Manual Procedures and constant and effective communication with the utility owners, Mr. Gunn will effectively minimize risk to the project schedule and cost. Utility coordination will be carried out in close coordination with the Design Manager, Mr. Mo Kim, PE, DBIA, to ensure that the project design and proposed utility relocations are appropriate and conflict-free. Additionally, Mr. Gunn will act as a liaison between the construction team and utility owners throughout the design and construction phases, providing the utility owners a single point of contact throughout the life of the project. Mr. Gunn will track the progress of each utility relocation using the matrix provided below. This matrix, identifying all required milestones, document submissions, and approvals/ authorizations, will be provided to all members of the project team, including VDOT, to allow for appropriate oversight and progress monitoring throughout the project. This approach allows for early identification of potential utility delays and provides the LANE Team the opportunity to implement corrective action when necessary to avoid impacts to project schedule and/or cost.

Mr. Gunn is intimately familiar with each utility owner identified, having previously served and successfully coordinated the utility relocation and adjustments for approximately 5 miles of roadway improvements in Haymarket on Carolina Road, Heathcote Boulevard, Route 15, and Waterfall Road.

Utility Tracking Matrix

	Dominion Virginia Power	Verizon	AT&T	Fiberlight	Comcast	PWCSA	Columbia Gas	Washington Gas
Underground Utility Locations Required	Date	Date	Date	Date	Date	Date	Date	Date
Preliminary Contacts with Utilities	Date	Date	Date	Date	Date	Date	Date	Date
Relocation Required	Y	Y	Y	Y	Y	Y	N	N
Preparation of Preliminary UT-9s	Date	Date	Date	Date	Date	Date	Date	Date
UFI Date	Date	Date	Date	Date	Date	Date	Date	Date
Determination of Prior Rights and Cost Sharing (Final UT-9)	Date	Date	Date	Date	Date	Date	Date	Date
Test Pits Requested on Underground Crossings	Date	Date	Date	Date	Date	Date	Date	Date
Test Pit Information Received	Date	Date	Date	Date	Date	Date	Date	Date
Relocation Plan with ROW Requirements Received	Date	Date	Date	Date	Date	Date	Date	Date
Utility Documents/Plats Prepared	Date	Date	Date	Date	Date	Date	Date	Date
Plats to ROW for Acquisition	Date	Date	Date	Date	Date	Date	Date	Date
Plan and Estimate Received	Date	Date	Date	Date	Date	Date	Date	Date
Plan and Estimate Reviewed and Recommended for Approval	Date	Date	Date	Date	Date	Date	Date	Date
Plan and Estimate to VDOT for Approval and Budgeting	Date	Date	Date	Date	Date	Date	Date	Date
Plan and Estimate Returned from VDOT	Date	Date	Date	Date	Date	Date	Date	Date

Special Provisions Received from Utility	Date	Date	Date	Date	Date	Date	Date	Date
Executed ROW Documents or Certificates Received	Date	Date	Date	Date	Date	Date	Date	Date
ROW Documents and Notice to Proceed to Utility	Date	Date	Date	Date	Date	Date	Date	Date
Utility Relocation Start Date	Date	Date	Date	Date	Date	Date	Date	Date
Estimated Relocation Duration	Days	Days	Days	Days	Days	Days	Days	Days
Utility Relocation Completion Date	Date	Date	Date	Date	Date	Date	Date	Date

In accordance with the policies set forth in the VDOT Utility Manual of Instructions, the LANE Team will use the following steps and will monitor the progress with the tracking sheet:

1. Coordinate with utility locator during the survey phase to locate underground facilities throughout the project limits. Early identification of all overhead and underground facilities is critical to a smooth and rapid utility coordination effort. Supplemental utility designating will also be provided to ensure accurate depiction.
2. Initiate utility contacts. Begin discussions with Dominion Virginia Power, Verizon, Fiberlight, and AT&T. Advise of project scope and schedules. Establish contact with utility owner engineers or consultants that will be involved with the redesign of the facilities.
3. Maintain open lines of communication at all times. Effective communication will speed response times. Mr. Gunn will keep the utility companies advised of the project schedules and will maintain constant communication throughout the life of the project. Monthly coordination meetings will be held with all utility owners to monitor progress, update schedules, and facilitate coordination between utility owners.
4. Obtain test pits on underground utilities and adjust design plans to minimize utility relocations. These test pits will be prepared in advance of the formal Utility Field Inspection (UFI) meeting to provide information to the utility companies earlier than normal and speed the preparation of the ROW requests and plan and estimates.
5. Hold a formal UFI meeting to officially request easement documents and plan and estimates for the required relocations. Set specific time limits for preparation and delivery of easement plats in order to not delay the ROW acquisition process.
6. Prepare UT-9 determinations for each utility owner. Perform prior rights determinations, and provide UT-9s and supporting documentation to VDOT for review and approval.
7. Following receipt of utility easement requests, Mr. Gunn will coordinate with the right of way acquisition team to coordinate the preparation of plats and acquisition of utility easements.
8. Work closely with utility owners during the Plan & Estimate preparation phase to monitor progress and ensure any design changes are accommodated with the Plan & Estimate.
9. Review Plan & Estimates for constructability, cost, adherence to VDOT Utility Manual of Instructions requirements, and appropriate cost responsibility determinations. Provide the complete Plan & Estimates to VDOT for review and approval.
10. Facilitate the preparation of any Special Provisions required for coordination of utility relocations with construction operations. Clearly communicate to the Construction Manager the requirements of the utility companies and the ultimate position of the relocated utilities to avoid costly and time-consuming conflicts.
11. Upon receipt of executed easement agreements and approval of Plan & Estimates, forward signed agreements to the utility companies and issue a Notice to Proceed.

12. Coordinate construction stakeout controls for proposed utility relocations.
13. Resolve any conflicts that occur during construction to minimize delays through proactive communication with each utility owner.
14. Act as a liaison between the utility companies, the adjacent property owners, and VDOT for the resolution of any concerns/disputes that arise during construction.

By following these processes, the LANE Team will be able to monitor the progress of all utility relocations, identify schedule impacts, and adjust construction operations accordingly. In addition, at the survey stage, UFI stage, easement acquisition phase, and plan and estimate phase, the design team will conduct reviews and incorporate any design changes required. This is done by identifying potential conflict points and resolving the conflict by adjusting either the design or the utility.

The LANE Team's Design Manager, Mr. Kim, will conduct bi-weekly reviews with the Team's Utility Coordinator, Mr. Gunn, to ensure proper communication between the project team and the utility companies is occurring. The review of the Utility Tracking Matrix at these meetings will provide early warning of any potential problems that could impact schedule so the team can react accordingly.

During the utility relocation phase, the LANE Team's Utility Coordinator, in coordination with the QC Manager, Mr. Angel Lebron, will monitor the utility relocations to ensure they are relocated according to plan and do not conflict with the roadway construction. Should conflicts arise, Mr. Gunn will coordinate with Mr. McDonough and Mr. Kim to resolve any issues.

Drainage. The LANE Team plans to provide stormwater conveyance under existing Route I-66, Route 15, and Route 15 ramps via requirements as outlined in the RFP documents, the means and methods most beneficial to the project, those causing the least impacts to the traveling public and in consideration of the project schedule. One such approach will be utilizing Jack and Bore methods. LANE will excavate 'Jacking and Receiving Pits' to the approximate proposed pipe invert elevation on either side of the roadway span requiring a stormwater crossing. 'Jacking Pits' are typically slightly larger (approximately 10'x25' in size) than 'Receiving Pits' and will have an approved support of excavation provided by either slide rail, manhole boxes or a combination thereof. The Jack and Bore machine is staged within the Jacking Pit and machine drilling forces countered by bracing off of either the support of excavation or a thrust block constructed within the pit. A 'Receiving Pit' (approximately 10'x15' in size) will be excavated at the planned terminus of the Jack and Bore to daylight the casing pipe. This excavation will also be supported by an approved method of excavation support similar to the 'Jacking Pit.' The LANE Team anticipates that a combination of pits will be utilized to most efficiently cross the I-66 alignment. Receiving Pits will likely be excavated on the north and south side of the highway with a dual-purpose pit excavated in the median to limit the bore length exposure. By limiting bore length the jacking operation will be less susceptible to impacts by rock that may be present in some areas. Rock areas will be anticipated to the best of our ability in accordance with geotechnical information provided in the RFP documents, but must ultimately be defined by geotechnical investigations performed during the Scope Validation and Design phases of the Contract. Encroachment of rock into the bore profile will be dealt with by adjustment of drilling head and necessary techniques.

4.4.3 Geotechnical

Approach. The LANE Team's Geotechnical Consultant, ECS Mid-Atlantic, has a specific plan to identify, reduce, and mitigate geotechnical risks that benefit VDOT and our Design-Build Team. A sound technical approach, stemmed from years of similar experience, will produce a successful, best-value design. ECS believes that the available subsurface information should be understood and used to the fullest extent, and when necessary, it should be complimented with supplementary studies early in the project design process.

A comprehensive Geotechnical Data Report (GDR) has been performed and the information is quite valuable; therefore, the information will be relied upon, but supported with supplemental geotechnical studies. The final investigation effort will focus on meeting the requirements of the MOI and obtaining the necessary information based on the latest design concepts. Supplemental borings will be performed at locations requiring specific analysis, such as bridge foundations, soundwalls, retaining walls, deep fill slopes, and soft soil zones. ECS has experience in performing all types of explorations at many sites, including high-traffic areas such as I-66, I-495, and I-95 that require difficult access, traffic control, and utility avoidance.

ECS is experienced working in high traffic and interstate environments. ECS will provide traffic control in accordance with the VDOT MUTD for roadway and shoulder borings. ECS will coordinate its activities with appropriate District personnel. ECS has visited the site and does not anticipate problems in being able to access any location with the drilling equipment (track-mounted ATVs) planned for the project. Minimal ground disturbance is expected and benching to reach boring locations is not anticipated.

The final design for all aspects of the project will satisfy the requirements of the project Contract Documents. Locations of unsuitable soils and the required treatments will be included on the project plans. ECS' geotechnical engineer will perform inspections of all embankment, pavement, and minor structure excavations to approve the subgrades or to recommend treatment methods that meet sound engineering requirements and the Contract Documents.

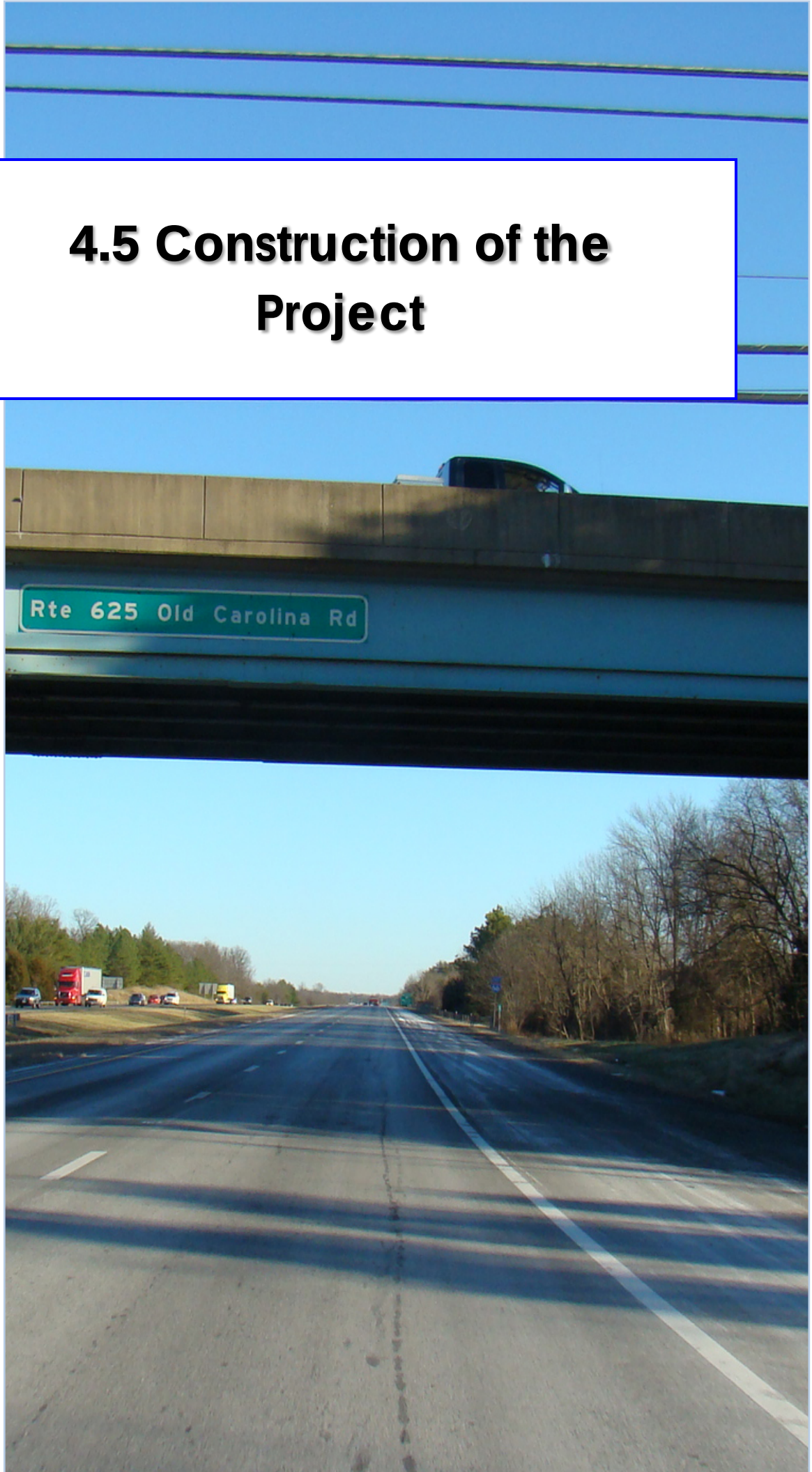
Challenges. It is understood that risks to the LANE Team as well as VDOT need to be accurately identified as early as possible after Notice to Proceed. By understanding the available geotechnical and design information, performing supplemental studies, and conducting appropriate engineering analyses, effective plans will be developed to minimize risks. The geologic conditions at the site are not overly problematic; however, specific concerns must be addressed. Some of these issues include, shallow rock, potential soft soils in fill zones, rock excavation, delineation of the extent of unsuitable soils, the shrink/swell potential of soils, subgrade treatments, ability to jack and bore pipes, and soil workability during wet seasons.

ECS will work with the LANE Team in developing an excavation and earthwork management plan and methods to deal with problem soils and changing subgrade conditions. Essential recommendations for design will be based on cost, long-term performance, and risk. Critical design elements include, bridge foundations, walls, cut and fill slopes, protecting existing structures and slopes, pavements, culverts, drainage, and SWM ponds. The final designs will include focus on settlement control, stability enhancement and structures, and embankments and long-term pavement performance.

As noted above, some additional borings and laboratory testing will be required, notably at locations requiring detailed geotechnical analyses. The laboratory testing would be focused on strength properties of soils located in cut and fill sections. Additionally, laboratory testing would include consolidation testing to evaluate settlement of fills and various structures. The locations of the currently planned new bridges are underlain by sedimentary rock with moderately varying top of rock elevations. ECS will perform pile driver analyzer testing during driving to ensure piles are driven to the required capacities.

Geotechnical Engineer Engaged During Construction. The final design for all aspects of the project will satisfy the requirements of the project Contract Documents. Locations of unsuitable soils and the required treatments will be included on the project plans. The LANE Team's geotechnical engineer, Mr. J. Christopher Giese, PE, will ensure inspections of all embankment, pavement, and minor structure excavations to approve the subgrades or to recommend treatment methods that meet sound engineering requirements and the Contract Documents. Mr. Giese will attend weekly and/or monthly progress meetings during construction, as needed.

4.5 Construction of the Project



4.5 CONSTRUCTION OF THE PROJECT

Introduction. The LANE Team has developed a general sequence of construction for the proposed I-66 Widening Design-Build project with a focus on the fact that we will be working along one of the most heavily-traveled interstate systems in the region. We have drawn upon our experience, including the I-495 Express Lanes and I-95 Express Lanes projects, to develop a construction sequence focusing on safety and maintenance of traffic during construction. Immediately following Notice to Proceed, the LANE Team will initiate coordination with all project stakeholders and adjacent projects. We will develop a Work Zone Traffic Impact Study to ensure that our proposed sequence of construction will be compatible with adjacent project activities and to verify that impact to traffic resulting from our proposed construction plan does not exceed RFP requirements. Recognizing the importance of initiating construction activities in a timely fashion, our Team's intent is to develop the design plans in logical work packages to allow the start of construction activities for early phases while designs are finalized for subsequent phases. The proposed work packages include: Erosion Control & Clearing Plans, Transportation Management Plans, Grading/Drainage/Pavement Plans, Structural (Bridge) Plans, Signage/Marking/ITS Plans, and Noise Barrier Plans.

Construction Work	
Phase 1	• Construct I-66 WB Off-Ramp to Route 15 Widening and related signal improvements • Install Old Carolina Road detour • Demolish Existing Old Carolina Road Bridge over I-66
Phase 2	• I-66 Inside Widening and Old Carolina Road Bridge Construction — Construct outside shoulder strengthening (temporary pavement) — Construct major drainage o I-66 culvert crossings o SWM facilities — Shift traffic to outside, set traffic control for median construction — Construct I-66 widening to median — Construct Old Carolina Road Bridge over I-66
Phase 3	• I-66 Outside Widening and Catharpin Road Bridge Construction — Shift traffic to inside, set traffic control for I-66 outside widening — Construct I-66 outside widening — Construct Catharpin Road over I-66 (Phased construction per RFP requirements) — This includes EB On-Ramp/Off-Ramp for Route 15 — Installation of Sound Barriers • Installation of ITS Facilities • Noise Wall Construction
Phase 4	• Final Paving • Final Signage & Marking

Section 4.5.1 below discusses in detail the sequence of construction for the Old Carolina Road and Catharpin Road Bridges and respective roadway approaches. Section 4.5.2 discusses in detail the approach to the sequence of construction of the overall project, and Section 4.5.3 discusses in detail the transportation management plan associated with project construction.

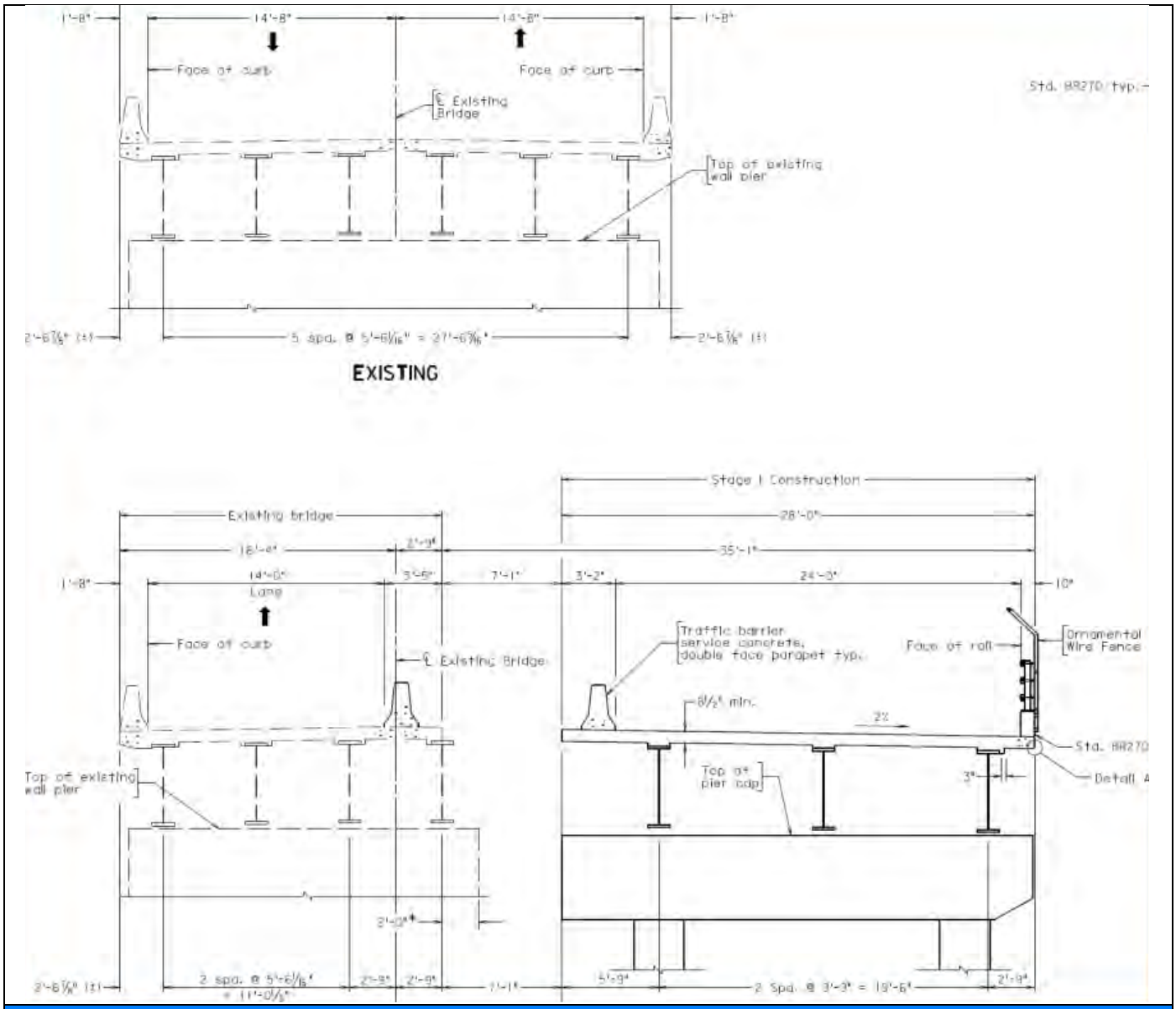
4.5.1 Bridge Reconstruction

Old Carolina Road Bridge Construction. As permitted by the RFP, the LANE Team will fully close Old Carolina Road/Jefferson Street in the immediate vicinity of the existing bridge over I-66 to allow for demolition of the existing bridge during the first phase of construction. Access to all local streets and entrances will be maintained, and a detour plan will be developed to minimize the impact of the detour on local travelers. Development of the detour plan will be coordinated with affected stakeholders including the Town of Haymarket. Following installation of the detour, demolition of the existing bridge will be completed. Demolition of the existing bridge in the first phase of construction will allow for early construction of the I-66 WB Off Ramp Widening as required by the RFP.

Construction of the new Old Carolina Road Bridge will commence immediately following demolition of the existing bridge. The LANE Team will expedite the Old Carolina Road Bridge construction to minimize the duration of the Old Carolina Road/Jefferson Street detour and associated traffic impacts.

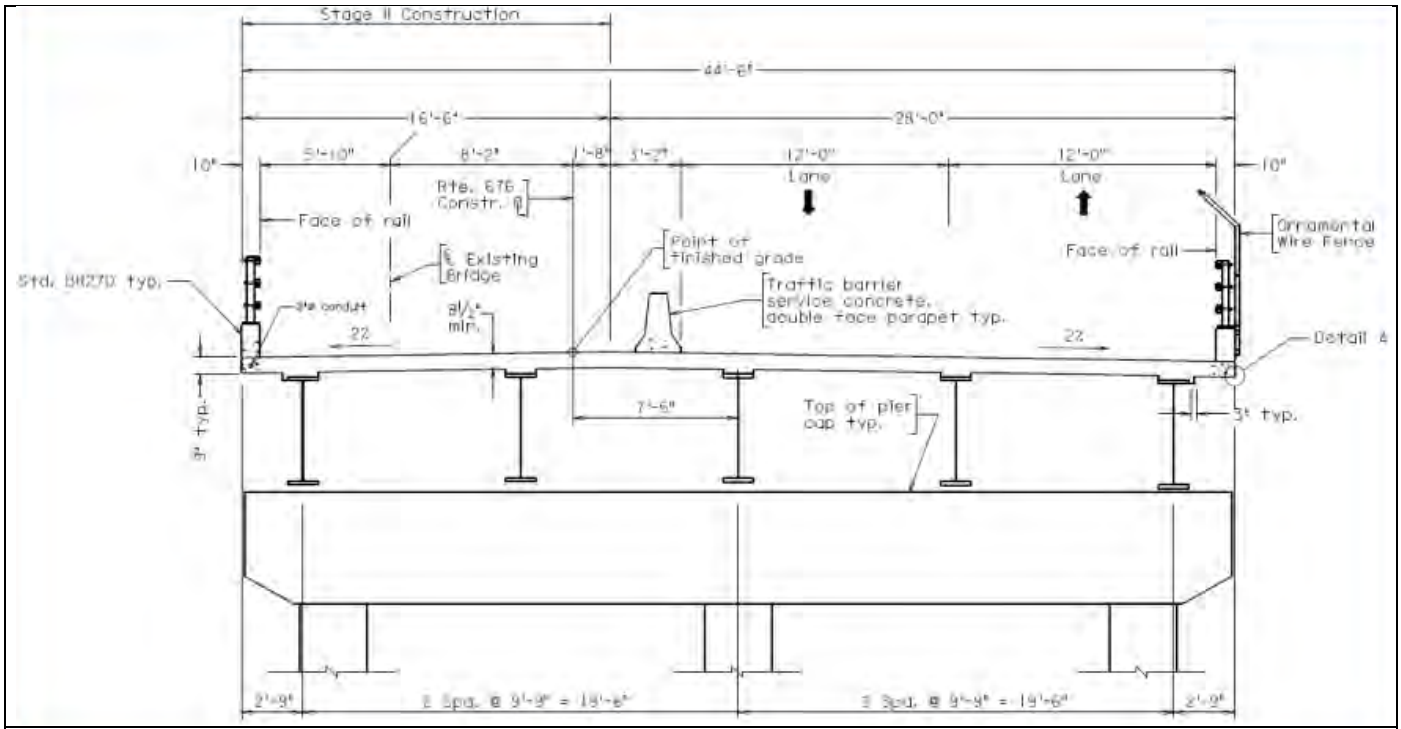
Catharpin Road Bridge Construction. The LANE Team has developed a detailed sequence of the construction for the Catharpin Road Bridge over I-66 meeting all requirements of the RFP. Following completion of the Old Carolina Road Bridge over I-66, the Catharpin Road Bridge will be constructed in phases to maintain a minimum 14' travel lane for all northbound traffic and fire and rescue apparatus throughout the duration of the bridge construction. A detour plan will be developed and implemented to reroute southbound traffic while the bridge is under construction. A detailed description of the construction phasing for the Catharpin Road Bridge over I-66 is provided below.

Stage I Bridge Construction for Catharpin Bridge (Part of Phase 2)
• Install detour rerouting southbound traffic • Install temporary traffic barrier and shift all traffic to one lane on the west side of the existing bridge. • Install temporary earth retaining structure (e.g., temporary sheet piling) at abutments, remove the east portion of the existing bridge, and construct a portion of the proposed abutments and pier on the east side of the structure. Widen the approach roadway, accordingly. • Place new girders, deck slab, railings, and approach slabs. • Place temporary traffic barrier in preparation for Phase 2 construction.



Stage II Bridge Construction for Catharpin Bridge (Part of Phase 2)

Stage II(a)	• Shift traffic to the new structure on the east side, one lane in each direction. • Remove remainder of the existing bridge. • Construct the west side of the proposed abutments and pier. Construct the remaining of the approach roadway. • Place new girders, deck slab, railings, and approach slabs.



Stage II(b)	• Shift the traffic temporarily back to Stage I pattern (14' wide northbound lane on the west side) and install the physical barrier for the shared-use path on the east portion of the deck. • Remove temporary traffic barrier, and open the entire bridge for two traffic lane and the shared-use path.

4.5.2 Sequence of Construction

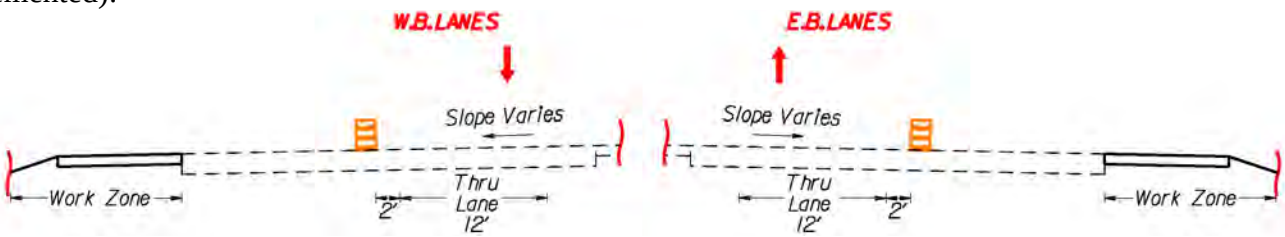
The LANE Team's Sequence of Construction for the overall project provides a safe separation of the construction work zone operations and minimizes potential traffic disruption while enhancing the Team's construction productivity.

Our sequence of construction has been developed through collaboration during the RFP phase between the design and construction teams. The result of this collaboration is a project sequence that minimizes risk to safety, traffic disruption, and schedule by incorporating the following key project components into the planning of our construction sequence:

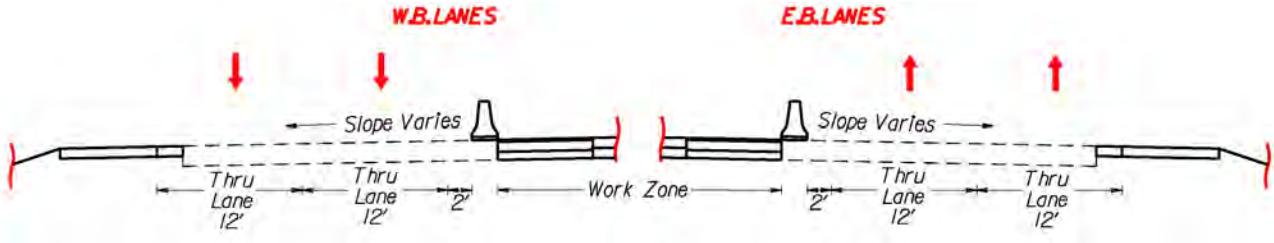
- Design plan approvals and associated authorizations to begin right of way acquisition and construction
- Geotechnical constraints
- Environmental constraints and permitting durations
- Right of way constraints and right of way acquisition timeline
- Public involvement and stakeholder coordination

Phase 1: I-66 WB Off-Ramp to Route 15. The initial construction phase will construct the widening of the I-66 WB off-ramp to Route 15 as required by the RFP. During this phase, demolition of the existing Old Carolina Road Bridge will be completed to allow for construction of the ramp widening in the bridge area. Additionally, the associated signal modification at Route 15 will be completed.

Phase 2: I-66 Inside Widening. During Phase 2, we will strengthen the existing outside shoulder for both directions of I-66 (as necessary per geotechnical/existing pavement investigations), so that the two existing travel lanes can be shifted toward the outside of the roadway in both directions. The LANE Team will review all cross-slopes to ensure that when traffic is shifted to the strengthened shoulder the cross-slopes will be within tolerances acceptable per VDOT specification/requirements. Generally, the following typical section for lane closures will be implemented (see Section 4.5.3 for further details for temporary traffic controls to be implemented):



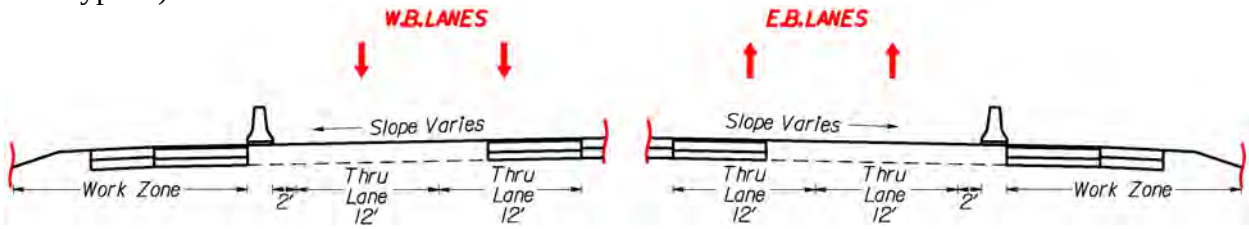
Once the roadway is restriped, traffic will be shifted and temporary barrier service will be installed along the inside median edge as shown by the typical section below:



To maximize safety and minimize impacts to the travelling public, the LANE Team will review drainage spreads adjacent to the barrier installation to ensure adequate drainage is provided during the shoulder closure. Following the barrier installation, the LANE Team will construct the roadway/drainage improvements towards the median of the roadway for the entire length of the project. During this phase the Old Carolina Road Bridge will be replaced. A majority of the culvert crossings and SWM pond work will be completed without impacting traffic flow.

Phase 2 will include construction of the new Catharpin Road Bridge over I-66. A detailed description of the sequencing associated with the Catharpin Road Bridge is provided in Section 4.5.1.

Phase 3: I-66 (Widening to the Outside, ITS, & Noise Barriers). Once the inside widening associated with Phase 2 is completed, the LANE Team will remove the barrier along the median restripe the lanes and shift traffic onto the newly constructed pavement. When the shift is made for both eastbound and westbound directions, traffic control devices necessary for outside widening construction will be installed. The LANE Team will then commence final construction work for outside roadway/drainage improvements and any associated drainage, signage improvements required as shown by the typical section below (shows barrier installation typical):



During this phase all the ITS infrastructure will be installed, connected, and tested coordinated to ensure VDOT acceptance. Final noise barrier construction will also be completed.

Phase 4: (Final Paving, Signage & Marking). For the final phase of construction work, the LANE Team will mill/overlay all existing pavement areas within the project's limits as required by the RFP. Included in this phase of construction will be the required ground and overhead signage modifications and restriping to tie the newly constructed lanes to the existing lane configurations just east of the project.

Construction Coordination with Adjacent Projects and Stakeholders. During construction, it will be very important to communicate with the general public and other stakeholders. The LANE Team will notify and educate the public about any planned closures or changes to traffic patterns. Managers of any nearby projects along I-66 (including Route 55, Washington Street Enhancement Project, I-66 ATM Project, I-66/Route 15 Interchange Project, and US Route 29/Linton Hall Road Interchange) or along adjacent roadways that are ongoing or may come online during construction of the I-66 Widening project will also be alerted and coordination will occur to prevent any conflicts that would negatively affect construction operations or the traveling public. Please see Shareholder Coordination and Public Outreach Section 4.4.1 and the Public Communications Plan in Section 4.5.3 for additional information.

MOT will be thoroughly planned and coordinated to ensure that all necessary precautions are taken to comply with the RFP and to keep motorists and workers safe. Proper signage will be installed to alert the traveling public to any changes in traffic patterns. The LANE Team will use the same Temporary Traffic Control (TTC) operations for the length of the project to enable ease of understanding for the traveling public. The Virginia Work Area Protection Manual (VWAPM) Temporary Traffic Control (TTC) operations are described further in Section 4.5.3.

The major risks with a construction project of this type are conflicts between motorists and construction activities, driver confusion over varying traffic patterns, and temporary closures. As stated earlier, safety of our workers and the general public is of greatest concern to the LANE Team. Ample temporary signage explaining traffic patterns, prior notification of temporary closures, and appropriate separation between work zone and the traveling public will be in place to minimize construction risks. Coordination between the LANE Team, project stakeholders, other projects in the corridor, and the general public will also be vital to minimizing risks. The LANE Team endeavors to provide all information that would be beneficial to VDOT, the general public, and other stakeholders through a transparent design and construction process, while adhering to our construction schedule as outlined in Section 4.6.

4.5.3 Transportation Management Plan

The LANE Team will develop and implement the Transportation Management Plan (TMP) in accordance with VDOT's Requirements in IIM-241/TED-351 and incorporate all the strategies outlined for a Type C project. The LANE Team recognizes that the I-66 corridor is one of the most heavily traveled interstate systems in the Northern Virginia region. Additionally, we recognize the importance and necessity of maintaining traffic with the least amount of disruption to the corridor. Members of the LANE Team have demonstrated their expertise in both developing and implementing effective TMPs for I-495 Express Lanes, I-95 Express Lanes, the MWAA-Dulles North Area Roadway Improvements, and numerous others, and understands the dynamics of maintaining traffic along a heavily-traveled corridor, particularly for our region and I-66. The LANE Team's TMP, as depicted in Volume II of our Technical Proposal, encompasses the following critical parts:

- Temporary Traffic Control (TTC)
- Work Zone Traffic Impact Analyses
- Public Communications
- Transportation Operations/Incident Management Strategies

Temporary Traffic Control (TTC). The I-66 Widening Project's TTC plan for the construction of roadway widening, two bridge replacements, extensive mill/overlay operations, and pavement marking/signage to

provide for an adequate tie to existing conditions east and west of the project, is divided into four (4) phases as discussed in Section 4.5.2. The LANE Team's TMP utilizes various temporary traffic control applications over the course of the project. As part of the LANE Team's TMP, the following is noted:

- Flagging Operations will only be permitted as allowed by the VWAPM, and all flaggers will have the required certifications.
- For all roadway, lane, and ramp closures, the LANE Team will follow the time-of-day restrictions outlined in Section 2.13.1 of the RFP.
- All lanes on I-66 as part of the TMP will be a minimum 12' in width, and all temporary traffic control devices (TCD) will be a minimum of 2' from the travelway.
- For all other roadways, the roadway width will meet or exceed the requirements in the VDOT Road and Bridge Standards, and all temporary TCD will be a minimum of 1' away from the travelway.
- The LANE Team does not anticipate the need for any speed reductions requests.
- The project will coordinate with adjacent projects as noted within the RFP and all stakeholders as it relates to lane closures, since maintaining efficient operations on this heavily traveled corridor is important.

In general, the types of TTC applications fall within several categories: lane closures, shoulder closure, ramp closures, temporary detours, and rolling roadway closures. Additionally, detailed traffic control designs will be provided for all construction access points to ensure the safety of the traveling public during all phases of construction.

Lane Closures. Closures will generally be implemented for the following proposed elements: installing concrete barrier to provide separation/protection for the construction work zone, installing project signage, installing ITS infrastructure, shoulder strengthening for temporary shifts in Phase 2, foundation installation for overhead signs and gantry structures components that will span the roadway, and to increase the space between the travelway and the work zone activities when the work zone does not have a barrier present. In all cases, the clear zone for the work area will be met per the VWAPM.

- Within the project's limits, I-66 is generally a four-lane divided highway, VWAPM TTC 16.0 and/or TTC 17.0 will be implemented to provide a work zone area as needed and to install the concrete barrier to provide additional separation between the travelway and construction work zone for all phases of the project.
- All lane closures will be implemented during allowable closure timeframes listed in RFP Section 2.13.1 and the project will review with a Work Zone Traffic Analysis to ensure the delays are not excessive as outlined by RFP's Section 2.13.

Shoulder Closure (and Ramp Gore Area Work). These closures will generally consist of closing the shoulder. The closures will be for the majority of the construction work to be conducted for this project. A majority of the project's roadway/drainage improvements, bridge and other structural components (sound barriers, large drainage structures and ITS/signage equipment) will be constructed within the work zone separated by a shoulder closure.

- As previously indicated in Section 4.5.2 for Phases 2 and 3, after restriping and shifting traffic to maintain 12' lanes the LANE Team will implement VWAPM TTC-4.0 and/or TTC-6.0 as applicable for all shoulder closures to provide for a safe separation for the construction work zone.
- For the I-66 On-Ramp and Off-Ramp at Route 15, the existing ramp gores are proposed to be improved. When the construction work zone requires entering into the travelway's clear zone, the LANE Team will implement VWAPM TTC 37.0, 38.0 and/or 39.0 as appropriate during non-peak hours as permitted by the RFP.

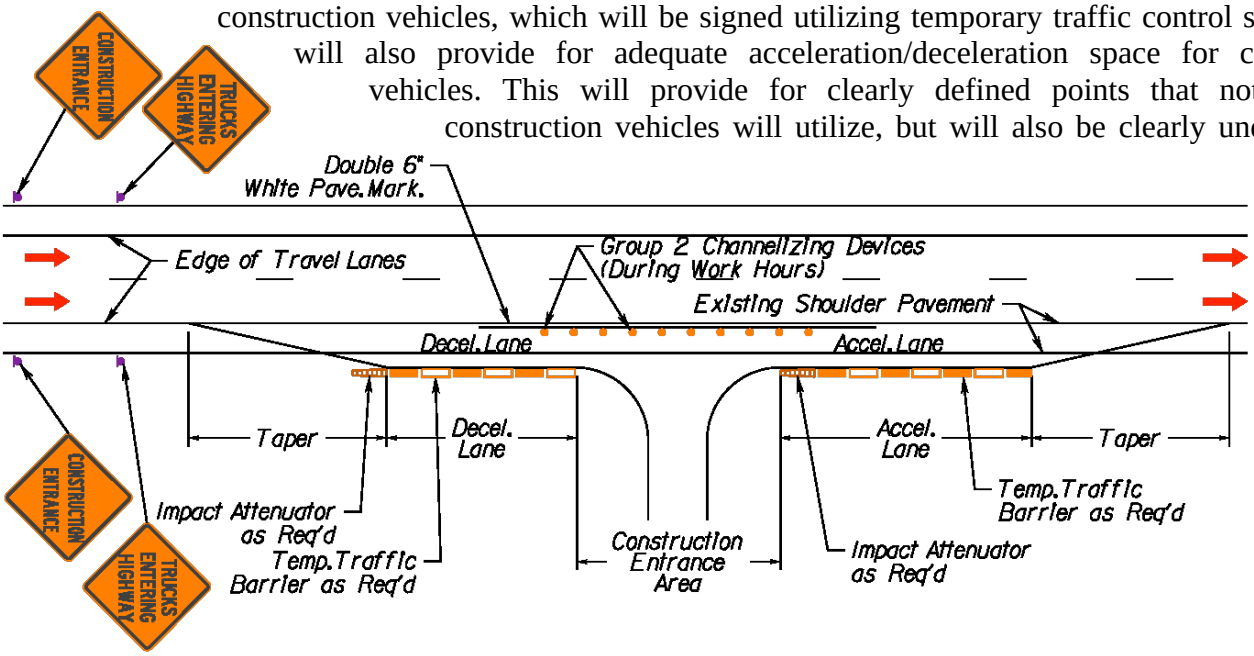
Temporary Ramp Closures. As part of the LANE Team's TMP design, these closures will be limited in nature due to the potential disruption it would cause the public. The occurrence of a ramp closure, as permitted by the RFP, will be proposed for approval to VDOT with complete detours for each instance. The TMP plan will review the detour routes to ensure the least impacting route (in terms of traffic, noise etc.) is implemented as required by the RFP. The LANE Team's TMP Design approach will be so that the ramp closures do not extend more than one overnight shift, the ramps will be re-opened to traffic the following morning, and may be re-implemented the next available overnight shift to avoid major disruption to traffic.

- The LANE Team will design temporary/short term detours, compliant with VWAPM TTC 46.0 for each occurrence in which there is a need to close an interchange's ramp access, noting that the LANE Team will use the optional PCMS to further advise the public as appropriate. For exit ramps that are closed, the LANE Team will direct travelers to the preceding or acceding interchanges, to guide travelers to desired destinations from the opposite direction of travel along I-66.

Roadway Closures. This project will require roadway closures to complete bridge construction/modification and overhead signage work. The LANE Team will follow the mandated time-limit requirements (20-minute maximum per RFP Section 2.13.1) and will follow the TTC applications outlined in the VWAPM. The roadway closures (one directional or two directional) will be implemented to best serve multiple needs (e.g., bridge beams and proposed gantry crossings) in order to save time for all stakeholders. In all instances of roadway closures (one directional or two directional), the LANE Team will provide the required advance notification outlined by the RFP and communicate the TMP implementation plans to all stakeholders, including the traveling public.

Temporary Detours. This project, outside of the temporary detours mentioned for the temporary ramp closures, does not anticipate the need for temporary detours for any side streets and/or I-66. If such circumstances arise, the LANE Team is more than able to adapt and will provide for a temporary detour with accompanying work zone traffic impact analysis that complies with Section 2.13.1's requirements for impacts on adjacent side-streets and intersections. The LANE Team also does not anticipate any long term detours required for any pedestrian/bicyclist movements as these detours will be on-site deviations of the normal path to ensure continuity of the pedestrian/bicyclist movement for the duration of the project.

Construction Entrance/Exit Points & Staging Areas. Another critical component for temporary traffic control especially on a heavily traveled, high-speed roadway is the entrance/exit points for construction vehicles to and from the construction work zones. The LANE Team will provide for adequate entrance/exit condition for construction vehicles, which will be signed utilizing temporary traffic control signage and will also provide for adequate acceleration/deceleration space for construction vehicles. This will provide for clearly defined points that not only the construction vehicles will utilize, but will also be clearly understood to



traveling public to expect entry/exit of construction vehicles in advance of the project's work area. This will promote for a safer and more efficient operations during construction of the project. Please see above for a typical entrance/exit point to be implemented for the project.

Work Zone Traffic Impact Analyses. The purpose of the Work Zone Traffic Impact assessment is to provide the necessary operational and safety analysis to formulate a safe and efficient maintenance of traffic plan for the traveling public during all phases of construction. This traffic operations and safety assessment is also critical to meaningful communication and outreach with the stakeholders. The LANE Team has some of the best local talent for traffic operations and safety. This has been demonstrated repeatedly by the superior work performed directly for VDOT Northern Region Operations Traffic Engineering Division as well as the local counties, cities, and towns.

The LANE Team is staffed with highly qualified traffic engineers well versed in the use of analysis tools such as HCS, CORSIM, SYNCHRO/SimTraffic, and VISSIM, among others. The most appropriate tools and methodology will be confirmed with VDOT reviewers in advance of the assessment; and. the results of the analysis will be thoroughly reviewed with VDOT in order to minimize levels of impact during construction. I-66 will be evaluated for every phase of construction to determine the anticipated traffic impact. The TMP) will consider all modes of travel within the influence area and will demonstrate that predicted queues on I-66 will not exceed two (2) miles in length and that travel time will not exceed 20 minutes (as measured from the end of the queue to just beyond the point of restriction).

The LANE Team will meet with VDOT to provide the intended construction plan and rationale, an assessment of the forecasted impact, and the strategies to mitigate that impact. The meeting will take place before construction commences; both safety and operations will be reviewed and all impacted modes of travel will be considered. For the modifications to the westbound off-ramp traffic signal at Route 15, the Team will provide SYNCHRO analysis and optimized timings for the new geometric configuration as per the Northern Region coordinated timing submittal requirements. For subsequent phases, the traffic impact of bridge construction will be evaluated as to the impact on surrounding local roadways and intersections based upon a careful determination of traffic detour patterns and travel times.

This project is classified Type C, which means the greatest level of detail is required to accommodate any level of disturbance/impact. Traffic analysis and modeling will be conducted by the LANE Team to verify/validate that the potential impacts are mitigated and provide for the least possible disruption to the traveling public during construction. The LANE Team has experience with traffic management in the I-66 corridor as well as other important highway corridors in Virginia. Thousands of vehicles pass through here every day on their way to work, shop, travel, and live their lives. We are committed and dedicated to maintaining adequate vehicle progression through the work site during construction. Our traffic experts understand the capacity issues of the corridor and will work relentlessly to minimize stops and delays on the affected roadways. They will be present during construction phase switches to ensure that safe, continuous operations are maintained. With any shift in traffic or changes to the work zone, the design engineer will be present to evaluate impacts to traffic and make recommendations as necessary.

The LANE Team will work closely with VDOT to communicate to the traveling public all shifts in traffic to optimize the local community's and traveling public's understanding of the project. Providing clear, concise, advanced notice of the project, traffic shifts, and potential impacts to the traveling public is an essential ingredient in securing community support and mitigating those potential impacts.

Public Communication Plan. The TMP will include a specific Public Communication Plan developed for VDOT's review and approval. It is an integral part of the project's overall public outreach outlined in Section 4.4.1. Through this plan, the LANE Team will maintain multiple channels of communication with the traveling public, mass transit systems, local jurisdiction police and fire and rescue, utilities, schools, parks and recreation, local residents and businesses, VDOT, local/County DOTs, adjacent construction project

contractors and other stakeholders. As required by the RFP, the LANE Team has designated a project liaison/Point of Contact between VDOT and the project stakeholders to help provide notification to the traveling public. Open channels of communication will be used throughout the life of the project to disseminate project information, including TMP information such as lane closures, traffic pattern changes, and the implementation of ramp closures and, if necessary, temporary detours, through available variable message signs or portable message signs to be installed within or outside the project's limits. As part of the public communication efforts, and as required by VDOT, the LANE Team is prepared to hold informal meetings with any stakeholder to discuss the project's construction schedule/efforts and potential impacts to traffic. Additionally, updates to VDOT's Northern Virginia District Office of Public Affairs and VDOT Traffic Operations Center (TOC) will be provided to enable information to be posted on VDOT's website (including timely project FAQs and general question/answers posed by the public and/or stakeholders) and VA511 system for access by the traveling public and any others who may be seeking project/traffic updates. To further enhance communication, the LANE Team will hold frequent coordination meetings with VDOT and other stakeholders to provide critical information for continuity of operations along I-66.

Project Website. Our Team will work closely with VDOT to ensure stakeholders and the public are kept up-to-date with important project information through the project website. An example of the I-95 Express Lanes project website is shown to the right.

Transportation Operations and Incident Management Strategies. The LANE Team will coordinate with VDOT to develop protocols for the implementation of incident management. We will develop the necessary list of contacts for any emergency action required and will develop plans to address incident scenarios. Such plans will include the utilization of strategically-placed variable message signs to assist motorists in dealing with the incident. These plans may include recommended alternative routes and procedures for emergency lane closures or hazard protection. Plans may include recommended signal timing changes at affected intersections, as well as possible turn movement restrictions. In addition to planning for incidents occurring within the immediate project limits, it is also appropriate to consider the effect of an incident outside the project boundary. The LANE Team will develop protocols and procedures for various incidents that could affect travel patterns in, and around, the project area. LANE will have on hand: variable message signboards, signs, and channelizing devices to immediately deploy for incident management. The LANE Team will follow VDOT's recently updated VWAPM 2011, which now includes Temporary Traffic Control applications for emergency/incident situations. The LANE Team will keep this onsite along with a list of emergency contacts. This approach will allow our project team to be prepared for, and react quickly and appropriately to, any incident affecting travel through and around the project. Recently, LANE has been responsible for maintaining traffic on two mega construction projects on the region's most congested commuter routes, the I-495 Express Lanes and I-95 Express Lanes construction. The lessons learned on this project in moving high volumes of traffic through extremely tight construction limits will be integrated as part of our overall TMP approach.

4.6 Proposal Schedule

4.6 PROPOSAL SCHEDULE

Integral to the Design-Build processes is the creation of a working CPM schedule using Primavera® software. Time for necessary inspections is built into the scheduled activities. Potential conflicts are identified early to formulate alternate plans and allow work to proceed in an organized and timely fashion. Conversely, opportunities to advance items of work will be capitalized upon as "early finish activities" are identified.

4.6.1 Proposal Schedule

LANE has developed a Proposal Schedule that represents the plan to execute the work in accordance with the Contract Documents. It includes a detailed work plan illustrating the sequence of the comprehensive scope of work on the Project. The detailed work plan furthermore includes a Work Breakdown Structure (WBS), activity durations, Critical Path (based on the longest path calculations), milestones, Scope Validation Period, permitting and right-of-way acquisition activities, utility relocations, design and construction, reviews by VDOT, FHWA and other regulatory agencies.

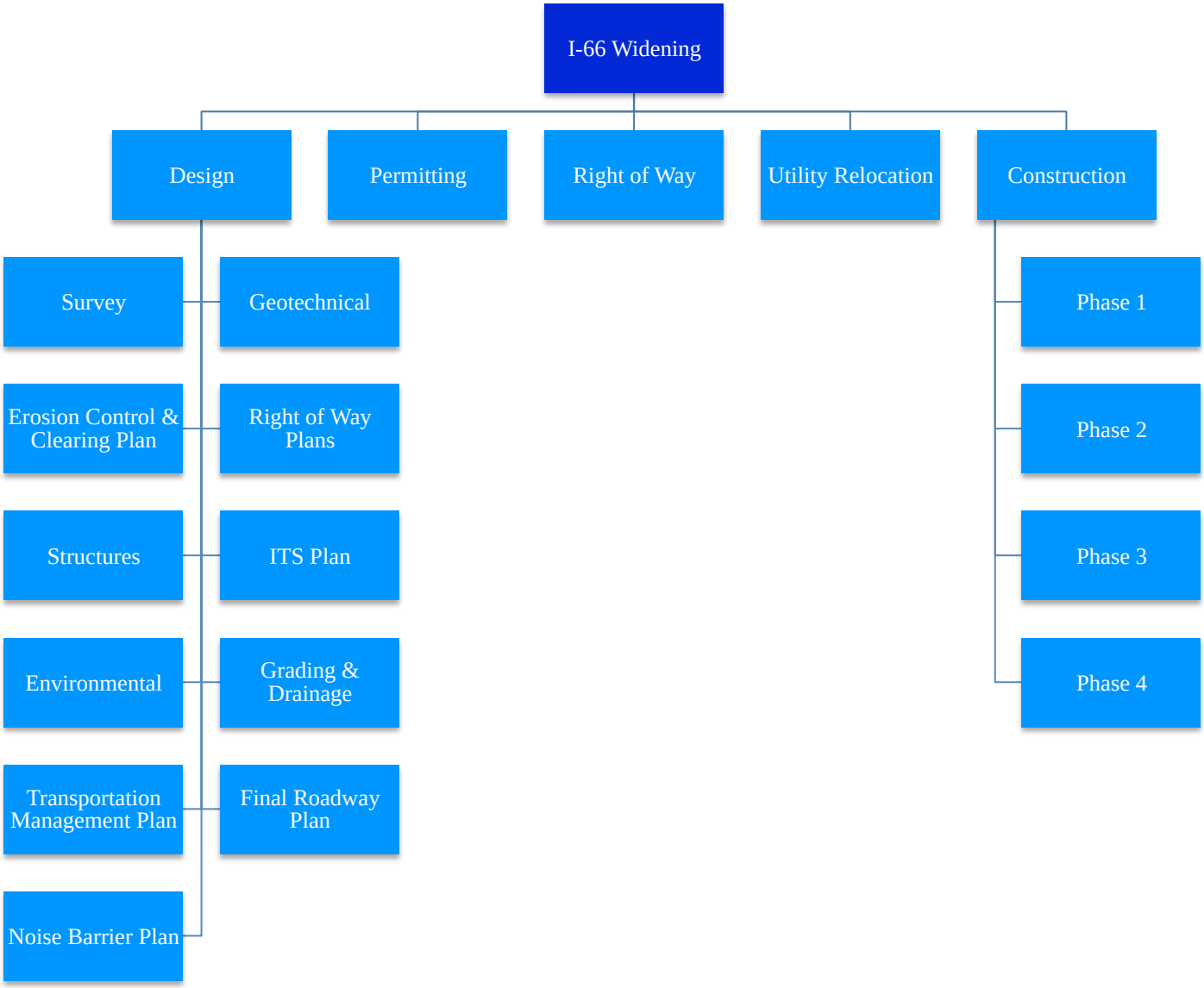
4.6.2 Proposal Schedule Narrative

LANE has developed the following Proposal Schedule Narrative detailing LANE's overall plan to successfully accomplish the Project in accordance with the Contract Documents. The narrative provides overall sequencing, a description and explanation of the Critical Path, proposed means and methods and other key assumptions on which our Proposal Schedule is based.

Work Breakdown Structure. The Work Breakdown Structure (WBS) is a multi-level, hierarchical arrangement of the work to be performed on the project. LANE has laid out the WBS to enable the identification of the design, permitting, utility relocations, and construction phases of the project. Design has been further broken down into 11 design packages. In addition construction has been subdivided to include MOT Phases and major work areas as shown below in a sample WBS Node.

As depicted in the chart on the following page, Level 1 of the WBS groups the schedule into the phases of the Design-Build process as follows:

- *Design:* Includes preliminary engineering services, plan development, QA/QC reviews, and VDOT review and approval of the plans. This section includes a second level to the WBS, grouping the design activities by type of design submission packages including Geotechnical, Right-of-Way, Structures, and Final Roadway.
- *Permitting:* Includes wetland and stream delineations and jurisdictional determination, permit management and preparation, mitigation, and permit submission, and review and approvals through the process.
- *Right of Way Acquisitions:* This section of the schedule is used to monitor the acquisition of right-of-way and easements for the project including title searches, appraisals, and appraisal review, offers, negotiations, and settlements.
- *Utility Relocations:* The utility relocations section of the schedule include activities for UFI meetings, preparation of preliminary engineering (PE) estimates, approval of PE estimates, utility relocation design by the utility owner, approval of the utility design, and utility relocation construction.
- *Construction:* Includes all components of roadway and bridge construction as well as MOT, signals, and drainage. The Construction section is segmented by one additional level of WBS structure to divide the construction activities into phasing of work that can be easily tracked to ensure on-time completion of the project.



Calendars. LANE used seven (7) different calendars to represent a variety of different work scenarios.

Calendar	Non-Work Period
7-Day	
5-Day Admin (No Weather)	
5-Day Typical	
5-Day Subbase & Grading	December–February
5-Day Concrete	December–February
5-Day Asphalt Paving–Base/Interim Courses	December–February
5-Day Asphalt Paving–Surface Course	November–March

LANE's approach to adverse weather differs depending on the type of work being performed. Any schedule acceleration attempts to remediate adverse weather impacts will occur first on Saturdays and then during the winter months.

The amount of adverse weather days to be expected has been calculated utilizing the National Oceanic and Atmosphere Administration's (NOAA) National Climatic Data Center to collect data from the Washington

Reagan Airport. Using daily data from 2001 through 2010, 10 years' worth, adverse weather days were determined by using the following scenarios in Tables 1 -5.

Table 1—Typical Weather Calendar

	Average Temp Below 32°F												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Probability	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	
Days Lost (in calendar days)	10	6	1	0	0	0	0	0	0	0	1	5	23

Table 2—Subbase and Grading Calendar

	Average Temp Below 40°F and/or Precip Greater than 0.50"												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Probability	0.6	0.6	0.2	0.1	0.2	0.3	0.1	0.1	0.2	0.2	0.2	0.5	
Days Lost (in calendar days)	20	17	8	3	5	8	5	2	6	7	5	17	103

Table 3—Concrete Calendar

	Low Temp Below 32°F and/or Precip Greater than 0.75"												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Probability	0.6	0.6	0.2	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.4	
Days Lost (in calendar days)	20	18	7	1	2	4	1	0	3	3	3	14	76

Table 4—Asphalt Paving—Base and Interm. Course Calendar

	Average Temp Below 40°F and/or Precip Greater than 0.75"												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Probability	0.6	0.6	0.2	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.5	
Days Lost (in calendar days)	20	17	7	1	2	4	1	0	3	3	3	16	77

Table 5—Asphalt Paving—Surface Course Calendar

	Average Temp Below 50°F and/or Precip Greater than 0.75"												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Probability	0.9	0.9	0.6	0.2	0.1	0.1	0.0	0.0	0.1	0.2	0.5	0.9	
Days Lost (in calendar days)	29	26	20	6	2	4	1	0	3	6	14	28	139

PLAN AND STRATEGY

Design. Immediately following Notice-to-Proceed, we will begin the field surveys and investigations necessary for design of the project. Survey notifications will be distributed to adjacent properties, and a complete design level survey will be performed. Utility designations and test pits will be completed, and geotechnical investigations and analyses will be initiated.

As the first phase of design, the LANE Team will develop the plans to a Right of Way Plan level. Design plans and supporting design calculations with appropriate design QA/QC checklists will be provided to VDOT/FHWA for review. The design team will resolve any review comments, and request Notice to Commence Right of Way Acquisition. This milestone represents a hold point in the project schedule.

Construction Plans will be broken into logical work packages to allow for approvals and authorizations to be obtained for early construction phases while the design is finalized. We anticipate the following work packages to be developed for the project: Erosion Control/Clearing Plans, Grading & Drainage Plans, Transportation Management Plans, Structural Design—Old Carolina Road Bridge, Structural Design—Catharpin Road Bridge, ITS Plans, Noise Barrier Plans, and Final Roadway Plans. For each work package plans will be submitted to VDOT/FHWA following completion of our internal Design QA/QC process,

comments will be resolved, and VDOT/FHWA approval will be obtained. Following VDOT approval of each work package, Notice to Commence Construction will be obtained and Released for Construction Plans will be issued to the field for construction. The Notice to Commence Construction represents a hold point in the project schedule.

Permitting. Our project schedule includes all necessary tasks required to obtain the environmental permits for the project construction. Depicted on the schedule are durations for wetland delineations, obtaining a Jurisdictional Determination, updates to the threatened and endangered species studies in conjunction with the Joint Permit Application, and obtaining environmental permits from the approving agencies. Schedule risk due to environmental permitting has been minimized by phasing construction to allow for work in "upland" areas first should permit delays be experienced. In addition to the environmental permits, the LANE Team will obtain all necessary permits including, but not limited to, VSMP and VDOT construction permits.

Right of Way Acquisitions. Right of way acquisition will be performed in accordance with VDOT requirements and the RFP. The initiation of the Right of Way Acquisition phase is dependent on our team obtaining Notice to Commence Right of Way Acquisition from VDOT. Our project schedule reflects the necessary durations need to perform all right of way acquisition tasks including Title Reports, Appraisals, Appraisal Reviews, Submittal of Offers, Negotiations, and Settlement/Closing. The LANE Team has minimized schedule risk due to right of way acquisition by preparing our construction phasing in a manner that minimizes the reliance of early construction phases on right of way acquisition.

Utility Relocations. The project schedule incorporates all utility relocation activities necessary to clear existing utilities from the work area. Utility related activities include utility designation and location, UFI meetings, utility plan & estimate preparation by utility owners, review and approval of plan and estimates, authorization to relocate, and the relocation of utilities by utility owners. Schedule risk due to utility relocation has been minimized by: 1) a design approach which minimizes utility conflict, and 2) impacted utilities not requiring easements for relocation removes the dependence of right of way acquisition on utility easement requests by utility owners.

Construction

Phase 1. Upon the completion of the preliminary investigation phase LANE will start construction of the project with the improvements to the WB Off-Ramp and the related signal/signage adjustments, per the RFP's requirements. Additionally work will start on the demolition and construction of the Old Carolina Bridge widening.

Phase 2. Once the WB Off-Ramp improvements are complete, LANE will first strengthen the existing outside shoulder for both directions of I-66 (as necessary per geotechnical/existing pavement conditions), enabling two traffic lanes to be shifted towards the outside of the roadway in both directions. The roadway will be restriped and traffic shifted followed by the installation of temporary barrier service along the inside median edge. Following the barrier installation, the LANE Team will construct the roadway and drainage improvements on the median side of the roadway for the entire length of the project.

The work at Old Carolina Bridge will be completed along with preparatory work for Catharpin Road Bridge. Once this work is completed, the LANE Team will open traffic to Old Carolina Bridge, and restrict traffic on Catharpin Road Bridge to only northbound direction to facilitate the demolition and construction of the Catharpin Road Bridge widening.

Phase 3. Once the roadway improvements in Phase 2 have been completed, the LANE Team will remove the barrier along the median, restripe and shift traffic onto the newly constructed roadway. Once the shift is made for both the east and westbound direction, concrete barrier and/or drums will be installed where appropriate. After barrier installation is complete, the LANE Team will commence construction work for the outside

roadway and drainage improvements and any associated signage improvements, proposed ITS infrastructure improvements, and the construction of sound barriers along the project.

Phase 4. For the final phase of construction, the LANE Team will mill and overlay all existing pavement areas within the project limits as required by the RFP. Included in this phase of construction will be the required ground and overhead signage modification and restriping to tie the newly constructed lanes to the existing lane configuration just east of the project. During this phase al the ITS infrastructure will be connected and tested to ensure VDOT acceptance.

Potential Impacts. The following risk issues have been identified as having the potential to cause impacts:

- Rock Excavation/Soil Conditions
- 3rd Party Coordination
- Maintenance of Traffic
- Ground Water

Key Milestone Dates. The I-66 Widening Project Schedule details our plan for all phases of the Design-Build process based on the following key project milestones:

Key Milestone	Milestone Date
Notice of Intent to Award Date	July 12, 2013
CTB Approval/Notice of Award	August 14, 2013
Notice to Proceed Date	September 19, 2013
Notice to Commence Construction	March 18, 2014
Substantial Completion Date	November 11, 2016
Final Completion Date	November 11, 2016

Critical Path. The Critical Path of the Project, as shown in the Schedule, starts with the Right of Way Acquisition process. By the time the Maintenance of Traffic Plans are approved, we will have completed non-critical environmental permitting activities and a Notice to Commence Construction will be issued. The Critical Path then follows the Notice to Commence Construction into the construction phases of the project. Construction starts with mobilization, followed by the WB Off-Ramp improvements at Route 15. Following Phase 1, the Critical Path then moves to Phase 2 shoulder strengthen and roadway and drainage improvements towards the median of I-66 in both directions. The Critical Path then moves to Phase 3 roadway and drainage improvements along the outside roadway. Following completion of the outside roadway improvements, the Critical Path moves into Phase 4. Phase 4 Critical Path includes milling and overlaying existing pavement areas within the project limits and pavement markings followed by Substantial and Final Completion on November 11, 2016.

Assumptions. The LANE Team made the following key assumptions on which our Proposal Schedule is based:

- Lane and road closures remain in accordance with the RFP
- Multiple noise barriers constructed concurrently
- No impacts due to unforeseen circumstances
- Effective partnering and coordination with contractors on adjacent active contracts to facilitate achievement of the I-66 construction program milestones

Schedule Management. Effective management and control of a construction project of this scope requires the use of a proven software package for scheduling, documentation control, cost control, and design functions of the integrated team concept to the Design-Build approach. The LANE Team uses Primavera P6 (P6) scheduling software to plan, schedule, and monitor its construction projects. This software is an industry

standard of practice for scheduling projects allows us to plan, organize, and control the project with the Precedence Diagram Method (PDM) of scheduling. As a management tool, P6 is powerful and flexible enough to handle all the project scheduling needs, including the following capabilities:

- CPM scheduling
- Cost management
- Resource management
- Data exchange
- Reporting capabilities
- Networking

P6 also has tools to assist the project management team in tracking and forecasting the project performance from the milestone level to the smallest work activity.

LANE will coordinate the scope of all project-related activities to establish a timely Critical Path Method (CPM) job schedule that will help ensure an on-time completion and identify potential risks. LANE's Project Controls will be coordinated from the on-site project office. The Project Engineer is responsible for scheduling, cost engineering, and cost forecasting. The Design-Build Project Manager, supported by the Construction Manager, is ultimately responsible for the implementation of the project controls system.

Upon award of the contract, LANE's project team will collaborate to develop the entire project schedule based on the proposal design plans. To control time spent on activities, LANE will develop a detailed, time-phased CPM project schedule, prepared with timelines outlined within the scope of work, with the assistance of their Corporate Scheduling Department. After an internal analysis and review of the general schedule logic and critical path, the schedule is completed. The P6 software program is used to generate a time-scaled logic diagram reflecting the interdependencies of all the activities incorporated into the schedule. In addition, other various tabular reports are produced, as required, for submission to the owner.

This schedule will indicate the necessary procurement and construction activities for each section or phase of the project. Various calendars will be incorporated into the project schedule to reflect holidays, seasonal work, temperature and precipitation restrictions, owner requirements, etc. The activities within the CPM schedule will be organized according to a WBS that has been developed for the project. An Activity Coding Structure will be utilized in the project schedule to organize data output. The project schedule will be the tool used for coordination by both on-site and off-site LANE management. Schedule updates are used by managers to review progress and coordinate the efforts of all entities involved. A full-time on-site engineer is tasked with the responsibility to track schedule progress on a daily basis and provide monthly updates.

Detailed schedules are used to plan and monitor specific items of work and will be prepared as necessary to deal with individual work packages or smaller work activities as the need arises. As the work progresses, start dates, finish dates, percent complete, and remaining durations will be updated to report the progress of each work activity. The Construction Manager will incorporate updated data into the CPM schedule on a monthly basis, review the results internally and with the owner, and prepare the required reports for submittal. Monthly updates of the CPM schedule provide the foundation of progress reports utilized by the project team.

When changes or unforeseen circumstances arise that impacts the project schedule, the LANE Team will immediately notify VDOT (and other appropriate stakeholders) and begin incorporating changes into the "live" CPM schedule. If changes to any task or phase in the schedule result in schedule slippage, the Design-Build Project Manager will divide the task into its components to determine the reason(s) for falling behind. LANE will develop and implement a recovery plan to put the project back on track. Progress can then be tracked daily via the schedule compared to the previously accepted schedule. LANE's management will evaluate any slippage to determine if additional manpower, equipment, multiple shifts, a change in subcontractor, or additional subcontractors is required. If so, the necessary resources will be mobilized to correct the slippage and maintain the schedule. Scheduling practices and concerns will be clearly communicated to all subcontractors and key suppliers. Delays and schedule slippage will not be tolerated.

4.6 PROPOSAL SCHEDULE

Summary. LANE has developed a Proposal Schedule and Proposal Schedule Narrative that demonstrates our understanding of the complexities and interrelationships of the technical elements of the Project. Additionally, our Proposal Schedule takes into account: internal plan reviews, VDOT plan reviews and approvals, environmental permitting, right of way acquisitions, utility relocations, and construction activities.

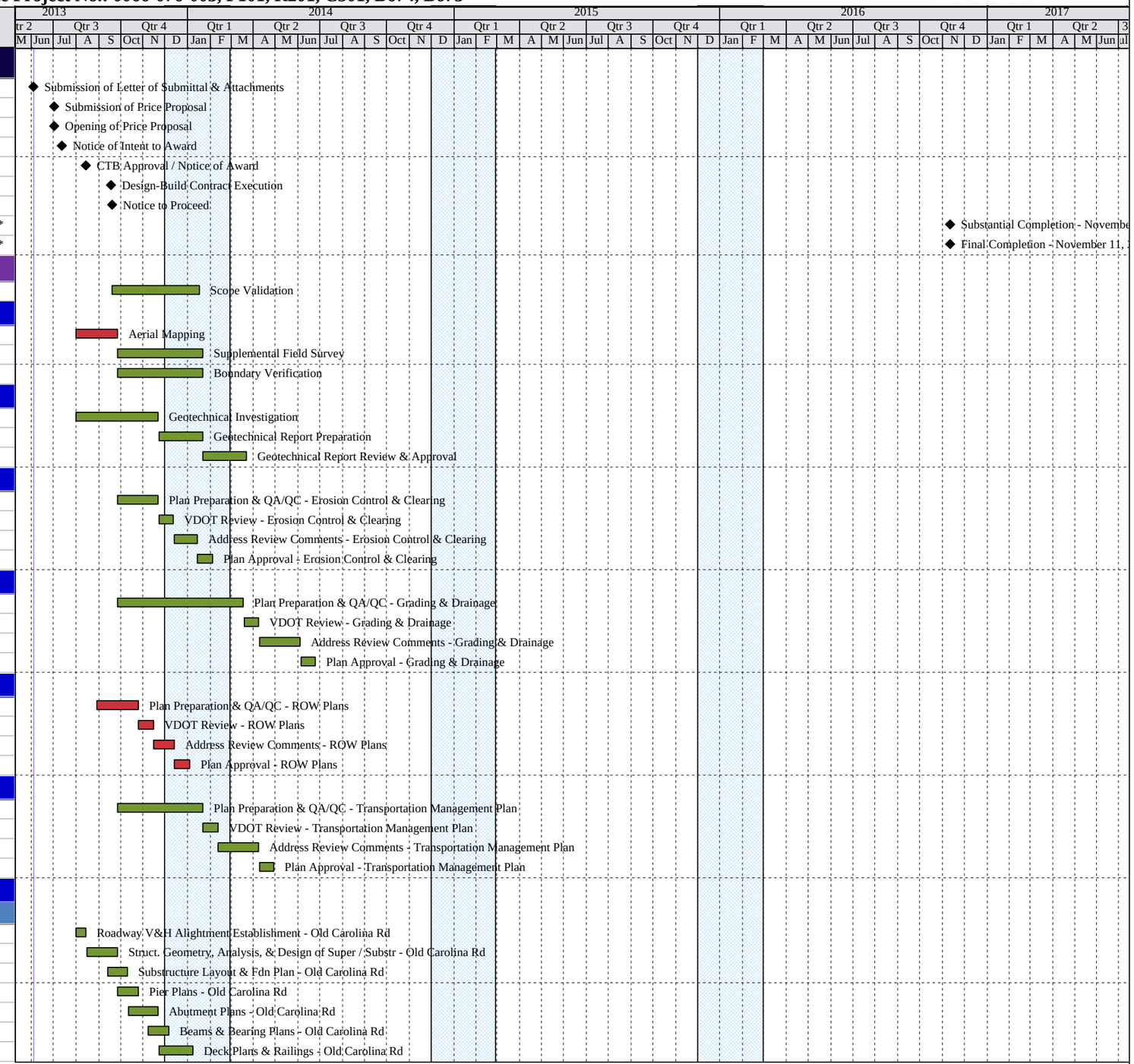
The LANE Team is committed to improve the enclosed Proposal Schedule to better serve VDOT, all associated stakeholders, and the traveling public. Once we have notice to proceed and the final design process begins, all team members will actively work to make this project more efficient, high quality and award winning.

Interstate 66 Widening

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

LANE

Activity ID	Activity Name	Original Duration	Start	Finish
Interstate 66 Widening				
0010	Submission of Letter of Submittal & Attachments	0	03-Jun-13	
0020	Submission of Price Proposal	0	01-Jul-13	
0030	Opening of Price Proposal	0	01-Jul-13	
0040	Notice of Intent to Award	0	12-Jul-13	
0050	CTB Approval / Notice of Award	0	14-Aug-13	
0060	Design-Build Contract Execution	0	17-Sep-13	
0070	Notice to Proceed	0	19-Sep-13	
0080	Substantial Completion - November 11, 2016	0		11-Nov-16*
0090	Final Completion - November 11, 2016	0		11-Nov-16*
Design				
D1000	Scope Validation	120	19-Sep-13	16-Jan-14
Survey				
D1010	Aerial Mapping	40	01-Aug-13	26-Sep-13
D1020	Supplemental Field Survey	80	27-Sep-13	21-Jan-14
D1030	Boundary Verification	80	27-Sep-13	21-Jan-14
Geotechnical				
D1040	Geotechnical Investigation	80	01-Aug-13	21-Nov-13
D1050	Geotechnical Report Preparation	40	22-Nov-13	21-Jan-14
D1060	Geotechnical Report Review & Approval	60	22-Jan-14	22-Mar-14
Erosion Control & Clearing Plan				
D1070	Plan Preparation & QA/QC - Erosion Control & Clearing	40	27-Sep-13	21-Nov-13
D1080	VDOT Review - Erosion Control & Clearing	21	22-Nov-13	12-Dec-13
D1090	Address Review Comments - Erosion Control & Clearing	20	13-Dec-13	13-Jan-14
D1100	Plan Approval - Erosion Control & Clearing	21	14-Jan-14	03-Feb-14
Grading & Drainage				
D1110	Plan Preparation & QA/QC - Grading & Drainage	120	27-Sep-13	18-Mar-14
D1120	VDOT Review - Grading & Drainage	21	19-Mar-14	08-Apr-14
D1130	Address Review Comments - Grading & Drainage	40	09-Apr-14	04-Jun-14
D1140	Plan Approval - Grading & Drainage	21	05-Jun-14	25-Jun-14
Right-of-Way Plans				
D1510	Plan Preparation & QA/QC - ROW Plans	40	29-Aug-13	24-Oct-13
D1520	VDOT Review - ROW Plans	21	25-Oct-13	14-Nov-13
D1530	Address Review Comments - ROW Plans	20	15-Nov-13	13-Dec-13
D1540	Plan Approval - ROW Plans	21	14-Dec-13	03-Jan-14
Transportation Management Plan				
D1150	Plan Preparation & QA/QC - Transportation Management Plan	80	27-Sep-13	21-Jan-14
D1160	VDOT Review - Transportation Management Plan	21	22-Jan-14	11-Feb-14
D1170	Address Review Comments - Transportation Management Plan	40	12-Feb-14	08-Apr-14
D1180	Plan Approval - Transportation Management Plan	21	09-Apr-14	29-Apr-14
Structural				
Old Carolina Rd				
D1190	Roadway V&H Alightment Establishment - Old Carolina Rd	10	01-Aug-13	14-Aug-13
D1200	Struct. Geometry, Analysis, & Design of Super / Substr - Old Carolina Rd	30	15-Aug-13	26-Sep-13
D1210	Substructure Layout & Fdn Plan - Old Carolina Rd	20	13-Sep-13	10-Oct-13
D1220	Pier Plans - Old Carolina Rd	20	27-Sep-13	24-Oct-13
D1230	Abutment Plans - Old Carolina Rd	30	11-Oct-13	21-Nov-13
D1240	Beams & Bearing Plans - Old Carolina Rd	20	08-Nov-13	06-Dec-13
D1250	Deck Plans & Railings - Old Carolina Rd	30	22-Nov-13	07-Jan-14



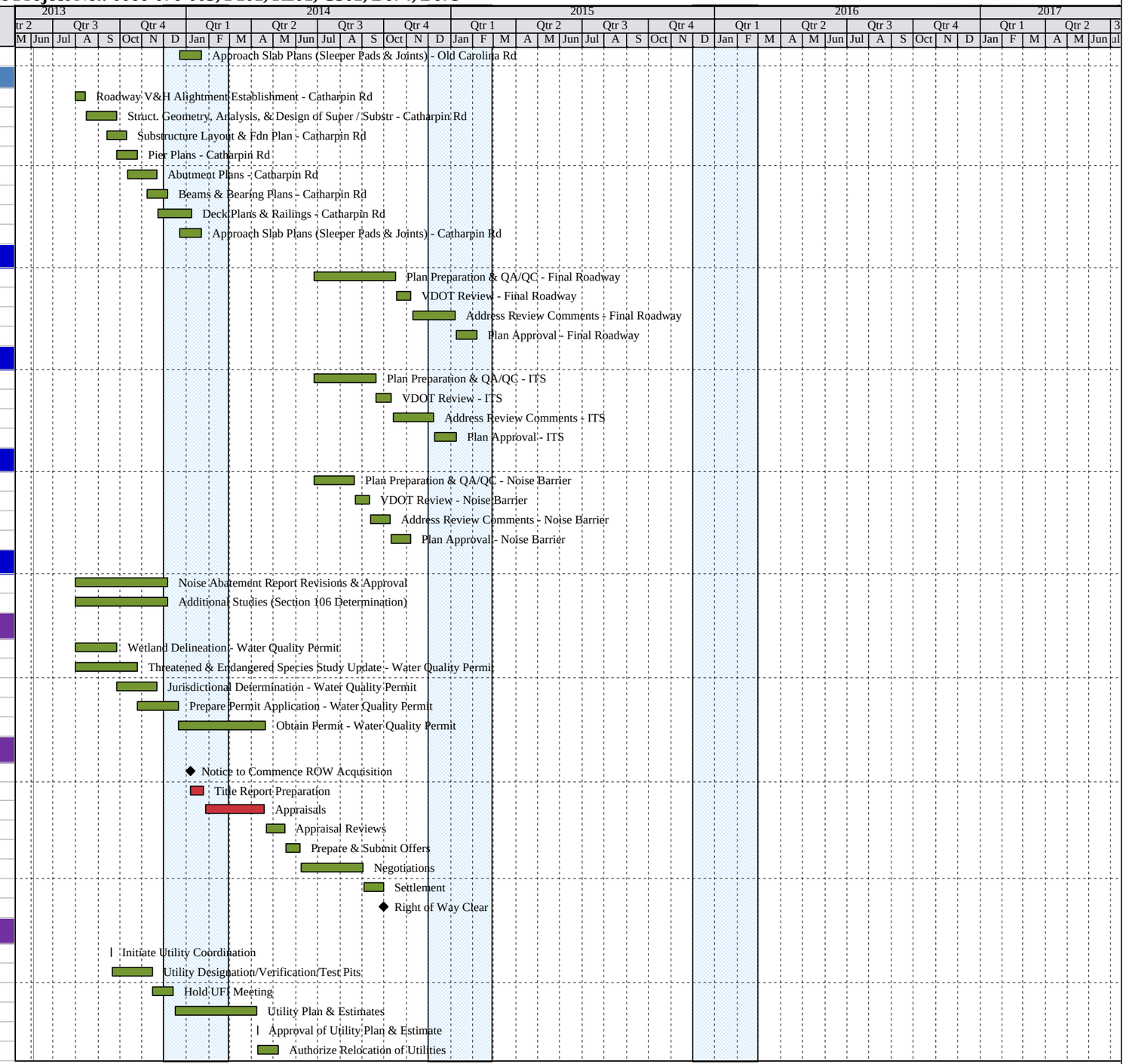
Remaining Level of Effort | Remaining Work | Critical Remaining Work | ◆ Milestone

Interstate 66 Widening

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

LANE

Activity ID	Activity Name	Original Duration	Start	Finish
D1260	Approach Slab Plans (Sleeper Pads & Joints) - Old Carolina Rd	20	23-Dec-13	21-Jan-14
Catharpin Rd				
D1270	Roadway V&H Alightment Establishment - Catharpin Rd	10	01-Aug-13	14-Aug-13
D1280	Struct. Geometry, Analysis, & Design of Super / Substr - Catharpin Rd	30	15-Aug-13	26-Sep-13
D1290	Substructure Layout & Fdn Plan - Catharpin Rd	20	13-Sep-13	10-Oct-13
D1300	Pier Plans - Catharpin Rd	20	27-Sep-13	24-Oct-13
D1310	Abutment Plans - Catharpin Rd	30	11-Oct-13	21-Nov-13
D1320	Beams & Bearing Plans - Catharpin Rd	20	08-Nov-13	06-Dec-13
D1330	Deck Plans & Railings - Catharpin Rd	30	22-Nov-13	07-Jan-14
D1340	Approach Slab Plans (Sleeper Pads & Joints) - Catharpin Rd	20	23-Dec-13	21-Jan-14
Final Roadway Plan				
D1350	Plan Preparation & QA/QC - Final Roadway	80	26-Jun-14	17-Oct-14
D1360	VDOT Review - Final Roadway	21	18-Oct-14	07-Nov-14
D1370	Address Review Comments - Final Roadway	40	10-Nov-14	07-Jan-15
D1380	Plan Approval - Final Roadway	21	08-Jan-15	05-Feb-15
ITS Plan				
D1390	Plan Preparation & QA/QC - ITS	60	26-Jun-14	19-Sep-14
D1400	VDOT Review - ITS	21	20-Sep-14	10-Oct-14
D1410	Address Review Comments - ITS	40	13-Oct-14	08-Dec-14
D1420	Plan Approval - ITS	21	09-Dec-14	08-Jan-15
Noise Barrier				
D1430	Plan Preparation & QA/QC - Noise Barrier	40	26-Jun-14	21-Aug-14
D1440	VDOT Review - Noise Barrier	21	22-Aug-14	11-Sep-14
D1450	Address Review Comments - Noise Barrier	20	12-Sep-14	09-Oct-14
D1460	Plan Approval - Noise Barrier	21	10-Oct-14	07-Nov-14
Environmental				
D1470	Noise Abatement Report Revisions & Approval	90	01-Aug-13	06-Dec-13
D1480	Additional Studies (Section 106 Determination)	90	01-Aug-13	06-Dec-13
Permitting				
P1020	Wetland Delineation - Water Quality Permit	40	01-Aug-13	26-Sep-13
P1010	Threatened & Endangered Species Study Update - Water Quality Permit	60	01-Aug-13	24-Oct-13
P1040	Jurisdictional Determination - Water Quality Permit	40	27-Sep-13	21-Nov-13
P1030	Prepare Permit Application - Water Quality Permit	40	25-Oct-13	20-Dec-13
P1050	Obtain Permit - Water Quality Permit	120	21-Dec-13	19-Apr-14
Right of Way Acquisitions				
R1000	Notice to Commence ROW Acquisition	0	06-Jan-14	
R1010	Title Report Preparation	15	06-Jan-14	24-Jan-14
R1020	Appraisals	60	27-Jan-14	18-Apr-14
R1030	Appraisal Reviews	20	21-Apr-14	16-May-14
R1040	Prepare & Submit Offers	14	19-May-14	06-Jun-14
R1050	Negotiations	60	09-Jun-14	02-Sep-14
R1060	Settlement	20	03-Sep-14	30-Sep-14
R1070	Right of Way Clear	0		30-Sep-14
Utility Relocations				
U1010	Initiate Utility Coordination	1	19-Sep-13	19-Sep-13
U1020	Utility Designation/Verification/Test Pits	40	20-Sep-13	14-Nov-13
U1030	Hold UFI Meeting	20	15-Nov-13	13-Dec-13
U1040	Utility Plan & Estimates	80	16-Dec-13	08-Apr-14
U1050	Approval of Utility Plan & Estimate	1	09-Apr-14	09-Apr-14
U1060	Authorize Relocation of Utilities	20	10-Apr-14	07-May-14



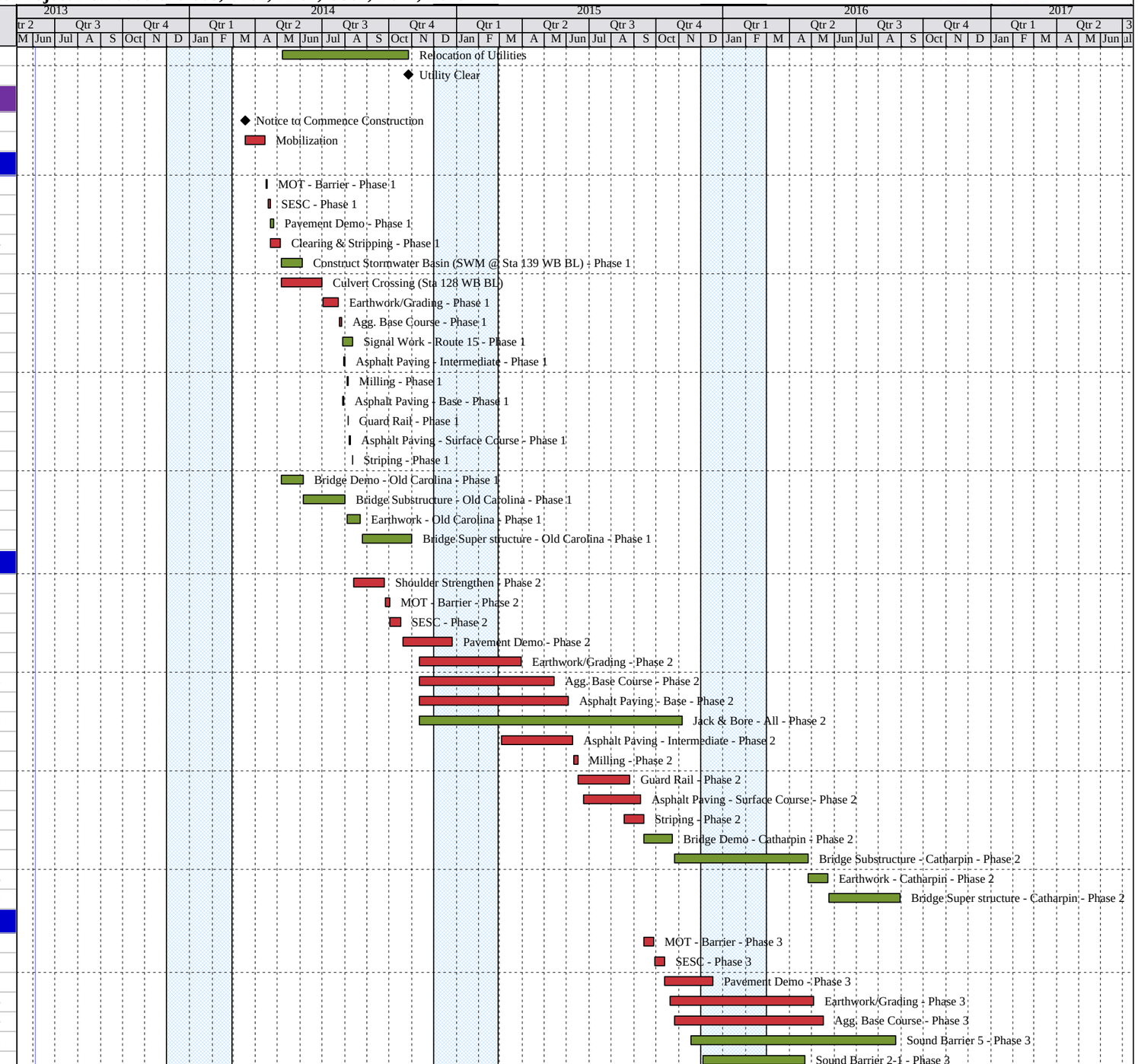
Remaining Level of Effort | Remaining Work | Critical Remaining Work | ◆ Milestone

Interstate 66 Widening

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

LANE

Activity ID	Activity Name	Original Duration	Start	Finish
U1070	Relocation of Utilities	120	08-May-14	27-Oct-14
U1080	Utility Clear	0		27-Oct-14
Construction				
C0000	Notice to Commence Construction	0	18-Mar-14	
C0010	Mobilization	20	18-Mar-14	14-Apr-14
Phase 1 - Widening of I-66 Off Ramp WB to Rt 15				
C1010	MOT - Barrier - Phase 1	3	15-Apr-14	17-Apr-14
C1020	SESC - Phase 1	2	18-Apr-14	21-Apr-14
C1030	Pavement Demo - Phase 1	4	22-Apr-14	25-Apr-14
C1180	Clearing & Stripping - Phase 1	10	22-Apr-14	05-May-14
C1170	Construct Stormwater Basin (SWM @ Sta 139 WB BL) - Phase 1	20	06-May-14	03-Jun-14
C1190	Culvert Crossing (Sta 128 WB BL)	40	06-May-14	01-Jul-14
C1040	Earthwork/Grading - Phase 1	15	02-Jul-14	23-Jul-14
C1050	Agg. Base Course - Phase 1	2	24-Jul-14	28-Jul-14
C1120	Signal Work - Route 15 - Phase 1	10	29-Jul-14	11-Aug-14
C1070	Asphalt Paving - Intermediate - Phase 1	2	31-Jul-14	01-Aug-14
C1080	Milling - Phase 1	2	04-Aug-14	05-Aug-14
C1060	Asphalt Paving - Base - Phase 1	2	29-Jul-14	30-Jul-14
C1090	Guard Rail - Phase 1	1	06-Aug-14	06-Aug-14
C1100	Asphalt Paving - Surface Course - Phase 1	2	07-Aug-14	08-Aug-14
C1110	Striping - Phase 1	2	11-Aug-14	12-Aug-14
C1130	Bridge Demo - Old Carolina - Phase 1	22	06-May-14	05-Jun-14
C1140	Bridge Substructure - Old Carolina - Phase 1	36	06-Jun-14	01-Aug-14
C1150	Earthwork - Old Carolina - Phase 1	15	04-Aug-14	22-Aug-14
C1160	Bridge Super structure - Old Carolina - Phase 1	43	25-Aug-14	31-Oct-14
Phase 2 - Widening of I-66 Median				
A1000	Shoulder Strengthen - Phase 2	30	13-Aug-14	24-Sep-14
C2010	MOT - Barrier - Phase 2	5	25-Sep-14	01-Oct-14
C2020	SESC - Phase 2	12	02-Oct-14	17-Oct-14
C2030	Pavement Demo - Phase 2	45	20-Oct-14	26-Dec-14
C2040	Earthwork/Grading - Phase 2	85	11-Nov-14	30-Mar-15
C2050	Agg. Base Course - Phase 2	56	11-Nov-14	14-May-15
C2060	Asphalt Paving - Base - Phase 2	71	11-Nov-14	02-Jun-15
C2160	Jack & Bore - All - Phase 2	240	11-Nov-14	06-Nov-15
C2070	Asphalt Paving - Intermediate - Phase 2	64	03-Mar-15	09-Jun-15
C2080	Milling - Phase 2	5	10-Jun-15	16-Jun-15
C2090	Guard Rail - Phase 2	50	17-Jun-15	26-Aug-15
C2100	Asphalt Paving - Surface Course - Phase 2	54	24-Jun-15	10-Sep-15
C2110	Striping - Phase 2	18	18-Aug-15	14-Sep-15
C2120	Bridge Demo - Catharpin - Phase 2	29	15-Sep-15	23-Oct-15
C2130	Bridge Substructure - Catharpin - Phase 2	57	26-Oct-15	25-Apr-16
C2140	Earthwork - Catharpin - Phase 2	20	26-Apr-16	23-May-16
C2150	Bridge Super structure - Catharpin - Phase 2	64	24-May-16	30-Aug-16
Phase 3 - Widening of I-66 Outside				
C3010	MOT - Barrier - Phase 3	10	15-Sep-15	28-Sep-15
C3020	SESC - Phase 3	10	29-Sep-15	12-Oct-15
C3030	Pavement Demo - Phase 3	45	13-Oct-15	18-Dec-15
C3040	Earthwork/Grading - Phase 3	125	20-Oct-15	03-May-16
C3050	Agg. Base Course - Phase 3	65	27-Oct-15	17-May-16
C4080	Sound Barrier 5 - Phase 3	183	18-Nov-15	23-Aug-16
C3120	Sound Barrier 2-1 - Phase 3	87	04-Dec-15	21-Apr-16



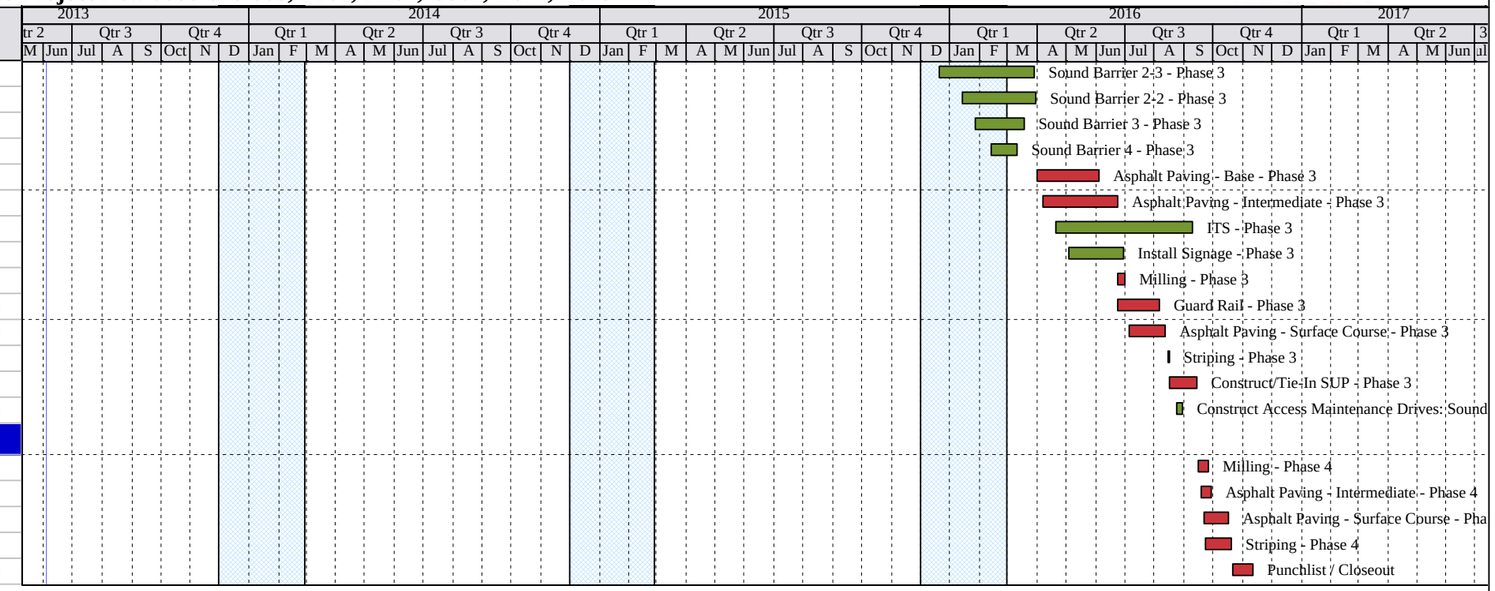
Remaining Level of Effort | Remaining Work | Critical Remaining Work | Milestone

Interstate 66 Widening

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

LANE

Activity ID	Activity Name	Original Duration	Start	Finish
C4060	Sound Barrier 2-3 - Phase 3	60	21-Dec-15	29-Mar-16
C4050	Sound Barrier 2-2 - Phase 3	51	13-Jan-16	30-Mar-16
C3150	Sound Barrier 3 - Phase 3	33	27-Jan-16	18-Mar-16
C4070	Sound Barrier 4 - Phase 3	18	12-Feb-16	11-Mar-16
C3060	Asphalt Paving - Base - Phase 3	43	31-Mar-16	03-Jun-16
C3070	Asphalt Paving - Intermediate - Phase 3	50	07-Apr-16	23-Jun-16
C3170	ITS - Phase 3	100	20-Apr-16	09-Sep-16
C3160	Install Signage - Phase 3	40	04-May-16	29-Jun-16
C3080	Milling - Phase 3	5	24-Jun-16	30-Jun-16
C3090	Guard Rail - Phase 3	30	24-Jun-16	05-Aug-16
C3100	Asphalt Paving - Surface Course - Phase 3	28	05-Jul-16	12-Aug-16
C3110	Striping - Phase 3	2	15-Aug-16	16-Aug-16
C3130	Construct/Tie-In SUP - Phase 3	20	17-Aug-16	14-Sep-16
C3140	Construct Access Maintenance Drives: Sound Barriers - Phase 3	5	24-Aug-16	30-Aug-16
Phase 4 - Overlay of I-66				
C4010	Milling - Phase 4	8	15-Sep-16	26-Sep-16
C4020	Asphalt Paving - Intermediate - Phase 4	8	19-Sep-16	28-Sep-16
C4030	Asphalt Paving - Surface Course - Phase 4	15	21-Sep-16	17-Oct-16
C4040	Striping - Phase 4	15	23-Sep-16	20-Oct-16
C4090	Punchlist / Closeout	22	21-Oct-16	11-Nov-16



Remaining Level of Effort | Remaining Work | Critical Remaining Work | ◆ Milestone

4.7 Disadvantaged Business Enterprises ("DBE")

4.7 DISADVANTAGED BUSINESS ENTERPRISES ("DBE")

The LANE Team embraces and supports VDOT's DBE program and is committed to meeting or exceeding the 13% goal for the design and construction of this project. Furthermore, we will take all necessary and reasonable steps to provide SWaM firms with the maximum opportunity to compete for and perform services on this contract.

Design Subconsultants. The LANE Team includes the highly qualified DBE subconsultant, Quinn Consulting Services, Inc., who will provide the QA Management/Inspections/Testing necessary for the successful completion of this Design-Build project.

Construction Subconsultants. LANE implements a subcontracting plan on all of our projects to confirm the maximum opportunity for DBE and SWaM subcontractors to qualify for and provide services. The first step is source selection. LANE researches the capabilities of a wide range of subcontractors. This includes an evaluation of past performance, socioeconomic status, financial condition, current availability, and safety performance. Based on this research, a list of potential subcontractors is developed. The second step is the outcome of the proposal process. Once a solicitation for pricing has been set, potential subcontractors have the opportunity to respond with their site-specific worker protection program and best price proposals. LANE reviews the price proposal to determine price reasonableness. The final selection of the subcontractor is made by combining the results of the safety and price evaluations to determine the proposal that provides the best value to VDOT and LANE.

Safety is an integral part of any scope of work performed on this project. Accordingly, a subcontractor's safety approach is a key component of our evaluation process. All subcontractors must meet our stringent safety requirements to be a member of the Team.

LANE also conducts a technical evaluation of the qualifications presented in the subcontractor's proposal, as well as an independent review of their past performance. References provided with their price proposal are contacted and questioned about the subcontractor's past performance. The topics covered include safety, schedule and cost compliance, and quality of work. If the potential subcontractor has worked for LANE before, its' past performance and safety record for LANE will be evaluated. If the potential subcontractor is required to submit a Quality Control Program or Worker Protection Program with their proposal, these documents will also be evaluated. If the subcontractor has not worked for LANE previously, a project interview will be required.

LANE solicits subcontractor and supplier price proposals and evaluates for award of a subcontract or purchase order based on quality, past performance, and competitiveness. Once these reviews are complete, our evaluation team members discuss the results and select the subcontractors and suppliers that best satisfy the requirements of the contract. Any subcontractor that fails to meet these requirements will be eliminated without further consideration.

Appendix

Attachment 4.0.1.1: Technical Proposal Checklist

ATTACHMENT 4.0.1.1

INTERSTATE 66 WIDENING

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	Appendix
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	Appendix
Letter of Submittal	NA	Sections 4.1		
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	I-1
Offeror's Full Legal Name and Address	NA	Section 4.1.1	yes	I-1
Authorized representative's original signature	NA	Section 4.1.1	yes	I-2
Declaration of intent	NA	Section 4.1.2	yes	I-1
120 day declaration	NA	Section 4.1.3	yes	I-1
Offeror's Point of Contact Information	NA	Section 4.1.4	yes	I-1, 2
Principal Officer information	NA	Section 4.1.5	yes	I-2
Substantial and Final Completion Date	NA	Section 4.1.6	yes	I-2
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.7	no	Appendix
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.8	no	Appendix
Written Statement of Compliance	NA	Section 4.1.9	yes	I-2

ATTACHMENT 4.0.1.1

INTERSTATE 66 WIDENING

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Offeror's Qualifications	NA	Section 4.2		
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2.1	yes	I-3
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	I-3, 4
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	N/A
Design Concept	NA	Section 4.3		
Conceptual Roadway Plans and description	NA	Section 4.3.	yes	I-5; II-1–II-11
Conceptual Structural Plans and description	NA	Section 4.3	yes	I-14; II-22–II-28
Project Approach	NA	Section 4.4		
Stakeholder Coordination/Public Outreach	NA	Section 4.4.1	yes	I-19
Utilities/Drainage	NA	Section 4.4.2	yes	I-22
Geotechnical	NA	Section 4.4.3	yes	I-25

ATTACHMENT 4.0.1.1

INTERSTATE 66 WIDENING

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Construction of Project	NA	Section 4.5		I-27
Bridge Reconstruction	NA	Section 4.5.1	yes	I-28
Sequence of Construction	NA	Section 4.5.2	yes	I-30
Transportation Management Plan	NA	Section 4.5.3	yes	I-32; II-12–II-21
Proposal Schedule	NA	Section 4.6		
Proposal Schedule	NA	Section 4.6	no	PS-1; PS-8–PS-11
Proposal Schedule Narrative	NA	Section 4.6	no	PS-1
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.6	no	CD located in plastic sleeve on PS-7
Disadvantaged Business Enterprises (DBE)	NA	Section 4.7		
Written statement of percent DBE participation	NA	Section 4.7	yes	I-37
DBE subcontracting narrative	NA	Section 4.7	yes	I-37

Attachment 3.6: Form C-78-RFP
Acknowledgement of Receipt of RFP, Revisions, and/or Addenda

Form C-78-RFP

ATTACHMENT 3.6

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

RFP NO. **C00093577DB49**

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

ACKNOWLEDGEMENT OF RFP, REVISION AND/OR ADDENDA

Acknowledgement shall be made of receipt of the Request for Proposals (RFP) and/or any and all revisions and/or addenda pertaining to the above designated project which are issued by the Department prior to the Letter of Submittal submission date shown herein. Failure to include this acknowledgement in the Letter of Submittal may result in the rejection of your proposal.

By signing this Attachment 3.6, the Offeror acknowledges receipt of the RFP and/or following revisions and/or addenda to the RFP for the above designated project which were issued under cover letter(s) of the date(s) shown hereon:

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

RAM

SIGNATURE

June 3, 2013
DATE

Richard A. McDonough, District Manager
PRINTED NAME AND TITLE

Attachment 9.3.1: Proposal Payment Agreement

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this "Agreement") is made and entered into as of this 3rd day of June, 2013, by and between the Virginia Department of Transportation ("VDOT"), and The Lane Construction Corporation ("Offeror").

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs"), to the Virginia Department of Transportation ("VDOT), pursuant to VDOT's December 20, 2011 Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the Interstate 66 Widening, Project No. 0066-076-003, P101, R201, C501, B674, B675 ("Project"), under a design-build contract with VDOT ("Design-Build Contract"); and

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

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

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

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

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

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

3. **Proposal Payment**. VDOT agrees to pay Offeror the lump sum amount of forty thousand and 00/100 Dollars ($40,000.00) ("Proposal Payment"), which payment constitutes payment in full to Offeror for the conveyance of Offeror's Intellectual Property to VDOT in accordance with this Agreement. Payment of the Proposal Payment is conditioned upon: (a) Offeror's Proposal being, in the sole discretion of VDOT, responsive to the RFP; (b) Offeror complying with all other terms and conditions of this Agreement; and (c) either (i) Offeror is not awarded the Design-Build Contract, or (ii) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror.

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

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

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

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

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

9. Miscellaneous.

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

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

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

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

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

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

VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

[Insert Offeror's Name]

By: _____

Name: Mark A. Schiller

Title: Regional Vice President, Mid-Atlantic Region

Attachment 11.8.6: Certification Regarding Debarment Forms
(a) Primary Covered Transactions & (b) Lower Tier Covered Transactions

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

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

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

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

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

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

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

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

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

	5/30/2013	Regional Vice President, Mid-Atlantic Region
Signature	Date	Title

The LANE Construction Corporation

Name of Firm

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

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

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

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

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

	May 30, 2013	Director of Transportation/Vice President
Signature	Date	Title

RINKER DESIGN ASSOCIATES, P.C.
Name of Firm

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

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

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

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

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

David E. Hill	April 10, 2013	President
Signature	Date	Title

FreeAhead Engineering PC
Name of Firm

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

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

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

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

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

	April 10, 2013	President
Signature	Date	Title

Quinn Consulting Services, Inc.
Name of Firm

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

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

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

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

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

4/10/2013 Vice President

Signature Date Title

Michael Baker JR., Inc.

Name of Firm

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

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

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

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

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

David A. Bal 4/10/2013 Mid-Atlantic Regional Manager

Signature Date Title

Vanasse Hangen Brustlin, Inc.

Name of Firm

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

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

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

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

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

Signature	4/10/2013 Date	Vice President/Chief Engineer Title

ECS Mid-Atlantic, LLC
Name of Firm

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

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

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

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

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

[illegible]	5-24-13	President/CEO
Signature	Date	Title

World Fiber Technologies, Inc.
Name of Firm

LANE

www.laneconstruct.com

14500 Avion Parkway
Suite 200
Chantilly, VA 20151
(703) 222-5670

RINKER DESIGN
ASSOCIATES, P.C.

www.rdacivil.com

9385 Discovery Boulevard
Suite 200
Manassas, VA 20109
(703) 368-7373

A DESIGN-BUILD PROJECT

Interstate 66 Widening

VOLUME II: TECHNICAL PROPOSAL EXHIBITS

From: approximately 1.2 miles west of U.S. Route 15 (James Madison Highway)
To: approximately 0.2 miles west of U.S. Route 29 (Lee Highway)

Prince William County, Virginia

June 3, 2013

Technical Proposal submitted to the Virginia Department of Transportation

VDOT

State Project No.: 0066-076-003, P101, R201, C501, B674, B675
Federal Project No.: NH-5A01(194)
Contract ID Number: C00093577DB48

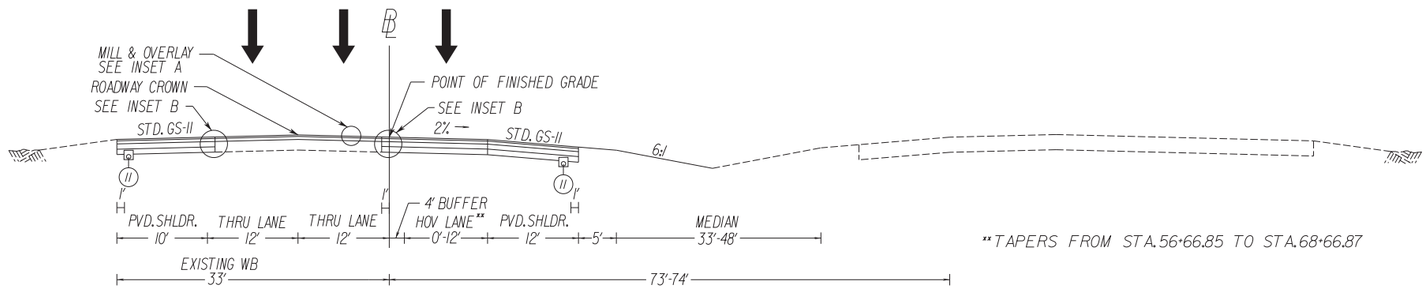
Submitted by

LANE *in association with* rda

Typical Sections

NOT TO SCALE

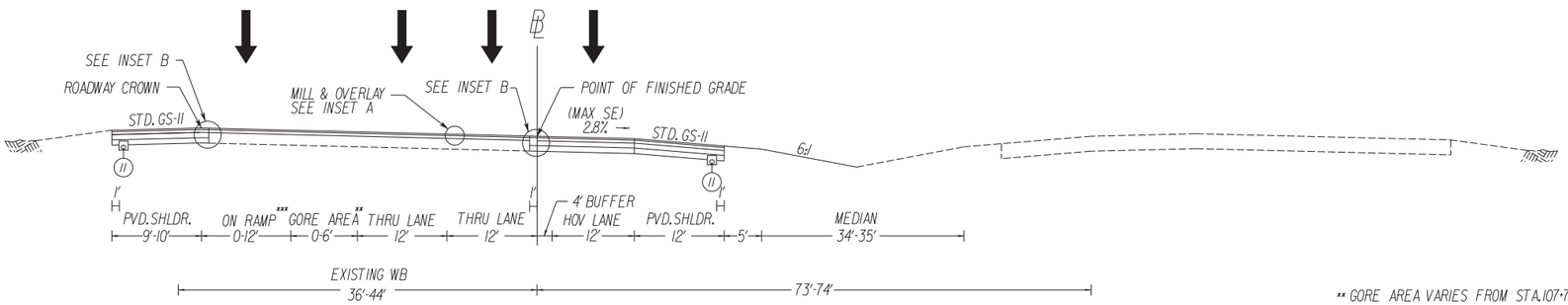
RTE.66 WESTBOUND / RTE.66 EASTBOUND



** TAPERS FROM STA. 56+66.85 TO STA. 68+66.87

STA. 56+66.85 TO STA. 68+66.86

RTE.66 WESTBOUND / RTE.66 EASTBOUND

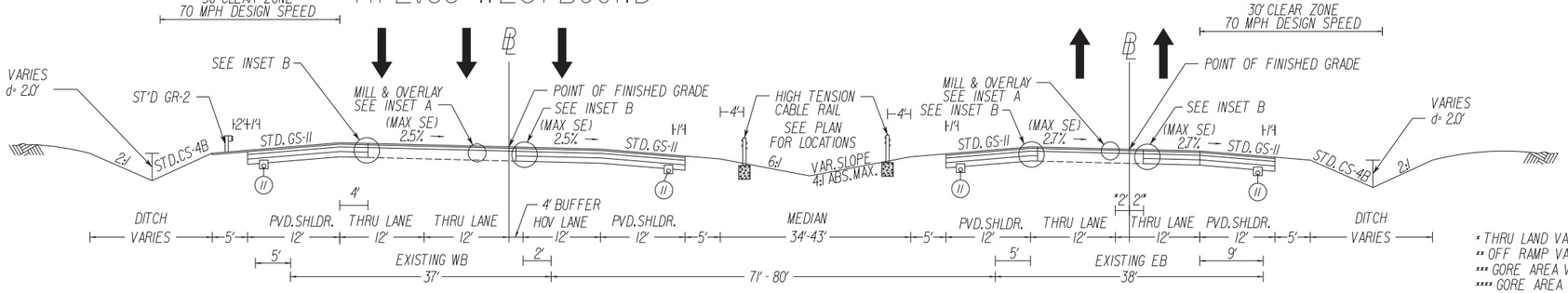


STA. 68+66.86 TO STA. 109+25.99

** GORE AREA VARIES FROM STA. 107+77.21 TO 110+06.69

*** FULL WIDTH ENTRANCE LANE STA. 102+66.81 to STA. 109+25.99
EXIT LANE TAPER 0'-12' FROM STA. 97+30.40 to STA. 102+66.81

RTE.66 WESTBOUND / RTE.66 EASTBOUND



STA. 109+25.99 TO STA. 118+19.75

STA. 300+25.00 TO STA. 322+50.00

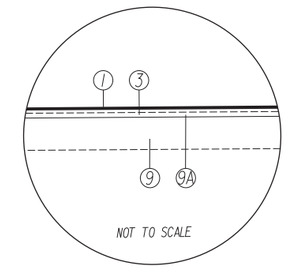
* THRU LAND VARIES FROM STA. 311+77.37 TO 322+50.00

** OFF RAMP VARIES FROM STA. 300+25.00 TO 307+29.74

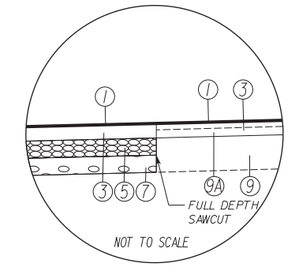
*** GORE AREA VARIES FROM STA. 107+77.21 TO 110+06.69

**** GORE AREA VARIES FROM STA. 304+65.55 TO 307+29.74

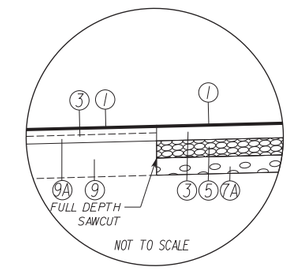
INSET A



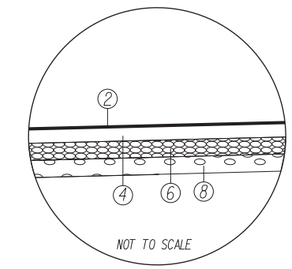
INSET B



INSET C



INSET D



PAVEMENT SECTION NOTES

1. SURFACE- 1.5" ASPHALT CONCRETE TYPE SMA-9.5 (PG 76-22) @ 181.5 LBS/SQ YD
2. SURFACE- 1.5" ASPHALT CONCRETE TYPE SM-9.5A @ 181.5 LBS/SQ YD
3. INTERMEDIATE- 3.0" OF ASPHALT CONCRETE TYPE IM-19.0D @ 244 LBS/SQ YD
4. INTERMEDIATE- 2.0" OF ASPHALT CONCRETE TYPE IM-19.0A @ 244 LBS/SQ YD
5. BASE - 10" ASPHALT CONCRETE TYPE BM-25.0A
6. BASE - 5" ASPHALT CONCRETE TYPE BM-25.0A
7. SUBBASE- 10" AGGREGATE BASE MATERIAL TYPE I SIZE 21B
7A. SUBBASE- 10" AGGREGATE BASE MATERIAL TYPE I SIZE 21A PUGMILL MIXED WITH 4% HYDRAULIC CEMENT BY WEIGHT
8. SUBBASE- 6" AGGREGATE BASE MATERIAL TYPE I SIZE 21B
9. EXISTING PAVEMENT
9A. MILL 2" PRIOR TO BUILD-UP / OVERLAY
10. SURFACE- 2" ASPHALT CONCRETE TYPE SM-9.5A @ 240 LBS/SQ YD
11. VDOT ST'D UD-4 UNDERDRAIN REQ'D

LANE

The LANE Team

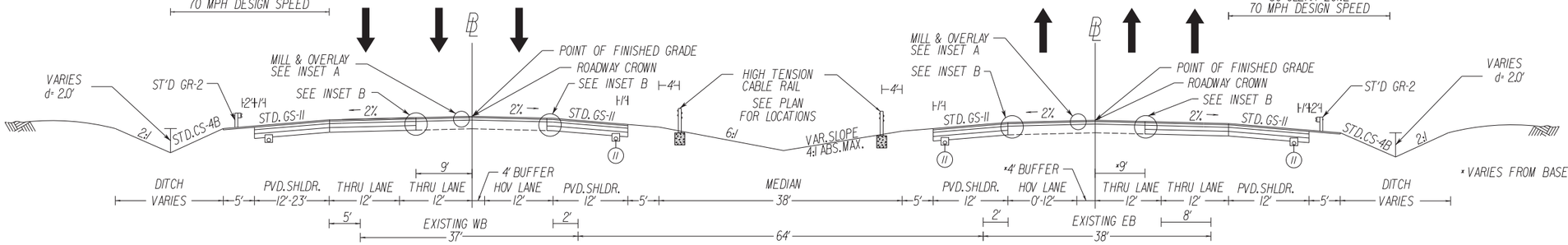
Typical Sections

EXHIBIT #: 01

Typical Sections

NOT TO SCALE

RTE.66 WESTBOUND



RTE.66 EASTBOUND

PAVEMENT SECTION NOTES

1. SURFACE- 1.5" ASPHALT CONCRETE TYPE SMA-9.5 (PG 76-22) @ 181.5 LBS/SQ YD
2. SURFACE- 1.5" ASPHALT CONCRETE TYPE SM-9.5A @ 181.5 LBS/SQ YD
3. INTERMEDIATE- 3.0" OF ASPHALT CONCRETE TYPE IM-19.0D @ 244 LBS/SQ YD
4. INTERMEDIATE- 2.0" OF ASPHALT CONCRETE TYPE IM-19.0A @ 244 LBS/SQ YD
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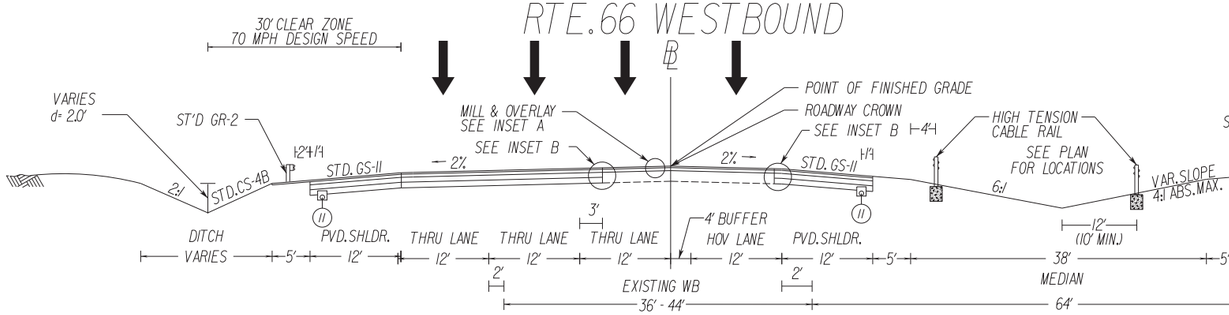
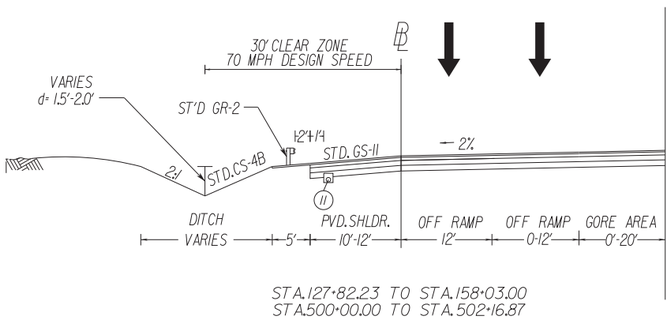
10. SURFACE- 2" ASPHALT CONCRETE TYPE SM-9.5A @ 240 LBS/SQ YD
11. VDOT ST'D UD-4 UNDERDRAIN REQ'D

RTE.66 WESTBOUND

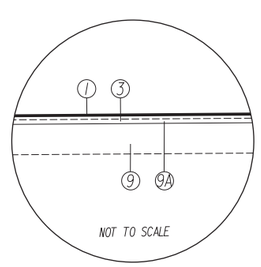


RTE.66 EASTBOUND

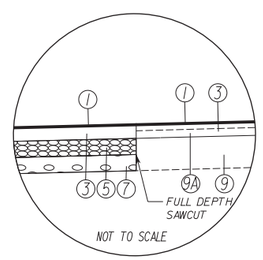
OFF RAMP



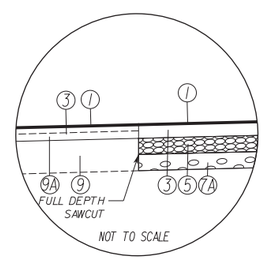
INSET A



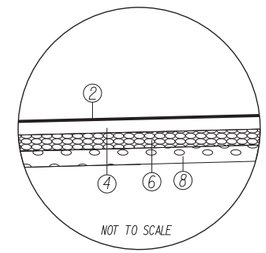
INSET B



INSET C



INSET D



LANE

The LANE Team

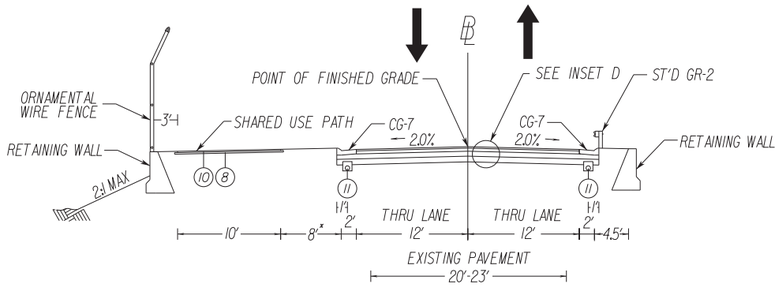
Typical Sections

EXHIBIT #: 01a

Typical Sections

NOT TO SCALE

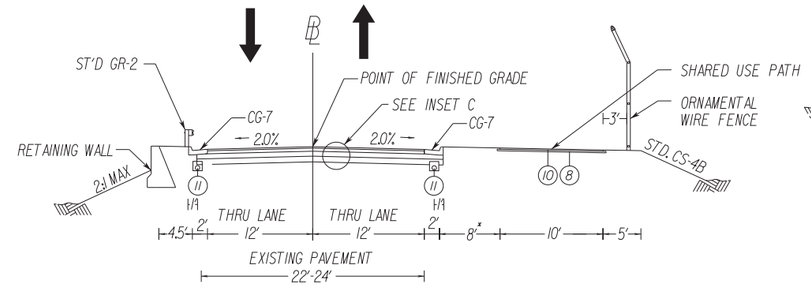
OLD CAROLINA ROAD



STA.702+35.00 TO STA.704+00.00

* TRANSITIONS TO MEET BRIDGE

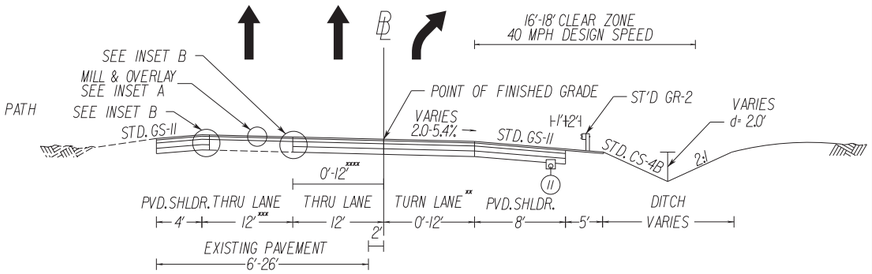
CATHARPIN ROAD



STA.801+85.75 TO STA.802+60.75

* TRANSITIONS TO MEET BRIDGE

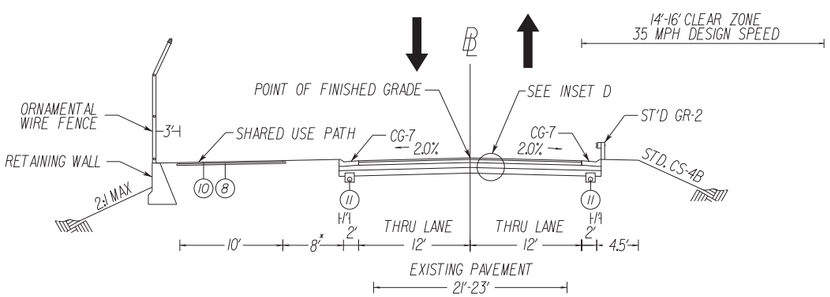
RTE.66 WESTBOUND OFF-RAMP



STA.502+16.87 TO STA.509+66.92

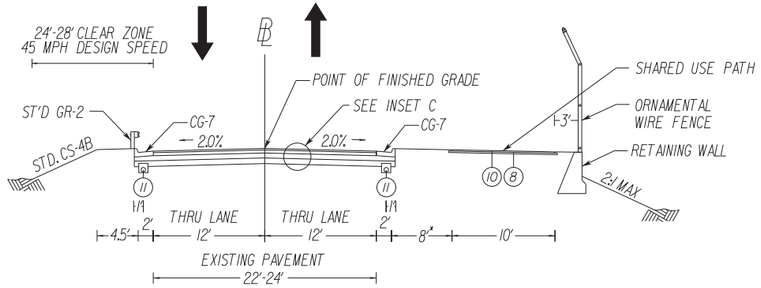
** TAPERS FROM STA 504+84.65 to STA 506+94.86
*** FULL DEPTH PAVEMENT from STA 502+16.87 to STA 505+10.66
**** VARIES 0' to 12' from STA 505+10.66 to 509+66.44

OLD CAROLINA ROAD



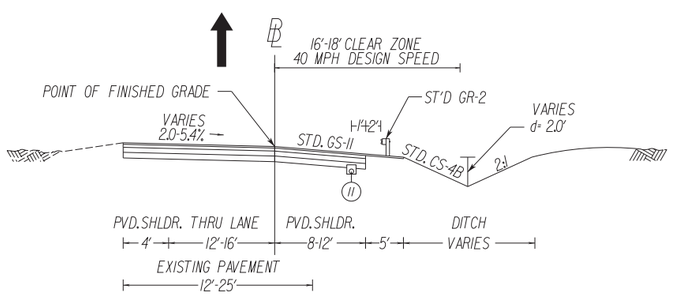
STA.707+10.00 TO STA.708+10.00

CATHARPIN ROAD



STA.805+70.75 TO STA.807+10.75

RTE.66 EASTBOUND ON-RAMP



STA.601+18.69 TO STA.607+09.86

NOTES:

1. FOR LIMITS OF MILL AND OVERLAY, AS WELL AS FULL DEPTH PAVEMENT, REFER TO THE PLAN SHEETS.
2. FOR SUPERELEVATIONS AND TRANSITIONS REFER TO PROFILE SHEETS.
3. SHOULDER CROSS SLOPE SHALL MEET GS-11 STANDARD WITH A MAXIMUM CROSS SLOPE OF 6%.

PAVEMENT SECTION NOTES

1. SURFACE- 1.5" ASPHALT CONCRETE TYPE SMA-9.5 (PG 76-22) @ 181.5 LBS/SQ YD
2. SURFACE- 1.5" ASPHALT CONCRETE TYPE SM-9.5A @ 181.5 LBS/SQ YD
3. INTERMEDIATE- 3.0" OF ASPHALT CONCRETE TYPE IM-19.0D @ 244 LBS/SQ YD
4. INTERMEDIATE- 2.0" OF ASPHALT CONCRETE TYPE IM-19.0A @ 244 LBS/SQ YD
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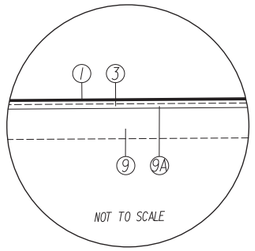
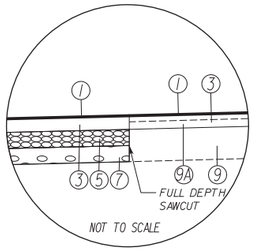
7A. SUBBASE- 10" AGGREGATE BASE MATERIAL TYPE I SIZE 21A PUGMILL MIXED WITH 4% HYDRAULIC CEMENT BY WEIGHT
8. SUBBASE- 6" AGGREGATE BASE MATERIAL TYPE I SIZE 21B
9. EXISTING PAVEMENT
9A. MILL 2" PRIOR TO BUILD-UP / OVERLAY
10. SURFACE- 2" ASPHALT CONCRETE TYPE SM-9.5A @ 240 LBS/SQ YD
11. VDOT ST'D UD-4 UNDERDRAIN REQ'D

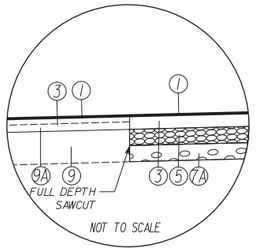
INSET A



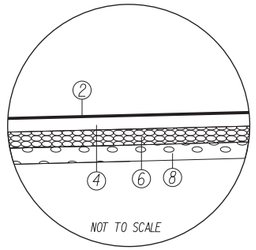
INSET B



INSET C



INSET D

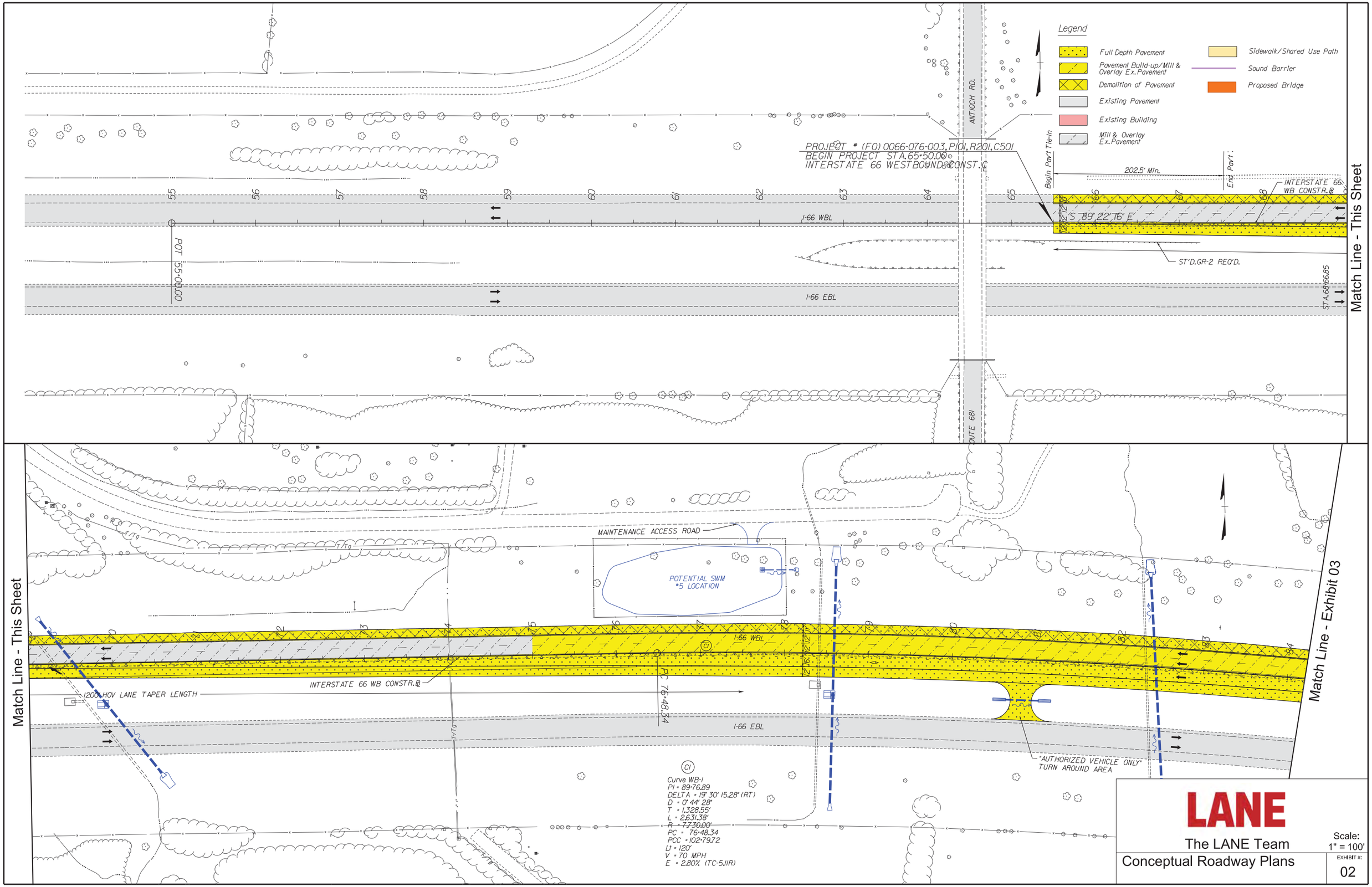


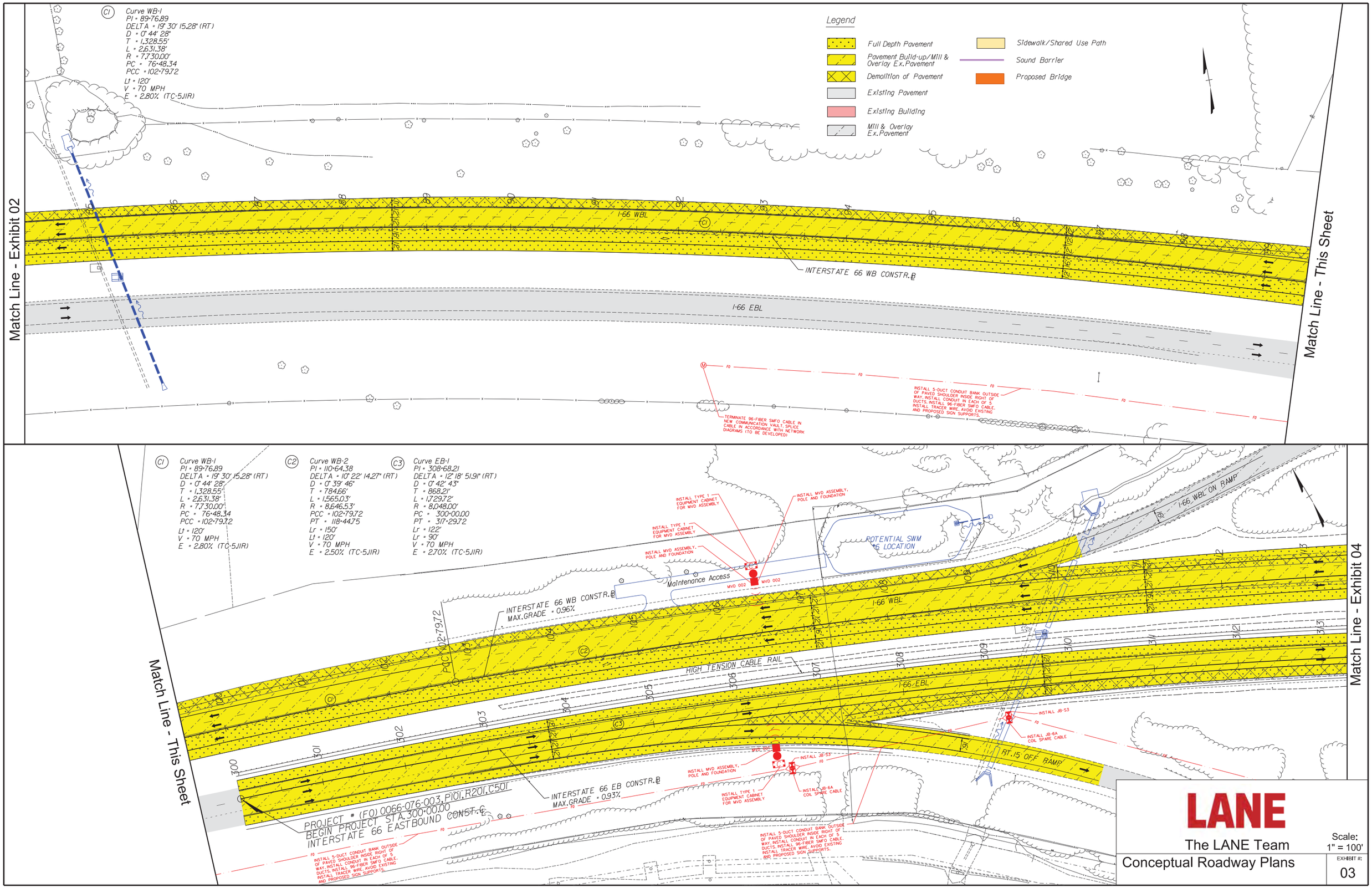
LANE

The LANE Team

Typical Sections

EXHIBIT #: 01b


Legend
Full Depth Pavement
Pavement Build-up/Mill & Overlay Ex. Pavement
Demolition of Pavement
Existing Pavement
Existing Building
Mill & Overlay Ex. Pavement
Sidewalk/Shared Use Path
Sound Barrier
Proposed Bridge
ANTIOCH RD.
PROJECT # (FO) 0066-076-003, P101, R201, C501
BEGIN PROJECT STA.65+50.00
INTERSTATE 66 WESTBOUND CONST.
Begin Pav't Tie-in
202.5' Min.
End Pav't
INTERSTATE 66 WB CONSTR.
S 89°22'16" E
I-66 WBL
I-66 EBL
ST'D.GR-2 REQ'D.
POT 55+00.00
ST.A.68+66.85
Match Line - This Sheet
ROUTE 681
MAINTENANCE ACCESS ROAD
POTENTIAL SWM #5 LOCATION
INTERSTATE 66 WB CONSTR.
1200' HOV LANE TAPER LENGTH
PC 76+48.34
"AUTHORIZED VEHICLE ONLY" TURN AROUND AREA
Match Line - Exhibit 03
Curve WB-1
PI = 89+76.89
DELTA = 19° 30' 15.28" (RT)
D = 0° 44' 28"
T = 1,328.55'
L = 2,631.38'
R = 7,730.00'
PC = 76+48.34
PCC = 102+79.72
Lt = 120'
V = 70 MPH
E = 2.80% (TC-5JIR)
LANE
The LANE Team
Scale: 1" = 100'
Conceptual Roadway Plans
EXHIBIT #: 02



LANE

The LANE Team

Conceptual Roadway Plans

Scale: 1" = 100'

EXHIBIT #: 03

Match Line - Exhibit 03

Legend

- Full Depth Pavement
- Pavement Build-up/Mill & Overlay Ex.Pavement
- Demolition of Pavement
- Existing Pavement
- Existing Building
- Mill & Overlay Ex.Pavement
- Sidewalk/Shared Use Path
- Sound Barrier
- Proposed Bridge

Curve EXITRAMP-1
PI = 503+10.29
DELTA = 28° 59' 43.45" (RT)
D = 4° 46' 29"
T = 310.29'
L = 607.28'
R = 1,200.00'
PC = 500+00.00
PT = 506+07.28
Lr = 105.78'
V = 40 MPH
E = 5.40% (TC-5.11R)

Curve WB-2
PI = 110+64.38
DELTA = 10° 22' 14.27" (RT)
D = 0° 39' 46"
T = 784.66'
L = 1,565.03'
R = 8,646.53'
PCC = 102+79.72
PT = 118+44.75
Lr = 150'
Lt = 120'
V = 70 MPH
E = 2.50% (TC-5.11R)

Curve EB-1
PI = 308+68.21
DELTA = 12° 18' 51.91" (RT)
D = 0° 42' 43"
T = 868.21'
L = 1,729.72'
R = 8,048.00'
PC = 300+00.00
PT = 317+29.72
Lr = 122'
Lt = 90'
V = 70 MPH
E = 2.70% (TC-5.11R)

Curve ENTRRAMP-1
PI = 604+38.67
DELTA = 26° 22' 21.02" (RT)
D = 4° 46' 29"
T = 281.15'
L = 552.34'
R = 1,200.00'
PC = 601+57.52
PT = 607+09.86
Lr = 82.5'
V = 40 MPH
E = 5.40% (TC-5.11R)

LANE

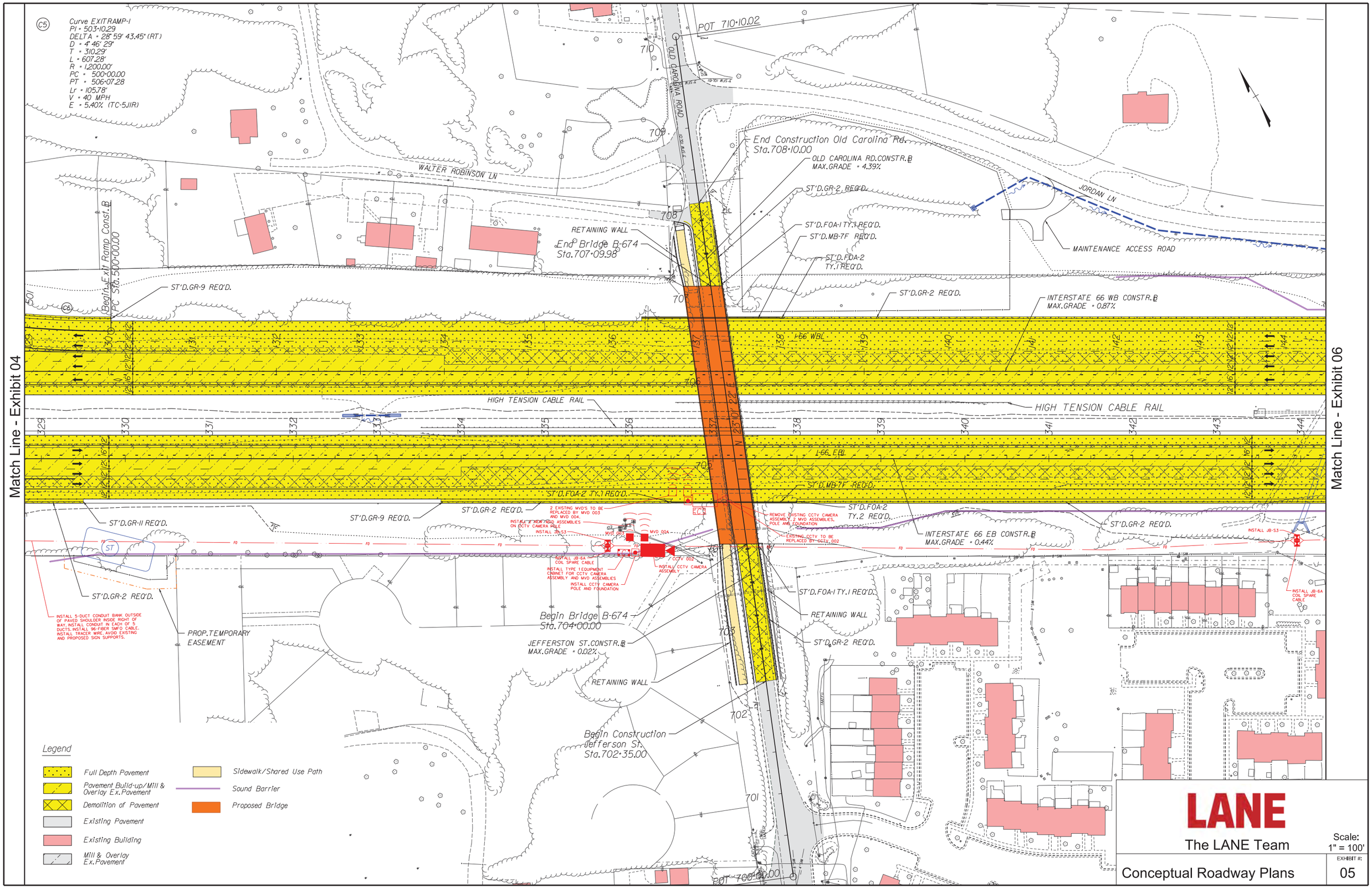
The LANE Team

Scale: 1" = 100'

Conceptual Roadway Plans

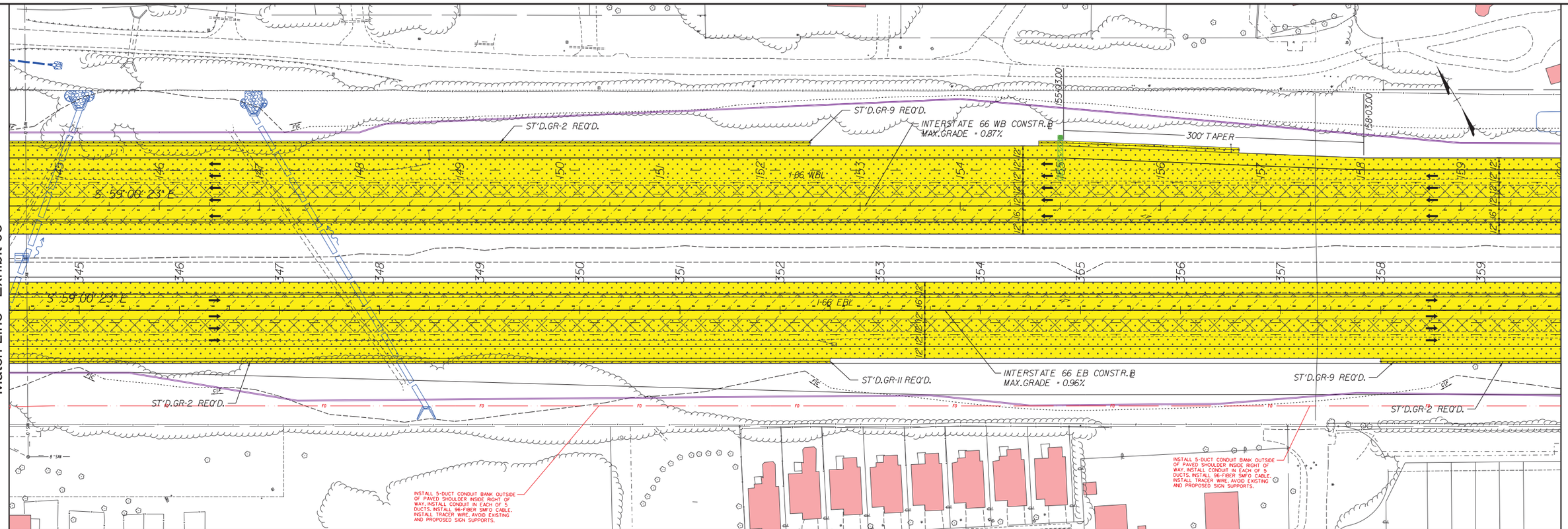
EXHIBIT #: 04

Match Line - Exhibit 05


Curve EXITRAMP-1
PI = 503+10.29
DELTA = 28° 59' 43.45" (RT)
D = 4° 46' 29"
T = 310.29'
L = 607.28'
R = 1,200.00'
PC = 500+00.00
PT = 506+07.28
Lr = 105.78'
V = 40 MPH
E = 5.40% (TC-5.11R)
POT 710+10.02
OLD CAROLINA ROAD
WALTER ROBINSON LN
JORDAN LN
End Construction Old Carolina Rd.
Sta.708+10.00
OLD CAROLINA RD.CONSTR.℄
MAX.GRADE = 4.39%
ST'D.GR-2 REQ'D.
ST'D.FOA-1 TY.1 REQ'D.
ST'D.MB-7F REQ'D.
ST'D.FOA-2 TY.1 REQ'D.
MAINTENANCE ACCESS ROAD
RETAINING WALL
End Bridge B-674
Sta.707+09.98
Begin Exit Ramp Const.℄
PC Sta. 500+00.00
ST'D.GR-9 REQ'D.
INTERSTATE 66 WB CONSTR.℄
MAX.GRADE = 0.87%
I-66 WBL
I-66 EBL
HIGH TENSION CABLE RAIL
N 23° 01' 22" E
ST'D.FOA-2 TY.1 REQ'D.
ST'D.GR-9 REQ'D.
ST'D.GR-2 REQ'D.
ST'D.GR-11 REQ'D.
2 EXISTING MVD'S TO BE REPLACED BY MVD 003 AND MVD 004.
INSTALL 2 NEW MVD ASSEMBLIES ON CCTV CAMERA POLE
INSTALL JB-S3
MVD 003
MVD 004
INSTALL JB-6A COIL SPARE CABLE
INSTALL TYPE I EQUIPMENT CABINET FOR CCTV CAMERA ASSEMBLY AND MVD ASSEMBLIES
INSTALL CCTV CAMERA POLE AND FOUNDATION
CCTV 002
INSTALL CCTV CAMERA ASSEMBLY
REMOVE EXISTING CCTV CAMERA ASSEMBLY, 2 MVD ASSEMBLIES, POLE AND FOUNDATION
EXISTING CCTV TO BE REPLACED BY CCTV 002
ST'D.FOA-2 TY.2 REQ'D.
INTERSTATE 66 EB CONSTR.℄
MAX.GRADE = 0.44%
ST'D.GR-2 REQ'D.
INSTALL JB-S3
INSTALL JB-6A COIL SPARE CABLE
INSTALL 5-DUCT CONDUIT BANK OUTSIDE OF PAVED SHOULDER INSIDE RIGHT OF WAY. INSTALL CONDUIT IN EACH OF 5 DUCTS. INSTALL 96-FIBER SMFO CABLE. INSTALL TRACER WIRE. AVOID EXISTING AND PROPOSED SIGN SUPPORTS.
PROP.TEMPORARY EASEMENT
Begin Bridge B-674
Sta.704+00.00
JEFFERSON ST.CONSTR.℄
MAX.GRADE = 0.02%
RETAINING WALL
Begin Construction Jefferson St.
Sta.702+35.00
EOT 700+00.00
Match Line - Exhibit 04
Match Line - Exhibit 06
Legend
Full Depth Pavement
Pavement Build-up/Mill & Overlay Ex.Pavement
Demolition of Pavement
Existing Pavement
Existing Building
Mill & Overlay Ex.Pavement
Sidewalk/Shared Use Path
Sound Barrier
Proposed Bridge
LANE
The LANE Team
Scale: 1" = 100'
Conceptual Roadway Plans
EXHIBIT #: 05

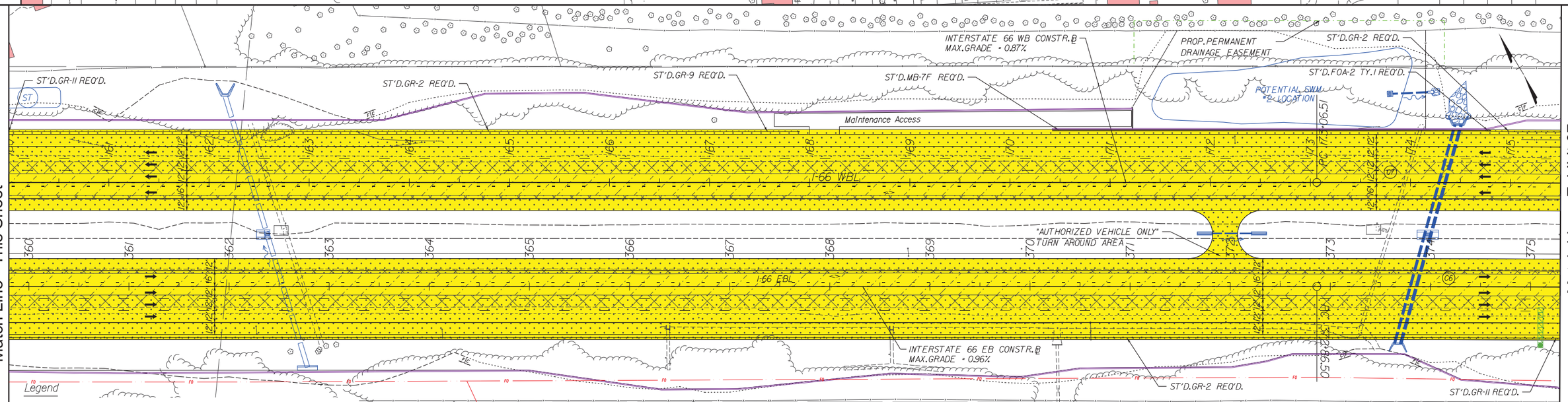
Match Line - Exhibit 05

Match Line - This Sheet



Match Line - This Sheet

Match Line - Exhibit 07



Legend

- Full Depth Pavement
- Pavement Build-up/Mill & Overlay Ex. Pavement
- Demolition of Pavement
- Existing Pavement
- Existing Building
- Mill & Overlay Ex. Pavement
- Sidewalk/Shared Use Path
- Sound Barrier
- Proposed Bridge

(C6) Curve EB-2
PI = 383+69.91
DELTA = 2°15' 32.77" (RT)
D = 0°06' 15"
T = 1,083.41'
L = 2,166.53'
R = 54,948.00'
PC = 372+86.50
PT = 394+53.03
V = 70 MPH
E = NC (TC-5JIR)

(C7) Curve WB-3
PI = 183+91.97
DELTA = 2°15' 32.82" (RT)
D = 0°06' 15"
T = 1,085.46'
L = 2,170.65'
R = 55,052.00'
PC = 173+06.51
PT = 194+77.16
V = 70 MPH
E = NC (TC-5JIR)

LANE

The LANE Team

Scale: 1" = 100'

Conceptual Roadway Plans

EXHIBIT #: 06

Match Line - Exhibit 06

INTERSTATE 66 WB CONSTR.@
MAX.GRADE = 0.87%

ST'D.GR-9 REQ'D.

ST'D.GR-2 REQ'D.

ST'D.GR-11 REQ'D.

POTENTIAL SWM #3 LOCATION

Maintenance Access

I-66 WBL

I-66 EBL

INTERSTATE 66 EB CONSTR.@
MAX.GRADE = 0.96%

REMOVE EXISTING CCTV CAMERA, POLE AND FOUNDATION TO BE REPLACED BY CCTV 003

INSTALL JB-6A

CCTV 003

INSTALL JB-S3

INSTALL CCTV CAMERA ASSEMBLY

INSTALL CCTV CAMERA POLE AND FOUNDATION

INSTALL TYPE 1 EQUIPMENT CABINET FOR CCTV CAMERA ASSEMBLY

INSTALL 5-DUCT CONDUIT BANK OUTSIDE OF PAVED SHOULDER INSIDE RIGHT OF WAY. INSTALL CONDUIT IN EACH OF 5 DUCTS. INSTALL 96-FIBER SMFO CABLE. INSTALL TRACER WIRE. AVOID EXISTING AND PROPOSED SIGN SUPPORTS.

INSTALL 5-DUCT CONDUIT BANK OUTSIDE OF PAVED SHOULDER INSIDE RIGHT OF WAY. INSTALL CONDUIT IN EACH OF 5 DUCTS. INSTALL 96-FIBER SMFO CABLE. INSTALL TRACER WIRE. AVOID EXISTING AND PROPOSED SIGN SUPPORTS.

TSB

PROP. TEMPORARY EASEMENT

Match Line - This Sheet

Match Line - This Sheet

ST'D.GR-2 REQ'D.

INTERSTATE 66 WB CONSTR.@
MAX.GRADE = 0.87%

I-66 WBL

I-66 EBL

2 EXISTING MVD'S TO BE REPLACED BY MVD 005 AND MVD 006

ST'D.GR-2 REQ'D.

INTERSTATE 66 EB CONSTR.@
MAX.GRADE = 0.96%

INSTALLATION OF NEW ITMS FACILITIES WAS NOT COMPLETE AS OF 8-17-11.

Match Line - Exhibit 08

(C6) Curve EB-2
PI = 383+69.91
DELTA = 2° 15' 32.77" (RT)
D = 0° 06' 15"
T = 1,083.41'
L = 2,166.53'
R = 54,948.00'
PC = 372+86.50
PT = 394+53.03
V = 70 MPH
E = NC (TC-5.11R)

(C7) Curve WB-3
PI = 183+91.97
DELTA = 2° 15' 32.82" (RT)
D = 0° 06' 15"
T = 1,085.46'
L = 2,170.65'
R = 55,052.00'
PC = 173+06.51
PT = 194+77.16
V = 70 MPH
E = NC (TC-5.11R)

Legend

- Full Depth Pavement
- Pavement Build-up/Mill & Overlay Ex. Pavement
- Demolition of Pavement
- Existing Pavement
- Existing Building
- Mill & Overlay Ex. Pavement
- Sidewalk/Shared Use Path
- Sound Barrier
- Proposed Bridge

LANE

The LANE Team

Scale: 1" = 100'

Conceptual Roadway Plans

EXHIBIT #: 07

Match Line - Exhibit 07

See Exhibit 09 For Remainder of Project Limits

Curve CP-1
PI = 808+24.56
DELTA = 10° 46' 25.35" (LT)
D = 4° 46' 34"
T = 113.16'
L = 225.58'
R = 1,200.00'
PC = 807+11.41
PT = 809+36.98

Legend

- Full Depth Pavement
- Pavement Build-up/Mill & Overlay Ex.Pavement
- Demolition of Pavement
- Existing Pavement
- Existing Building
- Mill & Overlay Ex.Pavement
- Sidewalk/Shared Use Path
- Sound Barrier
- Proposed Bridge

PT 809+36.98

End Construction Catharpin Rd. Sta.807+10.75

Maintenance Access Road

PC 807+11.41

CATHARPIN RD.CONSTR.℄ MAX.GRADE = 3.36%

ST'D.GR-2 REQ'D.

ST'D.FOA-1 TY.1 REQ'D.

End Bridge B-675 Sta.805+70.74

ST'D.FOA-2 TY.1 REQ'D.

ST'D.GR-2 REQ'D.

ST'D.GR-9 REQ'D.

INTERSTATE 66 WB CONSTR.℄ MAX.GRADE = 0.87%

ST'D.MB-7F REQ'D.

ST'D.FOA-2 TY.2 REQ'D.

POTENTIAL SWM #4 LOCATION

ST'D.GR-2 REQ'D.

S 56° 44' 50" E

I-66 WBL

HIGH TENSION CABLE RAIL

INSTALL OVERHEAD STRUCTURE. INSTALL DMS ASSEMBLY (TYPE 1).

HIGH TENSION CABLE RAIL

I-66 EBL

PC 407+55.32

ST'D.GR-2 REQ'D.

INSTALL 2 MVD ASSEMBLIES ON GANTRY

MVD 005

MVD 006

T COMM Duct (VDOT)

INSTALL TYPE 1 EQUIPMENT CABINET FOR DMS ASSMBLY AND MVD ASSEMBLIES

SPLICE NEW 96-FIBER SMFO CABLE TO EXISTING SMFO CABLE, IN NEW COMMUNICATION VAULT, IN ACCORDANCE WITH SPLICE PLAN (TO BE DEVELOPLED)

APPROXIMATE LOCATION OF EXISTING VDOT FIBER OPTIC CABLE

ST'D.FOA-2 TY.1 REQ'D.

ST'D.MB-7F REQ'D.

ST'D.FOA-1 TY.1 REQ'D.

INTERSTATE 66 EB CONSTR.℄ MAX.GRADE = 0.96%

INSTALL 5-DUCT CONDUIT BANK OUTSIDE OF PAVED SHOULDER INSIDE RIGHT OF WAY. INSTALL CONDUIT IN EACH OF 5 DUCTS. INSTALL 96-FIBER SMFO CABLE. INSTALL TRACER WIRE. AVOID EXISTING AND PROPOSED SIGN SUPPORTS.

PROP.TEMPORARY EASEMENT

Begin Bridge B-675 Sta.802+60.75

CATHARPIN RD.CONSTR.℄ MAX.GRADE = 0.34%

ST'D.GR-2 REQ'D.

Begin Construction Catharpin Rd. Sta.801+85.75

POT 800+00.00

Curve EB-3
PI = 413+41.58
DELTA = 5° 55' 27.09" (LT)
D = 0° 30' 21"
T = 586.26'
L = 1,171.47'
R = 11,329.92'
PC = 407+55.32
PT = 419+26.79
V = 70 MPH
E = NC (TC-5JIR)

Curve WB-4
PI = 225+05.64
DELTA = 15° 12' 12.32" (LT)
D = 0° 22' 13"
T = 2,065.28'
L = 4,106.28'
R = 15,475.00'
PC = 204+40.37
PT = 245+46.65
V = 70 MPH
E = NC (TC-5JIR)

LANE

The LANE Team

Scale: 1" = 100'

Conceptual Roadway Plans

EXHIBIT #: 08

Match Line - Exhibit 08

Match Line - This Sheet

END CONSTRUCTION
(FO) 0066-076-003, P101, R201, C501
INTERSTATE 66 EB
APPROXIMATELY 0.6 MILES WEST OF RT.29

Rte.29 Lee Hwy

END PROJECT
(FO) 0066-076-003, P101, R201, C501
INTERSTATE 66 WB
APPROXIMATELY 0.8 MILES EAST OF RTE.29

Match Line - This Sheet

Legend

Mill & Overlay Existing Pavement

LANE

The LANE Team

Scale:
1" = 250'

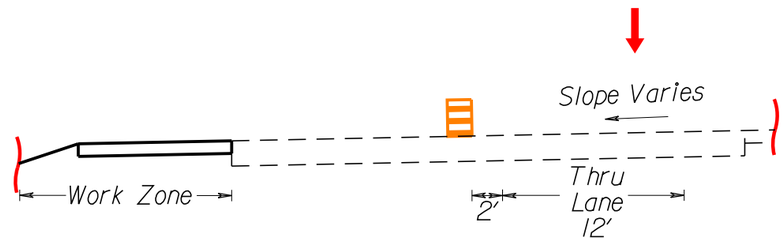
Conceptual Roadway Plans

EXHIBIT #:
09

Typical Sections

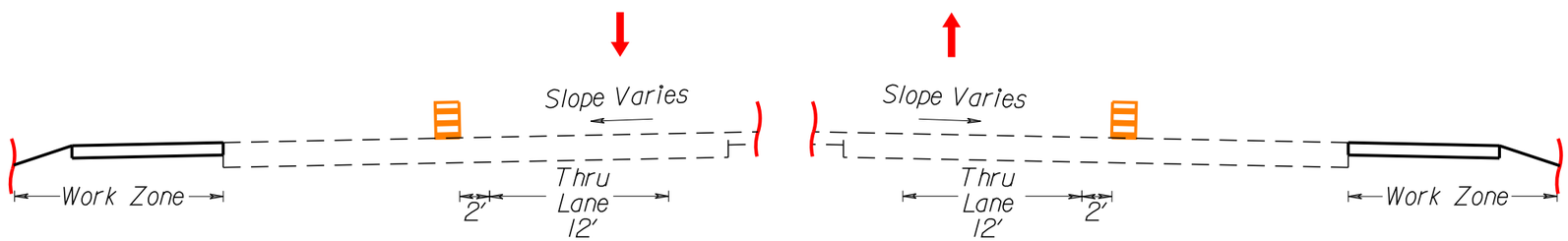
(Not to Scale)

W.B. LANES & RAMP TO U.S. RTE. 15



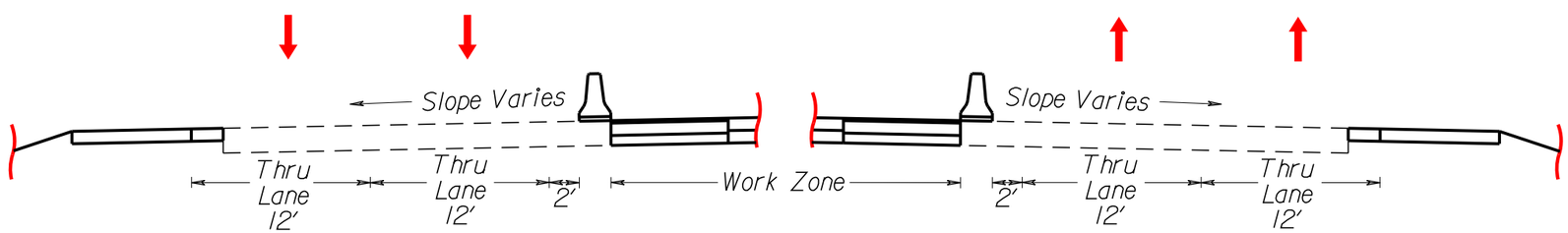
TMP/SOC Phase 1: Ramp & Deceleration Lane

W.B. LANES **E.B. LANES**



TMP/SOC Phase 2A: I-66 Temporary Pavement/Shoulder Strengthening

W.B. LANES **E.B. LANES**



TMP/SOC Phase 2B: I-66 Median Widening

Scale:
Not to Scale

LANE

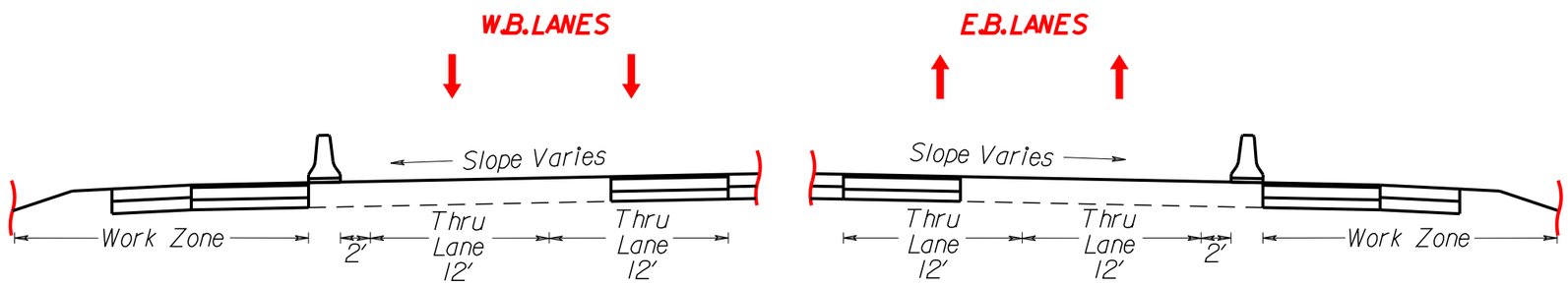
The LANE Team

TMP/SOC Typical Sections

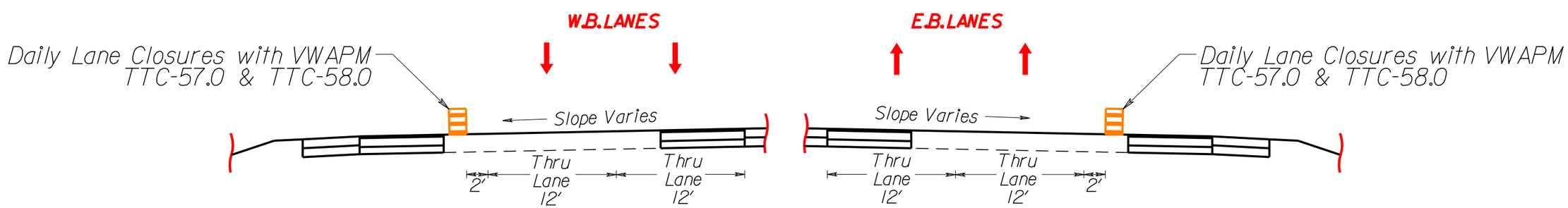
EXHIBIT #: 01

Typical Sections

(Not to Scale)



TMP/SOC Phase 3: I-66 Outside Lane Widening



TMP/SOC Phase 4: I-66 Mill and Overlay Operations

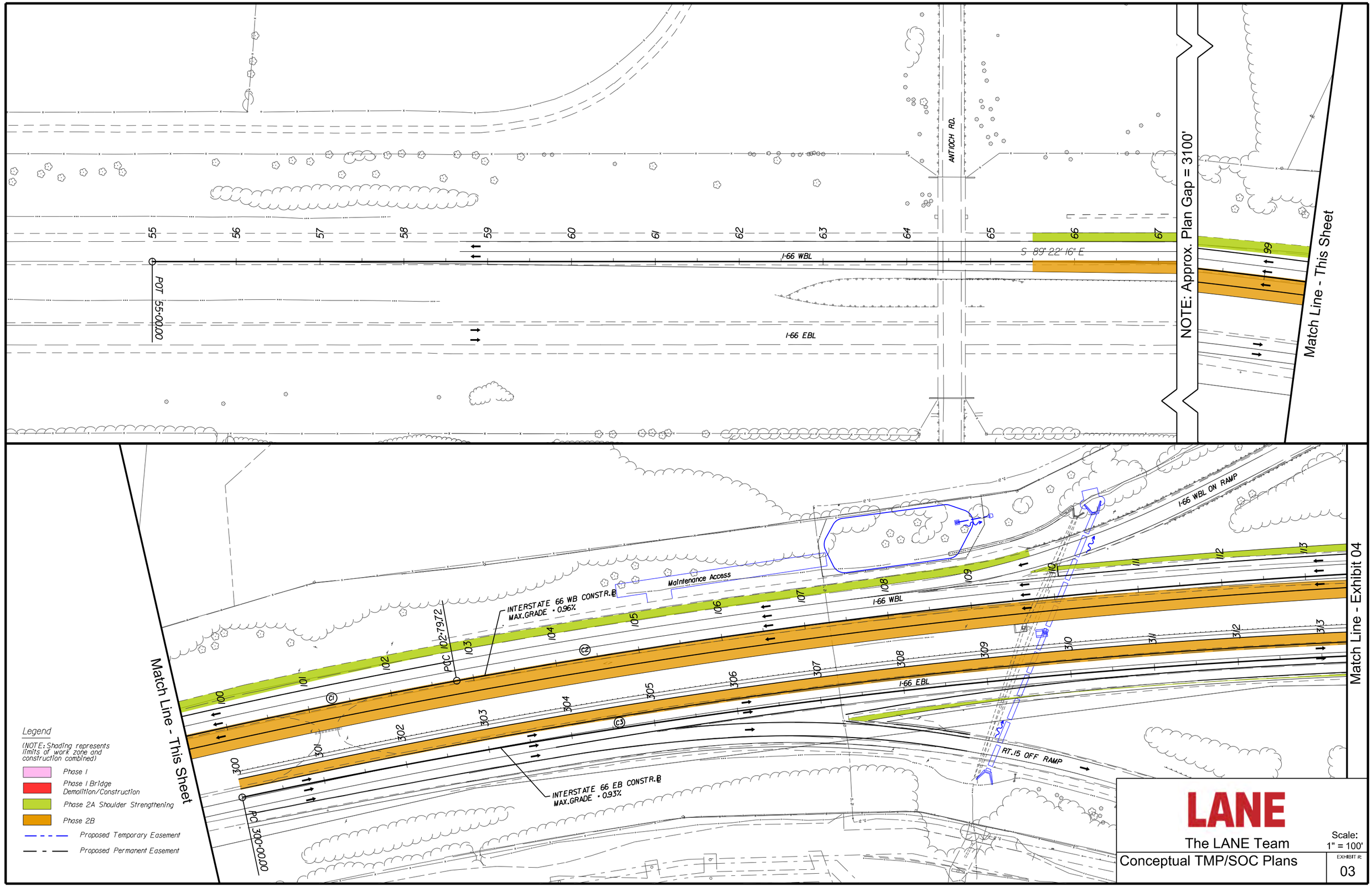
Scale:
Not to Scale

LANE

The LANE Team

TMP/SOC Typical Sections

EXHIBIT #: 02


ANTIOCH RD.
I-66 WBL
I-66 EBL
S 89° 22' 16" E
POT 5+00.00
NOTE: Approx. Plan Gap = 3100'
Match Line - This Sheet
Match Line - Exhibit 04
I-66 WBL ON RAMP
Maintenance Access
INTERSTATE 66 WB CONSTR.℄
MAX.GRADE = 0.96%
PQC 102+79.72
INTERSTATE 66 EB CONSTR.℄
MAX.GRADE = 0.93%
PCI 300+00.00
RT.15 OFF RAMP
C1
C2
C3
Legend
(NOTE: Shading represents limits of work zone and construction combined)
Phase I
Phase I Bridge Demolition/Construction
Phase 2A Shoulder Strengthening
Phase 2B
Proposed Temporary Easement
Proposed Permanent Easement
LANE
The LANE Team
Scale: 1" = 100'
Conceptual TMP/SOC Plans
EXHIBIT #:
03

Match Line - Exhibit 03

Legend

(NOTE: Shading represents limits of work zone and construction combined)

- Phase I
- Phase I Bridge Demolition/Construction
- Phase 2A Shoulder Strengthening
- Phase 2B
- Proposed Temporary Easement
- Proposed Permanent Easement

ROUTE 15

POT 510+42.33

N 30° 00' 40" W

ROUTE 15 EXIT RAMP CONSTR.@
MAX.GRADE = 2.39%

PT 506+07.28

ROUTE 15 OFF RAMP

I-66 WBL ON RAMP

CITY OF HAYMARKET CORPORATE LINE

INTERSTATE 66 WB CONSTR.@
MAX.GRADE = 0.96%

I-66 WBL

PT 318+44.75

I-66 EBL

PT 317+29.72

INTERSTATE 66 EB CONSTR.@
MAX.GRADE = 0.93%

PT 607+09.86

S 94° 37' 16" E

PC 601+57.52

ROUTE 15 ENTRANCE RAMP CONSTR.@
MAX.GRADE = 3.80%

POT 600+00.00

JAMES MADISON HWY.

RT.15 OFF RAMP

I-66 EBL ON RAMP

PROP.PERMANENT DRAINAGE EASEMENT

Match Line - Exhibit 05

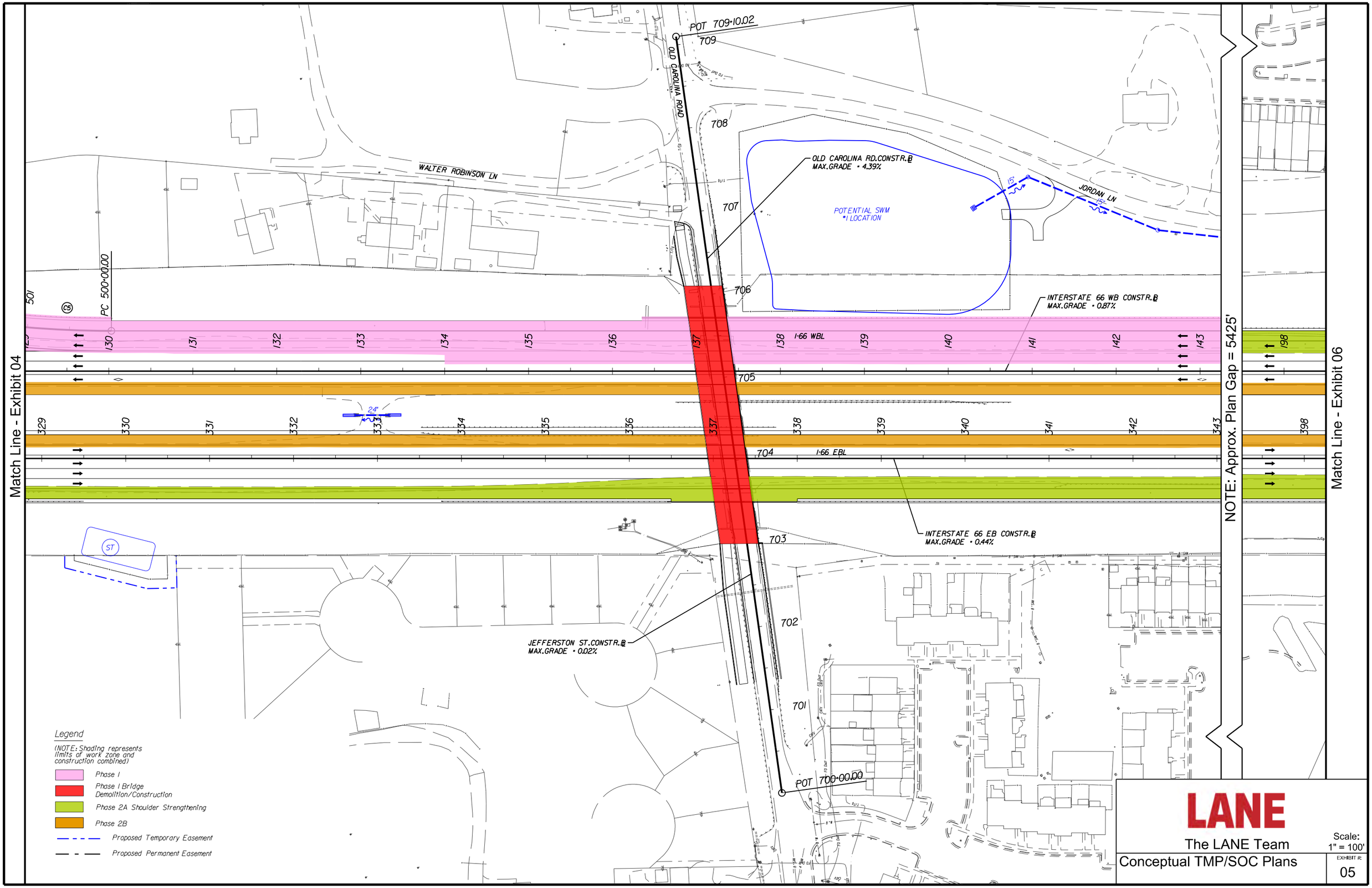
LANE

The LANE Team

Scale: 1" = 100'

Conceptual TMP/SOC Plans

EXHIBIT #: 04


Match Line - Exhibit 04
Match Line - Exhibit 06
NOTE: Approx. Plan Gap = 5425'
POT 709+10.02
OLD CAROLINA ROAD
WALTER ROBINSON LN
JORDAN LN
OLD CAROLINA RD.CONSTR.@
MAX.GRADE = 4.39%
POTENTIAL SWM
#1 LOCATION
INTERSTATE 66 WB CONSTR.@
MAX.GRADE = 0.87%
I-66 WBL
I-66 EBL
INTERSTATE 66 EB CONSTR.@
MAX.GRADE = 0.44%
JEFFERSTON ST.CONSTR.@
MAX.GRADE = 0.02%
PC 500+00.00
POT 700+00.00
ST
Legend
(NOTE: Shading represents limits of work zone and construction combined)
Phase 1
Phase 1 Bridge Demolition/Construction
Phase 2A Shoulder Strengthening
Phase 2B
Proposed Temporary Easement
Proposed Permanent Easement
LANE
The LANE Team
Scale: 1" = 100'
Conceptual TMP/SOC Plans
EXHIBIT #:
05

Match Line - Exhibit 05

Legend

(NOTE: Shading represents limits of work zone and construction combined)

- Phase I
- Phase I Bridge Demolition/Construction
- Phase 2A Shoulder Strengthening
- Phase 2B
- Proposed Temporary Easement
- Proposed Permanent Easement

POT 809+70.46

Maintenance Access Road

CATHARPIN RD.CONSTR.℄
MAX.GRADE = 3.36%

INTERSTATE 66 WB CONSTR.℄
MAX.GRADE = 0.87%

S 56° 44' 50" E

I-66 WBL

PC 204+40.37

N 26° 21' 02" E

PC 407+55.32

I-66 EBL

INTERSTATE 66 EB CONSTR.℄
MAX.GRADE = 0.96%

PROP.TEMPORARY EASEMENT

CATHARPIN RD.CONSTR.℄
MAX.GRADE = 0.34%

POT 800+00.00

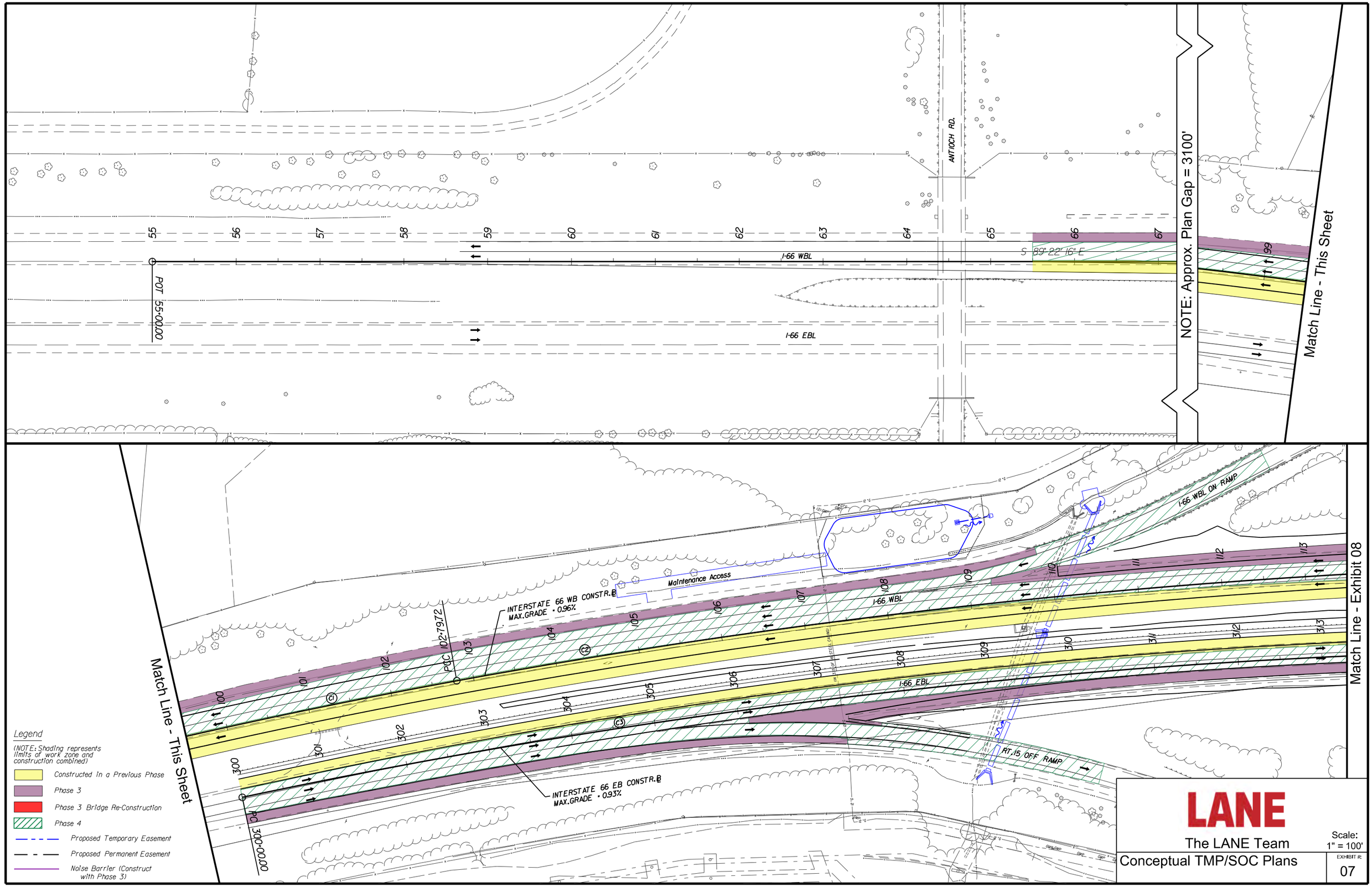
LANE

The LANE Team

Scale: 1" = 100'

Conceptual TMP/SOC Plans

EXHIBIT #: 06


ANTIOCH RD.
I-66 WBL
I-66 EBL
S 89° 22' 16" E
POT 5+00.00
NOTE: Approx. Plan Gap = 3100'
Match Line - This Sheet
Match Line - Exhibit 08
Maintenance Access
INTERSTATE 66 WB CONSTR.℄
MAX.GRADE = 0.96%
INTERSTATE 66 EB CONSTR.℄
MAX.GRADE = 0.93%
POC 102+79.72
POC 300+00.00
I-66 WBL ON RAMP
RT.15 OFF RAMP
Legend
(NOTE: Shading represents limits of work zone and construction combined)
Constructed in a Previous Phase
Phase 3
Phase 3 Bridge Re-Construction
Phase 4
Proposed Temporary Easement
Proposed Permanent Easement
Noise Barrier (Construct with Phase 3)
LANE
The LANE Team
Scale: 1" = 100'
Conceptual TMP/SOC Plans
EXHIBIT #:
07

Match Line - Exhibit 07

Legend

(NOTE: Shading represents limits of work zone and construction combined)

- Constructed In a Previous Phase
- Phase 3
- Phase 3 Bridge Re-Construction
- Phase 4
- Proposed Temporary Easement
- Proposed Permanent Easement
- Noise Barrier (Construct with Phase 3)

ROUTE 15

POT 510+42.33

510

509

508

507

506

505

504

503

502

N 30°00'40" W

PT 506+07.28

ROUTE 15 EXIT RAMP CONSTR.℄
MAX.GRADE = 2.39%

ROUTE 15 OFF RAMP

I-66 WBL ON RAMP

CITY OF HAYMARKET CORPORATE LINE

INTERSTATE 66 WB CONSTR.℄
MAX.GRADE = 0.96%

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128

I-66 WBL

PT 118+44.75

314 315 316 317 318 319 320 321 322 323 324 325 326 327 328

I-66 EBL

PT 317+29.72

INTERSTATE 66 EB CONSTR.℄
MAX.GRADE = 0.93%

PT 607+09.86

607 606 605 604 603 602 601

S 94°37'16" E

PC 601+57.52

ROUTE 15 ENTRANCE RAMP CONSTR.℄
MAX.GRADE = 3.80%

POT 600+00.00

JAMES MADISON HWY.

RT.15 OFF RAMP

I-66 EBL ON RAMP

PROP.PERMANENT DRAINAGE EASEMENT

Match Line - Exhibit 09

LANE

The LANE Team

Scale: 1" = 100'

Conceptual TMP/SOC Plans

EXHIBIT #: 08

Match Line - Exhibit 08

POT 709+10.02

OLD CAROLINA ROAD

WALTER ROBINSON LN

OLD CAROLINA RD.CONSTR.@
MAX.GRADE = 4.39%

POTENTIAL SWM
#1 LOCATION

JORDAN LN

INTERSTATE 66 WB CONSTR.@
MAX.GRADE = 0.87%

I-66 WBL

I-66 EBL

INTERSTATE 66 EB CONSTR.@
MAX.GRADE = 0.44%

JEFFERSTON ST.CONSTR.@
MAX.GRADE = 0.02%

PC 500+00.00

POT 700+00.00

NOTE: Approx. Plan Gap = 5425'

Match Line - Exhibit 10

Legend

(NOTE: Shading represents limits of work zone and construction combined)

- Constructed In a Previous Phase
- Phase 3
- Phase 3 Bridge Re-Construction
- Phase 4
- Proposed Temporary Easement
- Proposed Permanent Easement
- Noise Barrier (Construct with Phase 3)

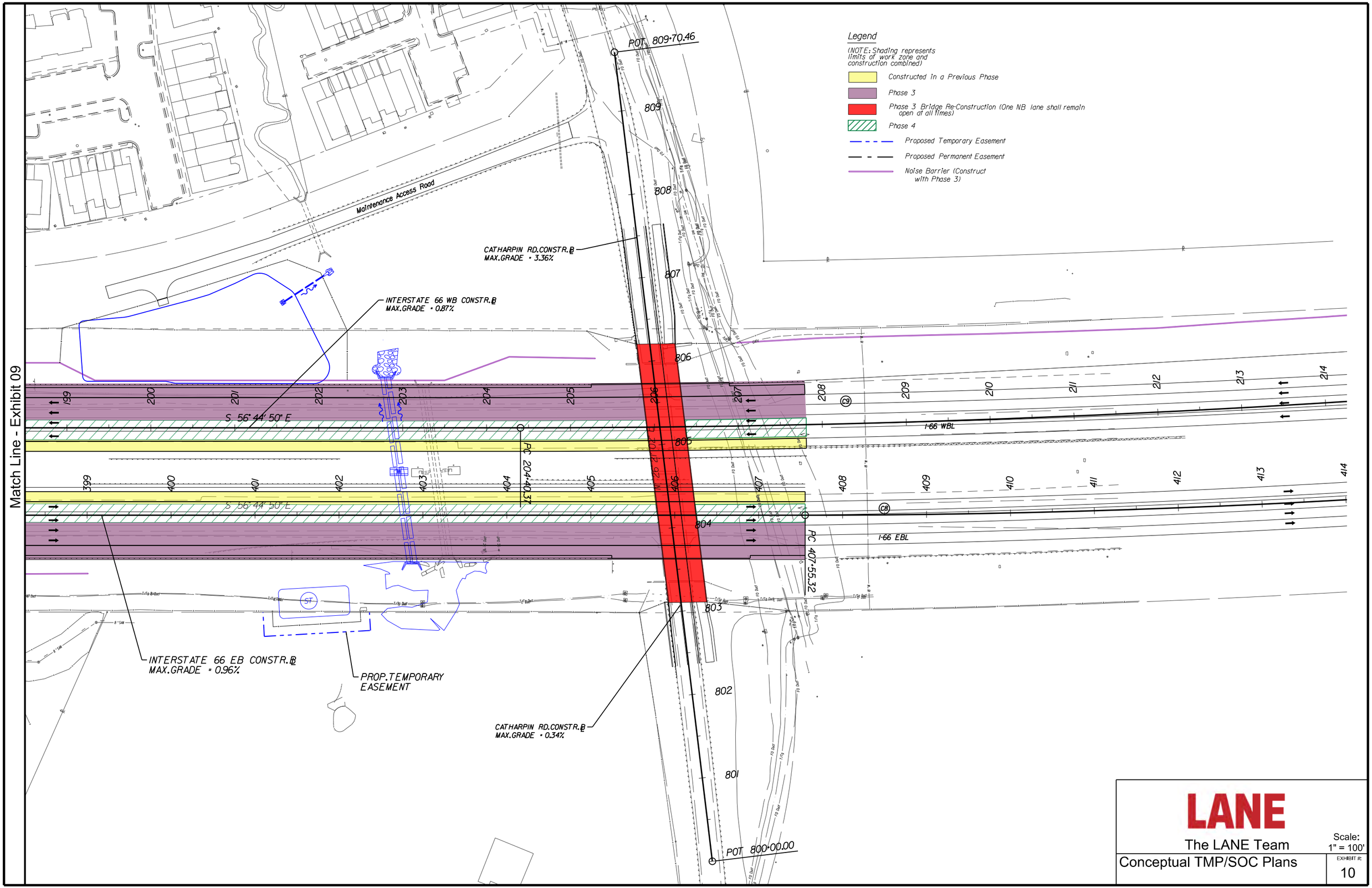
LANE

The LANE Team

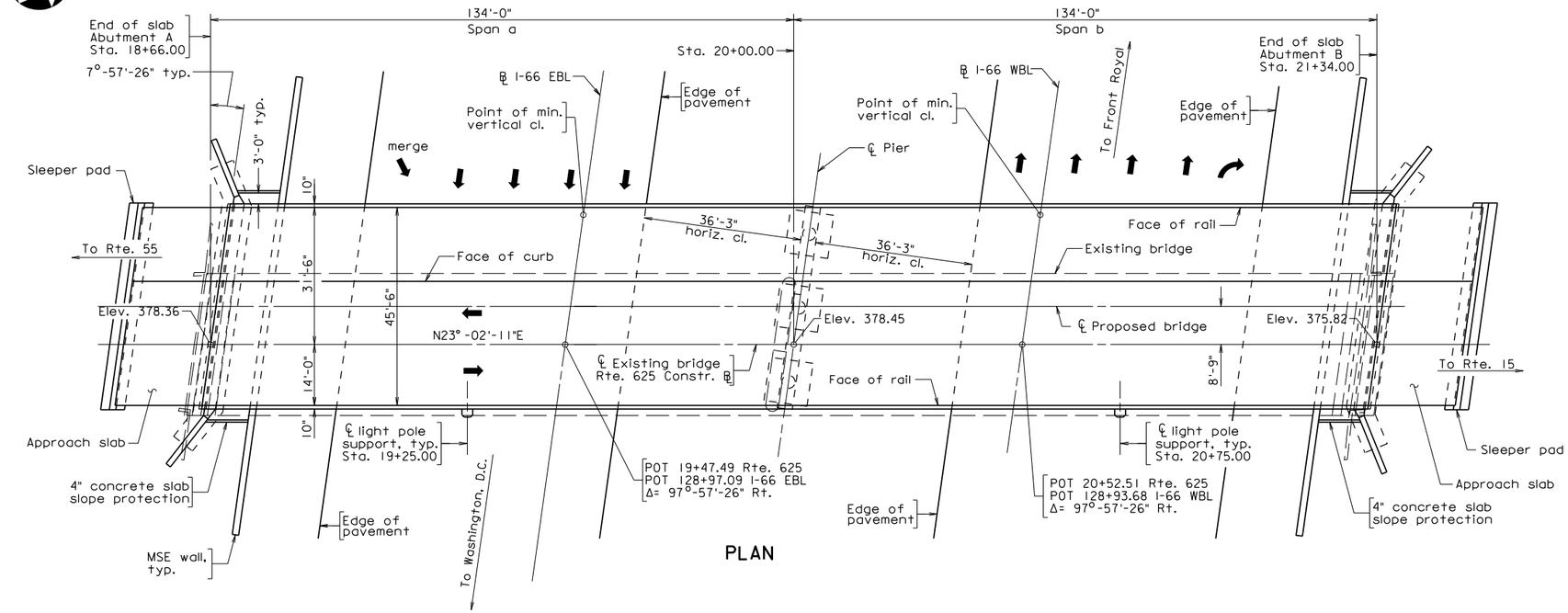
Scale: 1" = 100'

Conceptual TMP/SOC Plans

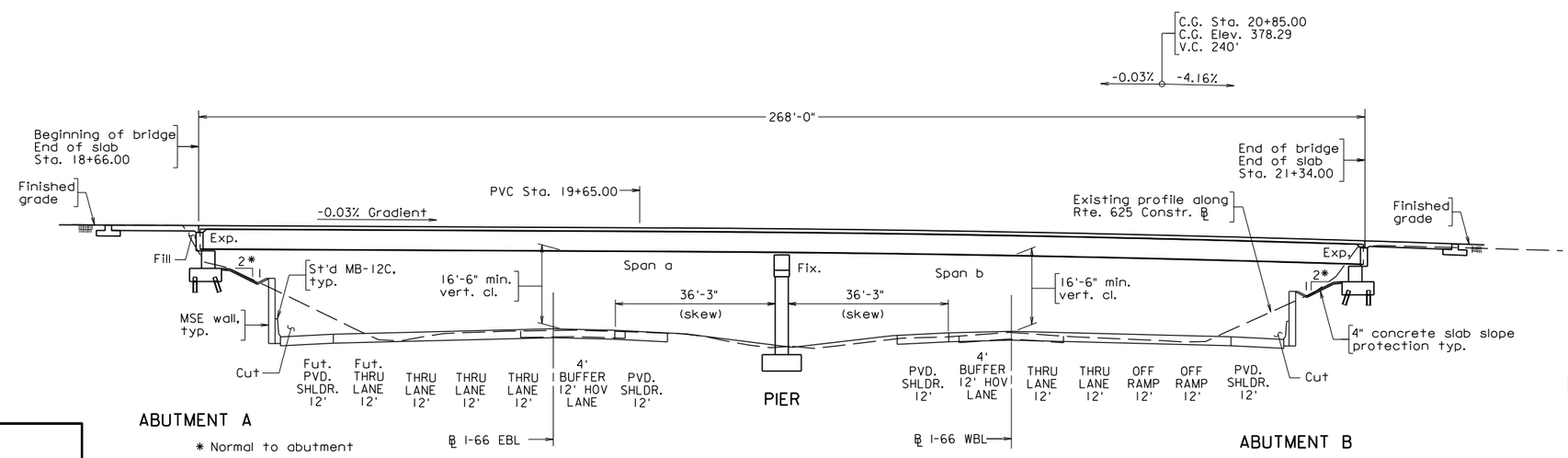
EXHIBIT #: 09


Legend
(NOTE: Shading represents limits of work zone and construction combined)
Constructed In a Previous Phase
Phase 3
Phase 3 Bridge Re-Construction (One NB lane shall remain open at all times)
Phase 4
Proposed Temporary Easement
Proposed Permanent Easement
Noise Barrier (Construct with Phase 3)
Match Line - Exhibit 09
POT 809+70.46
POT 800+00.00
PC 204+40.37
PC 407+55.32
Maintenance Access Road
CATHARPIN RD.CONSTR.@
MAX.GRADE = 3.36%
INTERSTATE 66 WB CONSTR.@
MAX.GRADE = 0.87%
INTERSTATE 66 EB CONSTR.@
MAX.GRADE = 0.96%
CATHARPIN RD.CONSTR.@
MAX.GRADE = 0.34%
PROP.TEMPORARY EASEMENT
S 56° 44' 50" E
I-66 WBL
I-66 EBL
ST
LANE
The LANE Team
Scale: 1" = 100'
Conceptual TMP/SOC Plans
EXHIBIT #:
10

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NH-5A01(194)	625	0066-076-003, B674	1
NBIS Number: 000000000014318			UPC No. 93577		
Federal Oversight Code: FO			FHWA Construction and Scour Code: X271-SN		



PLAN



DEVELOPED SECTION ALONG RTE. 625 CONSTR. ℄

DESIGN EXCEPTION(S):

None.

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: 45'-6" face-to-face of rails.

Span layout: 134'-134' continuous steel plate girder spans.

Capacity: HL-93 loading.

Specifications:

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

Design: AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012; and VDOT Modifications.

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

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

All structural steel, including bearings, shall be ASTM A709 Grade 50W and shall be unpainted.

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

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

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

MICHAEL BAKER CORP.
FALLS CHURCH, VA
STRUCTURAL ENGINEER

PLANS BY:	Consultant
COORDINATED:	
SUPERVISED:	
DESIGNED:	
DRAWN:	
CHECKED:	

No.	Description	Date

REVISIONS

For Table of Revisions, see Sheet 2.

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

Recommended for Approval: _____ State Structure and Bridge Engineer Date

Approved: _____ Chief Engineer Date

Date: April, 2013

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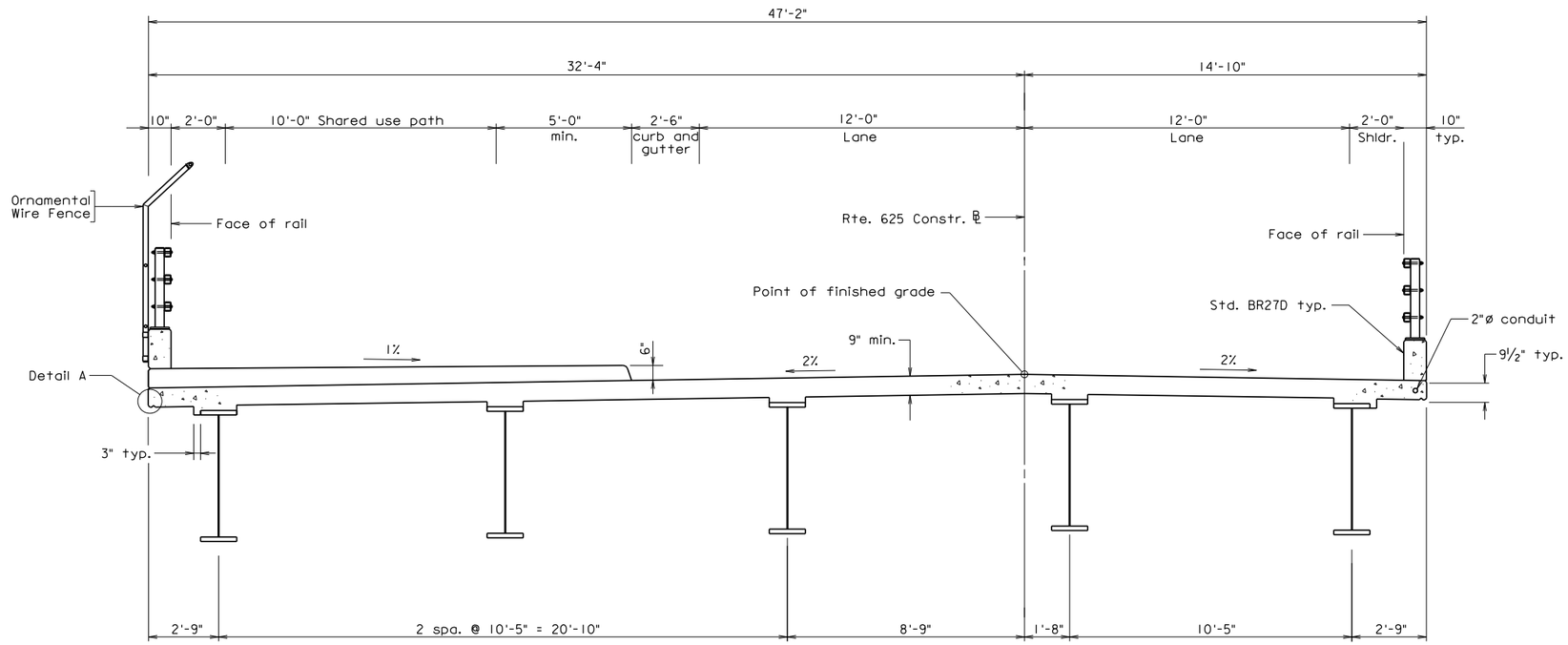
292-03

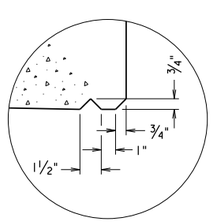
Sheet 1 of 3

DGN

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NH-5A01(194)	625	0066-076-003, B674	2



TRANSVERSE SECTION



DETAIL A

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

MICHAEL BARKER CORP.
FALLS CHURCH, VA.
STRUCTURAL ENGINEER

Scale: ⅜" = 1'-0"

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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

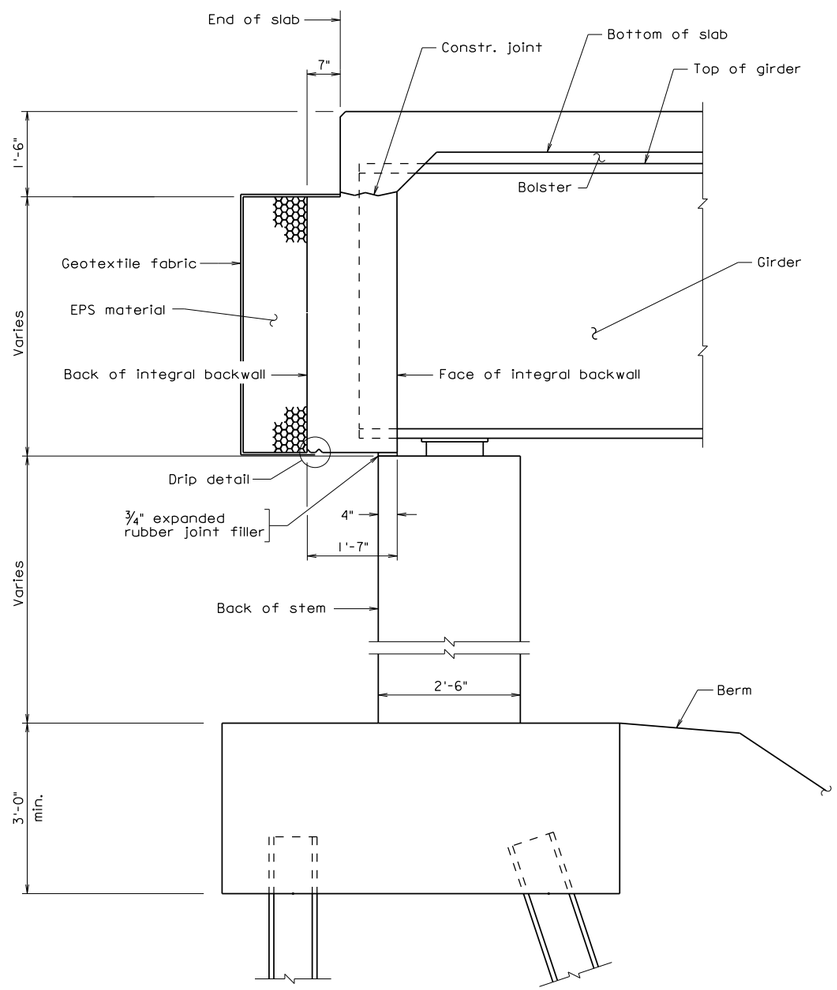
STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION

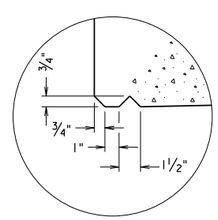
Designed: ..... Drawn: ..... Checked:	Date	Plan No.	Sheet No.
	---------	292-03	2 of 3

DGN

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



ABUTMENT SECTION



DRIP DETAIL
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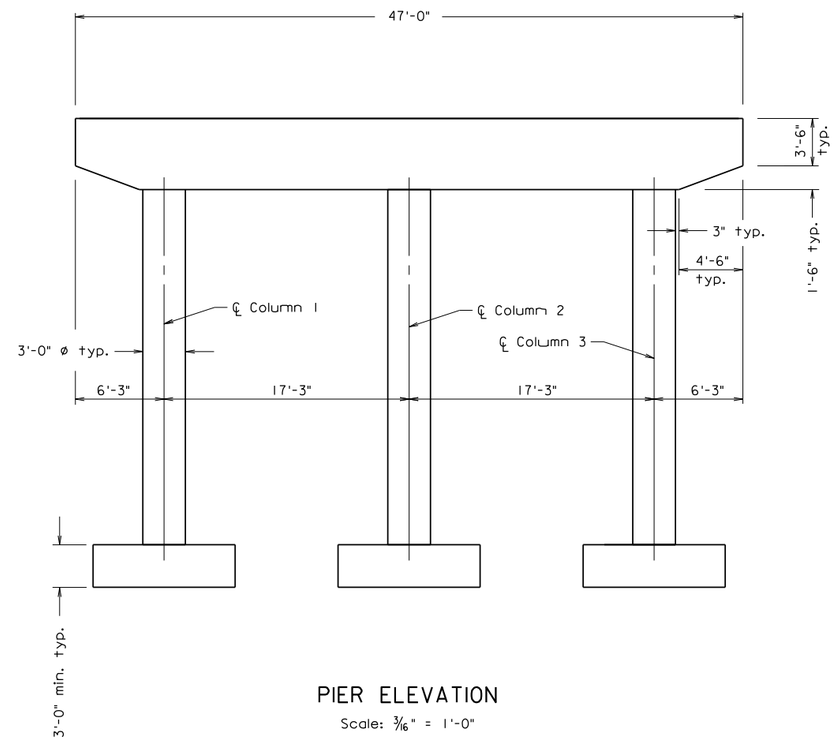
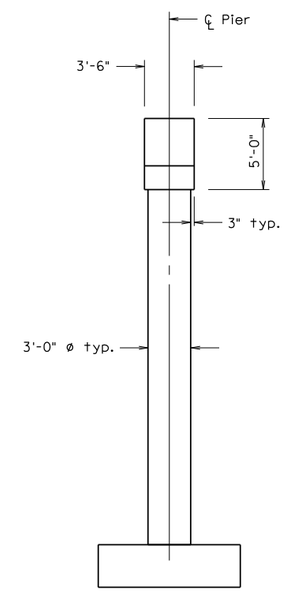


PIER ELEVATION
Scale: 3/16" = 1'-0"



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

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

MICHAEL BAKER CORP
FALLS CHURCH, VA
STRUCTURAL ENGINEER

Scale: ¾" = 1'-0" unless noted otherwise

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COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

SUBSTRUCTURE DETAILS

Designed:	Date	Plan No.	Sheet No.
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DGN

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NH-5A01(194)	676	0066-076-003, B675	1
NBIS Number: 000000000014363			UPC No. 93577		
Federal Oversight Code: FO			FHWA Construction and Scour Code: X271-SN		

DESIGN EXCEPTION(S):

None.

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: 28'-0" roadway, 10" rail, 14'-0" shared use path. Overall 42''-10" face-to-face of rails.

Span layout: 122'-122' continuous steel girder spans.

Capacity: HL-93 loading.

Specifications:

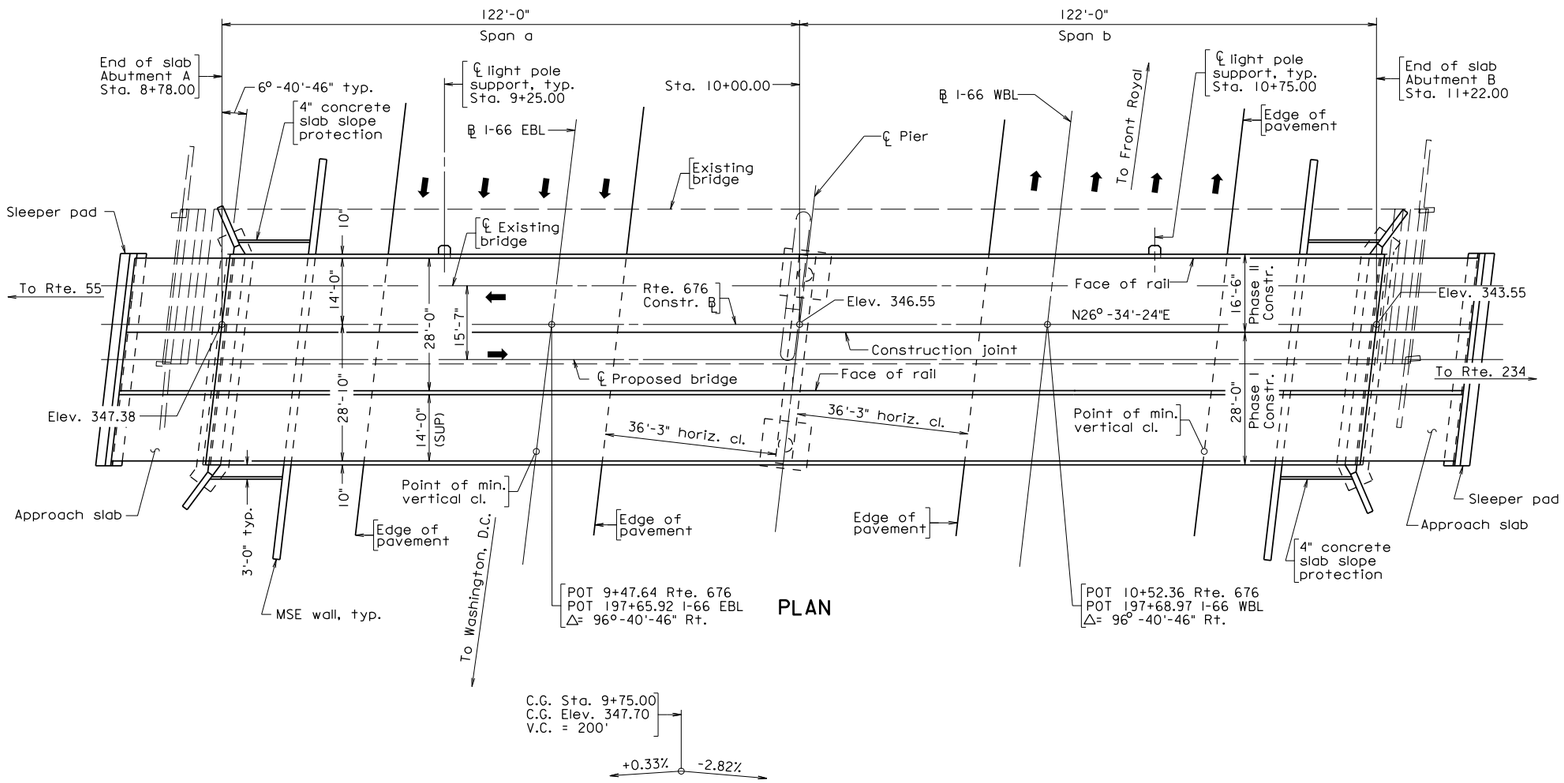
Construction: Virginia Department of Transportation Road and Bridge Specifications, 2007.

Design: AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012; and VDOT Modifications.

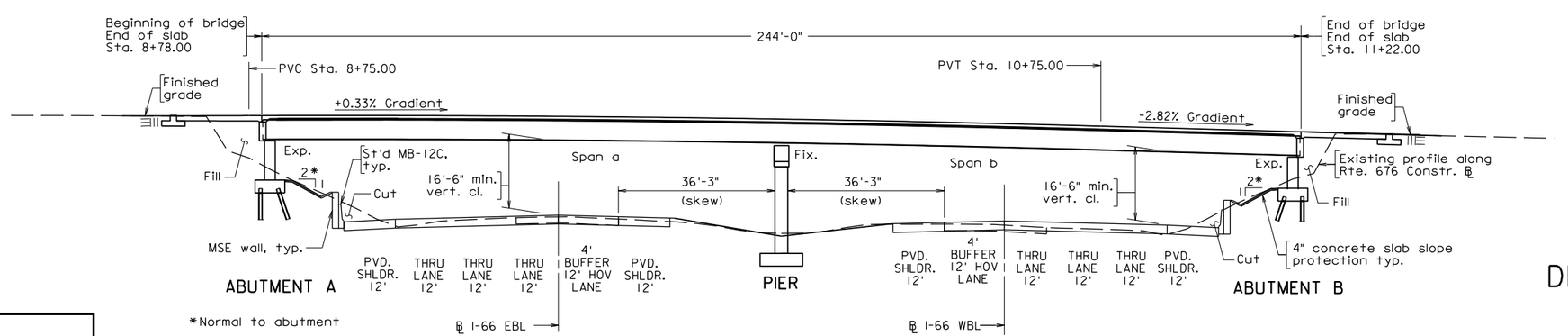
These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

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

All structural steel, including bearings, shall be ASTM A709 Grade 50W and shall be unpainted.



PLAN



DEVELOPED SECTION ALONG RTE. 676 CONSTR. ℄

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

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

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

MICHAEL BAKER CORP
FALLS CHURCH, VA
STRUCTURAL ENGINEER

PLANS BY:	Consultant
COORDINATED:	
SUPERVISED:	
DESIGNED:	
DRAWN:	
CHECKED:	

No.	Description	Date

REVISIONS

For Table of Revisions, see Sheet 2.

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

Recommended for Approval: _____ State Structure and Bridge Engineer Date

Approved: _____ Chief Engineer Date

Date: _____

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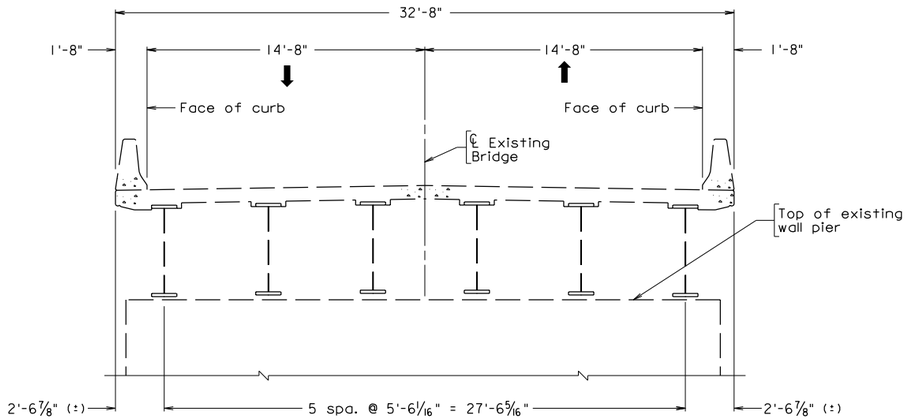
292-04
Sheet 1 of 4

DGN

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NH-5A01(194)	676	0066-076-003, B675	2



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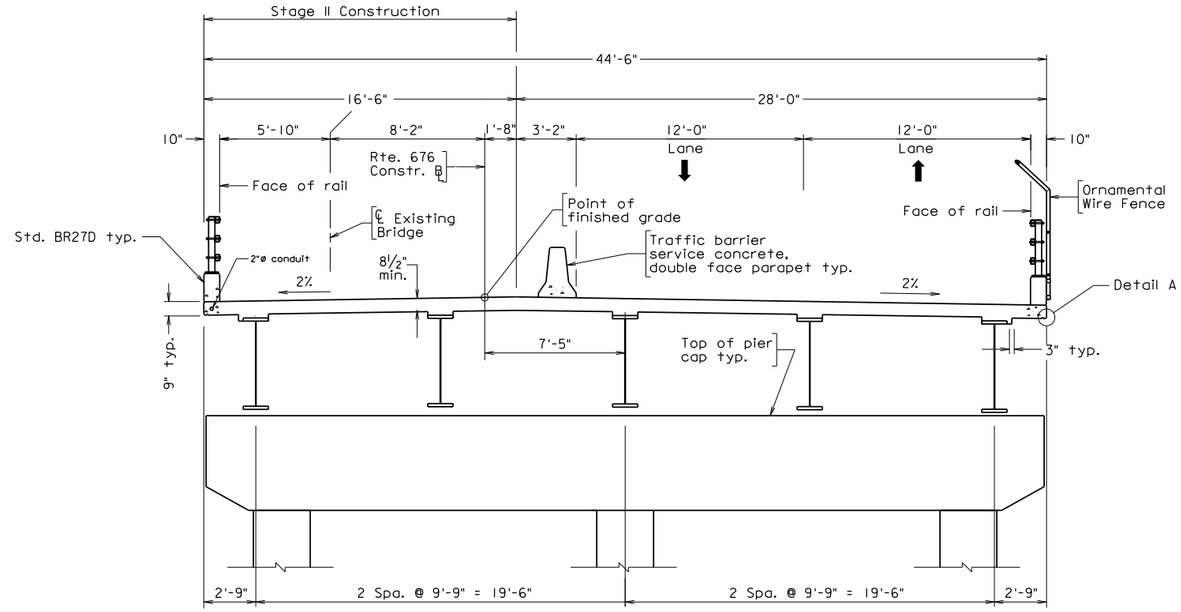
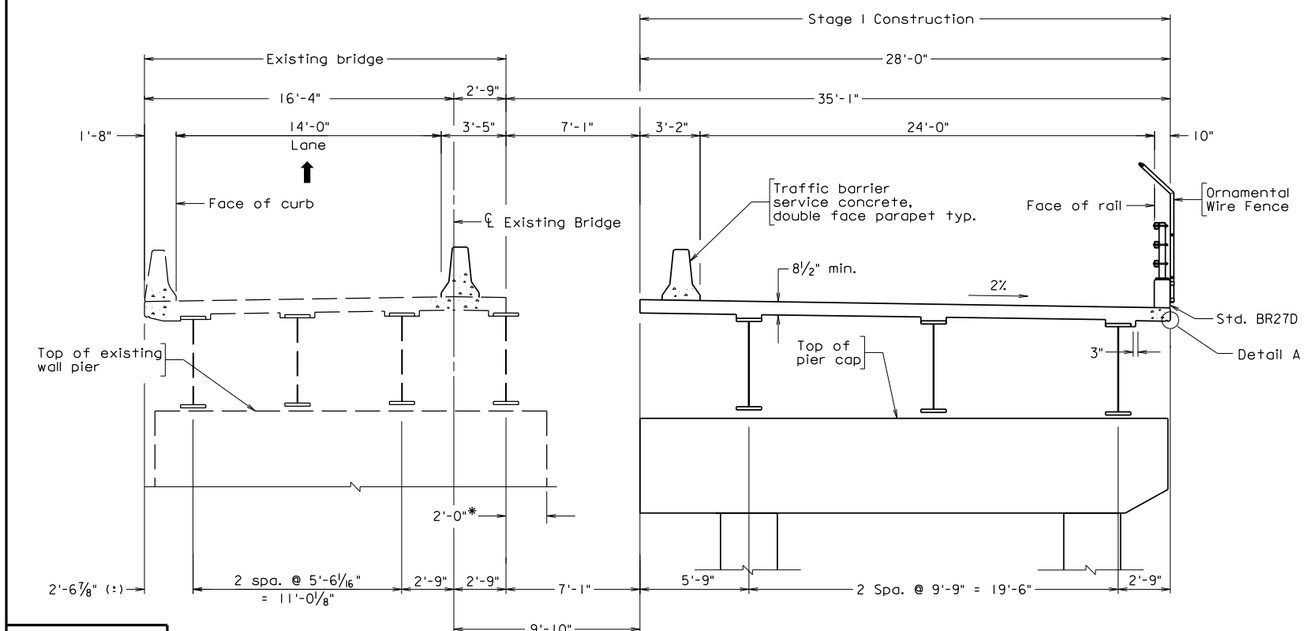
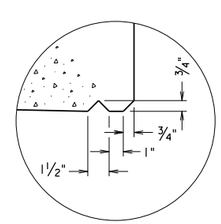


STAGE II



STAGE I

* Dimension measured along ℄ Pier



DETAIL A

SEQUENCE OF CONSTRUCTION NOTES:

Stage I:

Install temporary traffic barrier and shift all traffic to one lane on the west side of the existing bridge.

Install temporary earth retaining structure, e.g., temporary sheet piling, at abutments, remove the east portion of the existing bridge, and construct a portion of the proposed abutments and pier on the east side of the structure. Widen the approach roadway, accordingly.

Place new girders, deck slab, railings, and approach slabs.

Place temporary traffic barrier in preparation for Stage II construction.

Stage II (a):

Shift traffic to the new structure on the east side, one lane in each direction.

Remove remainder of the existing bridge.

Construct the west side of the proposed abutments and pier. Construct the remaining of the approach roadway.

Place new girders, deck slab, railings, and approach slabs.

Stage II (b):

Shift the traffic temporarily back to Stage I pattern (14' wide temporary lane on the west side) and install the physical barrier for the shared-use path on the east portion of the deck.

Remove temporary traffic barrier, and open the entire bridge for two traffic lane and the shred-use path.

CONCEPTUAL PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: ¼" = 1'-0"

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MICHAEL BAKER CORP.
FALLS CHURCH, VA
STRUCTURAL ENGINEER

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	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

SEQUENCE OF CONSTRUCTION

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Drawn:	--------	292-04	2 of 4
Checked:			

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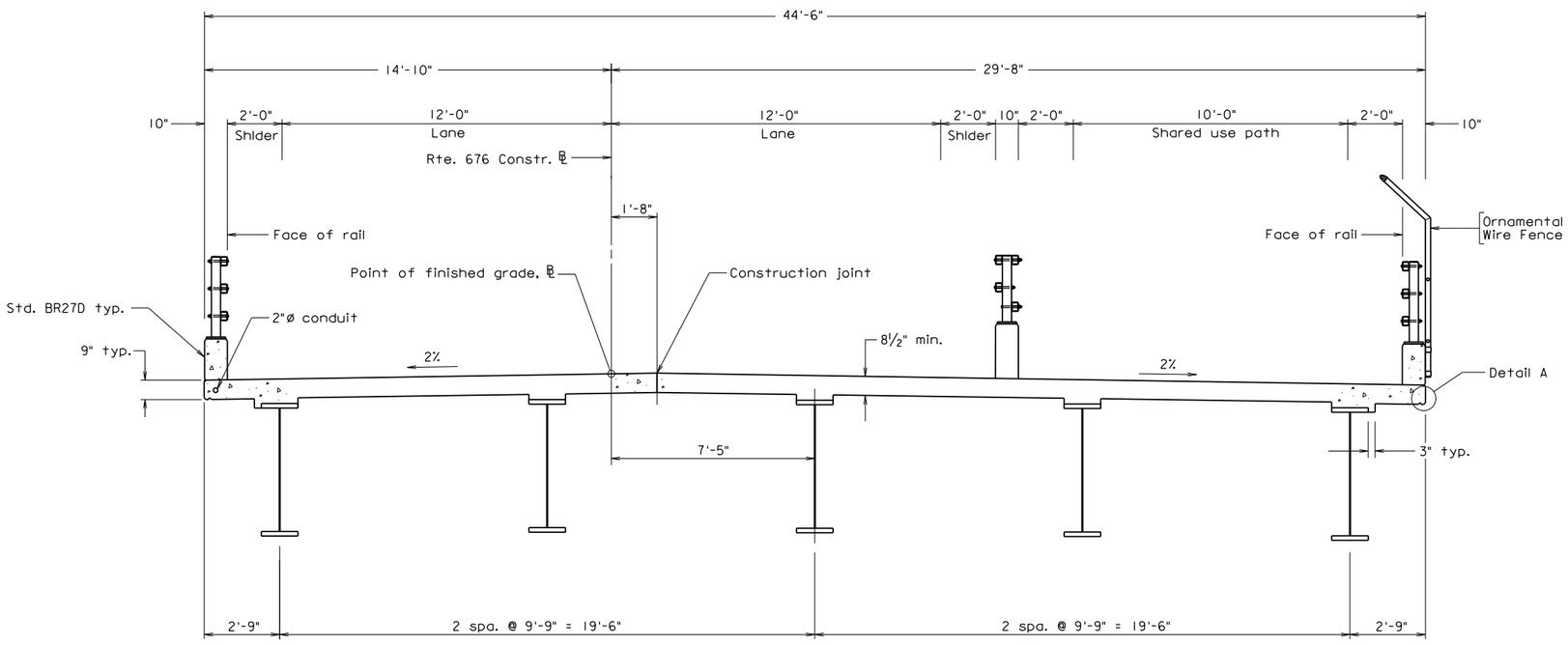
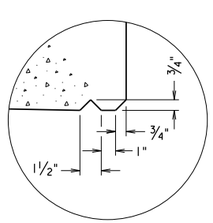


TRANSVERSE SECTION



DETAIL A

CONCEPTUAL PLANS

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STRUCTURAL ENGINEER

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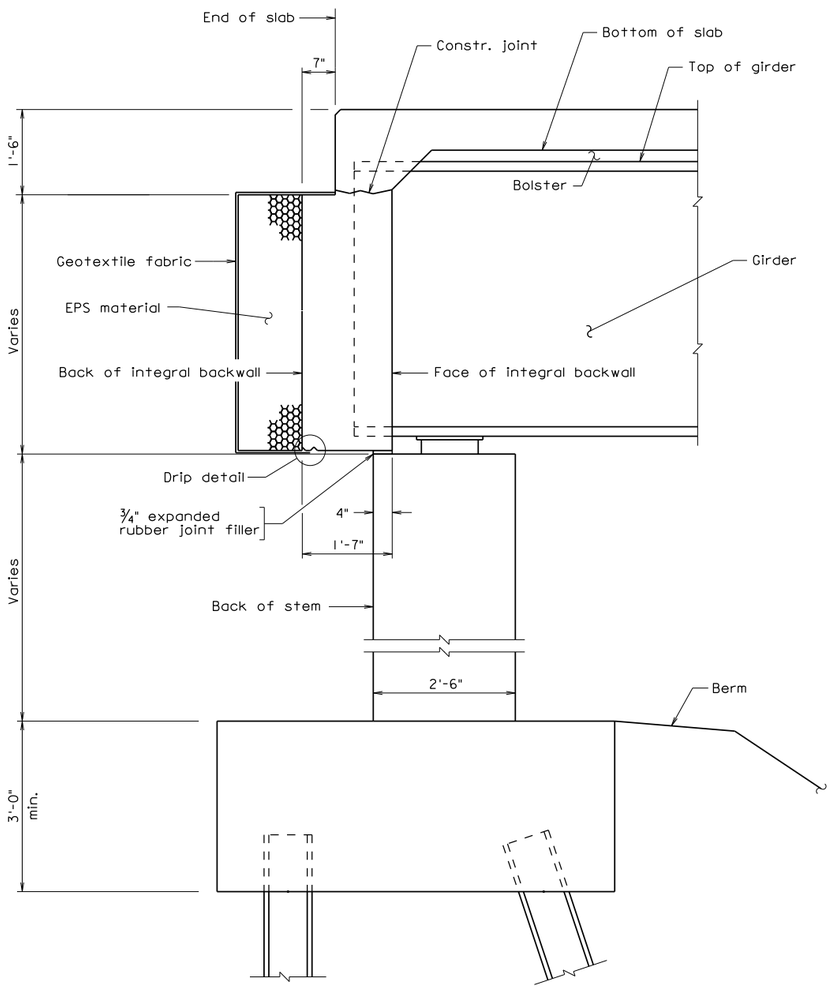
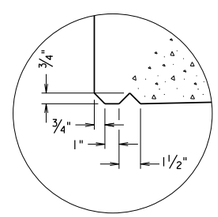


ABUTMENT SECTION



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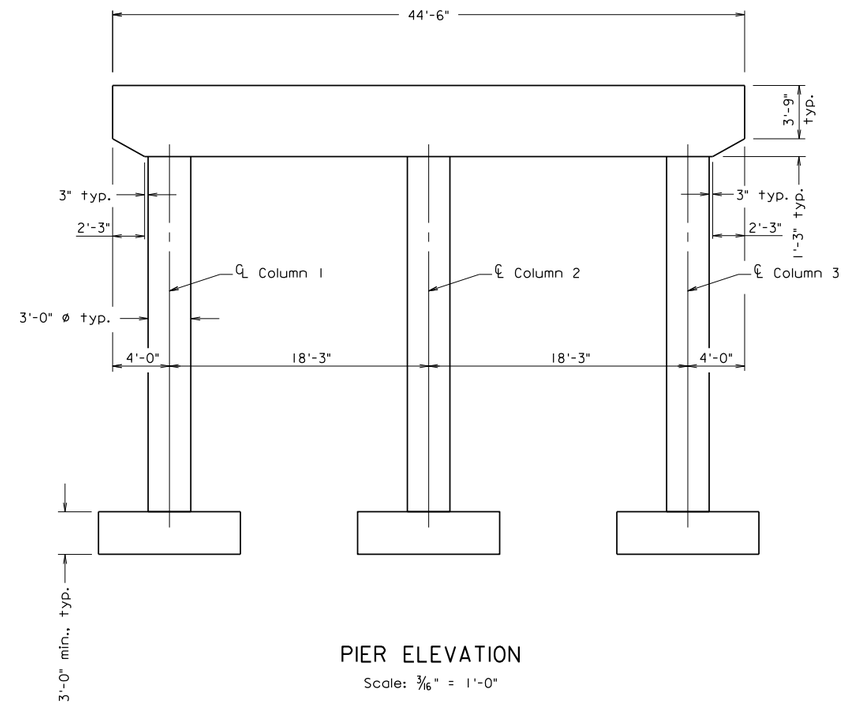

PIER ELEVATION
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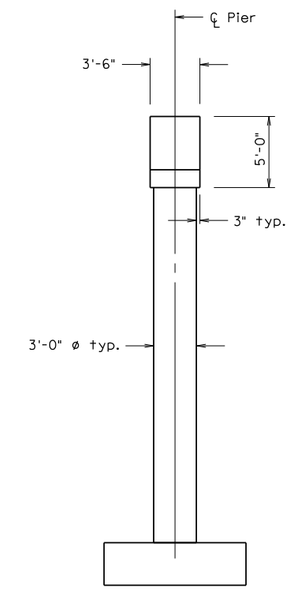

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SUBSTRUCTURE DETAILS

Designed:	Date	Plan No.	Sheet No.
Drawn:	---------	292-04	4 of 4
Checked:			

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www.laneconstruct.com

14500 Avion Parkway
Suite 200
Chantilly, VA 20151
(703) 222-5670

RINKER DESIGN
ASSOCIATES, P.C.

rda

www.rdacivil.com

9385 Discovery Boulevard
Suite 200
Manassas, VA 20109
(703) 368-7373