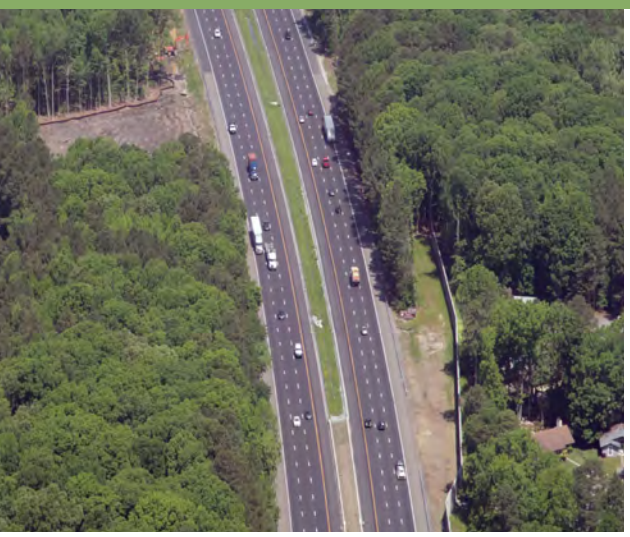
Response to Request for Proposal

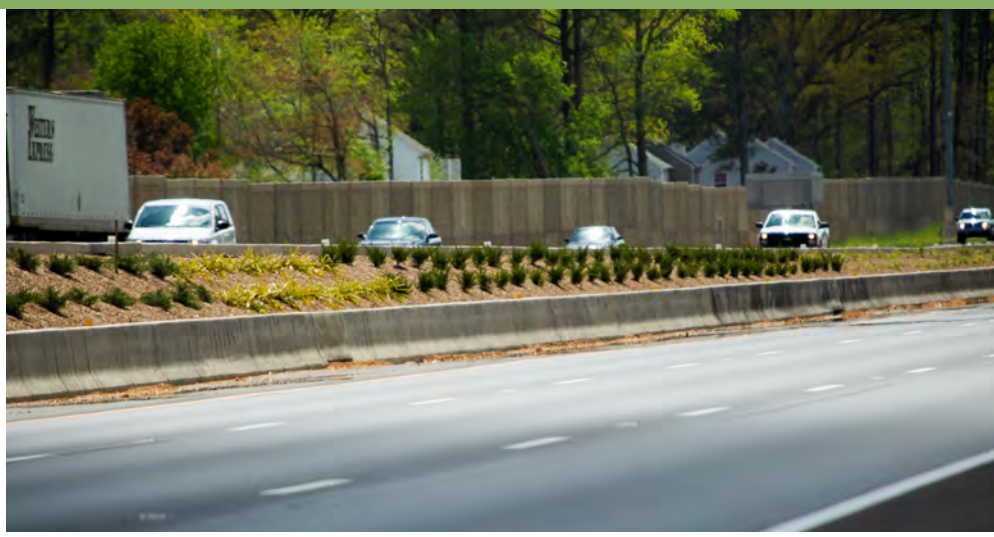
I-81 WIDENING MM 136.6 TO MM 141.8

Roanoke County and City of Salem, Virginia

State Project No.: 0081-080-946, P101, R201, C501, B677, B678, B681, B682, B683, B684, B685, B686, B687, B688
Federal Project No.: NHPP-0812 (330)
Contract ID No.: C00116203DB108

MARCH 3, 2021





Submitted by:

In Association with:

Dewberry

VOLUME I - TECHNICAL PROPOSAL

4.1: Letter of Submittal

March 3, 2021

Commonwealth of Virginia
Department of Transportation (VDOT)
Alternative Project Delivery
1401 E. Broad Street
Richmond, VA 23219
Attn: Bryan W. Stevenson, PE, DBIA

RE: I-81 Widening MM 136.6 to MM 141.8
Roanoke County and City of Salem, Virginia
State Project No.: 0081-080-946, P101, R201, C501, B677, B678, B681, B682, B683, B684, B685, B686, B687, B688
Federal Project No.: NHPP-0812 (330)
Contract ID No.: C00116203DB108

Dear Mr. Stevenson:

Archer Western Construction, LLC (AWC), as the offeror, along with Dewberry Engineers Inc. (Dewberry) as our lead designer, is pleased to submit our technical proposal for the VDOT ***I-81 Widening MM 136.6 to MM 141.8 Project***. Our proposal is organized in accordance with the RFP. Volume I includes our narrative and the required forms and appendices. Volume II consists of our design concept graphics and schedule. Also included are the Proposal Schedule native files (.XER format) and the two required layered PDF roll plots.

4.1.1 OFFEROR: The full legal name and address of the Offeror is Archer Western Construction, LLC, 13454 Sunrise Valley Drive, Suite 440, Herndon, VA 20171.

4.1.2-4.1.3 DECLARATION OF INTENT TO ENTER INTO A CONTRACT: AWC, will enter into a contract with VDOT for the I-81 Widening MM 136.6 to MM 141.8 Project, in accordance with the terms of the RFP and subsequent addendum. Further, the offer represented by our Technical and Price Proposals will remain in full force and effect for one hundred and twenty (120) days after the date that the price proposal is submitted.

4.1.4 OFFEROR'S POINT OF CONTACT:
Jeffrey Mays, Program Manager
13454 Sunrise Valley Dr, Suite 440
Herndon, VA 20171
Phone: 301-347-4680 Fax: 301-347-4681
jmays@walshgroup.com

4.1.5 PRINCIPAL OFFICER OF THE OFFEROR:
EJ O'Neill, Vice President
13454 Sunrise Valley Dr, Suite 440
Herndon, VA 20171
Phone: 301-347-4680 Fax: 301-347-4681
ejoneill@walshgroup.com

4.1.6 FINAL COMPLETION DATE: 01/14/2026

4.1.7 UNIQUE MILESTONE DATES (AND LDS):
#1 - Area 4 Complete – 12/31/2024 ($3,500/day LDs)
#2 - Route 112 Ramp D Spur Complete – 12/31/2024 ($3,500/day LDs)

4.1.8 PROPOSAL PAYMENT AGREEMENT: Please refer to the Appendix for executed Proposal Payment Agreement Form Attachment 9.3.1.

4.1.9 DEBARMENT FORMS: Please refer to the Appendix for executed debarment forms 11.8.6(a) and 11.8.6(b) from all team members.

4.1.10 DBE PARTICIPATION: AWC is committed to achieving the 9% DBE goal for the entire value of the contract.

We appreciate the opportunity to submit our technical proposal for the design and construction of the ***I-81 Widening MM 136.6 to MM 141.8 Project***. In consideration of our extensive experience and project approach, we are confident that the AWC Team has the professional and financial resources to make the project a resounding success. We look forward to working with you on this critical project for the Roanoke Valley area.

Sincerely,
Archer Western Construction, LLC

EJ O'Neill
Vice President

4.2: Offeror's Qualifications

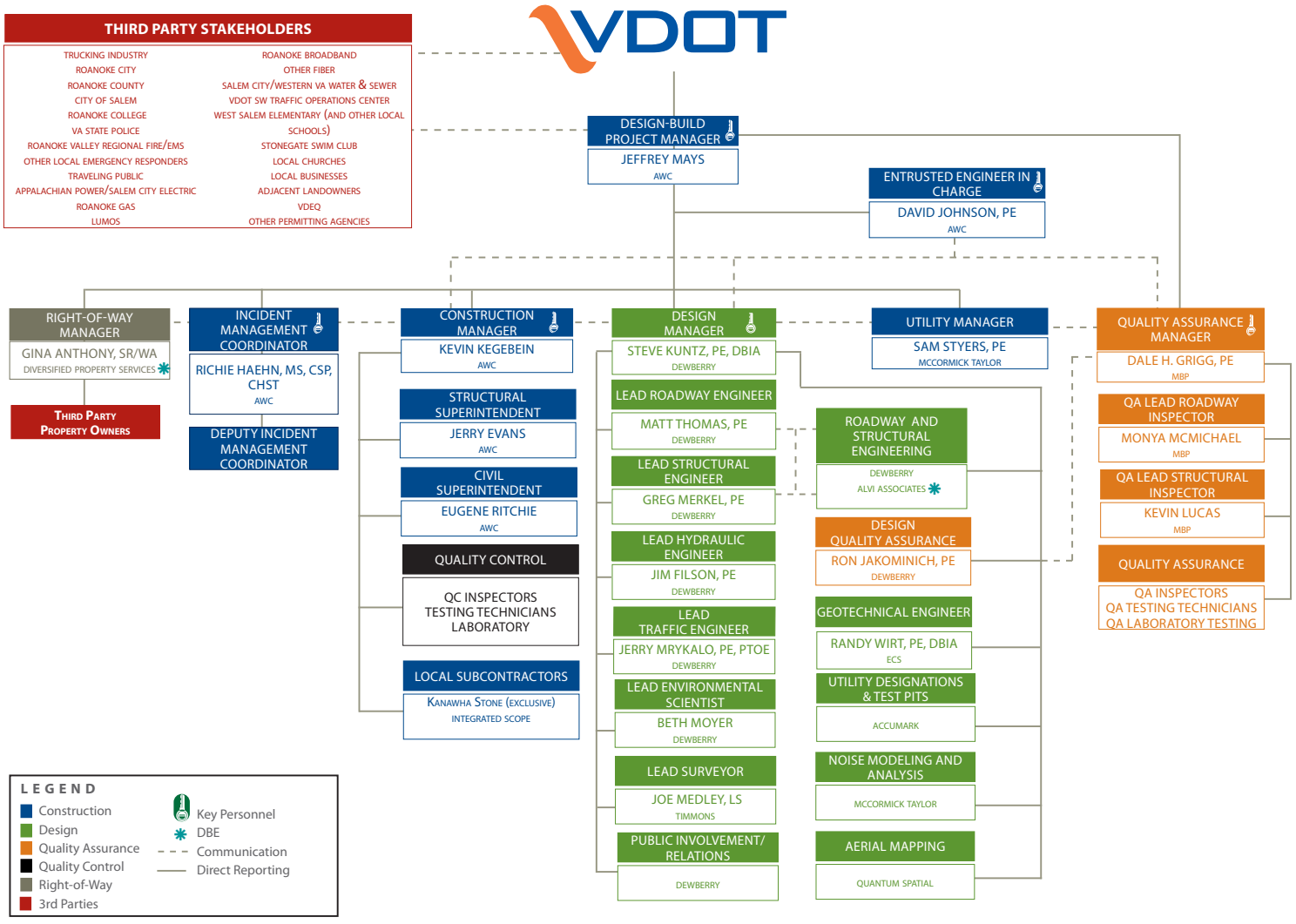
4.2 - Offe or's Qualifications

4.2.1 Confirmation

We confirm that the information contained in our Statement of Qualifications (SOQ) remains true an accurate in accordance with Part 1, Section 11.4.

4.2.2 Organizational Chart

The Project Organizational Chart below identifies the "chain of command" and major functions to be performed and their reporting relationships in managing, designing, and constructing the Project, including quality control/quality assurance. As there are no changes to any key staff or the functional relationships among the participants as were identified in our SOQ submission, an updated narrative is not required



4.3: Design Concept

4.3 - Design Concept

Introduction

As our Team prepared our conceptual design and Technical Proposal, we did so with recognition that an extensive amount of work had already been completed by VDOT to develop the RFP and conceptual plans. We reviewed the RFP documents, made multiple visits to the Project site, and held weekly meetings to discuss the scope of the Project and identify areas where enhancements could be implemented. Based on our extensive efforts to date, our Team has identified and incorporated modifications and enhancements which further our goals to:

- Improve safety for the travelling public, construction personnel, and inspection staff
- Improve traffic operations during constructio
- Complete the bridge replacements in two stages;
- Avoid and reduce property impacts;
- Reduce environmental impacts;
- Reduce the Project schedule; and
- Reduce long-term maintenance costs for VDOT.

In addition to achieving the goals above, our Team's concept:

- Meets or exceeds all requirements listed in the Design Criteria Table;
- Results in limits of construction, to include all stormwater management facilities, which are within the existing/proposed right-of-way limits shown in the RFP Conceptual Plans with the exception of permanent and temporary easements; and
- Does not include design elements that require Design Exceptions and/or Design Waivers unless they are identified or included in the RF or Addendum or are agreed to through the ATC process.

Our proposed enhancements and modifications are described in detail in the following sections, are summarized in the table below, and many are depicted on our Volume II – Conceptual Project Plans:

Table 4.3.1 – Enhancements and Benefits

Location/ Design Element	Enhancement	Project Benefit
I-81 Horizontal Alignments	Shifted alignments to the east and repositioned southbound horizontal lane shift further to the south, closer to the bridges over Route 112	• Eliminates four design waivers and two design exceptions • Eliminates median crossovers • Accommodates two-stage bridge replacement construction over Route 112, Route 635, and Route 619 • Closely matches existing crown locations, reducing pavement wedge buildup • Eliminates initial stage of temporary median widening
I-81 Vertical Profile	Maximized the use of spline grades	• Reduces amount of pavement build-up • Avoids trapping water adjacent to median construction and eliminates the need for temporary pavement wedges to maintain surface runoff
I-81 Sequence of Construction	Eliminated temporary median crossovers	• Improves safety • Eliminates horizontal and vertical curves at bridges that would increase the complexity of driver navigation. • Eliminates two-way flow on northbound I-8

Location/ Design Element	Enhancement	Project Benefit
Retaining Walls	Revised alignments, optimized profiles, and refined gradin reduced total retaining wall length by 1,229 linear feet	• Reduces long-term maintenance costs • Reduces construction costs • Avoids wetland and stream impacts by eliminating box culvert extensions
Stormwater Management	Reduced number of facilities from 18 to 12	• Reduces ROW impacts by over 1.5 acres • Reduces long-term maintenance • Reduces use of filter media and associated maintenance efforts • Avoids impacts to Hanging Rock Battlefield Trail
Noise Barriers	Optimized horizontal alignments	• Eliminates right-of-way and easement impacts to 17 properties • Closely match RFP alignments while optimizing use of existing topography • Reduces long-term maintenance

4.3.1 Conceptual Roadway Plans

Completion of these I-81 improvements will provide a 6-lane typical section with full-width shoulders for approximately five miles, increasing safety and mobility. Our Team's Design Concept does not incorporate any Alternative Technical Concepts (ATCs) based on discussions at our Team's ATC/Proprietary Meetings and VDOT's responses to our preliminary ATC concepts. However, we have incorporated numerous enhancements which reduce impacts to the travelling public, improve safety during and after construction, reduce right-of-way and environmental impacts, and reduce long-term maintenance costs for VDOT.

(a) General Geometry

The general geometry of our Team's concept is depicted in our Volume II – Conceptual Project Plans, including horizontal curve data, the number and widths of lanes and shoulders, superelevation rates for each horizontal curve, and design speeds. Improvements to I-81 have been developed to provide a 6-lane typical section with 12' wide travel lanes and 10' paved shoulders along both the outside and median in each direction. A 65-mph design speed has been utilized for the I-81 mainline improvements, in accordance with the Design Criteria Table and GS-INT (Interstate) design requirements. In addition to the improvements to I-81, Route 635 will be reconstructed and lowered to provide a minimum 15'-8" vertical clearance beneath I-81, and pier protection and shoulder improvements will be implemented on Route 112 under I-81 as part of the replacement of those bridges. Improvements are also being made to several interchange ramps to reflect minor geometric modifications to tie-in the new 6-lane I-81 typical section and to accommodate WB-67 turning movements. Design of all of these improvements have been developed in accordance with the Design Criteria Table. As we developed the geometric design for the I-81 Widening improvements, our Team has incorporated the following elements:

- ***I-81 Outside Shoulders:*** We understand that guardrail or barrier itself is a hazard, and our proposed design minimizes the use of guardrail and barriers along the outside shoulders while also accounting for required drainage, overhead sign, and slope grading improvements which minimize right-of-way and easement acquisitions. Where guardrail or barrier is required, the shoulder width has been increased by 2' to maintain usable shoulder widths as required by VDOT and AASHTO standards. Retaining walls located in cut sections are located at least 30' from the edge of the roadway to avoid guardrail installation. At the Route 112 Interchange, guardrail has been eliminated and slopes flattened along southbound I-81, the left side of Loop Ramp D, and the left side of Ramp D to improve safety. Expanded clearing on the right side of Loop Ramp D is proposed to improve sight distances and safety.

- ***I-81 Median Configurations:*** Our Team completed a thorough review of the median conditions and a detailed analysis of the type and foundation designs required for the constant slope barriers which are required for a majority of the Project limits. There are minimal areas where the median width is greater than 40' between the edges of the opposing travel lanes. Where this condition does exist, guardrail will be used to protect motorists from the overlapping clear zones. As the median width reduces to widths less than 40', guardrail transitions to concrete barriers, and in all locations where the distance between barriers is less than 15', concrete or riprap will be incorporated to eliminate future maintenance mowing.

  Due to the bifurcation in some areas between the northbound and southbound lanes of I-81, as well as to the majority of the Project resulting in minimal median widths, our Team recognized that the constant slope concrete barriers represent an major element of the project. As discussed at our ATC/ Proprietary Meeting #2, our Team developed several details for these barriers which are reflected in our conceptual design. Horizontal alignments for I-81 were refined so that these details could be implemented and constructed as simply as possible and without extensive transitions from one type to another.

(b) Horizontal Alignments

As our Team began development of our conceptual design, we recognized that implementing the median crossovers required by the RFP concept to facilitate reconstruction of the I-81 bridges over Routes 112, 635 and 619 would be challenging due to the bifurcation in the median of I-81. We quickly realized that these crossovers would extend well beyond the limits of the bridges providing adequate longitudinal grades, requiring extensive temporary shoring to maintain traffi and drainage patterns, and result in longer stretches of reduced shoulder widths. Furthermore, we recognized that the crossovers would subject traffi to significant horizontal shifts that would increase the complexity of driver navigation, especially for large trucks. We also relied on our design experience working on other interstate facilities and determined that constructing the bridges in a more conventional, two-stage approach would provide safer, quicker, and more cost-effective solutions. Based on extensive coordination and communication between our Team members, we developed alternate alignments for I-81 which meet all RFP geometric design criteria while also incorporating the following enhancements:

- Eliminates all temporary median crossovers;
- Eliminates all temporary roadway shoring between NB and SB I-81;
- Eliminates temporary wedge overlay of existing lanes on I-81 approaching the crossover locations;
- Reduces areas of narrow shoulder widths near Route 112, enabling our Team to avoid implementation of four design waivers and two design exceptions associated with reduced shoulder widths;
- Reduces the total length of retaining walls required along the outsides of I-81;
- Reduces and avoids easement impacts to private properties; and
- Reduces wetland and stream impacts associated with culvert extensions.

By implementing our Team's horizontal alignment adjustments, each of the bridge replacements over Route 112, Route 635, and Route 619 can be completed in two stages and without any temporary median crossovers. This alternate construction sequence presents an improvement to safety for the traveling public, improved temporary traffi operations during construction, and ultimately an accelerated construction schedule and reduced costs.

In addition to adjusting the horizontal alignments to facilitate two-stage bridge construction and elimination of all median crossovers, we also adjusted the location of the southbound travel lane shift to be closer to the bridge over Route 112, enabling us to eliminate narrow median shoulder widths throughout this shift. In fact, based on the combination of our horizontal alignment enhancements, the following four Design Waivers and two Design Exceptions have been eliminated:

Table 4.3.2 – Eliminated Design Waivers and Design Exceptions

Location	Area	Description
NB I-81 Sta. 135+00 to Sta. 154+00	Median Shoulder	Design Waiver Eliminated
NB I-81 Sta. 137+00 to Sta. 152+00	Median Shoulder	Design Exception Eliminated
SB I-81 Sta. 534+50 to Sta. 553+50	Median Shoulder	Design Waiver Eliminated
SB Sta. 536+50 to Sta. 552+00	Median Shoulder	Design Exception Eliminated
NB Sta. 244+00 to Sta. 247+50	Outside Shoulder	Design Waiver Eliminated
SB Sta. 645+00 to Sta. 648+00	Outside Shoulder	Design Waiver Eliminated

Finally, the horizontal alignment adjustments incorporated by our Team have enabled us to reduce right-of-way and easement impacts as described in Section (f) below.

Horizontal alignments for the interchange ramps and Routes 112, 635, and 619 are consistent with those identified in the RFP plans. Minor modifications have been incorporated to more closely reflect existing conditions and provide proper transitions to match existing shoulder widths, existing guardrail locations, and accommodate the required design vehicles in all turning movements.

(c) Maximum Grades

As we developed our profiles for the I-81 improvements, we utilized our experience in developing widening plans for other interstates and prepared very detailed spreadsheets to calculate existing cross slopes, longitudinal grades and breaks, and identify areas where slope corrections would be required based on the criteria outlined in the RFP. Through development of these spreadsheets we determined that a majority of the I-81 improvements could be based off of a "spline grade" of both northbound and southbound I-81, resulting in reductions of variable depth build-up and overlay of the existing pavement. In utilizing spline grades for the widening of I-81, **areas of variable depth overlays have been reduced, resulting in cost reductions to the Project. Temporary drainage patterns have been improved, eliminating the potential for runoff from the existing travel lanes to pond against the widened pavement, improving safety and operations during construction.** Within the Route 112 interchange, where the existing vertical profiles of I-81 provide substandard vertical curve lengths and design speeds, geometrically defined profiles have been incorporated to achieve the 65-mph design speed.

Similar to our approach for the I-81 spline grade profiles, we developed profiles for each of the interchange ramps which minimize the grade change in gore areas while also accounting for the required superelevation rates and transitions, thus minimizing variable depth overlay and reconstruction and improving constructability.

Table 4.3.3 – Maximum Grades

Alignment	Maximum Grade
Northbound I-81	3.60%
Southbound I-81	3.80%
Route 112	1.52%
Route 112 – Ramp A	4.16%
Route 112 – Ramp B	3.60%
Route 112 – Loop D	4.75%
Route 112 – Loop D Spur	1.72%
Route 112 – Ramp D	4.00%
Route 311 – Ramp A	5.00%
Route 311 – Ramp B	1.70%
Route 311 – Loop D	3.45%
Route 311 – Ramp D	2.95%
Route 419 – Loop B	2.68%
Route 419 – Ramp B	1.83%
Route 419 – Loop D	3.52%
Route 419 – Ramp D	3.48%
Route 635	7.40%

Although spline grades have been used for a majority of the mainline and ramp profiles, maximum approximated grades are identified in Table 4.3.3. All of the maximum grades proposed are less than the maximum allowed by VDOT and AASHTO criteria.

(d) Typical Sections

Typical sections for each of the roadways and ramps are included in our Volume II – Conceptual Project Plans. In addition to widening I-81 to a 6-lane typical section with 12-foot wide lanes, full width shoulders ranging from 4' to 10' are also being implemented. Narrow shoulder widths are only proposed where they have been authorized by the approved design exceptions and design waivers, as necessary to retain existing bridge overpasses. Where guardrail or barrier is required on I-81, the shoulder width is increased by 2' to maintain the required usable widths.

All interchange ramp designs incorporate four-foot-wide paved shoulders on the left and eight-foot-wide paved shoulders on the right. The travel lane width varies depending on the number of lanes and the radius of the ramp, in accordance with the RFP Design Criteria Table. Auxiliary lanes at ramp terminals have been provided with lengths in accordance with the RFP requirements, and ramp terminals/gores have been designed to incorporate the appropriate nose offsets and "z" taper areas per the VDOT Road Design Manual.

Improvements to Route 112 and Route 635 have been designed consistent with the RFP requirements. Route 112 will maintain the existing lane alignments and outside shoulder widths, and the median area will be improved to provide 4' offsets to the new barrier pier protection adjacent to the pier supporting the northbound and southbound I-81 bridges. Route 635, which is being reconstructed at a lower elevation to increase the vertical clearance beneath I-81, will provide 2 – 11' wide travel lanes (one in each direction) with the pavement extending 1' into the 8' shoulder.

As discussed previously, our Team paid special attention to the median barriers on I-81 due to the extensive length of barriers required, and the bifurcation between the northbound and southbound travel lanes. Our Team completed a thorough review of the I-81 median and identified six unique barrier configurations. Each of the configurations is shown in our Volume II – Conceptual Project Plans, and five of them are consistent with the details included in the Constant Slope Concrete Barrier Special Provision. However, one configuration was not specifica ly detailed in the Constant Slope Barrier Special Provision, but is necessary in areas where the vertical bifurcation exceeds 3' and the horizontal separation between paved shoulders is between 3' and 8.5'. In this configuration, our Team has proposed a special design median barrier as shown in Figure 4.3.1.

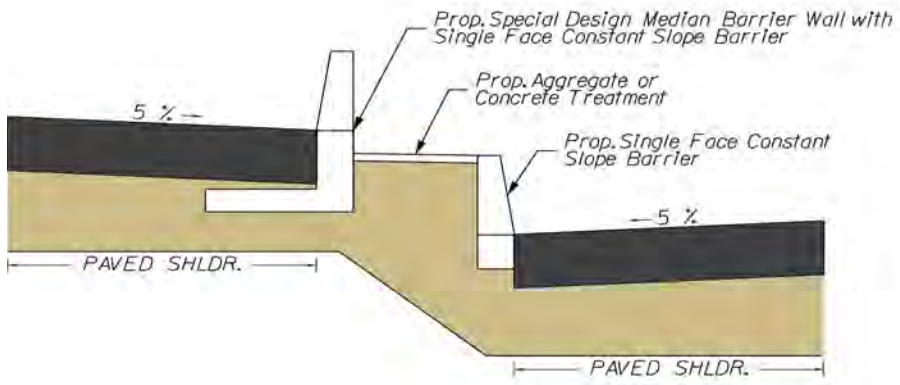


Figure 4.3.1 – We have developed a special design median barrier to account for the large bifurcation where minimal median width is available between northbound and southbound I-81

This configuration is required for approximately 8,900 linear feet. The special design barrier on the higher roadway is required since its foundation would influence the barrier on the lower roadway. Our Team has developed preliminary details for this special design barrier, which will be finalized as profiles and drainage are completed. All details, including any necessary reinforcing, will be developed to account for the loadings provided with Addendum 4 of the RFP.

(e) Hydraulic and Stormwater Management Design

Hydraulic Design

Hydraulic design improvements will incorporate a range of facility types including open channels, ditches, closed system storm sewers utilizing drop inlets and pipes, culverts, and underdrains. All of these facilities will be used to convey flow to stormwater management facilities, adequate outfalls, and/or major channels while avoiding impacts to adjacent properties and sensitive areas. Additionally, as required by the RFP, our typical section and revised horizontal alignments closely match the existing crown locations on northbound and southbound I-81. Throughout the entire length of the project, a maximum of 2-lanes will drain to either the outside or the median, except where the roadway is superelevated or transitioning into or out of superelevated sections.

Along the outside of I-81, our hydraulic design is primarily based on utilizing open channels and ditches to convey flo . Existing slopes will be regraded, and where sufficien ditch depths can't be provided for underdrain outfalls, cleanouts will be used to convey underdrain systems to adequate outfall locations. In wider median areas at the far north and south ends of the Project, open ditches will convey flow to storm sewer pipes or culverts. Throughout the majority of the length of the Project, the narrow median width and necessary concrete barriers will require implementation of closed system drainage facilities. In these areas, we refined and economized our drainage layout by utilizing a single trunk line on the low side of the median barrier(s) to convey runoff to ditches, culverts, and stormwater management facilities for proper treatment. The use of a single trunk line in the median simplifies construction by reducing the number of structures and pipes and reducing potential impacts with existing utilities. Further, storm sewer outfalls have been consolidated to minimize crossings of I-81. Each of these crossing locations will either be installed utilizing jack and bore methods where adequate cover can be provided, or will be installed in phases utilizing open cut methods so that active travel lanes are not impacted. Pipes which need to be utilized to maintain drainage during earlier stages of construction will also be installed using jack and bore methods so that surface runoff from all active travel lanes is maintained to an adequate outfall.

As mentioned earlier, our design provides for no more than two lanes to drain in the same direction in tangent sections. By maintaining a crown in both the northbound and southbound directions, we optimized the inlet spacing along the median barrier, reducing the number of drop inlets while meeting the required maximum spread and depth of flow requirements. By utilizing a single trunk line, we have also reduced the amount of storm sewer pipe to be installed and maintained.

The horizontal alignment adjustments incorporated by our Team also reduce the number of pipe and culvert extensions required. This results in reduced environmental and stream impacts, reduced easement impacts on private properties, and simplified erosion and sediment control processes during construction. Recognizing that the RFP concept utilized retaining walls on the outside of I-81 to avoid some culvert extensions, we refined the grading in these areas to reduce the lengths of the walls while still avoiding the culvert extensions. At the Route 112 Interchange, we have added a retaining wall above the existing triple box culvert to avoid its extension and associated wetland and stream impacts. Additionally, along northbound I-81 near Sta. 270+50, we are proposing a combination noise barrier and retaining wall to avoid extension of an existing 4'x4' box, also eliminating impacts to an existing wet pond and acquisition of a new permanent easement or additional right-of-way.

Finally, our hydraulic design reflects rehabilitation of pipes as allowed by RFP Part 2, Table 2.7.2. We recognize that several pipes were not previously inspected and have identified new facilities to replace those pipes and culverts. As part of preliminary design and field survey activities, each of those pipes will be videoed and inspected, and if they can be reused, we will work with VDOT to adjust our design accordingly.

Stormwater Management Design

Recognizing that the stormwater management facilities depicted on the RFP conceptual plans represented some of the largest property impacts, and understanding VDOT's desire to reduce right-of-way impacts as much as possible for the entire I-81 program, we developed a refined and improved stormwater management (SWM) concept which focuses on treating runoff as much as possible within existing right-of-way and within the existing interchanges. Facilities which could not be avoided and require acquisition of right-of-way and/or easements have been minimized as much as possible, as shown in Figure 4.3.2 example. All SWM facilities will be designed in accordance with Virginia Department of Environmental Quality (DEQ) II-B Criteria, and in recognition that the improvements extend through three sixth-order Hydrologic Unit Code (HUC) boundaries (Roanoke River/Sawmill Hollow HUC6-RU09, Mason Creek HUC6-RU10, and Roanoke River/Peters Creek HUC6-RU14), we completed a preliminary Virginia Runoff Reduction Method (VRRM) analyses for each HUC in accordance with VDOT Drainage Manual requirements. Based on this analysis, our Team was able to meet the required SWM treatment requirements while reducing the number of SWM facilities. Our proposed stormwater management concept provides the following enhancements:

- Reduces the number of SWM facilities from 18 to 12;
- Eliminates all except one dry swale facility, significantly reducing future maintenance associated with filter media replacement;
- Reduces right-of-way impacts associated with SWM facilities by over 1.5 acres;
- Reduces future maintenance costs due to reduced number of SWM facilities;
- Provides the required detention upstream of the City of Salem; and
- Avoids impacts to the Hanging Rock Battlefield Trail

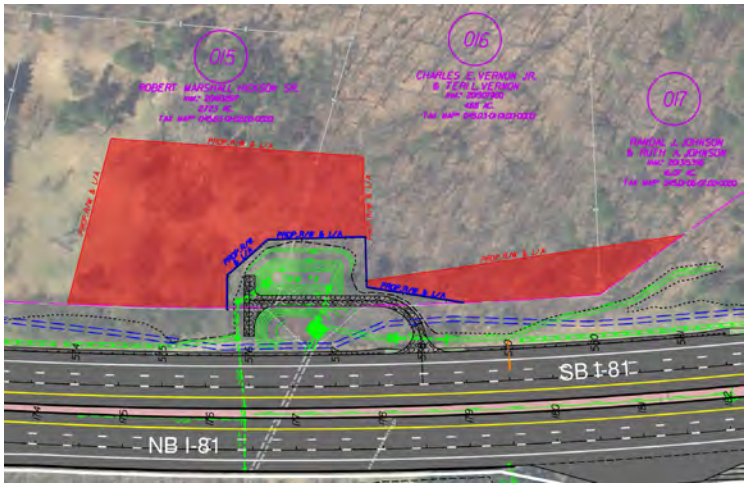


Figure 4.3.2 – The size of SWM #4 has been minimized while still providing SWM necessary quantity and quality treatment volume, significantly reducing right-of-way acquisition from Parcels 015 and 016 (right-of-way impact reduction is shown as the shaded)

Our SWM strategy is based on meeting quality and quantity requirements while also maximizing the use of nutrient credits (up to 25%) to reduce right-of-way and environmental impacts. Based on our conceptual design, we are able to achieve more than 75% of the SWM treatment on-site, and the remaining requirements will be achieved through purchase of nutrient credits. In addition to the 15 lbs/yr of phosphorous credit provided by VDOT, we anticipate purchasing 2.8 lbs/yr of phosphorous credits. As shown on our Volume II – Conceptual Project Plans not only have we reduced the number of SWM facilities which need to be maintained, we have also limited the use of facilities which require filter media, thereby reducing long-term maintenance costs for VDOT. Finally, our Team considered the safety of the public and VDOT maintenance staff when developing our SWM concept. Of the 12 facilities which will be constructed, access to seven of them are provided from secondary roadways, eliminating the need for access from shoulders adjacent to high speed traffi I-81. Where access from I-81 couldn't be avoided, we have provided either wide pull-off areas which extend outside the clearzone, or provided turnarounds adjacent to the SWM basins so that maintenance vehicles don't need to park or back-up onto the I-81 shoulders.

In addition to SWM analysis, we recognize that addressing challenges associated with adequacy of outfalls and avoiding impacts to adjacent properties is critical to the success of this Project. Upon review of the limits of the project, there are approximately 53 locations where concentrated flow will leave the project site. In developing our drainage and SWM concept, we have already completed a preliminary analysis of these outfalls to confirm that we have achieved the requirement to avoid increases in peak discharges from all storm events into Dry

Creek and the Unnamed Tributary of Williams Branch, as well as providing a reduction at Williams Branch. During final design, we will prepare reports for each outfall, including pre-construction condition assessments at each location, to meet adequate outfall analysis requirements, and detailed drainage computations will be provided to achieve runoff requirements by our final desig

(f) Proposed Right-of-Way Limits

We understand one of the goals of the I-81 Corridor Improvement Program is to reduce or avoid right-of-way impacts to the greatest extent possible. Since the majority of proposed widening is in the median, right-of-way and easement impacts are associated with slope adjustments, noise barrier installations, and stormwater management facility construction. It is in these areas that our team focused on implementing enhancements to reduce the right-of-way and easement acquisitions. The horizontal alignment adjustments previously discussed enabled us to reduce easement impacts associated with slope adjustments and reconstruction. Minor adjustments to noise barrier alignments, locating them at least 10' from existing right-of-way while accounting for changes in existing terrain and topography, enabled us to avoid impacts to additional properties. Finally, the reduction in the number and footprint of stormwater management facilities resulted in additional right-of-way acquisition avoidance and reductions. **The result of our design enhancements is that we have eliminated impacts on 25 of the 56 properties impacted by the RFP concept, or a reduction of nearly 45%. Additionally, the total right-of-way (fee simple) acquisition area has been reduced by more than five acres as compared with the RFP concept.** One of the greatest right-of-way enhancements incorporated by our Team is the elimination of the SWM facility adjacent to northbound I-81 just south of Kessler Mill Road (as shown in Figure 4.3.3), which not only reduces right-of-way impacts, but also eliminates impacts to the Hanging Rock Battlefield Trail. Locations of these right-of-way reductions are shown in our Volume II – Conceptual Project Plans.

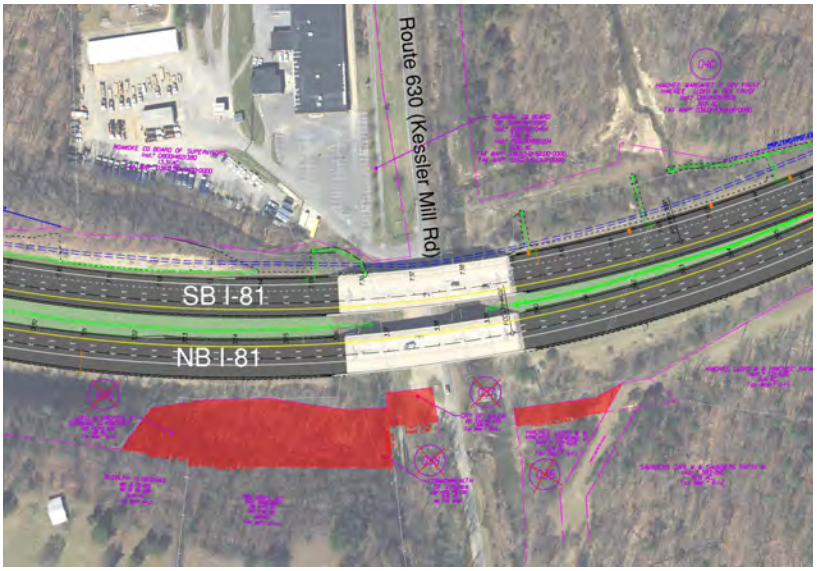


Figure 4.3.3 – Proposed right-of-way acquisitions adjacent to northbound I-81 have been eliminated (as indicated with red shading) due to the elimination of the stormwater management pond immediately south of Kessler Mill Road

(g) Proposed Utility Impacts

Our approach to all projects is to avoid or minimize impacts to utilities. During our weekly coordination meetings, we have identified all utilities which may be impacted by the Project, and developed solutions to eliminate many of those conflicts and the associated relocations. Noteworthy anticipated utility impacts are identified in Table 4.3.4:

Table 4.3.4 – Utilities Impacted By the Project

Location	Utility Owner	Potential Impact
I-81 Median	VDOT ITS facility Citizens Telephone	• Relocation required due to construction of third lane in each direction • Temporary support required at I-81 bridges of Route 112, Route 635 and Route 619 during initial/median stage of bridge demolition and reconstruction.
Route 112	Comcast, Verizon South, Segra, and Zayo	• Relocate fiber optic, telephone, and cable TV facilities to accommodate excavation for southern bridge abutment and regrading of SOZ area
	Verizon South, Salem City Electric, Comcast, Segra and Zayo	• Relocate pole outside of proposed slip lane for southbound exit ramp
Route 635	Salem City Electric	• Relocate buried electric and adjacent riser poles within right-of-way prior to lowering of roadway profil

Proposed utility relocations are shown on our Volume II – Conceptual Project Plans and a detailed discussion of our Team's project approach to utilities can be found within Section 4.4.2.

(h) Noise Barrier Locations

Consistent with the RFP requirements, we have accounted for construction of two potential noise barriers (Barrier DEFGI and Barrier IK) in our proposal with a total of 352,570 square feet, and conceptual alignments of those noise barriers are reflected on our Volume II – Conceptual Project Plans. Recognizing that grading associated with the noise barriers resulted in the majority of the impacts to properties along northbound I-81, we have investigated ways to minimally adjust alignments or refine grading to avoid those impacts. Using the TNM information provided with the RFP documents, we have confirmed that the minor adjustments reflected in our Volume II – Conceptual Project Plans will not impact noise modeling results. These minor adjustments include:

- Shifting Noise Barrier DEFGI closer to I-81 immediately adjacent to the access to SWM #5 (between Sta. 180+00 and Sta. 184+50), avoiding impacts to six properties (See Figure 4.3.4);
- Shifting Noise Barrier IK closer to Route 311 Ramp A to be located within existing right-of-way and avoiding impacts to four properties (See Figure 4.3.5)

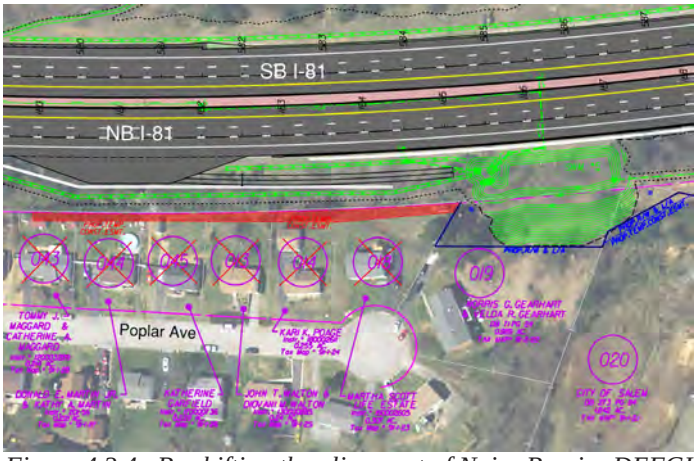


Figure 4.3.4 –By shifting the alignment of Noise Barrier DEFGI closer to I-81 and minimizing the gap between barrier segments, right-of-way impacts have been avoided on six (6) properties

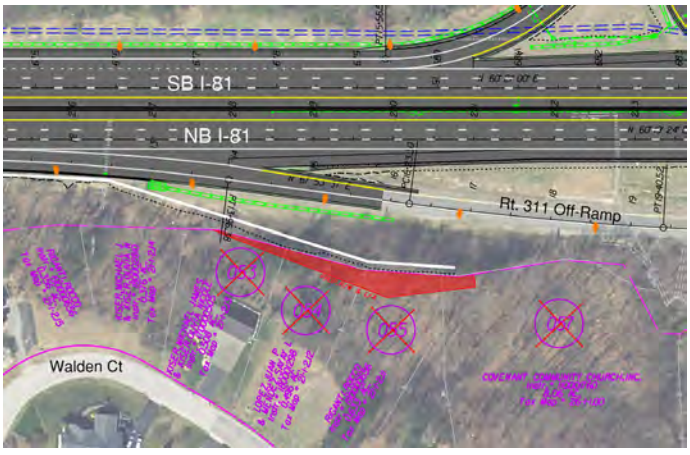


Figure 4.3.5 –By shifting Noise Barrier IK slightly to be located within existing right-of-way, impacts to four (4) properties have been eliminated

We have also completed updated preliminary modeling of the noise barriers, using the RFP provided TNM files, to confirm heights of noise barriers which will be required on the northbound I-81 bridges over Route 635 and Route 619, as well as to confirm they accommodate installation of a new overhead sign structure approaching the Route 311 Ramp A exit.

Where the noise barrier will be ground mounted, we expect a majority of the noise barrier will be located on the outside of the roadway shoulder, consistent with the typical section shown in Figure 4.3.6. This detail will incorporate the constant slope barrier specified in the RFP documents as well as the required offset between the constant slope barrier and the noise barrier as outlined in the VDOT Road Design Manual. Where I-81 is in a cut section, noise barriers will be located up the slope but within right-of-way to maximize the noise reductions provided by the barriers. Immediately upon starting final design of the roadway improvements, our Team will initiate the Final Design Noise Analysis to determine if adjustments in height or length is necessary to meet current noise attenuation and mitigation criteria. We understand that the public along the I-81 corridor are sensitive to the noise levels already experienced through the Project and more specifically that the preliminary noise study and RFP plans currently do not propose noise barriers along the Southbound outside of I-81. A thorough review will be completed during the Final Design Noise Analysis to look at each of the barriers included in the preliminary study to confirm if they would be warranted, feasible, and reasonable.

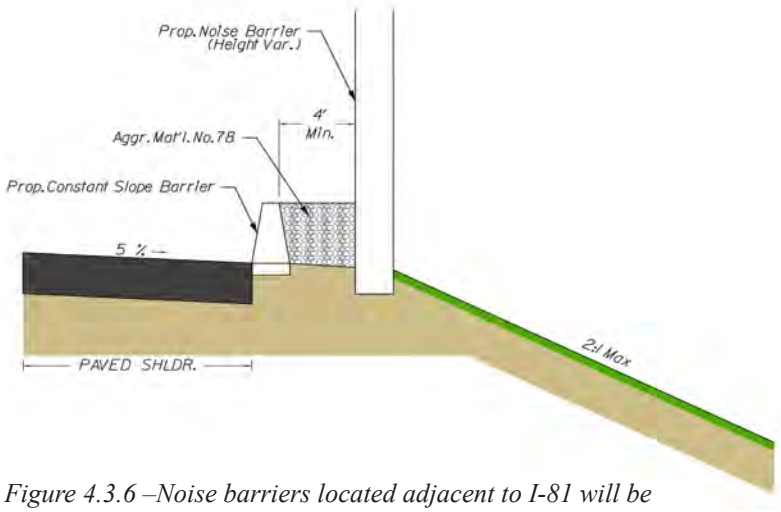


Figure 4.3.6 –Noise barriers located adjacent to I-81 will be protected with constant slope barrier and incorporate the gap required by VDOT Road Design Manual

(i) Other Key Project Features

In addition to items (a) through (h) detailed above, other key Project features include:

Lighting: Our Team has completed preliminary photometric analysis for the lighting improvements at the Exit 137 (Route 112), Exit 140 (Route 311) and Exit 141 (Route 419) Interchanges. Each of these locations will incorporate only standard Low level light poles, avoiding the light trespass and maintenance challenges associated with high mast lighting. The preliminary light poles and underbridge fixture locations are shown on the Volume II – Conceptual Project Plans. Power source locations for each area of lighting have been coordinated with our Utility Manager and with power companies, and we have identified two power sources for each interchange to improve resiliency and avoid crossing I-81 with electric conduits.

Intelligent Transportation Systems (ITS): The proposed ITS facilities represent a critical element of the project which will help to continue safe and efficien operations along I-81. Roadway grading and drainage designs have been developed to avoid impacts to the existing CCTV devices adjacent to I-81, and an additional CCTV camera will be added to supplement and improve visibility along the corridor. Temporary CCTV cameras will also be deployed during construction to assist with incident detection. Maintaining the existing fiber optic infrastructure, which extends for the length of the Project, including attachments beneath the existing northbound I-81 bridges over Route 112, 625 and 619, is also critically important. We have investigated the existing infrastructure and have developed a way to temporarily maintain the existing system while each of those bridges is demolished and replaced, as detailed in Section 4.4.2. The installation of new ITS facilities,

including the communication backbone which we propose to locate along the outside I-81, will be coordinated with the future Osprey installation which is currently planned to begin later in 2021. Additional discussion of the ITS infrastructure is included in Section 4.4.2.

CTB Limited Access Adjustment Approval Process: As we finalize grading limits and proposed right-of-way adjustment locations, we will prepare the exhibits and station/offset information to be provided to the Location and Design Engineer so that limited access adjustments are identified and approved by the Commonwealth Transportation Board. As Dewberry recently completed this process for the I-64 Widening improvements and the I-95/Route 630 Interchange, we understand the CTB process and timeline for approval. We will submit all necessary documents and exhibits early in the design process so that CTB approval can be obtained without impacting or delaying right-of-way plan approvals.

4.3.2 Conceptual Structural Plans

We will use our experience gained working on interstate widening projects in Virginia to support an approach to design and construction of the bridge replacements, widenings, and maintenance repairs that will result in a successful project for VDOT. Bridges to be improved by this project are summarized in Table 4.3.5. Our Team reviewed the RFP documents for each bridge and evaluated multiple configurations and alternatives for each structure so that our Technical Proposal is compliant with the RFP documents and meets or exceeds the goals identifi d for the Project. Alternatives studied included different span arrangements, girder spacings, adjusted abutment locations, and different types of superstructure elements. At each stage we looked for ways of selecting materials which will require minimal long-term maintenance and reduce inspection efforts and costs.

Table 4.3.5: Summary of Proposed Bridges

Replacement Bridges

Structure	Width	Span Length(s)	Superstructure	Substructure
SB 1-81 over Route 112 (B677)	74’-9”	74’-4”, 64’-11”	Prestressed concrete bulb-tees	• Abutments: Full integral on driven H-piles behind MSE walls. • Pier: Multi-column on driven steel H-piles
NB I-81 over Route 112 (B678)	62’- 9”	74’-4”, 64’-11”		
SB 1-81 over Route 635 (B685)	62’- 9”	87’-6”	Prestressed concrete bulb-tees	• Full integral abutments on driven H-piles behind MSE walls
NB I-81 over Route 635 (B684)	64’-7”	83’-0”		
SB 1-81 over Route 619 (B686)	62’- 9”	71’-6”	Prestressed concrete bulb-tees	• Full integral abutments on pre-bored, concrete en-cased steel H-piles behind MSE walls
NB 1-81 over Route 619 (B687)	64’-7”	71’-6”		

Widened Bridges

Structure	Width of Widening	Span Length(s)	Superstructure	Substructure
SB 1-81 over Route 311 (B677)	12'-3 1/2" outside widening 4'-3 1/2" inside widening	144'-0"	• Steel plate girder (painted) • Elastomeric bearings • RFP required repairs	• Abutments: CIP concrete cantilever on driven H-piles • Joint modification at abutment with VA Micro Abutment • RFP required repairs
NB 1-81 over Route 311 (B678)	16'-3 1/2" inside widening		• Steel plate girder (painted) • Elastomeric bearings • Replace outside parapet with Std. SSPC-1 • RFP required repairs	

Maintenance Repairs

Structure	Repair
Route 419 over I-81 (B681) Route 705 over I-81 (B682)	These bridges will have BPPS Pier protection barriers installed as well as substructure surface repairs identified in the RFP.

Our design concept features enhancements which will benefit VDOT by reducing the construction schedule, increase safety during construction, and reduce long-term maintenance costs. Based on this comprehensive analysis and review, we have developed our design approach as described below and as shown on our Volume II – Conceptual Project Plans.

Enhancements to the RFP Concept include:

- Our Team's construction staging concept eliminates the RFP median cross-overs of SB traffi onto the NB bridges and completes the replacement bridges in two construction stages for the bridges at Routes 112, 635, and 619 which improves safety during construction;
- Use of prestressed concrete bulb tee beams for the replacement bridges will provide low maintenance structures that are easier to inspect since there are no fatigue prone details that require up close inspection;
- Use of the Virginia Micro Abutment Detail at the Route 311 bridges to move joint behind the abutment backwall will reduce future maintenance while retaining existing approach slabs; and
- Slight lengthening of bridges to provide room needed for BPPS system required for future widening.

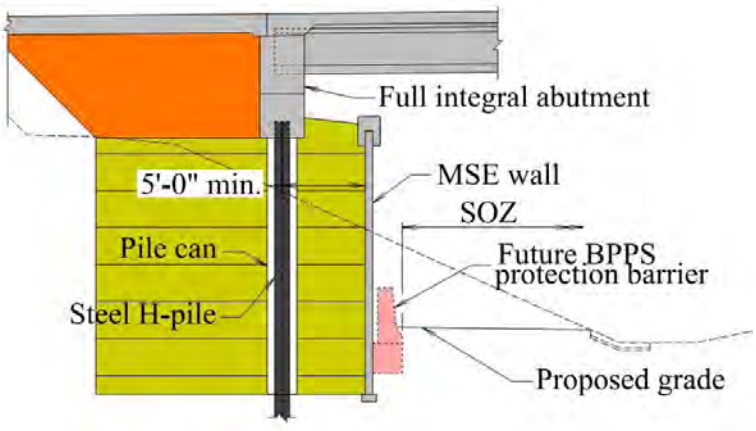


Figure 4.3.7 –Bridge span layout and abutment section

Replacement Bridges

General Layout

As shown in Figure 4.3.7, our spans accommodate future roadway features including a future BPPS protection barrier. This results in slightly longer bridges as compared to the RPF Concept, which did not accommodate the room needed for the future BPPS protection, which allows for a fully compliant underpass upon future widening. Also as depicted in the figure, pile cans will be used to eliminate downdrag on the piles within the MSE zone.

At Route 112, a single span steel alternative was considered in order to eliminate the median pier and associated BPPS barrier protection. However, the trade-off of the increased structure depth needed for the longer span and the required raising of the I-81 profile, did not make this a cost-effective solution. Our design will provide a gently sloping grade in front of the MSE walls which will facilitate future bridge inspections utilizing ladders and bucket trucks on more level ground.

Sequence of Construction

Our Team evaluated the RFP concept for bridge staging which required some undesirable features such as the use of median crossovers to carry two-way flow on one side I-81. Our Team's staging concept eliminates the RFP median cross-overs and completes the construction of the replacement bridges in two stages significantly reducing the driver complexity of navigating the work zone and reducing construction duration. Refer to Sections 4.5 for detailed description of the proposed sequencing. Our Team's phasing will provide adequate clearance between the existing and new bridge for demolition, installation of support of excavation, and construction of the new structure. At the Route 112 bridges, the existing northbound median pier will require a temporary support of the pier cap – the same as required by the RFP concept.

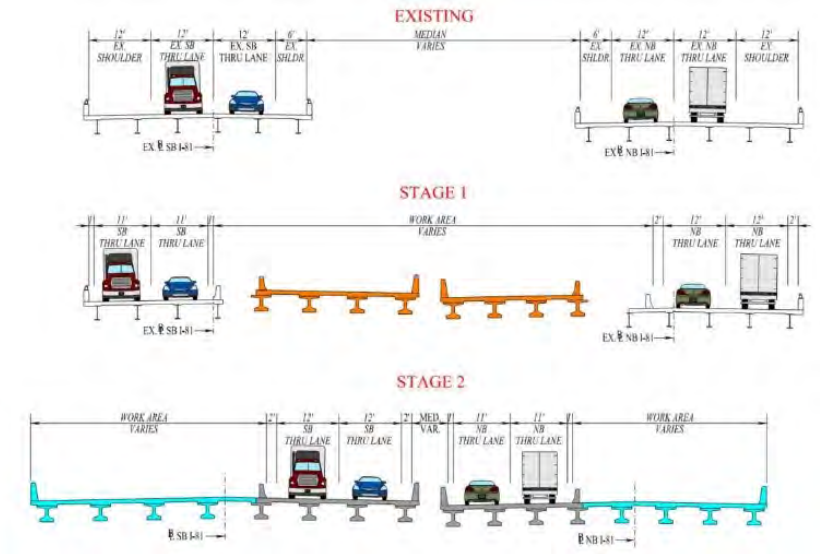


Figure 4.3.8 –General sequencing

The bridges will accommodate the proposed 16'-6" minimum vertical clearance over Route 112 and 619 for a future four thru lane section of NB and SB I-81. Route 635 will be lowered in the vicinity of the bridges to obtain the required 15'-8" minimum vertical clearance.

Superstructure

The new bridges have been designed to provide an additional lane on I-81 in each direction towards the median and to provide 12' shoulders. Our Team considered steel and concrete superstructures and has chosen to use prestressed concrete Bulb-T sections due to their economics and ease of future maintenance. They are low maintenance and reduce inspection needs compared to steel beams due to up-close inspection of fatigue prone details on steel superstructures. Single slope concrete parapets (SSCP-1) will be provided at all locations and will include a 2" diameter conduit for lighting. Each SB I-81 bridge will support a proposed 4" diameter conduit between the outside fascia beam and first interior beam for ITS infrastructure. Noise barriers

will be provided along the NB I-81 outside edge of deck at Routes 619 and 635.

Our preliminary bridge deck drainage analyses indicate that drainage systems are not required for the proposed bridges. Adequate drainage is provided based on deck area, shoulder widths, deck cross slope, profile and roadway drainage beyond the bridges.

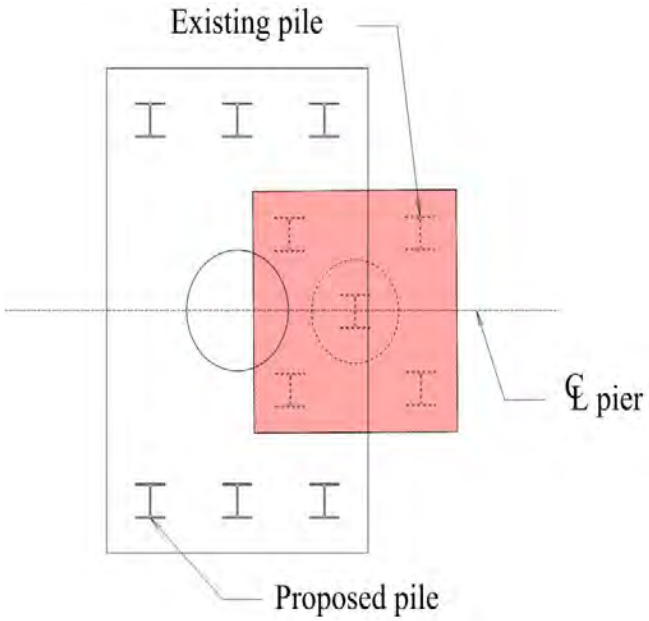


Figure 4.3.9 –Proposed pile configuration

Substructure

Our Team's concept will use full integral abutments behind MSE walls and founded on a single row of steel H-piles. This type of abutment is low maintenance due to the elimination of bearings and joints. Structural approach slabs and sleeper pads are provided at each end of the bridges. Based on proprietary discussions with VDOT, our bridges feature U-back MSE wingwalls and are not required to be constructed wider to accommodate a future lane on I-81 thereby reducing construction costs now while also accommodating a future widening of I-81 without requiring reconstruction of the bridge abutments. Preliminary geotechnical analysis for settlement shows that MSE walls are appropriate for these locations. Due to the potential of karst areas, the subsurface conditions will be investigated more thoroughly to check the viability of using MSE walls.

The Route 112 proposed median pier is located in the same location as the existing pier. We considered potential reuse of the existing piles into our new footing with the addition of new piles. However, our analysis determined the existing pile capacity was inadequate. The existing piles will be cut off below the proposed footing and new piles will be located to avoid the existing piles. Extraction of the existing piles could present risk since some are up to 100 feet long. Avoiding impacts to the existing piles led to our proposed pile layout, which is shown in Figure 4.3.9.

Proposed bridge foundations will be founded on driven or pre-bored steel H-piles. The abutment piles at the Route 619 bridge will be drilled and socketed with concrete due to the higher anticipated rock elevation and lack of fixity without pre-boring. Our design has accounted for potential effects of corrosion by up-sizing the pile sections. During final design, the actual subsurface investigations and test results will be used to determine the necessary sacrificial metal loss, if required.

Architectural treatments will be provided on outside faces of the bridge parapets and terminal walls, MSE retaining wall panels, abutments and wingwalls.

Widened Bridges

Our concept for the widening of the I-81 bridges over Route 311 is consistent with that shown in the RFP plans. Widening to the inside and outside of SB I-81 as well as to the inside of NB I-81 with steel plate girders will support the additional travel lanes and upgraded shoulders while maintaining the existing crown line and avoiding crown shifts. The new girders will be supported by new substructure elements, maximizing bridge resiliency. In addition to widening, all repairs required by the RFP will be completed. Post-award, a detailed inspection of the substructure as well as a deck delamination survey will be conducted in order to develop an approved repair program. The NB outside parapet will be upgraded to a VDOT Std. SSPC-1 parapet

on the deck as well as on the U-back wingwalls. Architectural treatment on the new abutment extensions and wingwalls will match the finish and color of the existing bridge.

Both bridges will be constructed in two stages, however, additional sub-stages are required to complete the existing deck overlay and joint modification. Refer to Sections 4.5.1 and 4.5.2 for in-depth discussions. Our staging concept has carefully considered the RFP requirements for the allowable location of the latex modified concrete overlay joints and will provide joints which coincide with either a lane line, mid-point of a lane, or crown point in the final condition. Thus limiting the exposure of the joints to traffi wheel paths and reducing potential future maintenance of the overlay.

Superstructure

Painted weathering steel plate girders will be used in the widened superstructure. The NB bridge will be widened to the median by adding two new girders. The SB bridge will be widened to the median by adding a single girder to the outside by adding two new girders. Our Team has selected low maintenance elastomeric bearings for the new girders as well as for the existing rocker bearing replacements.

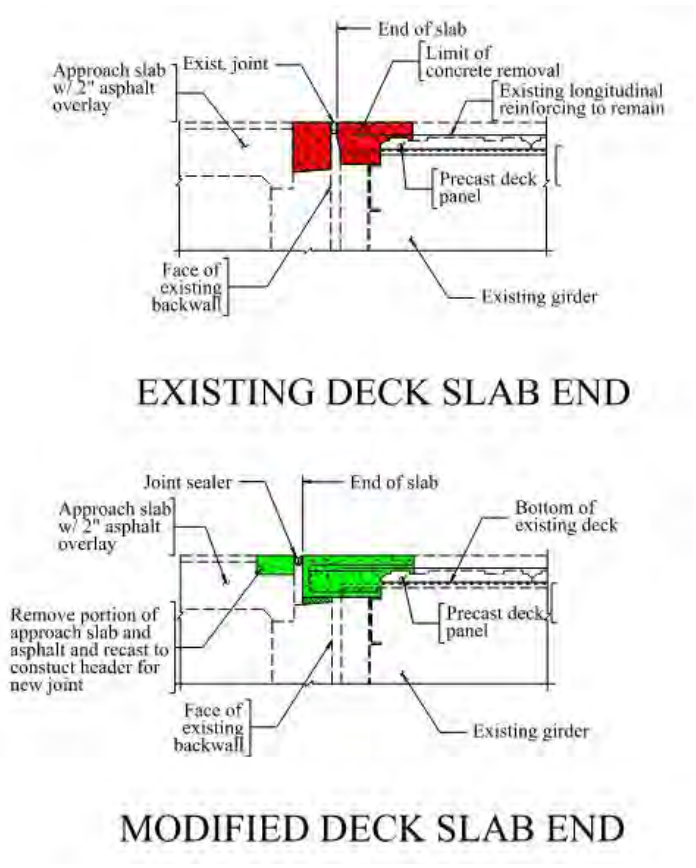


Figure 4.3.10 –Joint modification at abutment

The RFP requirement to replace the outside NB parapet results in an overhang of 2'-10". Our Team has performed a yield line analysis of deck overhang and has determined the limit of existing deck removal for the required additional reinforcement, considering the precast deck panels used in the existing bridge. We will demonstrate the adequacy of the overhang to the District Structure and Bridge Engineer to obtain a design approval. This detail is shown in our Volume II – Conceptual Project Plans.

The existing deck joints at the abutments will be relocated behind the abutment backwall reducing future maintenance associated with leaking joints. Our Team has chosen the Virginia Micro Abutment Detail to accomplish this as shown in Figure 4.3.10. This detail is cost-effective as it minimizes backwall demolition, retains the existing approach slab, and minimizes excavation compared to a buried approach slab. This same concept will be carried through the widened portions of the bridges providing a continuous joint behind the backwall.

Substructure

Based on our Teams' review of the existing bridge plans, it appeared that there was potential to achieve the project goals and priorities by converting a portion of the existing median stem walls to abutments that could support new girders. This concept would have eliminated the need for deep support of excavation in the median adjacent to vehicular traffic A preliminary analysis of the existing foundation and piles indicated that they could support the anticipated loads using LRFD design specifications. However, given the perceived risk of potential corrosion loss of the steel piles and the RFP requirements to verify corrosion and restrike the piles, we ultimately determined that complete replacement of this section of the abutments and piles will be performed. The typical section of the abutment will be similar to that of the existing. Tall, concrete cantilever

type abutments on driven steel piles will be constructed.

As identified in the RFP documents, an area of settlement has occurred adjacent to the wingwall on the outside shoulder along southbound I-81. During the widening of the southbound lanes, this area of settlement will be addressed. Additional discussion of this area is included in Section 4.4.3.

Maintenance Repairs at Route 419 over I-81 and Route 705 over I-81

Proposed improvements for the existing bridges are limited to maintenance repairs to the existing substructures and installing pier protection barriers (BPPS) on both faces of the median piers and the roadway side of the shoulder piers as well as the addition of underbridge lighting at Route 419. Substructure repairs include repairs of cracks, spalls and delaminations in the existing piers and the concrete slope protection. Repaired pier neatwork will receive a waterproof coating. Post-award, a detailed inspection of the substructure will be conducted in order to develop an approved repair program. Following the inspection of each bridge, reports will be prepared do that programs can be approved by VDOT prior to development of formal repair plans.

Retaining Walls

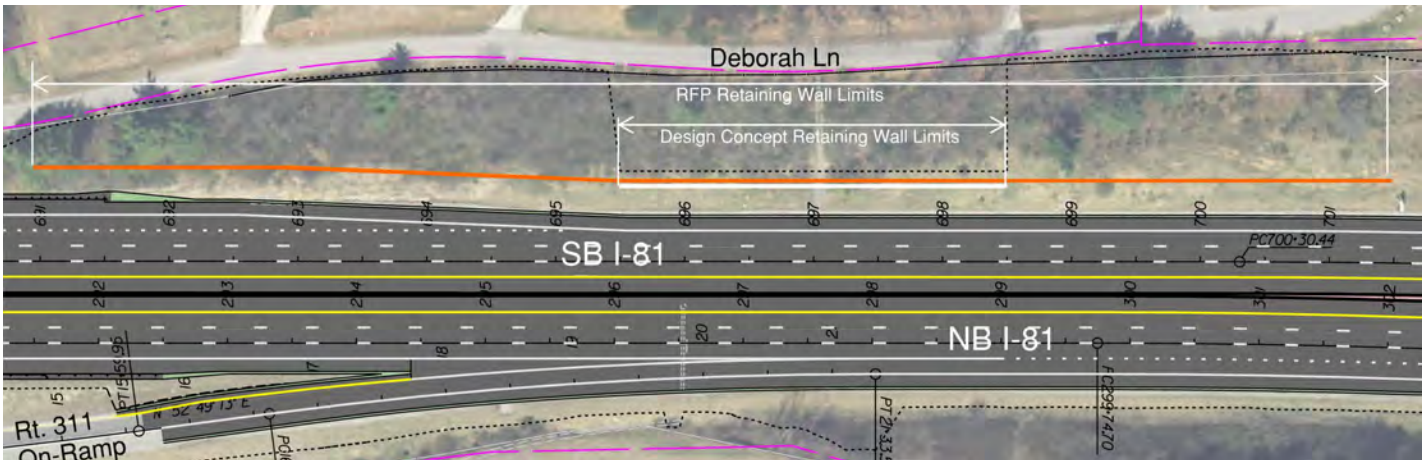


Figure 4.3.11: Reduction of overall length of retaining wall when compared to RFP shown in orange.

Other than the retaining walls/MSE walls associated with the bridges, seven retaining walls are required along southbound I-81. Incorporating the horizontal alignment modifications for constructability and optimization of the vertical profile also facilitated the reduction in the amount of retaining walls necessary when compared to the RFP. **Our Team's design has reduced the total anticipated length of retaining walls from the 2,050 linear feet shown in the RFP down to 821 linear feet, or a 60% reduction in the length of walls.** Table 4.3.6 provides a summary of all of the non-bridge retaining walls to be design and constructed by our Team. The five walls within fill sections will be located on the embankment and are used to eliminate the extensions of large culverts and also reduce ROW and environmental impacts as discussed earlier. In addition, the locations eliminate the need for crash rated barrier or moment slabs reducing future maintenance, but handrails will be provided for safety. Preliminary global stability analyses have been conducted to inform our Team's choice of wall types. Two walls are located in cut sections and are used reduce impacts to right-of-way. Cut walls will receive Architectural treatment as required by the RFP.

Table 4.3.6 – Proposed Retaining Walls

Retaining Wall Identifie	Roadway	Location	Length (ft.)	Cut/Fill	Type	Use
Wall #1	SB I-81	Sta. 525+92 to Sta. 526+68 LT	76	Fill	RW-3	Eliminate Box Culvert Extension
Wall #2	SB I-81	Sta. 565+30 to Sta. 566+40 LT	110	Cut	Post and Panel	Retains Cut Slope on Outside Widening

Retaining Wall Identifie	Roadway	Location	Length (ft.)	Cut/Fill	Type	Use
Wall #3	SB I-81	Sta. 618+00 to Sta. 618+70 LT	70	Fill	MSE	Eliminate Box Culvert Extension
Wall #4	SB I-81	Sta. 661+50 to Sta. 663+00 LT	150	Fill	RW-3	Eliminate Box Culvert Extension
Wall #5	SB I-81	Sta. 669+10 to Sta. 669+80 LT	70	Fill	MSE	Eliminate Box Culvert Extension
Wall #6	SB I-81	Sta. 695+50 to Sta. 698+50 LT	300	Cut	Post and Panel	Retains Cut Slope on Outside Widening
Wall #7	SB I-81	Sta. 714+00 to Sta. 714+45 LT	45	Fill	RW-3	Eliminate Box Culvert Extension

Major Drainage Structures

Based on the revised horizontal alignments proposed by our Team, combined with the two additional retaining walls which eliminated extensions of the triple box culvert under southbound I-81 within the Route 112 interchange and the 4'x4' box under northbound I-81 near Sta. 270+50, there are only 3 box culverts which require extension. These box culverts are at the following locations:

- SB Sta. 549+10/NB Sta. 149+60 - Single 6'x4' box culvert
- SB Sta. 560+25/NB Sta. 160+25 - Single 4'x6' box culvert
- SB Sta. 576+50/NB Sta. 176+60 - Single 4'x6' box culvert

We have reviewed the drainage inspection information provided with the RFP documents and believe each is in good condition to facilitate extension and rehabilitation. None of these structures will require special design, since standard VDOT details will be utilized for all of the extensions.

4.4: Project Approach

4.4 - Project Approach

4.4.1 Environmental Management

We know that environmental management is one of the most critical aspects of a successful Project, and requires not only proper planning and coordination during design, but also careful implementation and monitoring during construction. Our approach to environmental management efforts began during the preparation of our technical proposal, and included involvement from our environmental team during each of our weekly coordination meetings, as well as throughout the day-to-day development of our Design Concept. Due to the close coordination and involvement of our environmental staff, we are able to provide the following:

- Design is developed in a manner that reduces environmental impacts;
- Schedules which accurately reflect environmental constraints and permit approval timelines
- Confirmation that all necessary permits are identified and obtained prior to commencing construction efforts; and
- Construction is completed in accordance with permit requirements, NEPA commitments, and contract requirements.

Through coordination efforts we initiated during the procurement stage, we identified several design enhancements which had either a primary or secondary goal of reducing environmental impacts. These included adjusting horizontal alignments, adding a retaining wall over an existing culvert within the Route 112 interchange, incorporating a combination noise barrier/retaining wall near northbound Sta. 270+50 to eliminate a box culvert extension, and eliminating and adjusting stormwater management facility grading. These avoidance and minimization efforts will continue during design, and our focus will become more detailed as final designs are prepared and additional field investigations are complete

Approach to Risk Management During Design

As our Team begins the design phase, our approach to risk management continues with refinement of design details and confirming that the design accounts for all environmental commitments and constraints. Coordination between design disciplines and the environmental team, as well as with construction, right-of-way, and utility management staff, is critical to recognize and account for all constraints are in the plans and schedule. To further facilitate this coordination, we develop an Environmental Constraints Map (ECM) to account for all environmental constraints and commitments as the design progresses. This ECM is an electronic design file which can be referenced and cross-checked with design plans and details. Preliminary development of the ECM for this project has already identified potential areas of concern within the Project, and we have identified solutions and strategies to minimize environmental impacts as outlined in Table 4.4.1.

Table 4.4.1 - Strategies to Minimize Environmental Impacts

Resource	Project Phase	Avoidance and Minimization Strategy
Wetlands & Streams	Design	• Contacted permitting agencies regarding potential to adjust the preliminary Jurisdiction Determination (JD) based on latest agency guidance • Researched available mitigation credits within service area and created action plan for out of service area requests and approvals • Reduced the number of SWM basins from 18 to 12 and revised locations and grading to minimize impacts to wetlands • Identify wetland locations and non-permitted areas on erosion & sediment control plans for quick reference and use by construction staff

Resource	Project Phase	Avoidance and Minimization Strategy
Cultural Resources & Section 4(f) Resources	Design	• Revised design to eliminate SWM facility along NB I-81, eliminating need to cross the Hanging Rock Battlefield Trail
	Construction	• Avoid access to and across Hanging Rock Battlefield Trail • Prior to working in close proximity to Cultural Resource areas, resources will be demarcated to avoid impacts • Communicate with Roanoke County Director of Parks and Recreation and Tourism (Doug Blount) at least 14 days prior to any work adjacent to trails, and when work is completed
Threatened & Endangered Species	Design	• Utilize June 2020 Acoustic Survey for bats • Early recoordination with USFWS and DWR to confirm VDOTs preliminary determination of no TOYR for the Indiana Bat, Tri-Colored Bat, and Northern Long-Eared Bat • Reduce clearing impacts associated with SWM facilities and acquisition of forested areas, including potential habitat areas
	Construction	• Adhere to Special Provisions for Protection of Nesting Birds on Bridges and Protection of Bat Species • Complete bridge demolition activities within the 5-year timeframe of the acoustic survey

The most critical aspect of environmental avoidance and minimization efforts is related to reduction of Waters of the United States (WOUS) and wetland impacts. As outlined above, we have already incorporated design changes which have reduced and avoided impacts anticipated by the RFP concept. However, in reviewing the information provided with the RFP documents, we did identify discrepancies in the impact quantities provided with the RFP as detailed in Table 4.4.2 below.

Table 4.4.2 – Preliminary Wetland and Stream Impact Quantities

RFP Document	WOUS Impact Quantity (LF)	Wetland Impact Quantity (acre)
RFP, CE, Permit Determination Form	1,120	0.31
Addendum 1 WOUS Area Summary Table	1,234	0.85
Addendum 1 USM Stream Assessment Form	2,257	-
Addendum 1 USM plan sheets	2,719	-

As a proactive measure to determine the accurate impact quantities, we completed our own independent take-offs of wetland and stream impact quantities associated with the RFP conceptual design, and also contacted the regulatory agencies to discuss the systems identified in the Preliminary Jurisdictional Determination (PJD). As part of our independent investigation, we determined that some areas identified as an impact in the PJD may no longer qualify as an impact under the Navigable Waters Protection Rule, which revised the definition of WOUS. Based on these discussions, we understand that the agencies are open to revising the PJD to reflect areas which are no longer jurisdictional, as long as those revisions are supported by updated field surveys and delineations which are then reviewed and accepted during final permitting processes. To minimize and avoid impacts to WOUS and wetland areas, our Team has already implemented the following design enhancements:

- Added a retaining wall along southbound I-81 to eliminate a culvert extension and associated impacts within the Route 112 interchange; Modified Potential Noise barrier IK to include a retaining wall to eliminate extension of a 4'x4' box culvert near northbound I-81 Sta. 270+50;
- Incorporated ditch for ditch stream relocations to reduce permanent impact takes and mitigation costs; and

- Reduced the number of SWM basins from 18 to 12, and regraded the required facilities to minimize their footprint and grading impacts.

The result of these enhancements is that we have already reduced Project impacts to WOUS by over 900 linear feet and wetland impacts by over 0.5 acres. As outlined above, we believe further reductions may be achievable during preliminary design following updated wetland and stream delineations and further coordination with the permitting agencies.

In addition to focusing on implementing design enhancements to minimize impacts, close coordination within the Team is also critical to the success of the Project. Throughout the design phase, our Team will utilize consistent and open communication with VDOT and regulatory agencies through formal and informal processes to navigate the environmental process, resulting in comprehensive permits that are obtained in the timeline necessary to facilitate construction.

We know regulatory agencies are closely scrutinizing permit applications with attention given to the avoidance and minimization efforts made during the design stage. During design, we will document all avoidance and minimization efforts, including those already implemented through our design enhancements, and we will discuss those during the Joint Permit Application (JPA) process to minimize the risk of lengthier permitting and approval processes.

The goal of our Team with respect to environmental management, and the extensive coordination and documentation efforts outlined above, is to implement all possible avoidance and minimization efforts, properly identify all impacts, and develop an accurate schedule for all necessary environmental permits. The Proposal Schedule we have developed realistically accounts for the time to obtain the required permits and approvals. Based on the impacts we have identified, we expect the Project will require Individual Permits from USACE and DEQ and will take between six to nine months. The permits which we anticipate needing to obtain prior to construction are summarized in Table 4.4.3 below: all of which are integrated into our construction schedule.

Table 4.4.3 – Permits to Obtain

Agency	Permit Type/Approval	Anticipated Time Frame
USACE (Section 404, 408, 10)	Nationwide Permit 6 and Individual Permit	6 - 9 Months
VA DEQ (Section 401)	Individual Permit	6 - 9 Months
VDOT	VSMP Construction General Permit (LD-445)	2 Months

Approach to Risk Management During Construction

As the design phase is completed and all environmental permits are obtained, we know the environmental process is not completed. We recognize the extensive scrutiny being placed on environmental reviews and compliance during construction in order to avoid unintended impacts and provide for adherence to all permit conditions. To minimize the environmental risk during construction, our Team will implement the following activities:

- **Pre-Construction Coordination** – Before any construction activities, our environmental Team will return to the field and redelineate all wetlands, WOUS, and environmental resources, to so that limits are easily identifiable by construction personnel. Permit impact plates detailing temporary and permanent impact limits will be provided to all construction staff and foremen in order to avoid non-permitted areas. Additionally, a pre-construction environmental constraints and commitments meeting will be held to educate all parties on the allowable limits of work, including construction, inspection, and subcontractor personnel.

- **Virginia Water Protection (VWP) Permit Inspections** - Due to additional scrutiny placed on environmental permit compliance, site visits during construction are vital to the Project's success. These site visits check that permit requirements are met, Erosion and Sediment Control (ESC) measures are correctly installed and maintained, and areas that may require additional attention are identified before any unintended impacts occur. To track compliance, our Team will utilize iPads, paired with GIS software, and KMZ files to display the Project area and jurisdictional impact limits on Google Earth. By pinpointing both the inspector's location and impacts in real-time, any potential deviations from the permitted impacts can be assessed accurately and immediately.

- **VWP Compliance Reporting** - Our Team will complete DEQ's Monthly VWP Permit Inspection Checklist and Biannual Construction Status Update Forms to document construction progress and timing of impacts for all permitted jurisdictional areas. Our Team can provide additional site visits and utilize joint inspections to confirm permit compliance throughout the duration of construction. In the event that an undesired sediment release or non-permitted impact occurs during construction due to an unforeseen event, our Team will contact regulatory agencies to provide timely reporting, well within the 24-hour time frame as required per the VWP permits. Contact with these agencies will be completed efficientl and effectivel , identifying and implementing an appropriate corrective action plan in the field

In addition to these environmental compliance and monitoring efforts, we will continue to coordinate closely with VDOT environmental and construction staff, as well as communicate when necessary with the permitting agencies and Project stakeholders, to make them aware of construction progress and any challenging project areas. This close coordination has proved successful on past projects, and we will implement our experience from those successes, as well as "lessons learned", to provide for successful completion of this Project.

4.4.2 Utilities

Approach to Utility Coordination, Adjustments and Relocations

Consistent with our efforts on each of our design-build projects, we recognize that utilities, and especially utility conflicts and relocations, can have a significant impact on the schedule and success of the Project. Based on this recognition, our Team's primary goal with respect to utilities is to avoid conflicts and relocations completely. If conflicts can't be eliminated through design adjustments, we then work with the utility owner(s) to identify ways to protect their facilities in-place, and only as a last resort do we propose a relocation to eliminate the conflict. In those situations when utility conflicts can't be avoided, all efforts are made to reduce the limits of the relocation, and if possible, to complete the relocations within existing easements and/or right-of-way. We also work with the utility companies to identify schedules which facilitate utility relocations as early as possible so that they are not on the critical path.

For this Project our Team, led by our Utility Manager, took a proactive approach with respect to each of the utilities including a detailed review of the RFP documents, numerous field visits to confirm whether or not all existing utilities had been identified, and making contact with each utility owner. This early communication and coordination process was completed to:.

- Identify design changes and implement protective measures to avoid relocations;
- Identify ways to maintain the VDOT ITS fiber optic facility during initial construction stages, especially at the I-81 bridge locations;
- Develop schedules for potential relocations which are coordinated with the sequence of construction to provide efficiency and minimize disruptions; a
- Identify constructability concerns to avoid secondary relocations, cost increases and schedule impacts.

Our focus during the procurement stage was to establish open and regular lines of communication with each utility company. As summarized in Table 4.4.4, we contacted 16 utility companies to obtain information related to their existing infrastructure.

Table 4.4.4 – Summary of Contact with Utility Companies

Utility Owner	Outreach Efforts Completed by Our Team
AT&T (including Triton)	One virtual meeting/phone call, four e-mails
Appalachian Power (AEP)	Three virtual meetings/phone calls, six e-mails
Citizens Telephone	Two virtual meetings/phone calls, four e-mails
Comcast	Five virtual meetings/phone calls, 12 e-mails
Cox Communications	One virtual meeting/phone call, three e-mails
Crowncastle (Lightower / Sidera Fiber)	One virtual meeting/phone call, four e-mails
Osprey	Three virtual meetings/phone calls, 16 e-mails
Roanoke Gas	Two virtual meetings/phone calls, seven e-mails
Roanoke Valley Broadband	One virtual meeting/phone call, two e-mails
Salem City Electric	Three virtual meetings/phone calls, eight e-mails
Salem City Water/Sewer	Two virtual meetings/phone calls, three e-mails
Segra	Two virtual meetings/phone calls, seven e-mails
Verizon	Two virtual meetings/phone calls, eight e-mails
Western VA Water Authority	Two virtual meetings/phone calls, five e-mail
Windstream	Three e-mails
Zayo	Two virtual meetings/phone calls, eight e-mails

As we transition out of the pursuit phase and into final design, our Team will continue our engagement efforts with each of the utility companies, working to further limit impacts and necessary relocations. The following specific activities will be completed by our Team and our Utility Manager to oversee the utility coordination and relocation efforts during design and construction

- Update utility designations and supplemental test holes;
- Prepare a Preliminary Utility Status Report;
- Administer a Preliminary Utility Review meeting with all utility owners;
- Hold a Utility Field Inspection (UFI) meeting with each utility owner to confirm existing facilities and potential conflict
- Prepare UT-9 forms and perform a thorough review of each utility's compensable or prior rights to accurately establish pro-rata cost responsibilities;
- Work with each utility owner to develop a relocation schedule, coordinate the work with all design disciplines, environmental permitting staff, and construction staff, and make certain that the relocation schedule is reflected in the comprehensive Project Schedule;
- Identify critical path utility relocations, if any, and immediately complete P&E reviews so relocation plans can be approved, and relocations scheduled;
- Prepare utility agreements with the utility companies;
- Submit relocation plans and estimates to VDOT for review

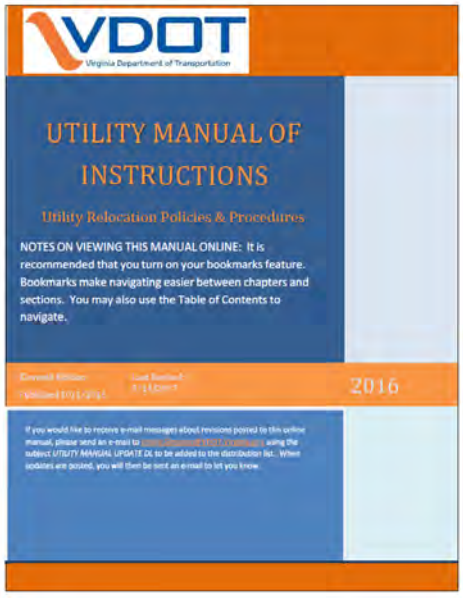


Figure 4.4.1: VDOT Utility Manual

and upon approval, notify each utility in writing so that relocations can commence;
- Monitor relocation status during construction, confirming that relocations are completed in accordance with the approved plans so that re-work is not necessary;
- Obtaining as-built information from utility companies when relocations are complete; and
- Record and update the status of utility relocations in RUMS.

Utility Status Report

UTILITY OWNER	FACILITY TYPE	MASTER AGREEMENT SIGNED	RELOCATION PLAN APPROVED	ESTIMATE APPROVED	ESTIMATED DURATION (days)
Appalachian Power Co.	Electric/Power	12/7/2015	4/4/2016	4/4/2016	30
Verizon Virginia	Telecom	3/23/2016	4/4/2016	4/4/2016	90
Mid-Atlantic Broadband	Telecom	11/13/2015	1/6/2016	1/6/2016	5
Comcast Cable	Telecom	12/15/2015	11/19/2015	11/19/2015	45
Columbia Gas of Va	Gas	3/16/2016	9/12/2016	9/12/2016	60

Figure 4.4.2: Example Utility Status Report

Utility Conflicts and P oposed Solutions

Based on conversations during each of these calls, meetings, and email communications, we were able to determine where utilities were expected to be impacted, and developed concepts to minimize those impacts. While this project extends over more than five miles, including modifications to three interchanges and four other road crossings, there are relatively few utility impacts based on our Team's approach, including modifications we intend to implement. Provided in Table 4.4.5 below is a list of all of the utilities within Project limits, potential relocation solutions for those which are in conflict, and those which have been avoided due to design refinements (as shown in bold text). Our Volume II – Conceptual Project Plans also show the locations and alignments for utility relocations, including the new Osprey facility which is planned to be installed by others through the limits of this Project.

Table 4.4.5 – Potential Utility Conflicts

Utility Owner/ Description	Approximate Location	Known/Potential Conflict	Relocation Plan/ Avoidance Strategy
UNDERGROUND COMMUNICATION			
VDOT (Traffic Control)	Sta. 111+50 to Sta. 279+31	Median widening, barrier installation, and drainage facilities	Relocate to outside of southbound lanes
Citizens Telephone (240 count fiber)	Sta. 134+40 to Sta. 376+75	Median widening, barrier installation, and drainage facilities	Relocate to outside of southbound lanes
Comcast (min. 24 count fiber), Zayo (24 count fiber), Segra (96 count fiber), and Verizon South (fiber and copper)	Route 112 Sta. 18+14 to Sta. 20+55	Bridge reconstruction and removal of material in front of bridge abutment	Relocate all facilities to a common corridor, crossing I-81 south of Route 112
Comcast (min. 24 count fiber), Zayo (24 count fiber), Segra (96 count fiber), and Verizon South (fiber and copper)	**Route 112 Sta. 21+16**	**SWM access road grading and alignment**	**Conflicts eliminated th ough design adjustments**

Utility Owner/ Description	Approximate Location	Known/Potential Conflict	Relocation Plan/ Avoidance Strategy
Comcast (min. 24 count fiber and TV)	Route 619 Sta. 15+85 to Sta. 18+19	Bridge reconstruction and removal of material in front of bridge abutment	Complete test holes to confirm location, relocate if necessary
Verizon South (fiber and copper inside steel conduits)	**Crossing I-81 at approximately Sta. 160+00**	**Drainage and noise barrier improvements**	**Conflict eliminated by adjusted drainage and storm sewer layout, and noise barrier posts will be laid out to span existing utilities**
Verizon South (copper)	**Route 619 Sta. 17+93**	**SWM access road grading and alignment**	**Conflict eliminated th ough design adjustments**
Verizon South (copper)	**Crossing I-81 at approximately Sta. 271+25**	**Proposed noise barrier**	**Noise barrier posts will be laid out to span the existing utility, eliminating the conflic**
UNDERGROUND POWER			
Salem City Electric (3 phase 12kV)	Route 112 Sta. 18+00 to Sta. 20+55	Bridge reconstruction and removal of material in front of bridge abutment, and SWM access road	Electric line is close to the edge of the existing pavement and at a depth where embankment removal will not result in a conflict or require relocation. SWM access road has been adjusted to avoid conflict
Salem City Electric (3 phase 12kV)	Route 635 Sta. 15+58 to Sta. 19+19	Reconstruction and lowering of Route 635	Relocate in deeper trench adjacent to existing facility
VDOT Electric	**Route 112 Ramp B Sta. 24+00 to Sta. 24+50**	**Noise barrier alignment, SWM grading, and drainage facilities**	**Conflicts eliminated by mino adjustment to noise barrier alignment, SWM grading adjustments, and vertical adjustment of proposed storm drainage**
GAS			
Roanoke Gas (4" coated steel)	**Route 112 Sta. 18+96 to Sta. 21+16**	**Bridge reconstruction and removal of material in front of bridge abutment, and SWM access road**	**Gas line is close to the edge of the existing pavement and at a depth where embankment removal will not result in a conflict o require relocation. SWM access road has been adjusted to avoid conflict**
Roanoke Gas (4" coated steel)	**Route 112 Sta. 25+00**	**Drainage improvements**	**Drainage design adjusted to eliminate conflic**
Roanoke Gas (2" plastic)	**Route 635 Sta. 15+39 to Sta. 14+97**	**Reconstruction and lowering of Route 635**	**Adjusted vertical profile to avoid conflicts at this tie-in location**
Roanoke Gas (3" plastic)	**Route 619 Sta. 15+87 to Sta. 17+18**	**Bridge reconstruction and removal of material in front of bridge abutment**	**Gas line is close to the edge of the existing pavement and at a depth where embankment removal will not result in a conflict o require relocation.**

Utility Owner/ Description	Approximate Location	Known/Potential Conflict	Relocation Plan/ Avoidance Strategy
Roanoke Gas (3" plastic main)	**Station 15+87 to Station 17+18 West side Route 619**	**Bridge Replacement**	**Design adjusted to avoid impacts**
WATER			
Salem City Water (12")	**Route 112 Sta. 18+96 to Sta. 21+16**	**Bridge reconstruction and removal of material in front of bridge abutment, and SWM access road**	**Water main is close to the edge of the existing pavement and at a depth where embankment removal will not result in a conflict o require relocation. SWM access road has been adjusted to avoid conflict**
Salem City Water (12")	**Route 112 Sta. 25+00**	**Drainage improvements**	**Drainage design adjusted to eliminate conflic**
Salem City Water (6")	Route 635 Sta. 15+20 to Sta. 16+08	Reconstruction and lowering of Route 635	Truncate and cap portion of existing water main to accommodate excavation and grading
Salem City Water (8")	**Route 619 Sta. 15+87 to Sta. 17+18**	**Bridge reconstruction and removal of material in front of bridge abutment**	**Water main is close to the edge of the existing pavement and at a depth where embankment removal will not result in a conflict o require relocation.**
SANITARY SEWER			
Salem City Sewer (8")	Route 635 Sta. 15+08	Reconstruction and lowering of Route 635	Adjust existing manhole frame and cover
OVERHEAD POWER AND COMMUNICATIONS			
Salem City Electric (3 phase 12kV), Comcast (min. 24 count fiber), Verizon South (fiber and 400 pair copper), Zayo (24 count fiber), and Segra (96 count fiber	Route 112 Sta. 25+04	Route 112 Loop Ramp Spur construction	Relocate pole in-line and outside of the new spur and adjust overhead facilities
Salem City Electric	**Route 112 Ramp B Sta. 17+60**	**Noise barrier alignment**	**Adjusted alignment of noise barrier to eliminate conflic**
Salem City Electric	**Northbound I-81 Sta. 163+15**	**SWM basin**	**Adjusted SWM grading to avoid pole conflict and relocation**
Salem City Electric and Comcast	Northbound I-81 Sta. 185+20 to Sta. 187+48	SWM basin grading	Replace poles and raise overhead power and communication facilities
Salem City Electric (3 phase 12kV)	Route 635 Sta. 15+58	Embankment placement	Replace pole
Salem City Electric (3 phase 12kV)	Route 635 Sta. 16+10	Embankment placement	Replace pole

Utility Owner/ Description	Approximate Location	Known/Potential Conflict	Relocation Plan/ Avoidance Strategy
Salem City Electric	Route 625 Sta. 16+18	Shoulder widening and grading	Relocate guy wire to accommodate new embankment grading
Salem City Electric (3 phase 12kV)	Route 635 Sta. 19+19	Embankment excavation	Replace pole
Salem City Electric (3 phase 12kV)	Route 635 Sta. 21+00	Embankment excavation	Replace pole
Salem City Electric (3 phase 12kV)	**Route 705 Sta. 14+37 to Sta. 18+85**	**Proposed noise barrier**	**Adjusted noise barrier alignment and end post location to eliminate conflict**

Utility Schedule Integration, and Process to Mitigate Unexpected Conflicts and Delay

Being well aware of impacts to the project schedule and cost related to utility conflicts, the Team has successfully managed utility relocations on large interstate and urban highway projects. We will continue the detailed coordination activities initiated with the utility companies in the proposal stage and add the steps necessary to maintain open communication during design development and construction to support a successful project completion. We will also give extra attention to the areas of the Project that may involve relocations of considerable length or those that have to be completed sequentially, requiring lengthy overall relocation timelines. The utility relocation process, and all communication with the utility companies, is factored into development of our schedule during design and construction, and the Utility Manager monitors the schedule and progress of relocations to avoid adverse impacts, or identify them early so that proper resequencing efforts can be implemented to mitigate or avoid schedule delays

Our Team's Proposal Schedule included in Section 4.6 already accounts for the utility relocations that we anticipate need to be completed. As shown in Table 4.4.2 above, extensive efforts have already been undertaken to incorporate design modifications to avoid utility relocations. For example, the proposed grading for the roadway and SWM improvements was generated to avoid impacts to the majority of utility poles and aerial lines within the project limits. Additionally, we expect that the proposed improvements, and design modifications we have incorporated avoid the majority or all conflicts with facilities owned by Roanoke Gas, AT&T, Appalachian Power, Cox, Western Virginia Water Authority, and the City of Salem water and sewer systems.

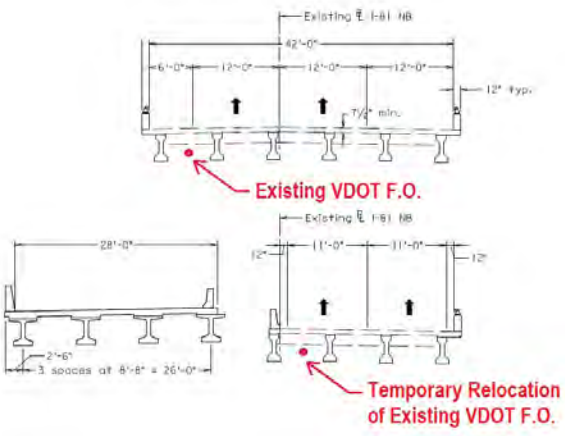


Figure 4.4.3: Temporary ITS communications plan

The primary areas of utility conflicts are associated with the Citizens Telephone and VDOT ITS facilities located in the median of I-81, both of which will be in conflic with the proposed widening and installation of the proposed median barriers and associated closed system drainage facilities. In addition, a new fiber optic utility (Osprey) will consist of seven – 18mm conduits which are proposed to be installed along the southbound lanes of I-81. To reduce the footprint of these facilities, we anticipate a consolidated "corridor" for along the outside of the southbound lanes, out of the way of major drainage and all noise barrier elements. Moreover, our Team has also integrated maintenance of the existing VDOT fiber optic system into our design and construction concept. As we know these existing cameras are a critical tool in maintaining safety and mobility, we have developed a temporary ITS communications plan as depicted in Figure 4.4.3. Given that the existing

under-bridge conduit systems are in a portion of the bridges that are to be demolished in the first major stage of construction, a temporary under-bridge duct system will be constructed under the middle of the existing northbound bridges to be reconstructed. Then, the existing fiber optic cable will be pulled into the temporary system, utilizing the coiled fiber optic cable slack that exists in the fiber boxes adjacent to each of the bridge structures. This temporary duct system will remain in place until the new, permanent fiber optic system can be constructed along the outside of I-81, thereby allowing continuous maintenance of the system safely separate from construction activities.

We have also evaluated the sequence of construction to limit any downtime to existing ITS devices, positioned SWM features in such a way to reduce impacts to the existing utilities, and selected relocation routes that minimize overlap with proposed project activities, including earthwork operations. Additionally, our mitigation strategy involves placing utilities in locations that will be away from the project construction, particularly the bridge replacement and widening work.

In the event unexpected utilities are identified at some point during final design or construction, we know that a rapid and robust approach must be taken to eliminate any impacts to the Project schedule. Our strategy for addressing unexpected utilities includes:

- Redesign of proposed improvements: If an unknown utility is identified, we will immediately complete additional surveys to identify the location of the utility in relation to proposed improvements. The utility location will then be reviewed by design staff to determine if it will be in conflict, and the extent of the conflict. Appropriate design leads will then discuss design modifications to avoid the conflict, and if necessary a formal revision or redline plans will be prepared to enable the utility to remain in place, avoiding any schedule impacts.
- Adjustment in-place: If an unknown utility is identified and found to be in conflict, we will work with the utility company to determine if the utility can be adjusted by raising or lowering it without a complex relocation process.
- Construction resequencing: In the event redesign and adjustment in-place options do not result in conflicts being avoided with the unknown utility, then our entire Team will discuss options to resequence work so that the utility can be relocated without causing impacts to the proposed improvements. This effort will require close coordination with the utility company to determine timelines and processes for relocation.

While unknown utilities can always be encountered, we believe our extensive efforts during the proposal phase with all of the utility companies, as well as the detailed efforts to redesignate all utilities immediately upon notice-to-proceed, will eliminate the likelihood of encountering any during design or construction, eliminating the potential for any schedule or cost impacts to the Project.

4.4.3 Geotechnical

Our Team recognizes that an extensive amount of preliminary investigations have already been completed by VDOT for the project, and our geotechnical engineering staff also has wide ranging experience along and surrounding the I-81 corridor which provides us a thorough understanding of the potential challenges and risks we may encounter in design and construction. Throughout the procurement process, we have considered these possible risks as we developed our Design Concept. We considered different materials, adjusted stormwater management facility locations and elevations, and investigated alternate design solutions which could avoid or minimize geotechnical risks. Based on conversations and coordination during our weekly meetings, we performed the following preliminary geotechnical analyses utilizing the information contained in the preliminary Geotechnical Data Report (GDR):

- Axial resistance for driven piles or pre-bored rock-socketed piles, with appropriate considerations for corrosivity and potential downdrag loading;

- Downdrag mitigation measures with use of cans in MSE abutment zones;
- Lateral pile analyses for serviceability requirements at full integral abutments;
- Settlement, global and external stability, and minimum strap length analyses for MSE abutments;
- Global and external stability for retaining walls along with considerations for RW-3, MSE, post and panel, and soil-nail wall alternatives;
- Global stability for select cut and fill slopes, along with considerations for infinit slope stability;
- Karst subsurface conditions evaluation and development of considerations for structures and SWM facilities;
- Unsuitable soils delineation and remediation;
- Acid producing material (APM) considerations and final design phase considerations; an
- Temporary pavement design alternatives and shoulder strengthening calculations.

Our geotechnical design approach will support the overall Project Team's design by identifying and managing geotechnical risks which could impact construction sequencing, traffic and serviceability, which thereby pose potential negative risks to safety, project cost, and long-term maintenance. Provided in Table 4.4.6 are the potential geotechnical hazards and risk mitigation strategies which our Team will implement.

Table 4.4.6 – Potential Geotechnical Hazards and Risk Mitigation Strategies

Geotechnical Hazard	Description	Risk Mitigation Strategy
Karst Terrain	• The preliminary GDR notes karst potential based on geology and encountered limestone and dolostone; however, soft karst residuum which would indicate severe karst is not generally noted in borings overlying bedrock • Route 112 existing bridge plans document erratic as-driven pile lengths indicative of typical karst rock survey profile with possible seam	• Soil borings and rock coring will be closely monitored for karst indications such as significant loss of strength with increasing depth in the residual overburden, and clay filled seams or voids in bedrock
Acid Producing Material (APM)	• Millboro Shale and Needmore Formations, known to include rock and overburden material which are APM, were mapped from Route 112 to near Station 590+00, with risk of acidic runoff • Limited GDR sulfur testing and Acid-Based Accounting (ABA) results indicate presence of Category 2, low-sulfur APM, as defined by the VDOT APM Mitigation Special Provision, potentially requiring amendment with alkaline or calcium carbonate-bearing material where excavated and reused in embankments • Category 1 APM material requiring encapsulation or proper disposal was not identified	• Perform stratified sampling and ABA testing in mapped formation area • Prepare APM Management Plan prior to the start of construction • Identify prescriptive amendments or other appropriate management techniques during construction
Corrosivity	• GDR corrosivity test results exhibited soil resistivity, chloride, and/or sulfate levels in the beyond extremely aggressive corrosivity range; however, many of the samples were taken from existing embankment material, roughly 15 to 35 feet higher than bottom of corresponding MSE abutment wall leveling pad • GER resistivity and pH test results for Exits 141 to 143 in alluvium and residuum indicate non-corrosive or moderately aggressive corrosivity	• Conduct additional geotechnical investigations and corrosivity testing in close proximity to all deep foundation and bridge substructure units • Design to meet VDOT Bridge Manual requirements established for long-term serviceability with regard to corrosivity, including oversizing of steel piles

Geotechnical Hazard	Description	Risk Mitigation Strategy
Embankment Stability	• GDR provides limited shear strength data for existing fill slopes which could be marginal for global stability in some instances, relative to current factor of safety requirements (1.5 global and 1.3 infinite) • Some sliver fills extend to culvert extensions and/or streams parallel to existing bridge approach embankments, where soft alluvial or terrace deposits comprise the supporting foundations soils	• Conduct shear strength testing as required, including fully-softened shear strength, for incorporation in global and infinite slope stability analyse • Evaluate the potential use of retaining walls in key areas to eliminate sliver fills and provide increased slope stability

To address the risks identified above, immediately following Notice to Proceed (NTP) our Team will prepare and execute a subsurface exploration program in accordance with Chapter 3 of the VDOT Manual of Instruction (MOI) and RFP requirements. Exploration will include a series of soil borings and/or rock corings and subsequent laboratory testing at locations for bridge replacement and bridge widening foundations, retaining walls, noise barriers, culverts, embankments, and pavements to evaluate the soil and geologic conditions. Experienced geotechnical engineers and geologists will monitor drilling activities on a full-time basis in order to identify changing conditions, and allow for adjustment to exploration activities. Where warranted due to karst and erratic rock conditions, strategic electrical resistivity (ER) testing will be performed. Coring of existing pavements will be performed as appropriate for widenings, with potential use of ground penetrating radar (GPR) for identification of shoulder transitions

The samples recovered during the exploration will be tested in an AASHTO-accredited laboratory for moisture content, gradation, corrosivity, soil unconfined compressive strength, and California Bearing Ratio (CBR). More advanced tests such as acid-based accounting, shear strength, consolidation, and rock unconfined compressive strength will also be performed, as appropriate according to the MOI and the Project Team's strategy for identifying and mitigating the geotechnical risks.

Following collection of data from field explorations and lab testing, the proposed improvements will be evaluated and analyzed in accordance with requirements of AASHTO LRFD and VDOT design and MOI requirements. Geotechnical Engineering Reports (GER) will be prepared in accordance with MOI requirements to provide recommendations and analysis on all necessary Project elements including the following:

- ***Slopes:*** As noted above, the limited GDR data indicate that some sliver fills may exhibit marginal global stability, such as along the SB shoulder near Station 662+00. We will sample and evaluate foundation and embankments soils for consolidation and shear strength characteristics, and determination of global stability, infinite slope stability, and settlement potential in accordance with the RFP. Where soft foundation soils are encountered, undercut and replacement may be required. Proper benching and potential rework may be required for some sliver fills, and free draining embankment material may be required in select areas. Cut slopes will be sampled and evaluated according to the requirements of the RFP.

- ***Retaining Walls:*** Design and recommendations for retaining walls will consider foundation material, retained soils, fill requirements, and surcharge loading, in accordance with FHWA, VDOT, and RFP requirements, including external and global stability, as well as confirmation of internal stability by the retaining wall MSE designer where MSE walls are used.

- ***Unsuitable Soils and APM:*** Based on the limited GDR classification testing and visual boring classifications, CH soils are the predominant material anticipated to be encountered during excavation

and placement of embankment. Also, of the five CBR test results included with the GDR, three results were below the required design CBR value of five. Delineation of high plasticity, soft, wet, and/or low CBR soils will be important make sure such unsuitable materials are not present within one foot of new pavement cut subgrades or three feet of new embankment subgrades. Undercutting, drying and re-compaction, or chemical stabilization will be performed as required and has been prepared in a preliminary fashion using a matrix of potential unsuitable soils. As noted above, we will also sample and delineate areas of mapped potential APM for treatment and handling in accordance with the RFP requirements. Areas of potential unsuitable soils are developed during the design stage and shared with the Construction Team in order to proactively plan for mitigation strategy during construction.

- ***Stormwater Management Basins and Culvert Foundations:*** Design-phase exploration will consider karst terrain and potential for negative impact in areas of concentrated stormwater. Although the GDR borings do not indicate the presence of severe karst overburden, borings may be supplemented by electrical resistivity to identify potential need for relocation. Low-permeability liners will be designed and constructed for impacted BMPs, as appropriate. Recommendations for culvert foundation material will consider the variability of materials encountered, potentially including areas of soft alluvium, soft residuum, and bedrock, in order to provide sufficien foundation support and control of differential settlement beneath embankment loads.

- ***Pavements:*** We will comply with the minimum pavement design requirements included in the RFP, and will confirm adequacy of the design based on the results of the final design-phase geotechnical exploration and laboratory testing. The design will incorporate the use of stabilization fabric and VDOT No. 1 aggregate, given the prevalence of highly plastic clay anticipated and RFP definition for proximity of such material to design subgrade. Temporary pavements will also be designed in accordance with RFP requirements and based on anticipated short-term MOT demands.

- ***Bridge Abutment and Pier Foundations:*** Design-phase exploration and testing will supplement GDR data to support the planned geotechnical analyses and recommendations for foundation elements, in accordance with the RFP requirements. As noted above, additional corrosivity testing will be required to confirm adequacy of type and sizing of foundation elements presented on the concept plans. Our preliminary analyses indicate the use of MSE abutment walls is acceptable, and our design-phase geotechnical analyses and recommendations will determine acceptable global stability and anticipated settlement, as well as the presence and remediation of karst conditions. The geotechnical exploration and subsequent analyses will focus on settlement and strength engineering parameters to support pile foundation, shallow foundation, stability, and potential settlement of bridge structure foundations and supporting approach embankments.

- ***Existing Foundations and Structures***: Geotechnical exploration and recommendations will consider proximity to existing foundations and structures, including support of excavation (SOE), new surcharge loading, and vibrations. New foundation elements at bridges over Routes 112, 619, and 311 will be designed to avoid conflict with existing foundation elements. If warranted, use of mitigation strategies such as pre-borings and/or vibration reduction strategies at select depth ranges will be considered. At locations with potential vibration impacts, the Team will implement a vibration monitoring program with actionable items at select threshold levels.

- ***Approach Slab Settlement Analysis (B677***): As required by the RFP, identification, evaluation, repair, and mitigation of the existing approach slab settlement at the North Abutment B of B677 (SB I-81 over Route 311) warrants additional exploration. Based on boring 20BH-115 included in the GDR, soft, variable, wet soil layers are present within the wingwall backfill zone to a depth of roughly 24 feet, which is located near the foundation elevation. A drop in the drilling rods was reported to have occurred just above the final split-spoon sample and terminated in medium dense fill. Given

termination in fill, the presence of karstic soils/rock conditions at this location, which could result in loss of material and collapse/loosening of overlying fill soils, cannot be ruled out. Extension of an additional boring and/or geophysical testing will be completed to finalize recommendations for stabilization in this area.

Our Team's methodical and thorough approach to geotechnical data collection, analysis, and implementation of recommendations will address all geotechnical risks and challenges during the design phase so that reactionary evaluations and modifications during construction will not be necessar .

4.4.4 Quality Control

Our Team's Quality Management System Plan (QMSP) is structured to meet the contractual requirements in not only VDOT's Minimum Requirements for Quality Assurance & Quality Control on Design-Build & Public-Private Transportation Act Projects, January 2012, revised July 2018 (Minimum Requirements), also those defined throughout the RFP Technical Requirements. The QMSP is the foundation for defining the appropriate resource levels and time commitments for the entire Quality Assurance (QA) and Quality Control (QC) staff in support of the efforts of our Team's Quality Assurance Manager (QAM), Mr. Dale Grigg, PE, CCM who is committed to the project on a full-time basis.

At the Project's Kick-Off meeting, the complete Design Quality Management Plan (DQMP) and the initial Construction Quality Management Plan outline the Preparatory Inspection Meetings (PIM) for all work packages, addresses the process for QA Auditing and Nonconforming Work Recovery Plan (AR Plan), and provides additional details to the CQMP updating process as design work packages are developed, submitted, and released for construction. As part of the kickoff presentation, nine key scenarios will be discussed to allow the entire project team to have the same understanding about quality.

Design QA/QC Approach

Our approach to design QA/QC is based on a process of implementation which occurs consistently throughout the study, design, and production phases rather than being applied as a separate oversight activity. We complete a thorough process in accordance with VDOT's Minimum Requirements for Quality Assurance and Quality Control

Nine Quality Management Scenarios Discussed at Kick-Off:

1. Design QC and QA steps and documentation.
2. PIM meetings/procedures for VDOT buy-in on Witness and Hold Points.
3. VDOT materials testing and QA responsibilities (Table 5-21)
4. AR Plan / NCR's – Identification, documentation, tracking, audit, recovery for defective equipment and construction activity/material failures.
5. Inspection documentation approach: checklists, daily work reports, and test reports from QA, QC, and Geotechnical Engineer of Record QC.
6. Pay application review and evaluation process.
7. Buy America compliance process: advanced planning support with the builders (what we need), source of materials (C-25) evaluation, pre-supply certification (C-76), delivery reviews (materials invoices, mill certifications, certification statements as outlined in the Materials MOI, etc.).
8. Materials Notebook Program (TL-142DB/LAP): pre-delivery source of materials (C-25), approved sources/ lists evaluations, delivery receipt reviews (invoices, manufacturer/supplier certifications). Considering project complexity two example entries may be increased to demonstrate additional scenarios.
9. ProjectWise and PlanGrid Document Management System integration: administrative and read/write access privileges recommendations. Organization of pay application support documentation.

on Design-Build and Public-Private Transportation Act Projects (July 2018 QA/QC Guide) and also in accordance with Dewberry's Quality Control Manual which contains standardized procedures for QC, QA, and independent quality audits. Implementing these processes and procedures across all disciplines provides for consistent adherence to our high internal quality standards while also meeting or exceeding the quality expectations of VDOT. Dewberry's QC Program is based on ISO 9001:2015 quality management standards, guided by our Plan-Do-Check-Act (PDCA) cycle of quality management. This four-step process is graphically displayed in Figure 4.4.4 and is as follows:

1. **Plan -** Define the requirements and processes needed to produce high quality deliverable.
2. **Do –** Perform the work per the defined requirements and codified processes.
3. **Check** – Validate that steps 1 and 2 yielded desired results.
4. **Act** – Act on the results of step 3.

Figure 4.4.4: Plan-Do-Check-Act Quality Control System

Our four-step PDCA process is integrated into our workflow throughout the project life cycle. While our QA/QC processes are implemented consistently throughout the design development phase, formal design QA/QC reviews are documented on marked-up plans, formal comment resolution spreadsheets, and through completion of the LD-436 checklists. These documents are retained for the contract duration so that they can be easily reviewed to verify completion of the QA/QC process. Internal checklists are based on meeting standards and specifications, incorporating lessons learned from past projects, utilizing the proper quality standards, selecting appropriate materials, and implementing in a safe manner. Reviews are not only completed by each discipline for their area of expertise, but also incorporate interdisciplinary reviews to account for proper coordination.

As the Engineer of Record, Dewberry is ultimately responsible for QA and QC of all of our design deliverables and supporting documentation and computations. However, we recognize that on design-build projects effective and complete QA/QC processes also require input from our contracting partner, specialty subcontractors, and our design subconsultants. Collectively, our Team implements design QA/QC processes by adhering to the approved QA/QC plan, requiring our design subconsultants follow the QA/QC plan and processes, incorporating constructability review input from our contracting partner and key subcontractors, and involving VDOT and in the design review process.

Finally, we recognize that design QA/QC processes do not end with approval of right-of-way and construction plans. Throughout construction, field changes, formal revisions, and all submittals and shop drawings reviews will follow these same QA/QC processes.

Design QA/QC Plan

As the Design Manager, Steve Kuntz, PE, DBIA is responsible for implementing and managing the design QA/QC program which establishes the following:

- Identification by firm, discipline, name, qualification, duty, responsibility, and authority for all personnel and/or subconsultants responsible for design QA/QC;
- Establishment of design QA/QC functions, including scheduled activities for design QA/QC, and identifying the drawings, computations, and other documents that will be submitted to VDOT;
- Procedures for preparing and checking all plans, specifications, and calculations, as well as procedures

to correct errors and deficiencies prior to submission;

- Processes to check that design submittals are signed and sealed by the responsible PE licensed in the Commonwealth of Virginia;
- Actions to confirm that the level, frequency, and methods for review of design (including independent reviews) are in compliance with VDOT's functional requirements; and
- Procedures for identifying elements of design that require special construction QA/QC attention or emphasis.

Steve verifies conformance with the QA/QC Plan using informal observations or by conducting audits of the processes established within the QA/QC Plan, and utilizes input from our Design QA Manager, Ron Jakominich, PE to complete the proper QA and QC reviews and documented them prior to submittals being recommended for signature and formal submission to VDOT. Completion of the formal QA and QC processes are documented on checklists and forms, including signatures from all parties involved beginning with the design engineer through the QA Manager. All submissions to VDOT will be accompanied by a certification that the documents have been reviewed in accordance with the QA/QC Plan. Major components of our Design QA/QC plan include:

Design Reviews: Design Quality Control (QC) reviews will be completed on all drawings, engineering computations, and other design related documents for technical accuracy, conformance to contract requirements, grammar and style, and formatting. Design QC efforts begin with the project engineer self-certifying their work and preparing it for an independent QC review by someone not involved in the day-to-day design efforts. The QC review is completed by design discipline leads and more senior staff with appropriate knowledge and experience based on the level of complexity of the design element. This effort is managed by our Design Manager who assigns appropriately experienced staff for the QC review, and that reviews have been completed at the appropriate milestone stages. The design QC process is not complete until all comments are resolved to the satisfaction of the QC reviewer, or discussions have been elevated to the Design Manager and comments have been addressed appropriately.

Following completion of the design QC process, the design Quality Assurance (QA) process evaluates whether the designers assessed problems appropriately, applied correct analyses, and assigned qualified personnel to tasks when conducting design related activities. Ron Jakominich will oversee this Design QA process throughout the duration of the Project as set forth in the QA/QC Plan and will verify that required QC functions were performed properly.

Interdisciplinary Coordination: Coordination between disciplines is critical to the success of the Project and requires coordination not only from multiple design disciplines, but also environmental, right-of-way, utility, and construction staff. This involvement extends beyond the design phase and through the right-of-way acquisition, utility relocation, and construction phases. Continuous interaction between all disciplines throughout the entire Project duration leads to comprehensive plans and approaches which minimize potential cost and schedule impacts.

During design, weekly design meetings are held with representatives of all disciplines where details, progress, and schedule is discussed. During these meetings, discipline leaders and pertinent roadway, structural, hydraulic, and traffi design staff can discuss critical elements so they are properly coordinated and incorporated in order to develop a comprehensive plan from the outset. These design meetings also involve representatives from our environmental permitting team to review for environmental compliance and account for avoidance and minimization efforts at the start.

Beyond the internal interdisciplinary coordination meetings, weekly progress meetings including design, environmental, right-of-way, utility and construction staff are also held verify that design is progressing as necessary to maintain schedules for the overall project, and for critical/long-lead elements such as environmental permits and specialty construction materials. Communication at these meetings also includes:

- Environmental regulation requirements and sensitive or restricted Project areas;
- Sequencing of construction and any advance work packages which may be necessary;
- Right-of-way acquisition and utility relocation sequencing; and
- Overall progress, upcoming milestone dates, and any areas where schedule adjustment needs to be investigated.

In the event specific elements have become critical, the entire Team is able to proactively identify alternate solutions which will address any concerns. These meetings continue beyond the design phase, timely addressing changes in field conditions or other concerns during construction without impact to the Project

Constructability Reviews: These reviews occur during the weekly progress meetings described above and provide construction staff an opportunity to give direct feedback on the plans as they are developed, avoiding the need to implement major changes immediately prior to formal submissions. Roll plots and review of design files "real-time" through computer/video displays provide opportunities to discuss challenging areas of the project and to check that designs are safe, constructible, and consistent with the scope envisioned by the construction team. Steve and the discipline leads incorporate feedback and suggestions from construction staff in the plans as design progresses. Additionally, explanations regarding design requirements are conveyed from design staff to construction personnel to provide a comprehensive understanding of the design approach and Project requirements. In addition to these informal weekly constructability reviews, Steve and Jeff Mays, our DBPM, will coordinate formal constructability reviews of the design prior to each plan submission. Comments generated from these formal reviews will be addressed by the design team, or further discussed with construction staff, prior to submission of any packages to VDOT for review, comment, and ultimately approval.

QA/QC of Changes During Construction: We recognize that despite a comprehensive involvement from all disciplines during design, changes following issuance of Released for Construction plans may be necessary due to impacts of weather, availability of right-of-way, utility relocation schedules, or identification of unforeseen conditions. When necessary changes are identified, they will be reviewed in accordance with the Design QA/QC plan and follow the processes outlined above for the design phase. The nature and scope of the field change will be discussed between the Construction Manager and Design Manager to determine if it is minor in nature and can be documented via a Request for Information (RFI), or if it is a more extensive change which will require development of a formal plan revision. Regardless of the scope of the change, no field adjustments will be made without approval of the engineer and confirmation that the change is compliant with applicable standards and contract requirements. If a plan revision is necessary, our Team will coordinate with VDOT prior to making the change to establish the necessary review and approval process. Formal plan revisions will not be issued for construction, or conveyed to third-party entities, until they have been reviewed and approved by VDOT.

Design QA/QC Staffing Leve

Design QA/QC staffin levels will vary throughout the design phase based on the design elements being developed; however, the involvement of Steve Kuntz and Ron Jakominich will remain consistent throughout the entire design phase. Design QC involvement is anticipated to include senior staff from each design discipline as well as from subconsultant design team members. Design QC staff will be assigned for the duration of the project so that a consistent QC approach is maintained. As Design Manager, Steve will verify that QC staffing levels are appropriate, commensurate with the amount of work being complete

Construction Quality Assurance Approach

During the Project's design phase, the CQMP will be concurrently updated with the design work package development, environmental studies, geotechnical reports, and other design efforts as needed in accordance with the Minimum Requirements and presented to VDOT for approval with each Approved for Construction (AFC) work package. The QAM, the lead QA inspectors, and the QA offic engineer from MBP will review

these design efforts, estimate quantities, develop the inspection and testing plans specific to the requirements of the scope of work. Elements such as the staffin plan, inspection plan, testing plan, and inspection checklists will be updated to clearly communicate to QC, QA, and VDOT staff (collectively, the "QMS Team") the specific technical requirements for each AFC work package, and to deliver the adequate resources for the work. All updates to the QMSP will be tracked as Addendum items to the plan, all subject to VDOT review and approval, prior to implementation.

As our Team mobilizes for construction operations, the CQMP will be reviewed with the QMSP Team to clarify expectations for quality management, documentation requirements, collaboration and coordination efforts, risk management, and potential quality issue resolution. The initial construction kick-off meeting will also be a Preparatory Inspection Meeting (PIM), which is a project Hold Point. At the start of each PIM, the QAM will review the quality management approach specific to the scope of work. The specific staffing inspection, testing, and checklists approved with the AFC work packages will be reviewed with the appropriate construction personnel as well as the QMS Team members who will be directly performing the quality management for that scope of work. VDOT's project staff including the NPDES and ECI staff assigned to the Project will also be invited and engaged for their limited oversight capacities. Hold and witness points will be discussed with the entire QMS Team so that the communications plan is followed, and the appropriate staff can 'sign-off on the inspection point. The entire AWC Team will clearly understand that as the QAM, Mr. Grigg will report directly to the Design-Build Project Manager and has been granted the written authority from AWC to stop work and withhold payment when circumstances necessitate such measures to achieve and maintain the required levels of quality work.

Anticipated Preparatory Inspection Meetings:

- TTC & Temporary Construction Signage
- Temporary Pavement, Markings, and Markers
- Construction Survey and Layout
- E&SC and Stormwater Pollution Prevention
- Clearing & Grubbing
- Excavation/Embankment
- Drainage
- Underdrains
- Subbase & Base Aggregates
- Milling and Overlays
- Permanent Asphalt
- Permanent Pavement Markings and Markers
- Guardrail & Terminals
- Permanent Signage – Ground Mount
- Permanent Signage – Structural Overhead
- Roadway Lighting
- ITS – Infrastructure (Conduits, Fiber Optics, etc.)
- ITS – CCTV
- ITS – System Integration/ Commissioning
- Bridge Widening/Rehabilitation
- Bridge Foundations
- Bridge Substructure
- Bridge Superstructure
- Bridge Deck Operations, Parapets
- MSE Walls
- Retaining Walls
- Noise Barrier Walls

Regarding project records management, the QAM and the QA offic engineer will collaborate with the Construction Manager to receive, evaluate, and process sources of materials (C-25), Buy America certifications (C-76), and relevant submittals in accordance with the Materials Manual of Instructions in advance of their manufacture and deliver. MBP will review, complete, file for record, and provide the C-25 to VDOT for information and/or action. The VDOT PM will receive the C-25 for information for materials that the DB team is responsible for acceptance. The C-25's that require VDOT action in cases where VDOT maintains the QA inspection and testing responsibilities will be flagged so that VDOT responsibilities are clear. Special consideration is necessary for the acceptance/testing of ITS components and will follow the established protocols in the Technical Requirements and as defined in the commissioning plan for inspection, integration, and testing.

MBP will utilize Hurt & Proffit (H&P), an AASHTO accredited materials testing lab, and a SWaM-certified small business, to perform QA laboratory testing and support field testing as needed. The QA inspection and materials testing will be independent of the construction QC inspection and materials testing program and the Geotechnical Engineer of Record's QC efforts. MBP will provide verification sampling and testing independently from the QC. The QAM testing will be coordinated with QC so this work is done 'shoulder to shoulder' by QC and QA staff. By performing these QC and QA concurrently in the field, comparisons and reconciliation can occur in real time to minimize unnecessary deliberation, delay, rework, and/or NCR's. Non-passing tests will be immediately coordinated with field personnel for remediation and retesting, and subsequently reported for the record as part of the QA Auditing and Nonconforming Work Recovery Plan (AR Plan). When a situation cannot be immediately corrected, the AR Plan will be implemented to resolve the deficiencies in a timeframe mutually acceptable to the design build team and the Department

Materials documentation, test reports, completed checklists and daily work reports (DWR) from the QA and QC inspection teams will be compiled, reviewed, and approved by the QAM daily, and will be submitted into ProjectWise, the Project's document management system within 24 hours of each shift being completed. The QAM will coordinate with the QCM to resolve any questions related to the QC staff s reports prior to approval.

Materials documentation will be entered into the materials notebook (TL-142DB/LAP) by the QA Offic Engineer (OE) in accordance with the requirements of the Materials Manual of Instructions, Chapter VII: Materials Acceptance and Materials Notebook Program. At the point of entry, the OE will backcheck the field confirmation that materials came from approved sources with approved C-25's on file and reconfirm that the appropriate acceptance method and Buy America documentation has been provided following the 'audit' portion of the AR Plan. Each test report provided by the QMSP Team will also be entered into the TL-142DB/LAP after review and approval by the QAM, and both the QAM and/or OE will use this step to initiate the AR Plan process as appropriate.

The AR Plan will be implemented as a continuous process throughout the project, not just during construction. If an issue is identified, it gets listed in the deficiency log. If the deficiency is not correctable using conventional means and methods, does not have a corrective action plan agreed upon by VDOT prior to the next pay application, is a safety violation, or is an environmental permit violation, it then is elevated to nonconformance status and an Nonconformance Report (NCR) is issued. Continuous monitoring and regular audits of the deficiency log may identify trends for corrective action or process improvements and trigger additional investigation or elevation of a deficiency to an NCR based on repeat performance issues. At the point an NCR is issued, the QAM will include the schedule activity ID's associated with the issue so payment for that activity is not included in pay applications until it has been fully resolved.

Construction Quality Management Team Organization

Quality Assurance Manager – Dale Grigg, PE, CCM (MBP) – Mr. Grigg will provide full-time on-site Quality Assurance Management during construction reporting directly to the Design-Build Project Manager. Due to the complexity and size of this project, the QAM will have a significant planning role during the Design phase. Our Team commits to 100% full time QAM participation from day one of construction.

QA Offic Engineer/Project Records Manager (OE/PRM) – James Hinkle, CCM (MBP) – Mr. Hinkle will serve in a leadership position in the capacity of Offic Engineer/Project Records Manager. A significant part of the QAM's responsibility includes comprehensive project documentation control and review, much in direct collaboration with the Design Builder's Construction Manager and corresponding on-site offic staff. In his role as OE/PRM, Mr. Hinkle will serve as the QAM's assistant providing direct daily oversight of the administration of the approved QA/QC Plan while concurrently managing QA related document control. Additionally, Mr. Hinkle will provide redundancy for the lead QA inspectors and will provide certain

safety controls for the QA inspection staff, for example, Mr. Hinkle will evaluate all potential confined space situations prior to entry.

Lead QA Inspector, Structures & Bridges – (Kevin Lucas, MBP) – Mr. Lucas will provide full time QA of all major structure new construction and reconstruction, anticipated to be 40 – 50 hours per week. This will include the structural portions of ITS and overhead signage. The schedule will be adjusted as necessary to provide leadership and guidance to support QA inspectors and technicians, and to provide coverage of critical work items and hold or witness points during either weekend and/or nighttime activities as applicable. Mr. Lucas is fully certified by VDOT, DEQ, and ACI and holds the requisite safety training to perform his duties.

Lead QA Inspector, Roadway & Environmental – (Korey Hines, MBP) – Mr. Hines will provide full time QA of all roadway new construction and reconstruction. The schedule will be developed to provide coverage of critical work items such as the twice-weekly construction runoff control inspections and hold or witness points during either weekend and/or nighttime activities as applicable. Mr. Hines is fully certified by VDOT, DEQ, and ACI and holds the requisite safety training to perform his duties.

QA Inspectors – Structures & Bridges, and Roadway – (MBP) – The QA Inspectors will support both the lead QA inspector for structures and bridges, and the lead QA inspector for roadway. Initially, two (2) full-time inspectors will be employed once construction has mobilized and the workload is justified. However, in concert with both the Project Schedule, weekly workplan and approved QA/QC Plan requirements, additional staff will be provided as needed on a part-time interim basis. Generally, the QA inspection team will be assigned to cover between one to three crews depending on the specific inspection requirements associated with the specific scope of work

QA Technicians – Structures & Bridges, and Roadway – (MBP/H&P) – The QA technicians will support and supplement the QA inspection team's field materials testing activities on an as needed basis. All QA technicians will possess the required VDOT, ACI, and nuclear safety certifications for their respective roles and responsibilities.

QA Laboratory – MBP will utilize the services of Hurt & Proffit (H&P) an accredited laboratory, for all QC lab testing requirements. All laboratory results will be compared with QC Laboratory results and any found discrepancies/non-compliance issues will be addressed immediately by the QAM and the QA team.

Construction Quality Control Approach

AWC's construction QC approach mirrors the design QA/QC philosophy of PLAN-DO-CHECK-ACT. This 4-step approach provides the QAM and VDOT the confidence that the work was done correctly, the inspections occurred, and proper documentation was recorded and distributed.

Step 1 – Work Plans for Definable Features: The QCM will initiate and track development of the Work Plan for every new construction activity in conjunction with the Superintendents and Project Engineers to incorporate safety and quality procedures.

- **PLAN**: Evaluate the work to be done, whether across scope or for just a single day. Establish what success looks like. Identify all hazards and how you will address them.
- **DO**: Execute the plan as it was written. If circumstances change or if conditions arise that were not accounted for in the plan, stop. Re-evaluate and move ahead according to the new plan.
- **CHECK**: After the work is complete, evaluate the results. Did the plan work? Are there things that should be improved in the plan moving forward? Are there things from the original plan that were not covered?
- **ACT**: Make adjustments and create a new plan based on the evaluation. Begin the cycle again.

Step 2 – Develop/Review Quality Checklist: The Quality Review Checklist is a comprehensive listing of

all the items and tasks that need to be accomplished prior to the work activity occurring. It includes the following items:

- Items to be inspected/verified
- Hold Points where work is halted until inspections and signoffs occur
- Signoff by multiple parties including the foreman, superintendent, quality control inspector, and the quality assurance inspector;
- Material Testing Requirements such as number of concrete cylinders to be made, additional concrete tests, and material certifications received

Step 3 – Review/Utilize Operational Checklist: The operational checklist describes items that occur during the specific construction activity (i.e. concrete placing operation - method of placement, when cylinders and concrete tests occur, and vibration and its interval).

Step 4 – Utilize Post Construction Checklist: The Post Construction Checklist identifies when tests occur occur and when test results reports will be distributed and to the project team, QC, QA, and VDOT.

Staffing Plan - Construction Quality Control (QC)

The QC Team, led by the CM, has the training and experience required to properly execute the quality program. Our approach and commitment provide assurance to VDOT that quality will be addressed and allow the Department to minimize its oversight resources. An outline of our QC resources and responsibilities is as follows:

Construction Manager (CM), *Kevin Kegebein, Archer Western Construction, LLC*

Time Commitment:

- Design Phase: Estimated at 25% - 50%
- Construction Phase: 100% from Notice to Commence Construction completion to Final Completion

As a Key Personnel, Kevin has overall responsibility for construction, safety and the QC Program. During the Design Phase he will focus his efforts on constructability review of the plans, planning means and methods of construction, and coordinating with the Design Team to accommodate those means and methods by the final design details. During Construction, he directs and manages day-to-day construction activities, monitors and updates the schedule, coordinates with the utility discipline, and oversees the QC Program. He inspects and reviews that all construction is in accordance with the Project requirements and will be on the Project site full-time for the duration of construction operations.

Quality Control Manager (QCM)

Time Commitment:

- Construction Phase: 100% from Notice to Commence Construction completion to Final Completion

Reporting to the Construction Manager, the QCM is responsible for construction quality control and oversees quality control testing and inspection activities. The QCM assigns inspectors and testing technicians for each work package and monitors reporting documentation so that the work is completed per Contract requirements. The QCM will assign two full-time QC inspectors – one for roadway and one for structures/bridges (to mirror the QA organization). Additional inspectors and testing technicians will be utilized when required by the schedule to in order to provide sufficient coverage during construction.

QC Inspectors/Testing Technicians

Time Commitment:

- Construction Phase: 3-4 Roadway Inspectors at peak of construction, one full-time Senior Structure/Bridge Inspector during bridge construction, two support Structure/Bridge Inspectors during peak periods

QC Inspectors and Testing Technicians will be utilized at ratios to support covering the volume of ongoing construction activities at any given time. These Inspectors and Testing Technicians hold applicable certifications for the materials they are inspecting and testing

QC Office Engineer

Time Commitment:

- Construction Phase: Estimated at 50% - 100%

A QC Office Engineer, reporting to the QCM, will be assigned and responsible for daily coordination with the CM to schedule the appropriate QC inspection and testing for the upcoming work.

Our Team utilizes a Daily Activity Report (DAR) Form to communicate to QA, QC and VDOT the upcoming work for the next day. Details such as scheduled MOT setups, concrete pour times, aggregate base production rates, and subcontractor activities are provided. The QC Office Engineer will also collect and review all Inspector Daily Reports (IDR's) and organize the reports for concise and timely submission to the QAM. The use of the QC Office Engineer checks that the inspectors are in the field, reviewing and verifying the work.

4.5: Construction of Project

4.5 - Construction of the Project

4.5.1 Sequence of Construction

The development of the sequence of construction for this project has been a collaborative effort between construction staff and designers responsible for TTC/MOT design, roadway design, bridge design, drainage and stormwater management design, noise barrier design, environmental permitting, and utility coordination and design. All of these groups met on a weekly basis during the proposal development process to result in an efficien sequence of construction that upheld safety as paramount, aimed to significantly reduce impacts to the traveling public, and achieved early delivery of both unique milestones as well as full project completion. Some of the enhancements incorporated into our sequence of construction are as follows:

- Sequencing the project in a manner that achieves the following safety enhancements:
  - Eliminating full median crossovers of I-81 for bridge reconstruction, significantly reducing the driver complexity of navigating the work zone;
  - Providing full 10' shoulders instead of the RFP 8' minimum shoulders; and
  - Providing full 12' lanes for Stage 2 of construction.
- Provides the following community impact and mobility enhancements:
  - Restricting the closure of Goodwin Road to one period of not to exceed 60 days. Closure to take place during the summer "non-school" months. RFP allows multiple closures with overall time not to exceed 60 days;
  - Self-limiting lane closure hours by 30 minutes to reduce the likelihood of stopped/slow traffic from 8:00 PM to 8:30 PM per preliminary traffic queue studies; and
  - Opening the 3rd NB thru lane in Area 4 early (Unique Milestone #1) and Route 112 Ramp D Spur early (Unique Milestone #2) providing the benefit of added capacity a full year prior to project completion.

Schedule Integration and Construction Areas

We established the general flow and stages of the project in order to provide safe and efficien work zones and travel ways through the project and developed our construction stages as described above. In order to reduce the project time we will break the project into four areas (given in NB Stationing) with area construction

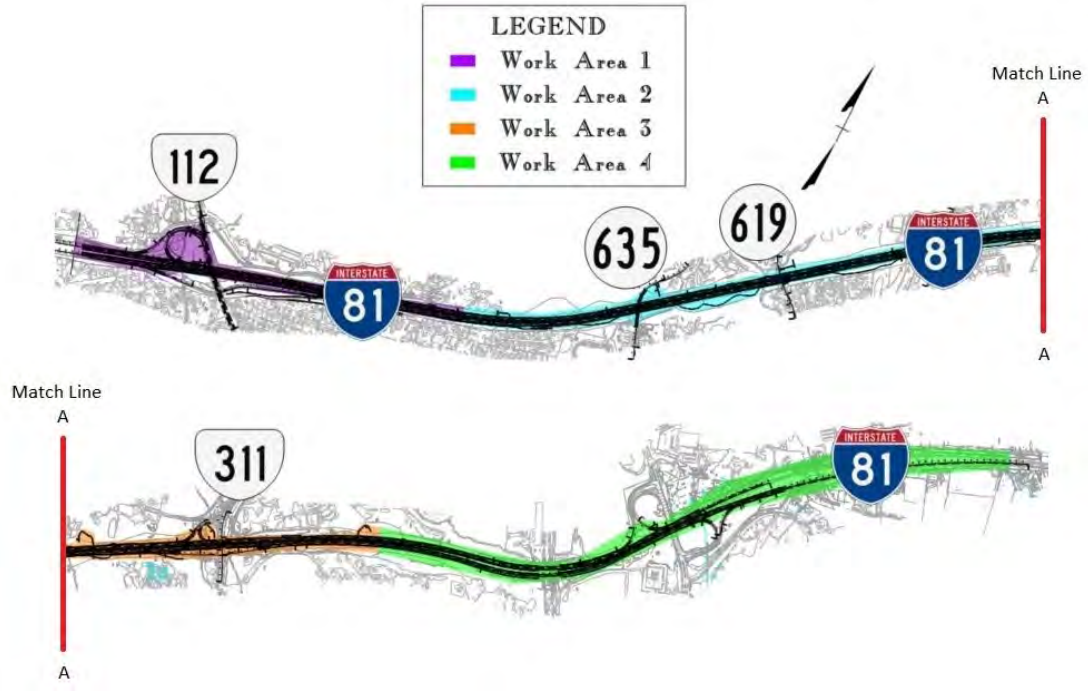


Figure 4.5.1- Project work areas

teams assigned to each area.
Area 1 – Sta 100+00 to Sta 175+00

Area 1 starts at the southern limits of the project and includes the RT 112 bridge replacement. It also has the second most drainage culverts with almost 5,900 LF installed in this area with three jack and bores under I-81. Concrete median barrier starts just south of the RT 112 bridge and continues to the limit of the area at Sta 175+ 00, typical to other locations. The southern end of the noise barriers starts on the east side just north the Rt 112 bridge.

Area 2 – Sta 175+00 to Sta 245+00 (Rt 705)

Area 2 includes two bridge replacement (RT 619 and RT 635) which will be reconstructed in two stages. This 7,100 LF has the most drainage work with 10,400 LF of new culverts and seven jack and bores under I-81. Concrete median barrier will be constructed for the full length of the area. Noise barriers will be placed along the entire east side of the roadway.

Area 3 – Sta 245+00 to Sta 312+00

This area includes the RT 311 bridge which will be widened and rehabilitated in four stages due to the deck overlay and replacement of the existing bridge joint. This area has 5,700 LF of drainage culverts with four jack and bores under I-81. Due to the median width concrete median barrier will be placed for the entire 6,700 LF. Noise barrier will be constructed on the east side just south of RT 311.

Area 4 – Sta 312+00 to Project end. (6,475 LF)

This section of the project ties into the existing VDOT widening project to the north. Area 4 has no bridge work, only three drainage jack and bores under I-81, a wide median which requires only 1,900 LF of median barrier and 2,800 LF of drainage pipe and only two row parcels need to be acquired.

This division of the project allows the construction team to be able to focus on smaller areas of the project while the Project Management team will continue to guide and monitor the overall project.

Sequencing Details
Our Team evaluated two global sequence options to construct this project. The first, as presented in the RFP, was to construct traffi crossovers allowing for bridge construction in one direction to be performed in a single operation. The second was to shift traffi within the existing travel lanes (SB stays on SB and NB stays on NB) and construct the bridges in phases. Our evaluation centered on the construction effort required to place crossovers as well as safety related issues involved with the large traffi movements required to move traffi between roadways. Grade differential between NB and SB roadways required extensive wedge overlays on existing pavement and undesirable profiles to implement the crossovers. Considerable effort was directed at ways to eliminate partial construction of permanent travel lanes as was required in the RFP and is the sequence of construction to the current adjacent VDOT project to the north. The approach we are presenting, which we believe to be safer and more economical, is to eliminate the expensive and large crossovers by widening the existing pavement section. Gradual lane shifts are designed to meet 65-mph design speed reducing the likelihood of incidents. Construction protection zones will be configured by shifting traffi while maintaining an overall 34' wide temporary roadway section. SB traffi will remain on the SB roadway and NB traffi will remain on the NB traffi lanes eliminating adjacent opposing traffi anywhere within the project limits. Bridge construction will be done in phases. Drainage, noise barriers, ponds, ITS, lighting, and culvert rehabilitation work will be performed as access to the work is available during various stages.

Our sequence of construction also focuses on minimizing the amount of traffi switches necessary in order to enhance safety. To that end, all major work activities are completed in two major stages

(Stage 1B and Stage 2). New median travel lanes on both NB and SB roadways will be the first major stage of construction, defined as Stage 1B. After median widening is complete in each area, traffi will be shifted to towards the median to complete Stage 2 outside widening and rehabilitation.

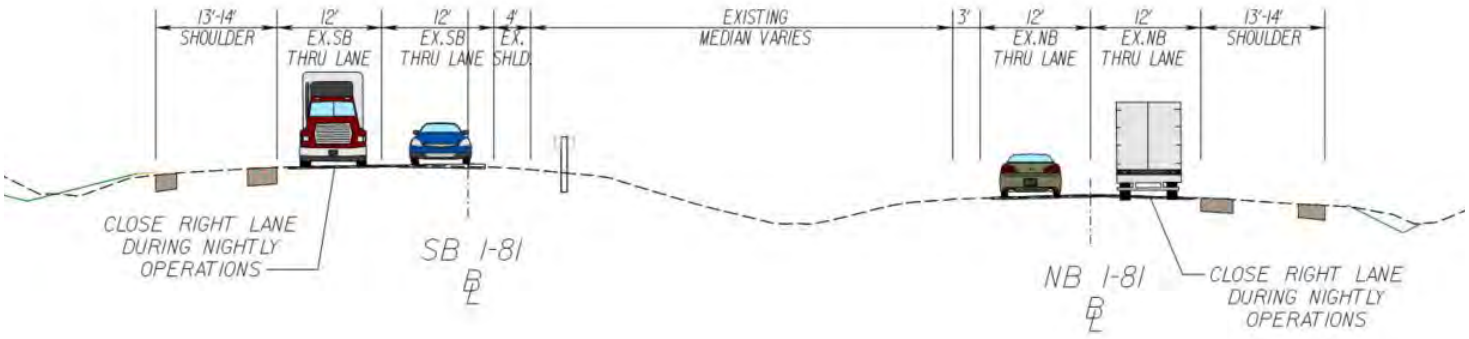


Figure 4.5.2 - Stage 1A Sequence of Construction

Stage 1A

New median travel lanes on both NB and SB roadways will be the first major stage of construction, defined as Stage 1B. To create a safe construction zone for the median widening work, traffi will be shifted to the outside using the existing shoulder as part of the required 34' travel lane section. In order to accommodate this, Stage 1A construction will comprise of existing shoulder strengthening and widening (see Figure 4.5.2). A 3' strip of shoulder adjacent to the existing roadway will be milled and reconstructed to be part of the temporary outside lane, designed to accommodate the loading of truck traffic The area along the outside edge of the existing shoulder will be widened. Existing guardrail in conflict with the widening will be removed and reset. This work will be accomplished using nighttime lane closures. Once the shoulders have been strengthened, traffi will be shifted to the outside allowing temporary concrete barrier to be placed on the inside lane shoulder creating a safe work zone for median lane construction. Construction access/entrances will be spaced a minimum of one mile. Existing pavement markers and markings will be eradicated and removed. New markers and markings will be provided to align the traffi into 11' travel lanes with a 2' inside shoulder and an 8' outside shoulder. Shoulder strengthening will commence in both directions simultaneously, beginning at the north and south ends of the project.

STAGE 1B

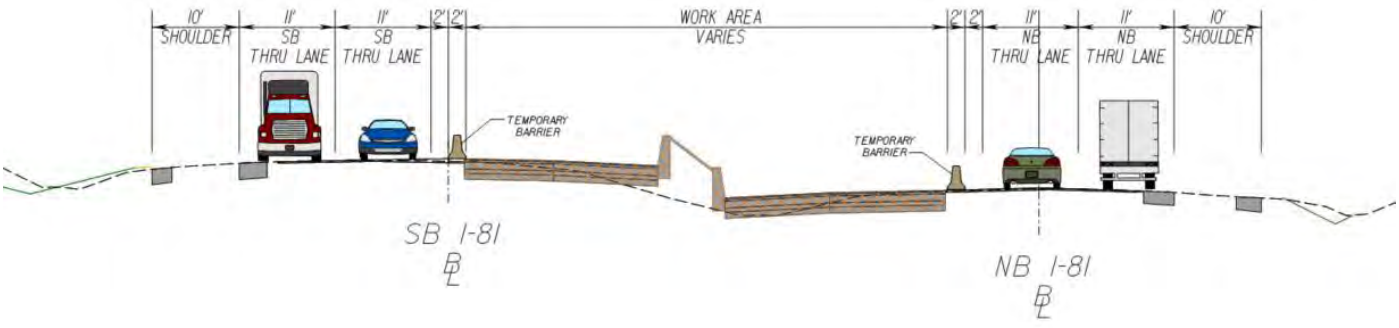


Figure 4.5.3 – Stage 1B Sequence of Construction

Once the median construction zone has been established, work on constructing the new median lanes of both NB and SB roadways commences as well as the first stage (median stage) of the bridges (Rt 112, Rt 635, Rt

619 and Rt 311).The existing median is mostly void of trees so clearing and grubbing operation will primarily consist of removal of existing topsoil. Excavation and embankment will progress based on balancing the cut and fill within the median limits.

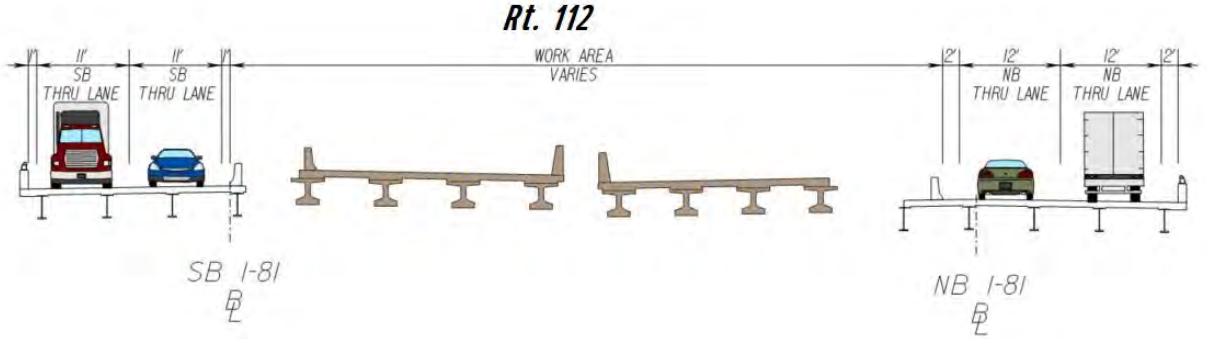
Establishing drainage is not only key to the safety of the traveling public by eliminating ponding in the travel roadway section but also for maintaining construction schedule by allowing water to drain from the work site rather than saturating the subgrade. Almost 18,000 LF of 25,000 LF of new culverts ranging in size from 15" to 60" will be installed. To minimize impact to I-81 traffi 17 pipe runs will be jacked and bored under I-81. Two to four drainage crews and two jack and bore crews will be utilized to construct the median drainage system.

New SWM facilities will need to be constructed in a timely manner to handle the runoff whether during construction or in final configuration. Six of the twelve SWM facilities will require ROW acquisition and are included in the priority one group of acquisitions. Of the twelve, three facilities are on the NB roadway and nine on the SB roadway. Along the west side of the SB roadway all SWM facilities handle runoff from the median of I-81 and will be developed during Stage 1B. Two facilities, No's 3 and 5 are east of I-81 and handle runoff from the median. These two facilities will also be constructed during this phase. Where these facilities are located within the clear zone of I-81, they will be protected by either concrete barrier or temporary guardrail.

Site conditions require a variety of permanent median barrier types throughout the project including standard-single and double-faced constant slope barrier, bifurcated barrier wall combinations with and without concrete cap, modified constant slope barrier and traditional guardrail. Stage 1B construction requires over 36,000 LF of concrete barrier and over 7,000 LF of guardrail. Construction of barrier walls will start after the drainage, underdrain and initial grading operations are completed.

Underdrain, final grading and aggregate base will start in sections without barrier walls. Once barrier walls are completed final grading and aggregate base will be placed followed by final paving and guardrail. Bridge replacement will be done at RT 112, RT 635 and Rt 619 and the work will be done in two phases. Four girder lines for each bridge (both NB and SB) are included in this phase of bridge reconstruction. Work will start at RT 112 with a single heading of demo and piledriving. Once piles are completed additional crews will be engaged to complete each bridge. The rehabilitation of Rt 311 bridge commences with the addition of a single girder line on the SB bridge and 2 girder lines on NB. Bearing replacement for all existing beams will be done during this phase. New end joint and deck overlay will be completed within the limits of Stage 1B construction.

The three new bridge replacements (RT 112, RT 636, RT 619) will have shorter spans than the existing bridges. Support of Excavation (SOE) will be required to both contain newly placed fill material and support existing roadways where excavation will occur adjacent to existing travel lanes. Temporary wire walls, sheetpile and soldier piles with lagging and tie backs will be used as SOE systems. For the Rt 311 median reconstruction a SOE system supporting 26 ft high vertical face will be driven prior to excavation and demolition. Preliminary design of the SOE indicates tie backs will be required as part of the SOE system.



Bridge replacement at RT 112, RT 619 and RT 635 Stage 1B construction

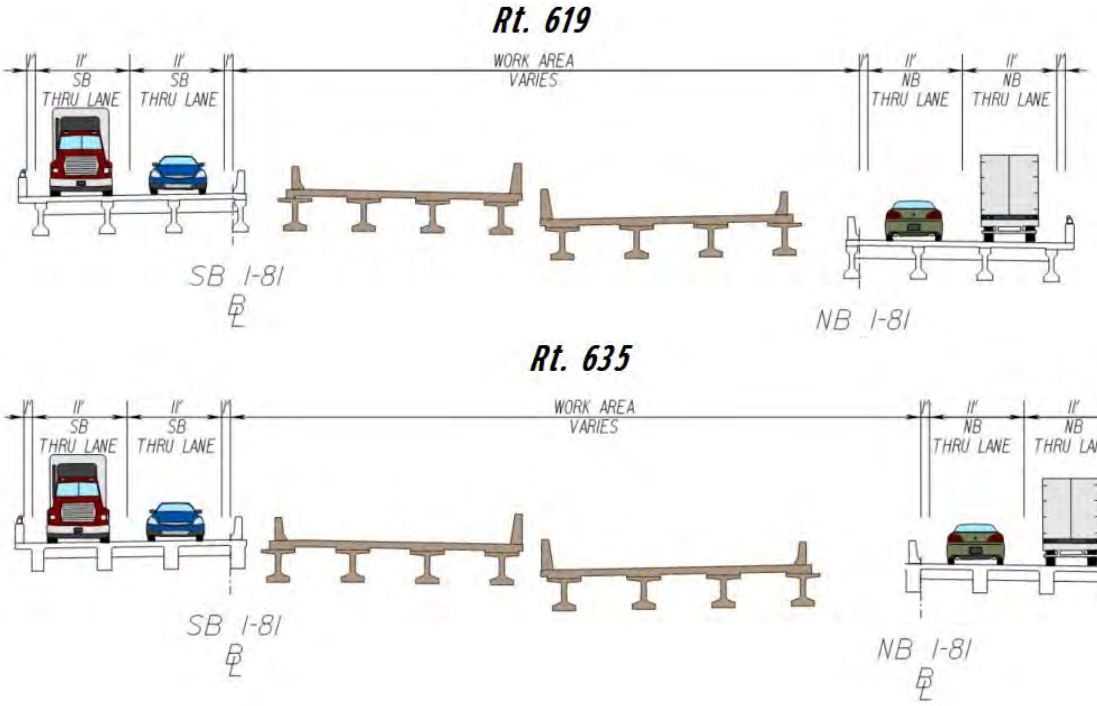


Figure 4.5.4 – Stage 1B Construction Bridge Replacement RT 112, RT 619 and RT 635

Bridge Rehabilitation Rt 311 Stage 1B Construction

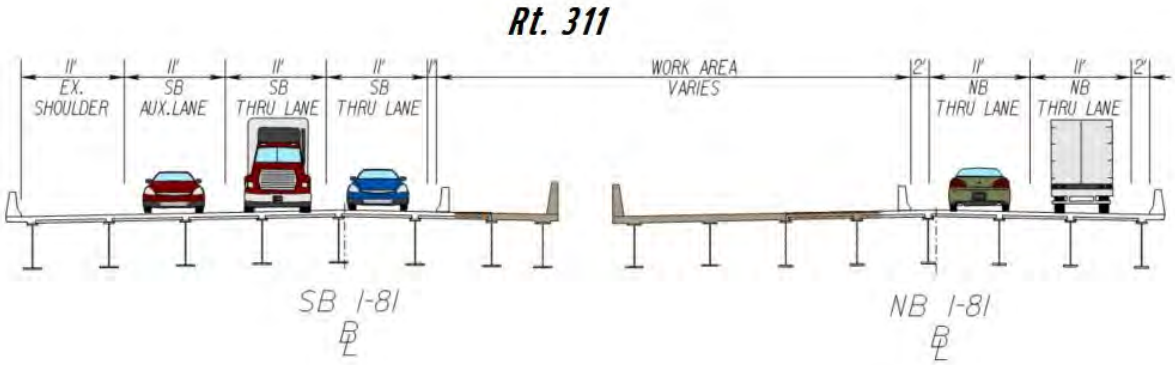


Figure 4.5.5 – Stage 1B Construction Bridge Rehabilitation RT 311

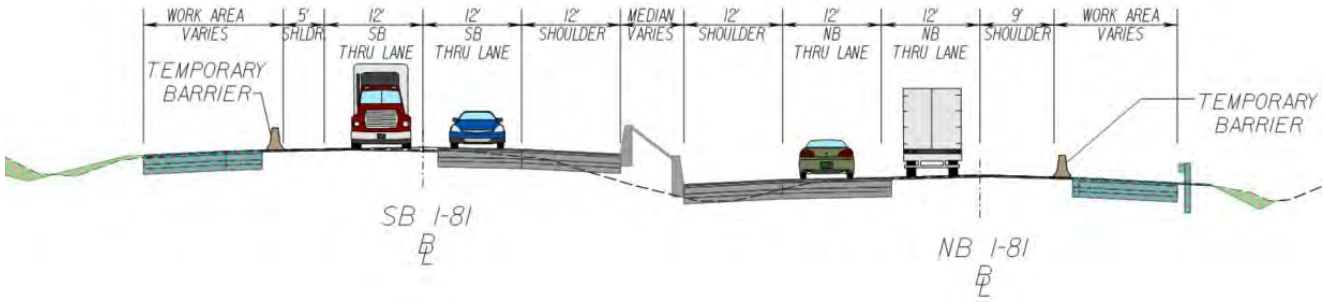


Figure 4.5.6 – Stage 2 Sequence of Construction

STAGE 2

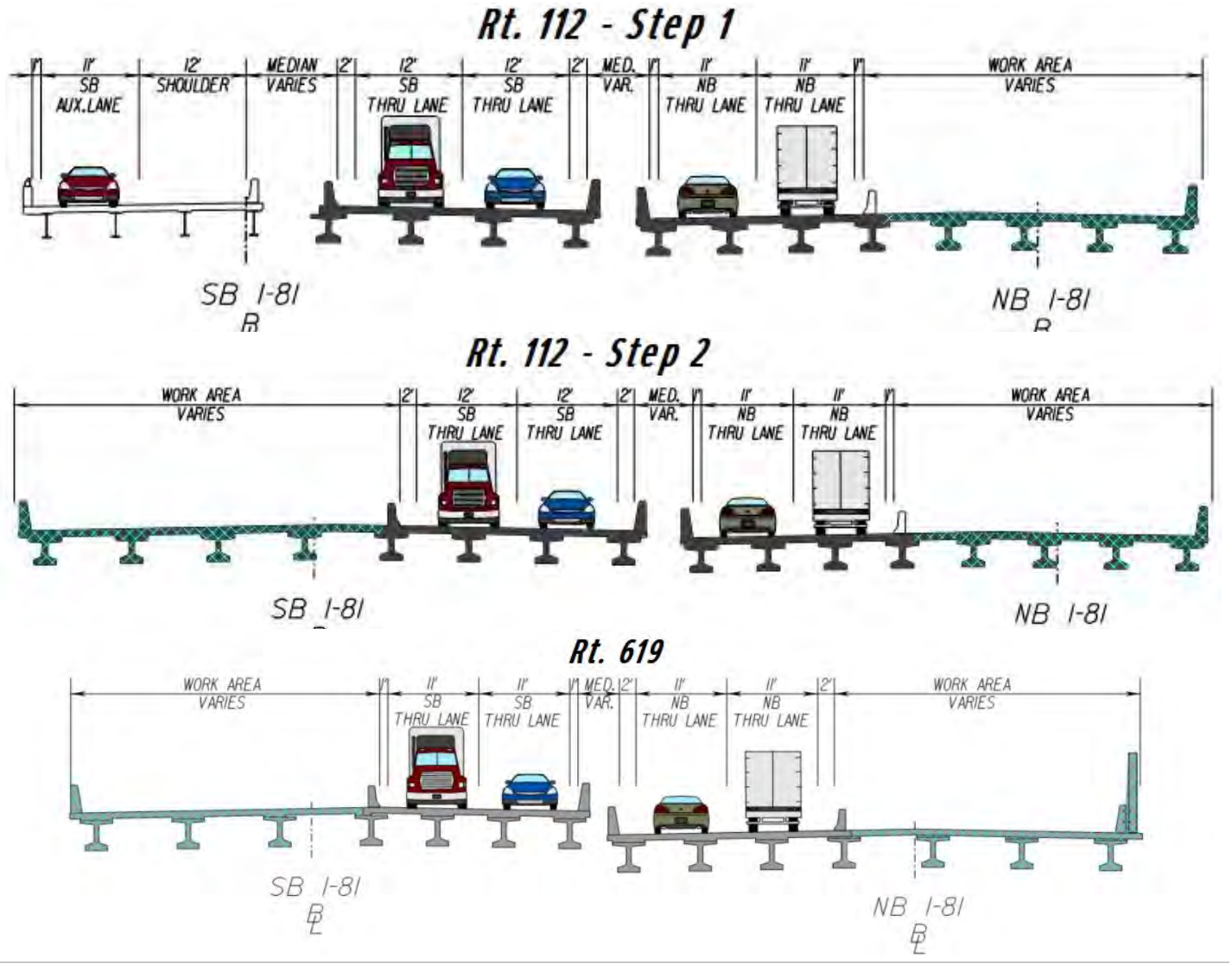
Stage 2 begins with the relocation of concrete barrier from its Stage 1B location to outside edge of the existing pavement. Traffi will run on the newly constructed median section using 2-12' lanes with 12' inside and 9' outside shoulder (except for bridges). Reconstruction and widening of the existing outside shoulder will be completed during this stage. Barrier relocation will start from each end with two headings. Once the work zone protection is established rebuilding the new outside shoulder will commence.

Excavation, underdrain and rebuilding the pavement section will progress with two headings. On the west side of the project final slope grading will follow completion of retaining walls and culvert extensions. In order to provide timely completion of the noise barrier, two headings of noise barrier construction will be working on the east side of the project.

Construction of the remaining SWM facilities (No. 2 & 7) are included during this stage as well as the completion of final access, final grading and stabilization of all SWM facilitie
Once Stage 2 roadway work is competed in Area 4, the 3rd lane in each direction will be opened to traffic expediting the operational benefit of the permanent capacity between Exits 140 and 141

Bridge replacement for Stage 2 of the RT 112, RT 635 and Rt 619 overpass bridges will be done in the same order as Stage 1B. The final four girder lines will be constructed in this Stage completing the work on these structures.

Bridge replacement at RT 112, RT 619 and RT 635 STAGE 2 Construction



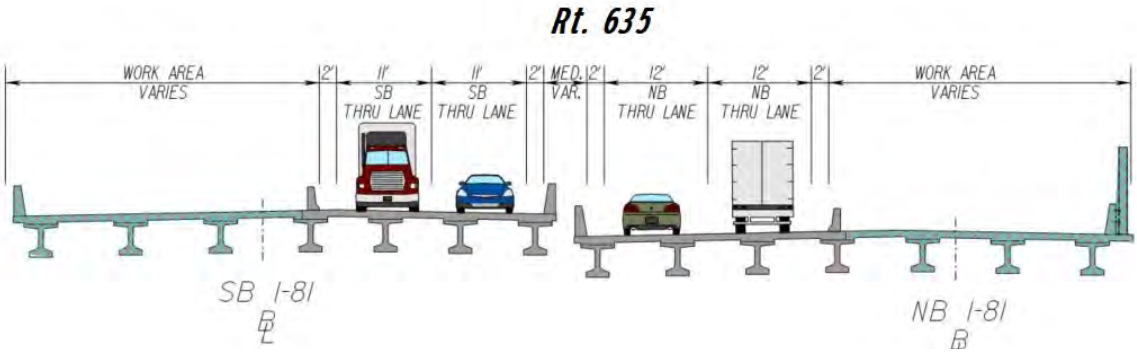


Figure 4.5.7 – Stage 2 Construction Bridge Replacement RT 112 (step 1 and 2), RT 619 and RT 635

replacement and parapet upgrade will be done on both the NB and SB bridges within the limits of Stage 2 construction. SOE for the SB widening is similar in height to the median reconstruction. The SOE system will be designed for a full height of 25' with traffi surcharge loading as required. Soldier piles with lagging and tie backs is our planned SOE system. There is no widening of the NB bridge on the outside in this stage.

Additional traffi lane shifts will be required to complete the rehabilitation of the RT 311 SB bridge, given

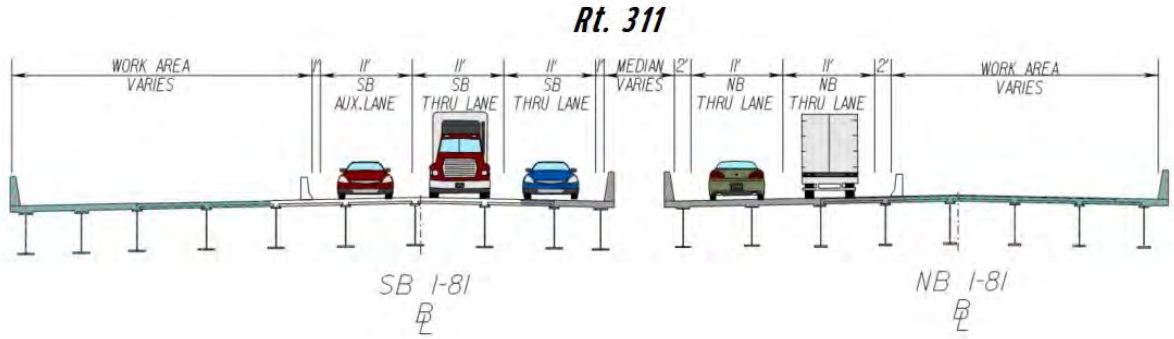


Figure 4.5.8 – Stage 2 Construction Bridge Rehabilitation RT 311 Step 1

that three lanes exist on this bridge. To accomplish this, Stage 2 Step 2 and Stage 2 Step 3 have been developed in order to maintain the full-length deceleration lane at all times during construction. After the widening is completed in Stage 2, 3- 11' lanes will be shifted to the outside of the SB bridge while deck and joint rehab takes place connecting the new median deck (Stage 2 Step 2). One more shift will take place with 2 – 11' lanes being shifted to the inside with the 12' exit lane remaining in the far outside lane (Stage 2 Step 3). Once this is complete, final deck overlay and joint replacement can then be completed.

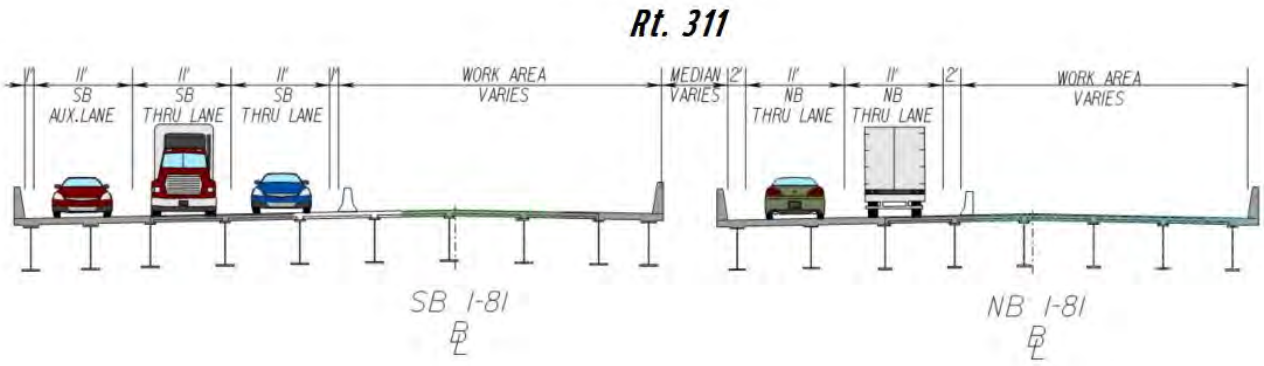


Figure 4.5.9 – Stage 2 Construction Bridge Rehabilitation RT 311 Step 2

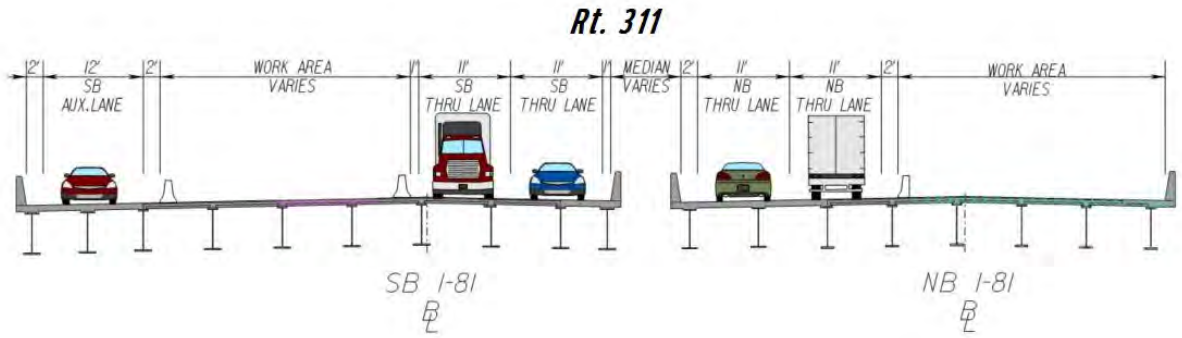


Figure 4.5.10 – Stage 2 Construction Bridge Rehabilitation RT 311 Step 2

Relocation of existing utilities and ITS facilities are identified in our utility matrix. As explained in Section 4.5.2, a detailed plan has been developed to maintain all existing ITS facilitates continuously during construction. Relocation of utilities identified on our Utility Matrix as having conflicts with construction will be scheduled to be completed prior to commencement of construction activities impacting the utility. This also includes the plan for temporary utility connections, such as the maintenance of ITS communication fiber during bridge reconstruction as detailed in Section 4.4.2. Citizens and VDOT have facilities throughout the project and coordination with all stakeholders will continue throughout the construction schedule.

New lighting is located on the outside edges of the roadways and will be installed as final slope grading is completed and as barrier protection in front of noise barriers is constructed.

STAGE 3
Once median and outside widening work is complete final milling and overlay can be completed, and the 3rd thru lanes will be opened in each direction in Areas 1, 2, and 3. Temporary lane shifts may occur to economize the overlay operation.

Other Major Work Elements
Three existing box culverts will be extended to match the newly graded slopes. Extensions will be completed during the Stage where access and slope grading is done. Structural repairs and slip lining existing culverts will be done throughout the life of the project and be scheduled during times where rainfall projections are lower than normal with consideration toward being able to keep sufficien capacity to eliminate localized stormwater flooding.

Concrete repairs are slated for the overpass bridges on Rt 419 and Rt 705 including anodes, substructure concrete repair and concrete slope protection. The work will be performed during the related stage of construction.

Safety
Safety is the core of our organization. It is imperative to the future of our employees and company that “No One Gets Hurt.” Our corporate safety program demonstrates the AWC Team’s commitment to safety and is evidenced by our best in class safety rate of 0.72. Our culture extends not only to our employees, but also our clients, subcontractors, vendors, third parties, and the public we encounter along the way.

Safety is personal, and it begins with each employee connecting personally with their peers and co-workers. Jeff Mays will set this tone from the beginning, expecting management to have open door policies, walking the field discussing safety with all craftsmen, leading safety meetings, and sharing his project safety stories to assure everyone that safety is personal to him.

Our Project Safety Manager will build relationships with the entire job team. Relationships are the key to making Safety personal. The Safety Manager will be supported by a team of safety professionals to assist with

training, reporting, creating hazard analyses, indoctrinations, Reviewing Employees Actions and Performance (REAP) cards, and inspections.

One key component to a successful safety program is the involvement and buy-in from the craft. Each craft type will have a safety ambassador that will be part of the Craft Safety Committee. This committee will report concerns to the DBPM each week, go through leading indicators and plan for that week's safety tour based on the weekly meeting and 3-week schedule.

Our design and construction approach establish a clear separation of construction activity from the traveling public. As interactions are eliminated, safety performance is increased. Each entrance and exit to the worksite will be identified with signs and illuminated so the traveling public knows to expect construction traffi and can begin maneuvers ahead of time.

Design

Safety begins with our design. Our Project Safety Manager, will be a part of our design review process, in particular TTC/MOT, working hand in hand with the design team to assure we are considering the safety of our employees and the traveling public first and foremost.

Safety will be integrated into the TTC/MOT design by providing a plan that provides the protection of the field staff and the traveling public in this highly traveled corridor. We will do this by carefully assessing construction ingress/egress points, eliminating temporary crossovers, minimizing traffi shifts and exceeding the required minimums for clear zones, shoulder widths, and other elements, where possible, based on work zone constraints. Safety is incorporated into the design process for final design elements including balancing earthwork and vastly reducing sliver paving to minimize truck traffic entering/exiting the projec

Planning

Planning for safety is an important first step to creating the project work plan. A full work plan will be created for every major operation. As an integral part of the planning and scheduling process, work plans will be developed with involvement from the Construction Manager, the Entrusted Engineer in Charge (EIC), the Safety Manager, QA and QC Managers, Superintendents, and Field Engineers. Each work plan includes a step by step procedure to complete the work. Each of these steps include an area in which hazards are identified and a work around, elimination plan, or PPE is prescribed to deal with the hazard properly.

Once a week each crew is required to review their work plans and step by step hazard analysis. The crew will modify this living document each week based on any hazards not identified, location changes, or revisions to the step by step procedure. Each crew member will sign this document each week and assure it is up to date and relevant.

Every day the crews will start the day with a morning huddle where the operation plan for the day is discussed including review of a task hazard analysis for what is to be done that day. The morning huddle is a chance for all employees to have a voice and identify what they see as safety hazards. A Task Hazard Analysis (THA) will be completed every day no matter how big or small the operation. The THA will address location access concerns, relevant housekeeping issues prior to starting the day, and any weather or other location specific issues that need addressed prior to beginning of shift.

All foremen and project construction staff will be required to participate in the Reviewing Employees Actions and Performance (REAP) program once a week. The REAP program is intended to bring the staff and craft together to discuss safety and improvements that can be made to operations to promote health and safety. The staff person will observe an operation and document any issues, concerns or accolades. The staff person will discuss those items with the crews on the spot.

A weekly job wide meeting will be held each Monday morning to discuss hot topics for safety, quality compliance and schedule. All personnel will be present at the meeting which will be chaired by the Construction Manager. This simple meeting will allow the craft and staff to build a solid and trusting relationship and make sure that

the entire job team is focused on the safety and schedule goals for the project.
To maximize public safety throughout the project, design and construction will be coordinated with the adjacent VDOT project to the north along with any other VDOT or local municipality project in our footprint. The AWC team will share information and meet regularly with the adjacent project design and construction staff to coordinate maintenance of traffic overhead signing throughout the corridor, and interface points including the horizontal and vertical tie-ins of roadways.

Table 4.5.1 - Weekly Safety Items

Monday	Tuesday	Wednesday	Thursday	Friday
Weekly Safety Meeting THA Review	Weekly CSC / DBPM Meeting THA Review	Weekly CSC Safety Walk THA Review	Safety Team Walk THA Review	THA Review

Training

Our safety plan and programs evolve through the life of a project to address specific needs and changing conditions. The AWC Team has many practices and programs that will be utilized during the Project. Through the life of the project these programs will be refocused or modified to account for current situational needs. Our Safety Manager will lead the safety program which will include the following major items:

- Indoctrination: This is perhaps the most important tool we have to assure all our employees start off on the right foot with the information and initial training they need to do their job. At indoctrination, our Safety Managers, Construction Manager, and Design Build Project Manager have an opportunity to connect with each employee first thing to "set the tone and expectations" for safety performance on the job.
- REAP Program: Each foreman and salary employee will be required to complete a REAP card each week. The purpose is for each employee to step back and watch an operation in progress for 5-10 minutes. A brief write-up of observations, both good and bad, will be discussed on the spot with the crew and improvements made or accolades given. These simple interactions will help assure we have the right tools, best access, and build a team that trusts one another to make sure we all go home safely.
- Near Miss Program: We encourage our employees to call out "Near Misses" when they see them in the field. The employees verify a near miss, stop and correct the action and then notify their Superintendent so that the near miss can be turned in to our Safety Department. These near misses are tracked in a database that will identify leading indicators for determining training needs.
- Craft Safety Committee: Each craft group (operators, laborers, carpenters, electricians, etc.) will nominate a Safety Champion to be a part of the Craft Safety Committee (CSC). The CSC will be responsible for a weekly jobsite safety tour. On this tour, they will meet with their peers, discuss operations, and listen to any concerns the employees might have. The CSC will meet with the DBPM and Safety Manager once a week to discuss the tour and voice any concerns from the craft on how to improve on safety (tools, access, personnel, etc.). During this meeting the group will also discuss upcoming operations or safety trends to focus on during the next week's walk. The CSC members will be identified to each new hire during their indoctrination process
- National Construction Safety Week: AWC is an active leader in this annual event dedicated to re-focusing attention on safety throughout the construction industry. During safety week, AWC will participate in many activities to train all craft, subcontractors, clients and designers on the hazards of our project. Items like Safety Rodeos are led by our craft and are excellent opportunities where craftsmen or experts will train the entire project team on their operations or areas of expertise.
- Celebration and Recognition programs: Celebration and recognition programs that will reward positive behavior and achieving milestones relating to safety will be established. Examples are

project giveaways (hats, shirts, mugs, coats) and lunches (both crew specific and job wide)

- Training: The AWC Team provides comprehensive safety training for all employees to competently complete their work while building a culture where everyone looks out for each other. Some of the specific training classes we will provide are
  - OSHA 30 for all foremen and up
  - OSHA 10 for all employees
  - Equipment Trainings – crane, manlift, forklift
  - Excavation and Trench Safety
  - Confined Space
  - Fall Protection
  - First Aid / CPR – all foremen and up

Measurement

Our safety performance will be measured by many tools. These tools include but are not limited to:

- REAP indicators are tracked monthly to assure we are improving on the areas that needed focus per our staff and foremen inspections
- Monthly safety audits from off-site management personnel ("outside set of eyes") to assure we are not missing any key details. Audits are reviewed with the DBPM and job team and action items will be assigned to specific team individuals.
- Weekly craft safety committee will tour the project and advise their peers on issues or corrections that need to be made, they will also be able to inform the DBPM of concerns or issues in the field that need to be addressed.
- Manhours will be tracked per foremen / superintendent along with their near misses, first aids, recordables, and restricted duty cases. Trainings will be targeted to groups as needed based on improving safety performance.

Data tracked and compiled as described above, will be used to modify and plan our safety programs, trainings, and incentives. The Craft Safety Committee feedback will help us to improve operations, assure we have the needed tools and resources to assure No One Gets Hurt.

Operations

Our approach to operations includes assigning separate construction teams to each of the Areas. This allows a smaller staff to focus on constructing a smaller portion of the Project while allowing senior staff to guide, plan and monitor overall project operations. Area staff will be assigned the resources, labor and equipment, required to meet the construction schedule. Senior staff will manage schedule and production and adjust resources in order to maintain the project schedule.

All areas will start together in Stage 1A and then move to Stage 1B. AWC has built a preliminary Linear Schedule (see Figure 4.6.2.1 in Section 4.6.2) to maximize resource utilization and keep crews productive for the duration of the project. For example, after the traffi switch to Stage 1B, multiple earthwork and drainage crews will start progressing their way linearly through Areas 1 and 4 and then proceed into Areas 2 and 3. Bridge demolition will start at the RT 112 bridge and proceed north (1 heading). One pile operation to include SOE and pile driving will follow the bridge demolition at Rt 112 and proceed north (1 heading). As Stage 1B is completed in Areas 1 and 4, traffi will be shifted to the inside, allowing work to begin on the outside. Additional traffic shifts will be required to complete the rehabilitation work at the Rt 1 bridge.

Switching traffi into Stage 2 opens up the outside of I-81. Stage 2 opens up access to the noise barrier work on the east side of the project. Multiple crews will work on completing the noise walls. Dedicated crews will be assigned to erosion and sediment control and maintaining MOT for the length project length.

Once Stage 2 is complete the final mill and overlay operation will work through the Project. As work progresses, schedule and production will be closely monitored to identify activities that have challenges that may require

the addition of resources to maintain the project schedule. Weather, production rates, and unanticipated conditions can provide challenges to the project team to keep the Project on time and within budget. Having multiple construction teams being able to focus within an area and communicate back to the DBPM, EIC and CM, will allow quick identification of issues that may impact the overall project schedule

Staging and Storage

We have identified two VDOT owned land parcels that have potential to serve as areas for placing temporary office and /or construction yards. Just NW of the RT 112 interchange there is an existing borrow pit/industrial zoned property that we have investigated as a possible offic and construction yard space. We have identified other possible properties within close proximity of the project site, as detailed below. These potential sites were identified in areas that are convenient to the project while also minimizing interaction with the community and the traveling public are shown in Figures 4.5.11, 4.512 and 4.513 below. Upon notice of award further and final negotiations will be completed.

a. NE quadrant of Electric Rd Interchange including area adjacent to Cove Rd (6.2 acres) VDOT

Figure 4.5.11

b. NW Quadrant of Rt 311 Interchange – 311 to Deborah Rd. (1.5 acres) VDOT

Figure 4.5.12

c. West of Rt 112 Interchange, 0 Wildwood Drive, Salem VA 24153. Private – SONABANK 74 acres

Figure 4.5.13

4.5.2 Transportation Management Plan

Our Team is dedicated to delivering this Project in a way that upholds public safety and minimizes impacts for all stakeholders during construction. All aspects of our Transportation Management Plan (TMP) and the Temporary Traffi Control (TTC) Plans will be developed with the focus on improving safety for the traveling public and construction personnel while minimizing the likelihood of incidents and minimizing travel delays throughout all stages of construction. We are also committed to a robust public communications program to effectively inform long distance traffic local traffic and the community of traffi changes thereby mitigating impacts and improving safety. To accomplish these safety, mobility, and communications goals, we have committed to numerous enhancement strategies that exceed the requirements of the RFP. These strategies include:

- Providing a full 10’ shoulder in each stage of construction instead of the 8’ minimum shoulders, providing enhanced safety for disabled motorists, emergency personnel, and tow truck personnel;
- Eliminating planned full median crossovers of I-81 for bridge reconstruction, significantly reducing the driver complexity of navigating the work zone;
- Self-limiting lane closure hours by 30 minutes to reduce the likelihood of stopped / slow traffi from 8:00PM to 8:30PM;
- Providing full 12’ lanes during Stage 2 of construction;
- Opening the 3rd NB thru lane in Area 4 (Unique Milestone #1) providing the benefit of the 3rd thru lane more than a year prior to project completion;
- Utilizing enhanced safety devices targeted to address specific conditions on I-81, such as wider than required pavement markings, flashing chevron signs, and speed display trailers;
- Designing temporary geometry to meet 65-mph geometry (exceeding the contract requirements) as

avoidance of abrupt transitions is especially important to minimize side-swipe crashes;

- Implementing signing for "higher fines" in the work zone to promote speed compliance and enhance safety;
- Adding warning systems for travel lanes upon approaches to construction egress points to alert drivers of construction vehicles entering the travel lanes;
- Enhancing public communication outreach by committing to holding "pardon our dust" meetings prior to each stage of construction, and information kiosks at rest areas;
- Installing orange safety fence for pedestrian traffi along Route 311 along the entirety of the sidewalk through the project limits;
- Committing to regular work zone traffi control reviews by design engineers, to verify controls were implemented as intended, and to suggest safety enhancements;
- Using additional temporary CCTV to fill existing gaps in coverage during construction to quickly detect incidents and determine the necessary level of incident response required;
- Mile markers mounted on temporary barrier every 1/10th mile during construction to allow for quick identification of exact location in the event of an incident; an
- A design concept that eliminates all impacts to Hanging Rock Battlefield Trail users.

TMP Philosophy

Our TMP and Construction Sequencing is focused on reducing the Project's anticipated impacts to the traveling public and exceeding the safety requirements of the RFP. Our TMP and TTC plans will place a particularly heavy emphasis on eliminating the need for temporary lane closures to the maximum extent possible, as we thoroughly understand the impact that lane closures can have on this heavily traveled section of I-81. To meet our high safety and mobility standards, the TTC and TMP plan development will be supervised by our Lead Traffi Engineer, Jerry Mrykalo, who is a Professional Traffi Operations Engineer (PTOE) and a certified VDOT Work Zone Traffi Control Training Instructor. He has led the implementation of an in-house training program for our engineers, allowing all of our engineers involved in Maintenance of Traffi (MOT) design to achieve VDOT Advanced Work Zone Traffi Control certification. Jerry also has recent relevant MOT design experience having served in this capacity for six interstate median widening projects, allowing him to understand the unique safety and mobility considerations of this Project.

During construction we are committed to going above and beyond the minimum requirements regarding incident management. As we recognize that work zone operations will take place both during the day and overnight, we will utilize a Deputy Incident Management Coordinator (DIMC) who will support the full-time Incident Management Coordinator (IMC). Strengthening the manpower of this position helps provide timely and coordinated response to incidents and urgent maintenance needs 24 hours a day. Our IMC, supported by our DIMC, will serve as the point of contact to quickly coordinate and deploy resources for incidents that require an urgent response to maintain safety and mobility on this critical corridor. The IMC and DIMC will also establish and maintain lines of communication with VDOT construction, VDOT maintenance, and emergency responder staff

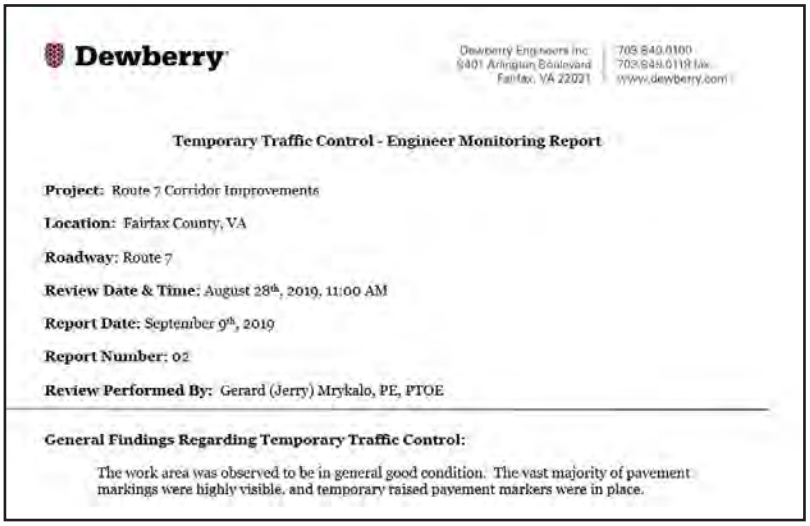
Furthermore, our Team commits to field reviews during construction, after major traffi switches, by our traffi engineering staff in addition to the Work Zone Safety Inspections completed by our QA and QC Team. These regular reviews will verify that traffi controls have been implemented correctly and provide recommendations for further enhancements. An example of a TTC Engineer Monitoring Report can be seen in Figure 4.5.14.

Sequence of Construction/Phasing

As introduced in Section 4.5.1, the Project will be constructed in two major stages, each of which has unique construction and temporary traffi control features. For each of these stages, we have developed specific

Sequence of Construction and MOT Phasing strategies as highlighted on Exhibits **4.5.2.1** through **4.5.2.2** on the following pages. Color coded shading is applied to each work element to show the sequencing of construction. Additionally, critical typical sections for each Stage of work are included to detail the TTC stagins we will use to safely maintain all lanes during construction. This sequencing allows our Team to efficientl construct the Project while minimizing impacts to traffic We carefully studied numerous options when developing this staging, resulting in a plan that minimizes the need for temporary lane closures and maximizes the maintenance of shoulder areas. Sequencing highlights detailed in the exhibits include:

- Use of a pre-stage (Stage 1A) for off-peak shoulder operations necessary to begin Stage 1B permanent widening. This includes rumble strip removal where traffi will be shifted onto this shoulder, temporary shoulder widening to achieve a 10' remaining shoulder width, guardrail removal and re-setting, and shoulder strengthening where required;
- Staging work to maintain a minimum 34' wide pavement width with one 10' and one 2' shoulder, meeting the requirements of the RFP;
- Staging construction in a way that eliminates the need for crossovers of traffi onto adjacent opposing alignments; and
- Constructing and opening the Route 112 Ramp D Spur (Unique Milestone #2) and I-81 3rd thru lane in Area 4 (Unique Milestone #2), more than one year early to increase capacity exceeding the requirements of the RFP.


Dewberry

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Fairfax, VA 22031

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703.849.0118 fax
www.dewberry.com

Temporary Traffic Control - Engineer Monitoring Report

Project: Route 7 Corridor Improvements

Location: Fairfax County, VA

Roadway: Route 7

Review Date & Time: August 28th, 2019, 11:00 AM

Report Date: September 9th, 2019

Report Number: 02

Review Performed By: Gerard (Jerry) Mrykalo, PE, PTOE

General Findings Regarding Temporary Traffic Control:

The work area was observed to be in general good condition. The vast majority of pavement markings were highly visible, and temporary raised pavement markers were in place.

Figure 4.5.14 - Example TTC Monitoring Report

Traffic Con ol Details for Maintaining Traffic Durin All Phases

In addition to the sequencing of construction and TTC typical sections shown on Exhibits 4.5.2.1 and 4.5.2.2 on the following pages, this section includes the traffi control details to be implemented. Upon Project Award, we will begin the design of the Type C, Category V TMP and will develop site-specific TTC plans for each stage of construction, with corresponding ESC plans for each Stage. The TTC plans will detail all controls required for construction, such as work areas, temporary barrier, attenuators, channelizing devices, signs, PCMS, temporary markings, temporary drainage elements, construction access points, temporary support of excavation near bridges, and all other requirements per VDOT's I&IM 241.7, the Virginia Work Area Protection Manual, and the Manual on Uniform Traffi Control Devices (MUTCD). Our Team also recognizes common shortfalls with TTC in work zones, and we are committed to avoiding these conditions with carefully designed site specific TTC plans. For example, barrier ends and impact attenuators will be flared as far away from traffi as possible to reduce the likelihood of a high severity crash into an attenuator. Additional details are as follows:

I-81 and Interchange Ramps

- All thru lanes and ramp lanes will be continuously maintained during all Stages, with the exception of temporary lane closures (time of day restrictions) following the hours defined in Part 2, Section 2.10.3 of the RFP;
- Lane closures are anticipated for activities such as rumble strip removal, nighttime paving, placement

EXHIBIT 4.5.2.1

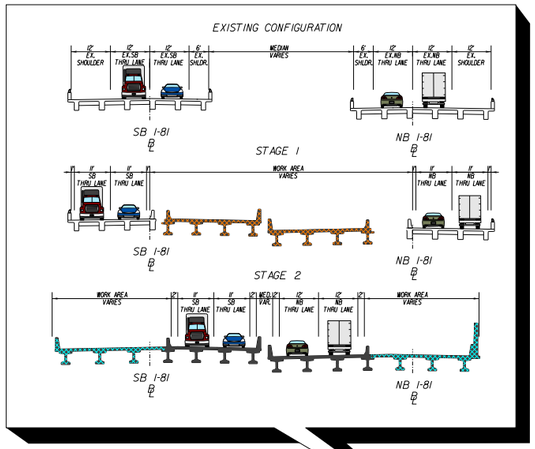
STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946	1

Denotes Stage 1

Denotes Stage 2

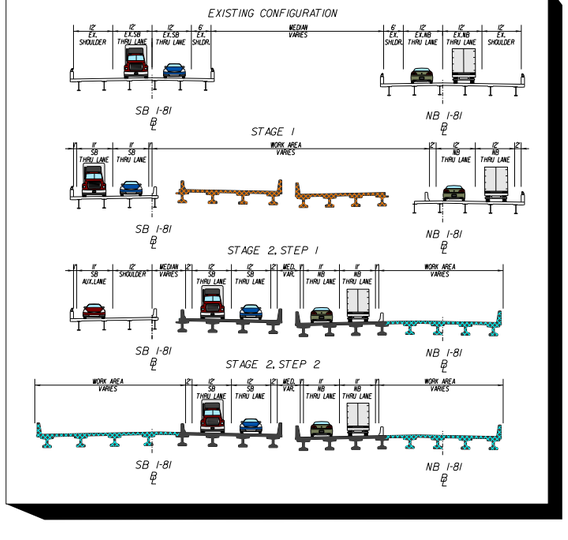
Dewberry

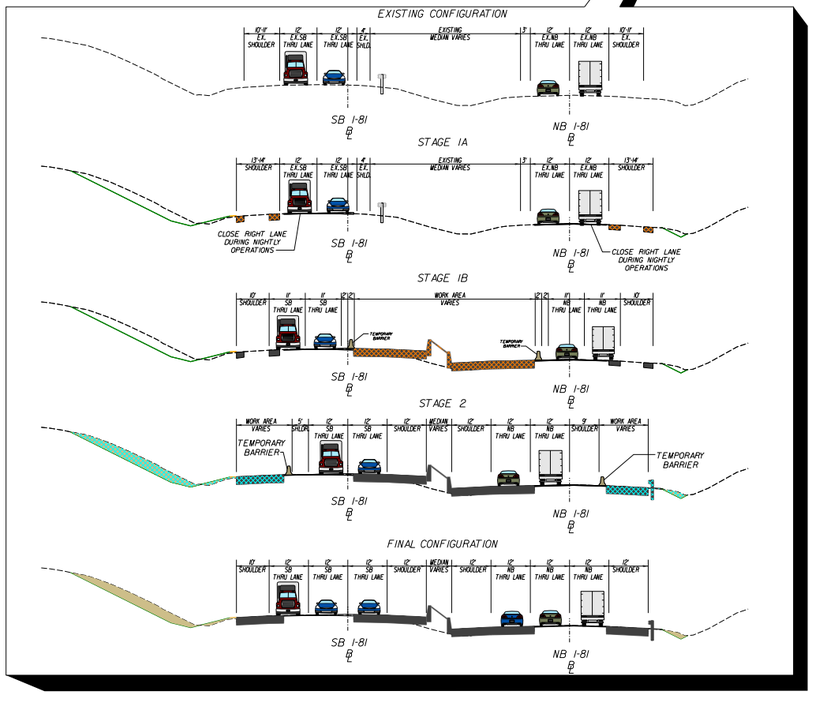
ROUTE 635



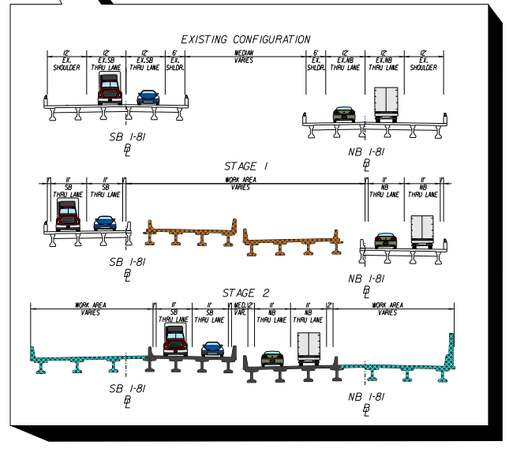
STA. 212+00

ROUTE 112





ROUTE 619



SCALE	PROJECT	SHEET NO.
0 500' 1000'	0081-080-946	1

EXHIBIT 4.5.2.2

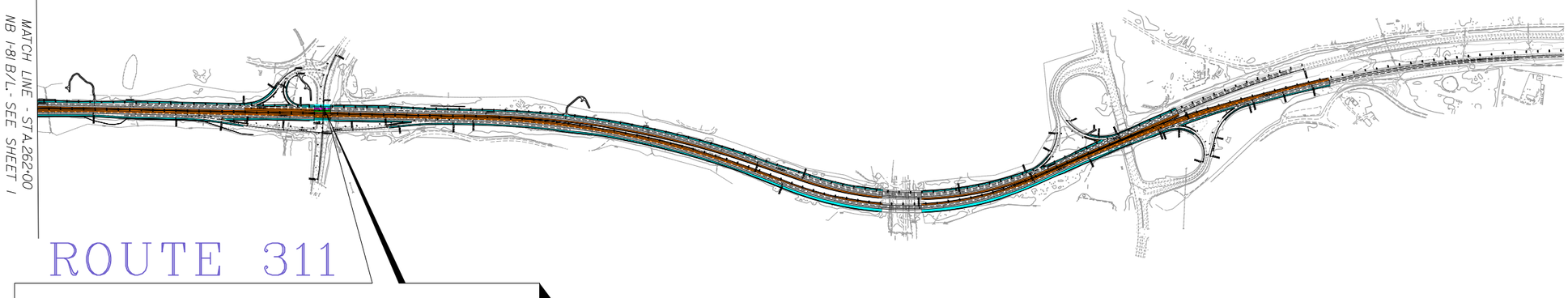
STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946	2

Denotes Stage 1

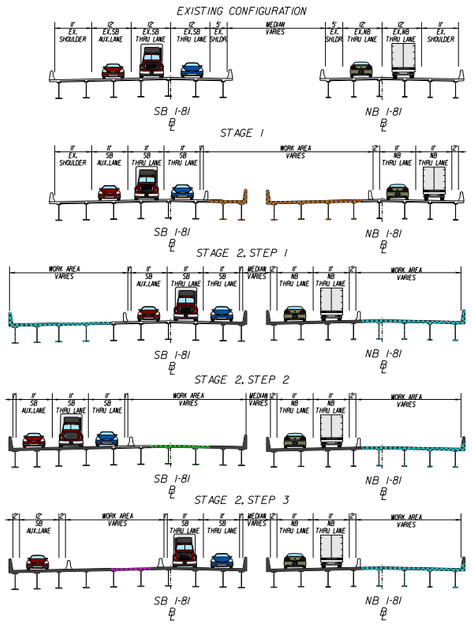
Denotes Stage 2, Step 1

Denotes Stage 2, Step 2

Denotes Stage 2, Step 3



ROUTE 311



SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	2

of traffic barriers, delivery of materials, and bridge work

- No detours are planned. 15-minute maximum full stoppages are only expected for overhead work (such as sign structure erection) and opening of new alignments;
- No Flagging operations; and
- Minimum lane widths will be 11', with 2' minimum narrow-side shoulder, and 10' minimum wide-side shoulder (total pavement width of 34' required).

All Other Roads:

- All thru lanes and ramp lanes will be continuously maintained during all Stages, with the following exceptions:
  - Temporary lane closures (time of day restrictions) following the hours defined in Part 2, Section 2.10.3 of the RFP;
  - Route 112 long-term single lane closures will be implemented as defined in Part 2, Section 2.10.3 of the RFP for safety and constructability; and
  - Goodwin Avenue (Route 635) closure will be limited to no more than 60 days and be implemented only one time instead of multiple times as allowed by the RFP, ***exceeding the requirements of the RFP.*** This single implementation reduces community impacts as drivers will not be subject to multiple traffi pattern changes that would be required if the road was closed, re-opened, and then re-closed again;
- Lane closures and flagging operations are anticipated for activities such as the placement of traffi barriers, delivery of materials, and bridge work;
- The only planned detour is associated with the allowed closure of Goodwin Avenue (Route 635); and
- Minimum lane widths will be 11' with 2' offsets to temporary barrie .

Work Zone Speed Reductions

Part 2 of the RFP requires the posted speed limit to remain at 60-mph during construction. Our Team agrees with approach given that speed reductions, where not justified based on geometry, have the potential to lead to speed differentials and increase the likelihood of work zone crashes.

Figure 4.5.15 - Speed display/radar trailer

To further enhance safety, temporary lane shifts will be design to meet 65-mph criteria as a measure to reduce the likelihood of sideswipe crashes, ***exceeding the requirements of the RFP***. Our Team also commits to the utilization of Speed Display / Radar units as an additional enhancement ***exceeding the requirements of the RFP***, choosing a side-by-side assembly (rather than a stacked assembly) for better sign visibility with respect to temporary barrier height.

Additionally, with VDOT support, we commit to implementing the signing beacons required for "higher fines" in the work zone. These higher fines are intended to promote speed limit compliance, which helps to reduce speed differentials, and ultimately reduce the likelihood of crashes. Furthermore, the safety for construction personnel and emergency responders is improved by providing this financial deterrent to speeding

Unique Project Challenges and Solutions

In addition to the minimum requirements of the RFP, specific attention has been given to the unique challenges of the Project, with focus on mitigation and communication strategies that maximize safety, minimize public impacts, and minimize schedule risk. By carefully studying these elements, our Team has identified the following challenges and devised unique solutions to address each:

1. Crash Avoidance and Incident Management

While the entire length of I-81 in Virginia is a vital roadway, the section within the Project limits is especially critical given the higher volumes due to the surrounding populated areas. Given this understanding, our Team

commits to the following crash avoidance and incident management techniques:

- Wider Shoulders: We commit to maintaining both a 10' and a 2' shoulder (with a minimum of 34' pavement width) except in the vicinity of bridges. By providing a full 10' shoulder, ***exceeding the requirements of the RFP*** instead of the RFP minimum 8' right shoulder, this additional 2' allows for safer refuge for vehicle breakdown, crash cleanup, or police enforcement without being uncomfortably close to thru traffic Furthermore, the ample shoulder width will help facilitate EMS to more quickly navigate through stopped traffic when responding to incidents
- Wider Lanes: During Stage 2 of construction, we commit to utilizing full 12' wide lanes for roadway widening sections, providing a significant mobility and safety enhancement for frequent side-by-side truck traffi
- Forgiving Geometry: Our Team commits to design temporary lane shifts to meet 65-mph criteria (exceeding the contract requirements). Our TTC design will focus on the avoidance of abrupt transitions, thereby reducing the complexity for drivers to navigate alignment changes. This is especially important to minimize side-swipe crashes and run off road crashes, and to accommodate trucks.
- Enhanced Safety Devices: We have proactively studied the existing crash trends, and commit to the utilization of the following enhanced safety devices to reduce the likelihood of incidents that all ***exceed the requirements of the RFP***:
  - Barrier attenuation devices placed as far away from adjacent travel lanes as possible to reduce exposure to the hazard;
  - Full continuous temporary raised pavement markers with installation of all temporary markings, for increased lane visibility especially at night and during wet pavement conditions (only required at lane shifts per the Work Area Protection Manual);
  - Use of wider than required lane lines for increased delineation of lane shifts;
  - Use of tighter than required channelizing device spacing for increased work zone delineation and improved safety; and
  - Use of flashing chevron curve warning signs as depicted in the image to the right

Figure 4.5.16 - Flashing chevron curve warning sign

- Minimizing Interaction with Public Traffi Our Team recognizes the potential hazards from interaction between construction trucks and public traffic especially at points of ingress/egress for construction vehicles. We recognize that along high speed roadways, the longer travel length and period of time for a construction vehicle to accelerate to prevailing speeds upon exiting a work zone can cause speed differentials that may result in crashes. Our Team's goal is to mitigate this condition by adding a special warning system to alert adjacent travelers. As depicted in Figure 4.5.17, as construction vehicles are exiting the work area, a transmitter sends a signal to a PCMS in advance of the merge point, giving traffi ample warning and an opportunity to adjust speeds, change lanes, or otherwise navigate safely through the potential

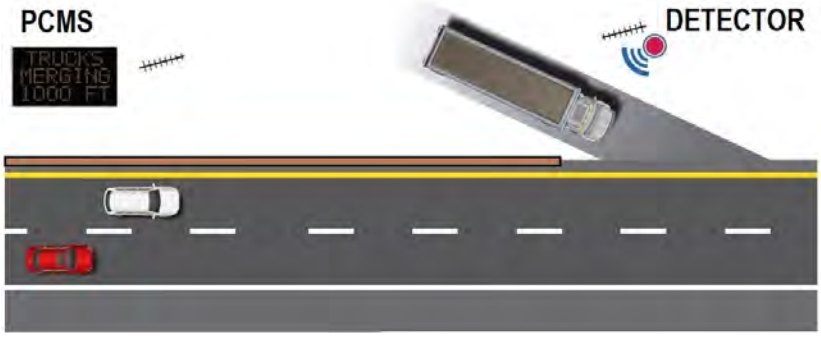


Figure 4.5.17 - Construction vehicle egress safety warning system

hazard.

- Incident Detection: Our Team recognizes the importance of early incident detection for swift emergency response. The existing CCTV cameras within the project limits help to monitor road conditions and recognize traffi incidents that require attention. However, given the terrain and curvature of I-81, our Team has identified several gaps in coverage of the existing system (as shown by the red circles in Figure 4.5.19 below) and proposes the use of 4 additional temporary CCTV cameras ***(exceeding the RFP requirement of 3 cameras)*** strategically placed during construction to fill the gaps in coverage. Being able to quickly and accurately diagnose the incidents expedites emergency response, allows for accurate posting of messages on advance DMS signs, and ultimately aids in quickly clearing incidents and restoring full capacity.

Figure 4.5.18 - Portable CCTV unit

2. Route 112 and Route 311 Interchange Sequencing

One of the unique challenges with an interstate widening project is the handling of construction activities and the maintenance of traffi through interchanges. Our Team recognizes the importance of efficien of construction sequencing to alleviate negative impacts to the traveling public. Therefore, our Team commits to construction phasing at interchanges along SB I-81 that maintains the existing deceleration lane lengths and, where feasible, increases those lengths during construction.

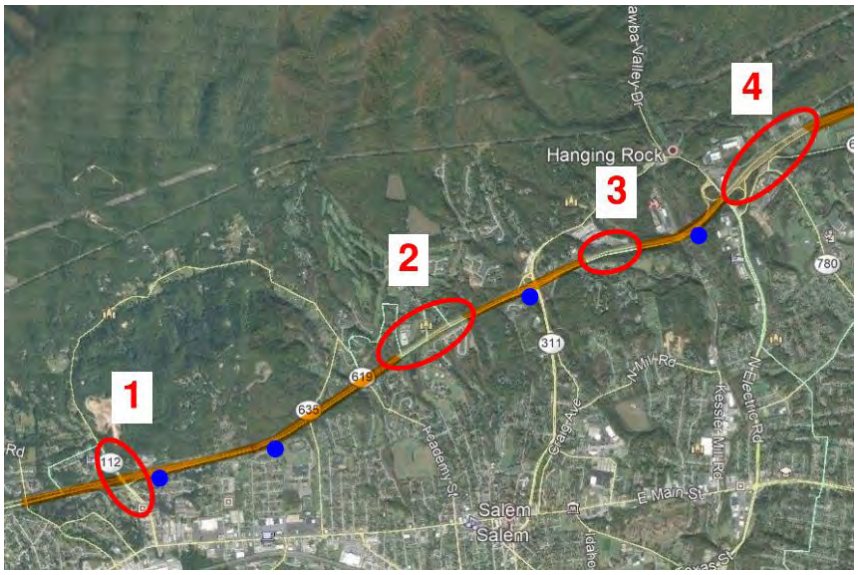


Figure 4.5.19 - Existing gaps in CCTV coverage limits are depicted with red circles

At the Route 112 interchange, our Team's phasing approach to eliminate the need for crossovers along I-81 has also reduced the need to "split-off" the deceleration lanes onto a separate bridge during construction. This not only increases driver comprehension but benefits driver safety and worker safety by allowing a consolidated work zone.

On southbound I-81 at the Route 311 interchange, where separating the exit lane from thru lanes is necessary, our Team commits to several enhancements that will increase driver comprehension and improve safety. These enhancements include:

- Full deceleration lane lengths provided in advance of the temporary exit point;
- Large temporary guide signing provided in advance of the temporary exit point; and
- Gore hatching pavement markings added at the temporary exit point.

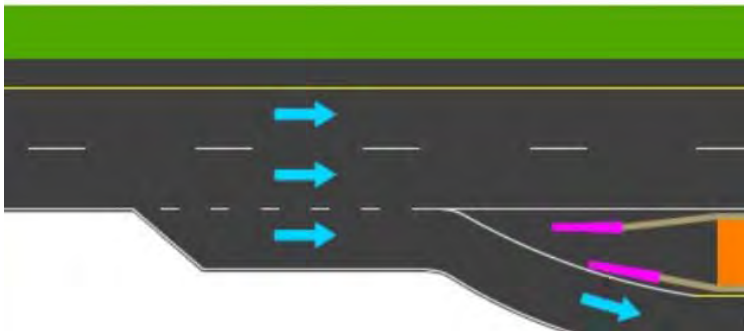


Figure 4.5.20 - Schematic of temporary exit configuration along SB I-81 and Route 311 with work area between thru lanes and exit lane

3. Adjacent Project Coordination (I-81 Widening in Roanoke County, Exits 141 to 143)

Our Team recognizes the importance of coordination with adjacent projects, as both this Project and the I-81 Widening project to the north are expected to have concurrent work along I-81 with overlapping construction activities. If not fully coordinated, the possibility of conflicting traffi control can arise, potentially leading to a public safety risk. In order to fully coordinate all activities, our Team commits to establishing and maintaining regular coordination between projects. For example, if both projects require a lane closure for work in the same lane, work will be coordinated to determine if it can be accomplished during a single closure as opposed to two separate closures, having a recognizable benefit to the traveling public

4. Lane Closure Optimization

When full construction starts, lane closure impact minimization will be critical when working along I-81. Our temporary traffi control strategy puts an emphasis on eliminating the need for temporary lane closures to the greatest extent possible. To minimize the impact of lane closures that are necessary, we have analyzed the 24-hour volume information along I-81 to determine if volumes are likely to exceed available lane capacity during lane closure hours. We recognize that the lane closure restriction times listed in Section 2.10.3 of Part 2 of the RFP are to be followed, but given our Team's experience, we also recognize the impact that lane closures can have on the already congested I-81 and that constantly changing traffi volumes may now be different than previously collected volumes.

As shown in Figure 4.5.21, hourly volume counts were compared to a single lane capacity (red dashed line) to determine if volume may cause traffi backups and delays during the allowed temporary lane closure window (indicated by vertical blue lines). As shown on the graph, we have found that the normal pre-pandemic volumes are likely to meet or exceed the capacity of the single remaining lane from 8:00 to 8:30 pm within the allowable 8:00 pm to 6:00 am weekday lane closure window. This is a highly undesirable condition that could lead to slowed and stopped traffic increasing the likelihood of rear-end collisions. ***Therefore, our Team commits to self-limiting temporary lane closure hours to not start until 8:30pm in an effort to eliminate this undesirable condition and improve safety and operations.***

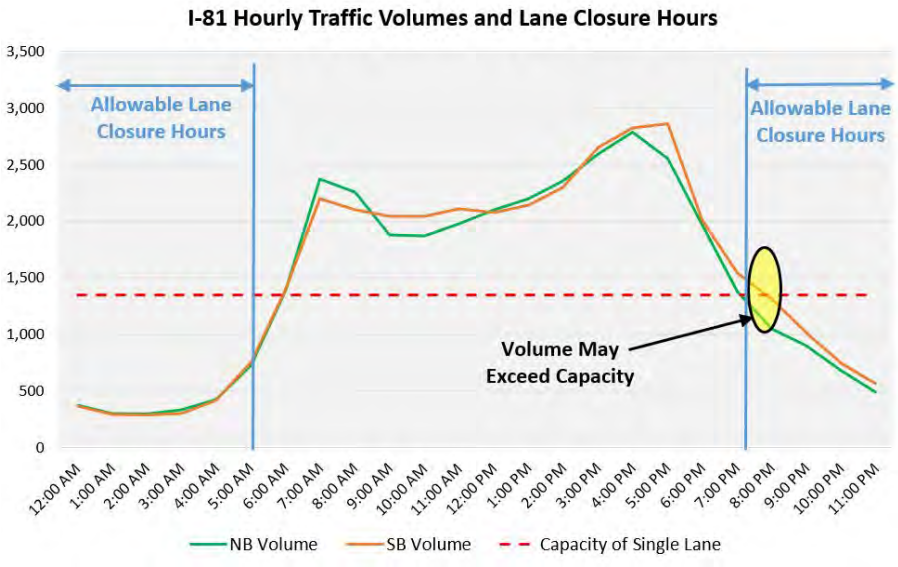


Figure 4.5.21 - I-81 Temporary lane closure analysis

We will also utilize this data in development of the TMP so that construction activities that require lane closures occur during the hours of lowest volume. For example, this hour-by-hour analysis will allow activities of a short duration, such as overhead sign erection, to occur during the hours of lowest volume within the longer allowable overnight lane closure window, providing a safety and travel time benefit that exceeds the requirements of the RFP. Furthermore, our Team commits to recounting traffi and revalidating lane closure hours mid-way through construction, as we recognize travel patterns constantly change.

5. Early Opening of New Capacity

Our Team recognizes the need for extra capacity along I-81 and the Route 112 interchange to relieve congestion

and has focused our phasing approach to take advantage of the following opportunities for providing early relief for the traveling public:

- Early opening of Route 112 interchange modifications; an
- Early opening of 3rd thru lane in each direction of I-81 in Area 4.

With the prior completion of the adjacent widening project to the north, our phasing approach will take full advantage of this available capacity by allowing the northbound 3rd thru lane to open one year early north of the Route 311. In addition, interchange modifications that are essential to improving interchange

Figure 4.5.22 - Area circled in red to be opened to traffic one year in advance of full project completion

functionality at Route 112 are also a focus for early opening, providing much needed relief through capacity and safety improvements in this area.

6. Pedestrian Safety

Our Team recognizes that the Route 311 interchange area will be an active and dynamic work area. We will install orange safety fence for pedestrian traffi along Route 311 along the entirety of the sidewalk through the project limits. Especially with regard to the adjacent bridge widening, this orange safety fence will safely and effectively delineate and separate pedestrians from work activities.

Figure 4.5.23 - Limits of pedestrian safety fence to be installed at Route 311 interchange

Stakeholder Communication and Mitigation Strategies

Our Team recognizes that proactive communication with all project stakeholders is essential to a successful TMP. As with any large-scale transportation improvement project, some inconvenience is unavoidable, but our Team's goal is to minimize these impacts. As detailed in Table 4.5.2 on the following pages, we have proactively identifi d project stakeholders, determined how they will be impacted, and we have devised targeted communication and mitigation strategies to reduce these impacts. While Section 2.11 of Part 2 of the RFP defines the components of a robust Public Involvement/Public Relations scope for the project, below are major enhancements to these minimum requirements that e***xceed the requirements of the RFP:***

1. Additional Pardon Our Dust Meetings

While the RFP states that the need for Pardon Our Dust meetings are at the discretion of VDOT, if VDOT is agreeable, our Team commits to holding a minimum of four Pardon Our Dust meetings during construction. These meetings are anticipated to be held before the start of Stage 1A work, before Stage 1B

work, before Stage 2 work, and before Unique Milestone #1 and #2. Our experience gained on similar projects has found that holding these meetings at regular intervals is a great way to keep the public engaged and enthusiastic, while also promoting key safety messages to attendees and to any media present for distribution to a larger audience.

2. Rest Area Open Houses

In addition to the Pardon Our Dust meetings, the presence of VDOT rest areas in the proximity of the project provide an opportunity for continual 24/7 public outreach for drivers along I-81. Our Team will coordinate with VDOT to establish kiosks at the Ironto Safety Rest Area (MM 129 NB) and the Troutville Safety Rest Area (MM 158 SB) that contain Project information and upcoming work activity posters and pamphlets. Handouts will also contain references to the project website where interested drivers can find additional information

Figure 4.5.24 - Sample project update pamphlets for public distribution

Table 4.5.2 - Stakeholder Communication and Mitigation Strategies

Stakeholders	Impacts	Communication/Mitigation Strategies
Traveling Public	• Minimal travel time delays along I-81. • Exposure to construction vehicle traffic.	• Wider lanes and shoulders to reduce the likelihood of collisions and incidents. • Hold "Pardon Our Dust" meetings and establish a Rest Area "Open House" for the general public, public safety officials, and other stakeholders throughout design and construction. • PCMS will be utilized for public notices.
Trucking Industry	• Overnight Lane Closures. • Narrower lanes and shoulders in some stages.	• Lane and shoulder closures during non-peak hours. • Longer than minimum lane shift lengths. • Minimum 10' shoulder maintained along one side of travel lanes for pull-offs and disabled vehicles.
Valley Metro Smart Way Bus and Smart Way Express	Potential delays to regional bus transit routes.	• Notifications of work will be sent to Valley Metro in advance of traffic switches, lane closures, and major operations.
VA State Police	• Potential response time impacts. • Safety during speed monitoring and patrolling activities.	• Full shoulder width provided for incident management, police enforcement, and quicker response to incidents. • Advance notification of temporary lane restrictions, changes to traffic patterns, and ingress/egress points. • Representatives will be notified of approved lane closure requests. • Pre-switch emergency responder meetings for response planning. • 24/7 Emergency Contact information
Roanoke Valley Regional Fire/EMS and Other Local Emergency Responders	Potential response time impacts.	• Full shoulder width provided for incident management, police enforcement, and quicker response to incidents. • Advance notification of temporary lane restrictions, changes to traffic patterns, and ingress/egress points. • Representatives will be notified of approved lane closure requests. • Pre-switch emergency responder meetings for response planning. • 24/7 Emergency Contact information.

Stakeholders	Impacts	Communication/Mitigation Strategies
Local Hospitals (Salem VA Medical Center, Lewis-Gale Hospital)	Potential delays accessing hospital.	• No long-term lane closures on hospital access routes.
Local Jurisdictions and Local Elected Officials (Cit of Salem, Roanoke County, City of Roanoke)	Constituent questions and inquiries.	• Our Team will inform elected officials of project status and upcoming events to help them answer direct inquiries they may receive from public. • Elected officials will be given contact information for our Team, either for their use or constituent use.
Local Utilities	Potential impacts to utility infrastructure and service disruptions.	• Advance coordination of construction activities directly with affected utilities.
VDOT SW Traffi Operations Center	Increased information conveyance of lane and shoulder closures, delay information, and construction activities or travel incidents.	• Advance notification of temporary lane restrictions. • Delay monitoring by CCTV cameras during construction. • Communication protocol for relaying traffic incident or construction activities.
Schools and Local Colleges: Salem High School West Salem Elementary Roanoke College Virginia Tech Radford University (And other local schools)	• Potential delays to school buses / transportation services. • Congestion during college move-in/move-out days and football games. • Possible construction noise and construction activities close to school property, (Salem High School).	• Coordination of construction activities directly with school staff. • No lane closures during school bus operating hours when possible or during move-in/move-out weekends. • Advance notification of traffic pattern changes. • Dust allaying measures.
Local Businesses, Churches, and Organizations (example: Stonegate Swim Club)	Possible construction noise, travel time delays.	• Hold “Pre-Opening Meeting” and Welcome Center “Open House” and “Pardon our Dust” meetings for the general public, public safety officials, and other stake-holders throughout design and construction. • PCMS will be utilized for public notices. • Robust outreach campaign in accordance with Part 2.11 of RFP. • Dust allaying measures
Adjacent Landowners	Possible construction noise and construction activities close to their property.	• Coordination of construction activities with residential groups by notification via public meetings and targeted outreach. • Access to all properties maintained at all times. • Encouragement for residents to follow Project related social media.
Adjacent projects	Possible conflicting I-81 construction operations.	• Coordinate construction activities and avoid conflicts. • Coordination of lane closures to minimize public impacts. • Coordinating public outreach to deliver a uniform, consistent message to drivers along I-81.

4.6: Proposal Schedule

4.6.1 - Proposal Schedule

The AWC Team's Proposal Schedule is provided in our Volume II - Conceptual Project Plans.

4.6.2 - Proposal Schedule Narrative

We have carefully reviewed the Project's schedule requirements and understand the complexities and interrelationships of the technical elements of the Project. As evidenced in our attached Proposal Schedule, we have taken into account internal and external plan reviews that are critical to a design build success, permitting constraints, right-of-way acquisition, utility relocations, design and construction integration, maintenance of traffi constraints, and QA/QC inspection and testing hold points. Our Maintenance of Traffi plan has been optimized to deliver the Project ahead of schedule while minimizing impacts to the traveling public, thus providing for worker and motorist safety. We have created and are committing to **Unique Milestone #1**, is completing Area 4 and opening 1.22 miles of a third lane (both NB and SB) from STA 312+00 to STA 376+75 (NB stationing) (northern limits of Project) and **Unique Milestone #2** which is opening of the SB Exit Ramp at Route 112 Spur which should provide much needed relief through capacity and safety improvements in this area by **December 31, 2024.** A summary of the Contract and Schedule Milestones are shown in Table 4.6.1 below:

Table 4.6.1 - Summary of Contractual and Schedule Milestones

Contractual & Schedule Milestones	Contractual	Projected
Notice of Intent to Award	3/31/2021	3/31/2021
CTB Approval / Notice to Award	4/21/2021	4/21/2021
Design-Build Contract Execution	5/21/2021	5/21/2021
Notice to Proceed	5/24/2021	5/24/2021
Scope Validation Period (120 Days)	9/20/21	9/20/21
Unique Milestone 1 - Area 4 Complete		12/31/2024
Unique Milestone 2 - Rte. 112 Ramp D Spur		12/31/2024
Final (Early) Completion	1/15/2026	1/14/2026

Work Breakdown Structure

We have organized the CPM Schedule into a hierarchical Work Breakdown Structure (WBS) in order to properly demonstrate the relationship and integration between the Contractual and schedule Milestones, Design, Procurement, Utilities, Construction, and Testing & Closeout. All Level 1 tasks are highlighted below with a brief description. Selected Level 2 and Level 3 WBS details are also provided in the Construction structure below:

A. Milestones: Consist of Contractual and Schedule Milestones including Unique Milestone No. 1 and No. 2 as well as the 120-day scope validation period.

B. Design: Includes Design Phase, Environmental Permitting and Right of Way Acquisition headings

- Design Phase – The Design Phase includes QA/QC design reviews, field surveys, geotechnical investigations, roadway design, noise analysis and noise barrier plans, advance temporary traffi way (ROW) plans, lighting and electrical plans, landscaping plans, and bridge plans. Activities inside the design phase plans include VDOT and FHWA reviews and approvals.
- Environmental Permitting - This phase includes the joint permit process, threatened and endangered species, hazardous and environmental assessments as well as land disturbance and stormwater permits.

- Right of Way Acquisition Phase - This phase is further broken down into project specific and priority 1, 2, and 3 acquisitions.

C. Procurement and Submittals: Includes shop drawings and fabrication/delivery timeframes for major items such as storm drainage, steel and concrete girders, MSE retaining wall panels, noise barrier posts and panels, and electrical items.

D. Utility Relocations: Includes all activities for utility relocations for VDOT, Osprey, Verizon, Comcast, Segra, Zayo and Salem Electric.

E. Construction: Includes all aspects of roadway, drainage, barrier wall, and bridge construction and rehabilitation. This section of the schedule is further broken down in our WBS Structure by Stage, Area and Work Type as described in the list below to provide schedule certainty and on-time completion of the Unique Milestone and early Final Completion while also allowing our operations team to focus on most efficiently prosecuting the work safe .

- Stage 1A Existing Shoulder Strengthening & Widening - Stage 1A is the strengthening & widening of the existing shoulders to allow traffi to be shifted to the outside lanes prior to Stage 1B. The mill and overlay operation will progress with one crew on NB I-81 and one crew progressing on SB I-81.
- Area 4 Unique Milestone Work – This stage includes the work required to accomplish the Unique Milestone 1 year ahead of the other areas. The Area 4 Unique Milestone Work WBS is further divided for Stage 1B Median Work, Stage 2 NB and SB Outside Lanes, RT 419 Ramps, and Stage 3 Mill and Overlay work.
- Stage 1B Median Work Area 1 to 3 - Stage 1B Median Work Area is the expansion toward the median of I-81 through the demolition of existing median and constructing new lanes and median barriers from Station 100+00 to 312+00. In this phase, I-81 traffi will be shifted to the outside with construction occurring from inside Areas 1, 2, and 3. The scope of work includes erosion and sediment controls and stormwater management basins, drainage, earthwork, full depth paving, replacing barriers and the inside phase of structures.
    i. Stage 1B – Structures - Stage 1B Structures is the demolition and replacement of existing inside lane portions of the I-81 bridges. As in Stage 1B roadwork, traffi will be shifted to the outside lanes while the work occurs in the median.
- Stage 2 Outside Lanes Area 1 to 3 - Stage 2 work consists of expanding the outside lanes after finishing median work in Stage 1B of Area 1, 2 or 3. The traffi pattern in this phase will be shifted towards the new median lanes while construction progresses on the outside of NB and SB I-81. The scope of work includes erosion and sediment controls and stormwater management basins on the outside, drainage, earthwork, retaining walls, noise barriers, asphalt paving, TMS electrical scope, and structures/ramp work in this stage.
    i. Stage 2 – Structures - Stage 2 Structure work consists of phased demolition and replacement of the existing outside lane portion of the structures over Routes 112, 635, 619 and 311. I-81 traffi will remain shifted to the median lanes while Stage 2 – Structures work is completed.
    ii. Stage 2 – Ramps – This stage includes ramp construction at Route 112 (Ramps A, B, D, and Loop D) and Route 311 (Ramps A, B, D, and Loop D). Ramp construction near underpass roadwork will consist primarily of grading, mill and overlay and full depth paving for outside barriers.
- Underpass Road Work - Underpass Roadwork at Routes 635, 112, 619 and 311 consists primarily of mill & overlay work of the roads and some full depth paving work at the median barriers.
- Bridge 4: I-81 Over Rt 311 Joint Repair / Overlay - This includes the work for SB I-81 over Route 311 joint repairs and latex overlay.

- Stage 3 Mill and Overlay - Stage 3 Mil and Overlay follows Stage 2 and consists of final milling and overlay of NB and SB I-81 from approximately Stations 100+00 to 312+00.

F. Testing and Closeout: Includes final inspections, TMS Testing, and Punchlist. In addition to our schedule being comprehensive of all elements required on a design-build project, it also properly accounts for the ability to overlap activities, realizing the full benefit of design-build project delivery. The following provides a brief summary of how different phases of the Project will be sequenced to provide the greatest benefit to the schedule

1. ***Design:*** Design will commence immediately upon Notice to Proceed. Preliminary design development will occur simultaneously with field surveys and environmental investigations. Field surveys will recover control used for the RFP conceptual plan development so that all new aerial mapping, field surveys, and investigations will align with design efforts already completed during the proposal development phase, eliminating any need to recreate design details. Design plans will be prepared in separate packages for roadway and bridge elements, and an advance temporary traffi control plan set will be prepared so that the Stage 1A of construction can commence while final design of permanent roadway elements is being finalized. Following submission of approximately 60% roadway plans, all comments related to right-of-way acquisitions will be addressed to enable approval of right-of-way acquisition plans in advance of construction plan approval. This will facilitate right-of-way acquisition efforts being completed as early as possible.

2. ***Public Involvement:*** Public involvement will occur throughout both design and construction phases, and will include formal outreach efforts such as "Pardon our Dust" meetings as well as regular communication with VDOT, third party stakeholders, and property owners as the right-of-way acquisition phase is underway. Additional, targeted public outreach efforts will be undertaken as part of the noise analysis and voting process to determine which noise barriers will be constructed.

3. ***Environmental Permitting:*** Environmental permitting efforts will begin during the design phase, with initial efforts including re-delineation and survey of wetlands and receiving concurrence on the Jurisdictional Determination (JD). As plans are further developed, impact quantities will be calculated and the Joint Permit Application (JPA) will be prepared. Submission of the JPA will be made immediately following submission of approximately 60% roadway plans, at which time all major design elements will have been established. Since an Individual Permit is expected based on the amount of wetland and Waters of the US impacts, overlapping the permit approval process with final design efforts will allow us to obtain environmental permits in advance of when impacts need to occur during construction.

4. ***Right-of-Way Acquisitions:*** As noted above, right-of-way acquisition plans will be finalized in advance of construction plan approval to facilitate overlapping acquisition and design phases. Once right-of-way plans are approved, acquisitions will be prioritized so that critical properties are obtained as soon as possible. The enhancements implemented by our Team have eliminated over 45% of the impacted parcels, and properties which are anticipated to be impacted have been separated into three categories. Generally, Priority 1 properties are those required for construction of stormwater management facilities, Priority 2 properties are needed for general construction of Stage 2 outside widening, and Priority 3 properties are needed for future maintenance and access of drainage outfalls and existing culverts.

5. ***Utility Relocations:*** Extensive efforts have been initiated to avoid utility relocations as much as possible, and these efforts have already enabled us to eliminate all utility easement acquisitions. With this effort, we will be able to coordinate with the utility companies early during the design phase to develop relocation plans and seek approval from VDOT for relocation efforts to commence prior to right-of-way and easements being acquired. This will help to shift the utility relocation efforts off the Project's critical path and moved facilities before major construction efforts (such as bridge reconstruction and widening) commence

6. ***Construction:*** As the longest portion of a design-build project, all efforts have been and will continue to be made by our Team to begin construction as soon as possible. Separate development and early approval of the Advance Temporary Traffic Control (TTC) plans for Stage construction will allow construction to begin while final design continues, as well as before right-of-way acquisitions have been initiated. As work on Stage 1A is being finalized, construction plans for the remainder of the improvements will be completed, allowing for a seamless transition from Stage 1A to Stage 1B, when median construction will start. Construction sequencing has been developed to reflect acquisition of right-of-way from the 31 impacted properties, obtaining environmental permits for jurisdictional areas, and relocation of utilities and installation of the Osprey facility. The table below is a complete outline of the WBS Structure for the Project.

Table 4.6.2 - WBS Structure for the Project

WBS Code	WBS Name
C00116203DB108_PRS01_D2	I-81 Widening MM 136.6 to MM 141.8 - Proposal Schedule
C00116203DB108_PRS01_D2.1	Milestones
C00116203DB108_PRS01_D2.3	Design
C00116203DB108_PRS01_D2.3.2	Design Phase
C00116203DB108_PRS01_D2.3.2.1	Design QA/QC Plan
C00116203DB108_PRS01_D2.3.2.2	Field Surveys & Investigation Phase
C00116203DB108_PRS01_D2.3.2.3	Geotechnical Investigations
C00116203DB108_PRS01_D2.3.2.4	Roadway Design
C00116203DB108_PRS01_D2.3.2.14	Noise Analysis & Noise Barrier Plans
C00116203DB108_PRS01_D2.3.2.5	Early Temporary Traffic Control Plans - Stage
C00116203DB108_PRS01_D2.3.2.6	Right-of-Way Plans
C00116203DB108_PRS01_D2.3.2.7	Lighting & Electrical Plans
C00116203DB108_PRS01_D2.3.2.12	Bridge Plans - Route 419 over I-81 (B681)
C00116203DB108_PRS01_D2.3.2.13	Bridge Plans - Route 705 over I-81 (B682)
C00116203DB108_PRS01_D2.3.2.8	Bridge Plans - NB & SB I-81 over Route 112 (B683 & B688)
C00116203DB108_PRS01_D2.3.2.9	Bridge Plans - NB & SB I-81 over Route 635 (B684 & B685)
C00116203DB108_PRS01_D2.3.2.10	Bridge Plans - NB & SB I-81 over Route 619 (B687 & B686)
C00116203DB108_PRS01_D2.3.2.11	Bridge Plans - NB & SB I-81 over Route 311 (B678 & B677)
C00116203DB108_PRS01_D2.3.3	Environmental Permitting
C00116203DB108_PRS01_D2.3.3.1	Joint Permit Process (Wetlands & Streams/Waters)
C00116203DB108_PRS01_D2.3.3.2	Threatened & Endangered Species
C00116203DB108_PRS01_D2.3.3.3	Hazardous Material and Environmental Site Assessments (ESAs)
C00116203DB108_PRS01_D2.3.3.4	LD-445 Land Disturbance Permit / Stormwater Management Permit
C00116203DB108_PRS01_D2.3.3.4.1	Early TTC Plan Land Disturbance (Stage 1A)
C00116203DB108_PRS01_D2.3.3.4.2	Overall Project Land Disturbance
C00116203DB108_PRS01_D2.3.4	Right-of-Way Acquisition Phase
C00116203DB108_PRS01_D2.3.4.1	Project Specific Right-of- ay Acquisition & Relocation Plan
C00116203DB108_PRS01_D2.3.4.2	Priority 1 Right-of-Way Acquisitions - SWM & Critical Properties (13 Parcels)
C00116203DB108_PRS01_D2.3.4.3	Priority 2 Right-of-Way Acquisitions - (15 Parcels)
C00116203DB108_PRS01_D2.3.4.4	Priority 3 Right-of-Way Acquisitions - (4 Parcels)
C00116203DB108_PRS01_D2.4	Procurement & Submittals
C00116203DB108_PRS01_D2.4.6	Storm Drain

WBS Code	WBS Name
C00116203DB108_PRS01_D2.4.4	Steel Beams
C00116203DB108_PRS01_D2.4.3	Concrete Beams
C00116203DB108_PRS01_D2.4.5	Retaining Wall
C00116203DB108_PRS01_D2.4.5.1	Retaining Wall - MSE Wall Panels
C00116203DB108_PRS01_D2.4.5.2	Retaining Wall - CIP
C00116203DB108_PRS01_D2.4.2	Soundwalls
C00116203DB108_PRS01_D2.4.2.1	Soundwall Posts
C00116203DB108_PRS01_D2.4.2.2	Soundwall Panels
C00116203DB108_PRS01_D2.4.1	Lighting
C00116203DB108_PRS01_D2. Harrisburg	Utility Relocations
C00116203DB108_PRS01_D2.5	Construction
C00116203DB108_PRS01_D2.5.1	Stage 1A Existing Shoulder Strengthening & Widening
C00116203DB108_PRS01_D2.5.1.1	Stage 1A - NB (Sta 111+50 to North End)
C00116203DB108_PRS01_D2.5.1.2	Stage 1A - SB (Sta 768+00 to South End)
C00116203DB108_PRS01_D2.5.3	Area 4 Interim Milestone Work
C00116203DB108_PRS01_D2.5.3.6	Stage 1B Median Work Area 4
C00116203DB108_PRS01_D2.5.3.6.2	Stage 1B - Area 4 Sta 312+00 to North End (376+75)
C00116203DB108_PRS01_D2.5.3.6.2.1	Stage 1B - Roadwork - Area 4 Sta 312+00 to North End (376+75)
C00116203DB108_PRS01_D2.5.3.6.2.2	Stage 1B - Storm Water Management Facilities - Area 4 Sta 312+00 to North End (376+75)
C00116203DB108_PRS01_D2.5.3.2	Stage 2 Outside Lanes Area 4
C00116203DB108_PRS01_D2.5.3.2.3	Stage 2 NB Area 4 Sta 312+00 to North End (376+75)
C00116203DB108_PRS01_D2.5.3.2.3.1	Stage 2 - NB Area 4 Roadwork
C00116203DB108_PRS01_D2.5.3.2.3.2	Stage 2 - NB Area 4 TMS
C00116203DB108_PRS01_D2.5.3.2.3.9	Stage 2 - Route 419 Ramp B
C00116203DB108_PRS01_D2.5.3.2.3.11	Stage 2 - Route 419 Loop B
C00116203DB108_PRS01_D2.5.3.2.1	Stage 2 SB Area 4 Sta 711+50 to North End
C00116203DB108_PRS01_D2.5.3.2.1.1	Stage 2 - SB Area 4 Roadwork
C00116203DB108_PRS01_D2.5.3.2.1.2	Stage 2 - SB Area 4 TMS
C00116203DB108_PRS01_D2.5.3.2.1.10	Stage 2 - Route 419 Ramp D
C00116203DB108_PRS01_D2.5.3.2.1.12	Stage 2 - Route 419 Loop D
C00116203DB108_PRS01_D2.5.3.7	Stage 3 Mill & Surface Asphalt Area 4
C00116203DB108_PRS01_D2.5.4	Stage 1B Median Work Area 1 to 3
C00116203DB108_PRS01_D2.5.4.1	Stage 1B - Area 1 Sta 100+00 to 175+00
C00116203DB108_PRS01_D2.5.4.1.1	Stage 1B - Roadwork - Area 1 Sta 100+00 to 175+00
C00116203DB108_PRS01_D2.5.4.1.2	Stage 1B - Storm Water Management Facilities - Area 1 Sta 100+00 to 175+00
C00116203DB108_PRS01_D2.5.4.2	Stage 1B - Area 2 Sta 175+00 to Route 705 Overpass (245+00)
C00116203DB108_PRS01_D2.5.4.2.1	Stage 1B - Roadwork - Area 2 Sta 175+00 to Route 705 Overpass (245+00)
C00116203DB108_PRS01_D2.5.4.2.2	Stage 1B - Storm Water Management Facilities - Area 2 Sta 175+00 to Route 705 Overpass (245+00)
C00116203DB108_PRS01_D2.5.4.3	Stage 1B - Area 3 Route 705 Overpass (245+00) to Sta 312+00
C00116203DB108_PRS01_D2.5.4.3.1	Stage 1B - Roadwork - Area 3 Route 705 Overpass (245+00) to Sta 312+00

WBS Code	WBS Name
C00116203DB108_PRS01_D2.5.4.3.2	Stage 1B - Storm Water Management Facilities - Area 3 Route 705 Overpass (245+00) to Sta 312+00
C00116203DB108_PRS01_D2.5.4.5	Stage 1B - Structures
C00116203DB108_PRS01_D2.5.4.5.1	Stage 1B - Structures - Bridge 1: I-81 Over RT 112
C00116203DB108_PRS01_D2.5.4.5.1.1	Stage 1B - Structures - I-81 Over RT 112 - NB
C00116203DB108_PRS01_D2.5.4.5.1.1.1	Stage 1B - I-81 Over RT112 - NB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.4.5.1.1.4	Stage 1B - I-81 Over RT112 - NB - Structures
C00116203DB108_PRS01_D2.5.4.5.1.1.4.1	Stage 1B - I-81 Over RT112 - NB - Abutment A
C00116203DB108_PRS01_D2.5.4.5.1.1.4.2	Stage 1B - I-81 Over RT112 - NB - Abutment B
C00116203DB108_PRS01_D2.5.4.5.1.1.4.3	Stage 1B - I-81 Over RT112 - NB - Pier
C00116203DB108_PRS01_D2.5.4.5.1.1.4.4	Stage 1B - I-81 Over RT112 - NB - Superstructure
C00116203DB108_PRS01_D2.5.4.5.1.2	Stage 1B - Structures - I-81 Over RT 112 - SB
C00116203DB108_PRS01_D2.5.4.5.1.2.1	Stage 1B - I-81 Over RT112 - SB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.4.5.1.2.4	Stage 1B - I-81 Over RT112 - SB - Structures
C00116203DB108_PRS01_D2.5.4.5.1.2.4.1	Stage 1B - I-81 Over RT112 - SB - Abutment A
C00116203DB108_PRS01_D2.5.4.5.1.2.4.2	Stage 1B - I-81 Over RT112 - SB - Abutment B
C00116203DB108_PRS01_D2.5.4.5.1.2.4.3	Stage 1B - I-81 Over RT112 - SB - Pier
C00116203DB108_PRS01_D2.5.4.5.1.2.4.4	Stage 1B - I-81 Over RT112 - SB - Superstructure
C00116203DB108_PRS01_D2.5.4.5.2	Stage 1B - Structures - Bridge 2: I-81 Over RT 635
C00116203DB108_PRS01_D2.5.4.5.2.3	Stage 1B - Structures - I-81 Over RT 635 - NB
C00116203DB108_PRS01_D2.5.4.5.2.3.1	Stage 1B - I-81 Over RT 635 - NB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.4.5.2.3.4	Stage 1B - I-81 Over RT 635 - NB - Structures
C00116203DB108_PRS01_D2.5.4.5.2.3.4.1	Stage 1B - I-81 Over RT 635 - NB - Abutment A
C00116203DB108_PRS01_D2.5.4.5.2.3.4.2	Stage 1B - I-81 Over RT 635 - NB - Abutment B
C00116203DB108_PRS01_D2.5.4.5.2.3.4.4	Stage 1B - I-81 Over RT 635 - NB - Superstructure
C00116203DB108_PRS01_D2.5.4.5.2.2	Stage 1B - Structures - I-81 Over RT 635 - SB
C00116203DB108_PRS01_D2.5.4.5.2.2.1	Stage 1B - I-81 Over RT 635 - SB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.4.5.2.2.4	Stage 1B - I-81 Over RT 635 - SB - Structures
C00116203DB108_PRS01_D2.5.4.5.2.2.4.1	Stage 1B - I-81 Over RT 635 - SB - Abutment A
C00116203DB108_PRS01_D2.5.4.5.2.2.4.2	Stage 1B - I-81 Over RT 635 - SB - Abutment B
C00116203DB108_PRS01_D2.5.4.5.2.2.4.4	Stage 1B - I-81 Over RT 635 - SB - Superstructure
C00116203DB108_PRS01_D2.5.4.5.3	Stage 1B - Structures - Bridge 3: I-81 Over RT 619
C00116203DB108_PRS01_D2.5.4.5.3.3	Stage 1B - Structures - I-81 Over RT 619 - NB
C00116203DB108_PRS01_D2.5.4.5.3.3.1	Stage 1B - I-81 Over RT 619 - NB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.4.5.3.3.4	Stage 1B - I-81 Over RT 619 - NB - Structures
C00116203DB108_PRS01_D2.5.4.5.3.3.4.1	Stage 1B - I-81 Over RT 619 - NB - Abutment A
C00116203DB108_PRS01_D2.5.4.5.3.3.4.2	Stage 1B - I-81 Over RT 619 - NB - Abutment B
C00116203DB108_PRS01_D2.5.4.5.3.3.4.4	Stage 1B - I-81 Over RT 619 - NB - Superstructure
C00116203DB108_PRS01_D2.5.4.5.3.1	Stage 1B - Structures - I-81 Over RT 619 - SB
C00116203DB108_PRS01_D2.5.4.5.3.1.1	Stage 1B - I-81 Over RT 619 - SB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.4.5.3.1.4	Stage 1B - I-81 Over RT 619 - SB - Structures
C00116203DB108_PRS01_D2.5.4.5.3.1.4.1	Stage 1B - I-81 Over RT 619 - SB - Abutment A
C00116203DB108_PRS01_D2.5.4.5.3.1.4.2	Stage 1B - I-81 Over RT 619 - SB - Abutment B
C00116203DB108_PRS01_D2.5.4.5.3.1.4.4	Stage 1B - I-81 Over RT 619 - SB - Superstructure
C00116203DB108_PRS01_D2.5.4.5.4	Stage 1B - Structures - Bridge 4: I-81 Over RT 311

WBS Code	WBS Name
C00116203DB108_PRS01_D2.5.4.5.4.3	Stage 1B - Structures - I-81 Over RT 311 - NB
C00116203DB108_PRS01_D2.5.4.5.4.3.1	Stage 1B - I-81 Over RT 311 - NB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.4.5.4.3.4	Stage 1B - I-81 Over RT 311 - NB - Structures
C00116203DB108_PRS01_D2.5.4.5.4.3.4.1	Stage 1B - I-81 Over RT 311 - NB - Abutment A
C00116203DB108_PRS01_D2.5.4.5.4.3.4.2	Stage 1B - I-81 Over RT 311 - NB - Abutment B
C00116203DB108_PRS01_D2.5.4.5.4.3.4.4	Stage 1B - I-81 Over RT 311 - NB - Superstructure
C00116203DB108_PRS01_D2.5.4.5.4.2	Stage 1B - Structures - I-81 Over RT 311 - SB
C00116203DB108_PRS01_D2.5.4.5.4.2.1	Stage 1B - I-81 Over RT 311 - SB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.4.5.4.2.4	Stage 1B - I-81 Over RT 311 - SB - Structures
C00116203DB108_PRS01_D2.5.4.5.4.2.4.1	Stage 1B - I-81 Over RT 311 - SB - Abutment A
C00116203DB108_PRS01_D2.5.4.5.4.2.4.2	Stage 1B - I-81 Over RT 311 - SB - Abutment B
C00116203DB108_PRS01_D2.5.4.5.4.2.4.4	Stage 1B - I-81 Over RT 311 - SB - Superstructure
C00116203DB108_PRS01_D2.5.5	Stage 2 Outside Lanes Area 1 to 3
C00116203DB108_PRS01_D2.5.5.1	Stage 2 - Roadwork
C00116203DB108_PRS01_D2.5.5.1.1	Stage 2 Northbound
C00116203DB108_PRS01_D2.5.5.1.1.1	Stage 2 NB Area 1 Sta 100+00 to 175+00
C00116203DB108_PRS01_D2.5.5.1.1.1.1	Stage 2 - NB Area 1 Roadwork
C00116203DB108_PRS01_D2.5.5.1.1.1.2	Stage 2 - NB Area 1 TMS
C00116203DB108_PRS01_D2.5.5.1.1.1.3	Stage 2 - NB Area 1 Soundwalls
C00116203DB108_PRS01_D2.5.5.1.1.2	Stage 2 NB Area 2 Sta 175+00 to Route 705 Overpass (245+00)
C00116203DB108_PRS01_D2.5.5.1.1.2.1	Stage 2 - NB Area 2 Roadwork
C00116203DB108_PRS01_D2.5.5.1.1.2.2	Stage 2 - NB Area 2 TMS
C00116203DB108_PRS01_D2.5.5.1.1.2.3	Stage 2 - NB Area 2 Soundwalls
C00116203DB108_PRS01_D2.5.5.1.1.3	Stage 2 NB Area 3 Route 705 Overpass(245+00) to Sta 312+00
C00116203DB108_PRS01_D2.5.5.1.1.3.1	Stage 2 - NB Area 3 Roadwork
C00116203DB108_PRS01_D2.5.5.1.1.3.2	Stage 2 - NB Area 3 TMS
C00116203DB108_PRS01_D2.5.5.1.1.3.3	Stage 2 - NB Area 3 Soundwalls
C00116203DB108_PRS01_D2.5.5.1.2	Stage 2 Southbound
C00116203DB108_PRS01_D2.5.5.1.2.1	Stage 2 SB Area 1 Sta 511+10 to 574+50
C00116203DB108_PRS01_D2.5.5.1.2.1.1	Stage 2 - SB Area 1 Roadwork
C00116203DB108_PRS01_D2.5.5.1.2.1.2	Stage 2 - SB Area 1 TMS
C00116203DB108_PRS01_D2.5.5.1.2.2	Stage 2 SB Area 2 Sta 574+50 to Route 705 Overpass (644+50)
C00116203DB108_PRS01_D2.5.5.1.2.2.1	Stage 2 - SB Area 2 Roadwork
C00116203DB108_PRS01_D2.5.5.1.2.2.2	Stage 2 - SB Area 2 TMS
C00116203DB108_PRS01_D2.5.5.1.2.3	Stage 2 SB Area 3 Route 705 Overpass (644+50) to Sta 711+ 50
C00116203DB108_PRS01_D2.5.5.1.2.3.1	Stage 2 - SB Area 3 Roadwork
C00116203DB108_PRS01_D2.5.5.1.2.3.2	Stage 2 - SB Area 3 TMS
C00116203DB108_PRS01_D2.5.5.3	Stage 2 - Structures
C00116203DB108_PRS01_D2.5.5.3.1	Stage 2 - Structures - Bridge 1: I-81 Over RT 112
C00116203DB108_PRS01_D2.5.5.3.1.1	Stage 2 - Structures - I-81 Over RT 112 - NB
C00116203DB108_PRS01_D2.5.5.3.1.1.1	Stage 2 - I-81 Over RT112 - NB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.5.3.1.1.4	Stage 2 - I-81 Over RT112 - NB - Structures
C00116203DB108_PRS01_D2.5.5.3.1.1.4.1	Stage 2 - I-81 Over RT112 - NB - Abutment A
C00116203DB108_PRS01_D2.5.5.3.1.1.4.2	Stage 2 - I-81 Over RT112 - NB - Abutment B
C00116203DB108_PRS01_D2.5.5.3.1.1.4.3	Stage 2 - I-81 Over RT112 - NB - Pier

WBS Code	WBS Name
C00116203DB108_PRS01_D2.5.5.3.1.1.4.4	Stage 2 - I-81 Over RT112 - NB - Superstructure
C00116203DB108_PRS01_D2.5.5.3.1.2	Stage 2 - Structures - I-81 Over RT 112 - SB
C00116203DB108_PRS01_D2.5.5.3.1.2.1	Stage 2 - I-81 Over RT112 - SB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.5.3.1.2.4	Stage 2 - I-81 Over RT112 - SB - Structures
C00116203DB108_PRS01_D2.5.5.3.1.2.4.1	Stage 2 - I-81 Over RT112 - SB - Abutment A
C00116203DB108_PRS01_D2.5.5.3.1.2.4.2	Stage 2 - I-81 Over RT112 - SB - Abutment B
C00116203DB108_PRS01_D2.5.5.3.1.2.4.3	Stage 2 - I-81 Over RT112 - SB - Pier
C00116203DB108_PRS01_D2.5.5.3.1.2.4.4	Stage 2 - I-81 Over RT112 - SB - Superstructure
C00116203DB108_PRS01_D2.5.5.3.2	Stage 2 - Structures - Bridge 2: I-81 Over RT 635
C00116203DB108_PRS01_D2.5.5.3.2.3	Stage 2 - Structures - I-81 Over RT 635 - NB
C00116203DB108_PRS01_D2.5.5.3.2.3.1	Stage 2 - I-81 Over RT 635 - NB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.5.3.2.3.4	Stage 2 - I-81 Over RT 635 - NB - Structures
C00116203DB108_PRS01_D2.5.5.3.2.3.4.1	Stage 2 - I-81 Over RT 635 - NB - Abutment A
C00116203DB108_PRS01_D2.5.5.3.2.3.4.2	Stage 2 - I-81 Over RT 635 - NB - Abutment B
C00116203DB108_PRS01_D2.5.5.3.2.3.4.4	Stage 2 - I-81 Over RT 635 - NB - Superstructure
C00116203DB108_PRS01_D2.5.5.3.2.2	Stage 2 - Structures - I-81 Over RT 635 - SB
C00116203DB108_PRS01_D2.5.5.3.2.2.1	Stage 2 - I-81 Over RT 635 - SB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.5.3.2.2.4	Stage 2 - I-81 Over RT 635 - SB - Structures
C00116203DB108_PRS01_D2.5.5.3.2.2.4.1	Stage 2 - I-81 Over RT 635 - SB - Abutment A
C00116203DB108_PRS01_D2.5.4.5.2.2.4.4	Stage 2 - I-81 Over RT 635 - SB - Abutment B
C00116203DB108_PRS01_D2.5.5.3.2.2.4.4	Stage 2 - I-81 Over RT 635 - SB - Superstructure
C00116203DB108_PRS01_D2.5.5.3.3	Stage 2 - Structures - Bridge 3: I-81 Over RT 619
C00116203DB108_PRS01_D2.5.5.3.3.3	Stage 2 - Structures - I-81 Over RT 619 - NB
C00116203DB108_PRS01_D2.5.5.3.3.3.1	Stage 2 - I-81 Over RT 619 - NB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.5.3.3.3.4	Stage 2 - I-81 Over RT 619 - NB - Structures
C00116203DB108_PRS01_D2.5.5.3.3.3.4.1	Stage 2 - I-81 Over RT 619 - NB - Abutment A
C00116203DB108_PRS01_D2.5.5.3.3.3.4.2	Stage 2 - I-81 Over RT 619 - NB - Abutment B
C00116203DB108_PRS01_D2.5.5.3.3.3.4.4	Stage 2 - I-81 Over RT 619 - NB - Superstructure
C00116203DB108_PRS01_D2.5.5.3.3.1	Stage 2 - Structures - I-81 Over RT 619 - SB
C00116203DB108_PRS01_D2.5.5.3.3.1.1	Stage 2 - I-81 Over RT 619 - SB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.5.3.3.1.4	Stage 2 - I-81 Over RT 619 - SB - Structures
C00116203DB108_PRS01_D2.5.5.3.3.1.4.1	Stage 2 - I-81 Over RT 619 - SB - Abutment A
C00116203DB108_PRS01_D2.5.5.3.3.1.4.2	Stage 2 - I-81 Over RT 619 - SB - Abutment B
C00116203DB108_PRS01_D2.5.5.3.3.1.4.4	Stage 2 - I-81 Over RT 619 - SB - Superstructure
C00116203DB108_PRS01_D2.5.5.3.4	Stage 2 - Structures - Bridge 4: I-81 Over RT 311
C00116203DB108_PRS01_D2.5.5.3.4.3	Stage 2 - Structures - I-81 Over RT 311 - NB
C00116203DB108_PRS01_D2.5.5.3.4.2	Stage 2 - Structures - I-81 Over RT 311 - SB
C00116203DB108_PRS01_D2.5.5.3.4.2.1	Stage 2 - I-81 Over RT 311 - SB - Demo Existing Structure
C00116203DB108_PRS01_D2.5.5.3.4.2.4	Stage 2 - I-81 Over RT 311 - SB - Structures
C00116203DB108_PRS01_D2.5.5.3.4.2.4.1	Stage 2 - I-81 Over RT 311 - SB - Abutment A
C00116203DB108_PRS01_D2.5.5.3.4.2.4.2	Stage 2 - I-81 Over RT 311 - SB - Abutment B
C00116203DB108_PRS01_D2.5.5.3.4.2.4.4	Stage 2 - I-81 Over RT 311 - SB - Superstructure
C00116203DB108_PRS01_D2.5.5.2	Stage 2 - Ramps
C00116203DB108_PRS01_D2.5.5.2.5	Stage 2 - Route 112 Ramp A
C00116203DB108_PRS01_D2.5.5.2.1	Stage 2 - Route 112 Ramp B

WBS Code	WBS Name
C00116203DB108_PRS01_D2.5.5.2.2	Stage 2 - Route 112 Ramp D
C00116203DB108_PRS01_D2.5.5.2.3	Stage 2 - Route 112 Loop D
C00116203DB108_PRS01_D2.5.5.2.4	Stage 2 - Route 311 Ramp A
C00116203DB108_PRS01_D2.5.5.2.6	Stage 2 - Route 311 Ramp B
C00116203DB108_PRS01_D2.5.5.2.7	Stage 2 - Route 311 Ramp D
C00116203DB108_PRS01_D2.5.5.2.8	Stage 2 - Route 311 Loop D
C00116203DB108_PRS01_D2.5.2	Underpass Road Work
C00116203DB108_PRS01_D2.5.2.2	Stage 2 - Roadwork - RT 635
C00116203DB108_PRS01_D2.5.2.1	Stage 2 - Roadwork - RT 112
C00116203DB108_PRS01_D2.5.2.3	Stage 2 - Roadwork - RT 619
C00116203DB108_PRS01_D2.5.2.4	Stage 2 - Roadwork - RT 311
C00116203DB108_PRS01_D2.5.6	Bridge 4: I-81 Over Rt 311 Joint Repair / Overlay
C00116203DB108_PRS01_D2.5.6.2	Bridge 4 SB I-81 Over Rt 311 Joint Repair / Overlay
C00116203DB108_PRS01_D2.5.7	Stage 3 Mill & Surface Asphalt
C00116203DB108_PRS01_D2.6	Testing & Closeout

Overall Geography & Sequencing

Our schedule mirrors the project segmentation (four Areas below in NB Stationing) discussed throughout the technical proposal. This segmented approach provides an ability to optimize our resources, provide "plan b" scenarios, and divides the project into more manageable pieces facilitating more accurate tracking and monitoring. Our Areas include:

- Area 1 to the south (STA 100+00 to 175+00)
- Area 2 (STA 175+00 to 245+00)
- Area 3 (STA 245+00 to STA 312+00)
- Area 4 (STA 312+00 to Northern End)

Within these 4 areas, we have sequenced the project as outlined above in the WBS Structure. This sequencing was driven by traffi flo . By eliminating the temporary crossovers, we will shift traffi to the outside of I-81 and construct the median. Traffi will then be shifted to the newly constructed median lanes and construction along the outside will occur. Maintaining traffi in its normal direction is preferable to a counterflow scenario where opposing SB and NB traffi are on the same roadway separated by a single temporary concrete barrier. With the amount of truck traffi along this corridor (most in the country), maintaining median separated traffi and eliminating a movement across the median into opposing travel lanes is a significant safety enhancement for our team and VDOT.

Shoulder strengthening operations will occur on both the NB and SB lanes during nighttime lane closures. Existing guardrail will be relocated to allow for the full 34' wide temporary pavement section for the traveling public. Once the strengthening operation is complete, traffi will be shifted to the outside. Temporary concrete barrier will be placed along the median construction workzone to segregate work activities from the traveling public, providing a safe work area for median construction to take place. Stormwater Management facilities will be constructed on the west side of the project to handle stormwater runoff from the newly constructed median. Bridge replacement will include demolition and replacement/rehabilitation of four bridges matching our sequence of roadway construction.

Once traffi is pushed to the new constructed median pavement, construction of the outside widening will commence. Temporary concrete barrier will provide for a safe construction zone for constructing the outside widening. This zone provides safe access for noise barrier construction to be done along the east side of the NB travel lanes.

Area 4 activities includes primarily grading and paving operations. This Area contains only 12% of the new storm drainage on the project, 1,900 LF of barrier wall, has no bridge work, and no noise barrier. All of these factors contribute to this area progressing faster than the other Areas allowing traffi to be shifted to the median lanes prior to the other Areas. Outside widening will be completed and traffi will be placed in its final configuration approximately ***one year ahead of the other Areas.***

The Goodwin Road underpass lowering will occur during the first construction season in the summer months within the allowed 60-day maximum road closure. Box culvert rehabilitation and extensions will occur in the Areas and during the stages that allow safe access to the workzone. Concrete rehabilitation of the RT 705 and RT 419 bridges will be scheduled and occur throughout the project as access permits. Roadway lighting is generally located at the interchanges and will be constructed in conjunction with final grading for that particular area stage and location. The ITS system will be maintained throughout the project with new equipment installation occurring as the Areas are completed.

Linear Schedule

In addition to the P6 CPM schedule AWC developed a linear schedule (Figure 4.6.2.1) to analyze and maximize resource utilization. A linear schedule is a graphical representation of the project on a Time Distance Diagram. Time is represented on the vertical axis with the beginning of the project at the bottom of the page and completion at the top of the page. Distance is represented on the horizontal axis with stationing going south to north (North Stations Shown). The linear schedule divides the Areas and Stages of the project. The stages are color coded in the background with Stage 1A a light blue, Stage 1B a light purple, and Stage 2 a light green.

In Stage 1B the crews will be working in the median starting at the ends of the project and working towards the middle. Once traffi is shifted to the median the crews will be working on the outside working in the direction of traffic within eac Area.

By maximizing resource utilization crews stay continuously productive for the duration of the project and minimize mobilizations. In Stage 1B there are two crews each for the major resources. This includes Earthwork, Drainage, and Barrier. Once Area 1 and 4 Stage 1B work is complete traffi shifts to the inside, and work begins on the outside. The crews will start working on the Northbound outside work in Area 1 and 4 and then switch to the Southbound outside work. These crews will then move to Areas 2 and 3 as they finish. Similarly, to Stage 1B there are two crews each for the major resources.

The bridge construction is also shown on the linear schedule. The bridge sequence of construction was optimized to use one crew each for the major resources. This includes Pile Driving, MSE, Substructure, and Superstructure.

AWC will use the linear schedule along with the CPM Schedule throughout the duration of the project. The program used can import the P6 schedule into the linear schedule software directly and graphically depict the plan. This allows the project's operations team to easily review and understand the schedule. It also serves as a good tool to identify any logic issues that need to be fixed in the CPM schedule early on so that the design and management team are focused on the key prerequisites to maintain schedule certainty. As with P6 scheduling software, the linear schedule can be filtered by specific activities to do a deeper dive into specific resources (i.e. Grading or Asphalt Operations).

Critical Path

The longest path of the project begins with Field Surveys and the Investigation Phase followed by Roadway Design. The longest path continues with Area 4 Stage 1B Erosion and Sediment Controls, Demo Existing Roadway and Area 3 Stage 1B Roadwork activities. Stage 1B (median work zone) contains over 70% of the storm drainage quantity for the project with 30% occurring in Area 2. Once the drainage crew from Area 3 is complete it will continue by supplementing the drainage crews in Area 2 to keep this off the critical path. Grading and median barrier wall construction will closely follow the storm drain activities. Final grading and paving will progress as sections within areas are ready. AWC will closely monitor the critical path and near

critical path utilizing the CPM and linear schedules and additional crews will be added, if needed to maintain schedule certainty.

Once the Area 3 Stage 1B work is complete traffi is shifted to the new median lanes in Area 3 (Area 4 previously shifted to the median lanes when the Stage 1B work was complete). The longest path continues through Area 3 Stage 2 NB Erosion and Sediment Controls, Demo Existing Roadway, and Earthwork. As crews complete work they will move to Area 3 Stage 2 SB to complete the earthwork and retaining walls. Once the retaining walls are complete the longest path continues through completion of the roadway in Area 3 SB and continues to Stage 2 Route 311 Ramp D tie-in. The longest path concludes with Stage 3 Mill, Overlay and Surface Asphalt allowing traffic to be placed in its final configurat

Calendars

Below is a description of the calendars used for the Project Schedule, including the following holidays:

- **I-81 7-Day:** Based on seven days per week for activities that have durations based on calendar days instead of workdays. This calendar is assigned to activities such as VDOT 21 calendar day submittal reviews, milestones, and Concrete Cure Time.
- **I-81 5-Day Holiday:** Based on five days per week with Saturdays, Sundays, New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Eve Day, Christmas Day, and New Year's Eve blocked out as non-work days. This calendar is assigned to design, administrative, and procurement activities.
- **I-81 5-Day Weather:** Based on five days per week with Saturdays, Sundays, and holidays blocked out as non-work days. Additionally, monthly average number of anticipated inclement weather days are blocked out as non-work days. These anticipated inclement weather days are shown in the Table below. This calendar is assigned to construction activities.

Table 4.6.3 - Anticipated inclement weather days

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
8	8	6	6	6	4	5	5	5	6	6	6

- **I-81 5-Day Paving:** Based on five days per week. Saturdays, Sundays, holidays, weather days, and December 15th through March 15th are blocked out as nonwork days. This calendar is assigned to asphalt activities.
- **I-81 5-Day RT 635:** Based on five days per week. Saturdays, Sundays, holidays, weather days, and the period during which school is in session are blocked out as nonwork days. This calendar is assigned to the RT 635 roadwork activities.

Key Schedule Assumptions

- Schedule is based on a NTP issued on or before May 21, 2021.
- Third Party Utility companies will coordinate, cooperate, and perform their work as shown in our Schedule.
- There are no hazardous materials, threatened or endangered species, or other environmental constraints not identified in the RF .
- Crews are primarily based on an 8-hour, five day per week schedule with weather and holidays accounted for in the Schedule as discussed above in the calendars section.
- Finish-Start relationships are used as much as possible to facilitate logical flow through the schedule. There are overlapping of certain activities such as earthwork and drainage within areas where multiple crews will be resourced.
- Quantities and anticipated crew productivity have been input into most Schedule activities.

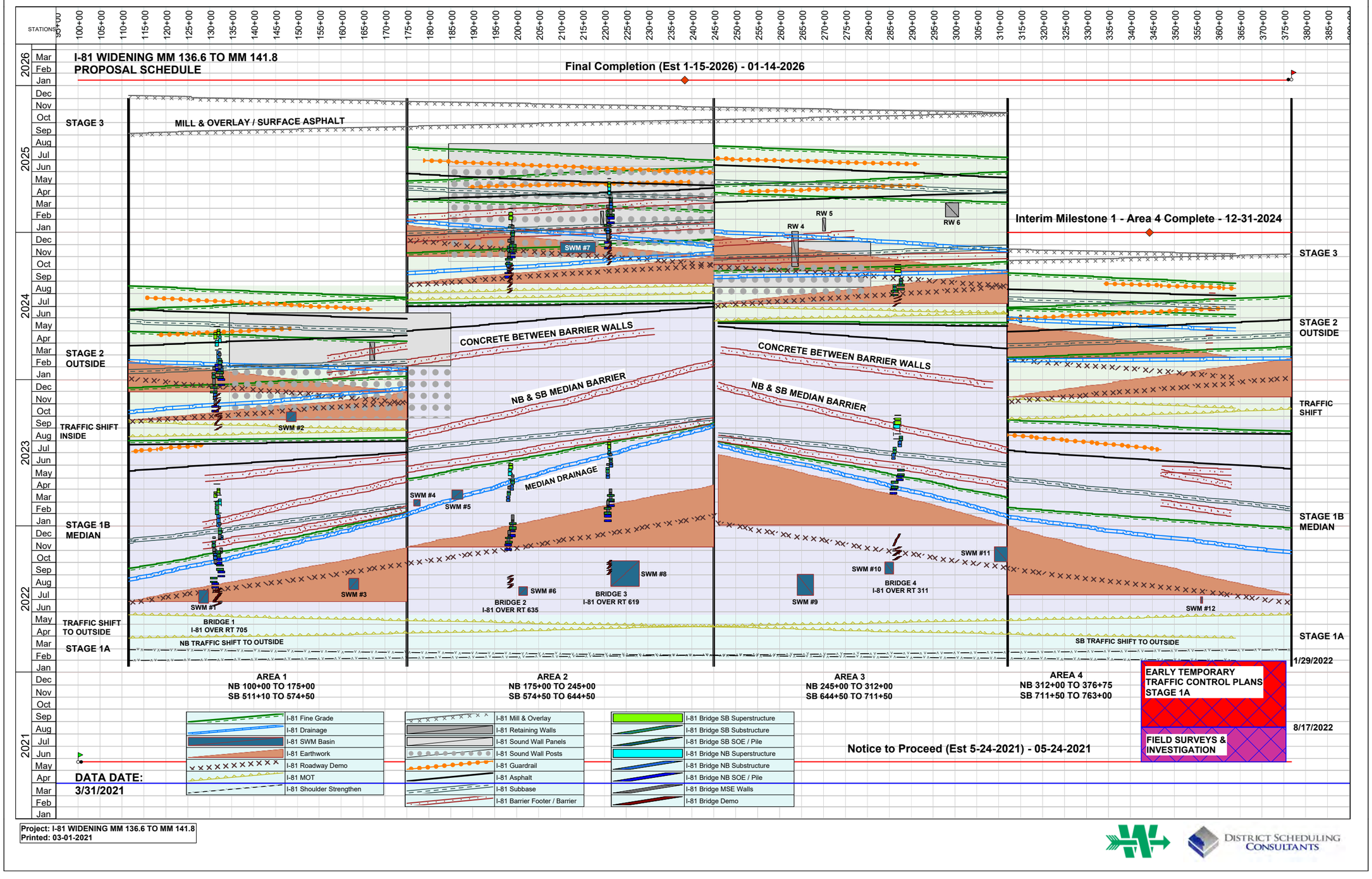


Figure 4.6.2.1 - Linear Schedule

Appendix

Attachment 4.0.1.1 Technical Proposal Checklist

ATTACHMENT 4.0.1.1

I-81 WIDENING MM 136.6 TO MM 141.8

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 3.7 (Form C-78-RFP)	Sections 3.7, 4.0.1.1	no	Appendix
List of Approved ATC's (if applicable)	Attachment 3.6.7 (Form C-78-RFP)	Sections 3.6.7	no	N/A
Letter of Submittal	NA	Sections 4.1		
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	Page 1
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	Page 1
Authorized representative's original signature	NA	Section 4.1.1	yes	Page 1
Declaration of intent	NA	Section 4.1.2	yes	Page 1
120 day declaration	NA	Section 4.1.3	yes	Page 1
Point of Contact information	NA	Section 4.1.4	yes	Page 1
Principal Officer information	NA	Section 4.1.5	yes	Page 1
~~Interim Milestone and~~ Final Completion Date~~—~~	NA	Section 4.1.6	yes	Page 1
Unique Milestone Date	NA	Section 4.1.7	yes	Page 1
Proposal Payment Agreement or Waiver of Proposal Payment	Attachment 9.3.1 or 9.3.2	Section 4.1.7	no	Appendix

ATTACHMENT 4.0.1.1

I-81 WIDENING MM 136.6 TO MM 141.8

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.8	no	Appendix
Written Statement of DBE Participation (9%)	NA	Section 4.1.10	yes	Page 1
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	Page 2
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	Page 2
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	Page 2
Design Concept	NA	Section 4.3		
Conceptual Roadway Plans and description	NA	Section 4.3.1.	yes	Page 3-13
Conceptual Structural Plans and description	NA	Section 4.3.2	yes	Page 13-19
Project Approach	NA	Section 4.4		
Environmental Management	NA	Section 4.4.1	yes	Page 20-23
Utilities	NA	Section 4.4.2	yes	Page 23-29
Geotechnical	NA	Section 4.4.3	yes	Page 29-33

ATTACHMENT 4.0.1.1

I-81 WIDENING MM 136.6 TO MM 141.8

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	Page 33-41
Construction of Project	NA	Section 4.5		
Sequence of Construction	NA	Section 4.5.1	yes	Page 42-53
Transportation Management Plan	NA	Section 4.5.2	yes	page 53-66
~~**Disadvantaged Business Enterprises (DBE)**~~	~~NA~~	~~Section 4.6~~		
~~Written statement of percent DBE participation~~	~~NA~~	~~Section 4.6~~	~~yes~~	
Proposal Schedule	NA	Section 4.6~~7~~		
Proposal Schedule	NA	Section 4.6~~7~~	no	Section 4.6
Proposal Schedule Narrative	NA	Section 4.6~~7~~	no	Section 4.6
Proposal Schedule in single .pdf	NA	Section 4.6~~7~~	no	Section 4.6

Attachment 3.7 Acknowledgment of Receipt of RFP, Revisions, and/or Addenda Form C-78-RFP

ATTACHMENT 3.7

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

RFP NO. C00116203DB108

PROJECT NO.: 0081-080-946

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 3.7, 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 RFP – October 28, 2020 (Date)
2. Cover letter of Addendum #1- December 16, 2020 (Date)
3. Cover letter of Addendum #2- January 7, 2021 (Date)
4. Cover letter of Addendum #3- January 27, 2021 (Date)
5. Cover letter of Addendum #4- February 12, 2021 (Date)

SIGNATURE

March 1, 2021

DATE

EJ O'Neill

PRINTED NAME

Vice President

TITLE

Attachment 9.3.1 Proposal Payment Agreement Letter

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this "Agreement") is made and entered into as of this ____ day of _____, 2021, by and between the Virginia Department of Transportation ("VDOT"), and Archer Western Construction, LLC ("Offeror").

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's May 29, 2020 Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the **I-81 Widening MM 136.6 to MM 141.8, Project No. 0081-080-946** ("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 **Two-hundred twenty five thousand and 00/100 Dollars ($225,000.00)** ("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: _____

Archer Western Construction, LLC

By: _____

Name: EJ O'Neill

Title: Vice President

Attachment 11.8.6(a) Certification Regarding Debarment; Primary Covered Transactions

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project No.: 0081-080-946

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.

	March 1, 2021	Vice President
Signature - EJ O'Neill	Date	Title

Archer Western Construction, LLC
Name of Firm

Attachment 11.8.6(b) Certification Regarding Debarment; Lower Tier Covered Transactions

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

Project No.: 0081-080-946

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	3/3/2021 Date	Executive Vice President Title

Dewberry Engineers Inc.
Name of Firm

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

Project No.: 0081-080-946

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.

Thomas J Kitredge 2/10/2021 President
Signature Date Title

Kanawha Stone Company, Inc.
Name of Firm

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

Project No.: 0081-080-946

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.

February 8, 2021	Vice President, Transportation Services Leader
Signature Date	Title

McDonough Bolyard Peck, Inc.
Name of Firm

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

Project No.: 0081-080-946

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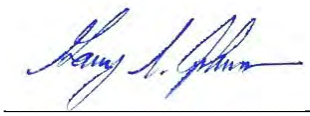

Signature	February 8, 2021 Date	Principal, Director of Bridges & Structures Director of Transportation Design Build Title

Timmons Group, Inc.
Name of Firm

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

Project No.: 0081-080-946

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_	2/8/21	President & Chief Engineer
Signature	Date	Title

Alvi Associates, Inc.
Name of Firm

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

Project No.: 0081-080-946

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Marlin Zook	2/08/2021	Vice President
Signature	Date	Title

Quantum Spatial, Inc.
Name of Firm

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

Project No.: 0081-080-946

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Jeanette Dabbs 2/8/21 President

Signature Date Title

Diversified Property Services, Inc.

Name of Firm

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

Project No.: 0081-080-946

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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	2/11/2021 Date	Chief Visionary Officer Title

McCormick Taylor, Inc.
Name of Firm

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

Project No.: 0081-080-946

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	2/8/2021	Vice President
Signature	Date	Title

Accumark, Inc.

Name of Firm

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

Project No.: 0081-080-946

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Signature	2/8/21 Date	Vice President Title

ECS Mid-Atlantic, LLC
Name of Firm

www.walshgroup.com

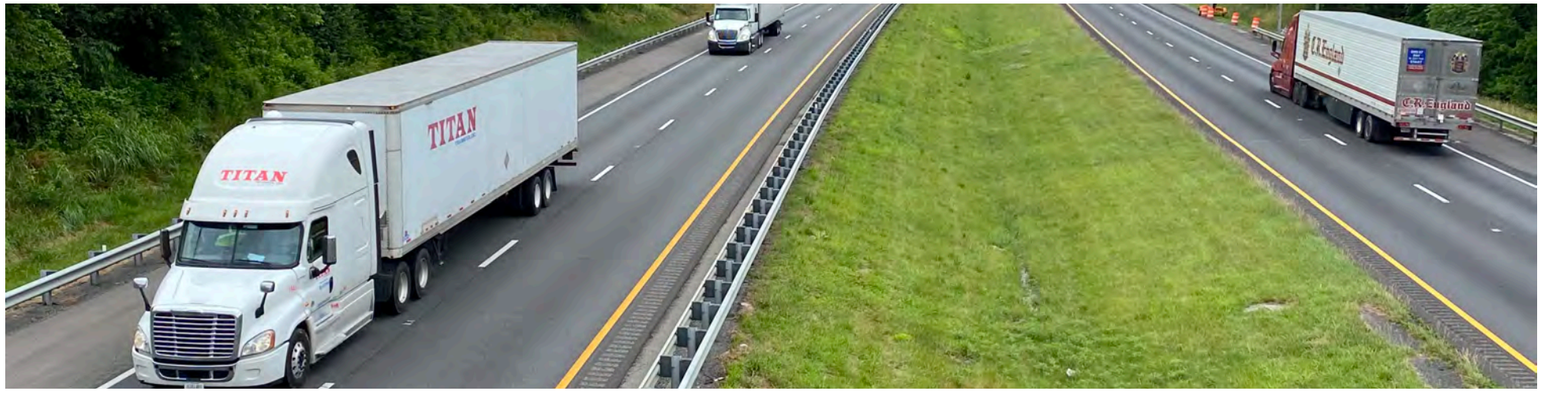
Dewberry®

www.dewberry.com

I-81 WIDENING MM 136.6 TO MM 141.8
Roanoke County and City of Salem, Virginia

State Project No.: 0081-080-946, P101, R201, C501, B677, B678, B681, B682, B683, B684, B685, B686, B687, B688
Federal Project No.: NHPP-0812 (330)
Contract ID No.: C00116203DB108

MARCH 3, 2021



Dewberry

VOLUME II - CONCEPTUAL PROJECT PLANS

Roadway Plans

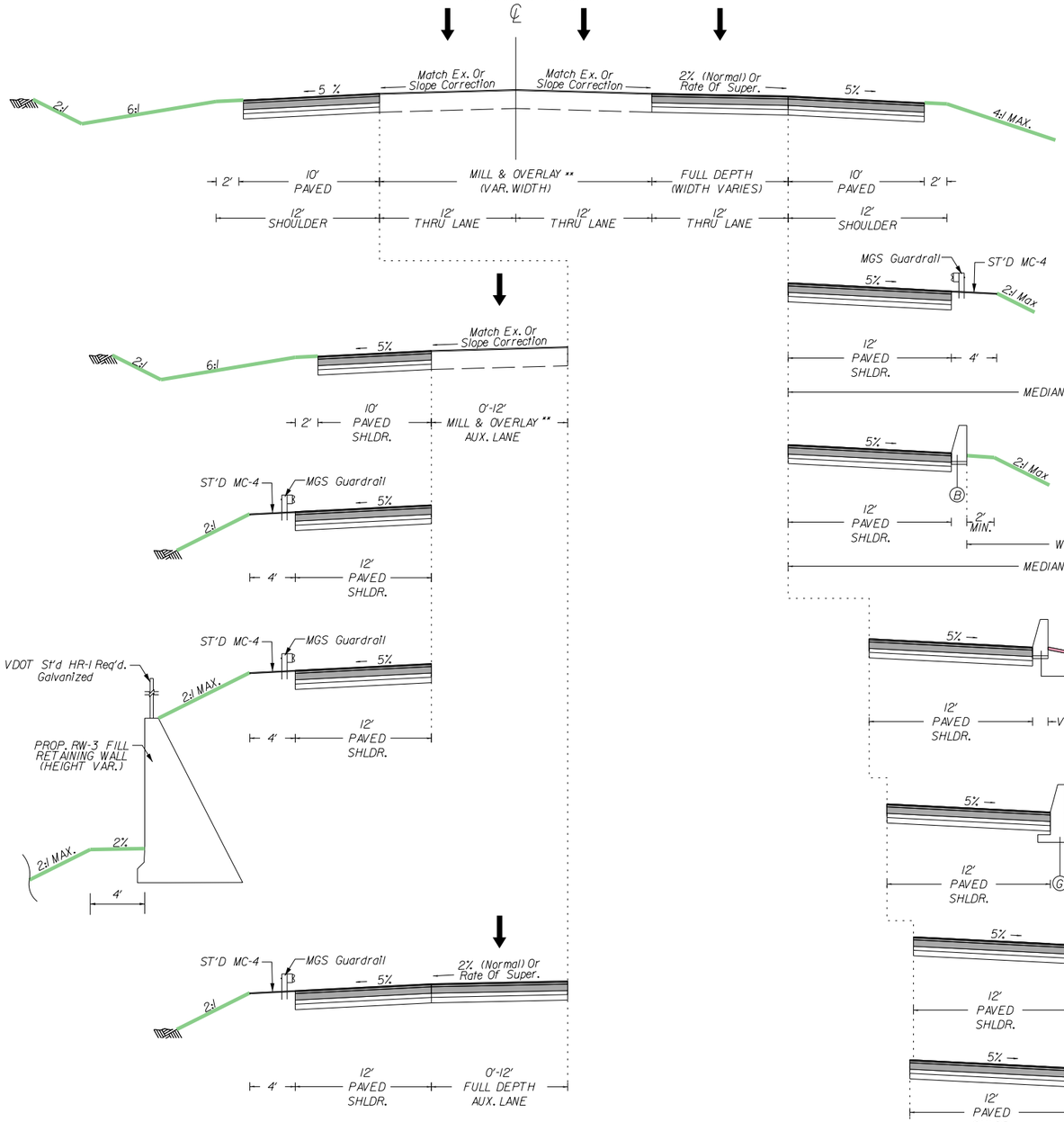
STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946	2A(1)

NOTE:
* SEE SHEET 2A(3) NOISE BARRIER TYPICAL SECTION FOR FURTHER DETAILS

** MILL AND OVERLAY AREAS INCLUDES REHABILITATION PER RFP PART 2. SECTION 2.6.JJ.

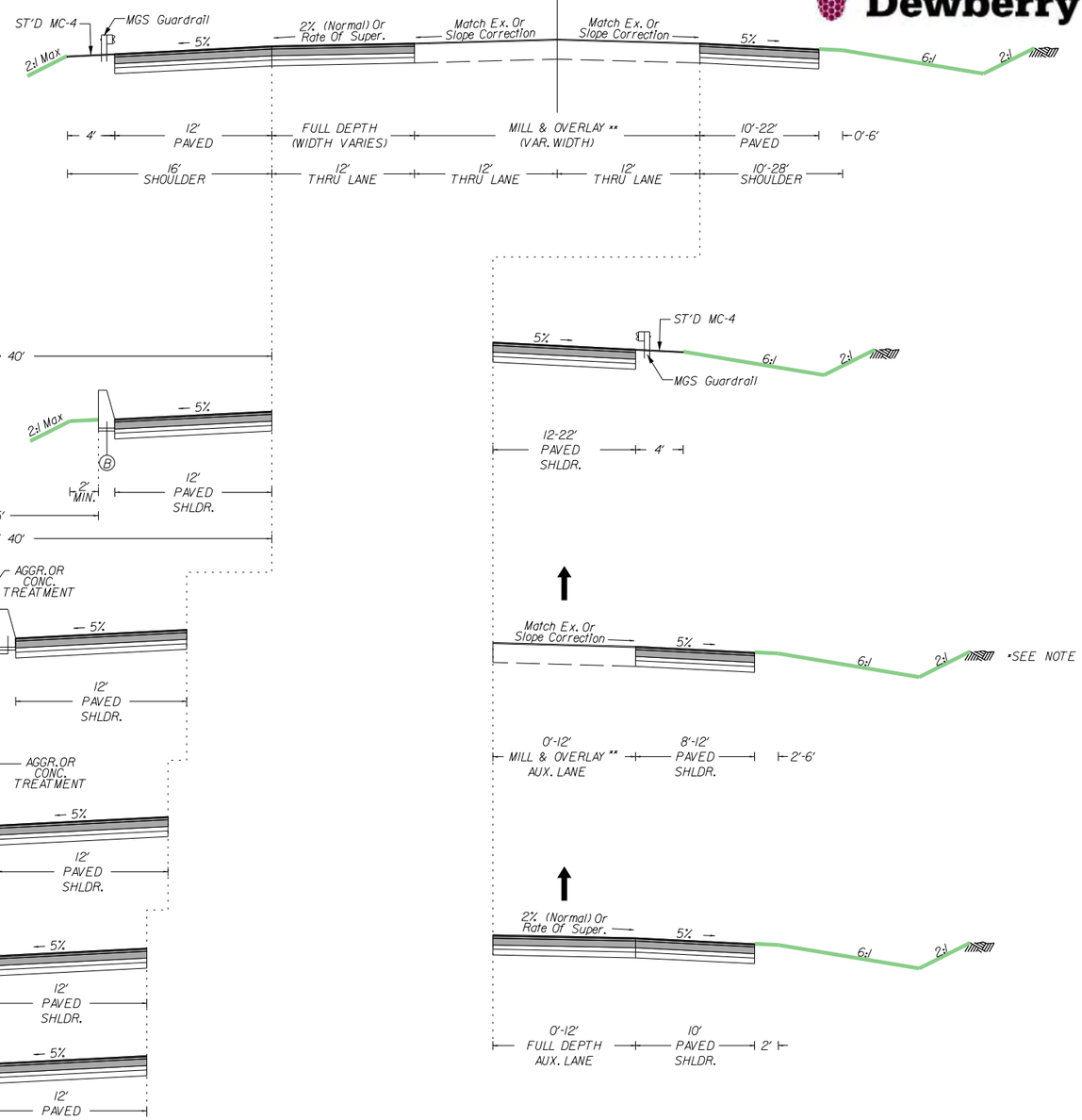
I-81 SB (GS-INT)

WIDEN TO INSDE
STA. 511+09.98 TO 543+83.13



I-81 NB (GS-INT)

WIDEN TO INSDE
STA. 111+50.00 TO 244+15.00



LEGEND

- (A) Constant Slope Grade Differential Barrier Req'd.
- (B) Single Face Constant Slope Concrete Barrier Req'd.
- (C) Constant Slope Barrier Req'd.
- (D) Modified Constant Slope Barrier Req'd.
- (E) 6" Curb, St'd. CG-2 Req'd.
- (F) Bridge Pier Protection System, BPPS-1A Req'd.
- (G) Special Design Median Barrier Req'd.

Proposed Asphalt Pavement

Denotes Proposed Grass Median/ Buffer/Planted Area

Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm

	PROJECT	SHEET NO.
	0095-969-739	2A(1)

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946	2A(2)

NOTE:

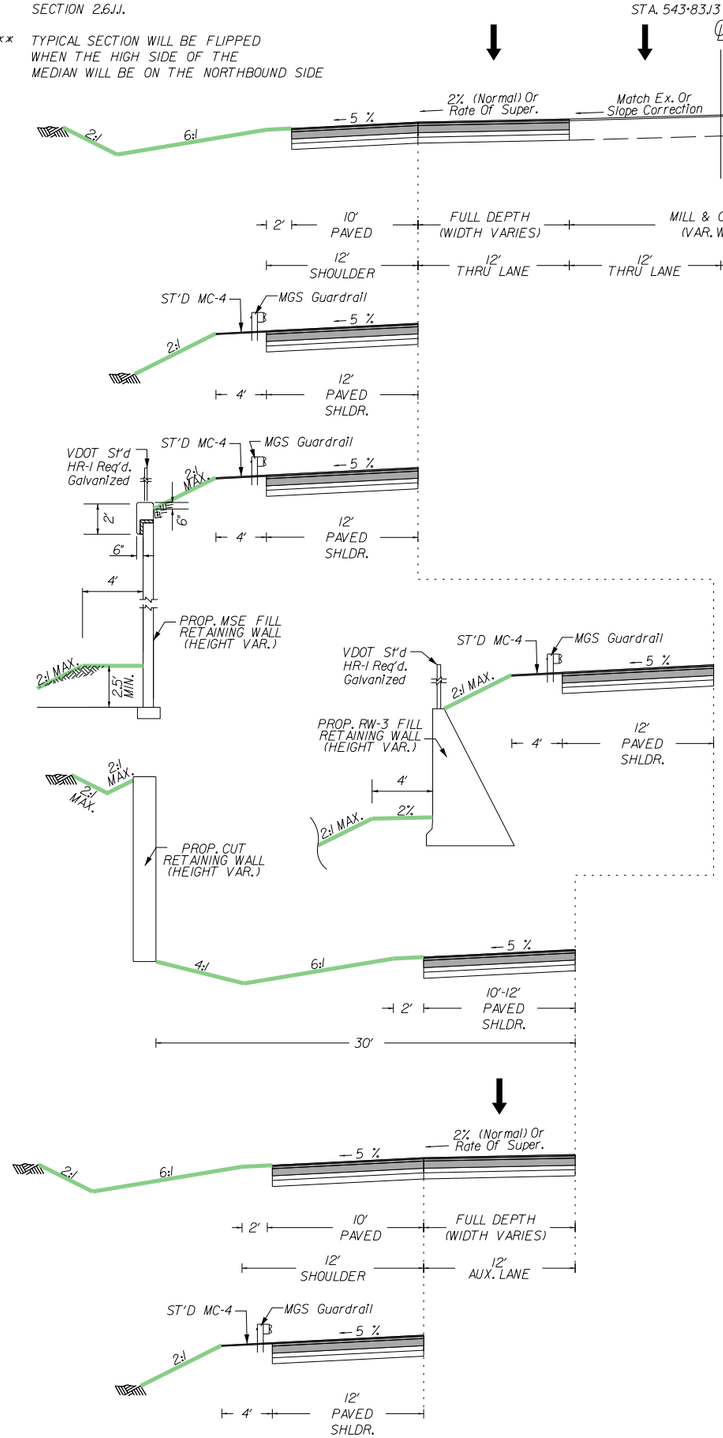
* SEE SHEET 2A(3) NOISE BARRIER TYPICAL SECTION FOR FURTHER DETAILS

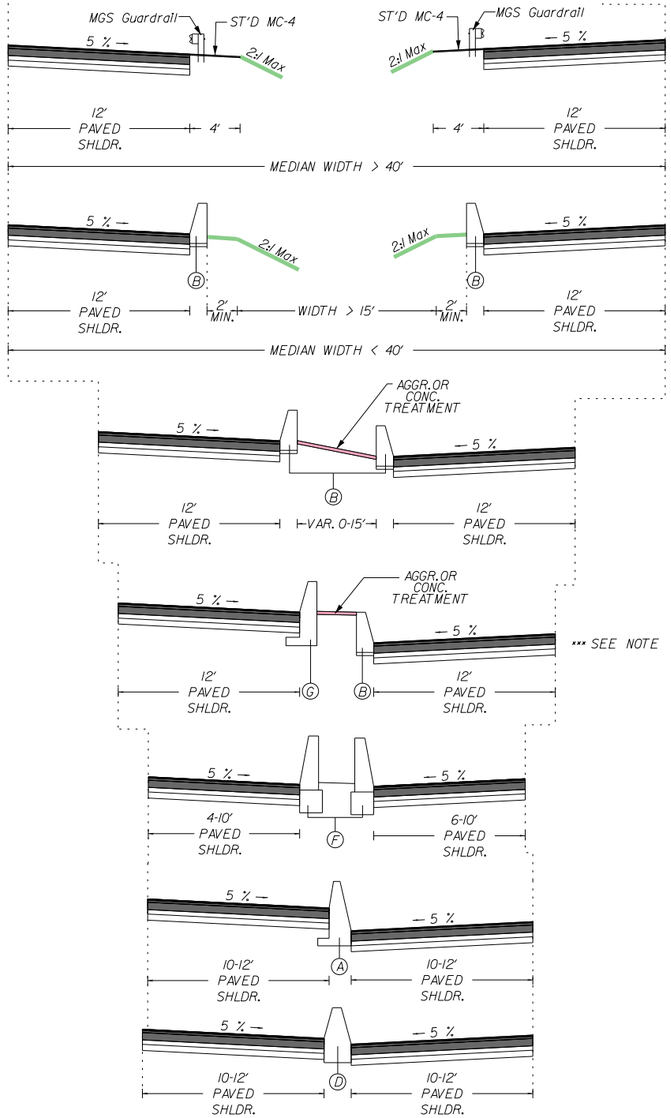
** MILL AND OVERLAY AREAS INCLUDES REHABILITATION PER RFP PART 2, SECTION 2.6.JJ.

*** TYPICAL SECTION WILL BE FLIPPED WHEN THE HIGH SIDE OF THE MEDIAN WILL BE ON THE NORTHBOUND SIDE

I-81 SB (GS-INT)

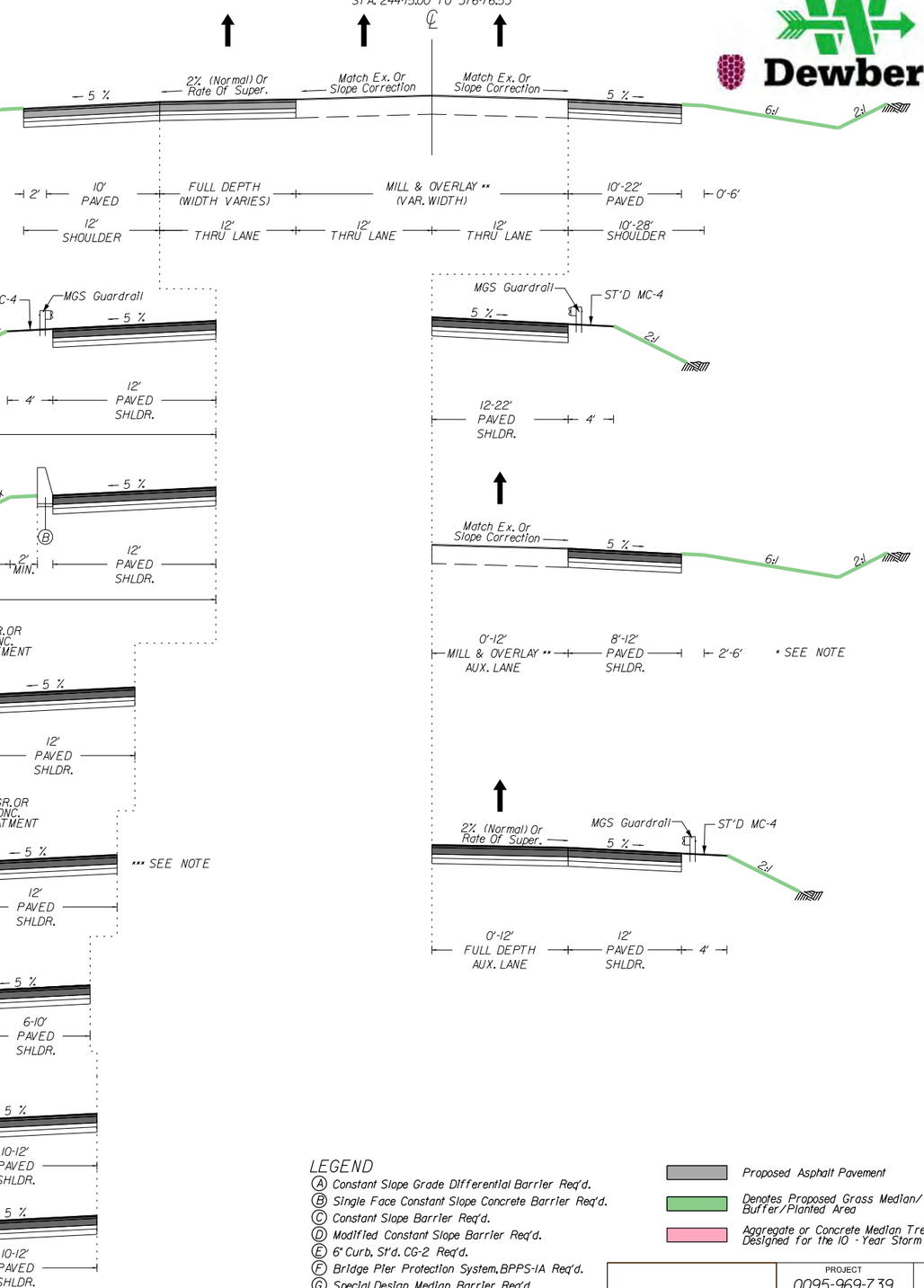
WIDEN TO OUTSIDE
STA. 543+83.13 TO 762+48.74





I-81 NB (GS-INT)

WIDEN TO INSDE
STA. 244+15.00 TO 376+76.53



LEGEND

- (A) Constant Slope Grade Differential Barrier Req'd.
- (B) Single Face Constant Slope Concrete Barrier Req'd.
- (C) Constant Slope Barrier Req'd.
- (D) Modified Constant Slope Barrier Req'd.
- (E) 6" Curb, St'd. CG-2 Req'd.
- (F) Bridge Pier Protection System, BPPS-1A Req'd.
- (G) Special Design Median Barrier Req'd.

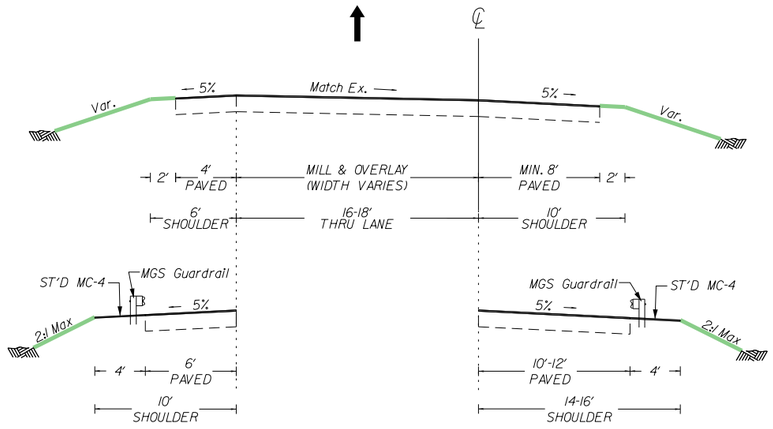
- Proposed Asphalt Pavement
- Denotes Proposed Grass Median/ Buffer/Planted Area
- Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm

PROJECT	SHEET NO.
0095-969-739	2A(2)

STATE	STATE		SHEET NO.
	ROUTE	PROJECT	
VA.	81	0081-080-946	2A(3)

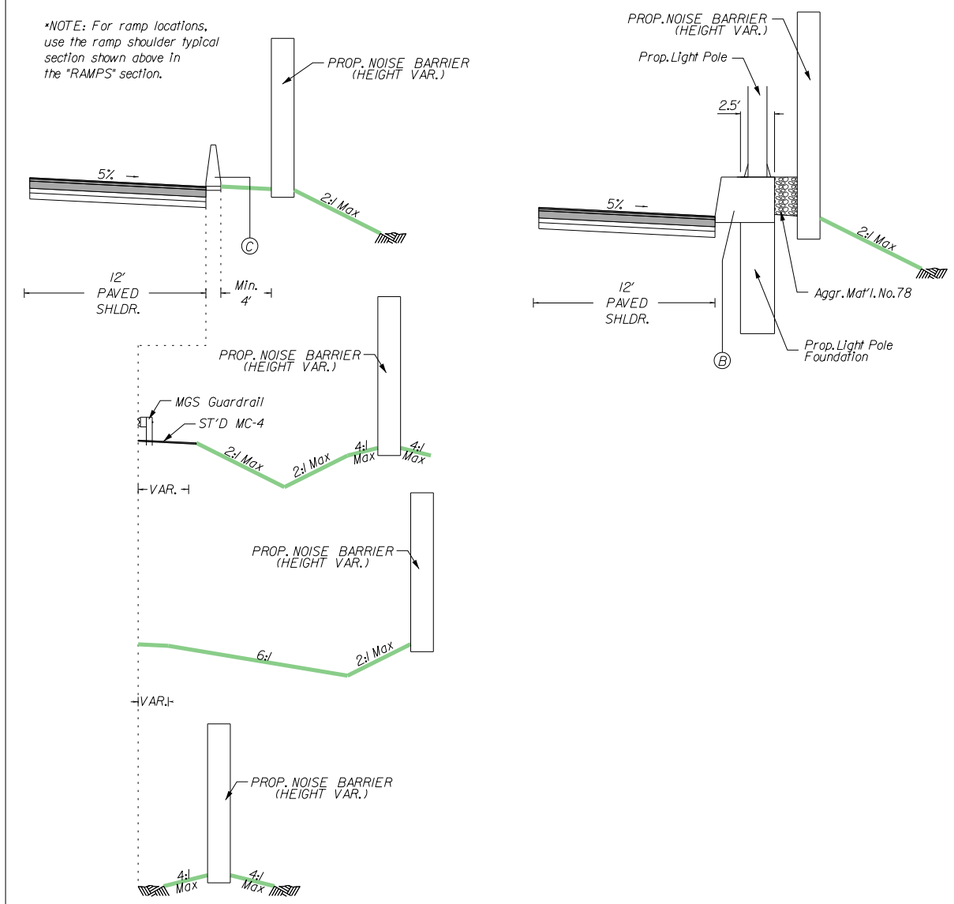
Dewberry

RAMPS (GS-R)



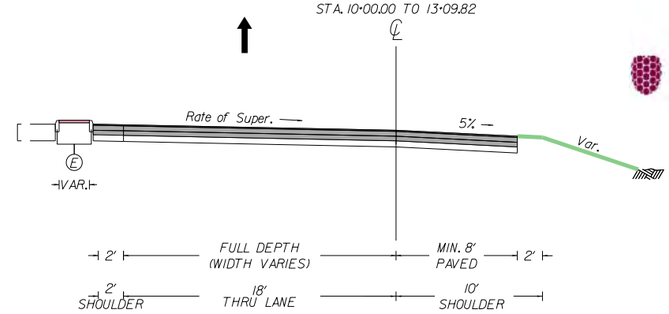
PROPOSED NOISE BARRIER SECTIONS

*NOTE: For ramp locations, use the ramp shoulder typical section shown above in the "RAMPS" section.



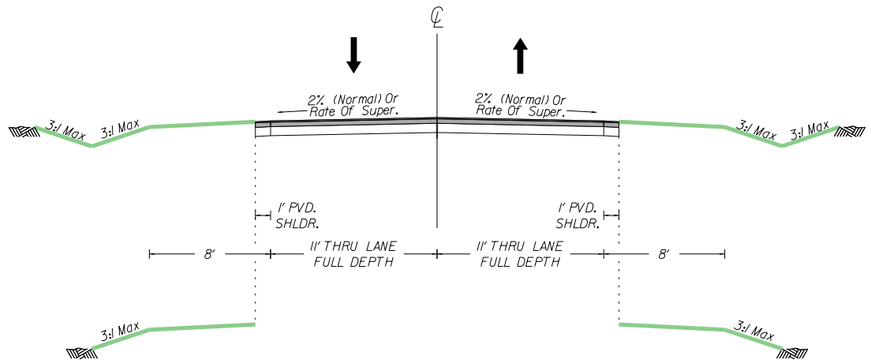
ROUTE 112 SPUR D (GS-R)

STA. 10+00.00 TO 13+09.82



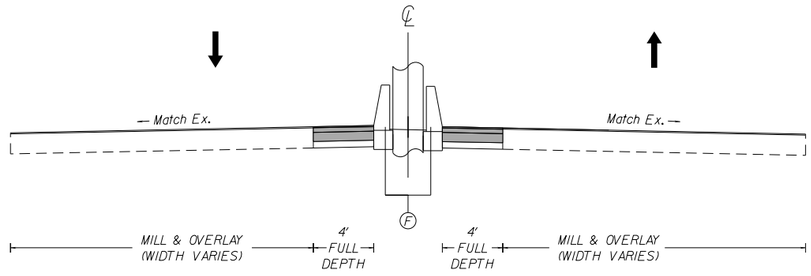
ROUTE 635 (GS-7)

STA. 15+00.00 TO 21+00.00



ROUTE 112 (GS-5)

STA. 17+95.46 TO 28+21.98



LEGEND

- Ⓐ Constant Slope Grade Differential Barrier Req'd.
- Ⓑ Single Face Constant Slope Concrete Barrier Req'd.
- Ⓒ Constant Slope Barrier Req'd.
- Ⓓ Modified Constant Slope Barrier Req'd.
- Ⓔ 6" Curb, St'd. CG-2 Req'd.
- Ⓕ Bridge Pier Protection System, BPPS-1A Req'd.
- Ⓖ Special Design Median Barrier Req'd.

- Proposed Asphalt Pavement
- Denotes Proposed Grass Median/ Buffer/Planted Area
- Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm

	PROJECT	SHEET NO.
	0095-969-739	2A(3)

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	3

Dewberry

Proposed Asphalt Pavement	Denotes Proposed Sign Structure	Denotes Prop. R/W per RFP
Denotes Proposed Grass Median/ Buffer/Planted Area	Denotes Proposed Light Pole	Denotes Offeror's Prop. R/W
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm	Denotes Proposed Bridge	Denotes Prop. L/A
Proposed Gravel	Denotes Demolition of Pavement	Denotes Prop. Perm. Esm't.
	Denotes Area of R/W or Esm't Reduction	Denotes Temp. Esm't.
		Denotes Exist. R/W
		Exist. Utilities

Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail

Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	3

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	4

Dewberry

Curve RTE112_LOOPD1
PI = 82+95.22
DELTA = 183° 49' 01.24" (RT)
D = 23° 34' 11"
T = 7,295.22'
L = 779.89'
R = 243.09'
PC = 10+00.00
PT = 17+79.89
V = 30 MPH
E = 8%

Curve RTE112_RAMPD2
PI = 20+84.44
DELTA = 51° 47' 30.49" (RT)
D = 9° 56' 13"
T = 279.93'
L = 521.21'
R = 576.60'
PC = 18+04.51
PT = 23+25.72
V = 40 MPH
E = 7.8%

Curve RTE112_RAMPA1
PI = 11+92.63
DELTA = 14° 38' 08.30" (RT)
D = 3° 49' 11"
T = 192.63'
L = 383.16'
R = 1,500.00'
PC = 10+00.00
PT = 13+83.16
V = 45 MPH
E = 5.4%

Legend	
Proposed Asphalt Pavement	Denotes Proposed Sign Structure
Denotes Proposed Grass Median/ Buffer/Planted Area	Denotes Proposed Light Pole
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm	Denotes Proposed Bridge
Proposed Gravel	Denotes Demolition of Pavement
	Denotes Area of R/W or Esm't Reduction

Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities

Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail

Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE 0 50' 100'

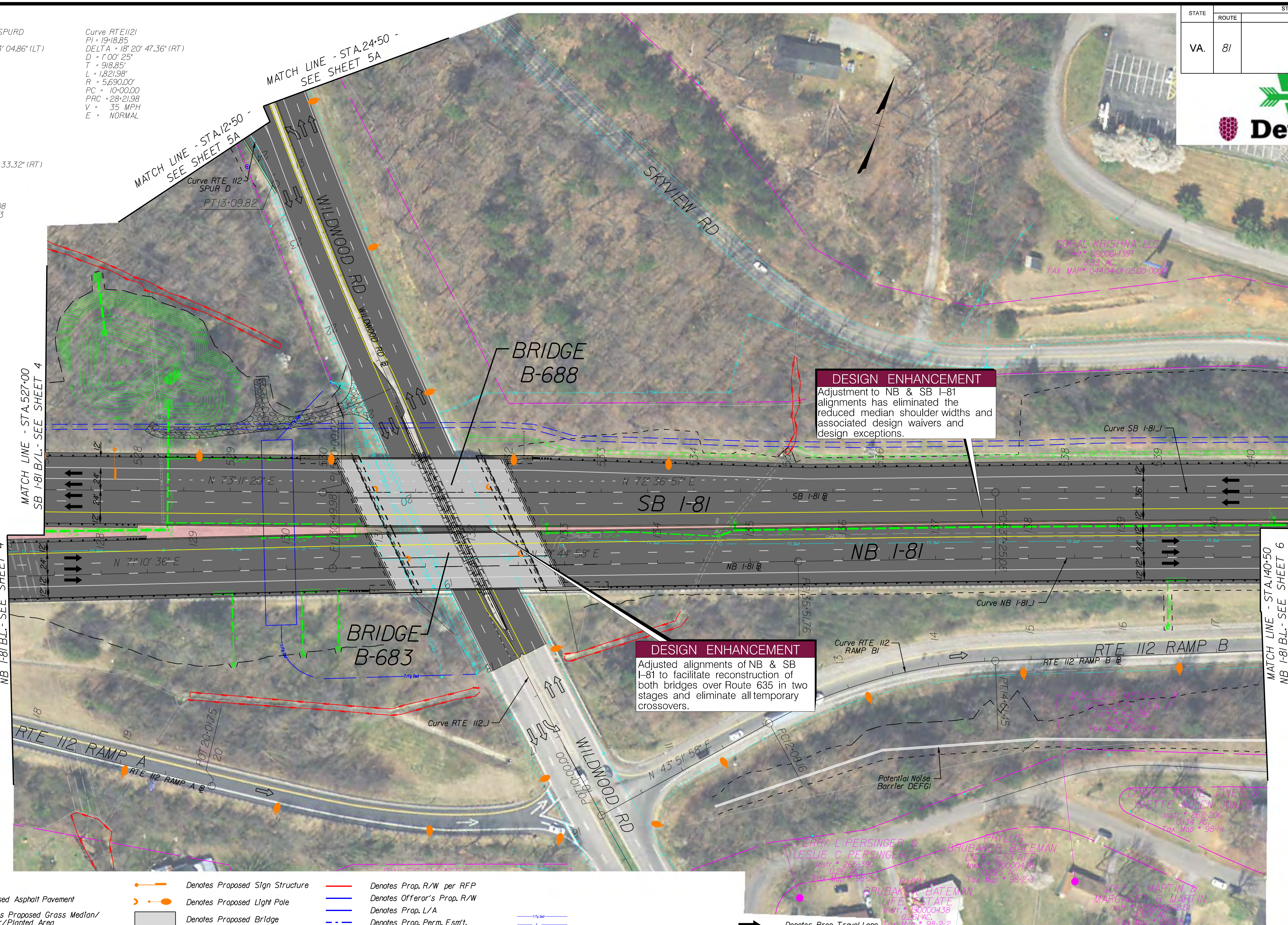
PROJECT	SHEET NO.
0081-080-946	4

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	5

Curve RTE112_SPURD
PI = 11+73.68
DELTA = 64° 33' 04.86" (LT)
D = 20° 50' 05"
T = 173.68'
L = 309.82'
R = 275.00'
PC = 10+00.00
PT = 13+09.82
V = 20 MPH
E = 3%

Curve RTE1121
PI = 19+18.85
DELTA = 18° 20' 47.36" (RT)
D = 1° 00' 25"
T = 918.85'
L = 1,821.98'
R = 5,690.00'
PC = 10+00.00
PRC = 28+21.98
V = 35 MPH
E = NORMAL

Curve SB_I81I
PI = 540+54.12
DELTA = 0° 56' 33.32" (RT)
D = 0° 08' 36"
T = 329.03'
L = 658.05'
R = 40,000.00'
PC = 537+25.08
PT = 543+83.13
V = 65 MPH
E = NORMAL



Curve NB_I81I
PI = 142+05.74
DELTA = 1° 52' 24.04" (RT)
D = 0° 08' 36"
T = 653.98'
L = 1,307.84'
R = 40,000.00'
PC = 135+51.76
PT = 148+59.60
V = 65 MPH
E = NORMAL

Curve RTE112_RAMPB1
PI = 13+36.15
DELTA = 26° 35' 41.29" (RT)
D = 10° 25' 03"
T = 129.99'
L = 255.29'
R = 550.00'
PC = 12+06.16
PT = 14+61.45
V = 45 MPH
E = NORMAL

Dewberry

Legend	
Proposed Asphalt Pavement	Denotes Proposed Sign Structure
Denotes Proposed Grass Median/ Buffer/Planted Area	Denotes Proposed Light Pole
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm	Denotes Proposed Bridge
Proposed Gravel	Denotes Demolition of Pavement
	Denotes Area of R/W or Esm't Reduction

Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities

Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail

Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE 0 50' 100'

PROJECT	SHEET NO.
0081-080-946	5

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	5A

Dewberry

Curve RTE1122
PI = 30+02.88
DELTA = 4° 50' 40.00" (LT)
D = 1° 20' 23"
T = 180.91'
L = 361.60'
R = 4,276.68'
PRC = 28+21.98
PT = 31+83.58
V = 35 MPH
E = NORMAL

Curve RTE112_LOOPD1
PI = 82+95.22
DELTA = 183° 49' 01.24" (RT)
D = 23° 34' 11"
T = 7,295.22'
L = 779.89'
R = 243.09'
PC = 10+00.00
PT = 17+79.89
V = 30 MPH
E = NORMAL

Curve RTE1121
PI = 19+18.85
DELTA = 18° 20' 47.36" (RT)
D = 1° 00' 25"
T = 918.85'
L = 1,821.98'
R = 5,690.00'
PC = 10+00.00
PRC = 28+21.98
V = 35 MPH
E = NORMAL

Curve RTE112_SPURD
PI = 11+73.68
DELTA = 64° 33' 04.86" (LT)
D = 20° 50' 05"
T = 173.68'
L = 309.82'
R = 275.00'
PC = 10+00.00
PT = 13+09.82
V = 20 MPH
E = 3%

Curve RTE112_RAMPD1
PI = 14+15.95
DELTA = 55° 36' 37.21" (LT)
D = 19° 31' 30"
T = 154.75'
L = 284.82'
R = 293.45'
PC = 12+61.19
PT = 15+46.01
V = 30 MPH
E = 8%

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel
Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction
Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	5A

STATE	STATE		SHEET NO.
	ROUTE	PROJECT	
VA.	81	0081-080-946 C-501	6

Dewberry

Curve SB_I81I
PI = 540+54.12
DELTA = 0° 56' 33.32" (RT)
D = 0° 08' 36"
T = 329.03'
L = 658.05'
R = 40,000.00'
PC = 537+25.08
PT = 543+83.13
V = 65 MPH
E = NORMAL

Curve NB_I81I
PI = 142+05.74
DELTA = 1° 52' 24.04" (RT)
D = 0° 08' 36"
T = 653.98'
L = 1,307.84'
R = 40,000.00'
PC = 135+51.76
PT = 148+59.60
V = 65 MPH
E = NORMAL

DESIGN ENHANCEMENT
Adjustment to NB & SB I-81 alignments has eliminated the reduced median shoulder widths and associated design waivers and design exceptions.

DESIGN ENHANCEMENT
Alignment of Potential Noise Barrier DEFGI has been adjusted to avoid utility conflicts.

MATCH LINE - STA.540+50
SB I-81 B/L - SEE SHEET 5

MATCH LINE - STA.554+50
SB I-81 B/L - SEE SHEET 7

MATCH LINE - STA.140+50
NB I-81 B.L. - SEE SHEET 5

MATCH LINE - STA.154+50
NB I-81 B.L. - SEE SHEET 7

SKYVIEW RD

SB I-81

NB I-81

RTE 112 RAMP B

Curve SB I-81_I

Curve NB I-81_I

N 70° 27' 39" E

Potential Noise Barrier DEFGI

PROP. TEMP. CONST. ESM'T.

PROP. R/W

PROP. TEMP. DRAINAGE ESM'T.

PROPOSED R/W & L/A

WOODMERE CT

SEXTON AVE

KISKA RD

DONALD W. JONES & YVETTE N. JONES
Instr. # 236-652
0.276 Ac.
Tax Map # 98-1-4

LARRY C. LINTON & YVONNE E. LINTON
Instr. # 425
0.25 Ac.
Tax Map # 98-1-5

DONALD W. JONES & YVETTE N. JONES
Instr. # 425-46
0.262 Ac.
Tax Map # 98-1-6

GEORGE LEE JONES
Instr. # 120000453
0.24 Ac.
Tax Map # 98-B-4

WAYNE M. HARTMAN SR. & VIRGINIA L. HARTMAN
Instr. # 427-476
0.462 Ac.
Tax Map # 98-1-1

GEORGE LEE JONES
Instr. # 120000152
0.43 Ac.
Tax Map # 99-B-5

TIFFANY LEE AND LENEAVE
Instr. # 170001715
Tax Map # 99-B-8

CLEATIS N. SISSON III & DIANA L. SISSON
Instr. # 315-13
0.24 Ac.
Tax Map # 98-1-3

DONALD W. JONES & YVETTE N. JONES
Instr. # 425-39
0.325 Ac.
Tax Map # 98-1-2

DONALD W. JONES & YVETTE N. JONES
Instr. # 425-46
0.275 Ac.
Tax Map # 98-1-1

KATIE M. BRADLEY
Instr. # 170000491
0.449 Ac.
Tax Map # 99-B-2

DONALD W. JONES & YVETTE N. JONES
Instr. # 060004852
0.535 Ac.
Tax Map # 99-B-7

GEORGE LEE JONES
Instr. # 120000152
Acres
Tax Map # 99-B-6

DONALD WAYNE JONES & YVETTE NOLEN JONES
Instr. # 262-206
0.33 Ac.
Tax Map # 98-1-2

SAMANTHA MAE HAYNES
Instr. # 220001233
0.536 Ac.
Tax Map # 99-1-1

ANTHONY H. GRUBB & DEBORAH D. GRUBB
Instr. # 157-178
0.21 Ac.
Tax Map # 99-1-1

WILLIAM LLC
Inst. # 180002842
0.215 Ac.
TAX MAP # 99-1-1

COMMONWEALTH OF VIRGINIA
Inst. # 180002476
0.225 Ac.
TAX MAP # 99-1-2

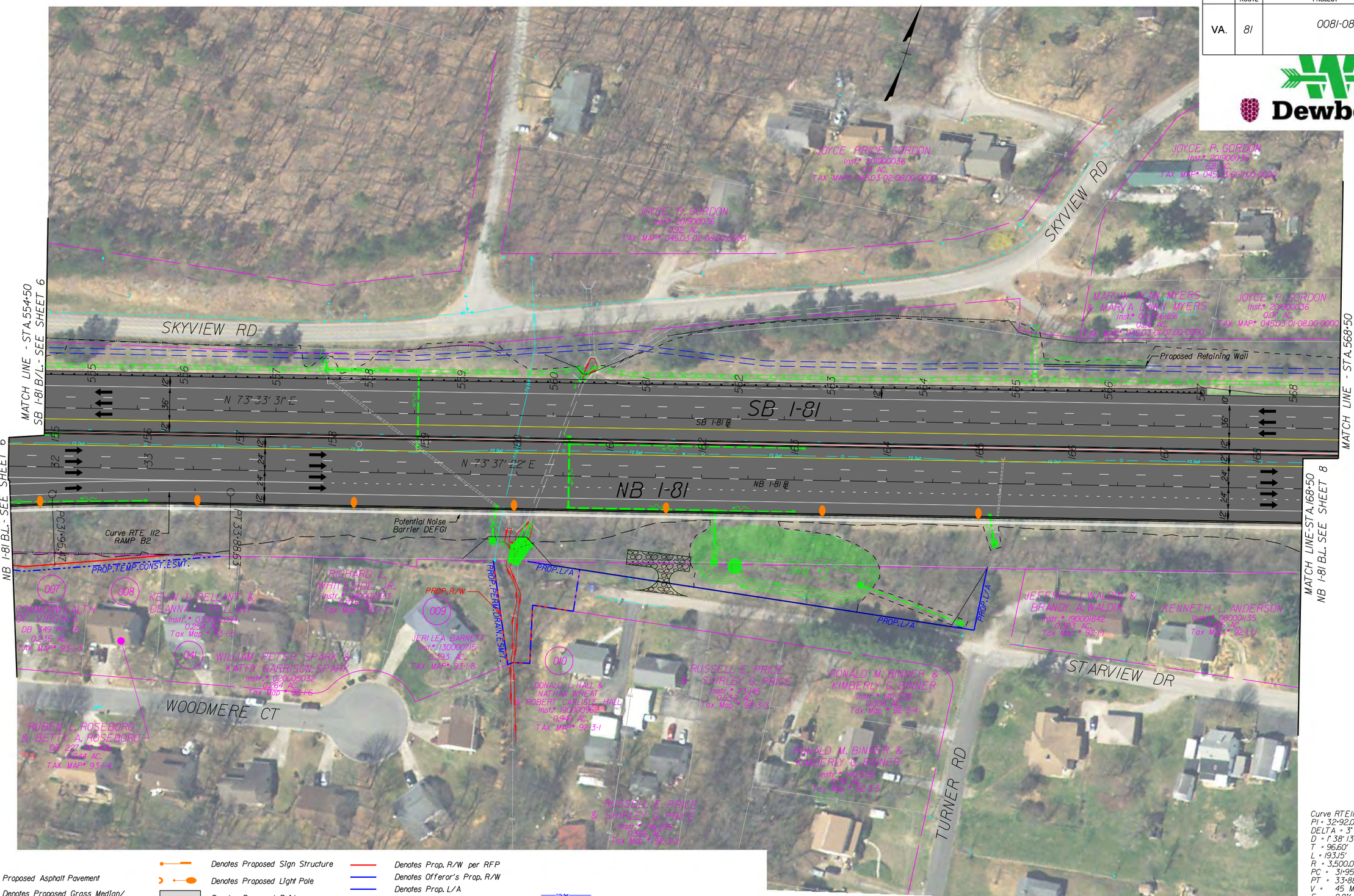
001 002 003 004 005 006

Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction
Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel
Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	6

STATE	STATE		SHEET NO.
	ROUTE	PROJECT	
VA.	81	0081-080-946 C-501	7

Dewberry



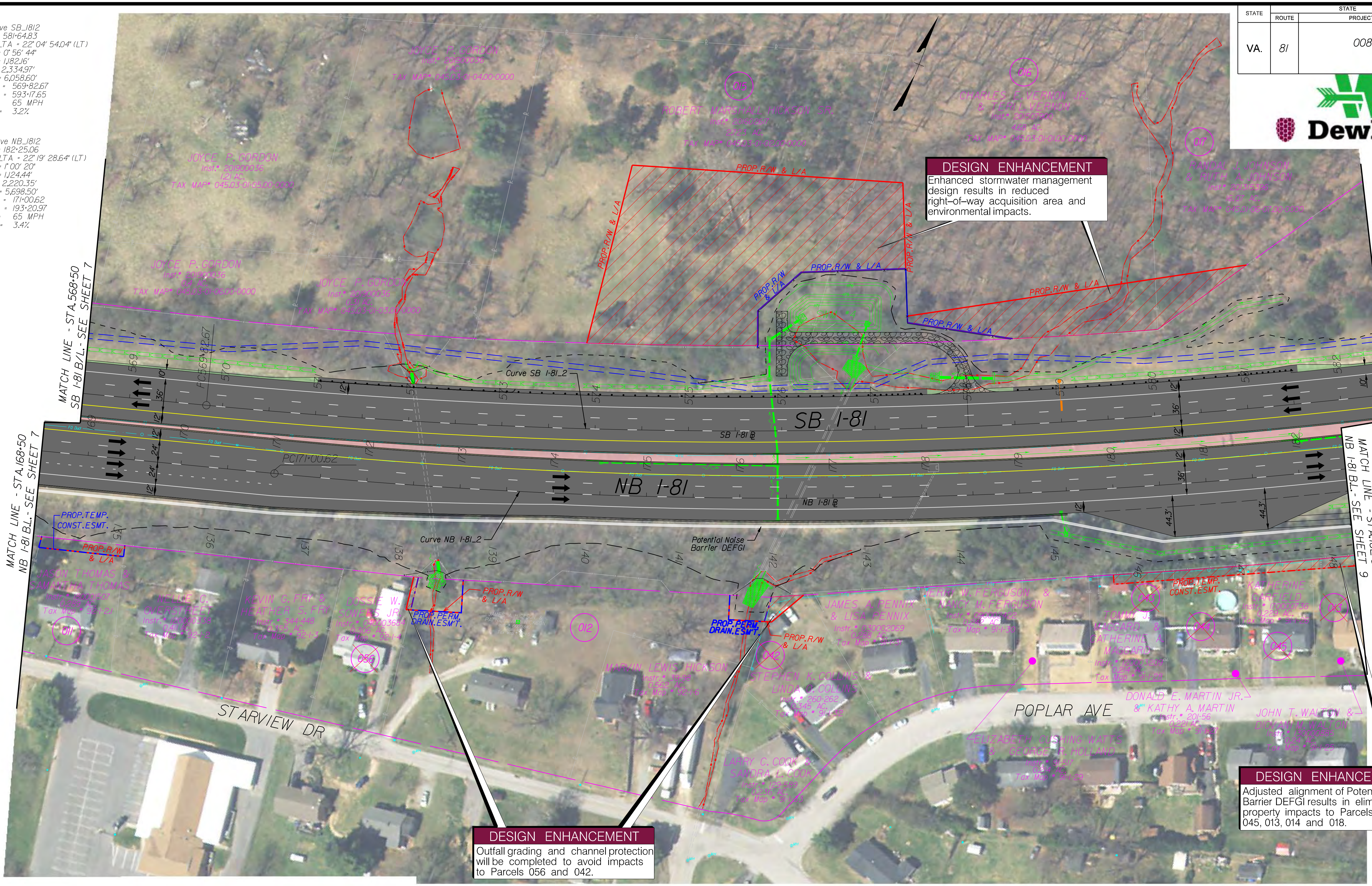
Curve RTE112_RAMPB2
PI = 32+92.08
DELTA = 3° 09' 43.00" (RT)
D = 1° 38' 13"
T = 96.60'
L = 193.15'
R = 3,500.00'
PC = 31+95.47
PT = 33+88.63
V = 45 MPH
E = 2.8%

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel
Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction
Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
C Denotes Construction Limits In Cuts
F Denotes Construction Limits In Fills

SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	7

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	8

Dewberry



DESIGN ENHANCEMENT
Enhanced stormwater management design results in reduced right-of-way acquisition area and environmental impacts.

DESIGN ENHANCEMENT
Outfall grading and channel protection will be completed to avoid impacts to Parcels 056 and 042.

DESIGN ENHANCEMENT
Adjusted alignment of Potential Noise Barrier DEFGI results in eliminated property impacts to Parcels 043, 044, 045, 013, 014 and 018.

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel
Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction
Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

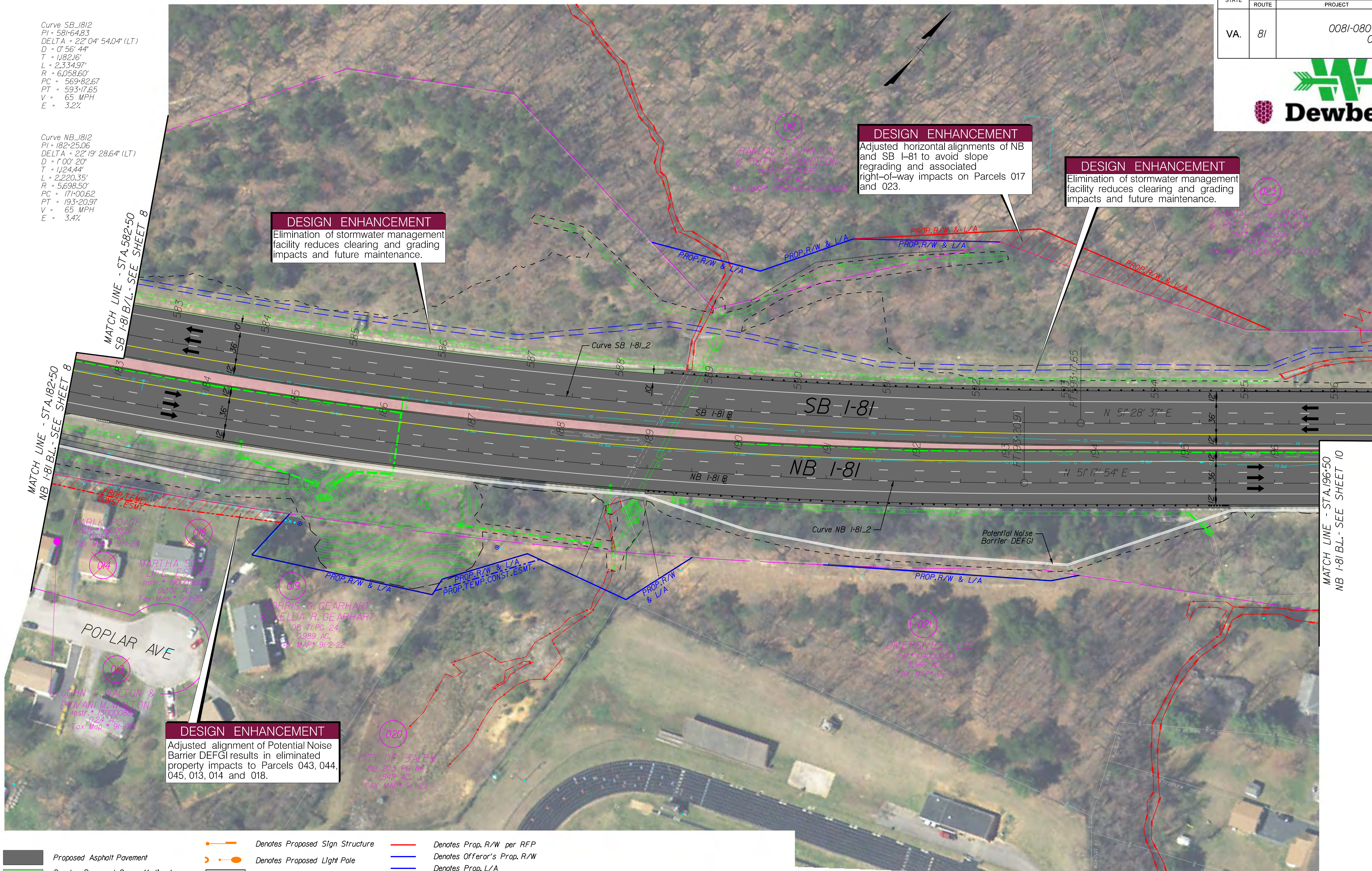
SCALE 0 50' 100'

PROJECT	SHEET NO.
0081-080-946	8

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	9

Curve SB_1812
PI = 581+64.83
DELTA = 22° 04′ 54.04″ (LT)
D = 0° 56′ 44″
T = 1,182.16′
L = 2,334.97′
R = 6,058.60′
PC = 569+82.67
PT = 593+17.65
V = 65 MPH
E = 3.2%

Curve NB_1812
PI = 182+25.06
DELTA = 22° 19′ 28.64″ (LT)
D = 1° 00′ 20″
T = 1,124.44′
L = 2,220.35′
R = 5,698.50′
PC = 171+00.62
PT = 193+20.97
V = 65 MPH
E = 3.4%



Proposed Asphalt Pavement	Denotes Proposed Sign Structure
Denotes Proposed Grass Median/Buffer/Planted Area	Denotes Proposed Light Pole
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm	Denotes Proposed Bridge
Proposed Gravel	Denotes Demolition of Pavement
	Denotes Area of R/W or Esm't Reduction

- Denotes Prop. R/W per RFP
- Denotes Offeror's Prop. R/W
- Denotes Prop. L/A
- Denotes Prop. Perm. Esm't.
- Denotes Temp. Esm't.
- Denotes Exist. R/W
- Exist. Utilities
- Prop. Utility Relocations
- Potential Osprey Relocation Corridor
- Denotes Prop. Guardrail
- Denotes Prop. Travel Lane
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

SCALE 0 50′ 100′

PROJECT	SHEET NO.
0081-080-946	9

STATE	STATE		SHEET NO.
	ROUTE	PROJECT	
VA.	81	0081-080-946 C-501	10

Dewberry

Curve RTE6353
PI = 26+60.03
DELTA = 25° 26' 45.22" (LT)
D = 5° 58' 06"
T = 216.75'
L = 426.35'
R = 960.00'
PC = 24+43.28
PT = 28+69.63
V = 35 MPH
E = 5.2%

Curve RTE6352
PI = 21+00.18
DELTA = 65° 22' 41.01" (RT)
D = 13° 28' 53"
T = 272.73'
L = 484.95'
R = 425.00'
PCC = 18+27.45
PT = 23+12.40
V = 35 MPH
E = 7.7%

DESIGN ENHANCEMENT
Reduced right of way aquisition reducing project cost and potential schedule impacts.

DESIGN ENHANCEMENT
Access to SWM facility from Route 635 improves safety and eliminates access from I-81.

DESIGN ENHANCEMENT
Adjusted alignments of NB and SB I-81 eliminate impacts to Parcel 027, adjacent wetlands and stream.

DESIGN ENHANCEMENT
Adjusted alignments of NB and SB I-81 facilitate reconstruction of both bridges over Route 635 in two stages and eliminate all temporary crossovers.

DESIGN ENHANCEMENT
Adjusted alignment of Potential Noise Barrier DEFGI avoids impacts to Parcel 046.

RANDAL L JOHNSON & RUTH A JOHNSON
Inst.# 20030894
2.55 AC.
TAX MAP# 045.01-01-00.000

PHOENIX OF ROANOKE, LLC
Inst.# DB0200324306
0.99 AC.
TAX MAP# 045.01-01-25.01-0000

STEVEN S ARROWOOD
SARAH K ARROWOOD
Inst.# DB0210435006
0.21 AC.
TAX MAP# 045.01-01-22.30-0000

LEE WILLIAM E
Inst.# DB0012141225
0.07 AC.
TAX MAP# 045.01-01-23.00-0000

LEE WILLIAM E
Inst.# DB0012141225
0.19 AC.
TAX MAP# 045.01-01-24.00-0000

REMY RICHARD O
Inst.# DB0200214208
0.89 AC.
TAX MAP# 045.01-01-26.00-0000

THERESA L BOWLES HOWELL
Inst.# DB0047[illegible]
2.04 AC.
TAX MAP# 045.01-01-30.00-0000

VIRGINIA F TAYLOR
Inst.# 0000053
0.51 AC.
TAX MAP# 67-2-4

HOFFMAN JAMES MICHAEL &
HOFFMAN BRITNEY NICOLE
Inst.# 140002022
0.22 AC.
Tax Map # 65-1-1

MCNEILL JEREMY L
& MCNEILL ANDREA L
Inst.# 120012366
0.37 AC.
Tax Map # 67-2-14

SNYDER SCOTT E
Inst.# 0200048[illegible]
0.23 AC.
Tax Map # 65-1-2

LANE FRANCIS V JR
Inst.# 120002164
0.45 AC.
Tax Map # 64-5-1

GOODWIN AVE.

N 44° 48' 04" E

N 51° 28' 37" E

N 51° 17' 54" E

N 51° 52' 16" E

SB I-81

NB I-81

SB I-81 B

NB I-81 B

PI 200+00.05

PI 204+00.07

PC24+43.28

PT 23+12.40

FCC605+94.92

FRC610+42.13

Curve RTE 635_2

Curve RTE 635_3

Curve RTE 635_1

Curve SB I-81_3

Curve SB I-81_4

BRIDGE B-685

BRIDGE B-684

SWM #6

EXIST.& PROP.R/W

PROP.R/W & L/A

PROP.L/A

EXIST.R/W.PROP.R/W & PROP.L/A

PROP.R/W

PROP.TEMP. CONST.ESMT.

PROP.TEMP. CONST.R.ESMT.

EXIST.& PROP.R/W

Potential Noise Barrier DEFGI

MATCH LINE - STA.596+50
SB I-81 B/L - SEE SHEET 9

MATCH LINE - STA.596+50
NB I-81 B/L - SEE SHEET 9

MATCH LINE - STA.610+50
SB I-81 B/L - SEE SHEET 11

MATCH LINE - STA.210+50
NB I-81 B/L - SEE SHEET 11

Curve SB_I81_3
PI = 608+18.53
DELTA = 0° 30' 44.89" (LT)
D = 0° 06' 53"
T = 223.61'
L = 447.22'
R = 50,000.00'
PC = 605+94.92
PRC = 610+42.13
V = 65 MPH
E = NORMAL

Curve SB_I81_4
PI = 612+65.74
DELTA = 0° 30' 44.89" (RT)
D = 0° 06' 53"
T = 223.61'
L = 447.22'
R = 50,000.00'
PRC = 610+42.13
PT = 614+89.35
V = 65 MPH
E = NORMAL

Curve RTE6351
PI = 15+04.85
DELTA = 1° 28' 43.55" (RT)
D = 0° 13' 45"
T = 322.63'
L = 645.23'
R = 25,000.00'
PC = 11+82.22
PCC = 18+27.45
V = 35 MPH
E = NORMAL

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel

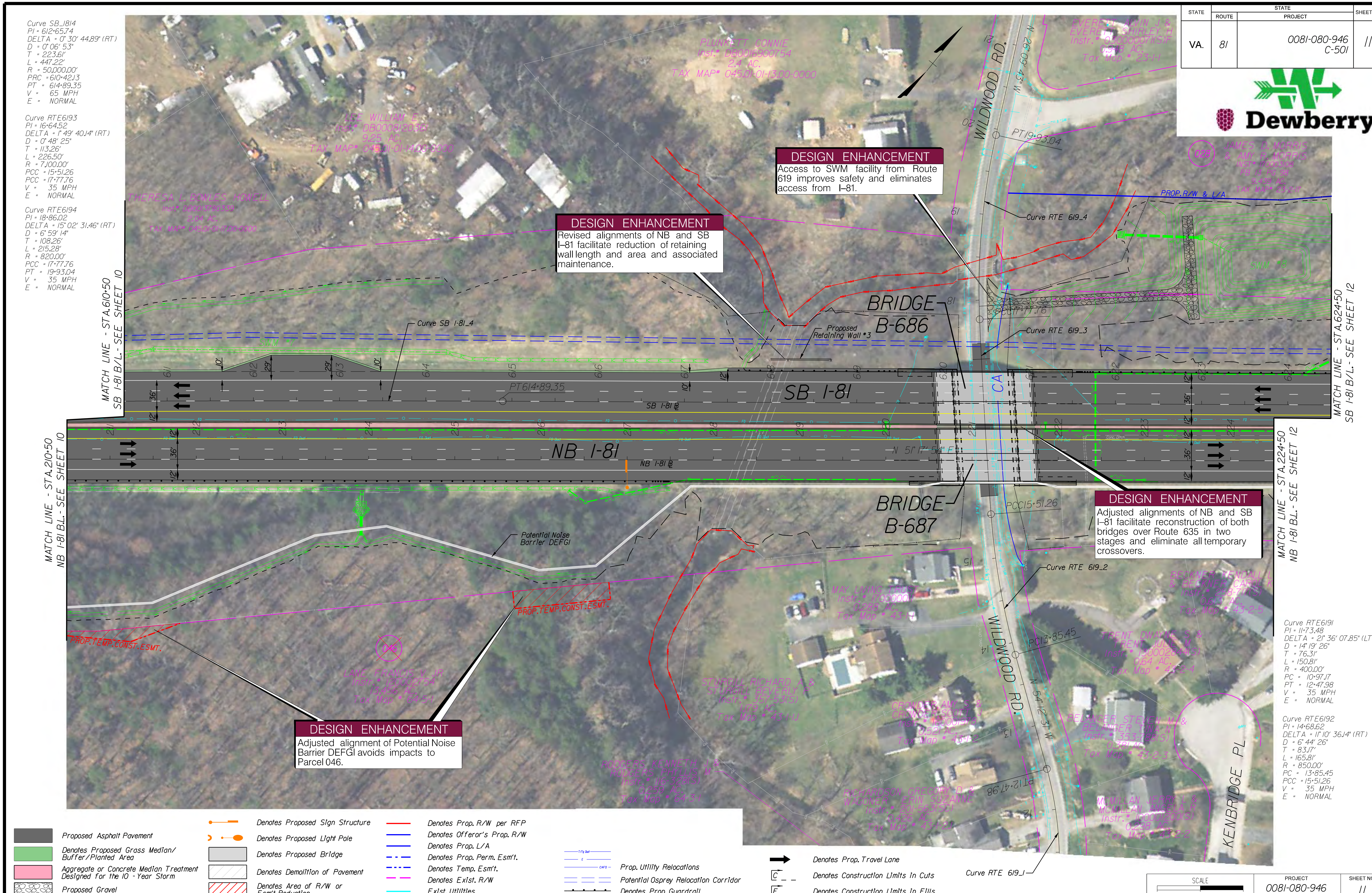
Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction

Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities

Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail

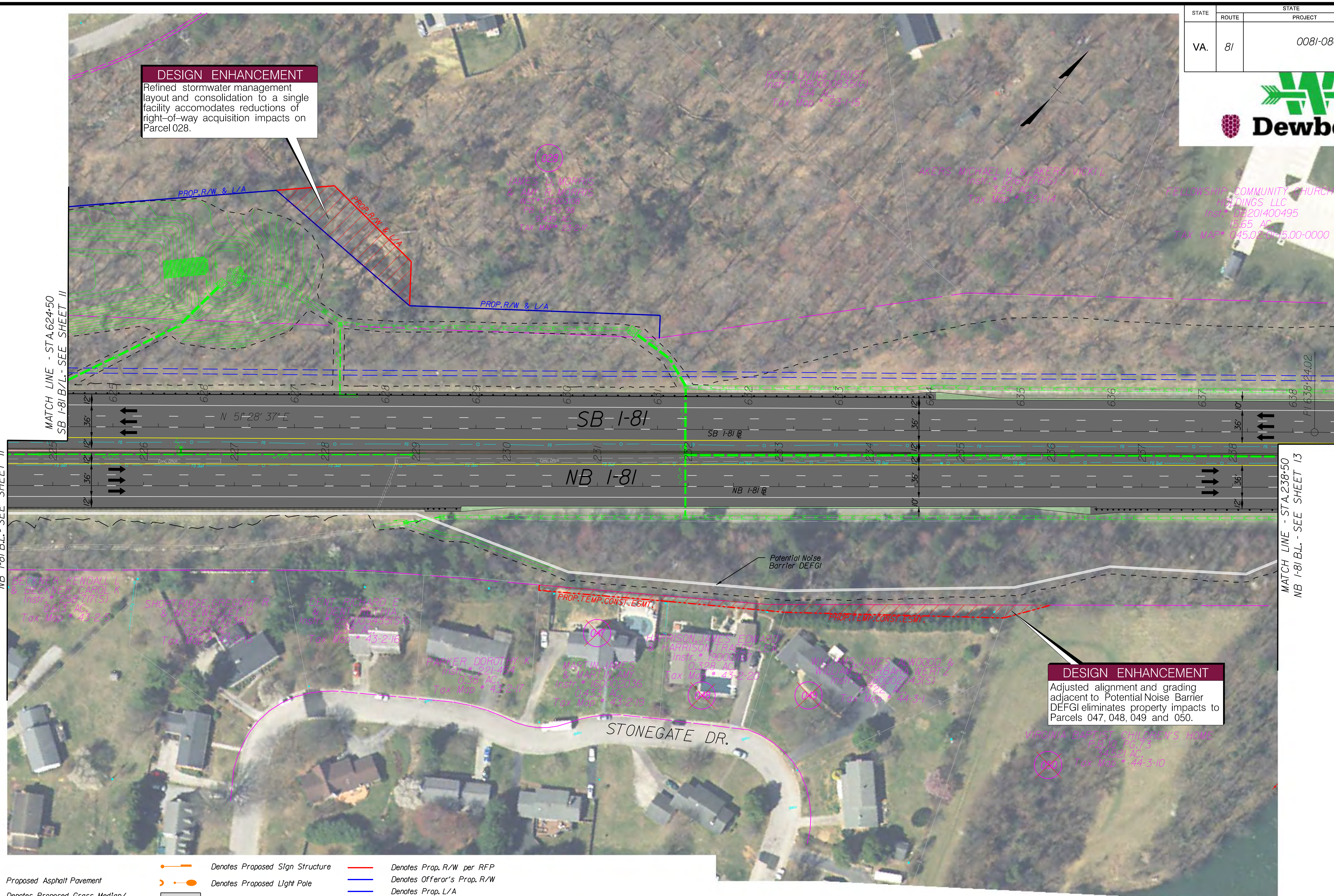
Denotes Prop. Travel Lane
Denotes Construction Limits In Cuts
Denotes Construction Limits In Fills

SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	10


STATE
ROUTE
STATE PROJECT
SHEET NO.
VA.
81
0081-080-946 C-501
11
Dewberry
Curve SB_1814
PI = 612+65.74
DELTA = 0° 30' 44.89" (RT)
D = 0° 06' 53"
T = 223.61'
L = 447.22'
R = 50,000.00'
PRC = 610+42.13
PT = 614+89.35
V = 65 MPH
E = NORMAL
Curve RTE6193
PI = 16+64.52
DELTA = 1° 49' 40.14" (RT)
D = 0° 48' 25"
T = 113.26'
L = 226.50'
R = 7,100.00'
PCC = 15+51.26
PCC = 17+77.76
V = 35 MPH
E = NORMAL
Curve RTE6194
PI = 18+86.02
DELTA = 15° 02' 31.46" (RT)
D = 6° 59' 14"
T = 108.26'
L = 215.28'
R = 820.00'
PCC = 17+77.76
PT = 19+93.04
V = 35 MPH
E = NORMAL
DESIGN ENHANCEMENT
Access to SWM facility from Route 619 improves safety and eliminates access from I-81.
DESIGN ENHANCEMENT
Revised alignments of NB and SB I-81 facilitate reduction of retaining wall length and area and associated maintenance.
DESIGN ENHANCEMENT
Adjusted alignments of NB and SB I-81 facilitate reconstruction of both bridges over Route 635 in two stages and eliminate all temporary crossovers.
DESIGN ENHANCEMENT
Adjusted alignment of Potential Noise Barrier DEFGI avoids impacts to Parcel 046.
WILDWOOD RD.
BRIDGE B-686
BRIDGE B-687
SB I-81
NB I-81
Proposed Retaining Wall #3
Potential Noise Barrier DEFGI
PROP. TEMP. CONST. ESMT.
PROP. R/W & L/A
MATCH LINE - STA. 610+50 SB I-81 B/L - SEE SHEET 10
MATCH LINE - STA. 210+50 NB I-81 B/L - SEE SHEET 10
MATCH LINE - STA. 624+50 SB I-81 B/L - SEE SHEET 12
MATCH LINE - STA. 224+50 NB I-81 B/L - SEE SHEET 12
KENBRIDGE PL
Curve RTE6191
PI = 11+73.48
DELTA = 21° 36' 07.85" (LT)
D = 14° 19' 26"
T = 76.31'
L = 150.81'
R = 400.00'
PC = 10+97.17
PT = 12+47.98
V = 35 MPH
E = NORMAL
Curve RTE6192
PI = 14+68.62
DELTA = 11° 10' 36.14" (RT)
D = 6° 44' 26"
T = 83.17'
L = 165.81'
R = 850.00'
PC = 13+85.45
PCC = 15+51.26
V = 35 MPH
E = NORMAL
Proposed Asphalt Pavement
Denotes Proposed Grass Median/Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel
Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction
Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills
SCALE
0 50' 100'
PROJECT 0081-080-946
SHEET NO. 11

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	12

Dewberry



Proposed Asphalt Pavement	Denotes Proposed Sign Structure
Denotes Proposed Grass Median/ Buffer/Planted Area	Denotes Proposed Light Pole
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm	Denotes Proposed Bridge
Proposed Gravel	Denotes Demolition of Pavement
	Denotes Area of R/W or Esm't Reduction

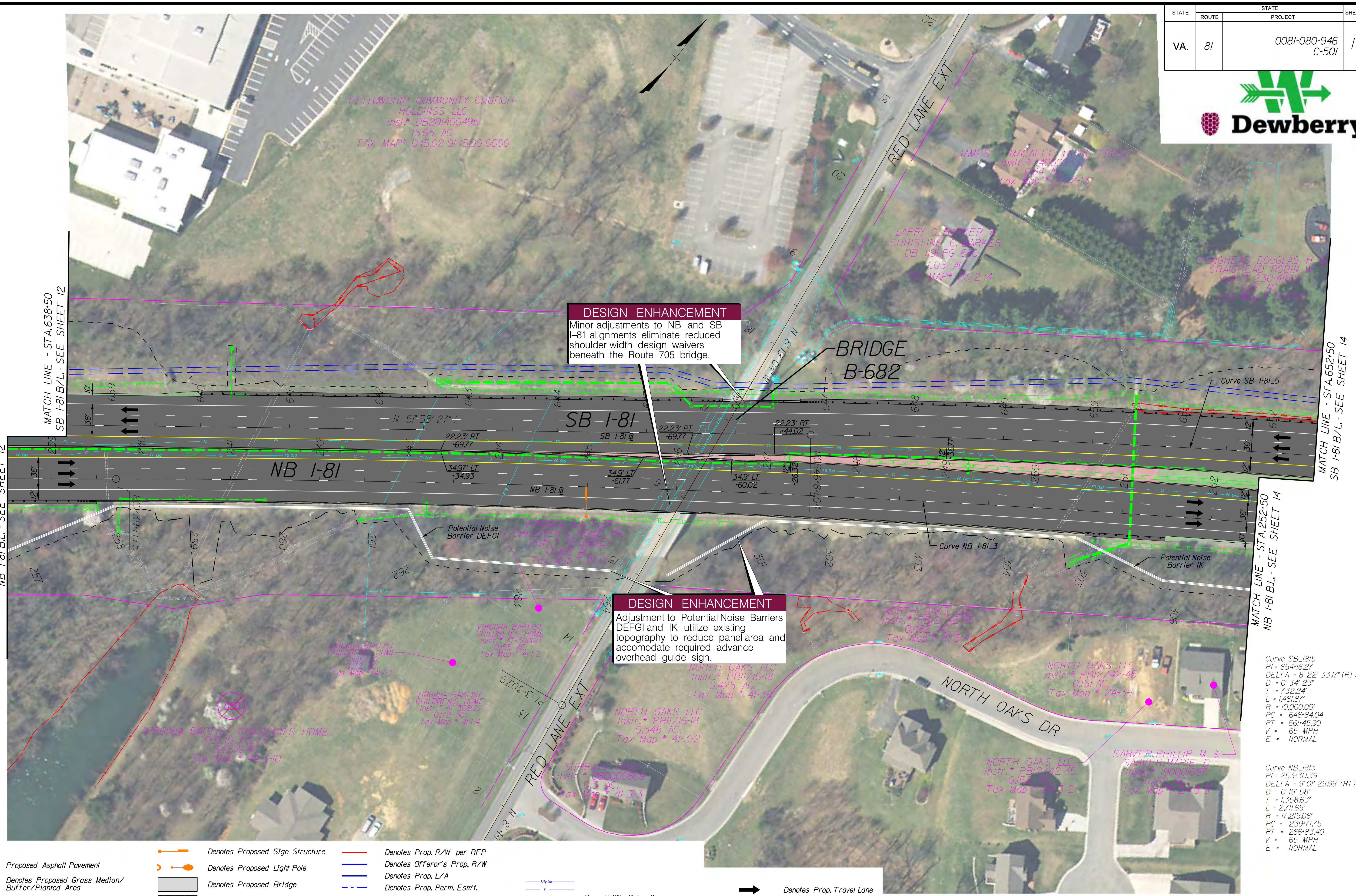
- Denotes Prop. R/W per RFP
- Denotes Offeror's Prop. R/W
- Denotes Prop. L/A
- Denotes Prop. Perm. Esm't.
- Denotes Temp. Esm't.
- Denotes Exist. R/W
- Exist. Utilities
- Prop. Utility Relocations
- Potential Osprey Relocation Corridor
- Denotes Prop. Guardrail
- Denotes Prop. Travel Lane
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

SCALE 0 50' 100'

PROJECT	SHEET NO.
0081-080-946	12

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	13

Dewberry



Legend	
Proposed Asphalt Pavement	Denotes Proposed Sign Structure
Denotes Proposed Grass Median/ Buffer/Planted Area	Denotes Proposed Light Pole
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm	Denotes Proposed Bridge
Proposed Gravel	Denotes Demolition of Pavement
	Denotes Area of R/W or Esm't Reduction

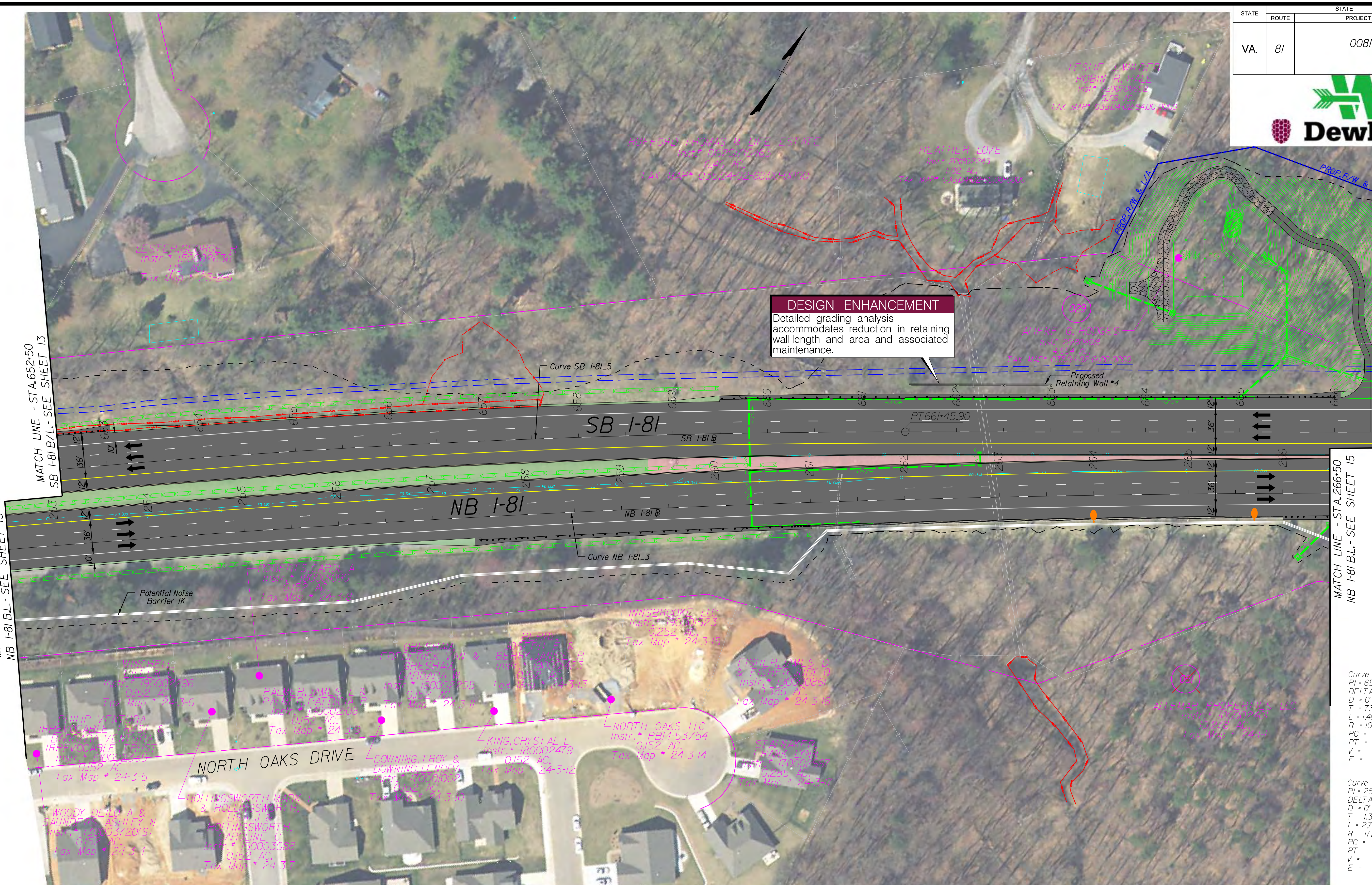
- Denotes Prop. R/W per RFP
- Denotes Offeror's Prop. R/W
- Denotes Prop. L/A
- Denotes Prop. Perm. Esm't.
- Denotes Temp. Esm't.
- Denotes Exist. R/W
- Exist. Utilities
- Prop. Utility Relocations
- Potential Osprey Relocation Corridor
- Denotes Prop. Guardrail
- Denotes Prop. Travel Lane
- Denotes Construction Limits in Cuts
- Denotes Construction Limits in Fills

SCALE 0 50' 100'

PROJECT	SHEET NO.
0081-080-946	13

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	14

Dewberry



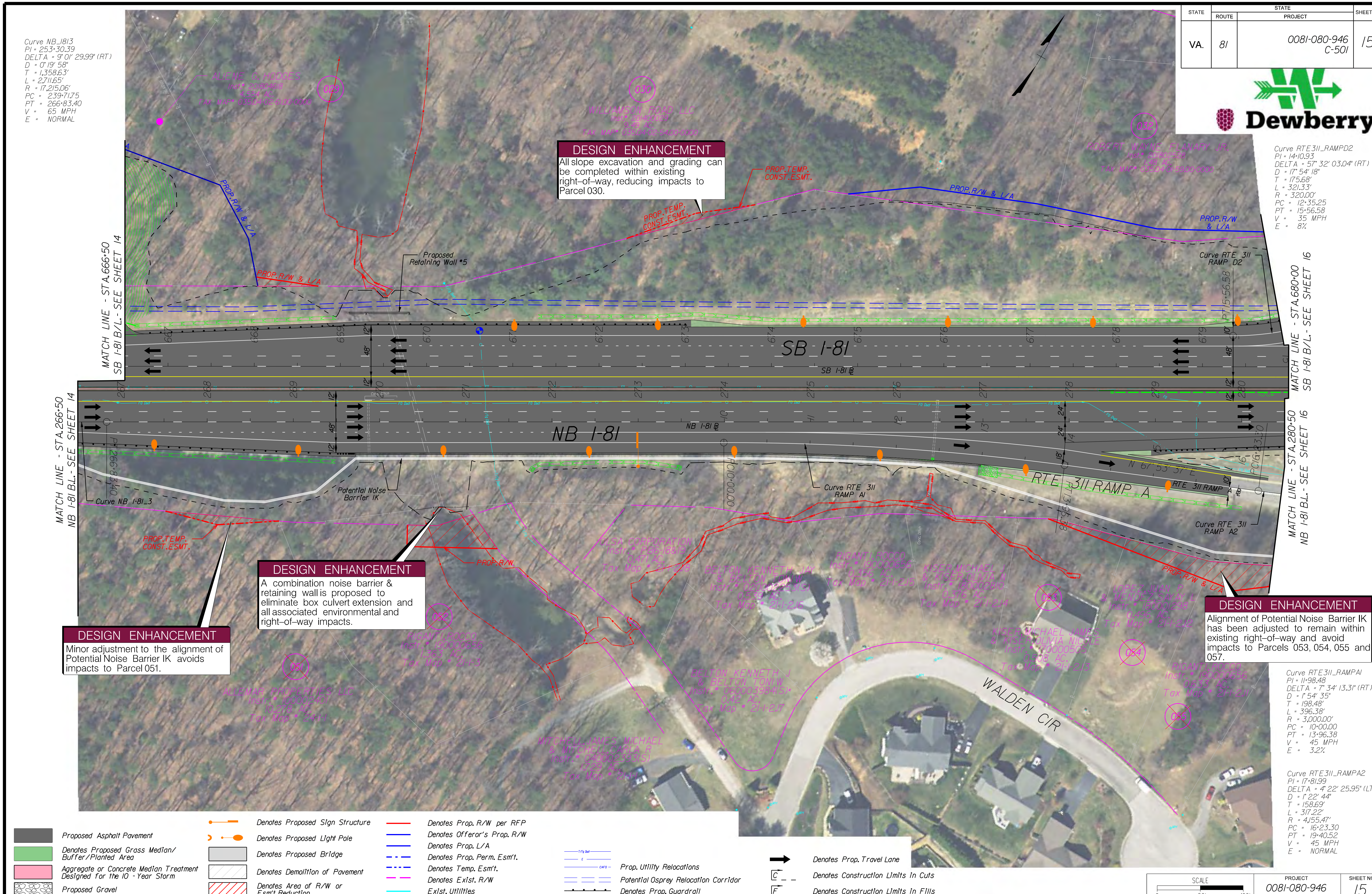
Curve SB_I815
PI = 654+16.27
DELTA = 8° 22′ 33.17″ (RT)
D = 0° 34′ 23″
T = 732.24′
L = 1,461.87′
R = 10,000.00′
PC = 646+84.04
PT = 661+45.90
V = 65 MPH
E = NORMAL

Curve NB_I813
PI = 253+30.39
DELTA = 9° 01′ 29.99″ (RT)
D = 0° 19′ 58″
T = 1,358.63′
L = 2,711.65′
R = 17,215.06′
PC = 239+71.75
PT = 266+83.40
V = 65 MPH
E = NORMAL

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel
Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction
Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE 0 50′ 100′

PROJECT	SHEET NO.
0081-080-946	14


STATE | ROUTE | STATE PROJECT | SHEET NO.
VA. | 81 | 0081-080-946 C-501 | 15
Dewberry
Curve NB_I813
PI = 253+30.39
DELTA = 9° 01' 29.99" (RT)
D = 0° 19' 58"
T = 1,358.63'
L = 2,711.65'
R = 17,215.06'
PC = 239+71.75
PT = 266+83.40
V = 65 MPH
E = NORMAL
DESIGN ENHANCEMENT
All slope excavation and grading can be completed within existing right-of-way, reducing impacts to Parcel 030.
DESIGN ENHANCEMENT
A combination noise barrier & retaining wall is proposed to eliminate box culvert extension and all associated environmental and right-of-way impacts.
DESIGN ENHANCEMENT
Minor adjustment to the alignment of Potential Noise Barrier IK avoids impacts to Parcel 051.
DESIGN ENHANCEMENT
Alignment of Potential Noise Barrier IK has been adjusted to remain within existing right-of-way and avoid impacts to Parcels 053, 054, 055 and 057.
PROP. R/W & L/A
PROP. TEMP. CONST. ESMT.
Proposed Retaining Wall #5
Potential Noise Barrier IK
PROP. R/W
SB I-81
SB I-81 ℄
NB I-81
NB I-81 ℄
RTE 311 RAMP A
WALDEN CIR
Curve NB_I-81_3
Curve RTE 311 RAMP A1
Curve RTE 311 RAMP D2
Curve RTE 311 RAMP A2
MATCH LINE - STA.666+50 SB I-81 B/L - SEE SHEET 14
MATCH LINE - STA.266+50 NB I-81 BL - SEE SHEET 14
MATCH LINE - STA.680+00 SB I-81 B/L - SEE SHEET 16
MATCH LINE - STA.280+50 NB I-81 BL - SEE SHEET 16
Curve RTE311_RAMPD2
PI = 14+10.93
DELTA = 57° 32' 03.04" (RT)
D = 17° 54' 18"
T = 175.68'
L = 321.33'
R = 320.00'
PC = 12+35.25
PT = 15+56.58
V = 35 MPH
E = 8%
Curve RTE311_RAMPA1
PI = 11+98.48
DELTA = 7° 34' 13.31" (RT)
D = 1° 54' 35"
T = 198.48'
L = 396.38'
R = 3,000.00'
PC = 10+00.00
PT = 13+96.38
V = 45 MPH
E = 3.2%
Curve RTE311_RAMPA2
PI = 17+81.99
DELTA = 4° 22' 25.95" (LT)
D = 1° 22' 44"
T = 158.69'
L = 317.22'
R = 4,155.47'
PC = 16+23.30
PT = 19+40.52
V = 45 MPH
E = NORMAL
Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel
Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction
Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills
SCALE 0 50' 100'
PROJECT 0081-080-946
SHEET NO. 15

STATE	STATE		SHEET NO.
	ROUTE	PROJECT	
VA.	81	0081-080-946 C-501	16

Dewberry

Curve RTE 3112
PI = 18+88.25
DELTA = 27° 00' 17.18" (RT)
D = 6° 26' 16"
T = 213.71'
L = 419.48'
R = 890.00'
PC = 16+74.54
PT = 20+94.01
V = 35 MPH
E = NORMAL

Curve RTE 311_RAMPD2
PI = 14+10.93
DELTA = 57° 32' 03.04" (RT)
D = 17° 54' 18"
T = 175.68'
L = 321.33'
R = 320.00'
PC = 12+35.25
PT = 15+56.58
V = 35 MPH
E = 8%

Curve RTE 311_RAMPD1
PI = 10+96.24
DELTA = 32° 07' 52.04" (LT)
D = 17° 08' 39"
T = 96.24'
L = 187.42'
R = 334.20'
PC = 10+00.00
PT = 11+87.42
V = 35 MPH
E = NORMAL

Curve RTE 311_LOOPD1
PI = 18+52.31
DELTA = 161° 52' 04.63" (RT)
D = 42° 07' 45"
T = 852.31'
L = 384.22'
R = 136.00'
PC = 10+00.00
PT = 13+84.22
V = 25 MPH
E = 8%

Curve RTE 311
PI = 12+45.11
DELTA = 7° 25' 47.57" (LT)
D = 1° 31' 04"
T = 245.11'
L = 489.53'
R = 3,775.00'
PC = 10+00.00
PT = 14+89.53
V = 35 MPH
E = NORMAL

Curve RTE 311_RAMPA2
PI = 17+81.99
DELTA = 4° 22' 25.95" (LT)
D = 1° 22' 44"
T = 158.69'
L = 317.22'
R = 4,155.47'
PC = 16+23.30
PT = 19+40.52
V = 45 MPH
E = NORMAL

Curve RTE 311_RAMPB1
PI = 14+11.79
DELTA = 3° 01' 43.53" (LT)
D = 1° 01' 19"
T = 148.23'
L = 296.38'
R = 5,606.78'
PC = 12+63.56
PT = 15+59.95
V = 45 MPH
E = NORMAL

Curve RTE 311_RAMPB2
PI = 18+98.16
DELTA = 7° 30' 10.37" (RT)
D = 1° 35' 30"
T = 236.05'
L = 471.42'
R = 3,600.00'
PC = 16+62.11
PT = 21+33.53
V = 45 MPH
E = 2.8%

EDGEBROOK RD
THOMPSON MEMORIAL HIGHWAY
DEBORAH LN
FREEDMAN LN
PENGUIN LN
SB I-81
NB I-81
BRIDGE B-677
BRIDGE B-678
RTE 311 RAMP A
RTE 311 RAMP B
RTE 311 RAMP D
RTE 311 LOOP D
SWM #10
PC10+00.00
PT13+84.22
PT20+94.01
PC16+74.54
PT19+40.52
PT14+89.53
POT22+79.25
PC12+63.56
PT15+59.95
PC16+62.11
Curve RTE 311_2
Curve RTE 311 RAMP D1
Curve RTE 311 RAMP D2
Curve RTE 311 LOOP D1
Curve RTE 311_1
Curve RTE 311 RAMP A2
Curve RTE 311 RAMP B1
Curve RTE 311 RAMP B2
RTE 311 RAMP A ℄
RTE 311 RAMP B ℄
N 60° 21' 00" E
N 60° 19' 24" E
N 63° 31' 11" E
N 55° 50' 57" E
N 52° 49' 13" E
S 57° W
MATCH LINE - STA.680+00 SB I-81 B/L. - SEE SHEET 15
MATCH LINE - STA.280+50 NB I-81 B/L. - SEE SHEET 15
MATCH LINE - STA.694+00 SB I-81 B/L. - SEE SHEET 17
MATCH LINE - STA.294+50 NB I-81 B/L. - SEE SHEET 17

FRANTZ ALPHA ALBERT A
Inst.# DB00035340394
0.56 AC.
TAX MAP# 036.03-01-46.00-0000

KEATON ANTHONY
KEATON DAVID
Inst.# WB20180003I8
4.3 AC.
TAX MAP# 036.03-01-43.00-0000

GORDON RICHARD L
Inst.# DB00035340438
1.062 AC.
TAX MAP#
036.03-01-45.00-0000

KEATON DAVID A
Inst.# WB20180003I8
1.14 AC.
TAX MAP# 036.03-01-42.01-0000

HOPKINS LESLIE A
Inst.# DB00035340430
0.92 AC.
TAX MAP#
036.03-01-44.00-0000

TANARY ROBERT WAYNE JR
Inst.# DB00218002328
0.998 AC.
TAX MAP#
035.04-01-57.00-0000

ROBERT WAYNE TANARY JR
Inst.# DB00218002328
1.04 AC.
TAX MAP#
035.04-01-57.00-0000

033

PROP.TEMP. CONST.ESMT.

COVENANT COMMUNITY CHURCH INC
Inst.# 170001760
6.05 AC.
Tax Map # 21-1-130

MILLER EDITH F ESTATE
Instr.# WB22-76
1.46 AC.
Tax Map # 21-1-4

PRAKESH R PATEL & SONAL P PATEL
Inst.# 170004478
0.674 AC.
TAX MAP# 20-2-4

CURTIS W ELLWANGER
Inst.# 150002573
0.5 AC.
TAX MAP# 20-2-

EDITH FREEMAN MILLER ESTATE
WB 22 PG 76
0.86 AC.
TAX MAP# 21-1

PROP. R/W

Potential Noise Barrier IK

DESIGN ENHANCEMENT
Alignment of Potential Noise Barrier IK has been adjusted to remain within existing right-of-way and avoid impacts to Parcels 053, 054, 055 and 057.

DESIGN ENHANCEMENT
Elimination of stormwater management facility between NB I-81 and Penguin Lane eliminates clearing adjacent to the interstate and property impacts to Parcel 031.

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel

Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction

Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities

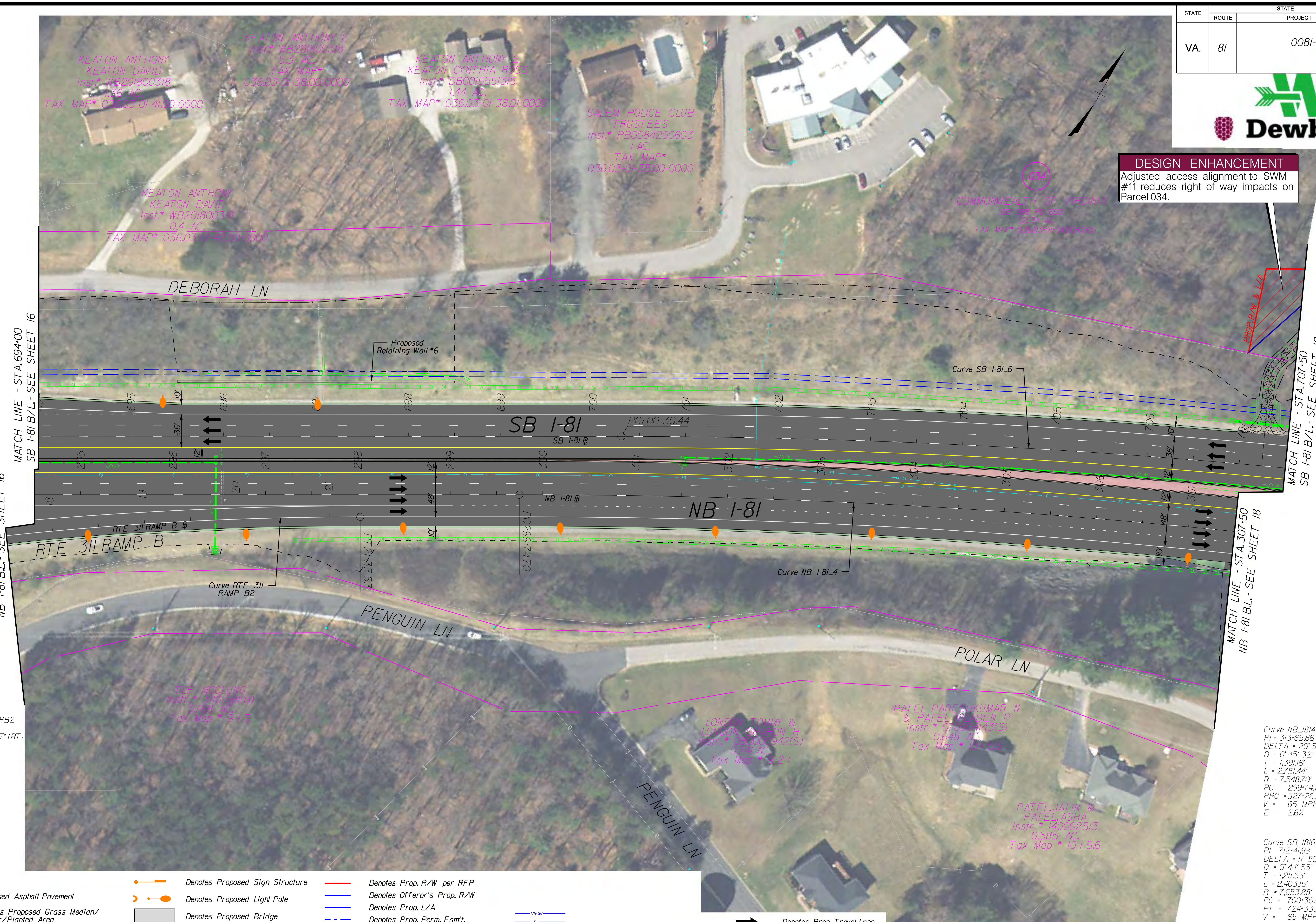
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail

Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	16

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	17

Dewberry



Curve RTE311_RAMPB2
PI = 18+98.16
DELTA = 7° 30' 10.37" (RT)
D = 1° 35' 30"
T = 236.05'
L = 471.42'
R = 3,600.00'
PC = 16+62.11
PT = 21+33.53
V = 45 MPH
E = 2.8%

Curve NB_I814
PI = 313+65.86
DELTA = 20° 53' 01.87" (RT)
D = 0° 45' 32"
T = 1,391.16'
L = 2,751.44'
R = 7,548.70'
PC = 299+74.70
PRC = 327+26.14
V = 65 MPH
E = 2.6%

Curve SB_I816
PI = 712+41.98
DELTA = 17° 59' 22.64" (RT)
D = 0° 44' 55"
T = 1,211.55'
L = 2,403.15'
R = 7,653.88'
PC = 700+30.44
PT = 724+33.59
V = 65 MPH
E = 2.6%

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel
Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction
Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE 0 50' 100'

PROJECT	SHEET NO.
0081-080-946	17

STATE	STATE		SHEET NO.
	ROUTE	PROJECT	
VA.	81	0081-080-946 C-501	18

Dewberry

DESIGN ENHANCEMENT
Adjusted access alignment to SWM #11 reduces right-of-way impacts on Parcel 034.

DESIGN ENHANCEMENT
Grading and construction activities can be completed within existing right-of-way, reducing impacts to Parcels 034 and 035.

COMMONWEALTH OF VIRGINIA
DB 988 PG 659
32.34 AC.
TAX MAP# 036.03-01-34.00-0000

034

COMMONWEALTH OF VIRGINIA
DB 988 PG 659
32.34 AC.
TAX MAP# 036.03-01-34.00-0000

034

STEVEN L WEBSTER
& TANYA L WEBSTER
inst# 200027312
4.9 AC.
TAX MAP# 036.03-01-33.00-0000

035

PROP. R/W & L/A

PROP. R/W & L/A

SWM #11

PROP. TEMP. CONST. ESMT.

PROP. TEMP. CONST. ESMT.

PROP. TEMP. CONST. ESMT.

Proposed Retaining Wall #7

Curve SB_I-81_6

SB I-81

SB I-81 ℄

NB I-81

NB I-81 ℄

Curve NB_I-81_4

MATCH LINE - STA.707+50
SB I-81 B/L - SEE SHEET 17

MATCH LINE - STA.721+50
SB I-81 B/L - SEE SHEET 19

MATCH LINE - STA.307+50
NB I-81 B/L - SEE SHEET 17

MATCH LINE - STA.321+50
NB I-81 B/L - SEE SHEET 19

MASSGOOD LLC
Instr.# PB12-31/32
0.593 AC.
Tax Map # 10-1-4

MASSGOOD LLC
Instr.# PB12-31/32
0.602 AC.
Tax Map # 10-1-5

MASSGOOD LLC
Instr.# PB12-31/32
0.402 AC.
Tax Map # 10-1-3

EDWARD ANDREW
RIVER REVOCABLE
DECLARATION OF TRUST
Instr.# 190001147
0.357 AC.
Tax Map # 10-1-1J

MASSGOOD LLC
Instr.# PB12-31/32
0.267 AC.
Tax Map # 10-1-1.2

MASSGOOD LLC
Instr.# PB12-31/32
0.268 AC.
Tax Map # 10-1-16

VALLEY PROPERTIES LLC
Instr.# 170001406
3.75 AC.
Tax Map # 7-1-1

POLAR LN

Curve SB_I-81_6
PI = 712+41.98
DELTA = 17° 59' 22.64" (RT)
D = 0° 44' 55"
T = 1,211.55'
L = 2,403.15'
R = 7,653.88'
PC = 700+30.44
PT = 724+33.59
V = 65 MPH
E = 2.6%

Curve NB_I-81_4
PI = 313+65.86
DELTA = 20° 53' 01.87" (RT)
D = 0° 45' 32"
T = 1,391.16'
L = 2,751.44'
R = 7,548.70'
PC = 299+74.70
PRC = 327+26.14
V = 65 MPH
E = 2.6%

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel

Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction

Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities

Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail

Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

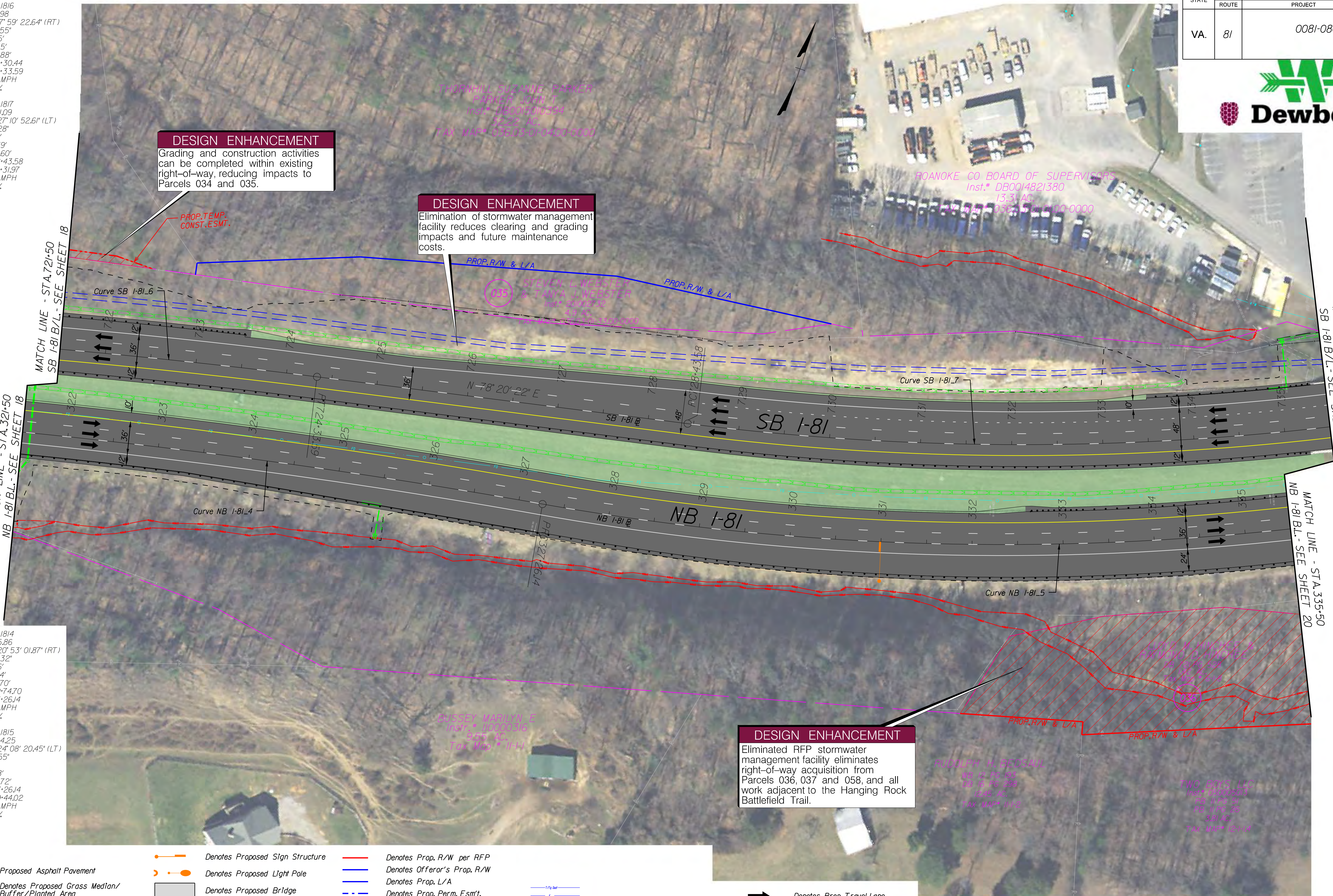
SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	18

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	81	0081-080-946 C-501	19

Dewberry

Curve SB_I816
PI = 712+41.98
DELTA = 17° 59' 22.64" (RT)
D = 0° 44' 55"
T = 1,211.55'
L = 2,403.15'
R = 7,653.88'
PC = 700+30.44
PT = 724+33.59
V = 65 MPH
E = 2.6%

Curve SB_I817
PI = 735+51.09
DELTA = 27° 10' 52.61" (LT)
D = 1° 57' 28"
T = 707.51'
L = 1,388.39'
R = 2,926.60'
PC = 728+43.58
PCC = 742+31.97
V = 65 MPH
E = 5.7%



DESIGN ENHANCEMENT
Grading and construction activities can be completed within existing right-of-way, reducing impacts to Parcels 034 and 035.
DESIGN ENHANCEMENT
Elimination of stormwater management facility reduces clearing and grading impacts and future maintenance costs.
DESIGN ENHANCEMENT
Eliminated RFP stormwater management facility eliminates right-of-way acquisition from Parcels 036, 037 and 058, and all work adjacent to the Hanging Rock Battlefield Trail.
PROP. TEMP. CONST. ESMT.
PROP. R/W & L/A
ROANOKE CO BOARD OF SUPERVISORS
Inst.# DB0014821380
13.31 AC.
MATCH LINE - STA.721+50 SB I-81 B/L - SEE SHEET 18
MATCH LINE - STA.321+50 NB I-81 B/L - SEE SHEET 18
MATCH LINE - STA.735+50 SB I-81 B/L - SEE SHEET 20
MATCH LINE - STA.335+50 NB I-81 B/L - SEE SHEET 20
Curve SB I-81_6
Curve SB I-81_7
Curve NB I-81_4
Curve NB I-81_5
SB I-81
NB I-81
N 78° 20' 22" E
035
BUSSEY MARILYN E

Curve NB_I814
PI = 313+65.86
DELTA = 20° 53' 01.87" (RT)
D = 0° 45' 32"
T = 1,391.16'
L = 2,751.44'
R = 7,548.70'
PC = 299+74.70
PRC = 327+26.14
V = 65 MPH
E = 2.6%

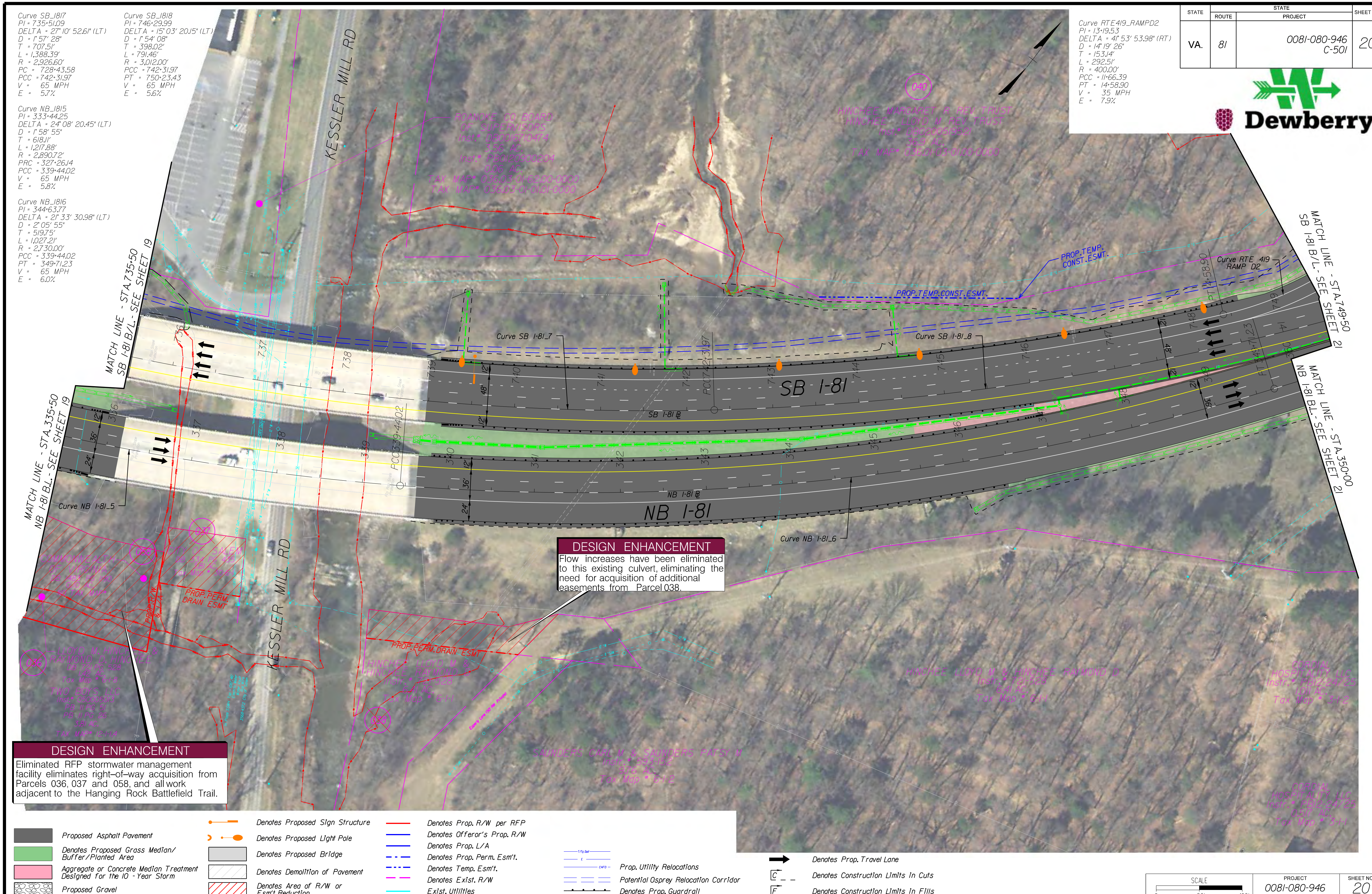
Curve NB_I815
PI = 333+44.25
DELTA = 24° 08' 20.45" (LT)
D = 1° 58' 55"
T = 618.11'
L = 1,217.88'
R = 2,890.72'
PRC = 327+26.14
PCC = 339+44.02
V = 65 MPH
E = 5.8%

Legend		
Proposed Asphalt Pavement	Denotes Proposed Sign Structure	Denotes Prop. R/W per RFP
Denotes Proposed Grass Median/ Buffer/Planted Area	Denotes Proposed Light Pole	Denotes Offeror's Prop. R/W
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm	Denotes Proposed Bridge	Denotes Prop. L/A
Proposed Gravel	Denotes Demolition of Pavement	Denotes Prop. Perm. Esm't.
	Denotes Area of R/W or Esm't Reduction	Denotes Temp. Esm't.
		Denotes Exist. R/W
		Exist. Utilities

Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE 0 50' 100'

PROJECT	SHEET NO.
0081-080-946	19



Curve SB_I817
PI = 735+51.09
DELTA = 27° 10' 52.61" (LT)
D = 1° 57' 28"
T = 707.51'
L = 1,388.39'
R = 2,926.60'
PC = 728+43.58
PCC = 742+31.97
V = 65 MPH
E = 5.7%
Curve SB_I818
PI = 746+29.99
DELTA = 15° 03' 20.15" (LT)
D = 1° 54' 08"
T = 398.02'
L = 791.46'
R = 3,012.00'
PCC = 742+31.97
PT = 750+23.43
V = 65 MPH
E = 5.6%
Curve NB_I815
PI = 333+44.25
DELTA = 24° 08' 20.45" (LT)
D = 1° 58' 55"
T = 618.11'
L = 1,217.88'
R = 2,890.72'
PRC = 327+26.14
PCC = 339+44.02
V = 65 MPH
E = 5.8%
Curve NB_I816
PI = 344+63.77
DELTA = 21° 33' 30.98" (LT)
D = 2° 05' 55"
T = 519.75'
L = 1,027.21'
R = 2,730.00'
PCC = 339+44.02
PT = 349+71.23
V = 65 MPH
E = 6.0%
Curve RTE419_RAMPD2
PI = 13+19.53
DELTA = 41° 53' 53.98" (RT)
D = 14° 19' 26"
T = 153.14'
L = 292.51'
R = 400.00'
PCC = 11+66.39
PT = 14+58.90
V = 35 MPH
E = 7.9%
STATE | ROUTE | STATE PROJECT | SHEET NO.
VA. | 81 | 0081-080-946 C-501 | 20
Dewberry
KESSLER MILL RD
MATCH LINE - STA.735+50 SB I-81 B/L - SEE SHEET 19
MATCH LINE - STA.335+50 NB I-81 B/L - SEE SHEET 19
MATCH LINE - STA.749+50 SB I-81 B/L - SEE SHEET 21
MATCH LINE - STA.350+00 NB I-81 B/L - SEE SHEET 21
SB I-81
NB I-81
PROP.TEMP. CONST.ESMT.
PROP.TEMP.CONST.ESMT.
PROP.PERM. DRAIN ESMT
PROP.PERM.DRAIN ESMT
Curve SB I-81_7
Curve SB I-81_8
Curve NB I-81_5
Curve NB I-81_6
Curve RTE 419 RAMP D2
DESIGN ENHANCEMENT
Flow increases have been eliminated to this existing culvert, eliminating the need for acquisition of additional easements from Parcel 038.
DESIGN ENHANCEMENT
Eliminated RFP stormwater management facility eliminates right-of-way acquisition from Parcels 036, 037 and 058, and all work adjacent to the Hanging Rock Battlefield Trail.
Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel
Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction
Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail
Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills
SCALE 0 50' 100'
PROJECT 0081-080-946
SHEET NO. 20

STATE	STATE		SHEET NO.
	ROUTE	PROJECT	
VA.	81	0081-080-946 C-501	21

Dewberry

MATCH LINE - SEE SHEET 21A

MATCH LINE - SEE SHEET 21A

MATCH LINE - STA.749+50
SB I-81 B/L. SEE SHEET 20

MATCH LINE - STA.350+00
NB I-81 B/L. SEE SHEET 20

MATCH LINE - STA.763+50
SB I-81 B/L - SEE SHEET 22

MATCH LINE - STA.364+50
NB I-81 B/L - SEE SHEET 22

HINCHEE MARGARET R REV TRUST
HINCHEE LLOYD M REV TRUST
Inst.# DB202005195?1
7.59 AC.
TAX MAP# 0360-01-03-01.00-0000

RIND20 LLC
Inst.# DB201606589
7.1845 AC.
TAX MAP# 0360-01-14.00-0000

WING MARK A
Inst.# DB201005324
3.36 AC.
TAX MAP#
0360-03-0100-0000

CORDIAL HOSPITALITY LLC
Inst.# PB12-24/25
1.01 AC.
Tax Map # 3-1-2

CORDIAL HOSPITALITY LLC
Inst.# PB12-24/25
2.35 AC.
Tax Map # 4-1-2

SHIVA HOSPITALITY LLC
Inst.# 140009916
4.47 AC.
Tax Map # 4-1-1

N ELECTRIC RD

W ELECTRIC RD

SB I-81

NB I-81

BRIDGE
B-681

RAMP D

LOOP D

LOOP B1

LOOP B2

SWM #12

Tie to Bordering Project Under Construction

Work Shown In Yellow Under Construction by Others

Curve RTE 419 RAMP D1

Curve RTE 419 RAMP D2

Curve RTE 419 LOOP D1

Curve RTE 419 LOOP D2

Curve SB I-81_8

Curve SB I-81_9

Curve NB I-81_7

Curve NB I-81_8

Curve RTE 419 LOOP B1

Curve RTE 419 LOOP B2

PT750+23.43

PT14+93.71

PC354+83.95

PC361+35.95

PC0+00.00

PC11+66.52

PC11+66.29

PC1+43.26

PT15+67.20

N 36° 06' 10" E

N 35° 30' 34" E

Curve RTE419_RAMPD1
PI = 10+84.25
DELTA = 22° 09' 21.69" (RT)
D = 13° 18' 56"
T = 84.25'
L = 166.39'
R = 430.29'
PC = 10+00.00
PCC = 11+66.39
V = 35 MPH
E = NORMAL

Curve RTE419_RAMPD2
PI = 13+19.53
DELTA = 41° 53' 53.98" (RT)
D = 14° 19' 26"
T = 153.14'
L = 292.51'
R = 400.00'
PCC = 11+66.39
PT = 14+58.90
V = 35 MPH
E = 7.9%

Curve NB_1817
PI = 358+10.04
DELTA = 3° 14' 54.28" (RT)
D = 0° 29' 54"
T = 326.09'
L = 652.00'
R = 11,500.00'
PC = 354+83.95
PCC = 361+35.95
V = 65 MPH
E = 2%

Curve RTE419_LOOPD1
PI = 10+84.87
DELTA = 27° 15' 34.08" (RT)
D = 16° 22' 13"
T = 84.87'
L = 166.52'
R = 350.00'
PC = 10+00.00
PCC = 11+66.52
V = 25 MPH
E = 6.0%

Curve RTE419_LOOPD2
PI = 13+39.97
DELTA = 47° 02' 00.85" (RT)
D = 14° 22' 29"
T = 173.45'
L = 327.20'
R = 398.59'
PCC = 11+66.52
PT = 14+93.71
V = 25 MPH
E = 5.7%

Curve SB_1818
PI = 746+29.99
DELTA = 15° 03' 20.15" (LT)
D = 1° 54' 08"
T = 398.02'
L = 791.46'
R = 3,012.00'
PCC = 742+31.97
PT = 750+23.43
V = 65 MPH
E = 5.6%

Curve SB_1819
PI = 768+56.82
DELTA = 7° 45' 13.39" (RT)
D = 0° 42' 30"
T = 548.10'
L = 1,094.53'
R = 8,088.00'
PC = 763+08.71
PT = 774+03.25
V = 65 MPH
E = 2.4%

Curve RTE419_LOOPB1
PI = 10+72.28
DELTA = 18° 44' 26.83" (RT)
D = 13° 04' 52"
T = 72.28'
L = 143.26'
R = 438.00'
PC = 10+00.00
PCC = 11+43.26
V = 25 MPH
E = 5.5%

Curve RTE419_LOOPB2
PI = 14+60.25
DELTA = 110° 32' 15.19" (RT)
D = 26° 04' 26"
T = 316.98'
L = 423.94'
R = 219.74'
PCC = 11+43.26
PT = 15+67.20
V = 25 MPH
E = 7.3%

Curve NB_1818
PI = 365+62.86
DELTA = 6° 11' 11.25" (RT)
D = 0° 43' 31"
T = 426.91'
L = 853.00'
R = 7,900.00'
PCC = 361+35.95
PT = 369+88.95
V = 65 MPH
E = 2.4%

Proposed Asphalt Pavement

Denotes Proposed Grass Median/ Buffer/Planted Area

Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm

Proposed Gravel

Denotes Proposed Sign Structure

Denotes Proposed Light Pole

Denotes Proposed Bridge

Denotes Demolition of Pavement

Denotes Area of R/W or Esm't Reduction

Denotes Prop. R/W per RFP

Denotes Offeror's Prop. R/W

Denotes Prop. L/A

Denotes Prop. Perm. Esm't.

Denotes Temp. Esm't.

Denotes Exist. R/W

Exist. Utilities

Prop. Utility Relocations

Potential Osprey Relocation Corridor

Denotes Prop. Guardrail

Denotes Prop. Travel Lane

Denotes Construction Limits in Cuts

Denotes Construction Limits in Fills

SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	21

STATE	STATE		SHEET NO.
	ROUTE	PROJECT	
VA.	81	0081-080-946 C-501	21A

Dewberry

MATCH LINE - SEE SHEET 21

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel

Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction

Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities

Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail

Denotes Prop. Travel Lane
Denotes Construction Limits In Cuts
Denotes Construction Limits In Fills

SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	21A

STATE	STATE		SHEET NO.
	ROUTE	PROJECT	
VA.	81	0081-080-946 C-501	22

Dewberry

Curve NB_1811O
PI = 395+25.24
DELTA = 20° 46' 51.5" (RT)
D = 0° 31' 27"
T = 2,004.26'
L = 3,964.49'
R = 10,930.64'
PCC = 375+20.98
PT = 414+85.46
V = 65 MPH
E = 2.0%

Curve SB_1819
PI = 768+56.82
DELTA = 7° 45' 13.39" (RT)
D = 0° 42' 30"
T = 548.10'
L = 1,094.53'
R = 8,088.00'
PC = 763+08.71
PT = 774+03.25
V = 65 MPH
E = 2.4%

WING MARK A
Inst.# DB201005324
3.36 AC.
TAX MAP# 036JJ-03-01.00-0000

APPALACHIAN POWER COMPANY
Inst.# DB1612300254
46.4 AC.
TAX MAP# 036JJ-01-14.03-0000

LOCH HAVEN DR

END CONSTRUCTION
S.B. I-81
STATION 774+00.00

Curve SB I-81_9

Work Shown In Yellow Under Construction by Others

SB I-81

SB I-81 B/L

PT 774+03.25

MATCH LINE - STA 763+50
SB I-81 B/L - SEE SHEET 21

Curve NB I-81_8

Curve NB I-81_9

Tie to Bordering Project Under Construction

Curve NB I-81_10

N 44° 56' 40" E

NB I-81 B/L

NB I-81

PT 369+88.95

PC 372+60.95

PC 375+20.98

MATCH LINE - STA 379+00
NB I-81 B/L - SEE INSET A

MATCH LINE - STA 364+50
NB I-81 B/L - SEE SHEET 21

RAMP B

RAMP B B/L

PT 15+93.30

Curve RTE 419 RAMP B1

Work Shown In Yellow Under Construction by Others

PC 11+64.29

N 16° 11' 20" W

POT 10+00.00

COVE RD NW

FRANKLIN GEORGE H
FRANKLIN BERNA C
Inst.# PB009610022
0.65 AC.
TAX MAP# 036JJ-01-07.00-0000

FRANKLIN GEORGE H
FRANKLIN BERNA C
Inst.# PB009710022
0.65 AC.
TAX MAP# 036JJ-01-08.00-0000

EDWARD ROSE DEVELOPMENT COMPANY LLC
Inst.# PB201604087
0.5752 AC.
TAX MAP# 036JJ-02-04.01-0000

EDWARD ROSE DEVELOPMENT COMPANY LLC
Inst.# PB201604087
3.4126 AC.
TAX MAP# 036JJ-02-04.02-0000

Curve RTE419_RAMPB1
PI = 14+01.51
DELTA = 60° 50' 15.37" (RT)
D = 14° 10' 52"
T = 237.22'
L = 429.01'
R = 404.03'
PC = 11+64.29
PT = 15+93.30
V = 35 MPH
E = 7.8%

Curve NB_1818
PI = 365+62.86
DELTA = 6° 11' 11.25" (RT)
D = 0° 43' 31"
T = 426.91'
L = 853.00'
R = 7,900.00'
PCC = 361+35.95
PT = 369+88.95
V = 65 MPH
E = 2.4%

Curve NB_1819
PI = 373+90.97
DELTA = 1° 32' 09.43" (RT)
D = 0° 35' 26"
T = 130.02'
L = 260.03'
R = 9,700.00'
PC = 372+60.95
PCC = 375+20.98
V = 65 MPH
E = 2.0%

INSET A

MATCH LINE - STA 379+00
NB I-81 B/L - SEE ABOVE

Curve NB I-81_10

END CONSTRUCTION
N.B. I-81
STATION 382+75.01

Work Shown In Yellow Under Construction by Others

Proposed Asphalt Pavement
Denotes Proposed Grass Median/ Buffer/Planted Area
Aggregate or Concrete Median Treatment Designed for the 10 - Year Storm
Proposed Gravel

Denotes Proposed Sign Structure
Denotes Proposed Light Pole
Denotes Proposed Bridge
Denotes Demolition of Pavement
Denotes Area of R/W or Esm't Reduction

Denotes Prop. R/W per RFP
Denotes Offeror's Prop. R/W
Denotes Prop. L/A
Denotes Prop. Perm. Esm't.
Denotes Temp. Esm't.
Denotes Exist. R/W
Exist. Utilities

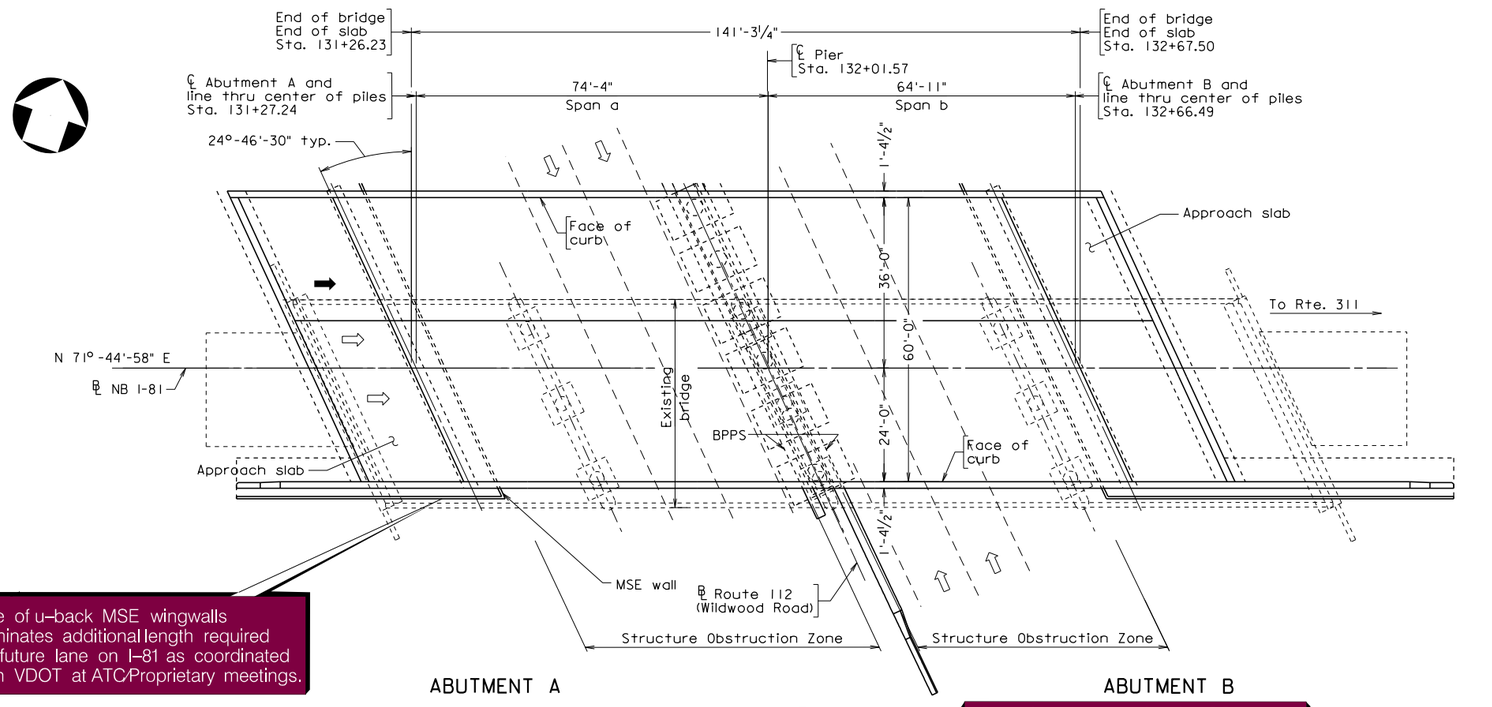
Prop. Utility Relocations
Potential Osprey Relocation Corridor
Denotes Prop. Guardrail

Denotes Prop. Travel Lane
Denotes Construction Limits in Cuts
Denotes Construction Limits in Fills

SCALE	PROJECT	SHEET NO.
0 50' 100'	0081-080-946	22

Structural Plans

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				1
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	

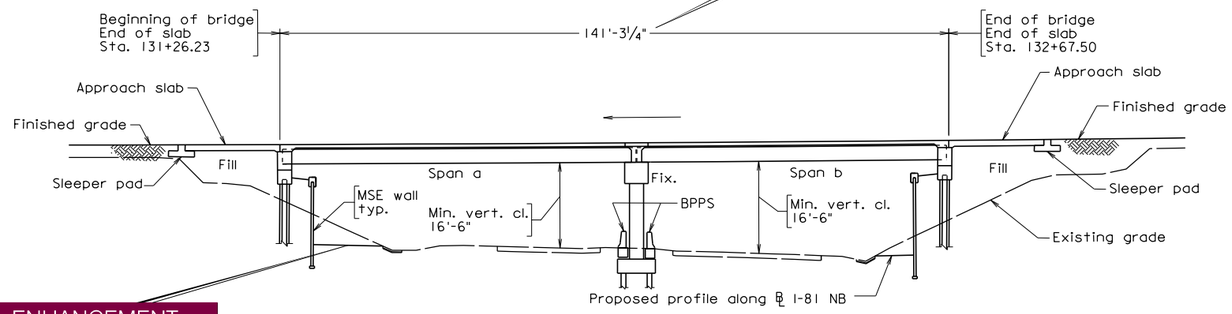


ABUTMENT A ABUTMENT B

PLAN

Use of u-back MSE wingwalls eliminates additional length required for future lane on I-81 as coordinated with VDOT at ATC/Proprietary meetings.

Span lengths comply with SOZ, future BPPS at abutments, and clearance with pile cans to MSE wall.



ABUTMENT A ABUTMENT B

DEVELOPED SECTION ALONG PROPOSED NB BASELINE

DESIGN ENHANCEMENT

Existing slope material will be removed, resulting in a flattened slope approaching the abutments and minimizing future construction efforts associated with widening of Route 112.

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Width: 60'-0" face-to-face of curbs.

Span layout: 74'-4" - 64'-11" prestressed concrete deep bulb-T beam spans continuous for live load.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016, including all current revisions.

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

Architectural treatments are required for structures.

Drystack architectural treatment shall be placed on parapets exterior face and abutment faces.

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE REPLACEMENT ON

I-81 NORTH BOUND OVER ROUTE 112 (WILDWOOD ROAD)
ROANOKE CO. - 4.29 MI. S. OF ROUTE 419
PROJ. 0081-080-946, B683

Recommended for Approval: _____ _____
District Project Development Engineer Date

Approved: _____ _____
District Administrator Date

Date: _____

Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

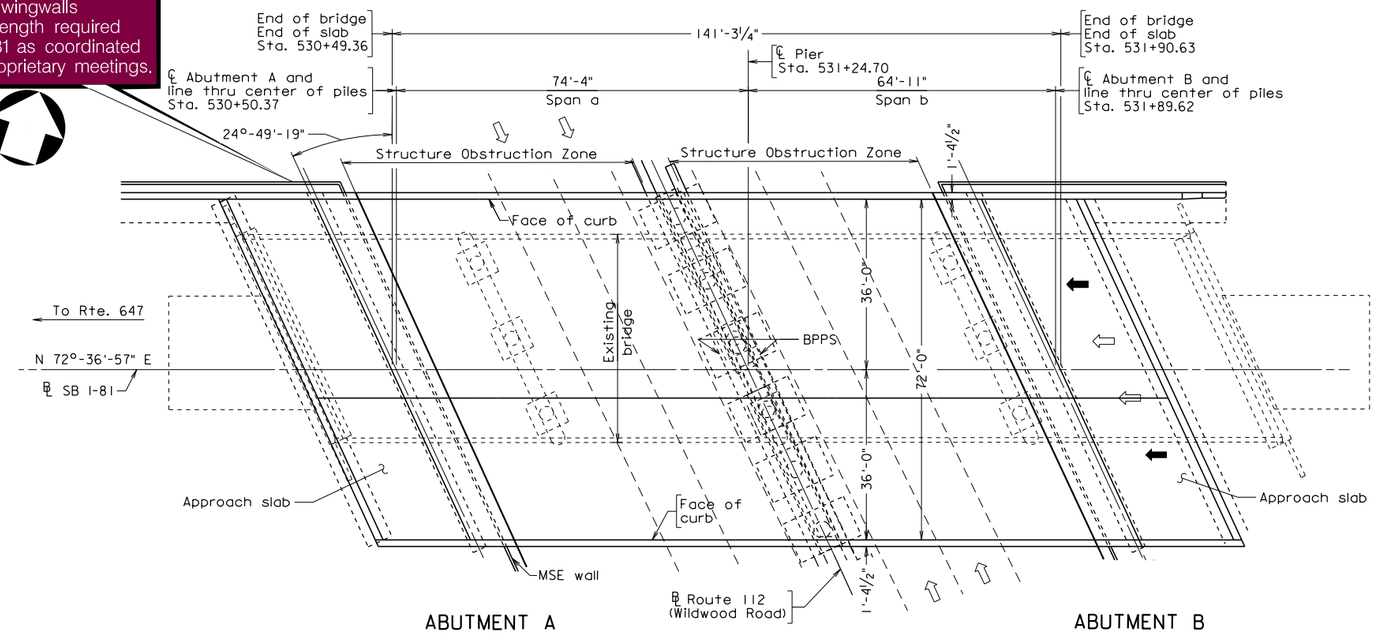
PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

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

112_GP&E_NB.dgn

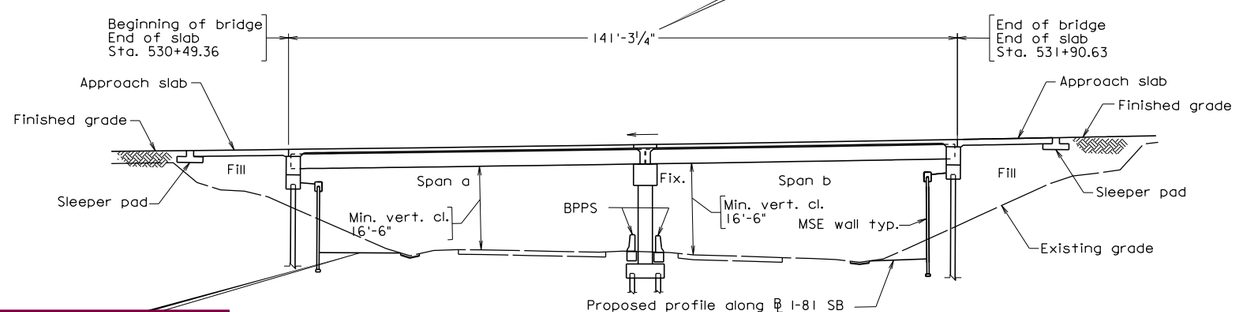
STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				2
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	

Use of u-back MSE wingwalls eliminates additional length required for future lane on I-81 as coordinated with VDOT at ATC/Proprietary meetings.



PLAN

Span lengths comply with SOZ, future BPPS at abutments, and clearance with pile cans to MSE wall.



DEVELOPED SECTION ALONG PROPOSED SB BASELINE

DESIGN ENHANCEMENT

Existing slope material will be removed, resulting in a flattened slope approaching the abutments and minimizing future construction efforts associated with widening of Route 112.

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Width: 72'-0" face-to-face of curbs.

Span layout: 74'-4" - 64'-11" prestressed concrete bulb-T beam spans continuous for live load

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016, including all current revisions.

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

Architectural treatments are required for structures.

Drystack architectural treatment shall be placed on parapets exterior face and abutment faces.

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE REPLACEMENT ON

I-81 SOUTH BOUND OVER ROUTE 112 (WILDWOOD ROAD)
ROANOKE CO. - 4.29 MI. S. OF ROUTE 419
PROJ. 0081-080-946, B688

Dewberry

Recommended for Approval: _____ _____
District Project Development Engineer Date

Approved: _____ _____
District Administrator Date

Date: _____

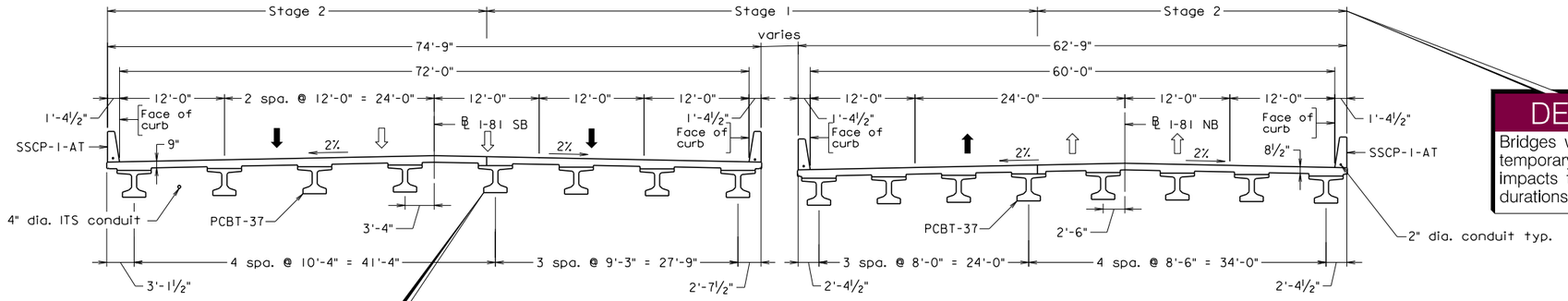
Scale: 1/16" = 1'-0"

Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

112_GP&E_SB.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	——				3



TRANSVERSE SECTION

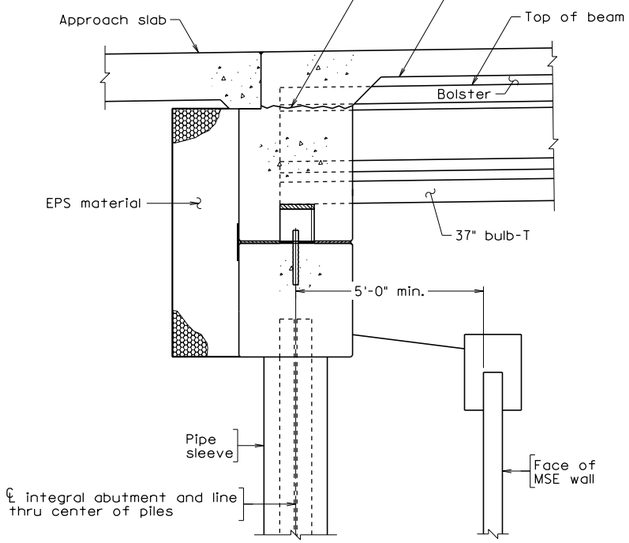
DESIGN ENHANCEMENT

Bridges will be constructed in two stages, eliminating temporary median cross-overs resulting in less impacts to traffic and reduced construction durations.

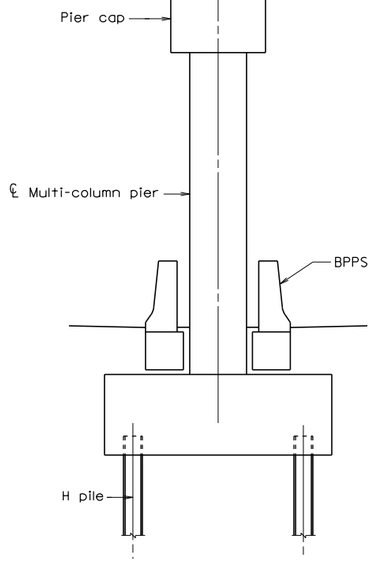
Use of bulb tee beams provides low maintenance structure.

Use of CRR reinforcement provides a low maintenance structure.

Use of full integral abutment eliminates deck joints and bearings providing a low maintenance structure.



ABUTMENT SECTION
Scale: ½" = 1'-0"



PIER SECTION
Scale: ¼" = 1'-0"

Dewberry Engineers Inc.
FAIRFAX, VA
STRUCTURAL ENGINEER

Scale: ⅛" = 1'-0" unless shown otherwise

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

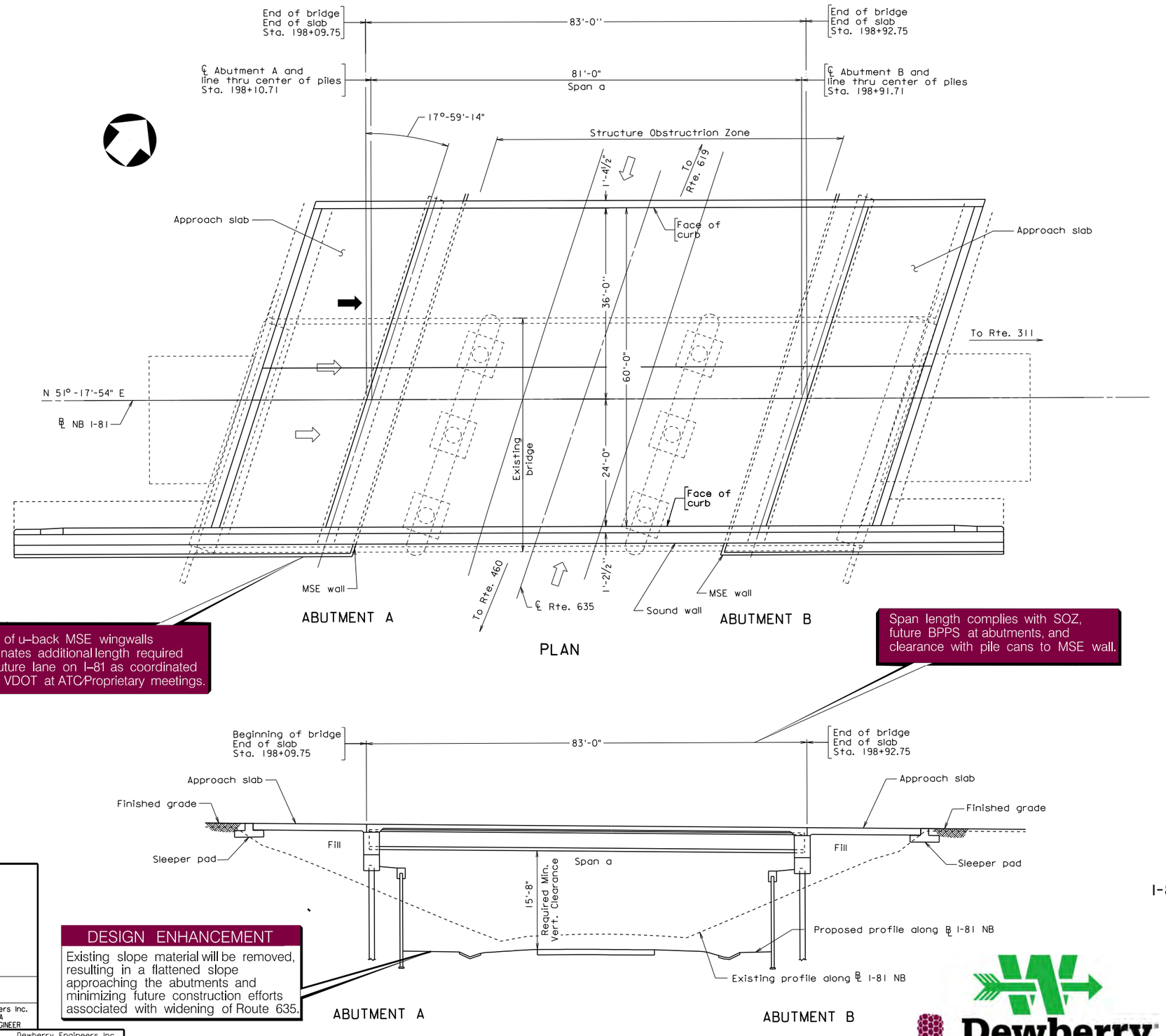
STRUCTURE AND BRIDGE DIVISION

I-81 OVER ROUTE 112 WILDWOOD ROAD SECTIONS

Designed:	Date	Plan No.	Sheet No.
Drawn:			
Checked:			3

I-81 Rte 112 Transverse Section.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				1
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	



DESIGN EXCEPTION(S):

Approved Design Waiver No. 2 for 15'-8" vertical clearance.

GENERAL NOTES:

Width: 60'-0" face-to-face of curbs.

Span layout: 83'-0" single span prestressed concrete, 45" deep bulb-T beam.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016, including all current revisions.

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

Architectural treatments are required for structures.

Drystack architectural treatment shall be placed on parapets exterior face and abutment faces.

635_GP&E_NB.dgn

Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE REPLACEMENT ON

I-81 NORTH BOUND OVER ROUTE 635 (GOODWIN AVE.)
ROANOKE CO. - 1.26 MI. N. OF ROUTE 112
PROJ. 0081-080-946, B684

Recommended for Approval: _____ _____
District Project Development Engineer Date

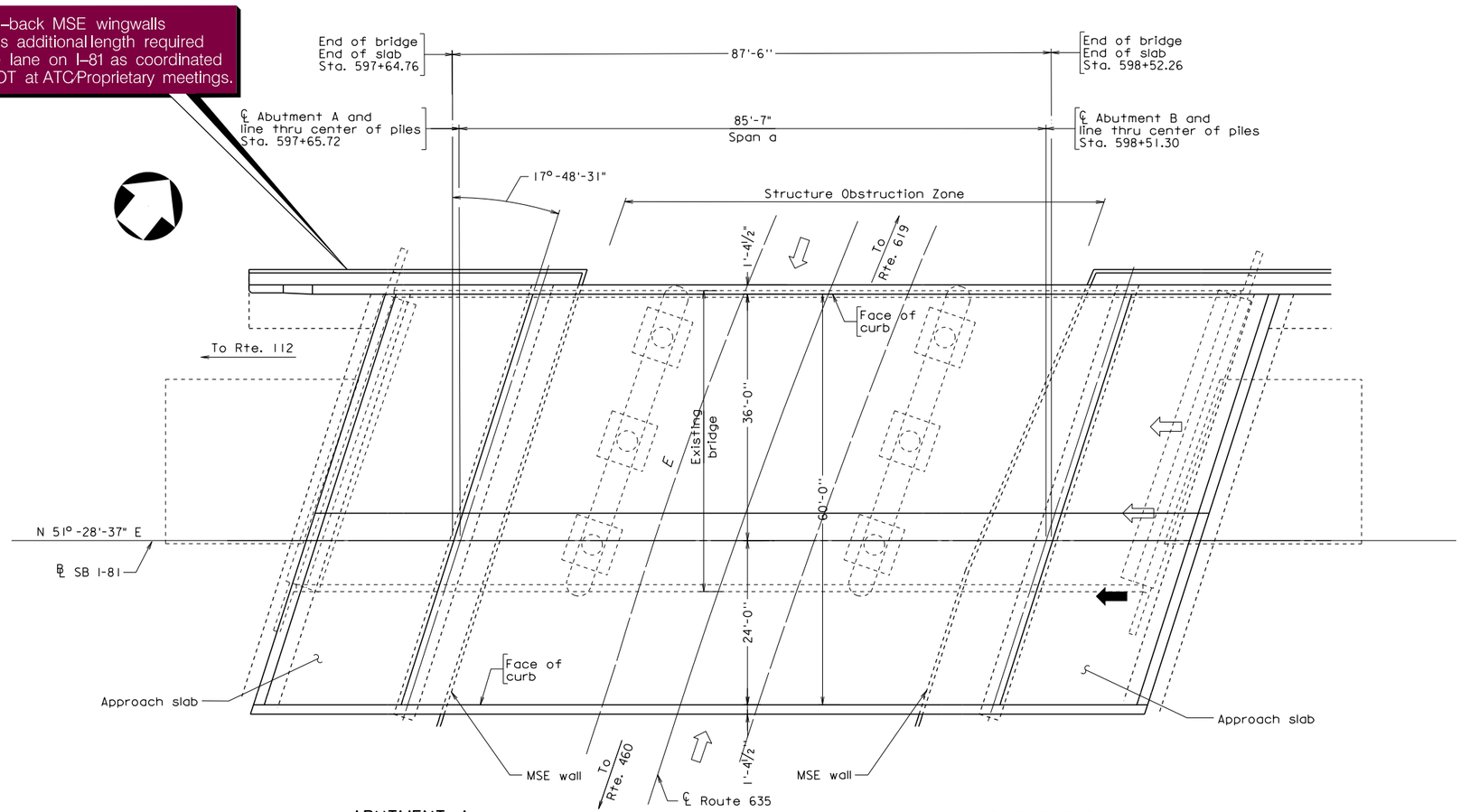
Approved: _____ _____
District Administrator Date

Scale: 1" = 10'-0"

Date: _____

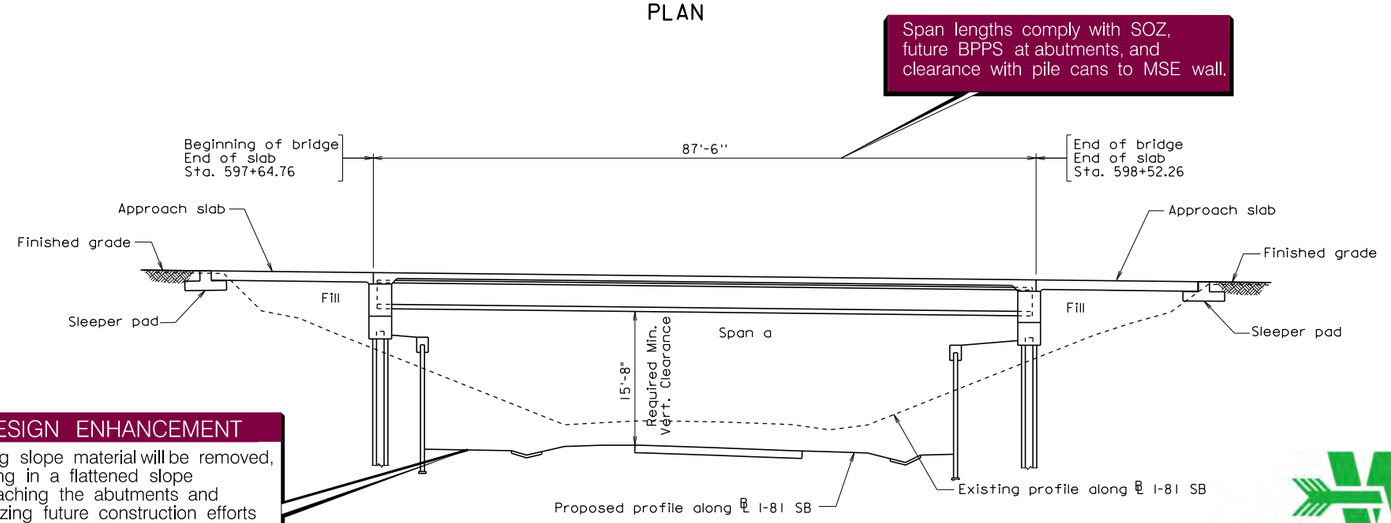
STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				2
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	

Use of u-back MSE wingwalls eliminates additional length required for future lane on I-81 as coordinated with VDOT at ATC/Proprietary meetings.



PLAN

Span lengths comply with SOZ, future BPPS at abutments, and clearance with pile cans to MSE wall.



DEVELOPED SECTION ALONG PROPOSED SB BASELINE

DESIGN ENHANCEMENT

Existing slope material will be removed, resulting in a flattened slope approaching the abutments and minimizing future construction efforts associated with widening of Route 635.

DESIGN EXCEPTION(S):

Approved Design Waiver No. 2 for 15'-8" vertical clearance.

GENERAL NOTES:

Width: 60'-0" face-to-face of curbs.

Span layout: 87'-6" single span. prestressed concrete, 45" deep bulb-T beam.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016, including all current revisions.

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

Architectural treatments are required for structures.

Drystack architectural treatment shall be placed on parapets exterior face and abutment faces.

635_GP&E_SB.dgn

Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE REPLACEMENT ON

I-81 SOUTH BOUND OVER ROUTE 635 (GOODWIN AVE.)
ROANOKE CO. - 3.03 MI. S. OF ROUTE 419
PROJ. 0081-080-946, B685

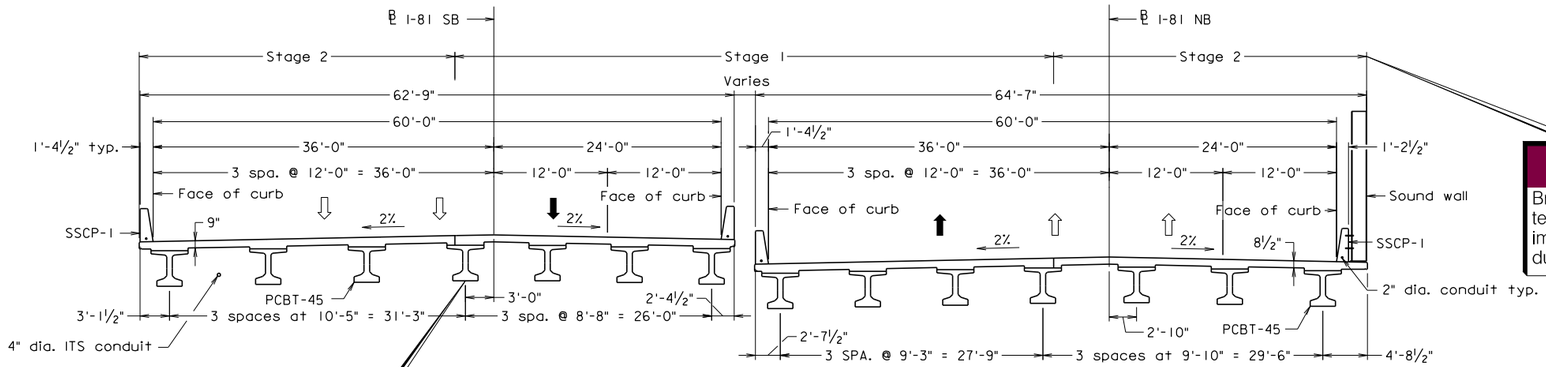
Recommended for Approval: _____ _____
District Project Development Engineer Date

Approved: _____ _____
District Administrator Date

Scale: 1" = 10'-0"

Date: _____

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				3



TRANSVERSE SECTION

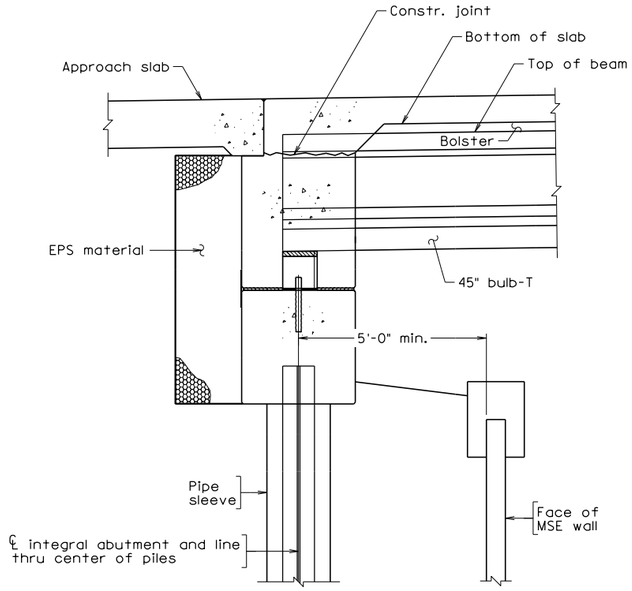
DESIGN ENHANCEMENT

Bridges will be constructed in two stages, eliminating temporary median cross-overs resulting in less impacts to traffic and reduced construction durations.

Use of bulb tee beams provides low maintenance structure.

Use of CRR reinforcement provides a low maintenance structure.

Use of full integral abutment eliminates deck joints and bearings providing a low maintenance structure.



ABUTMENT SECTION
Scale: ½" = 1'-0"

Scale: ⅛" = 1'-0" unless otherwise shown

Dewberry Engineers Inc.
FAIRFAX, VA
STRUCTURAL ENGINEER

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

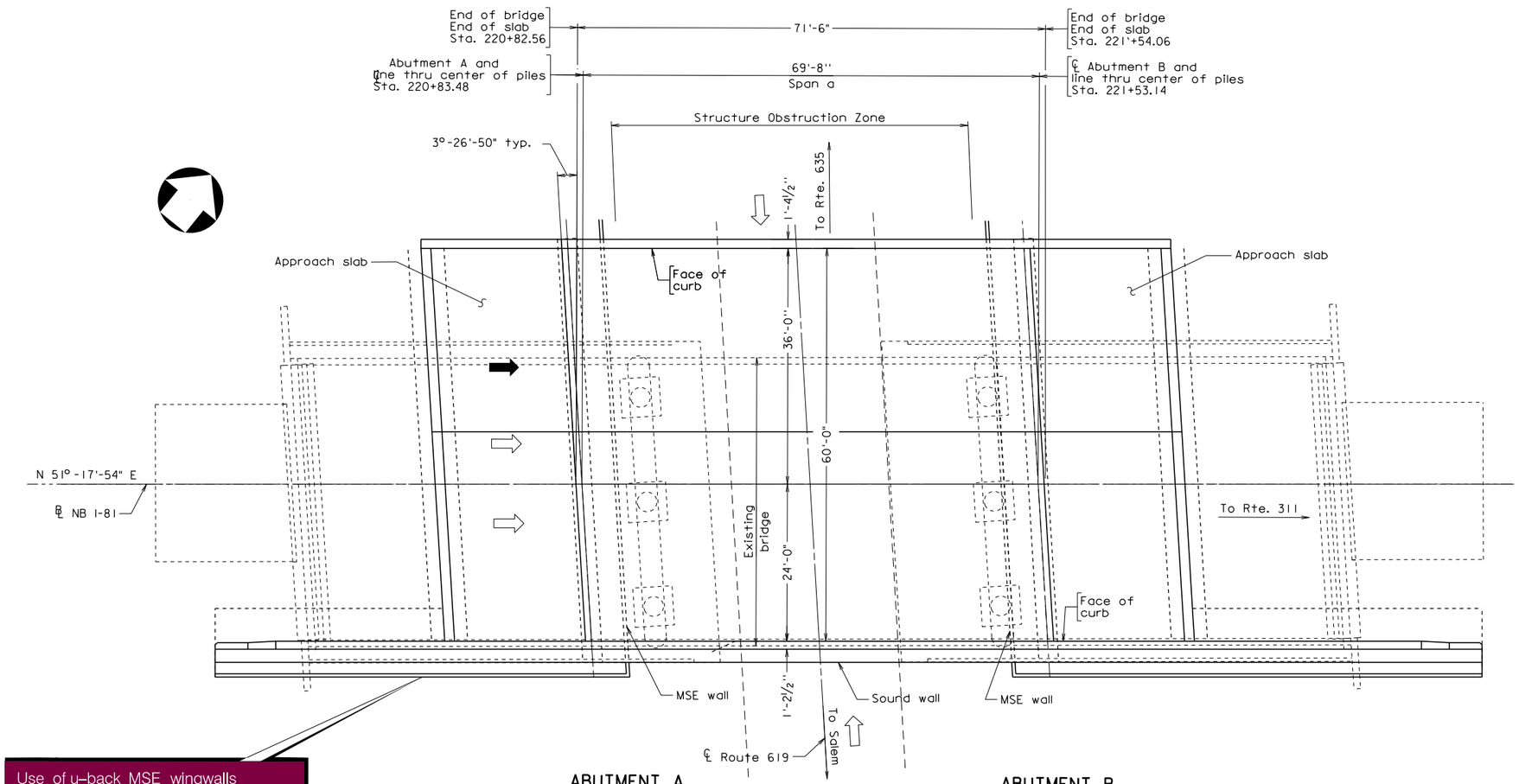
STRUCTURE AND BRIDGE DIVISION

I-81 OVER ROUTE 635 GOODWIN AVENUE SECTIONS

	Date	Plan No.	Sheet No.
Designed:			
Drawn:			3
Checked:			

I-81 Rte 635 Transverse Section.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				1
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	



DESIGN ENHANCEMENT

Existing slope material will be removed, resulting in a flattened slope approaching the abutments and minimizing future construction efforts associated with widening of Route 619.

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Width: 60'-0" face-to-face of curbs.

Span layout: 71'-6" single span. prestressed concrete, 37" deep bulb-T beam.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016, including all current revisions.

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

Architectural treatments are required for structures.

Drystack architectural treatment shall be placed on parapets exterior face and abutment faces.

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE REPLACEMENT ON

I-81 NORTH BOUND OVER ROUTE 619 (WILDWOOD ROAD)
ROANOKE CO. - 1.65 MI. N. OF ROUTE 112
PROJ. 0081-080-946, B687

Recommended for Approval: _____ _____
District Project Development Engineer Date

Approved: _____ _____
District Administrator Date

Date: _____

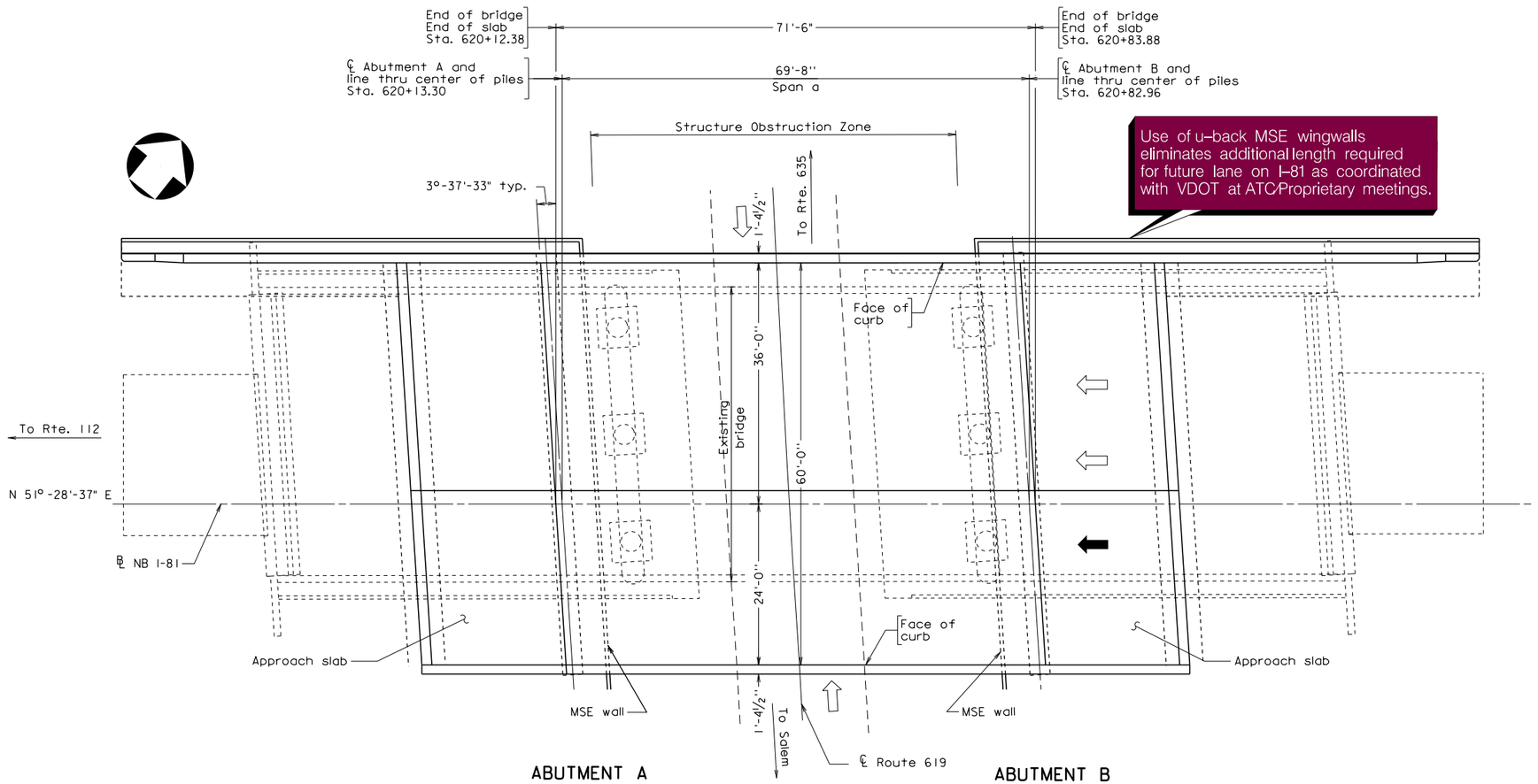
Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

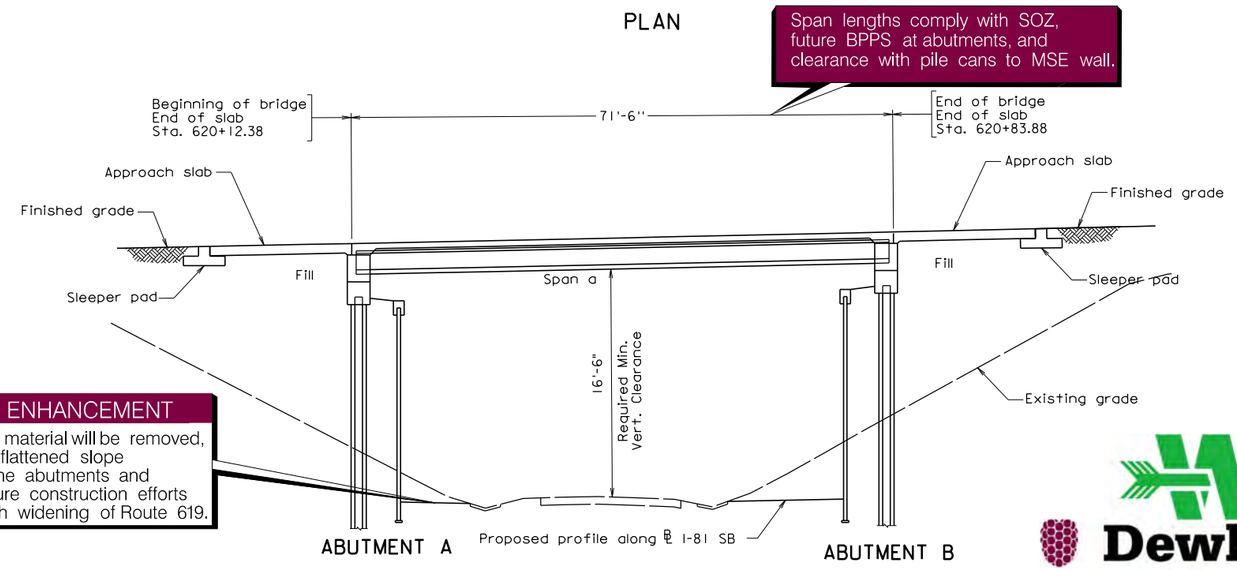
Scale: 1" = 10'-0"

619_GP&E_NB.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				2
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	



PLAN



DEVELOPED SECTION ALONG PROPOSED SB BASELINE

Scale: 1" = 10'-0"

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Width: 60'-0" face-to-face of curbs.

Span layout: 71'-6" single span. prestressed concrete, 37" deep bulb-T beam.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016, including all current revisions.

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

Architectural treatments are required for structures.

Drystack architectural treatment shall be placed on parapets exterior face and abutment faces.

DESIGN ENHANCEMENT

Existing slope material will be removed, resulting in a flattened slope approaching the abutments and minimizing future construction efforts associated with widening of Route 619.

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE REPLACEMENT ON

I-81 SOUTH BOUND OVER ROUTE 619 (WILDWOOD ROAD)
ROANOKE CO. - 1.23 MI. S. OF ROUTE 311
PROJ. 0081-080-946, B686

Recommended for Approval: _____ _____
District Project Development Engineer — Date

Approved: _____ _____
District Administrator — Date

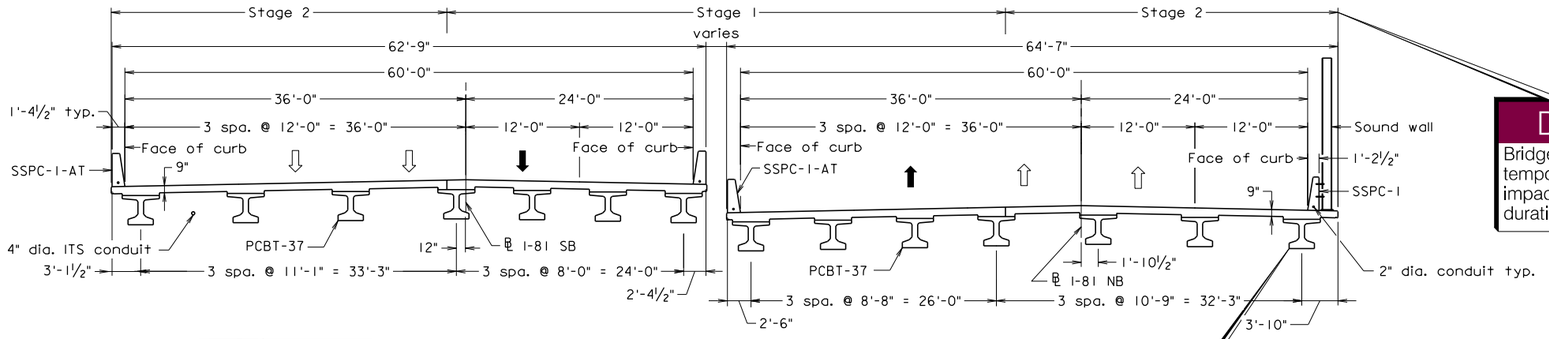
Date: _____

Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

619_GP&E_SB.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				3



TRANSVERSE SECTION

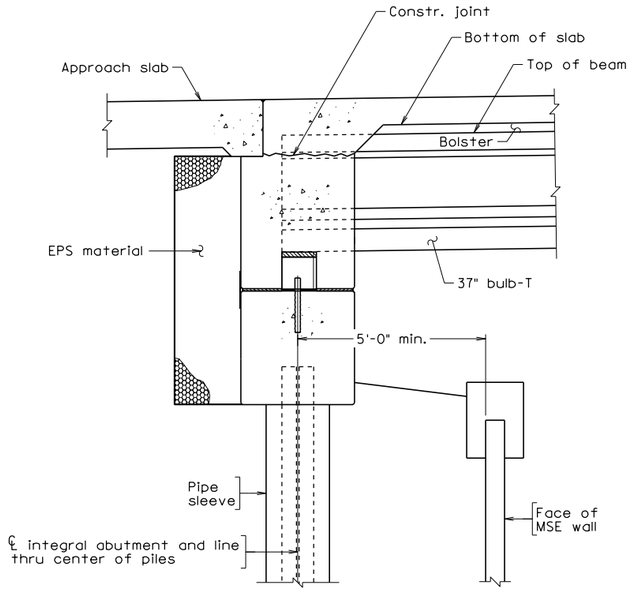
DESIGN ENHANCEMENT

Bridges will be constructed in two stages, eliminating temporary median cross-overs resulting in less impacts to traffic and reduced construction durations.

Use of CRR reinforcement provides a low maintenance structure.

Use of bulb tee beams provides low maintenance structure.

Use of full integral abutment eliminates deck joints and bearings providing a low maintenance structure.



ABUTMENT SECTION
Scale: ½" = 1'-0"

Scale: ⅛" = 1'-0" unless otherwise shown

Dewberry Engineers Inc.
FAIRFAX, VA
STRUCTURAL ENGINEER

No.	Description	Date
	Revisions	

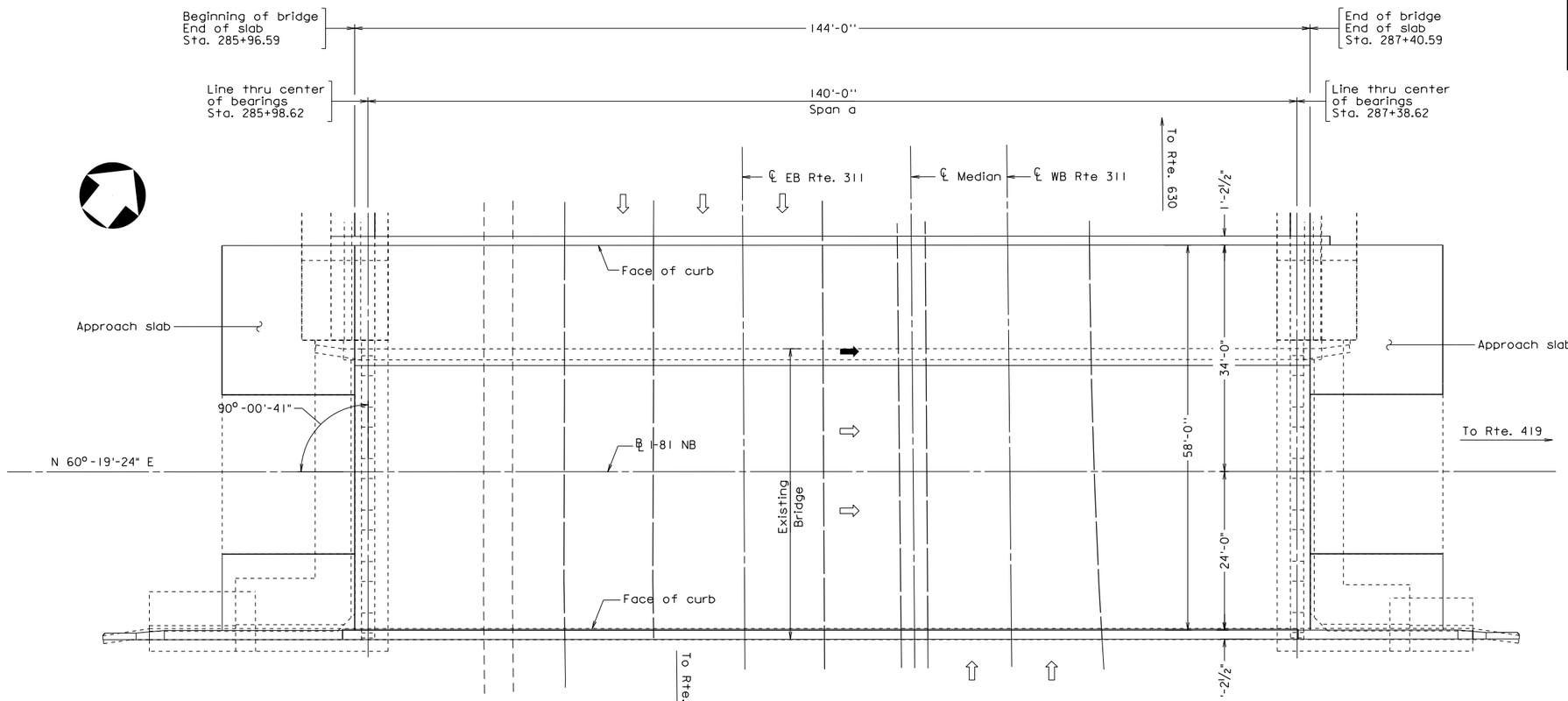
COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

I-81 OVER ROUTE 619 (WILDWOOD ROAD) SECTIONS

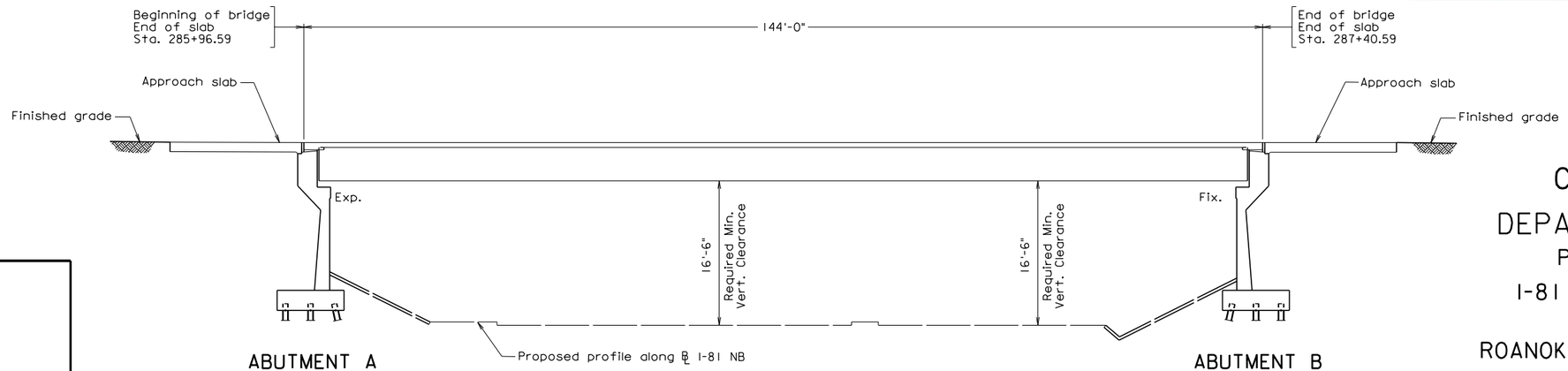
Designed:	Date	Plan No.	Sheet No.
Drawn:			3
Checked:			

I-81 Rte 619 Transverse Section.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				1
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	



PLAN



DEVELOPED SECTION ALONG PROPOSED NB BASELINE

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Width: 58'-0" face-to-face of curbs.

Span layout: 140'-0" single span steel plate girder.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016, including all current revisions.

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

Architectural treatments are required for structures. Architectural treatment shall be used on the exterior face of wingwalls, abutments, and associated retaining walls. Architectural treatment shall match the existing abutment treatment.

Use of Virginia Micro Abutment Detail moves deck joint behind backwall, reduces future maintenance, and retains existing approach slab.

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE WIDENING ON
I-81 NORTH BOUND OVER ROUTE 311
(THOMPSON MEMORIAL DRIVE)
ROANOKE CO. - 2.94 MI. N. OF ROUTE 112
PROJ. 0081-080-946, B678

Recommended for Approval: _____ _____
District Project Development Engineer — Date

Approved: _____ _____
District Administrator — Date

Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

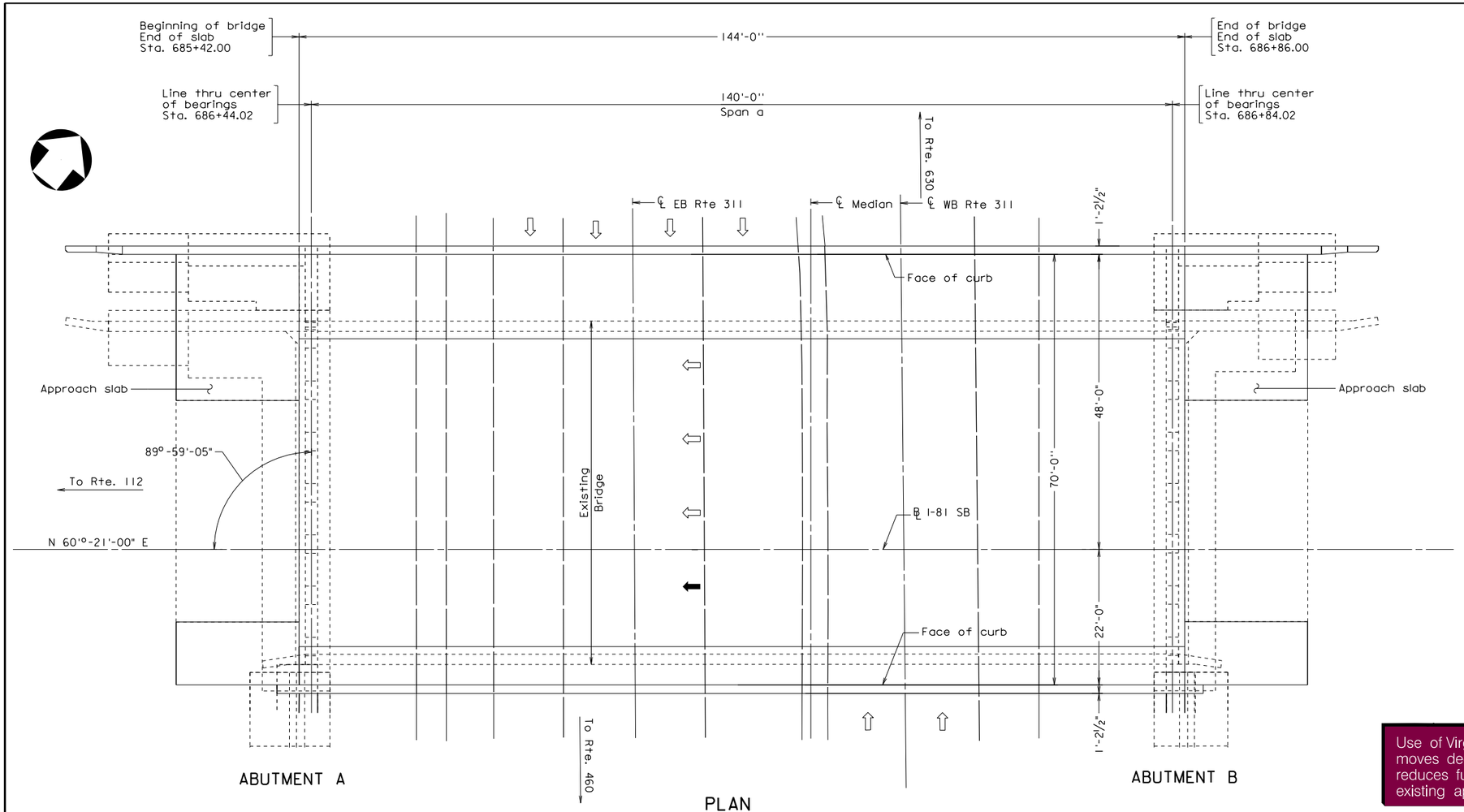
Dewberry

Scale: 1" = 10'-0"

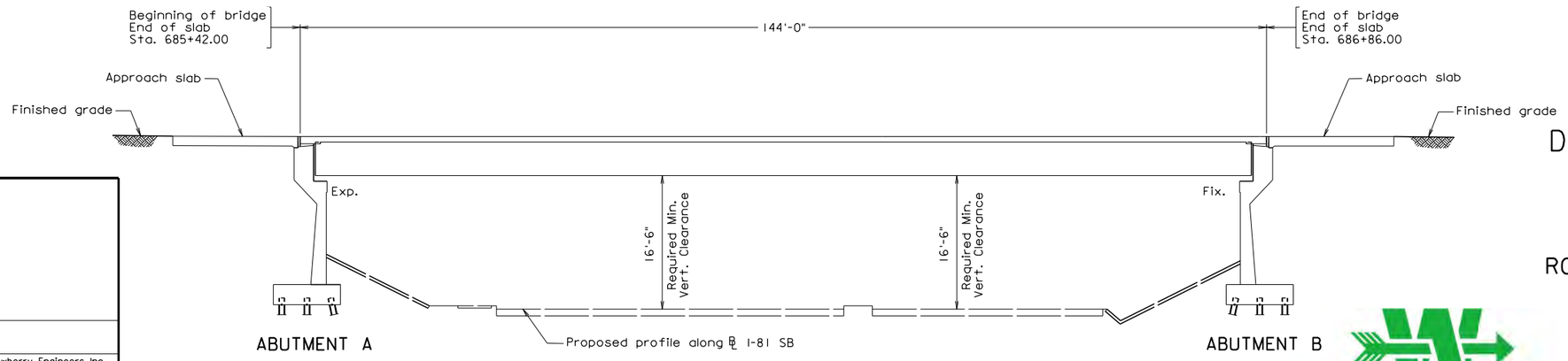
Date: _____

Rte 311_GP&E_NB.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				2
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	



PLAN



DEVELOPED SECTION ALONG PROPOSED SB BASELINE

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Width: 70'-0" face-to-face of curbs.

Span layout: 140'-0" single span steel plate girder.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2020.

Design: AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016, including all current revisions.

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

Architectural treatments are required for structures. Architectural treatment shall be used on the exterior face of wingwalls, abutments, and associated retaining walls. Architectural treatment shall match the existing abutment treatment.

Use of Virginia Micro Abutment Detail moves deck joint behind backwall, reduces future maintenance, and retains existing approach slab.

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE ON
I-81 SOUTH BOUND OVER ROUTE 311
(THOMPSON MEMORIAL DRIVE)
ROANOKE CO. - 1.30 MI. S. OF ROUTE 419
PROJ. 0081-080-946, B677

Recommended for Approval: _____ _____
District Project Development Engineer — Date

Approved: _____ _____
District Administrator — Date

Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

Dewberry

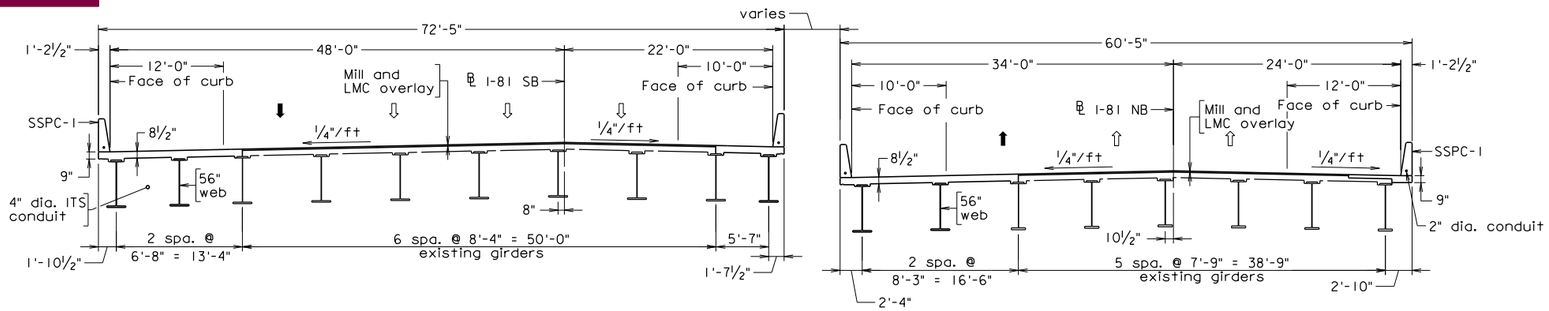
Scale: 1" = 10'-0"

Date: _____

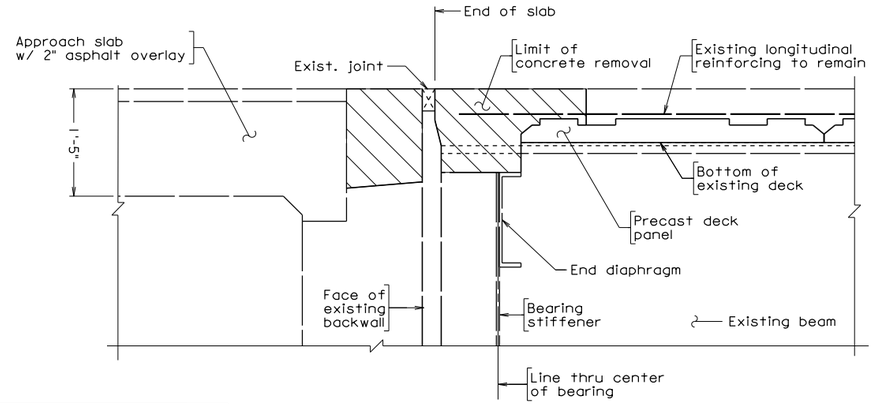
Rte 311_GP&E_SB.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				3

Use of CRR reinforcement in widened deck slab provides a low maintenance structure.



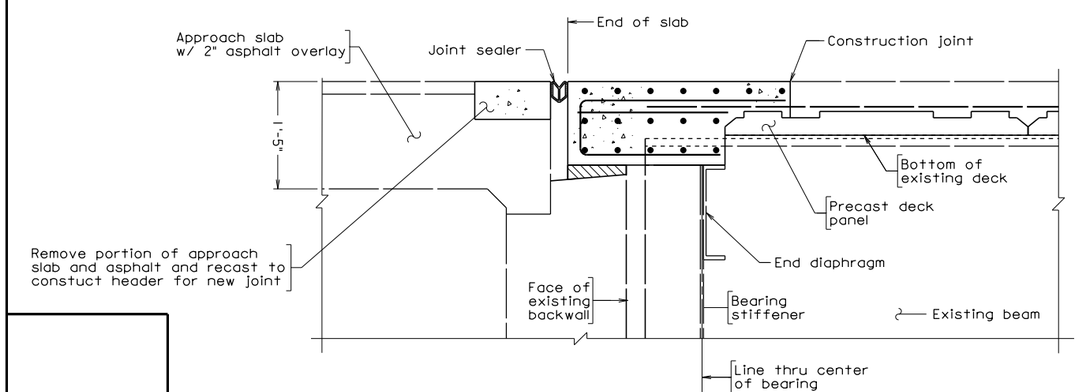
TRANSVERSE SECTION



EXISTING DECK SLAB END

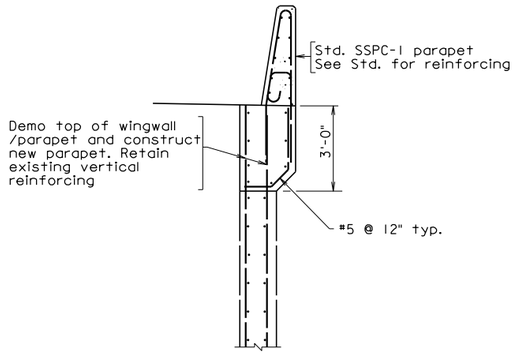
Scale: 1" = 1'-0"

Use of Virginia Micro Abutment Detail moves deck joint behind backwall, reduces future maintenance, and retains existing approach slab.



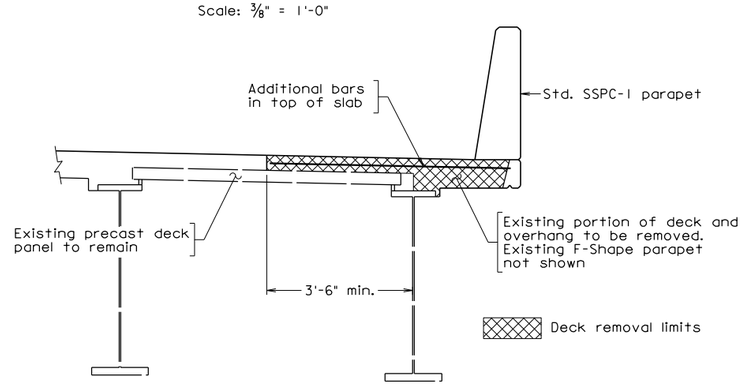
PROPOSED DECK SLAB END MODIFICATION
VIRGINIA MICRO ABUTMENT DETAIL

Scale: 1" = 1'-0"



EXISTING BARRIER REPLACEMENT
ON NORTHBOUND WINGWALLS

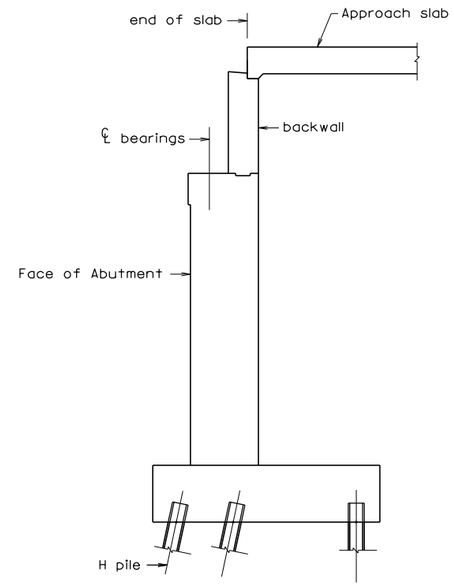
Scale: ⅜" = 1'-0"



PARAPET MODIFICATION DETAIL

Scale: ½" = 1'-0"

Yield line analysis of deck overhang already performed demonstrating adequacy of the overhang.



WIDENED ABUTMENT SECTION

Scale: ¼" = 1'-0"

Dewberry Engineers Inc.
FAIRFAX, VA
STRUCTURAL ENGINEER

Scale: ⅛" = 1'-0" unless otherwise shown

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

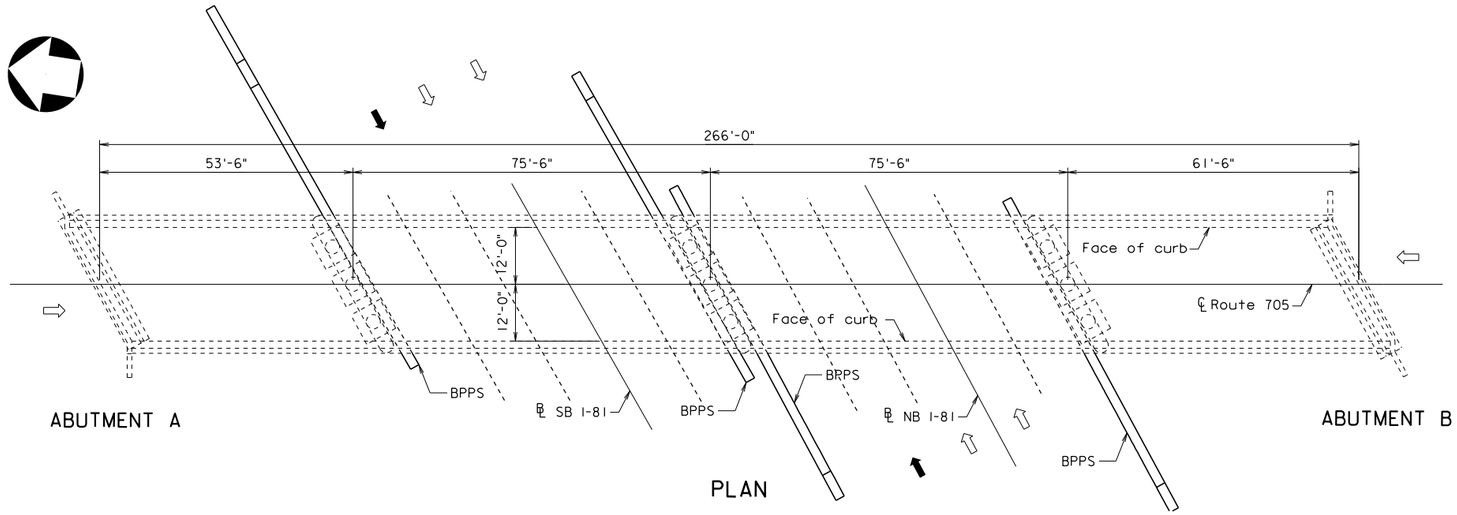
STRUCTURE AND BRIDGE DIVISION

I-81 OVER ROUTE 311 (THOMPSON MEMORIAL DRIVE) SECTIONS AND DETAILS

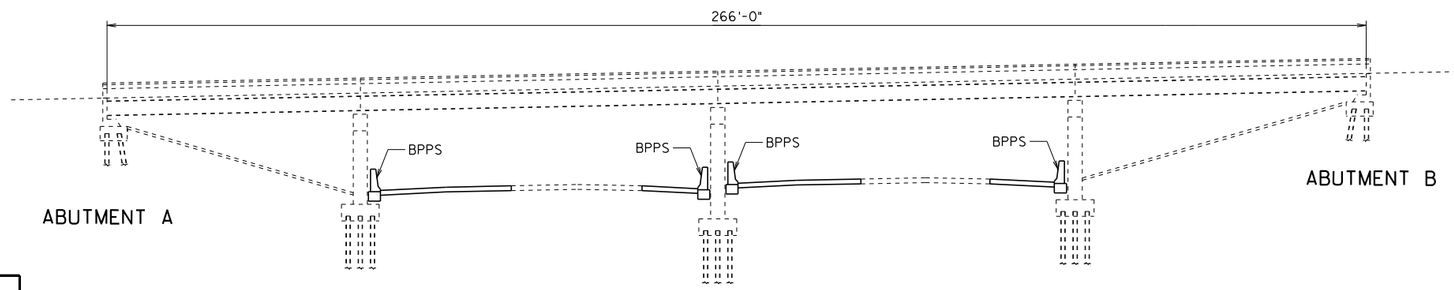
Designed:	Date	Plan No.	Sheet No.
Drawn:			
Checked:			3

I-81 Rte 311 Transverse Section.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				1
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	



PLAN



DEVELOPED SECTION

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Width: 24'-0" face-to-face of curb.

Span layout: 53'-6" - 75'-6" - 75'-6" - 61'-6" steel beam spans

Capacity: H20-44 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 1958.

Design: AASHTO Standard Specificationsfor Highway Bridges, 1957

Standards: Virginia Department of Transportation Road and Bridge Standards, 1958.

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

Scope of Work - RFP required Maintenance Repairs:
- Concrete Substructure Surface Repairs
- Concrete Slope Protection
- Other repair items identified from post-award inspection

705_GP&E.dgn

Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

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

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE RPAIRS ON

ROUTE 705 (RED LANE) OVER NB & SB I-81
ROANOKE CO. - 1.3 MI. N. OF ROUTE 460

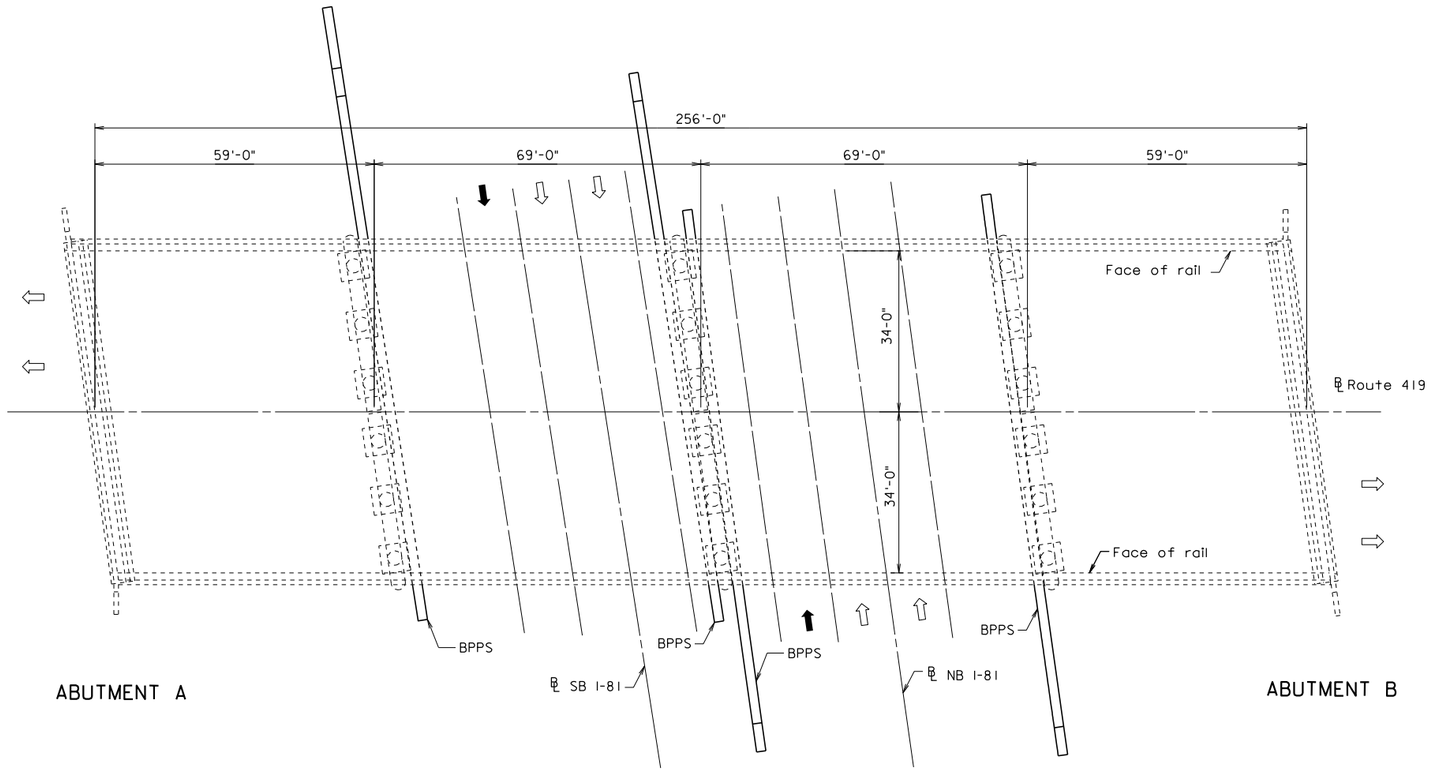
Recommended for Approval: _____ _____
District Project Development Engineer Date

Approved: _____ _____
District Administrator Date

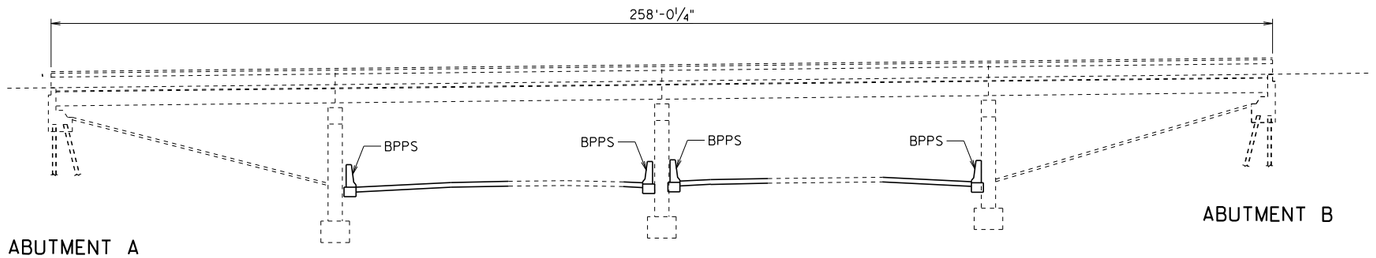
Date: _____

Sheet 1 of 1

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—				1
Federal Structure No.			FHWA Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	



PLAN



DEVELOPED SECTION

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Width: 68'-0" face-to-face of rails.

Span layout: 59'-0" - 69'-0" - 69'-0" - 59'-0" steel beam spans

Capacity: H20-44 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 1958.

Design: AASHTO Standard Specificationsfor Highway Bridges, 1961

Standards: Virginia Department of Transportation Road and Bridge Standards, 1958.

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

Scope of Work - RFP required Maintenance Repairs:
Concrete Substructure Surface Repairs
Concrete Slope Protection
Other repair items identified from post-award inpsection

419_GP&E.dgn

Dewberry Engineers Inc.
Fairfax, VA
STRUCTURAL ENGINEER

PLANS BY:	Dewberry Engineers Inc.
COORDINATED:	
SUPERVISED:	Gregory J. Merkel
DESIGNED:	
DRAWN:	John P. Doulis
CHECKED:	Gregory J. Merkel

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

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE REPAIRS ON
ROUTE 419 (ELECTRIC ROAD) OVER NB & SB I-81
ROANOKE CO. - 2.0 MI. N. OF ROUTE 460

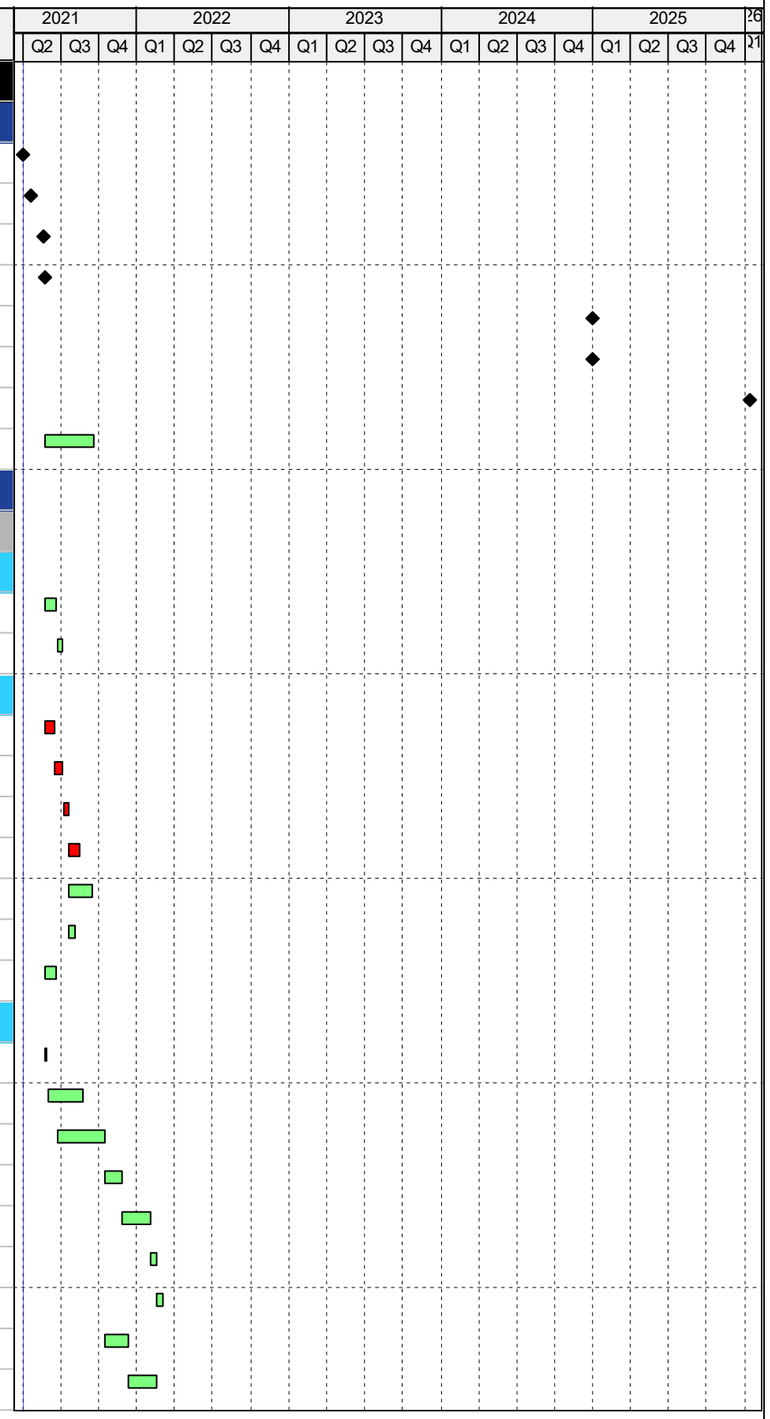
Recommended for Approval: _____ District Project Development Engineer Date

Approved: _____ District Administrator Date

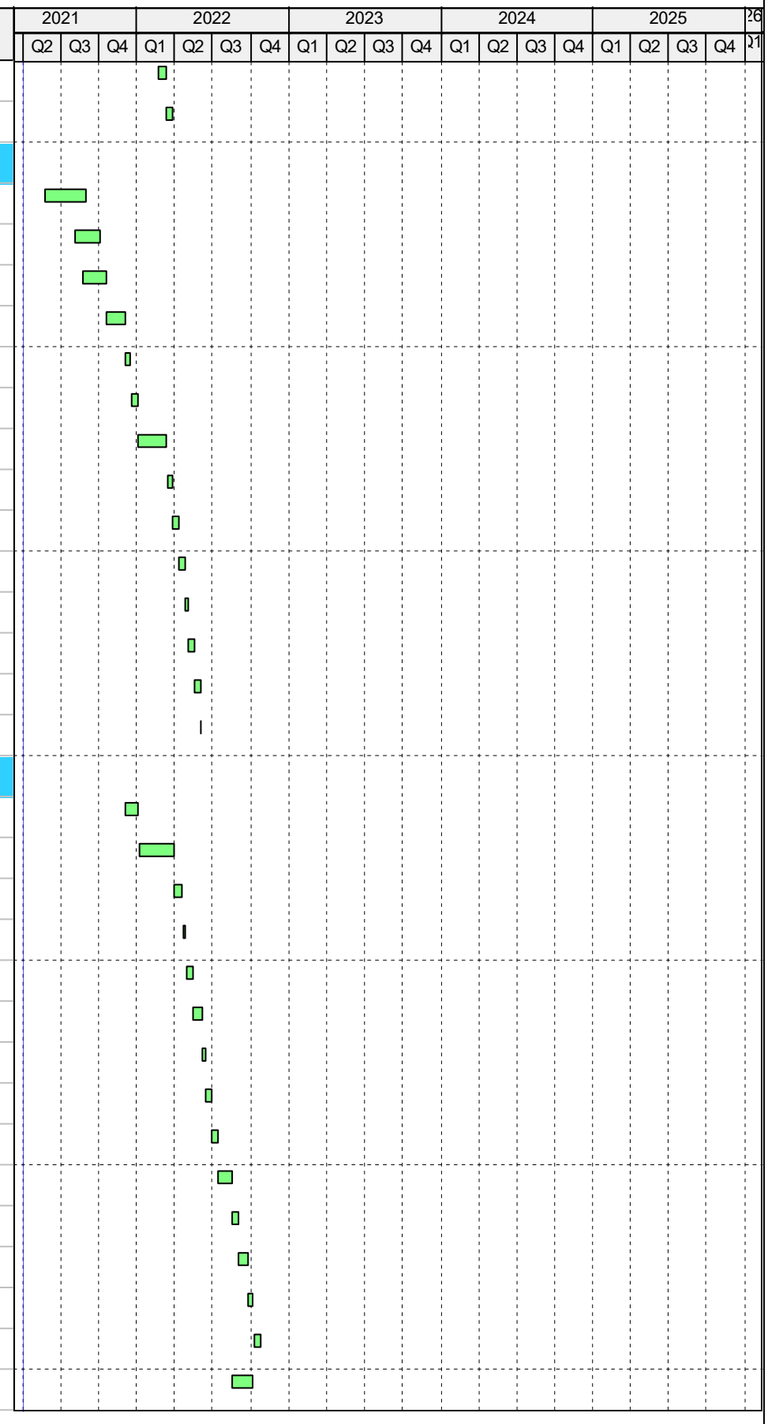
Date: _____

Proposal Schedule

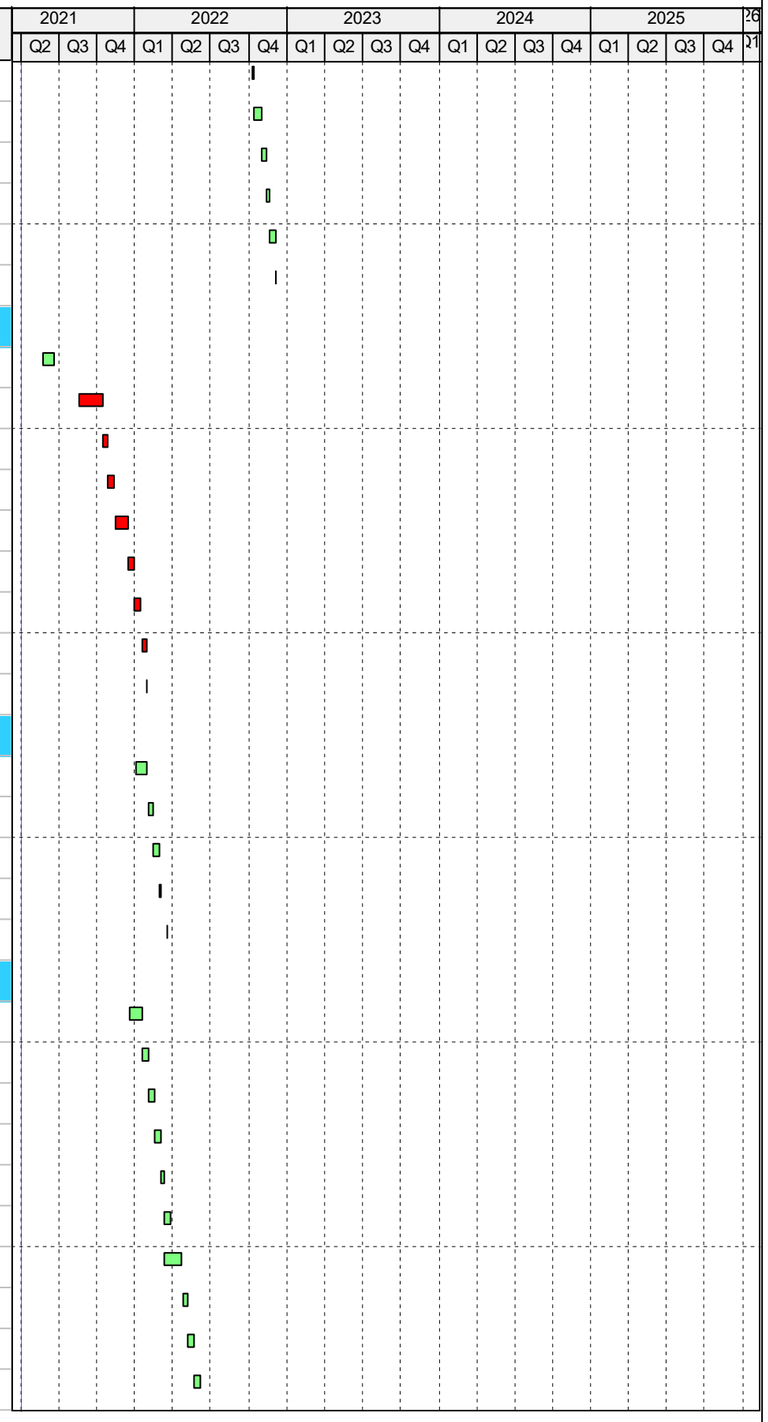
Activity ID	Activity Name	OD	Start	Finish	TF
I-81 Widening MM 136.6 to MM 141.8 - Proposal Schedule					
Milestones					
MS-1000	Notice of Intent to Award (Est 3-31-2021)	0	31-Mar-21		54
MS-1010	CTB Approval / Notice to Award (Est 4-21-2021)	0	21-Apr-21*		33
MS-1020	Design-Build Contract Execution (Est 5-21-2021)	0	21-May-21*		3
MS-1030	Notice to Proceed (Est 5-24-2021)	0	24-May-21*		0
MS-1040	Unique Milestone 1 - Area 4 Complete	0		31-Dec-24	0
MS-1050	Unique Milestone 2 - Route 112 Ramp D Spur Complete	0		31-Dec-24	0
MS-1060	Final Completion (Est 1-15-2026)	0		14-Jan-26*	1
MS-1070	Scope Validation Period	120	24-May-21	20-Sep-21	0
Design					
Design Phase					
Design QA/QC Plan					
D-Q-1000	Prepare & Submit Design QA/QC Plan	20	24-May-21	21-Jun-21	72
D-Q-1010	VDOT Review & Approve Design QA/QC Plan	15	22-Jun-21	06-Jul-21	103
Field Surveys & Investigation Phase					
D-FS-1000	Prepare / Distribute Permission to Enter Letters	15	24-May-21	14-Jun-21	2
D-FS-1010	Prepare / Distribute Notice of Intent to Enter Letters	15	15-Jun-21	06-Jul-21	2
D-FS-1020	Reestablish Project Control / Set Aerial Mapping Photo Points	10	07-Jul-21	20-Jul-21	2
D-FS-1030	Perform Aerial Mapping	20	21-Jul-21	17-Aug-21	2
D-FS-1040	Perform Utility Designations & Septic Field Surveys	40	21-Jul-21	15-Sep-21	29
D-FS-1050	Perform Storm Sewer & Culvert Video Inspections	10	21-Jul-21	03-Aug-21	5
D-FS-1060	Perform Traffic Counts	20	24-May-21	21-Jun-21	102
Geotechnical Investigations					
D-GER-1000	Prepare Boring Location Plan	5	24-May-21	28-May-21	27
D-GER-1010	Geotechnical Field Investigations	60	01-Jun-21	24-Aug-21	27
D-GER-1020	Geotechnical Lab Sampling & Testing	80	22-Jun-21	13-Oct-21	27
D-GER-1030	Prepare & Submit Roadway GER	30	14-Oct-21	24-Nov-21	27
D-GER-1040	VDOT Review of Roadway GER	70	25-Nov-21	02-Feb-22	46
D-GER-1050	Incorporate VDOT Comments & Resubmit Roadway GER	10	03-Feb-22	16-Feb-22	32
D-GER-1060	VDOT Review & Approve Roadway GER	16	17-Feb-22	04-Mar-22	58
D-GER-1070	Prepare & Submit Bridges GER	40	14-Oct-21	10-Dec-21	101
D-GER-1080	VDOT Review Design QA/QC Plan	70	11-Dec-21	18-Feb-22	149



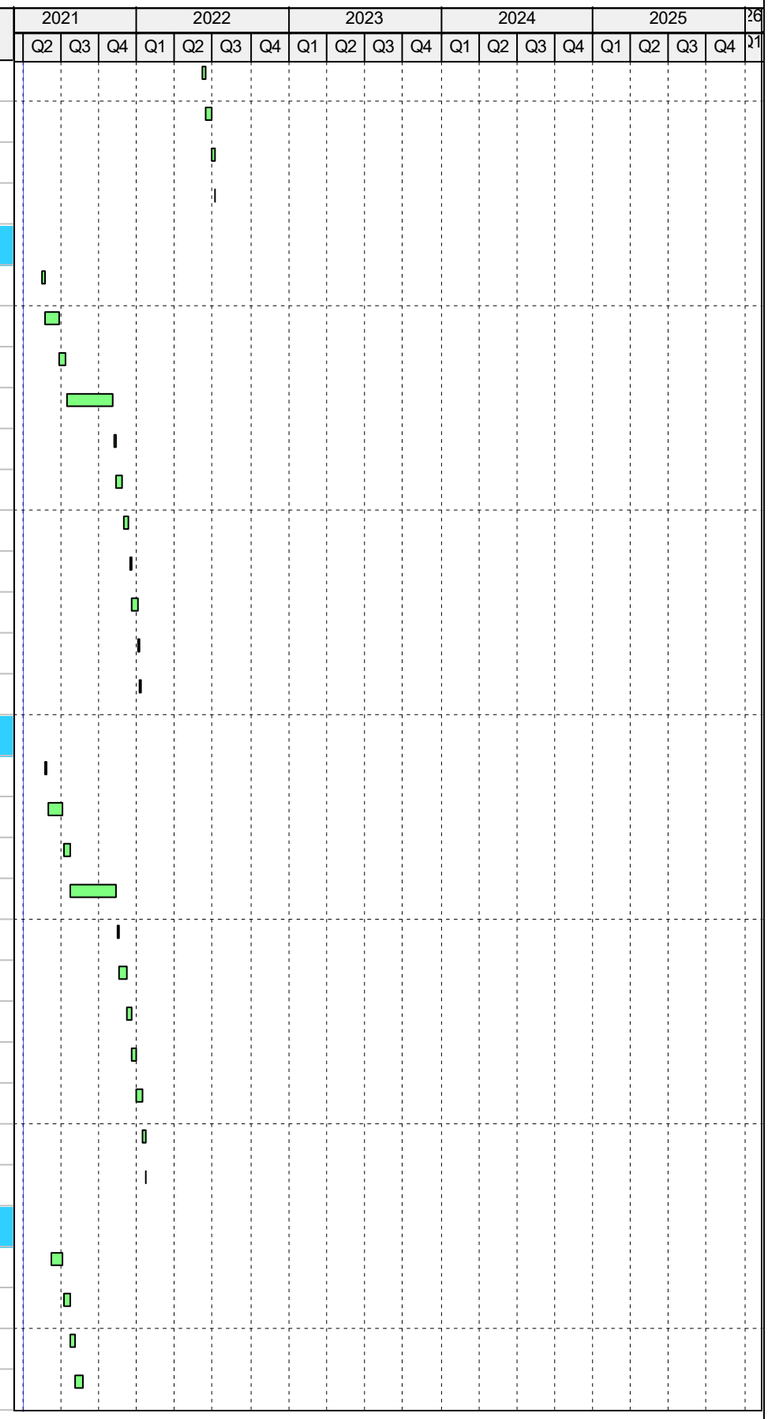
Activity ID	Activity Name	OD	Start	Finish	TF
D-GER-1090	Incorporate VDOT Comments & Resubmit Bridges GER	15	21-Feb-22	11-Mar-22	102
D-GER-1100	VDOT Review & Approve Bridges GER	16	12-Mar-22	27-Mar-22	147
Roadway Design					
D-RD-1000	Establish / Finalize Horizontal Alignments & Vertical Profiles	70	24-May-21	31-Aug-21	25
D-RD-1010	Roadway Drainage Design	60	04-Aug-21	02-Oct-21	7
D-RD-1020	Stormwater Management & Adequate Outfall	40	24-Aug-21	19-Oct-21	5
D-RD-1030	Prepare Roadway Plan Set & Details	30	20-Oct-21	02-Dec-21	5
D-RD-1040	Design QA/QC & Submit Roadway Plans (1st Submission)	10	03-Dec-21	16-Dec-21	5
D-RD-1050	VDOT / FHWA Review & Comment on Roadway Plans (1st Submission)	16	17-Dec-21	01-Jan-22	8
D-RD-1060	Address Comments / Prepare Roadway Plans (2nd Submission)	50	03-Jan-22	11-Mar-22	5
D-RD-1070	Design QA/QC & Submit Rodway Plans (2nd Submission)	10	14-Mar-22	25-Mar-22	5
D-RD-1080	VDOT / FHWA Review & Comment on Roadway Plans (2nd Submission)	16	26-Mar-22	10-Apr-22	7
D-RD-1090	Address Comments / Prepare Roadway Plans (Final Submission)	10	11-Apr-22	25-Apr-22	4
D-RD-1100	Design QA/QC & Submit Roadway Plans (Final Submission)	5	26-Apr-22	02-May-22	4
D-RD-1110	VDOT / FHWA Review & Comment on Roadway Plans (Final Submission)	16	03-May-22	18-May-22	4
D-RD-1120	Final Comment Resolution for Roadway Plans	10	19-May-22	02-Jun-22	2
D-RD-1130	Released for Construction (RFC) Roadway Plans Issued	1	03-Jun-22	03-Jun-22	4
Noise Analysis & Noise Barrier Plans					
D-NB-1000	Complete Noise Analysis / Field Data Collections	20	03-Dec-21	04-Jan-22	135
D-NB-1010	Complete Noise Modeling	60	05-Jan-22	29-Mar-22	135
D-NB-1020	Prepare Noise Report (1st Submission)	15	30-Mar-22	20-Apr-22	170
D-NB-1030	QA/QC & Submit Noise Report (1st Submission)	5	21-Apr-22	27-Apr-22	170
D-NB-1040	VDOT Review & Comment on Noise Report	16	28-Apr-22	13-May-22	248
D-NB-1050	Address Comments and Prepare Noise Report (2nd Submission)	15	16-May-22	06-Jun-22	168
D-NB-1060	QA/QC & Submit Noise Report (2nd Submission)	5	07-Jun-22	13-Jun-22	168
D-NB-1070	VDOT / FHWA Review & Approve Noise Report	16	14-Jun-22	29-Jun-22	245
D-NB-1080	Prepare & Distribute Noise Barrier Survey Letters (Letter #1)	10	30-Jun-22	14-Jul-22	168
D-NB-1090	Receive Responses and Compile Survey Results (Letter #1)	25	15-Jul-22	18-Aug-22	168
D-NB-1100	Prepare & Distribute Noise Barrier Survey Letters (Letter #2)	10	19-Aug-22	01-Sep-22	199
D-NB-1110	Receive Responses and Compile Survey Results (Letter #2)	15	02-Sep-22	23-Sep-22	199
D-NB-1120	Prepare & Submit Noise Barrier Voting Addendum Report	10	26-Sep-22	07-Oct-22	199
D-NB-1130	VDOT Review & Approve Noise Barrier Voting Addendum	16	08-Oct-22	23-Oct-22	291
D-NB-1140	Prepare Noise Barrier Plan / Profiles	35	19-Aug-22	07-Oct-22	168



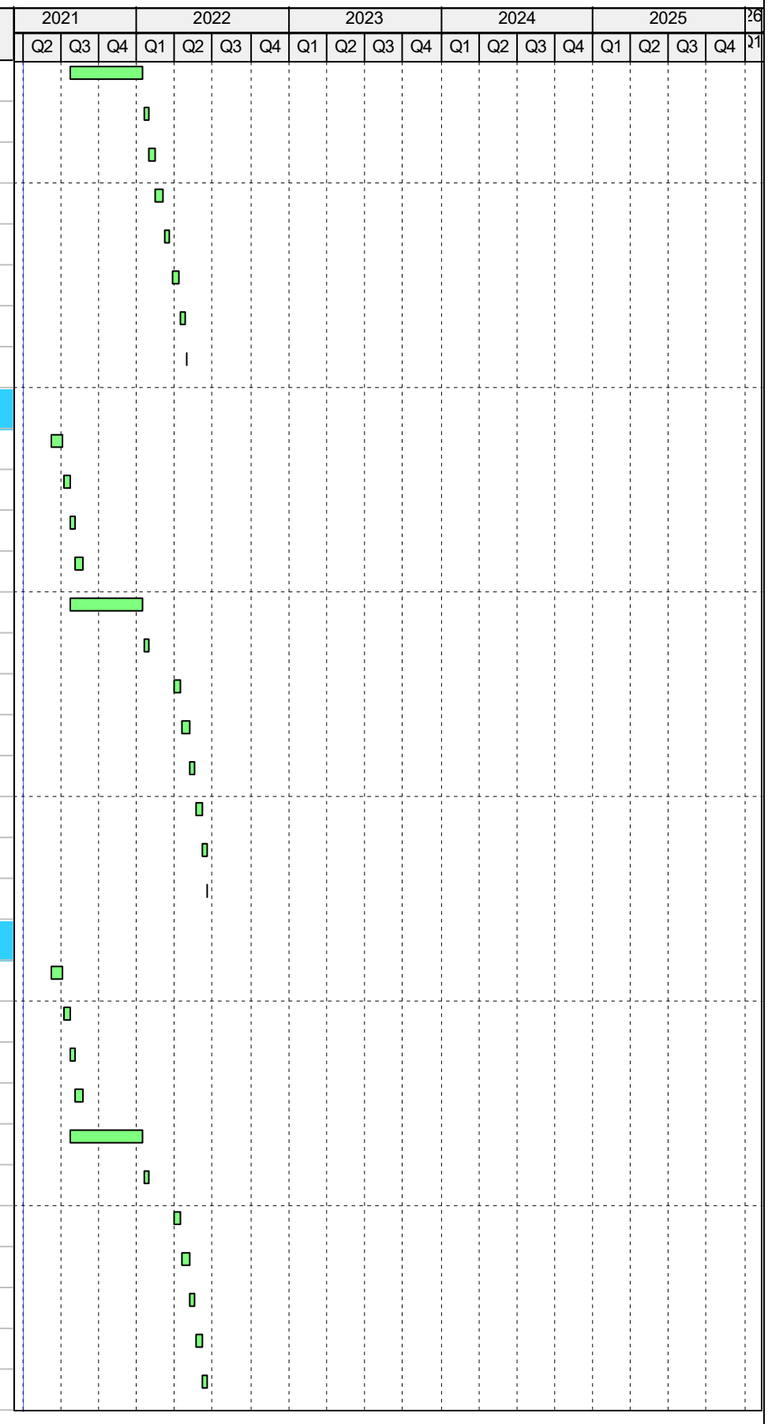
Activity ID	Activity Name	OD	Start	Finish	TF
D-NB-1150	Design QA/QC & Submit Noise Barrier Plan/Profile Sheets (1st Submission)	5	10-Oct-22	14-Oct-22	168
D-NB-1160	VDOT Review & Comment on Noise Barrier Plan / Profile Sheets (1st Submission)	16	15-Oct-22	30-Oct-22	247
D-NB-1170	Address Comments on Noise Barrier Plan / Profile Sheets	10	31-Oct-22	11-Nov-22	169
D-NB-1180	Design QA/QC & Submit Noise Barrier Plan/Profile Sheets (Final Submission)	5	14-Nov-22	18-Nov-22	169
D-NB-1190	VDOT Review & Approve Noise Barrier Plan / Profile Sheets	16	19-Nov-22	04-Dec-22	249
D-NB-1200	Noise Barrier Plan / Profile Sheets Released for Foundation & Panel Design and Construction	1	05-Dec-22	05-Dec-22	173
Early Temporary Traffic Control Plans - Stage 1A					
D-TTC-1000	Prepare Transportation Management Plans (TMP) (Stage 1A)	20	24-May-21	21-Jun-21	82
D-TTC-1010	Prepare Early TTC Plans (Stage 1A)	40	18-Aug-21	13-Oct-21	2
D-TTC-1020	Design QA/QC & Submit Early TTC Plans (1st Submission) (Stage 1A)	10	14-Oct-21	27-Oct-21	2
D-TTC-1030	VDOT / FHWA Review & Comment on Early TTC Plans (1st Submission) (Stage 1A)	16	28-Oct-21	12-Nov-21	2
D-TTC-1040	Address Comments / Prepare Early TTC Plans (2nd Submission) (Stage 1A)	20	15-Nov-21	14-Dec-21	0
D-TTC-1050	Design QA/QC & Submit Early TTC Plans (2nd Submission) (Stage 1A)	10	15-Dec-21	30-Dec-21	0
D-TTC-1060	VDOT / FHWA Review & Comment on Early TTC Plans (2nd Submission) (Stage 1A)	16	31-Dec-21	15-Jan-22	1
D-TTC-1070	Comment Resolution for Early TTC Plans (Stage 1A)	10	17-Jan-22	28-Jan-22	0
D-TTC-1080	Released for Construction (RFC) Early TTC Plans Issued (Stage 1A)	1	29-Jan-22	29-Jan-22	1
Right-of-Way Plans					
D-ROW-1000	Address Right-of-Way Comments from 1st Roadway Submission (Right-of-Way Plans)	20	03-Jan-22	28-Jan-22	204
D-ROW-1010	Design QA/QC Right-of-Way Plans (Final Submission) (Right-of-Way Plans)	10	31-Jan-22	11-Feb-22	204
D-ROW-1020	VDOT / FHWA Review & Comment on Right-of-Way Plans (Final Submission) (Right-of-Way Plans)	16	12-Feb-22	27-Feb-22	295
D-ROW-1030	Comment Resolution for Right-of-Way Plans (Right-of-Way Plans)	5	28-Feb-22	04-Mar-22	205
D-ROW-1040	Approved for Right-of-Way Acquisition Plans Issued (Right-of-Way Plans)	1	18-Mar-22	18-Mar-22	286
Lighting & Electrical Plans					
D-LEP-1000	Prepare Lighting Photometric Plans	20	17-Dec-21	18-Jan-22	450
D-LEP-1010	Design QA/QC & Submit Photometric Plans	10	19-Jan-22	01-Feb-22	450
D-LEP-1020	VDOT / FHWA Review & Comment on Photometric Plans	16	02-Feb-22	17-Feb-22	649
D-LEP-1030	Address Comments / Prepare Final Photometric Plans	10	18-Feb-22	03-Mar-22	448
D-LEP-1040	Design QA/QC Photometric Plans	5	04-Mar-22	10-Mar-22	448
D-LEP-1050	VDOT / FHWA Review & Approve Photometric Plans	16	11-Mar-22	26-Mar-22	649
D-LEP-1060	Prepare Electrical Plans for Roadway Lighting	30	11-Mar-22	22-Apr-22	448
D-LEP-1070	Design QA/QC & Submit Electrical Plans for Roadway Lighting (1st Submission)	10	25-Apr-22	06-May-22	448
D-LEP-1080	VDOT / FHWA Review & Comment on Electrical Plans (1st Submission)	16	07-May-22	22-May-22	651
D-LEP-1090	Address Comments / Prepare Electrical Plans for Lighting (Final Submission)	10	23-May-22	06-Jun-22	448



Activity ID	Activity Name	OD	Start	Finish	TF
D-LEP-1100	Design QA/QC & Submit Electrical Plans (Final Submission)	5	07-Jun-22	13-Jun-22	448
D-LEP-1110	VDOT / FHWA Review & Comment on Electrical Plans (Final Submission)	16	14-Jun-22	29-Jun-22	649
D-LEP-1120	Comment Resolution for Electrical Plans	5	30-Jun-22	07-Jul-22	446
D-LEP-1130	Released for Construction (RFC) Lighting & Electrical Plans Issued	1	08-Jul-22	08-Jul-22	648
Bridge Plans - Route 419 over I-81 (B681)					
D-BP-R419-1000	Complete Detailed Field Inspection (R419)	5	17-May-21	24-May-21	247
D-BP-R419-1010	Prepare List of Repairs & Submit Repair Program / Plan (R419)	25	24-May-21	28-Jun-21	247
D-BP-R419-1020	VDOT / FHWA Review & Comment on Repair Program/Plan (R419)	16	29-Jun-21	14-Jul-21	358
D-BP-R419-1030	Address Comments / Prepare Bridge Plans (1st Submission) (R419)	80	15-Jul-21	04-Nov-21	247
D-BP-R419-1040	Design QA/QC & Submit Bridge Plans (1st Submission) (R419)	5	05-Nov-21	11-Nov-21	247
D-BP-R419-1050	VDOT / FHWA Review & Comment on Bridge Plans (1st Submission) (R419)	16	12-Nov-21	27-Nov-21	358
D-BP-R419-1060	Address Comments / Prepare Bridge Plans (Final Submission) (R419)	10	29-Nov-21	10-Dec-21	248
D-BP-R419-1070	Design QA/QC & Submit Bridge Plans (Final Submission) (R419)	5	13-Dec-21	17-Dec-21	248
D-BP-R419-1080	VDOT / FHWA Review & Comment on Bridge Plans (Final Submission) (R419)	16	18-Dec-21	02-Jan-22	361
D-BP-R419-1090	Comment Resolution for Bridge Plans (R419)	5	03-Jan-22	07-Jan-22	251
D-BP-R419-1100	Released for Construction Bridge Plans Issued (R419)	1	08-Jan-22	08-Jan-22	365
Bridge Plans - Route 705 over I-81 (B682)					
D-BP-R705-1000	Complete Detailed Field Inspection (R705)	5	24-May-21	28-May-21	242
D-BP-R705-1010	Prepare List of Repairs & Submit Repair Program / Plan (R705)	25	01-Jun-21	06-Jul-21	242
D-BP-R705-1020	VDOT / FHWA Review & Comment on Repair Program/Plan (R705)	16	07-Jul-21	22-Jul-21	350
D-BP-R705-1030	Address Comments / Prepare Bridge Plans (1st Submission) (R705)	80	23-Jul-21	12-Nov-21	241
D-BP-R705-1040	Design QA/QC & Submit Bridge Plans (1st Submission) (R705)	5	15-Nov-21	19-Nov-21	241
D-BP-R705-1050	VDOT / FHWA Review & Comment on Bridge Plans (1st Submission) (R705)	16	20-Nov-21	05-Dec-21	350
D-BP-R705-1060	Address Comments / Prepare Bridge Plans (Final Submission) (R705)	10	06-Dec-21	17-Dec-21	243
D-BP-R705-1070	Design QA/QC & Submit Bridge Plans (Final Submission) (R705)	5	20-Dec-21	28-Dec-21	243
D-BP-R705-1080	VDOT / FHWA Review & Comment on Bridge Plans (Final Submission) (R705)	16	29-Dec-21	13-Jan-22	350
D-BP-R705-1090	Comment Resolution for Bridge Plans (R705)	5	14-Jan-22	20-Jan-22	242
D-BP-R705-1100	Released for Construction Bridge Plans Issued (R705)	1	21-Jan-22	21-Jan-22	352
Bridge Plans - NB & SB I-81 over Route 112 (B683 & B688)					
D-BP-R112-1000	Prepare & Submit Stage 1 Bridge Plans & Report (R112)	20	08-Jun-21	06-Jul-21	110
D-BP-R112-1010	VDOT / FHWA Review & Comment on Stage 1 Plans & Report (R112)	16	07-Jul-21	22-Jul-21	159
D-BP-R112-1020	Address Stage 1 Comments & Resubmit (R112)	10	23-Jul-21	05-Aug-21	208
D-BP-R112-1030	VDOT / FHWA Review & Approve Stage 1 Plans & Report (R112)	16	06-Aug-21	21-Aug-21	302

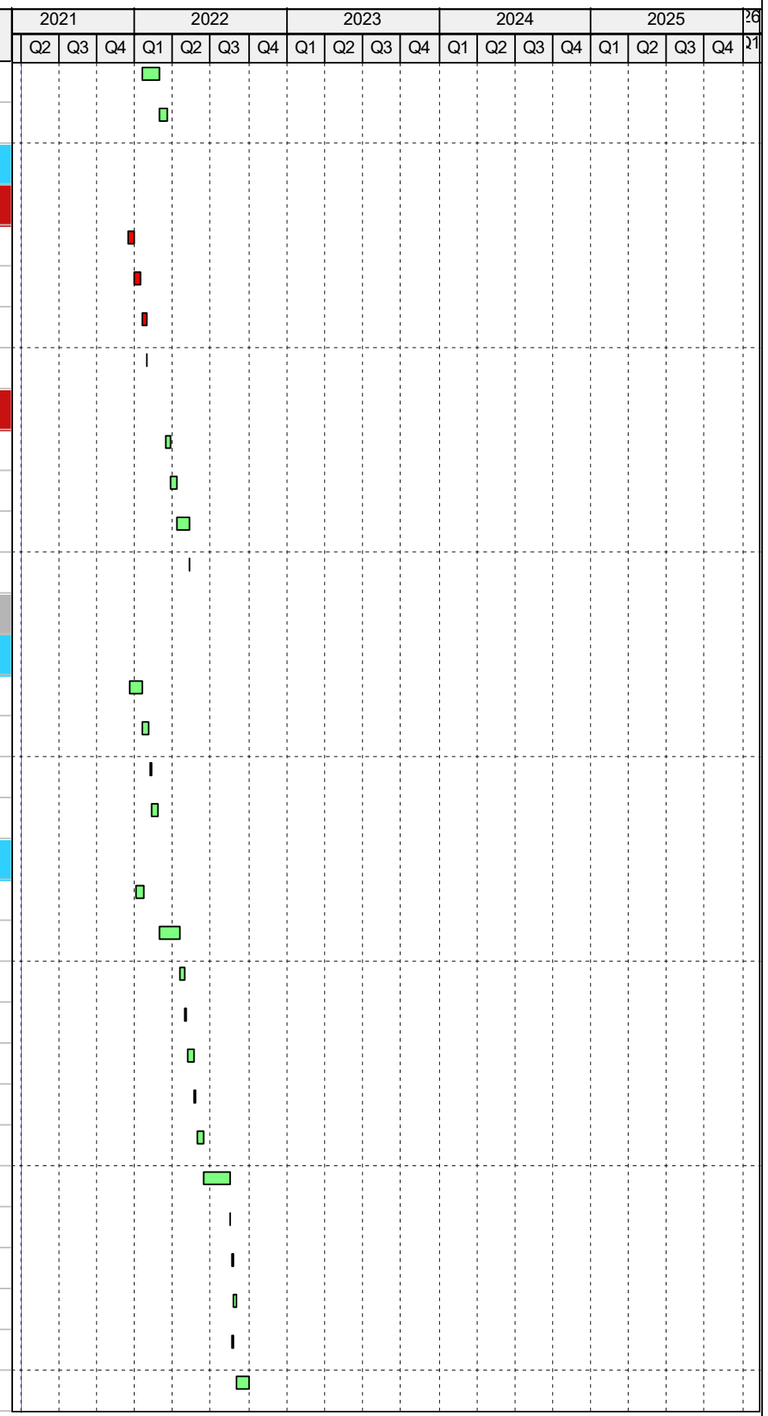


Activity ID	Activity Name	OD	Start	Finish	TF
D-BP-R112-1040	Prepare Bridge Plans (1st Submission) (R112)	120	23-Jul-21	14-Jan-22	108
D-BP-R112-1050	Design QA/QC & Submit Bridge Plans (1st Submission) (R112)	10	17-Jan-22	28-Jan-22	108
D-BP-R112-1060	VDOT / FHWA Review & Comment on Bridge Plans (1st Submission) (R112)	16	29-Jan-22	13-Feb-22	154
D-BP-R112-1070	Address Comments / Prepare Bridge Plans (Final Submission) (R112)	15	14-Feb-22	04-Mar-22	107
D-BP-R112-1080	Design QA/QC & Submit Bridge Plans (Final Submission) (R112)	10	07-Mar-22	18-Mar-22	107
D-BP-R112-1090	VDOT / FHWA Review & Comment on Bridge Plans (Final Submission) (R112)	16	28-Mar-22	12-Apr-22	147
D-BP-R112-1100	Comment Resolution for Bridge Plans (R112)	10	13-Apr-22	27-Apr-22	101
D-BP-R112-1110	Released for Construction Bridge Plans (R112) Issued (R112)	1	28-Apr-22	28-Apr-22	146
Bridge Plans - NB & SB I-81 over Route 635 (B684 & B685)					
D-BP-R635-1000	Prepare & Submit Stage 1 Bridge Plans & Report (R635)	20	08-Jun-21	06-Jul-21	177
D-BP-R635-1010	VDOT / FHWA Review & Comment on Stage 1 Plans & Report (R635)	16	07-Jul-21	22-Jul-21	257
D-BP-R635-1020	Address Stage 1 Comments & Resubmit (R635)	10	23-Jul-21	05-Aug-21	276
D-BP-R635-1030	VDOT / FHWA Review & Approve Stage 1 Plans & Report (R635)	16	06-Aug-21	21-Aug-21	401
D-BP-R635-1040	Prepare Bridge Plans (1st Submission) (R635)	120	23-Jul-21	14-Jan-22	177
D-BP-R635-1050	Design QA/QC & Submit Bridge Plans (1st Submission) (R635)	10	17-Jan-22	28-Jan-22	177
D-BP-R635-1060	VDOT / FHWA Review & Comment on Bridge Plans (1st Submission) (R635)	16	30-Mar-22	14-Apr-22	195
D-BP-R635-1070	Address Comments / Prepare Bridge Plans (Final Submission) (R635)	15	18-Apr-22	06-May-22	135
D-BP-R635-1080	Design QA/QC & Submit Bridge Plans (Final Submission) (R635)	10	09-May-22	20-May-22	135
D-BP-R635-1090	VDOT / FHWA Review & Comment on Bridge Plans (Final Submission) (R635)	16	21-May-22	05-Jun-22	198
D-BP-R635-1100	Comment Resolution for Bridge Plans (R635)	10	06-Jun-22	17-Jun-22	138
D-BP-R635-1110	Released for Construction Bridge Plans Issued (R635)	1	18-Jun-22	18-Jun-22	204
Bridge Plans - NB & SB I-81 over Route 619 (B687 & B686)					
D-BP-R619-1000	Prepare & Submit Stage 1 Bridge Plans & Report (R619)	20	08-Jun-21	06-Jul-21	177
D-BP-R619-1010	VDOT / FHWA Review & Comment on Stage 1 Plans & Report (R619)	16	07-Jul-21	22-Jul-21	257
D-BP-R619-1020	Address Stage 1 Comments & Resubmit (R619)	10	23-Jul-21	05-Aug-21	276
D-BP-R619-1030	VDOT / FHWA Review & Approve Stage 1 Plans & Report (R619)	16	06-Aug-21	21-Aug-21	401
D-BP-R619-1040	Prepare Bridge Plans (1st Submission) (R619)	120	23-Jul-21	14-Jan-22	177
D-BP-R619-1050	Design QA/QC & Submit Bridge Plans (1st Submission) (R619)	10	17-Jan-22	28-Jan-22	177
D-BP-R619-1060	VDOT / FHWA Review & Comment on Bridge Plans (1st Submission) (R619)	16	30-Mar-22	14-Apr-22	195
D-BP-R619-1070	Address Comments / Prepare Bridge Plans (Final Submission) (R619)	15	18-Apr-22	06-May-22	135
D-BP-R619-1080	Design QA/QC & Submit Bridge Plans (Final Submission) (R619)	10	09-May-22	20-May-22	135
D-BP-R619-1090	VDOT / FHWA Review & Comment on Bridge Plans (Final Submission) (R619)	16	21-May-22	05-Jun-22	198
D-BP-R619-1100	Comment Resolution for Bridge Plans (R619)	10	06-Jun-22	17-Jun-22	138

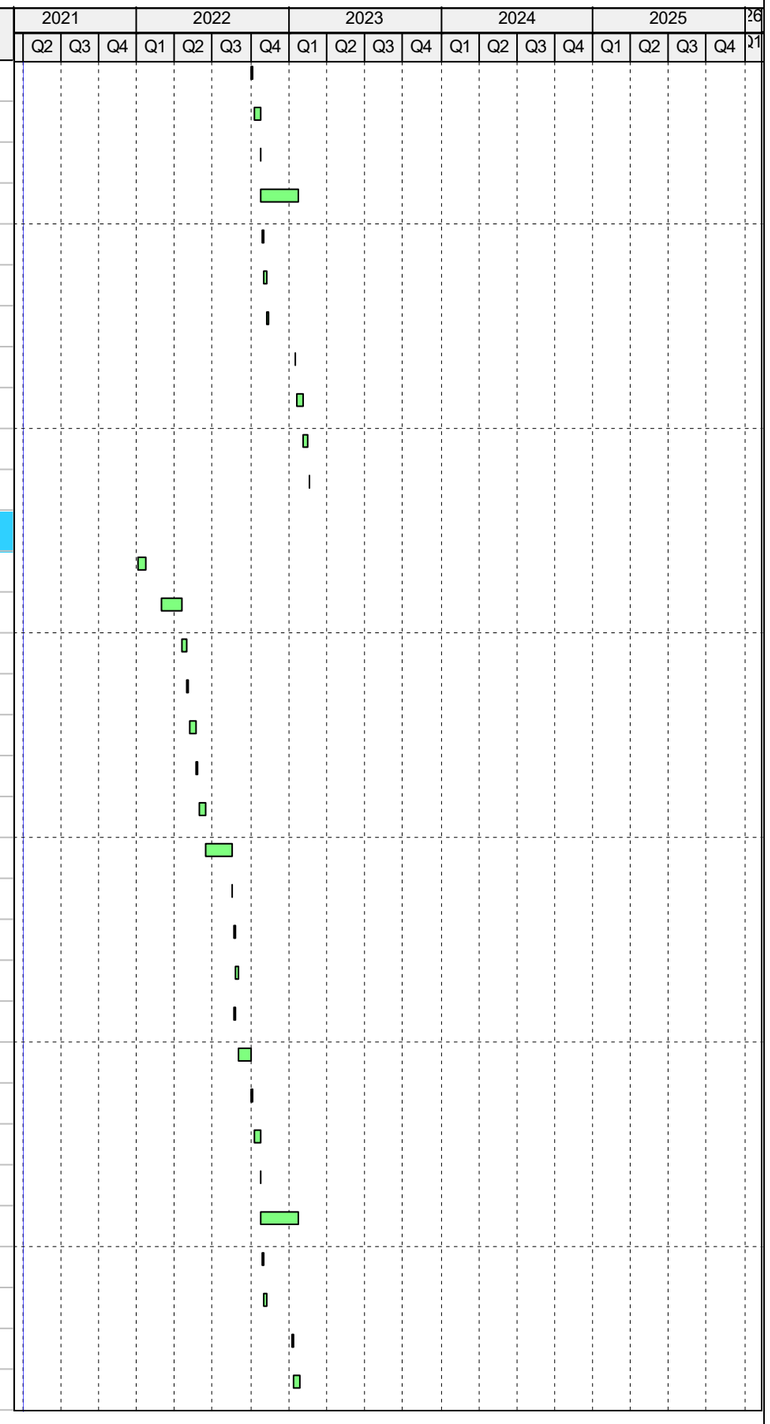


Activity ID	Activity Name	OD	Start	Finish	TF
D-BP-R619-1110	Released for Construction Bridge Plans Issued (R619)	1	18-Jun-22	18-Jun-22	204
Bridge Plans - NB & SB I-81 over Route 311 (B678 & B677)					
D-BP-R311-1000	Complete Detailed Field Inspection & Deck Delamination Survey (R311)	5	24-May-21	28-May-21	152
D-BP-R311-1010	Prepare & Submit - Stage 1 Bridge Plans & Report (R311)	30	08-Jun-21	20-Jul-21	147
D-BP-R311-1020	VDOT / FHWA Review & Comment on Stage 1 Plans & Report (R311)	16	21-Jul-21	05-Aug-21	215
D-BP-R311-1030	Address Stage 1 Comments & Resubmit (R311)	10	06-Aug-21	19-Aug-21	257
D-BP-R311-1040	VDOT / FHWA Review & Approve - Stage 1 Plans & Report (R311)	16	20-Aug-21	04-Sep-21	373
D-BP-R311-1050	Prepare Bridge Plans (1st Submission) (R311)	130	06-Aug-21	11-Feb-22	147
D-BP-R311-1060	Design QA/QC & Submit Bridge Plans (1st Submission) (R311)	15	14-Feb-22	04-Mar-22	147
D-BP-R311-1070	VDOT / FHWA Review & Comment on Bridge Plans (1st Submission) (R311)	16	05-Mar-22	20-Mar-22	213
D-BP-R311-1080	Address Comments / Prepare Bridge Plans (Final Submission) (R311)	20	21-Mar-22	18-Apr-22	149
D-BP-R311-1090	Design QA/QC & Submit Bridge Plans (Final Submission) (R311)	10	19-Apr-22	02-May-22	149
D-BP-R311-1100	VDOT / FHWA Review & Comment on Bridge Plans (Final Submission) (R311)	16	03-May-22	18-May-22	216
D-BP-R311-1110	Comment Resolution for Bridge Plans (R311)	10	19-May-22	02-Jun-22	149
D-BP-R311-1120	Released for Construction Bridge Plans Issued (R311)	1	03-Jun-22	03-Jun-22	219
Environmental Permitting					
Joint Permit Process (Wetlands & Streams/Waters)					
P-JPA-1000	Wetland Delineations - Flagging & Surveying	20	21-Jul-21	17-Aug-21	321
P-JPA-1010	Submit and Obtain Jurisdictional Determination	45	18-Aug-21	20-Oct-21	321
P-JPA-1020	Prepare & Submit Joint Permit Application (JPA)	30	03-Dec-21	18-Jan-22	292
P-JPA-1030	JPA Pre-Application Meeting	1	05-Jan-22	05-Jan-22	434
P-JPA-1040	Agency Review & Comment & Conditional Approval of JPA - Initiate Purchase of Mitigation Credits	130	19-Jan-22	28-May-22	421
P-JPA-1050	Public Notice for Environmental Permit (Individual Permit)	30	31-May-22	12-Jul-22	289
P-JPA-1060	Purchase Wetland and Stream Credits	20	31-May-22	27-Jun-22	299
P-JPA-1070	Final Agency Review & Approve of JPA & VDOT Approval	21	13-Jul-22	02-Aug-22	418
Threatened & Endangered Species					
P-TE-1000	T&E Species Identification & Impact Coordination	35	07-Jul-21	24-Aug-21	370
P-TE-1010	Prepare & Submit T&E Species Documentation	20	25-Aug-21	22-Sep-21	370
Hazardous Material and Environmental Site Assessments (ESAs)					
P-ESA-1000	Complete Phase II ESA's on RFP Required Properties	10	24-May-21	07-Jun-21	300
P-ESA-1010	Prepare & Submit Phase II ESA Reports	20	08-Jun-21	06-Jul-21	300
P-ESA-1020	VDOT Review & Approve Phase II ESAs on RFP Required Properties	16	07-Jul-21	22-Jul-21	434
P-ESA-1030	Complete Phase I ESA Investigation on Additional Properties	20	17-Dec-21	18-Jan-22	198

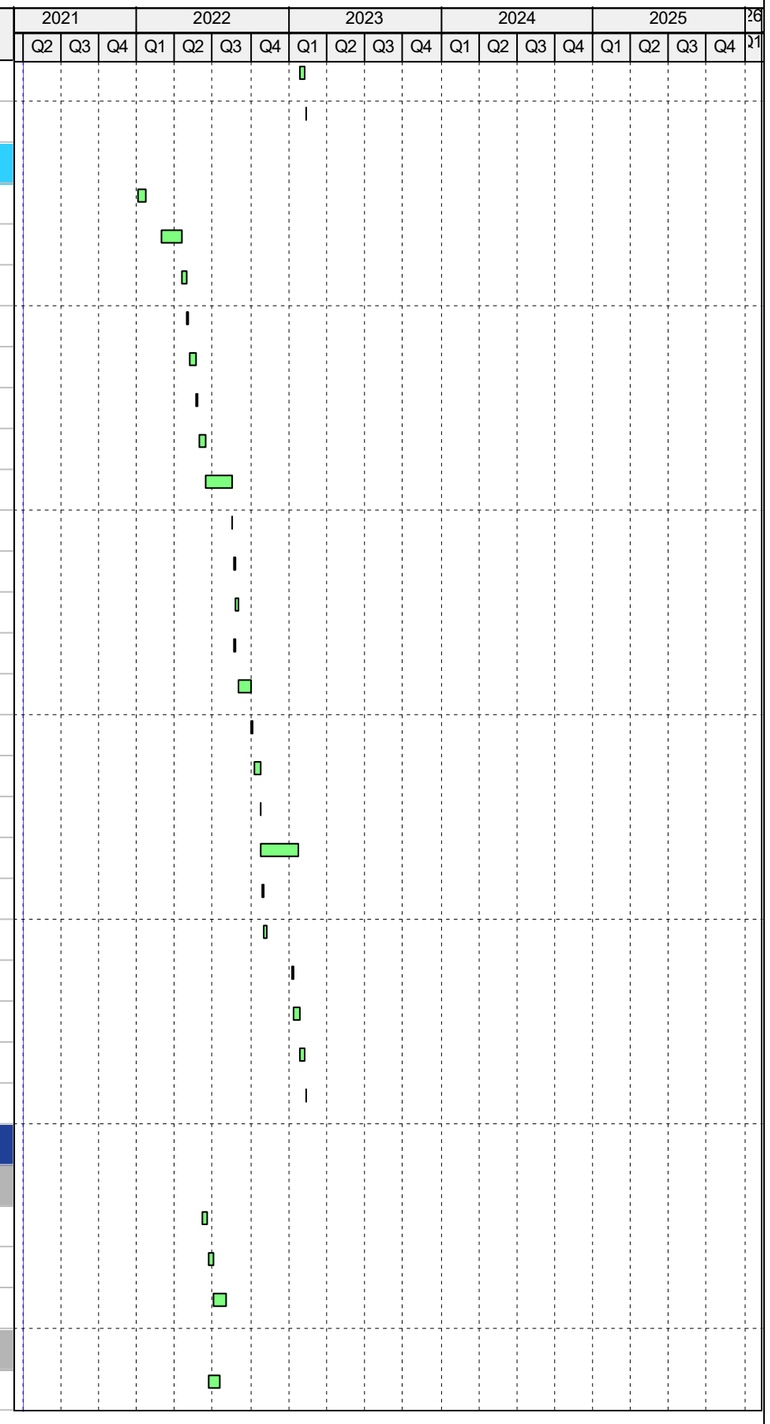
Activity ID	Activity Name	OD	Start	Finish	TF
P-ESA-1040	Prepare & Submit Phase I ESA Reports	30	19-Jan-22	01-Mar-22	198
P-ESA-1050	VDOT Review & Approve Phase I ESAs	16	02-Mar-22	17-Mar-22	286
LD-445 Land Disturbance Permit / Stormwater Management Permit					
Early TTC Plan Land Disturbance (Stage 1A)					
P-LD-1000	Prepare LD-445 Forms for Early TTC Plans	10	15-Dec-21	30-Dec-21	0
P-LD-1010	VDOT / Agency Review of LD-445 Forms for Early TTC Plans	16	31-Dec-21	15-Jan-22	1
P-LD-1020	Prepare SWPPP Documents for Early TTC Construction	10	17-Jan-22	28-Jan-22	0
P-LD-1030	Land Disturbance Approved for Early TTC Construction	1	29-Jan-22	29-Jan-22	1
Overall Project Land Disturbance					
P-LD-2000	Prepare LD-445 Forms	10	14-Mar-22	25-Mar-22	26
P-LD-2010	VDOT / Agency Review of LD-445 Forms	16	26-Mar-22	10-Apr-22	39
P-LD-2020	Prepare SWPPP Documents	20	11-Apr-22	09-May-22	28
P-LD-2030	Land Disturbance Approved	1	10-May-22	10-May-22	40
Right-of-Way Acquisition Phase					
Project Specific Right-of-Way Acquisition & Relocation Plan					
P-ROW-1000	Prepare & Submit Right-of-Way Acquisition & Relocation Plan	20	17-Dec-21	18-Jan-22	72
P-ROW-1010	VDOT Review & Comment on Acquistion & Relocation Plan	16	19-Jan-22	03-Feb-22	101
P-ROW-1020	Address Comments / Finalize Acquisition & Relocation Plan / Resubmit	5	04-Feb-22	10-Feb-22	70
P-ROW-1030	VDOT Review / Approve Right-of-Way Acquisition & Relocation Plan	16	11-Feb-22	26-Feb-22	101
Priority 1 Right-of-Way Acquisitions - SWM & Critical Properties (13 Parcels)					
P-ROW-P1-1000	Update / Complete 60-Year Title Examinations (Priority 1 ROW)	15	03-Jan-22	21-Jan-22	240
P-ROW-P1-1010	Complete Appraisals (Priority 1 ROW)	35	28-Feb-22	18-Apr-22	215
P-ROW-P1-1020	Review Appraiser Perform / Complete Reviews (Priority 1 ROW)	10	19-Apr-22	28-Apr-22	311
P-ROW-P1-1030	Submit Appraisal to VDOT (RUMS) (Priority 1 ROW)	5	29-Apr-22	05-May-22	213
P-ROW-P1-1040	VDOT Approves Appraisals (Priority 1 ROW)	16	06-May-22	21-May-22	309
P-ROW-P1-1050	Prepare Offer Packages (Priority 1 ROW)	5	23-May-22	27-May-22	212
P-ROW-P1-1060	Negotiator Makes Initial Contact / Presents Offers (Priority 1 ROW)	10	31-May-22	13-Jun-22	212
P-ROW-P1-1070	Negotiations Period (Priority 1 ROW)	45	14-Jun-22	16-Aug-22	212
P-ROW-P1-1080	Provide Notice of Filing Certificate to Property Owner (Priority 1 ROW)	3	17-Aug-22	19-Aug-22	212
P-ROW-P1-1090	Finalize Plans (Priority 1 ROW)	4	22-Aug-22	25-Aug-22	212
P-ROW-P1-1100	Prepare & Submit Certificate Package (Priority 1 ROW)	5	26-Aug-22	01-Sep-22	212
P-ROW-P1-1110	Obtain Signed Option (Property Access Available If Option Signed) (Priority 1 ROW)	5	22-Aug-22	26-Aug-22	236
P-ROW-P1-1120	VDOT Review / Issue Certificate & Check (Priority 1 ROW)	30	02-Sep-22	01-Oct-22	309



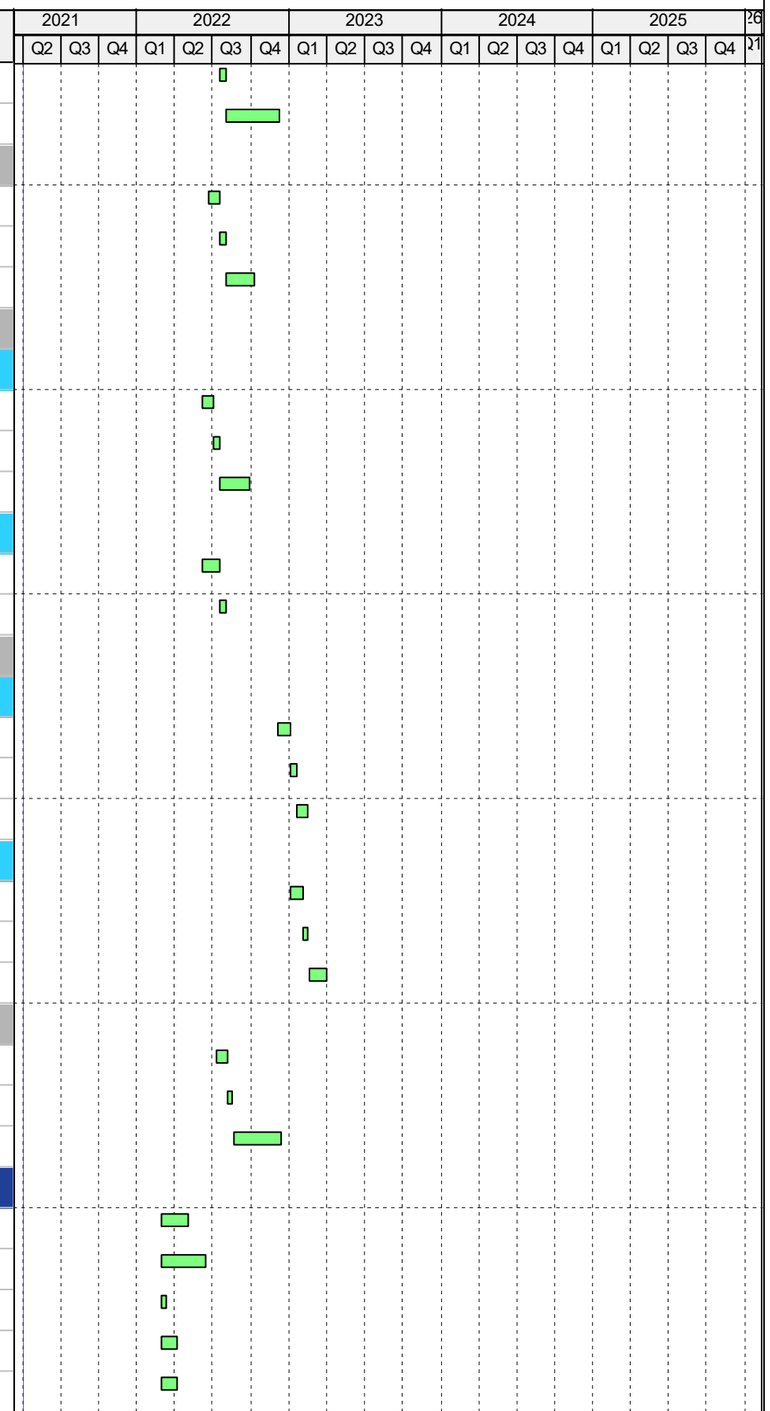
Activity ID	Activity Name	OD	Start	Finish	TF
P-ROW-P1-1130	Option / Settlement Documents Submitted to VDOT (Priority 1 ROW)	5	03-Oct-22	07-Oct-22	212
P-ROW-P1-1140	VDOT Reviews Settlement Documents (Priority 1 ROW)	16	08-Oct-22	23-Oct-22	310
P-ROW-P1-1150	Settlement Documents Provided to Settlement Attorney (Priority 1 ROW)	2	24-Oct-22	25-Oct-22	214
P-ROW-P1-1160	Obtain Release of Liens (If Required) (Priority 1 ROW)	60	26-Oct-22	24-Jan-23	217
P-ROW-P1-1170	BD Files Certificate at Courthouse (Priority 1 ROW)	2	28-Oct-22	31-Oct-22	214
P-ROW-P1-1180	Property Access Available (If by Certificate) (Priority 1 ROW)	5	01-Nov-22	07-Nov-22	214
P-ROW-P1-1190	DB Requests NTCC on Available Parcels (Priority 1 ROW)	5	08-Nov-22	14-Nov-22	214
P-ROW-P1-1200	Notice to VDOT that all Liens are Cleared (Priority 1 ROW)	1	17-Jan-23	17-Jan-23	304
P-ROW-P1-1210	VDOT Issues Settlement Check (Priority 1 ROW)	16	18-Jan-23	02-Feb-23	304
P-ROW-P1-1220	Settlement Attorney Holds Settlement / Records Acquisition (Priority 1 ROW)	10	03-Feb-23	16-Feb-23	210
P-ROW-P1-1230	Right-of-Way Process Complete (Priority 1 ROW)	1	17-Feb-23	17-Feb-23	304
Priority 2 Right-of-Way Acquisitions - (15 Parcels)					
P-ROW-P2-1000	Update / Complete 60-Year Title Examinations (Priority 2 ROW)	15	03-Jan-22	21-Jan-22	201
P-ROW-P2-1010	Complete Appraisals (Priority 2 ROW)	35	28-Feb-22	18-Apr-22	176
P-ROW-P2-1020	Review Appraiser Perform / Complete Reviews (Priority 2 ROW)	10	19-Apr-22	28-Apr-22	255
P-ROW-P2-1030	Submit Appraisal to VDOT (RUMS) (Priority 2 ROW)	5	29-Apr-22	05-May-22	173
P-ROW-P2-1040	VDOT Approves Appraisals (Priority 2 ROW)	16	06-May-22	21-May-22	255
P-ROW-P2-1050	Prepare Offer Packages (Priority 2 ROW)	5	23-May-22	27-May-22	174
P-ROW-P2-1060	Negotiator Makes Initial Contact / Presents Offers (Priority 2 ROW)	10	31-May-22	13-Jun-22	174
P-ROW-P2-1070	Negotiations Period (Priority 2 ROW)	45	14-Jun-22	16-Aug-22	174
P-ROW-P2-1080	Provide Notice of Filing Certificate to Property Owner (Priority 2 ROW)	3	17-Aug-22	19-Aug-22	174
P-ROW-P2-1090	Finalize Plans (Priority 2 ROW)	4	22-Aug-22	25-Aug-22	174
P-ROW-P2-1100	Prepare & Submit Certificate Package to VDOT (Priority 2 ROW)	5	26-Aug-22	01-Sep-22	174
P-ROW-P2-1110	Obtain Signed Option (Property Access Available If Option Signed) (Priority 2 ROW)	5	22-Aug-22	26-Aug-22	198
P-ROW-P2-1120	VDOT Review / Issue Certificate & Check (Priority 2 ROW)	30	02-Sep-22	01-Oct-22	254
P-ROW-P2-1130	Option / Settlement Documents Submitted to VDOT (Priority 2 ROW)	5	03-Oct-22	07-Oct-22	174
P-ROW-P2-1140	VDOT Reviews Settlement Documents (Priority 2 ROW)	16	08-Oct-22	23-Oct-22	255
P-ROW-P2-1150	Settlement Documents Provided to Settlement Attorney (Priority 2 ROW)	2	24-Oct-22	25-Oct-22	175
P-ROW-P2-1160	Obtain Release of Liens (If Required) (Priority 2 ROW)	60	26-Oct-22	24-Jan-23	175
P-ROW-P2-1170	BD Files Certificate at Courthouse (Property Access Available If by Certificate) (Priority 2 ROW)	2	28-Oct-22	31-Oct-22	175
P-ROW-P2-1180	DB Requests NTCC on Available Parcels (Priority 2 ROW)	5	01-Nov-22	07-Nov-22	175
P-ROW-P2-1190	Notice to VDOT that all Liens are Cleared (Priority 2 ROW)	1	10-Jan-23	10-Jan-23	249
P-ROW-P2-1200	VDOT Issues Settlement Check (Priority 2 ROW)	16	11-Jan-23	26-Jan-23	249



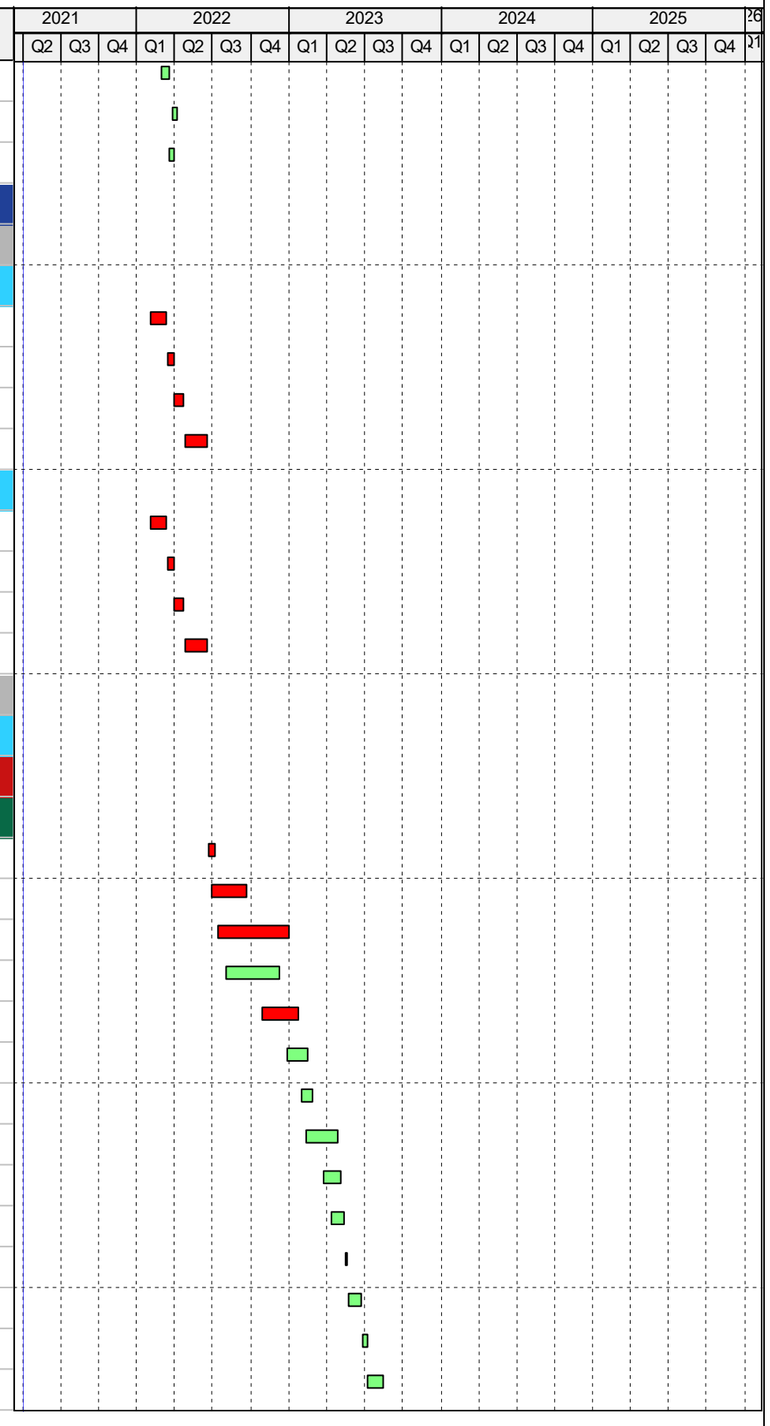
Activity ID	Activity Name	OD	Start	Finish	TF
P-ROW-P2-1210	Settlement Attorney Holds Settlement / Records Acquisition (Priority 2 ROW)	10	27-Jan-23	09-Feb-23	173
P-ROW-P2-1220	Right-of-Way Process Complete (Priority 2 ROW)	1	10-Feb-23	10-Feb-23	249
Priority 3 Right-of-Way Acquisitions - (4 Parcels)					
P-ROW-P3-1000	Update / Complete 60-Year Title Examinations (Priority 3 ROW)	15	03-Jan-22	21-Jan-22	245
P-ROW-P3-1010	Complete Appraisals (Priority 3 ROW)	35	28-Feb-22	18-Apr-22	220
P-ROW-P3-1020	Review Appraiser Perform / Complete Reviews (Priority 3 ROW)	10	19-Apr-22	28-Apr-22	318
P-ROW-P3-1030	Submit Appraisal to VDOT (RUMS) (Priority 3 ROW)	5	29-Apr-22	05-May-22	218
P-ROW-P3-1040	VDOT Approves Appraisals (Priority 3 ROW)	16	06-May-22	21-May-22	316
P-ROW-P3-1050	Prepare Offer Packages (Priority 3 ROW)	5	23-May-22	27-May-22	217
P-ROW-P3-1060	Negotiator Makes Initial Contact / Presents Offers (Priority 3 ROW)	10	31-May-22	13-Jun-22	217
P-ROW-P3-1070	Negotiations Period (Priority 3 ROW)	45	14-Jun-22	16-Aug-22	217
P-ROW-P3-1080	Provide Notice of Filing Certificate to Property Owner (Priority 3 ROW)	3	17-Aug-22	19-Aug-22	217
P-ROW-P3-1090	Finalize Plans (Priority 3 ROW)	4	22-Aug-22	25-Aug-22	217
P-ROW-P3-1100	Prepare & Submit Certificate Package (Priority 3 ROW)	5	26-Aug-22	01-Sep-22	217
P-ROW-P3-1110	Obtain Signed Option (Property Access Available If Option Signed) (Priority 3 ROW)	5	22-Aug-22	26-Aug-22	241
P-ROW-P3-1120	VDOT Review / Issue Certificate & Check (Priority 3 ROW)	30	02-Sep-22	01-Oct-22	316
P-ROW-P3-1130	Option / Settlement Documents Submitted to VDOT (Priority 3 ROW)	5	03-Oct-22	07-Oct-22	217
P-ROW-P3-1140	VDOT Reviews Settlement Documents (Priority 3 ROW)	16	08-Oct-22	23-Oct-22	316
P-ROW-P3-1150	Settlement Documents Provided to Settlement Attorney (Priority 3 ROW)	2	24-Oct-22	25-Oct-22	217
P-ROW-P3-1160	Obtain Release of Liens (If Required) (Priority 3 ROW)	60	26-Oct-22	24-Jan-23	217
P-ROW-P3-1170	BD Files Certificate at Courthouse (Property Access Available If by Certificate) (Priority 3 ROW)	2	28-Oct-22	31-Oct-22	219
P-ROW-P3-1180	DB Requests NTCC on Available Parcels (Priority 3 ROW)	5	01-Nov-22	07-Nov-22	219
P-ROW-P3-1190	Notice to VDOT that all Liens are Cleared (Priority 3 ROW)	1	10-Jan-23	10-Jan-23	311
P-ROW-P3-1200	VDOT Issues Settlement Check (Priority 3 ROW)	16	11-Jan-23	26-Jan-23	311
P-ROW-P3-1210	Settlement Attorney Holds Settlement / Records Acquisition (Priority 3 ROW)	10	27-Jan-23	09-Feb-23	215
P-ROW-P3-1220	Right-of-Way Process Complete (Priority 3 ROW)	1	10-Feb-23	10-Feb-23	311
Procurement & Submittals					
Storm Drain					
P-SD-1000	Prepare & Submit Storm Drain Shop Drawings	10	06-Jun-22	17-Jun-22	2
P-SD-1010	Review & Approve Storm Drain Shop Drawings	10	20-Jun-22	01-Jul-22	2
P-SD-1020	Fabricate & Deliver Storm Drain	20	05-Jul-22	01-Aug-22	2
Steel Beams					
P-STL-1000	Prepare & Submit Steel Beams - I-81 Over Rt 311	20	20-Jun-22	18-Jul-22	279



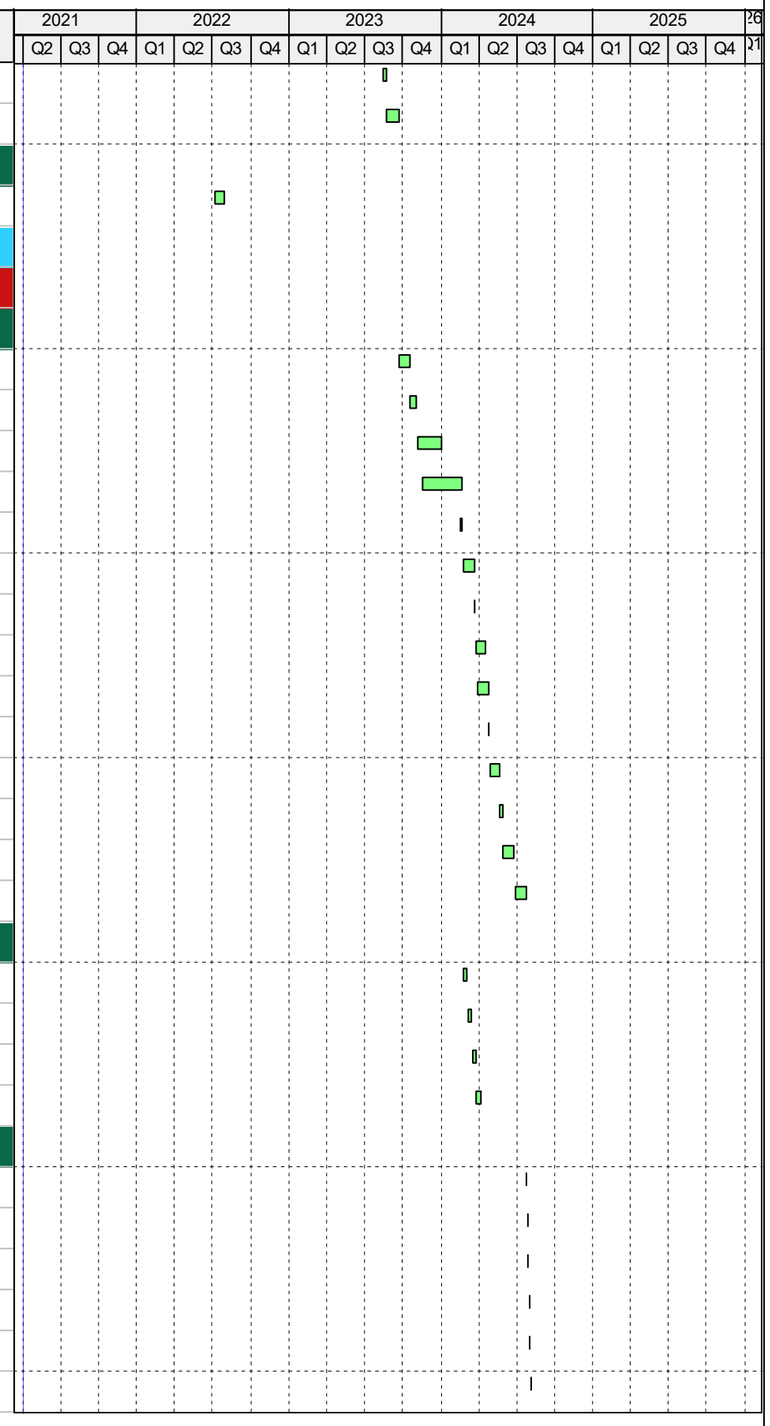
Activity ID	Activity Name	OD	Start	Finish	TF
P-STL-1010	Review & Approve Steel Beams - I-81 Over Rt 311	10	19-Jul-22	01-Aug-22	279
P-STL-1020	Fabricate & Deliver Steel Beams - I-81 Over Rt 311	90	02-Aug-22	08-Dec-22	279
Concrete Beams					
P-CONC-1000	Prepare & Submit Concrete Beams - I-81 Over Rt 112 / 635 / 619	20	20-Jun-22	18-Jul-22	138
P-CONC-1010	Review & Approve Concrete Beams - I-81 Over Rt 112 / 635 / 619	10	19-Jul-22	01-Aug-22	138
P-CONC-1020	Fabricate & Deliver Concrete Beams - I-81 Over Rt 112 / 635 / 619	50	02-Aug-22	11-Oct-22	138
Retaining Wall					
Retaining Wall - MSE Wall Panels					
P-RW-1000	Prepare & Submit Retaing Wall - MSE Wall Panels	20	06-Jun-22	01-Jul-22	43
P-RW-1010	Review & Approve Retaing Wall - MSE Wall Panels	10	05-Jul-22	18-Jul-22	43
P-RW-1020	Fabricate & Deliver Retaing Wall - MSE Wall Panels	50	19-Jul-22	27-Sep-22	43
Retaining Wall - CIP					
P-RW-2000	Prepare & Submit Retaing Wall - CIP	30	06-Jun-22	18-Jul-22	410
P-RW-2010	Review & Approve Retaing Wall - CIP	10	19-Jul-22	01-Aug-22	410
Soundwalls					
Soundwall Posts					
P-SW-1000	Prepare & Submit Soundwall Posts	20	06-Dec-22	05-Jan-23	173
P-SW-1010	Review & Approve Soundwall Posts	10	06-Jan-23	19-Jan-23	173
P-SW-1020	Fabricate & Deliver Soundwall Posts	20	20-Jan-23	16-Feb-23	173
Soundwall Panels					
P-SW-2000	Prepare & Submit Soundwall Panels	20	06-Jan-23	02-Feb-23	232
P-SW-2010	Review & Approve Soundwall Panels	10	03-Feb-23	16-Feb-23	232
P-SW-2020	Fabricate & Deliver Soundwall Panels	32	17-Feb-23	03-Apr-23	232
Lighting					
P-LTG-1000	Prepare & Submit Lighting Shop Drawings	20	11-Jul-22	05-Aug-22	446
P-LTG-1010	Review & Approve Lighting Shop Drawings	10	08-Aug-22	19-Aug-22	446
P-LTG-1020	Fabricate & Deliver Light Poles & Lights	80	22-Aug-22	14-Dec-22	446
Utility Relocations					
U-1000	Utility Relocation Project Wide - Citizens / VDOT / Osprey	45	28-Feb-22	02-May-22	100
U-1010	Utility Relocation Route 112 - Verizon	75	28-Feb-22	14-Jun-22	70
U-1020	Utility Relocation Route 112 - Comcast	10	28-Feb-22	11-Mar-22	135
U-1030	Utility Relocation Route 112 - Segra	30	28-Feb-22	08-Apr-22	115
U-1040	Utility Relocation Route 112 - Zayo	30	28-Feb-22	08-Apr-22	115



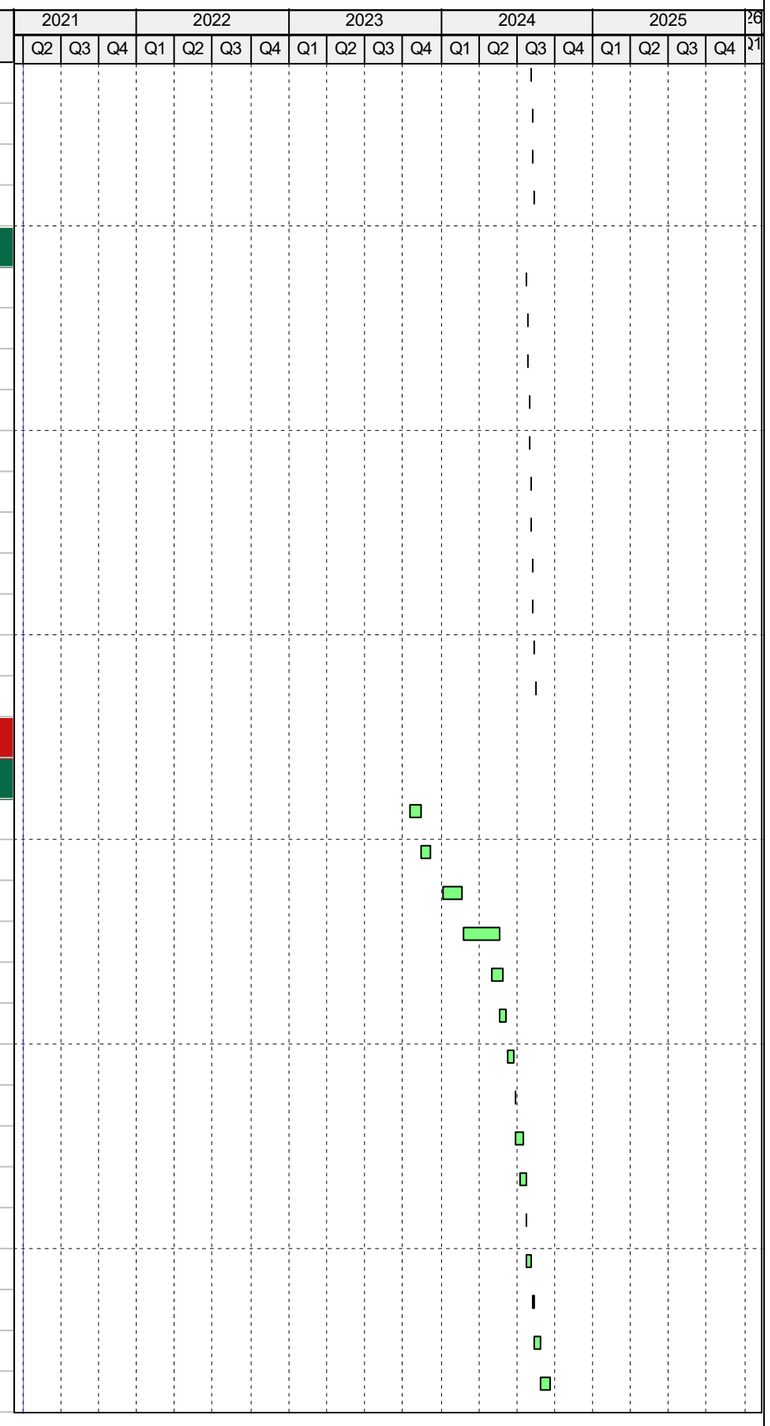
Activity ID	Activity Name	OD	Start	Finish	TF
U-1070	Utility Relocation Route 635 - Salem Electric	15	28-Feb-22	18-Mar-22	288
U-1080	Utility Relocation Route 635 - Comcast	10	28-Mar-22	08-Apr-22	288
U-1090	Utility Relocation Route 619 - Comcast	10	21-Mar-22	01-Apr-22	329
Construction					
Stage 1A Existing Shoulder Strengthening & Widening					
Stage 1A- NB (Sta 111+50 to North End)					
S1A-1000	S1A NB - Strengthen 3' & Widen Outside Edge 3'	20	31-Jan-22	11-Mar-22	0
S1A-1010	S1A NB - Replace Existing White Edge Line If Damaged By Milling	10	14-Mar-22	31-Mar-22	0
S1A-1020	S1A NB - Remove / Replace Impacted Guardrail	10	01-Apr-22	22-Apr-22	0
S1A-1030	S1A NB - Set MOT Barrier / Temp Striping / Shift Traffic	30	25-Apr-22	17-Jun-22	0
Stage 1A- SB (Sta 768+00 to South End)					
S1A-2000	S1A SB - Strengthen 3' & Widen Outside Edge 3'	20	31-Jan-22	11-Mar-22	0
S1A-2010	S1A SB - Replace Existing White Edge Line If Damaged By Milling	10	14-Mar-22	31-Mar-22	0
S1A-2020	S1A SB - Remove / Replace Impacted Guardrail	10	01-Apr-22	22-Apr-22	0
S1A-2030	S1A SB - Set MOT Barrier / Temp Striping / Shift Traffic	30	25-Apr-22	17-Jun-22	0
Area 4 Interim Milestone Work					
Stage 1B Median Work Area 4					
Stage 1B - Area 4 Sta 312+00 to North End (376+75)					
Stage 1B - Roadwork - Area 4 Sta 312+00 to North End (376+75)					
S1B-R-A4-1000	S1B RW A4 - Install E&S Controls	10	20-Jun-22	07-Jul-22	0
S1B-R-A4-1010	S1B RW A4 - Demo Existing Barrier / Guardrail / Pavement	46	28-Jun-22	22-Sep-22	0
S1B-R-A4-1020	S1B RW A4 - Excavate / Embankment to Subgrade	87	13-Jul-22	30-Dec-22	0
S1B-R-A4-1030	S1B RW A4 - Drainage Jack & Bore	66	02-Aug-22	07-Dec-22	20
S1B-R-A4-1040	S1B RW A4 - Install Drainage	41	27-Oct-22	23-Jan-23	0
S1B-R-A4-1050	S1B RW A4 - Fine Grade for Roadway / Barrier	23	27-Dec-22	15-Feb-23	0
S1B-R-A4-1060	S1B RW A4 - Install Barrier Footer	12	01-Feb-23	27-Feb-23	0
S1B-R-A4-1070	S1B RW A4 - Install Subbase	36	13-Feb-23	27-Apr-23	0
S1B-R-A4-1080	S1B RW A4 - Install Underdrain	23	23-Mar-23	05-May-23	0
S1B-R-A4-1090	S1B RW A4 - Install Barrier Walls	16	12-Apr-23	12-May-23	0
S1B-R-A4-1100	S1B RW A4 - Install Concrete Between Barrier Walls	4	15-May-23	22-May-23	0
S1B-R-A4-1110	S1B RW A4 - Asphalt Paving - Base Asphalt	19	23-May-23	23-Jun-23	0
S1B-R-A4-1120	S1B RW A4 - Asphalt Paving - Intermediate Asphalt	7	26-Jun-23	07-Jul-23	0
S1B-R-A4-1130	S1B RW A4 - Install Guardrail	21	10-Jul-23	15-Aug-23	0



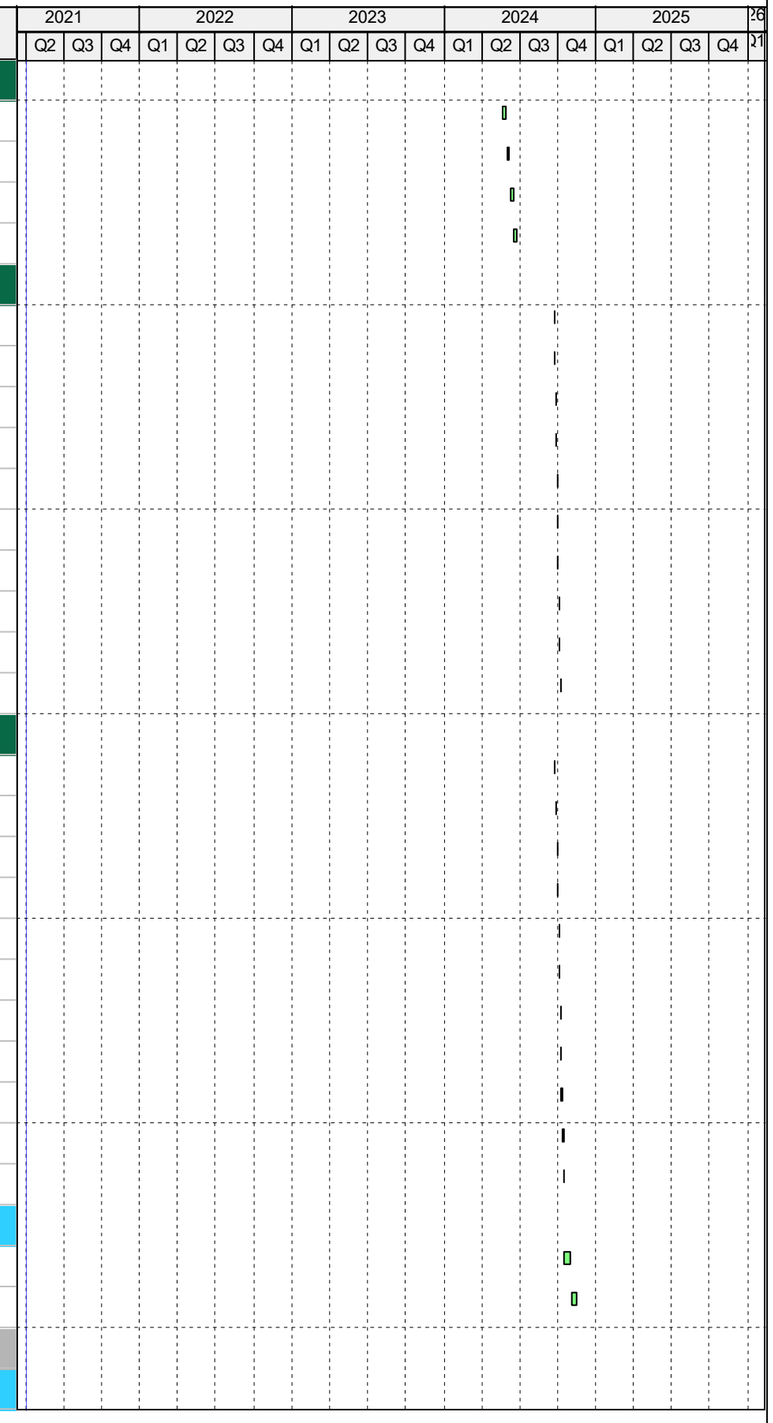
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-R-A4-1140	S1B RW A4 - Asphalt Paving - Surface Asphalt	4	17-Aug-23	22-Aug-23	0
S1B-R-A4-1150	S1B RW A4 - Fine Grade Slopes & Ditch / Seed	15	24-Aug-23	21-Sep-23	0
Stage 1B - Storm Water Management Facilities - Area 4 Sta 312+00 to North End (376+75)					
S1B-SW-A4-1000	S1B SWM A4 - Construct SWM #12 Basin	11	08-Jul-22	28-Jul-22	195
Stage 2 Outside Lanes Area 4					
Stage 2 NB Area 4 Sta 312+00 to North End (376+75)					
Stage 2 - NB Area 4 Roadwork					
S2-RNB-A4-1000	S2 RNB A4 - Relocate Barrier from Median / Temp Striping / Shift Traffic	14	22-Sep-23	18-Oct-23	0
S2-RNB-A4-1010	S2 RNB A4 - Install E&S Controls	10	20-Oct-23	03-Nov-23	0
S2-RNB-A4-1020	S2 RNB A4 - Demo Existing Barrier / Guardrail / Pavement	26	06-Nov-23	03-Jan-24	0
S2-RNB-A4-1030	S2 RNB A4 - Excavate / Embankment to Subgrade	43	17-Nov-23	21-Feb-24	0
S2-RNB-A4-1040	S2 RNB A4 - Install Drainage	3	16-Feb-24	21-Feb-24	33
S2-RNB-A4-1050	S2 RNB A4 - Fine Grade for Roadway / Barrier	13	23-Feb-24	21-Mar-24	33
S2-RNB-A4-1060	S2 RNB A4 - Install Barrier Footer	1	22-Mar-24	22-Mar-24	33
S2-RNB-A4-1070	S2 RNB A4 - Install Subbase	13	25-Mar-24	19-Apr-24	33
S2-RNB-A4-1080	S2 RNB A4 - Install Underdrain	13	28-Mar-24	23-Apr-24	33
S2-RNB-A4-1090	S2 RNB A4 - Install Barrier Walls	1	26-Apr-24	26-Apr-24	33
S2-RNB-A4-1100	S2 RNB A4 - Asphalt Paving - Base Asphalt	12	29-Apr-24	20-May-24	33
S2-RNB-A4-1110	S2 RNB A4 - Asphalt Paving - Intermediate Asphalt	4	21-May-24	28-May-24	33
S2-RNB-A4-1120	S2 RNB A4 - Install Guardrail	16	30-May-24	25-Jun-24	33
S2-RNB-A4-1140	S2 RNB A4 - Fine Grade Slopes & Ditch / Seed	16	27-Jun-24	25-Jul-24	33
Stage 2 - NB Area 4 TMS					
S2-RNB-A4-2000	S2 RNB A4 - Install TMS Ductbank / Junction Boxes	5	23-Feb-24	04-Mar-24	104
S2-RNB-A4-2010	S2 RNB A4 - Install TMS / Sign Foundations / Light Foundations	5	06-Mar-24	15-Mar-24	104
S2-RNB-A4-2020	S2 RNB A4 - Install TMS / Sign Structures / Light Structures	5	18-Mar-24	25-Mar-24	104
S2-RNB-A4-2030	S2 RNB A4 - Pull & Terminate Power and Fiber	5	26-Mar-24	04-Apr-24	104
Stage 2 - Route 419 Ramp B					
S2-RAMP-9000	S2 Ramp Route 419 Ramp B - Set MOT Barrier / Temp Striping / Shift Traffic	1	26-Jul-24	26-Jul-24	36
S2-RAMP-9010	S2 Ramp Route 419 Ramp B - Demo Existing Barrier / Pavement	1	29-Jul-24	29-Jul-24	36
S2-RAMP-9020	S2 Ramp Route 419 Ramp B - Install Drainage	1	30-Jul-24	30-Jul-24	36
S2-RAMP-9030	S2 Ramp Route 419 Ramp B - Fine Grade for Roadway	1	01-Aug-24	01-Aug-24	36
S2-RAMP-9040	S2 Ramp Route 419 Ramp B - Install Subbase	1	02-Aug-24	02-Aug-24	36
S2-RAMP-9050	S2 Ramp Route 419 Ramp B - Install Underdrain	1	05-Aug-24	05-Aug-24	36



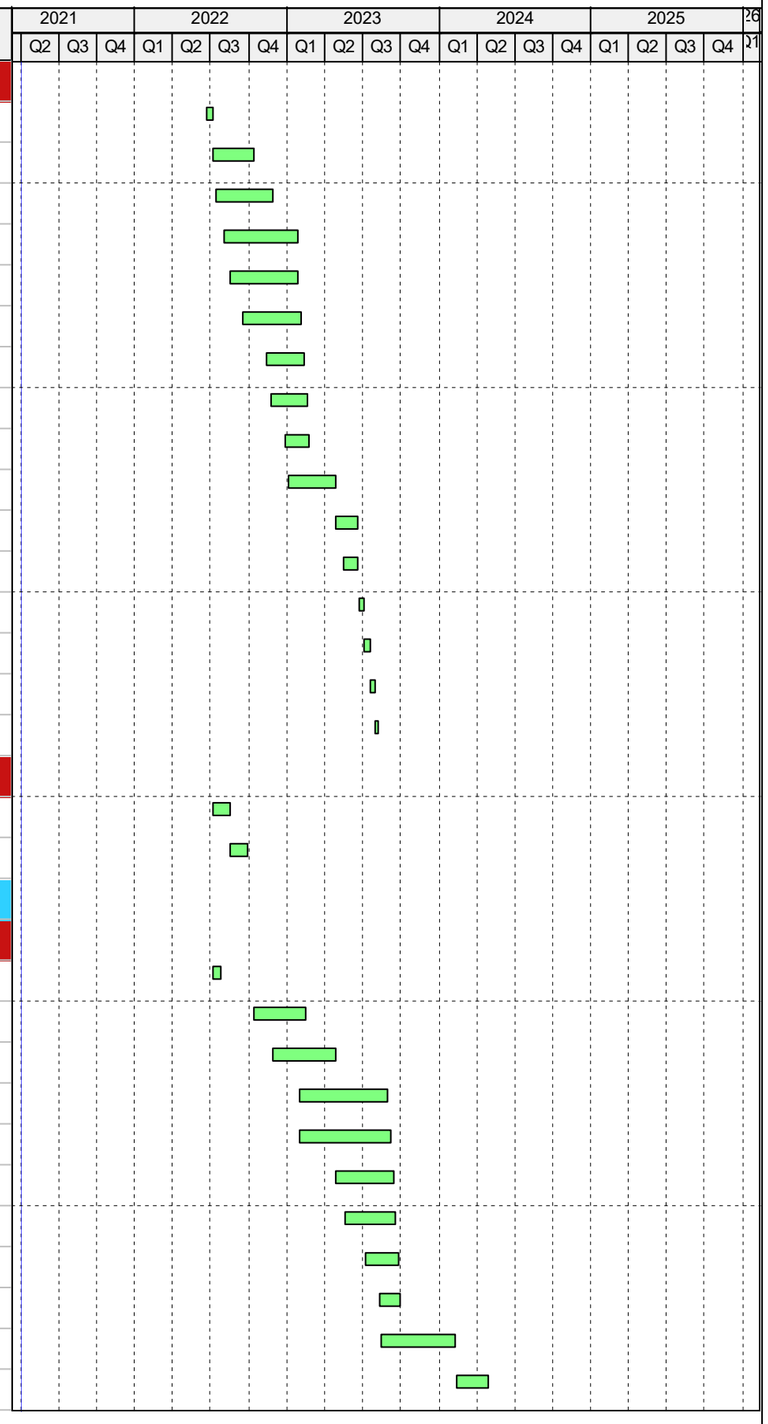
Activity ID	Activity Name	OD	Start	Finish	TF
S2-RAMP-9060	S2 Ramp Route 419 Ramp B - Asphalt Paving - Base Asphalt	1	06-Aug-24	06-Aug-24	37
S2-RAMP-9070	S2 Ramp Route 419 Ramp B - Asphalt Paving - Intermediate Asphalt	1	08-Aug-24	08-Aug-24	37
S2-RAMP-9080	S2 Ramp Route 419 Ramp B - Asphalt Paving - Surface Asphalt	1	09-Aug-24	09-Aug-24	37
S2-RAMP-9090	S2 Ramp Route 419 Ramp B - Fine Grade Slopes & Ditch / Seed	1	12-Aug-24	12-Aug-24	35
Stage 2 - Route 419 Loop B					
S2-RAMP-11000	S2 Ramp Route 419 Loop B - Set MOT Barrier / Temp Striping / Shift Traffic	1	26-Jul-24	26-Jul-24	33
S2-RAMP-11010	S2 Ramp Route 419 Loop B - Demo Existing Barrier / Pavement	1	29-Jul-24	29-Jul-24	33
S2-RAMP-11020	S2 Ramp Route 419 Loop B - Install Drainage	1	30-Jul-24	30-Jul-24	33
S2-RAMP-11030	S2 Ramp Route 419 Loop B - Fine Grade for Roadway	1	01-Aug-24	01-Aug-24	33
S2-RAMP-11040	S2 Ramp Route 419 Loop B - Install Subbase	1	02-Aug-24	02-Aug-24	33
S2-RAMP-11050	S2 Ramp Route 419 Loop B - Install Underdrain	1	05-Aug-24	05-Aug-24	33
S2-RAMP-11060	S2 Ramp Route 419 Loop B - Asphalt Paving - Base Asphalt	1	06-Aug-24	06-Aug-24	34
S2-RAMP-11070	S2 Ramp Route 419 Loop B - Asphalt Paving - Intermediate Asphalt	1	08-Aug-24	08-Aug-24	34
S2-RAMP-11080	S2 Ramp Route 419 Loop B - Asphalt Paving - Surface Asphalt	1	09-Aug-24	09-Aug-24	34
S2-RAMP-11090	S2 Ramp Route 419 Loop B - Install Guardrail	2	12-Aug-24	14-Aug-24	33
S2-RAMP-11100	S2 Ramp Route 419 Loop B - Fine Grade Slopes & Ditch / Seed	1	16-Aug-24	16-Aug-24	33
Stage 2 SB Area 4 Sta 711+50 to North End					
Stage 2 - SB Area 4 Roadwork					
S2-RSB-A4-1000	S2 RSB A4 - Relocate Barrier from Median / Temp Striping / Shift Traffic	14	20-Oct-23	13-Nov-23	29
S2-RSB-A4-1010	S2 RSB A4 - Install E&S Controls	10	15-Nov-23	06-Dec-23	29
S2-RSB-A4-1020	S2 RSB A4 - Demo Existing Barrier / Guardrail / Pavement	21	05-Jan-24	19-Feb-24	17
S2-RSB-A4-1030	S2 RSB A4 - Excavate / Embankment to Subgrade	43	23-Feb-24	20-May-24	0
S2-RSB-A4-1040	S2 RSB A4 - Install Drainage	14	03-May-24	30-May-24	5
S2-RSB-A4-1050	S2 RSB A4 - Install Retaining Wall 7 at Sta 714+25	10	21-May-24	07-Jun-24	0
S2-RSB-A4-1060	S2 RSB A4 - Fine Grade for Roadway	10	10-Jun-24	25-Jun-24	0
S2-RSB-A4-1070	S2 RSB A4 - Install Barrier Footer	1	27-Jun-24	27-Jun-24	0
S2-RSB-A4-1080	S2 RSB A4 - Install Subbase	11	28-Jun-24	18-Jul-24	0
S2-RSB-A4-1090	S2 RSB A4 - Install Underdrain	10	08-Jul-24	23-Jul-24	0
S2-RSB-A4-1100	S2 RSB A4 - Install Barrier Walls	1	25-Jul-24	25-Jul-24	0
S2-RSB-A4-1110	S2 RSB A4 - Asphalt Paving - Base Asphalt	7	26-Jul-24	06-Aug-24	0
S2-RSB-A4-1120	S2 RSB A4 - Asphalt Paving - Intermediate Asphalt	3	08-Aug-24	12-Aug-24	0
S2-RSB-A4-1130	S2 RSB A4 - Install Guardrail	7	14-Aug-24	26-Aug-24	0
S2-RSB-A4-1150	S2 RSB A4 - Fine Grade Slopes & Ditch / Seed	13	27-Aug-24	20-Sep-24	0



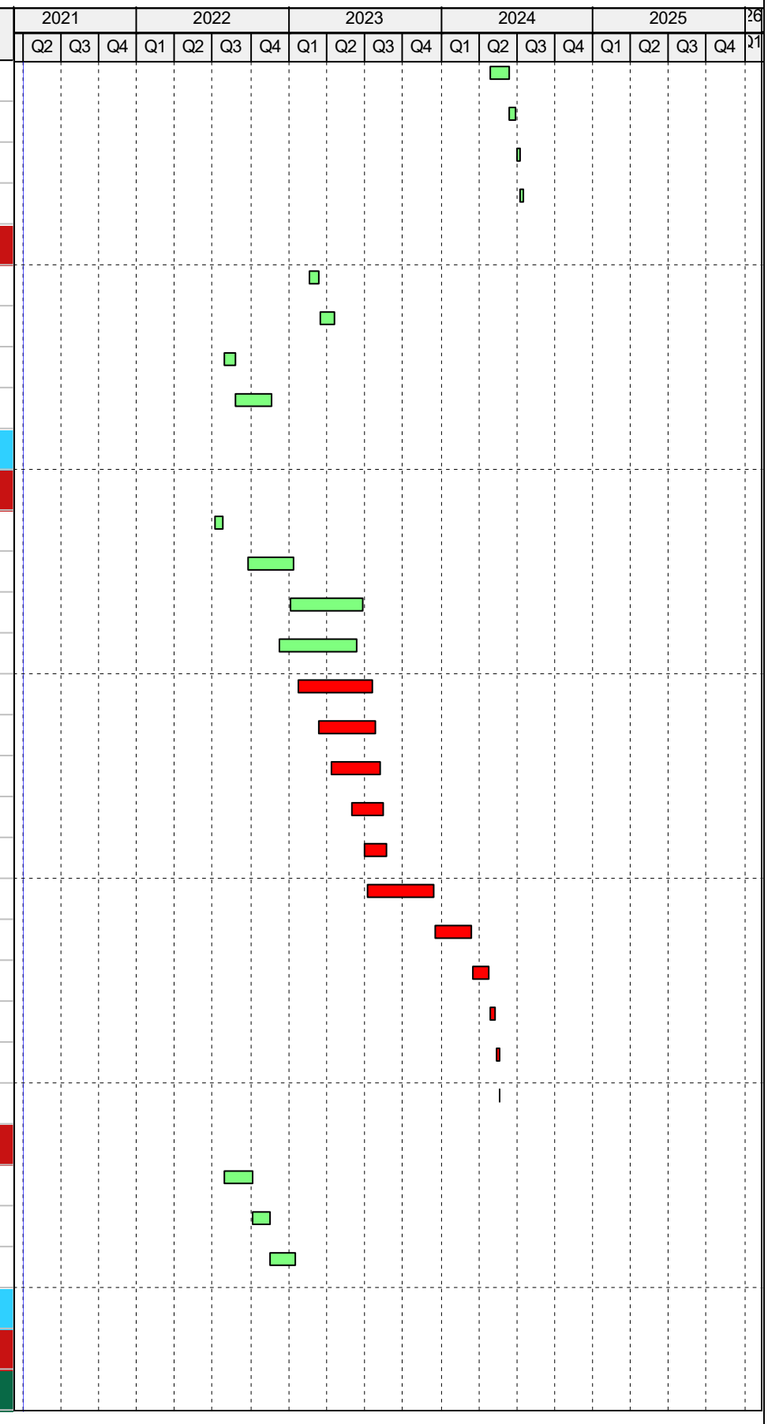
Activity ID	Activity Name	OD	Start	Finish	TF
Stage 2 - SB Area 4 TMS					
S2-RSB-A4-2000	S2 RSB A4 - Install TMS Ductbank / Junction Boxes	5	21-May-24	30-May-24	61
S2-RSB-A4-2010	S2 RSB A4 - Install TMS / Sign / Light Foundations	5	31-May-24	07-Jun-24	61
S2-RSB-A4-2020	S2 RSB A4 - Install TMS / Sign Structures / Light Structures	5	10-Jun-24	17-Jun-24	61
S2-RSB-A4-2030	S2 RSB A4 - Pull & Terminate Power and Fiber	5	18-Jun-24	25-Jun-24	61
Stage 2 - Route 419 Ramp D					
S2-RAMP-100000	S2 Ramp Route 419 Ramp D - Set MOT Barrier / Temp Striping / Shift Traffic	1	23-Sep-24	23-Sep-24	6
S2-RAMP-100010	S2 Ramp Route 419 Ramp D - Demo Existing Barrier / Pavement	1	24-Sep-24	24-Sep-24	6
S2-RAMP-100020	S2 Ramp Route 419 Ramp D - Install Drainage	1	26-Sep-24	26-Sep-24	6
S2-RAMP-100030	S2 Ramp Route 419 Ramp D - Fine Grade for Roadway	1	27-Sep-24	27-Sep-24	6
S2-RAMP-100040	S2 Ramp Route 419 Ramp D - Install Subbase	1	30-Sep-24	30-Sep-24	6
S2-RAMP-100050	S2 Ramp Route 419 Ramp D - Install Underdrain	1	01-Oct-24	01-Oct-24	6
S2-RAMP-100060	S2 Ramp Route 419 Ramp D - Asphalt Paving - Base Asphalt	1	02-Oct-24	02-Oct-24	6
S2-RAMP-100070	S2 Ramp Route 419 Ramp D - Asphalt Paving - Intermediate Asphalt	1	03-Oct-24	03-Oct-24	6
S2-RAMP-100080	S2 Ramp Route 419 Ramp D - Asphalt Paving - Surface Asphalt	1	04-Oct-24	04-Oct-24	6
S2-RAMP-100090	S2 Ramp Route 419 Ramp D - Fine Grade Slopes & Ditch / Seed	1	07-Oct-24	07-Oct-24	5
Stage 2 - Route 419 Loop D					
S2-RAMP-12000	S2 Ramp Route 419 Loop D - Set MOT Barrier / Temp Striping / Shift Traffic	2	23-Sep-24	24-Sep-24	0
S2-RAMP-12010	S2 Ramp Route 419 Loop D - Demo Existing Barrier / Pavement	2	26-Sep-24	27-Sep-24	0
S2-RAMP-12020	S2 Ramp Route 419 Loop D - Install Drainage	2	30-Sep-24	01-Oct-24	0
S2-RAMP-12030	S2 Ramp Route 419 Loop D - Fine Grade for Roadway	1	02-Oct-24	02-Oct-24	0
S2-RAMP-12040	S2 Ramp Route 419 Loop D - Install Subbase	1	03-Oct-24	03-Oct-24	0
S2-RAMP-12050	S2 Ramp Route 419 Loop D - Install Underdrain	1	04-Oct-24	04-Oct-24	0
S2-RAMP-12060	S2 Ramp Route 419 Loop D - Asphalt Paving - Base Asphalt	1	07-Oct-24	07-Oct-24	0
S2-RAMP-12070	S2 Ramp Route 419 Loop D - Asphalt Paving - Intermediate Asphalt	1	08-Oct-24	08-Oct-24	0
S2-RAMP-12080	S2 Ramp Route 419 Loop D - Asphalt Paving - Surface Asphalt	1	10-Oct-24	10-Oct-24	0
S2-RAMP-12090	S2 Ramp Route 419 Loop D - Install Guardrail	2	11-Oct-24	14-Oct-24	0
S2-RAMP-12100	S2 Ramp Route 419 Loop D - Fine Grade Slopes & Ditch / Seed	1	16-Oct-24	16-Oct-24	0
Stage 3 Mill & Surface Asphalt Area 4					
S3-1020	S3 NB - Mill & Surface Asphalt Area 4	10	17-Oct-24	01-Nov-24	0
S3-1030	S3 SB - Mill & Surface Asphalt Area 4	7	04-Nov-24	14-Nov-24	0
Stage 1B Median Work Area 1 to 3					
Stage 1B - Area 1 Sta 100+00 to 175+00					



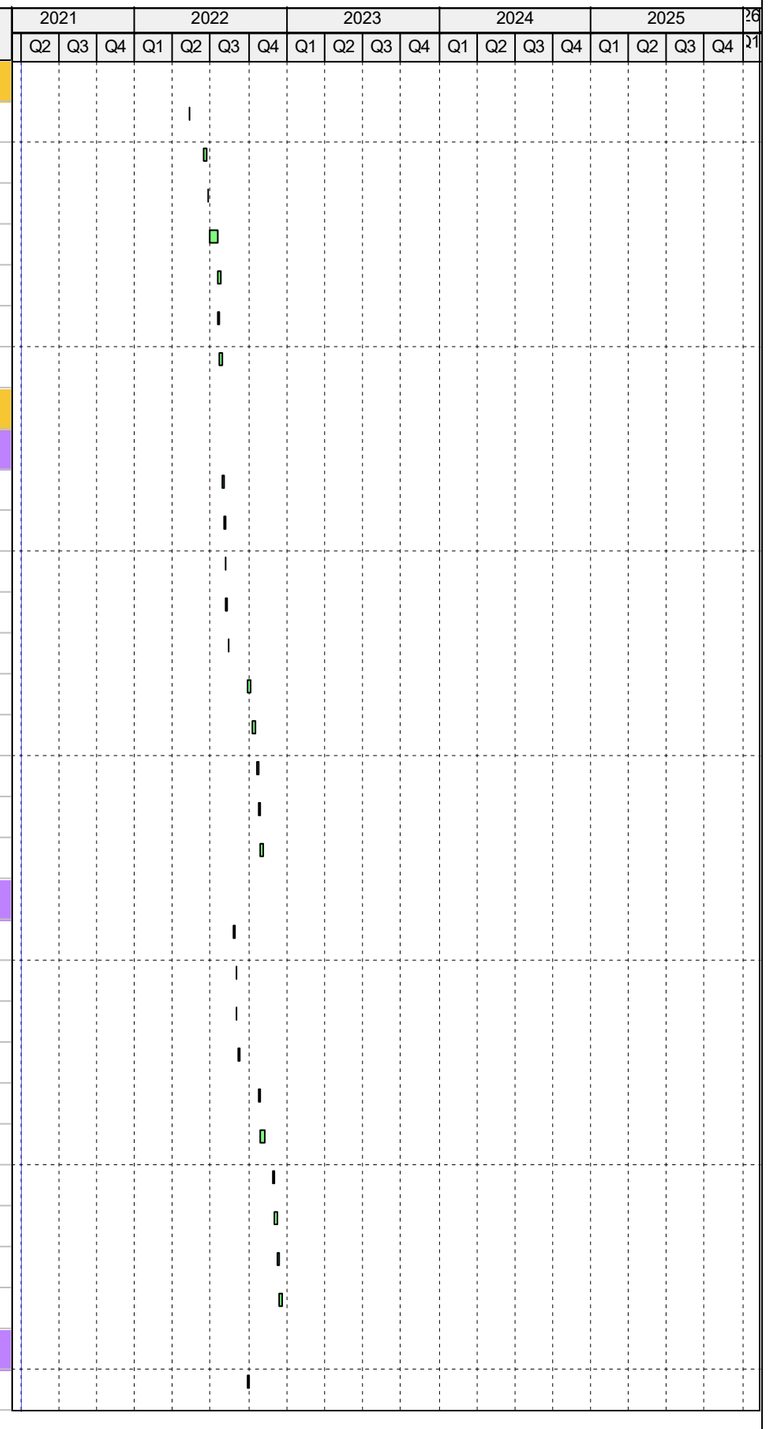
Activity ID	Activity Name	OD	Start	Finish	TF
Stage 1B - Roadwork - Area 1 Sta 100+00 to 175+00					
S1B-R-A1-1000	S1B RW A1 - Install E&S Controls	10	20-Jun-22	07-Jul-22	14
S1B-R-A1-1010	S1B RW A1 - Demo Existing Barrier / Guardrail / Pavement	52	08-Jul-22	12-Oct-22	17
S1B-R-A1-1020	S1B RW A1 - Excavate / Embankment to Subgrade	71	13-Jul-22	28-Nov-22	17
S1B-R-A1-1030	S1B RW A1 - Drainage Jack & Bore (4 Ea)	88	02-Aug-22	27-Jan-23	1
S1B-R-A1-1040	S1B RW A1 - Install Drainage	78	19-Aug-22	27-Jan-23	1
S1B-R-A1-1050	S1B RW A1 - Fine Grade for Roadway / Barrier	67	16-Sep-22	03-Feb-23	1
S1B-R-A1-1060	S1B RW A1 - Install Barrier Footer	41	11-Nov-22	10-Feb-23	1
S1B-R-A1-1070	S1B RW A1 - Install Subbase	40	23-Nov-22	20-Feb-23	1
S1B-R-A1-1080	S1B RW A1 - Install Underdrain	26	29-Dec-22	24-Feb-23	1
S1B-R-A1-1090	S1B RW A1 - Install Barrier Walls	54	03-Jan-23	27-Apr-23	1
S1B-R-A1-1100	S1B RW A1 - Install Concrete Between Barrier Walls	29	28-Apr-23	20-Jun-23	1
S1B-R-A1-1110	S1B RW A1 - Asphalt Paving - Base Asphalt	20	17-May-23	20-Jun-23	1
S1B-R-A1-1120	S1B RW A1 - Asphalt Paving - Intermediate Asphalt	7	22-Jun-23	03-Jul-23	1
S1B-R-A1-1130	S1B RW A1 - Install Guardrail	8	05-Jul-23	20-Jul-23	1
S1B-R-A1-1140	S1B RW A1 - Asphalt Paving - Surface Asphalt	6	21-Jul-23	31-Jul-23	1
S1B-R-A1-1150	S1B RW A1 - Fine Grade Slopes & Ditch / Seed	5	01-Aug-23	08-Aug-23	1
Stage 1B - Storm Water Management Facilities - Area 1 Sta 100+00 to 175+00					
S1B-SW-A1-1000	S1B SWM A1 - Construct SWM #1 Basin	23	08-Jul-22	18-Aug-22	150
S1B-SW-A1-1010	S1B SWM A1 - Construct SWM #3 Basin	21	19-Aug-22	27-Sep-22	150
Stage 1B - Area 2 Sta 175+00 to Route 705 Overpass (245+00)					
Stage 1B - Roadwork - Area 2 Sta 175+00 to Route 705 Overpass (245+00)					
S1B-R-A2-1000	S1B RW A2 - Install E&S Controls	10	08-Jul-22	26-Jul-22	88
S1B-R-A2-1010	S1B RW A2 - Demo Existing Barrier / Guardrail / Pavement	56	14-Oct-22	13-Feb-23	46
S1B-R-A2-1020	S1B RW A2 - Excavate / Embankment to Subgrade	71	29-Nov-22	28-Apr-23	27
S1B-R-A2-1030	S1B RW A2 - Drainage Jack & Bore (7 Ea)	110	30-Jan-23	31-Aug-23	4
S1B-R-A2-1040	S1B RW A2 - Install Drainage	113	30-Jan-23	07-Sep-23	4
S1B-R-A2-1050	S1B RW A2 - Fine Grade for Roadway / Barrier	75	27-Apr-23	13-Sep-23	4
S1B-R-A2-1060	S1B RW A2 - Install Barrier Footer	66	22-May-23	19-Sep-23	4
S1B-R-A2-1070	S1B RW A2 - Install Subbase	43	10-Jul-23	26-Sep-23	4
S1B-R-A2-1080	S1B RW A2 - Install Underdrain	28	10-Aug-23	29-Sep-23	4
S1B-R-A2-1090	S1B RW A2 - Install Barrier Walls	88	14-Aug-23	09-Feb-24	4
S1B-R-A2-1100	S1B RW A2 - Install Concrete Between Barrier Walls	37	12-Feb-24	29-Apr-24	4



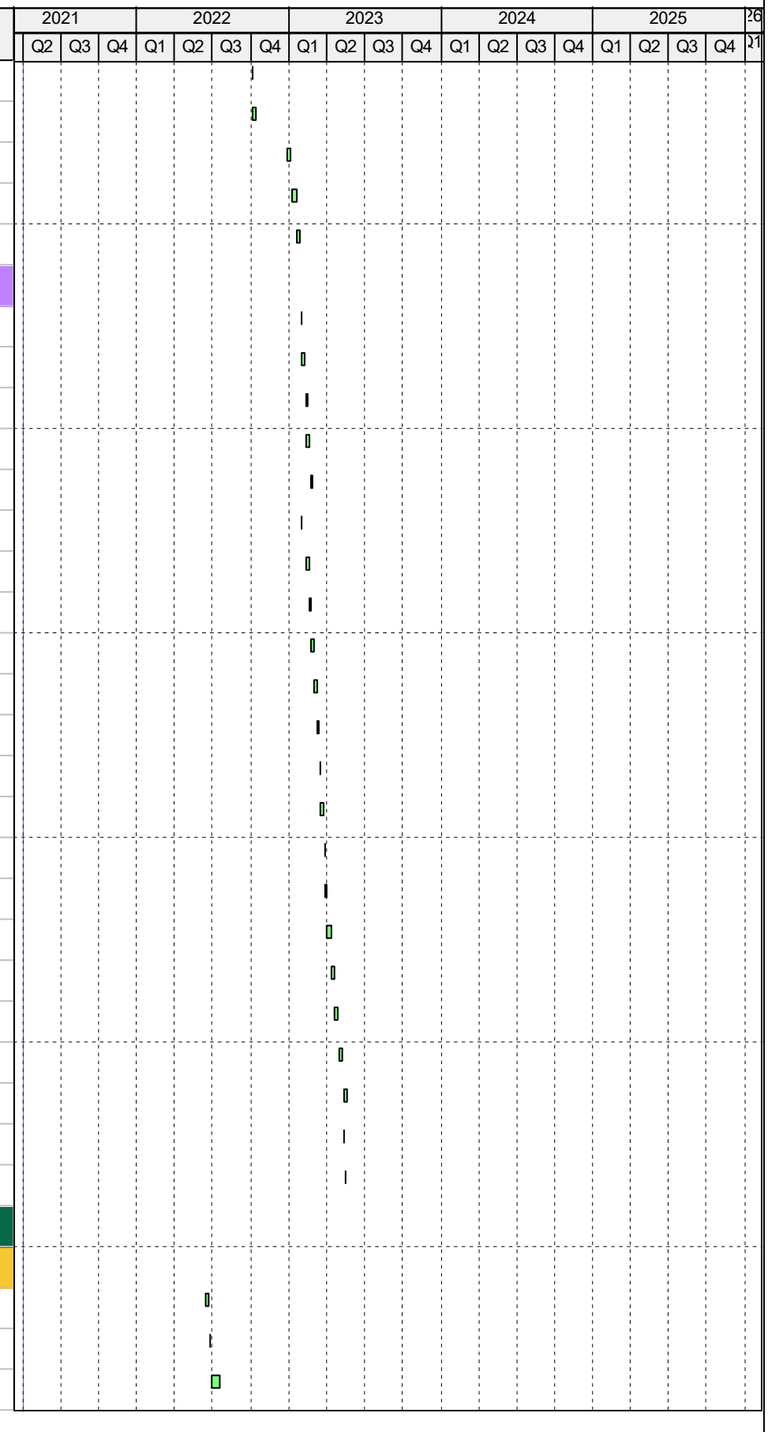
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-R-A2-1110	S1B RW A2 - Asphalt Paving - Base Asphalt	24	30-Apr-24	13-Jun-24	4
S1B-R-A2-1120	S1B RW A2 - Asphalt Paving - Intermediate Asphalt	9	14-Jun-24	28-Jun-24	4
S1B-R-A2-1130	S1B RW A2 - Asphalt Paving - Surface Asphalt	4	01-Jul-24	08-Jul-24	4
S1B-R-A2-1140	S1B RW A2 - Fine Grade Slopes & Ditch / Seed	4	09-Jul-24	15-Jul-24	4
Stage 1B - Storm Water Management Facilities - Area 2 Sta 175+00 to Route 705 Overpass (245+00)					
S1B-SW-A2-1000	S1B SWM A2 - Construct SWM #4 Basin	12	20-Feb-23	15-Mar-23	227
S1B-SW-A2-1010	S1B SWM A2 - Construct SWM #5 Basin	17	17-Mar-23	19-Apr-23	227
S1B-SW-A2-1020	S1B SWM A2 - Construct SWM #6 Basin	16	28-Jul-22	23-Aug-22	266
S1B-SW-A2-1030	S1B SWM A2 - Construct SWM #8 Basin	45	25-Aug-22	21-Nov-22	266
Stage 1B - Area 3 Route 705 Overpass (245+00) to Sta 312+00					
Stage 1B - Roadwork - Area 3 Route 705 Overpass (245+00) to Sta 312+00					
S1B-R-A3-1000	S1B RW A3 - Install E&S Controls	10	08-Jul-22	26-Jul-22	83
S1B-R-A3-1010	S1B RW A3 - Demo Existing Barrier / Guardrail / Pavement	54	23-Sep-22	13-Jan-23	52
S1B-R-A3-1020	S1B RW A3 - Excavate / Embankment to Subgrade	87	03-Jan-23	27-Jun-23	6
S1B-R-A3-1030	S1B RW A3 - Drainage Jack & Bore	88	09-Dec-22	12-Jun-23	21
S1B-R-A3-1040	S1B RW A3 - Install Drainage	88	25-Jan-23	20-Jul-23	1
S1B-R-A3-1050	S1B RW A3 - Fine Grade for Roadway / Barrier	72	13-Mar-23	28-Jul-23	1
S1B-R-A3-1060	S1B RW A3 - Install Barrier Footer	62	12-Apr-23	07-Aug-23	1
S1B-R-A3-1070	S1B RW A3 - Install Subbase	42	01-Jun-23	15-Aug-23	1
S1B-R-A3-1080	S1B RW A3 - Install Underdrain	27	03-Jul-23	21-Aug-23	1
S1B-R-A3-1090	S1B RW A3 - Install Barrier Walls	83	07-Jul-23	15-Dec-23	1
S1B-R-A3-1100	S1B RW A3 - Install Concrete Between Barrier Walls	39	18-Dec-23	13-Mar-24	1
S1B-R-A3-1110	S1B RW A3 - Asphalt Paving - Base Asphalt	23	18-Mar-24	26-Apr-24	0
S1B-R-A3-1120	S1B RW A3 - Asphalt Paving - Intermediate Asphalt	8	29-Apr-24	10-May-24	0
S1B-R-A3-1130	S1B RW A3 - Asphalt Paving - Surface Asphalt	4	13-May-24	20-May-24	0
S1B-R-A3-1140	S1B RW A3 - Fine Grade Slopes & Ditch / Seed	2	21-May-24	23-May-24	0
Stage 1B - Storm Water Management Facilities - Area 3 Route 705 Overpass (245+00) to Sta 312+00					
S1B-SW-A3-1000	S1B SWM A3 - Construct SWM #9 Basin	38	28-Jul-22	04-Oct-22	240
S1B-SW-A3-1010	S1B SWM A3 - Construct SWM #10 Basin	21	06-Oct-22	16-Nov-22	240
S1B-SW-A3-1020	S1B SWM A3 - Construct SWM #11 Basin	27	18-Nov-22	16-Jan-23	240
Stage 1B - Structures					
Stage 1B - Structures - Bridge 1: I-81 Over RT 112					
Stage 1B - Structures - I-81 Over RT 112 - NB					



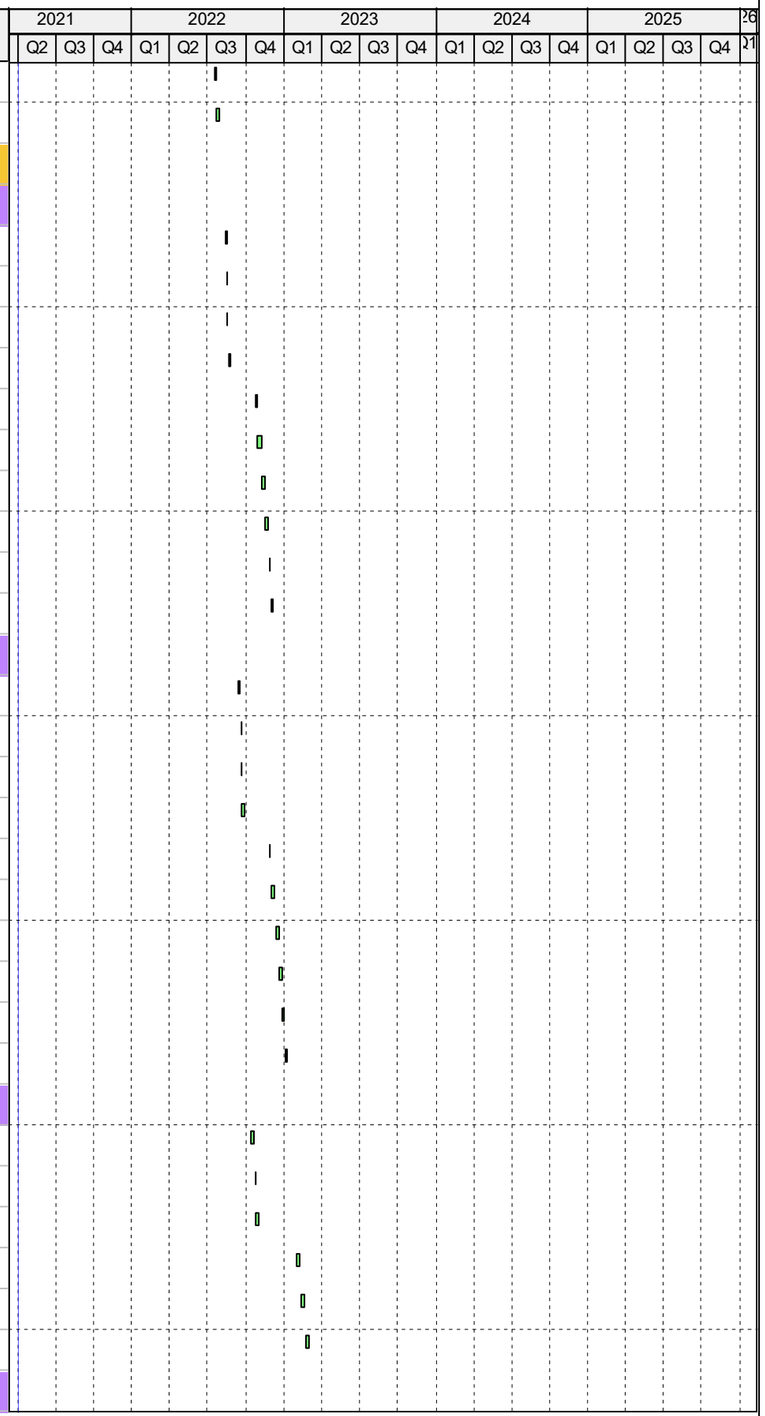
Activity ID	Activity Name	OD	Start	Finish	TF
	Stage 1B - I-81 Over RT112 - NB - Demo Existing Structure				
S1B-B1NB-1000	S1B B1 NB Demo - Set MOT Barrier / Temp Striping / Shift Traffic on RT 112	1	12-May-22	12-May-22	71
S1B-B1NB-1010	S1B B1 NB Demo - Demo Existing Bridge Deck	5	16-Jun-22	23-Jun-22	53
S1B-B1NB-1020	S1B B1 NB Demo - Demo Existing Beams	2	24-Jun-22	27-Jun-22	53
S1B-B1NB-1030	S1B B1 NB Demo - Demo Existing Piers / Abutment	10	28-Jun-22	18-Jul-22	53
S1B-B1NB-1040	S1B B1 NB Demo - Temporary Support of Existing NB Cap	5	19-Jul-22	26-Jul-22	54
S1B-B1NB-1050	S1B B1 NB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	19-Jul-22	21-Jul-22	53
S1B-B1NB-1060	S1B B1 NB Demo - Demo Existing Concrete Slope Protection	4	22-Jul-22	28-Jul-22	53
	Stage 1B - I-81 Over RT112 - NB - Structures				
	Stage 1B - I-81 Over RT112 - NB - Abutment A				
S1B-B1NB-2000	S1B B1 NB Abutment A - Install SOE Adjacent to Existing Bridge	3	29-Jul-22	02-Aug-22	53
S1B-B1NB-2010	S1B B1 NB Abutment A - Remove Existing Structure / Pavement	1	04-Aug-22	04-Aug-22	53
S1B-B1NB-2020	S1B B1 NB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	05-Aug-22	05-Aug-22	53
S1B-B1NB-2030	S1B B1 NB Abutment A - Install Pile	3	08-Aug-22	11-Aug-22	53
S1B-B1NB-2040	S1B B1 NB Abutment A - FRP Concrete Footer - MSE at Abutment	2	12-Aug-22	15-Aug-22	53
S1B-B1NB-2050	S1B B1 NB Abutment A - Erect / Backfill - MSE at Abutment	6	29-Sep-22	07-Oct-22	30
S1B-B1NB-2060	S1B B1 NB Abutment A - FRP Pile Cap	4	10-Oct-22	17-Oct-22	30
S1B-B1NB-2070	S1B B1 NB Abutment A - FRP Back Wall	3	19-Oct-22	24-Oct-22	30
S1B-B1NB-2080	S1B B1 NB Abutment A - Backfill Abutment Seat	2	25-Oct-22	27-Oct-22	82
S1B-B1NB-2090	S1B B1 NB Abutment A - Finish MSE Wall & Install Coping	4	28-Oct-22	03-Nov-22	82
	Stage 1B - I-81 Over RT112 - NB - Abutment B				
S1B-B1NB-3000	S1B B1 NB Abutment B - Install SOE Adjacent to Existing Bridge	3	26-Aug-22	30-Aug-22	59
S1B-B1NB-3010	S1B B1 NB Abutment B - Remove Existing Structure / Pavement	1	01-Sep-22	01-Sep-22	59
S1B-B1NB-3020	S1B B1 NB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	02-Sep-22	02-Sep-22	59
S1B-B1NB-3030	S1B B1 NB Abutment B - Install Pile	3	06-Sep-22	09-Sep-22	59
S1B-B1NB-3040	S1B B1 NB Abutment B - FRP Concrete Footer - MSE at Abutment	2	25-Oct-22	27-Oct-22	38
S1B-B1NB-3050	S1B B1 NB Abutment B - Erect / Backfill - MSE at Abutment	6	28-Oct-22	07-Nov-22	38
S1B-B1NB-3060	S1B B1 NB Abutment B - FRP Pile Cap	4	28-Nov-22	01-Dec-22	31
S1B-B1NB-3070	S1B B1 NB Abutment B - FRP Back Wall	3	02-Dec-22	07-Dec-22	31
S1B-B1NB-3080	S1B B1 NB Abutment B - Backfill Abutment Seat	2	09-Dec-22	12-Dec-22	60
S1B-B1NB-3090	S1B B1 NB Abutment B - Finish MSE Wall & Install Coping	4	14-Dec-22	20-Dec-22	60
	Stage 1B - I-81 Over RT112 - NB - Pier				
S1B-B1NB-4000	S1B B1 NB Pier - Install SOE	4	27-Sep-22	03-Oct-22	65



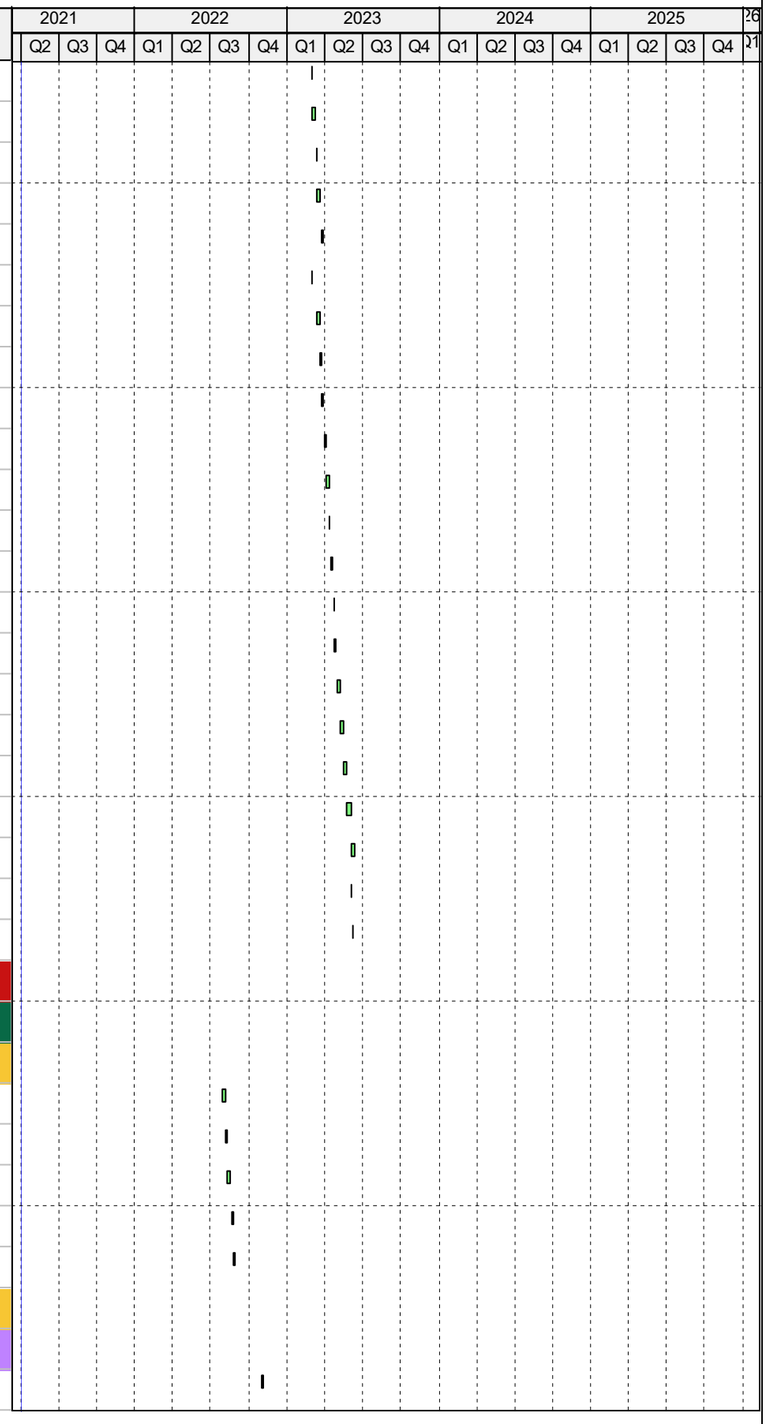
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B1NB-4010	S1B B1 NB Pier - Excavate to Grade	1	04-Oct-22	04-Oct-22	65
S1B-B1NB-4020	S1B B1 NB Pier - Install Pile	4	06-Oct-22	12-Oct-22	65
S1B-B1NB-4030	S1B B1 NB Pier - FRP Pile Cap	5	29-Dec-22	06-Jan-23	30
S1B-B1NB-4040	S1B B1 NB Pier - FRP Column	5	09-Jan-23	18-Jan-23	30
S1B-B1NB-4050	S1B B1 NB Pier - FRP Cap	4	20-Jan-23	27-Jan-23	30
Stage 1B - I-81 Over RT112 - NB - Superstructure					
S1B-B1NB-5000	S1B B1 NB Superstructure - Erect Girders Span A	1	30-Jan-23	30-Jan-23	44
S1B-B1NB-5010	S1B B1 NB Superstructure - Install Underbridge Protection / Overhangs Span A	4	01-Feb-23	08-Feb-23	44
S1B-B1NB-5020	S1B B1 NB Superstructure - FRP Integral Backwall Abutment A	2	10-Feb-23	13-Feb-23	55
S1B-B1NB-5030	S1B B1 NB Superstructure - Install SIP Decking Span A	5	10-Feb-23	20-Feb-23	44
S1B-B1NB-5040	S1B B1 NB Superstructure - Install Rebar Span A	3	22-Feb-23	27-Feb-23	49
S1B-B1NB-5050	S1B B1 NB Superstructure - Erect Girders Span B	1	01-Feb-23	01-Feb-23	48
S1B-B1NB-5060	S1B B1 NB Superstructure - Install Underbridge Protection / Overhangs Span B	4	10-Feb-23	17-Feb-23	45
S1B-B1NB-5070	S1B B1 NB Superstructure - FRP Integral Backwall Abutment B	2	20-Feb-23	22-Feb-23	54
S1B-B1NB-5080	S1B B1 NB Superstructure - Install SIP Decking Span B	5	22-Feb-23	02-Mar-23	44
S1B-B1NB-5090	S1B B1 NB Superstructure - Install Rebar Span B	3	03-Mar-23	08-Mar-23	44
S1B-B1NB-5100	S1B B1 NB Superstructure - Install Screed Rail / Dry Run	3	10-Mar-23	15-Mar-23	44
S1B-B1NB-5110	S1B B1 NB Superstructure - Deck Pour 1	1	17-Mar-23	17-Mar-23	44
S1B-B1NB-5120	S1B B1 NB Superstructure - Cure Deck Pour 1	7	18-Mar-23	24-Mar-23	87
S1B-B1NB-5130	S1B B1 NB Superstructure - Pier Closure Pour	1	27-Mar-23	27-Mar-23	44
S1B-B1NB-5140	S1B B1 NB Superstructure - FRP Sleeper Slab North Approach	3	28-Mar-23	31-Mar-23	44
S1B-B1NB-5150	S1B B1 NB Superstructure - FRP Approach Slab North Approach	5	03-Apr-23	12-Apr-23	44
S1B-B1NB-5160	S1B B1 NB Superstructure - FRP Sleeper Slab South Approach	3	14-Apr-23	19-Apr-23	44
S1B-B1NB-5170	S1B B1 NB Superstructure - FRP Approach Slab South Approach	5	21-Apr-23	28-Apr-23	44
S1B-B1NB-5180	S1B B1 NB Superstructure - FRP Barrier Walls / Install Conduit	6	01-May-23	10-May-23	44
S1B-B1NB-5190	S1B B1 NB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	12-May-23	22-May-23	44
S1B-B1NB-5200	S1B B1 NB Superstructure - Groove Bridge Deck	1	12-May-23	12-May-23	47
S1B-B1NB-5210	S1B B1 NB Superstructure - Striping	1	15-May-23	15-May-23	47
Stage 1B - Structures - I-81 Over RT 112 - SB					
Stage 1B - I-81 Over RT112 - SB - Demo Existing Structure					
S1B-B1SB-1000	S1B B1 SB Demo - Demo Existing Bridge Deck	5	16-Jun-22	23-Jun-22	67
S1B-B1SB-1010	S1B B1 SB Demo - Demo Existing Beams	2	24-Jun-22	27-Jun-22	67
S1B-B1SB-1020	S1B B1 SB Demo - Demo Existing Piers / Abutment	10	28-Jun-22	18-Jul-22	67



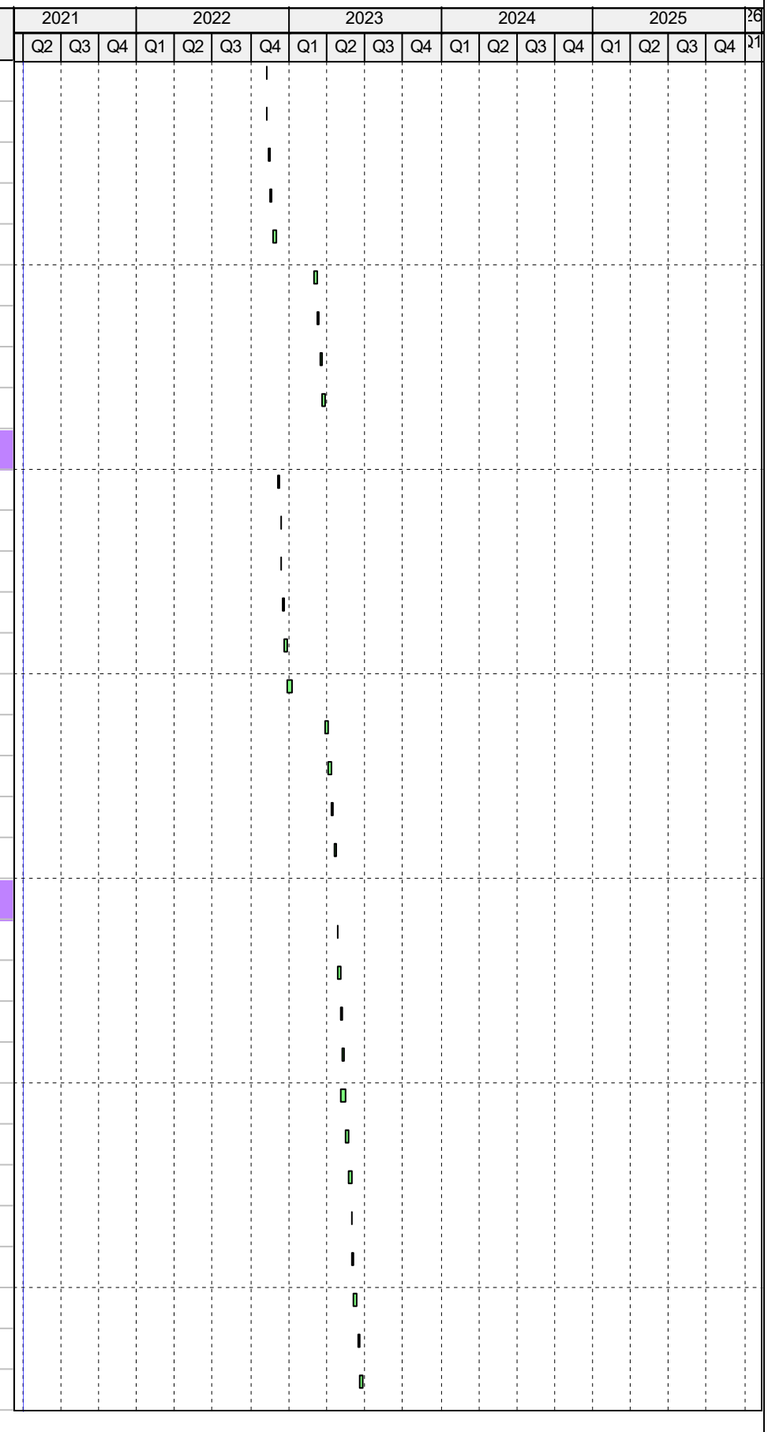
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B1SB-1030	S1B B1 SB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	19-Jul-22	21-Jul-22	67
S1B-B1SB-1040	S1B B1 SB Demo - Demo Existing Concrete Slope Protection	4	22-Jul-22	28-Jul-22	67
Stage 1B - I-81 Over RT112 - SB - Structures					
Stage 1B - I-81 Over RT112 - SB - Abutment A					
S1B-B1SB-2000	S1B B1 SB Abutment A - Install SOE Adjacent to Existing Bridge	3	12-Aug-22	16-Aug-22	59
S1B-B1SB-2010	S1B B1 SB Abutment A - Remove Existing Structure / Pavement	1	18-Aug-22	18-Aug-22	59
S1B-B1SB-2020	S1B B1 SB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	19-Aug-22	19-Aug-22	59
S1B-B1SB-2030	S1B B1 SB Abutment A - Install Pile	3	22-Aug-22	25-Aug-22	59
S1B-B1SB-2040	S1B B1 SB Abutment A - FRP Concrete Footer - MSE at Abutment	2	25-Oct-22	27-Oct-22	30
S1B-B1SB-2050	S1B B1 SB Abutment A - Erect / Backfill - MSE at Abutment	6	28-Oct-22	07-Nov-22	30
S1B-B1SB-2060	S1B B1 SB Abutment A - FRP Pile Cap	4	09-Nov-22	16-Nov-22	30
S1B-B1SB-2070	S1B B1 SB Abutment A - FRP Back Wall	3	18-Nov-22	23-Nov-22	30
S1B-B1SB-2080	S1B B1 SB Abutment A - Backfill Abutment Seat	2	28-Nov-22	29-Nov-22	67
S1B-B1SB-2090	S1B B1 SB Abutment A - Finish MSE Wall & Install Coping	4	30-Nov-22	05-Dec-22	67
Stage 1B - I-81 Over RT112 - SB - Abutment B					
S1B-B1SB-3000	S1B B1 SB Abutment B - Install SOE Adjacent to Existing Bridge	3	12-Sep-22	16-Sep-22	59
S1B-B1SB-3010	S1B B1 SB Abutment B - Remove Existing Structure / Pavement	1	19-Sep-22	19-Sep-22	59
S1B-B1SB-3020	S1B B1 SB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	20-Sep-22	20-Sep-22	59
S1B-B1SB-3030	S1B B1 SB Abutment B - Install Pile	3	22-Sep-22	26-Sep-22	59
S1B-B1SB-3040	S1B B1 SB Abutment B - FRP Concrete Footer - MSE at Abutment	2	28-Nov-22	29-Nov-22	30
S1B-B1SB-3050	S1B B1 SB Abutment B - Erect / Backfill - MSE at Abutment	6	30-Nov-22	09-Dec-22	30
S1B-B1SB-3060	S1B B1 SB Abutment B - FRP Pile Cap	4	12-Dec-22	19-Dec-22	30
S1B-B1SB-3070	S1B B1 SB Abutment B - FRP Back Wall	3	20-Dec-22	27-Dec-22	30
S1B-B1SB-3080	S1B B1 SB Abutment B - Backfill Abutment Seat	2	29-Dec-22	30-Dec-22	52
S1B-B1SB-3090	S1B B1 SB Abutment B - Finish MSE Wall & Install Coping	4	03-Jan-23	09-Jan-23	52
Stage 1B - I-81 Over RT112 - SB - Pier					
S1B-B1SB-4000	S1B B1 SB Pier - Install SOE	4	14-Oct-22	21-Oct-22	70
S1B-B1SB-4010	S1B B1 SB Pier - Excavate to Grade	1	24-Oct-22	24-Oct-22	70
S1B-B1SB-4020	S1B B1 SB Pier - Install Pile	4	25-Oct-22	31-Oct-22	70
S1B-B1SB-4030	S1B B1 SB Pier - FRP Pile Cap	5	30-Jan-23	08-Feb-23	30
S1B-B1SB-4040	S1B B1 SB Pier - FRP Column	5	10-Feb-23	20-Feb-23	30
S1B-B1SB-4050	S1B B1 SB Pier - FRP Cap	4	22-Feb-23	01-Mar-23	30
Stage 1B - I-81 Over RT112 - SB - Superstructure					



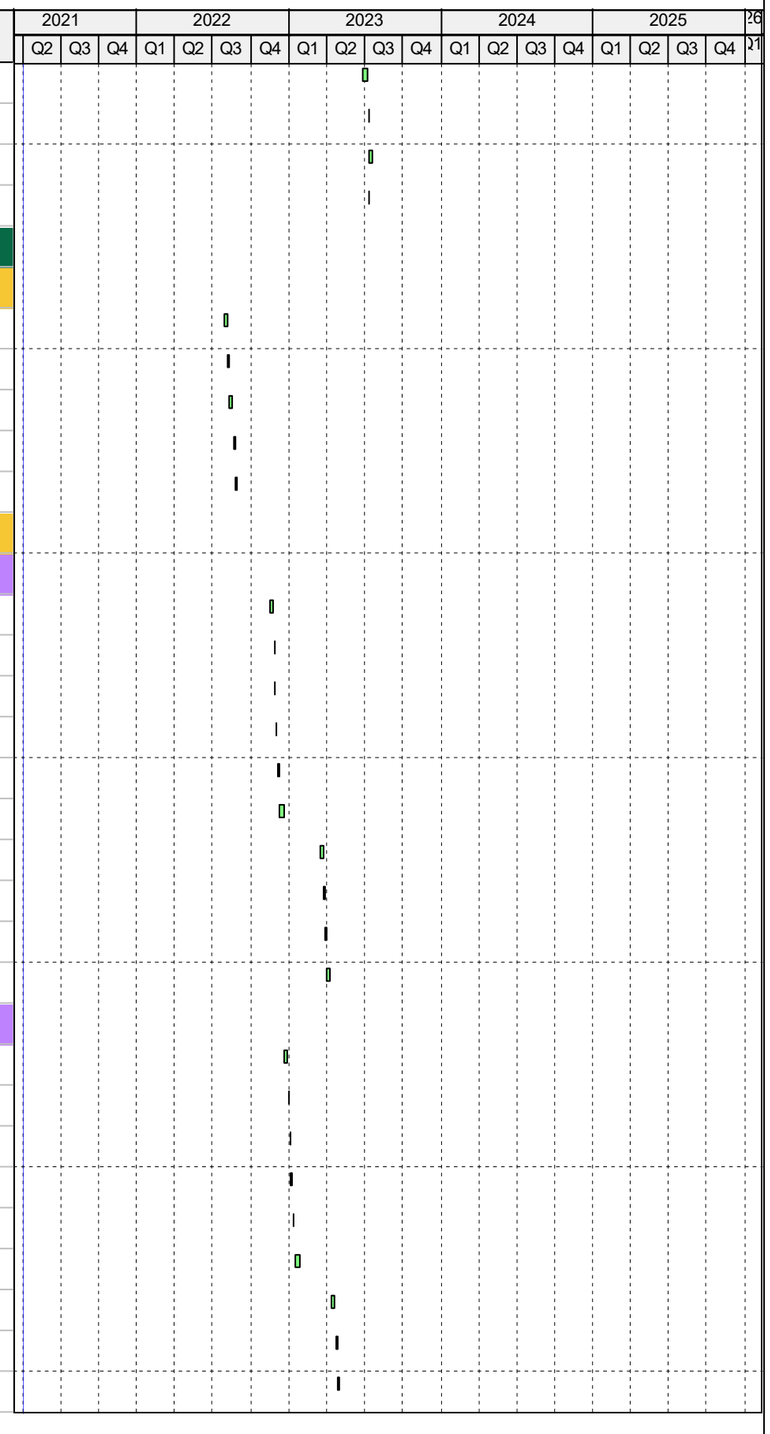
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B1SB-5000	S1B B1 SB Superstructure - Erect Girders Span A	1	02-Mar-23	02-Mar-23	30
S1B-B1SB-5010	S1B B1 SB Superstructure - Install Underbridge Protection / Overhangs Span A	4	03-Mar-23	10-Mar-23	30
S1B-B1SB-5020	S1B B1 SB Superstructure - FRP Integral Backwall Abutment A	2	13-Mar-23	15-Mar-23	41
S1B-B1SB-5030	S1B B1 SB Superstructure - Install SIP Decking Span A	5	13-Mar-23	21-Mar-23	30
S1B-B1SB-5040	S1B B1 SB Superstructure - Install Rebar Span A	3	23-Mar-23	27-Mar-23	35
S1B-B1SB-5050	S1B B1 SB Superstructure - Erect Girders Span B	1	03-Mar-23	03-Mar-23	34
S1B-B1SB-5060	S1B B1 SB Superstructure - Install Underbridge Protection / Overhangs Span B	4	13-Mar-23	20-Mar-23	31
S1B-B1SB-5070	S1B B1 SB Superstructure - FRP Integral Backwall Abutment B	2	21-Mar-23	23-Mar-23	40
S1B-B1SB-5080	S1B B1 SB Superstructure - Install SIP Decking Span B	5	23-Mar-23	30-Mar-23	30
S1B-B1SB-5090	S1B B1 SB Superstructure - Install Rebar Span B	3	31-Mar-23	04-Apr-23	30
S1B-B1SB-5100	S1B B1 SB Superstructure - Install Screed Rail / Dry Run	3	06-Apr-23	12-Apr-23	30
S1B-B1SB-5110	S1B B1 SB Superstructure - Deck Pour 1	1	14-Apr-23	14-Apr-23	30
S1B-B1SB-5120	S1B B1 SB Superstructure - Cure Deck Pour 1	7	15-Apr-23	21-Apr-23	59
S1B-B1SB-5130	S1B B1 SB Superstructure - Pier Closure Pour	1	24-Apr-23	24-Apr-23	31
S1B-B1SB-5140	S1B B1 SB Superstructure - FRP Sleeper Slab North Approach	3	25-Apr-23	28-Apr-23	31
S1B-B1SB-5150	S1B B1 SB Superstructure - FRP Approach Slab North Approach	5	01-May-23	08-May-23	31
S1B-B1SB-5160	S1B B1 SB Superstructure - FRP Sleeper Slab South Approach	3	10-May-23	15-May-23	31
S1B-B1SB-5170	S1B B1 SB Superstructure - FRP Approach Slab South Approach	5	17-May-23	25-May-23	31
S1B-B1SB-5180	S1B B1 SB Superstructure - FRP Barrier Walls / Install Conduit	6	26-May-23	05-Jun-23	31
S1B-B1SB-5190	S1B B1 SB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	06-Jun-23	13-Jun-23	31
S1B-B1SB-5200	S1B B1 SB Superstructure - Groove Bridge Deck	1	06-Jun-23	06-Jun-23	34
S1B-B1SB-5210	S1B B1 SB Superstructure - Striping	1	08-Jun-23	08-Jun-23	34
Stage 1B - Structures - Bridge 2: I-81 Over RT 635					
Stage 1B - Structures - I-81 Over RT 635 - NB					
Stage 1B - I-81 Over RT 635 - NB - Demo Existing Structure					
S1B-B2NB-1000	S1B B2 NB Demo - Demo Existing Bridge Deck	5	29-Jul-22	05-Aug-22	150
S1B-B2NB-1010	S1B B2 NB Demo - Demo Existing Beams	2	08-Aug-22	09-Aug-22	150
S1B-B2NB-1020	S1B B2 NB Demo - Demo Existing Abutments	6	11-Aug-22	19-Aug-22	150
S1B-B2NB-1030	S1B B2 NB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	22-Aug-22	23-Aug-22	150
S1B-B2NB-1040	S1B B2 NB Demo - Demo Existing Concrete Slope Protection	4	25-Aug-22	30-Aug-22	159
Stage 1B - I-81 Over RT 635 - NB - Structures					
Stage 1B - I-81 Over RT 635 - NB - Abutment A					
S1B-B2NB-2000	S1B B2 NB Abutment A - Install SOE Adjacent to Existing Bridge	3	01-Nov-22	04-Nov-22	115



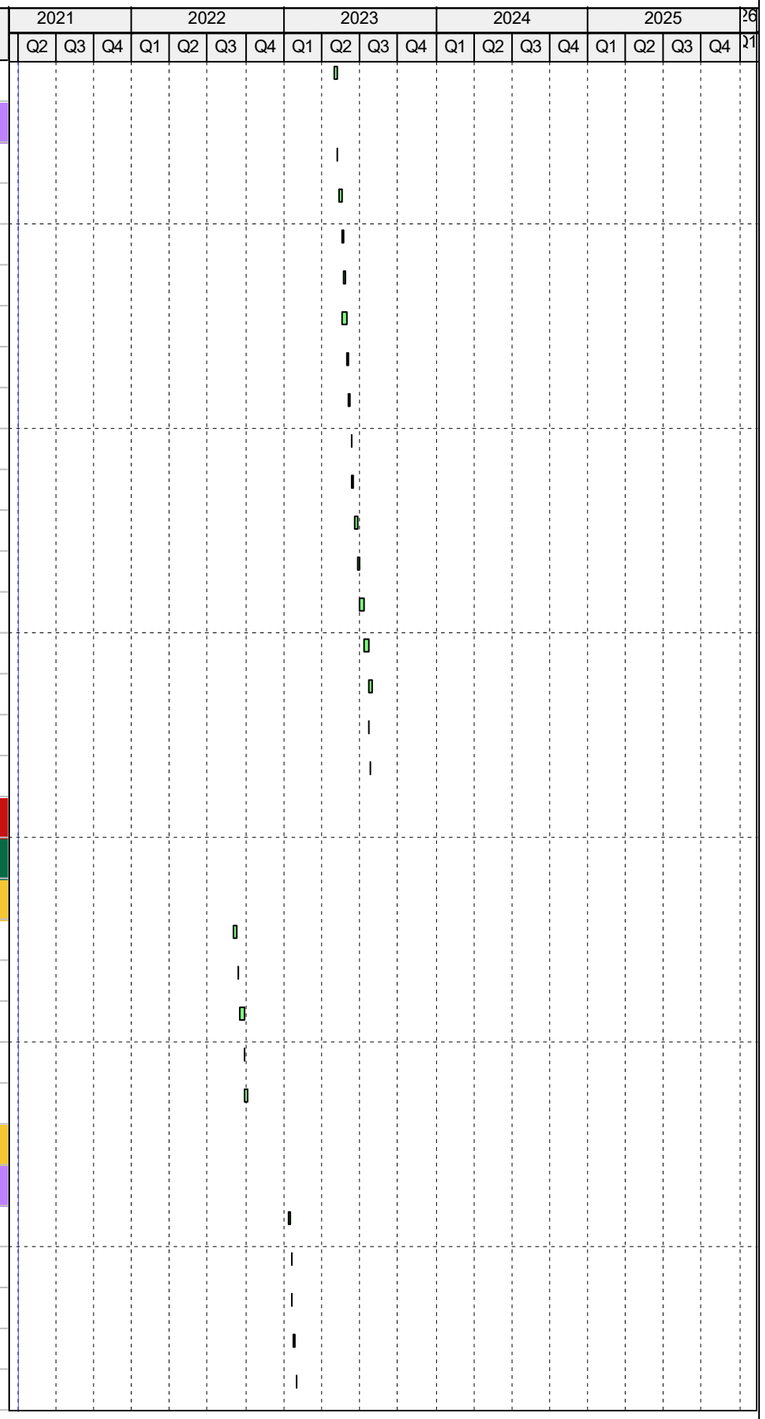
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B2NB-2010	S1B B2 NB Abutment A - Remove Existing Structure / Pavement	1	07-Nov-22	07-Nov-22	115
S1B-B2NB-2020	S1B B2 NB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	09-Nov-22	09-Nov-22	115
S1B-B2NB-2030	S1B B2 NB Abutment A - Install Pile	3	11-Nov-22	16-Nov-22	115
S1B-B2NB-2040	S1B B2 NB Abutment A - FRP Concrete Footer - MSE at Abutment	2	18-Nov-22	21-Nov-22	121
S1B-B2NB-2050	S1B B2 NB Abutment A - Erect / Backfill - MSE at Abutment	6	23-Nov-22	02-Dec-22	121
S1B-B2NB-2060	S1B B2 NB Abutment A - FRP Pile Cap	4	02-Mar-23	08-Mar-23	83
S1B-B2NB-2070	S1B B2 NB Abutment A - FRP Back Wall	3	10-Mar-23	15-Mar-23	83
S1B-B2NB-2080	S1B B2 NB Abutment A - Backfill Abutment Seat	2	17-Mar-23	20-Mar-23	88
S1B-B2NB-2090	S1B B2 NB Abutment A - Finish MSE Wall & Install Coping	4	21-Mar-23	27-Mar-23	150
Stage 1B - I-81 Over RT 635 - NB - Abutment B					
S1B-B2NB-3000	S1B B2 NB Abutment B - Install SOE Adjacent to Existing Bridge	3	05-Dec-22	09-Dec-22	115
S1B-B2NB-3010	S1B B2 NB Abutment B - Remove Existing Structure / Pavement	1	12-Dec-22	12-Dec-22	115
S1B-B2NB-3020	S1B B2 NB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	14-Dec-22	14-Dec-22	115
S1B-B2NB-3030	S1B B2 NB Abutment B - Install Pile	3	16-Dec-22	20-Dec-22	115
S1B-B2NB-3040	S1B B2 NB Abutment B - FRP Concrete Footer - MSE at Abutment	2	22-Dec-22	27-Dec-22	119
S1B-B2NB-3050	S1B B2 NB Abutment B - Erect / Backfill - MSE at Abutment	6	29-Dec-22	09-Jan-23	119
S1B-B2NB-3060	S1B B2 NB Abutment B - FRP Pile Cap	4	30-Mar-23	04-Apr-23	83
S1B-B2NB-3070	S1B B2 NB Abutment B - FRP Back Wall	3	06-Apr-23	12-Apr-23	83
S1B-B2NB-3080	S1B B2 NB Abutment B - Backfill Abutment Seat	2	14-Apr-23	17-Apr-23	136
S1B-B2NB-3090	S1B B2 NB Abutment B - Finish MSE Wall & Install Coping	4	19-Apr-23	25-Apr-23	136
Stage 1B - I-81 Over RT 635 - NB - Superstructure					
S1B-B2NB-4000	S1B B2 NB Superstructure - Erect Girders	1	27-Apr-23	27-Apr-23	136
S1B-B2NB-4010	S1B B2 NB Superstructure - Install Underbridge Protection / Overhangs	4	28-Apr-23	04-May-23	136
S1B-B2NB-4020	S1B B2 NB Superstructure - FRP Integral Backwall Abutment A	2	05-May-23	08-May-23	145
S1B-B2NB-4030	S1B B2 NB Superstructure - FRP Integral Backwall Abutment B	2	10-May-23	12-May-23	145
S1B-B2NB-4040	S1B B2 NB Superstructure - Install SIP Decking Spa	5	05-May-23	15-May-23	136
S1B-B2NB-4050	S1B B2 NB Superstructure - Install Rebar	4	17-May-23	23-May-23	141
S1B-B2NB-4060	S1B B2 NB Superstructure - Install Screed Rail / Dry Run	3	25-May-23	30-May-23	141
S1B-B2NB-4070	S1B B2 NB Superstructure - Deck Pour	1	31-May-23	31-May-23	141
S1B-B2NB-4080	S1B B2 NB Superstructure - FRP Sleeper Slab North Approach	3	01-Jun-23	05-Jun-23	141
S1B-B2NB-4090	S1B B2 NB Superstructure - FRP Approach Slab North Approach	5	06-Jun-23	13-Jun-23	141
S1B-B2NB-4100	S1B B2 NB Superstructure - FRP Sleeper Slab North Approach	3	15-Jun-23	19-Jun-23	141
S1B-B2NB-4110	S1B B2 NB Superstructure - FRP Approach Slab North Approach	5	20-Jun-23	27-Jun-23	141



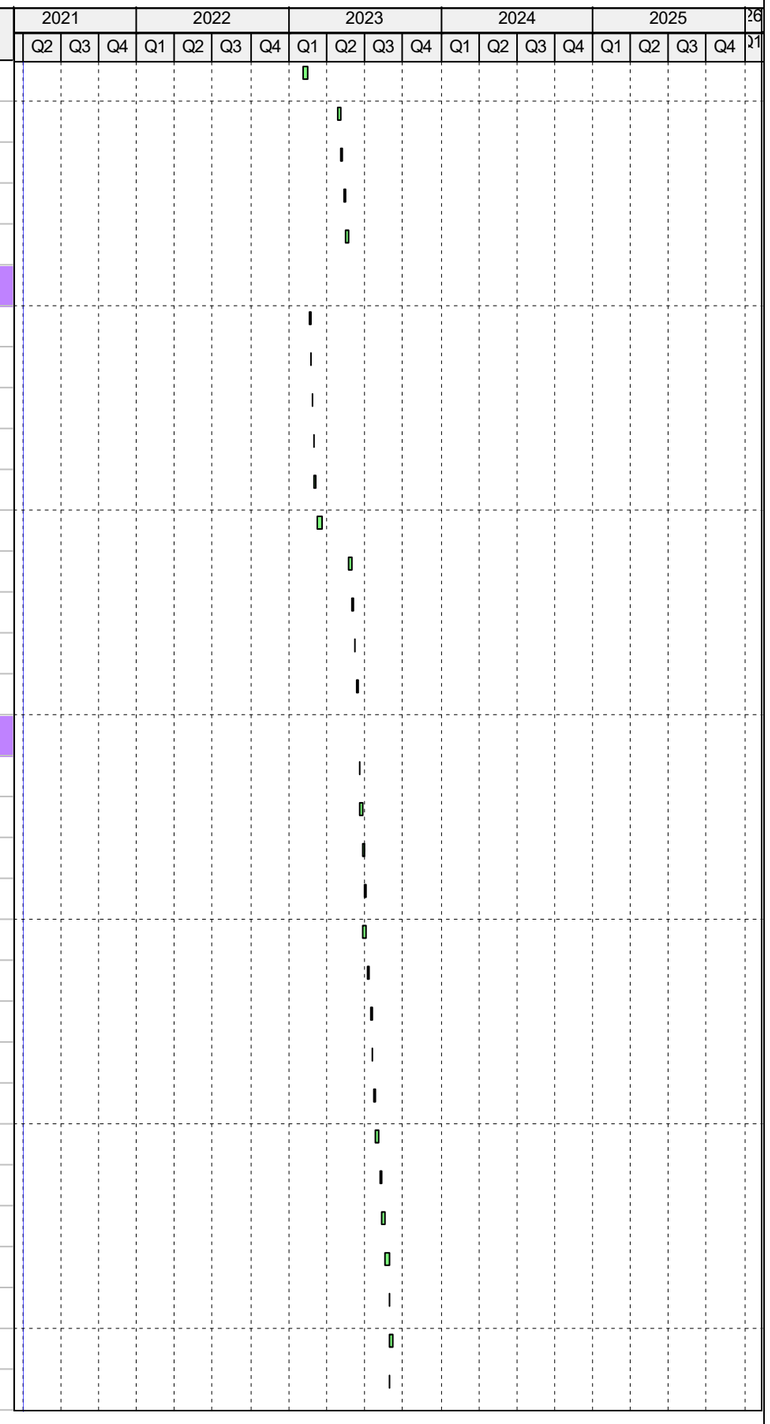
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B2NB-4120	S1B B2 NB Superstructure - FRP Barrier Walls / Install Conduit	6	29-Jun-23	10-Jul-23	141
S1B-B2NB-4130	S1B B2 NB Superstructure - Groove Bridge Deck	1	12-Jul-23	12-Jul-23	152
S1B-B2NB-4140	S1B B2 NB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	12-Jul-23	20-Jul-23	141
S1B-B2NB-4150	S1B B2 NB Superstructure - Striping	1	14-Jul-23	14-Jul-23	152
Stage 1B - Structures - I-81 Over RT 635 - SB					
Stage 1B - I-81 Over RT 635 - SB - Demo Existing Structure					
S1B-B2SB-1000	S1B B2 SB Demo - Demo Existing Bridge Deck	5	29-Jul-22	05-Aug-22	154
S1B-B2SB-1010	S1B B2 SB Demo - Demo Existing Beams	2	08-Aug-22	09-Aug-22	154
S1B-B2SB-1020	S1B B2 SB Demo - Demo Existing Abutments	6	11-Aug-22	19-Aug-22	154
S1B-B2SB-1030	S1B B2 SB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	22-Aug-22	23-Aug-22	154
S1B-B2SB-1040	S1B B2 SB Demo - Demo Existing Concrete Slope Protection	4	25-Aug-22	30-Aug-22	154
Stage 1B - I-81 Over RT 635 - SB - Structures					
Stage 1B - I-81 Over RT 635 - SB - Abutment A					
S1B-B2SB-2000	S1B B2 SB Abutment A - Install SOE Adjacent to Existing Bridge	3	18-Nov-22	23-Nov-22	115
S1B-B2SB-2010	S1B B2 SB Abutment A - Remove Existing Structure / Pavement	1	28-Nov-22	28-Nov-22	115
S1B-B2SB-2020	S1B B2 SB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	29-Nov-22	29-Nov-22	115
S1B-B2SB-2030	S1B B2 SB Abutment A - Install Pile	3	30-Nov-22	02-Dec-22	115
S1B-B2SB-2040	S1B B2 SB Abutment A - FRP Concrete Footer - MSE at Abutment	2	05-Dec-22	07-Dec-22	120
S1B-B2SB-2050	S1B B2 SB Abutment A - Erect / Backfill - MSE at Abutment	6	09-Dec-22	20-Dec-22	120
S1B-B2SB-2060	S1B B2 SB Abutment A - FRP Pile Cap	4	17-Mar-23	23-Mar-23	83
S1B-B2SB-2070	S1B B2 SB Abutment A - FRP Back Wall	3	24-Mar-23	28-Mar-23	83
S1B-B2SB-2080	S1B B2 SB Abutment A - Backfill Abutment Seat	2	30-Mar-23	31-Mar-23	148
S1B-B2SB-2090	S1B B2 SB Abutment A - Finish MSE Wall & Install Coping	4	03-Apr-23	10-Apr-23	148
Stage 1B - I-81 Over RT 635 - SB - Abutment B					
S1B-B2SB-3000	S1B B2 SB Abutment B - Install SOE Adjacent to Existing Bridge	3	22-Dec-22	29-Dec-22	115
S1B-B2SB-3010	S1B B2 SB Abutment B - Remove Existing Structure / Pavement	1	30-Dec-22	30-Dec-22	115
S1B-B2SB-3020	S1B B2 SB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	03-Jan-23	03-Jan-23	115
S1B-B2SB-3030	S1B B2 SB Abutment B - Install Pile	3	04-Jan-23	09-Jan-23	115
S1B-B2SB-3040	S1B B2 SB Abutment B - FRP Concrete Footer - MSE at Abutment	2	11-Jan-23	13-Jan-23	118
S1B-B2SB-3050	S1B B2 SB Abutment B - Erect / Backfill - MSE at Abutment	6	16-Jan-23	27-Jan-23	118
S1B-B2SB-3060	S1B B2 SB Abutment B - FRP Pile Cap	4	14-Apr-23	21-Apr-23	83
S1B-B2SB-3070	S1B B2 SB Abutment B - FRP Back Wall	3	24-Apr-23	27-Apr-23	83
S1B-B2SB-3080	S1B B2 SB Abutment B - Backfill Abutment Seat	2	28-Apr-23	01-May-23	134



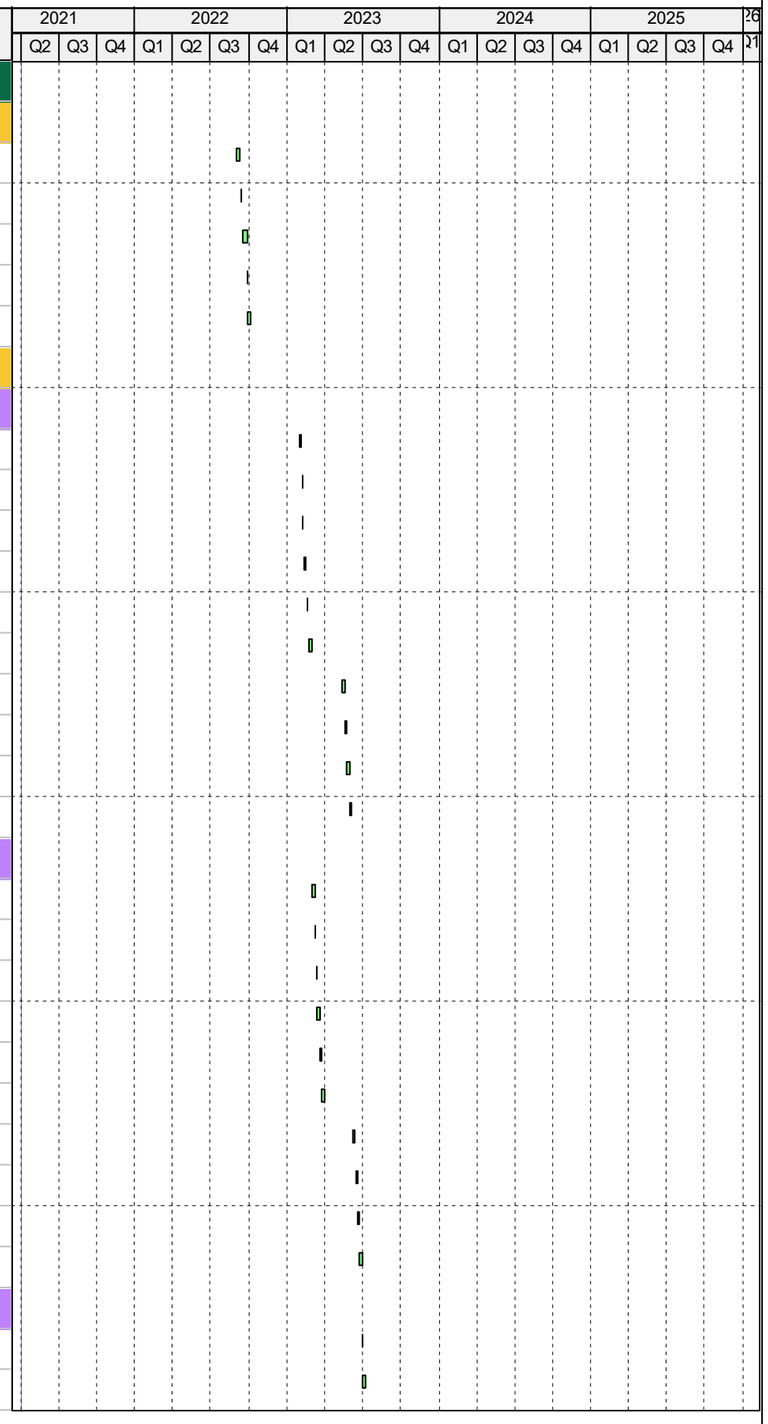
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B2SB-3090	S1B B2 SB Abutment B - Finish MSE Wall & Install Coping	4	02-May-23	08-May-23	134
Stage 1B - I-81 Over RT 635 - SB - Superstructure					
S1B-B2SB-4000	S1B B2 SB Superstructure - Erect Girders	1	10-May-23	10-May-23	134
S1B-B2SB-4010		4	12-May-23	19-May-23	134
S1B-B2SB-4020	S1B B2 SB Superstructure - FRP Integral Backwall Abutment A	2	22-May-23	23-May-23	142
S1B-B2SB-4030	S1B B2 SB Superstructure - FRP Integral Backwall Abutment B	2	25-May-23	26-May-23	142
S1B-B2SB-4040	S1B B2 SB Superstructure - Install SIP Decking Spa	5	22-May-23	30-May-23	134
S1B-B2SB-4050	S1B B2 SB Superstructure - Install Rebar	4	31-May-23	05-Jun-23	134
S1B-B2SB-4060	S1B B2 SB Superstructure - Install Screed Rail / Dry Run	3	06-Jun-23	09-Jun-23	134
S1B-B2SB-4070	S1B B2 SB Superstructure - Deck Pour	1	12-Jun-23	12-Jun-23	134
S1B-B2SB-4080	S1B B2 SB Superstructure - FRP Sleeper Slab North Approach	3	13-Jun-23	16-Jun-23	134
S1B-B2SB-4090	S1B B2 SB Superstructure - FRP Approach Slab North Approach	5	19-Jun-23	26-Jun-23	134
S1B-B2SB-4100	S1B B2 SB Superstructure - FRP Sleeper Slab North Approach	3	27-Jun-23	30-Jun-23	134
S1B-B2SB-4110	S1B B2 SB Superstructure - FRP Approach Slab North Approach	5	03-Jul-23	12-Jul-23	134
S1B-B2SB-4120	S1B B2 SB Superstructure - FRP Barrier Walls / Install Conduit	6	14-Jul-23	24-Jul-23	134
S1B-B2SB-4130	S1B B2 SB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	25-Jul-23	01-Aug-23	134
S1B-B2SB-4140	S1B B2 SB Superstructure - Groove Bridge Deck	1	25-Jul-23	25-Jul-23	145
S1B-B2SB-4150	S1B B2 SB Superstructure - Striping	1	27-Jul-23	27-Jul-23	145
Stage 1B - Structures - Bridge 3: I-81 Over RT 619					
Stage 1B - Structures - I-81 Over RT 619 - NB					
Stage 1B - I-81 Over RT 619 - NB - Demo Existing Structure					
S1B-B3NB-1000	S1B B3 NB Demo - Demo Existing Bridge Deck	5	01-Sep-22	09-Sep-22	159
S1B-B3NB-1010	S1B B3 NB Demo - Demo Existing Beams	2	12-Sep-22	14-Sep-22	159
S1B-B3NB-1020	S1B B3 NB Demo - Demo Existing Abutments	6	16-Sep-22	26-Sep-22	159
S1B-B3NB-1030	S1B B3 NB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	27-Sep-22	29-Sep-22	159
S1B-B3NB-1040	S1B B3 NB Demo - Demo Existing Concrete Slope Protection	4	30-Sep-22	06-Oct-22	159
Stage 1B - I-81 Over RT 619 - NB - Structures					
Stage 1B - I-81 Over RT 619 - NB - Abutment A					
S1B-B3NB-2000	S1B B3 NB Abutment A - Install SOE Adjacent to Existing Bridge	3	11-Jan-23	16-Jan-23	115
S1B-B3NB-2010	S1B B3 NB Abutment A - Remove Existing Structure / Pavement	1	18-Jan-23	18-Jan-23	115
S1B-B3NB-2020	S1B B3 NB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	20-Jan-23	20-Jan-23	115
S1B-B3NB-2030	S1B B3 NB Abutment A - Install Pile	3	23-Jan-23	27-Jan-23	115
S1B-B3NB-2040	S1B B3 NB Abutment A - FRP Concrete Footer - MSE at Abutment	2	30-Jan-23	01-Feb-23	117



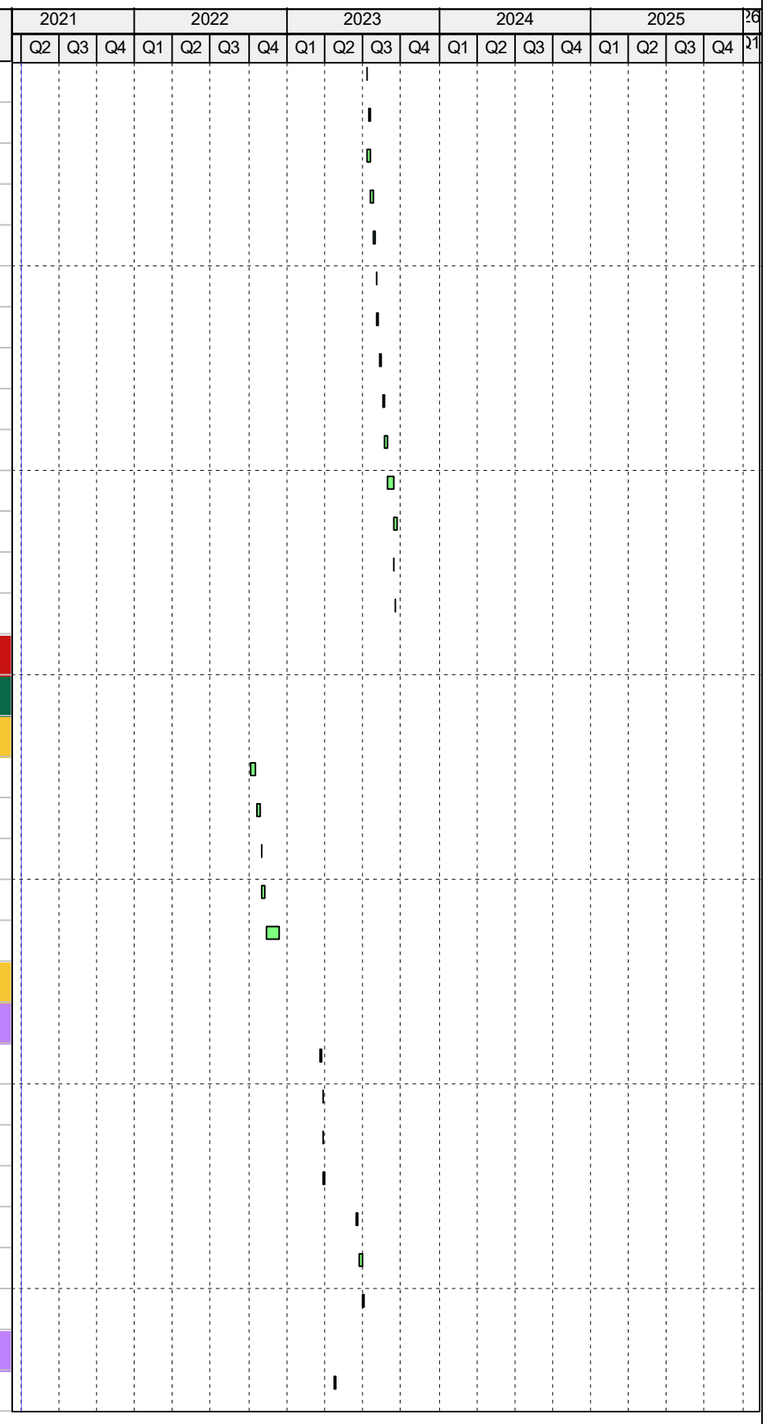
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B3NB-2050	S1B B3 NB Abutment A - Erect / Backfill - MSE at Abutment	6	03-Feb-23	15-Feb-23	117
S1B-B3NB-2060	S1B B3 NB Abutment A - FRP Pile Cap	4	28-Apr-23	04-May-23	83
S1B-B3NB-2070	S1B B3 NB Abutment A - FRP Back Wall	3	05-May-23	10-May-23	83
S1B-B3NB-2080	S1B B3 NB Abutment A - Backfill Abutment Seat	2	12-May-23	15-May-23	127
S1B-B3NB-2090	S1B B3 NB Abutment A - Finish MSE Wall & Install Coping	4	17-May-23	23-May-23	127
Stage 1B - I-81 Over RT 619 - NB - Abutment B					
S1B-B3NB-3000	S1B B3 NB Abutment B - Install SOE Adjacent to Existing Bridge	3	17-Feb-23	22-Feb-23	115
S1B-B3NB-3010	S1B B3 NB Abutment B - Remove Existing Structure / Pavement	1	24-Feb-23	24-Feb-23	115
S1B-B3NB-3020	S1B B3 NB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	27-Feb-23	27-Feb-23	115
S1B-B3NB-3030	S1B B3 NB Abutment B - Install Pile	2	01-Mar-23	02-Mar-23	115
S1B-B3NB-3040	S1B B3 NB Abutment B - FRP Concrete Footer - MSE at Abutment	2	03-Mar-23	06-Mar-23	116
S1B-B3NB-3050	S1B B3 NB Abutment B - Erect / Backfill - MSE at Abutment	6	08-Mar-23	20-Mar-23	116
S1B-B3NB-3060	S1B B3 NB Abutment B - FRP Pile Cap	4	26-May-23	01-Jun-23	83
S1B-B3NB-3070	S1B B3 NB Abutment B - FRP Back Wall	3	02-Jun-23	06-Jun-23	83
S1B-B3NB-3080	S1B B3 NB Abutment B - Backfill Abutment Seat	2	08-Jun-23	09-Jun-23	113
S1B-B3NB-3090	S1B B3 NB Abutment B - Finish MSE Wall & Install Coping	4	12-Jun-23	16-Jun-23	113
Stage 1B - I-81 Over RT 619 - NB - Superstructure					
S1B-B3NB-4000	S1B B3 NB Superstructure - Erect Girders	1	19-Jun-23	19-Jun-23	113
S1B-B3NB-4010	S1B B3 NB Superstructure - Install Underbridge Protection / Overhangs	4	20-Jun-23	26-Jun-23	113
S1B-B3NB-4020	S1B B3 NB Superstructure - FRP Integral Backwall Abutment A	2	27-Jun-23	29-Jun-23	122
S1B-B3NB-4030	S1B B3 NB Superstructure - FRP Integral Backwall Abutment B	2	30-Jun-23	03-Jul-23	122
S1B-B3NB-4040	S1B B3 NB Superstructure - Install SIP Decking Spa	5	27-Jun-23	05-Jul-23	113
S1B-B3NB-4050	S1B B3 NB Superstructure - Install Rebar	4	07-Jul-23	14-Jul-23	118
S1B-B3NB-4060	S1B B3 NB Superstructure - Install Screed Rail / Dry Run	3	17-Jul-23	20-Jul-23	118
S1B-B3NB-4070	S1B B3 NB Superstructure - Deck Pour	1	21-Jul-23	21-Jul-23	118
S1B-B3NB-4080	S1B B3 NB Superstructure - FRP Sleeper Slab North Approach	3	24-Jul-23	27-Jul-23	118
S1B-B3NB-4090	S1B B3 NB Superstructure - FRP Approach Slab North Approach	5	28-Jul-23	04-Aug-23	118
S1B-B3NB-4100	S1B B3 NB Superstructure - FRP Sleeper Slab North Approach	3	07-Aug-23	10-Aug-23	118
S1B-B3NB-4110	S1B B3 NB Superstructure - FRP Approach Slab North Approach	5	11-Aug-23	18-Aug-23	118
S1B-B3NB-4120	S1B B3 NB Superstructure - FRP Barrier Walls / Install Conduit	6	21-Aug-23	29-Aug-23	118
S1B-B3NB-4130	S1B B3 NB Superstructure - Groove Bridge Deck	1	31-Aug-23	31-Aug-23	125
S1B-B3NB-4140	S1B B3 NB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	31-Aug-23	08-Sep-23	118
S1B-B3NB-4150	S1B B3 NB Superstructure - Striping	1	01-Sep-23	01-Sep-23	125



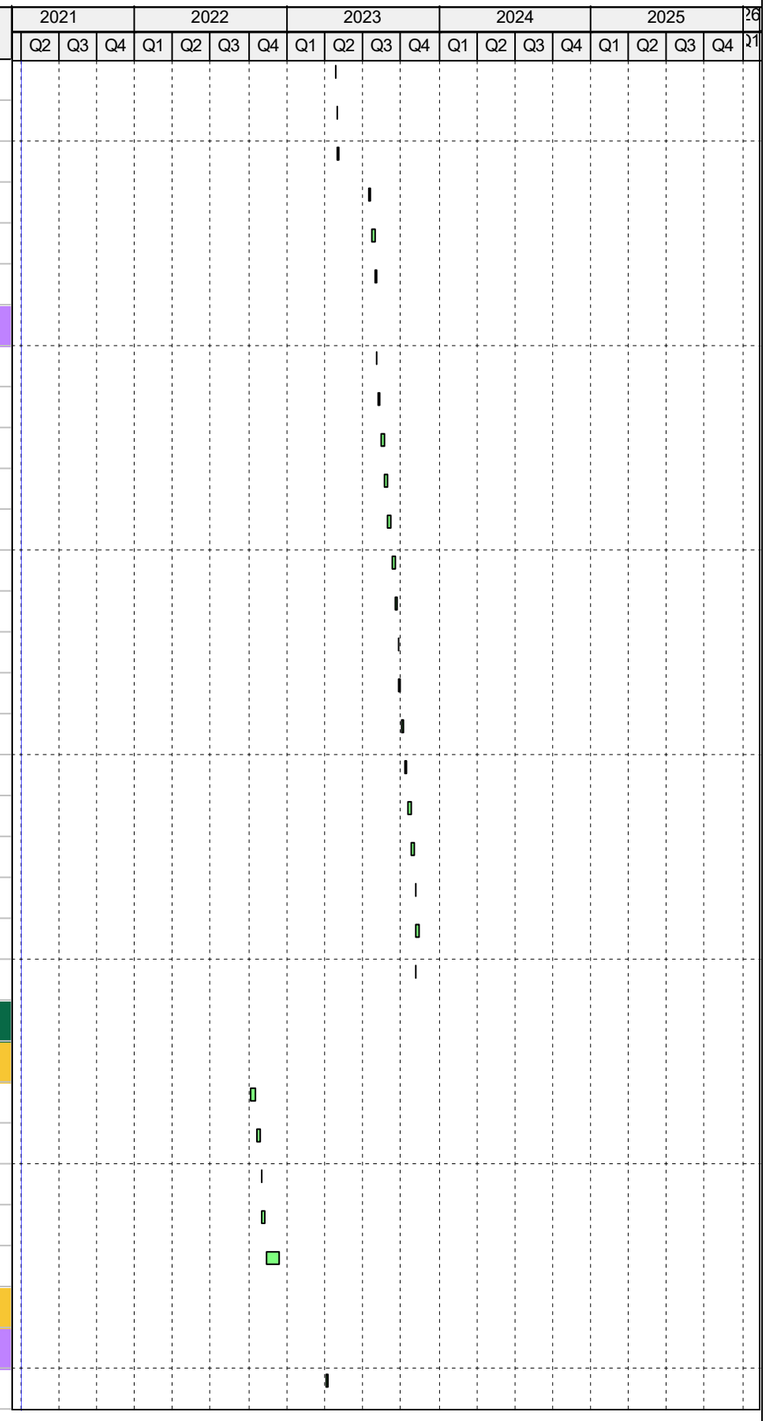
Activity ID	Activity Name	OD	Start	Finish	TF
Stage 1B - Structures - I-81 Over RT 619 - SB					
Stage 1B - I-81 Over RT 619 - SB - Demo Existing Structure					
S1B-B3SB-1000	S1B B3 SB Demo - Demo Existing Bridge Deck	5	01-Sep-22	09-Sep-22	167
S1B-B3SB-1010	S1B B3 SB Demo - Demo Existing Beams	2	12-Sep-22	14-Sep-22	167
S1B-B3SB-1020	S1B B3 SB Demo - Demo Existing Abutments	6	16-Sep-22	26-Sep-22	167
S1B-B3SB-1030	S1B B3 SB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	27-Sep-22	29-Sep-22	167
S1B-B3SB-1040	S1B B3 SB Demo - Demo Existing Concrete Slope Protection	4	30-Sep-22	06-Oct-22	167
Stage 1B - I-81 Over RT 619 - SB - Structures					
Stage 1B - I-81 Over RT 619 - SB - Abutment A					
S1B-B3SB-2000	S1B B3 SB Abutment A - Install SOE Adjacent to Existing Bridge	3	30-Jan-23	03-Feb-23	115
S1B-B3SB-2010	S1B B3 SB Abutment A - Remove Existing Structure / Pavement	1	06-Feb-23	06-Feb-23	115
S1B-B3SB-2020	S1B B3 SB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	08-Feb-23	08-Feb-23	115
S1B-B3SB-2030	S1B B3 SB Abutment A - Install Pile	3	10-Feb-23	15-Feb-23	115
S1B-B3SB-2040	S1B B3 SB Abutment A - FRP Concrete Footer - MSE at Abutment	2	17-Feb-23	20-Feb-23	116
S1B-B3SB-2050	S1B B3 SB Abutment A - Erect / Backfill - MSE at Abutment	6	22-Feb-23	03-Mar-23	116
S1B-B3SB-2060	S1B B3 SB Abutment A - FRP Pile Cap	4	12-May-23	19-May-23	83
S1B-B3SB-2070	S1B B3 SB Abutment A - FRP Back Wall	3	22-May-23	25-May-23	83
S1B-B3SB-2080	S1B B3 SB Abutment A - Backfill Abutment Seat	2	26-May-23	30-May-23	125
S1B-B3SB-2090	S1B B3 SB Abutment A - Finish MSE Wall & Install Coping	4	31-May-23	05-Jun-23	125
Stage 1B - I-81 Over RT 619 - SB - Abutment B					
S1B-B3SB-3000	S1B B3 SB Abutment B - Install SOE Adjacent to Existing Bridge	3	03-Mar-23	08-Mar-23	115
S1B-B3SB-3010	S1B B3 SB Abutment B - Remove Existing Structure / Pavement	1	10-Mar-23	10-Mar-23	115
S1B-B3SB-3020	S1B B3 SB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	13-Mar-23	13-Mar-23	115
S1B-B3SB-3030	S1B B3 SB Abutment B - Install Pile	3	15-Mar-23	20-Mar-23	115
S1B-B3SB-3040	S1B B3 SB Abutment B - FRP Concrete Footer - MSE at Abutment	2	21-Mar-23	23-Mar-23	115
S1B-B3SB-3050	S1B B3 SB Abutment B - Erect / Backfill - MSE at Abutment	6	24-Mar-23	03-Apr-23	115
S1B-B3SB-3060	S1B B3 SB Abutment B - FRP Pile Cap	4	08-Jun-23	13-Jun-23	83
S1B-B3SB-3070	S1B B3 SB Abutment B - FRP Back Wall	3	15-Jun-23	19-Jun-23	111
S1B-B3SB-3080	S1B B3 SB Abutment B - Backfill Abutment Seat	2	20-Jun-23	22-Jun-23	111
S1B-B3SB-3090	S1B B3 SB Abutment B - Finish MSE Wall & Install Coping	4	23-Jun-23	29-Jun-23	111
Stage 1B - I-81 Over RT 619 - SB - Superstructure					
S1B-B3SB-4000	S1B B3 SB Superstructure - Erect Girders	1	30-Jun-23	30-Jun-23	111
S1B-B3SB-4010	S1B B3 SB Superstructure - Install Underbridge Protection / Overhangs	4	03-Jul-23	10-Jul-23	111



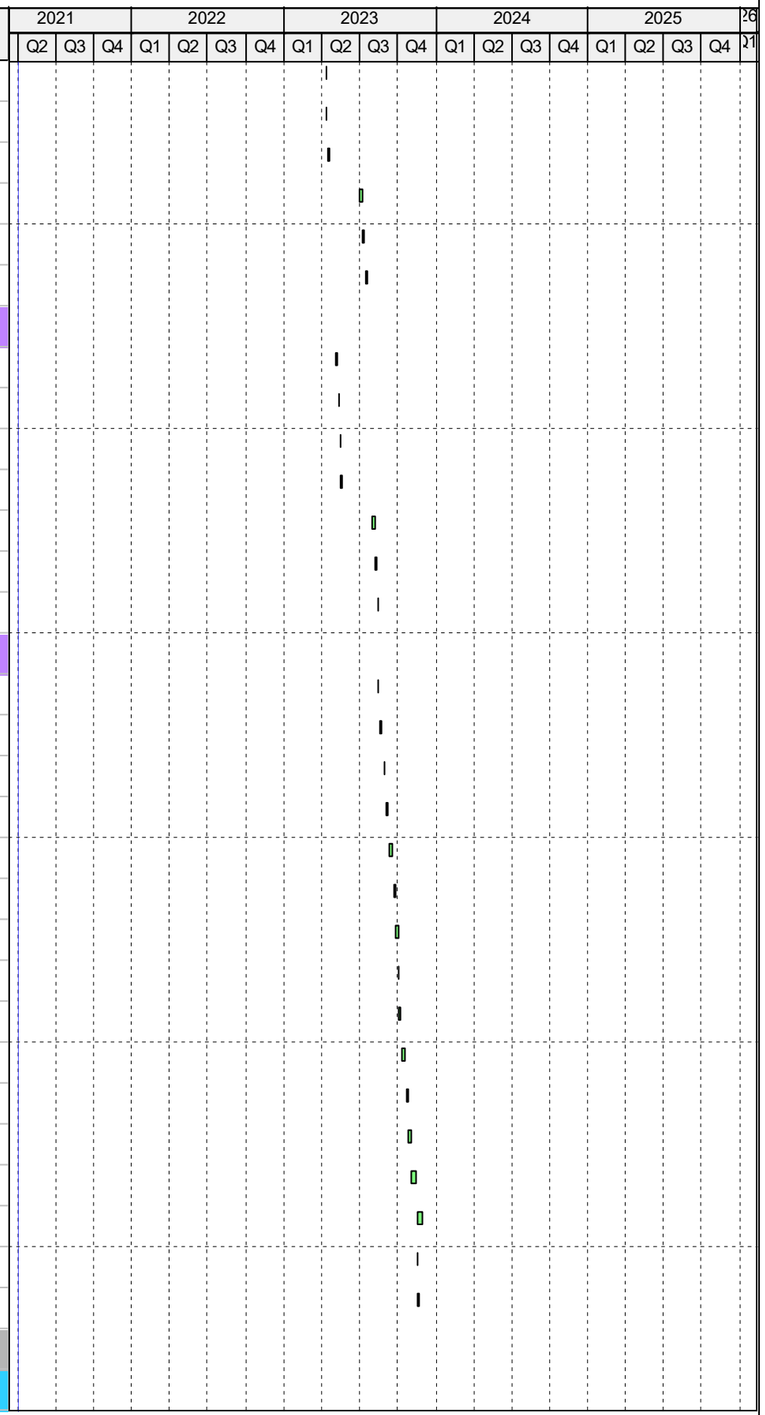
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B3SB-4020	S1B B3 SB Superstructure - FRP Integral Backwall Abutment A	2	12-Jul-23	14-Jul-23	119
S1B-B3SB-4030	S1B B3 SB Superstructure - FRP Integral Backwall Abutment B	2	17-Jul-23	18-Jul-23	119
S1B-B3SB-4040	S1B B3 SB Superstructure - Install SIP Decking Spa	5	12-Jul-23	20-Jul-23	111
S1B-B3SB-4050	S1B B3 SB Superstructure - Install Rebar	4	21-Jul-23	27-Jul-23	111
S1B-B3SB-4060	S1B B3 SB Superstructure - Install Screed Rail / Dry Run	3	28-Jul-23	01-Aug-23	111
S1B-B3SB-4070	S1B B3 SB Superstructure - Deck Pour	1	03-Aug-23	03-Aug-23	111
S1B-B3SB-4080	S1B B3 SB Superstructure - FRP Sleeper Slab North Approach	3	04-Aug-23	08-Aug-23	111
S1B-B3SB-4090	S1B B3 SB Superstructure - FRP Approach Slab North Approach	5	10-Aug-23	17-Aug-23	111
S1B-B3SB-4100	S1B B3 SB Superstructure - FRP Sleeper Slab North Approach	3	18-Aug-23	22-Aug-23	111
S1B-B3SB-4110	S1B B3 SB Superstructure - FRP Approach Slab North Approach	5	24-Aug-23	31-Aug-23	111
S1B-B3SB-4120	S1B B3 SB Superstructure - FRP Barrier Walls / Install Conduit	6	01-Sep-23	13-Sep-23	111
S1B-B3SB-4130	S1B B3 SB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	15-Sep-23	22-Sep-23	111
S1B-B3SB-4140	S1B B3 SB Superstructure - Groove Bridge Deck	1	15-Sep-23	15-Sep-23	118
S1B-B3SB-4150	S1B B3 SB Superstructure - Striping	1	18-Sep-23	18-Sep-23	118
Stage 1B - Structures - Bridge 4: I-81 Over RT 311					
Stage 1B - Structures - I-81 Over RT 311 - NB					
Stage 1B - I-81 Over RT 311 - NB - Demo Existing Structure					
S1B-B4NB-1000	S1B B4 NB Demo - Demo Existing Bridge Deck	5	07-Oct-22	17-Oct-22	162
S1B-B4NB-1010	S1B B4 NB Demo - Demo Existing Backwall	6	19-Oct-22	28-Oct-22	162
S1B-B4NB-1020	S1B B4 NB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	31-Oct-22	01-Nov-22	162
S1B-B4NB-1030	S1B B4 NB Demo - Demo Existing Concrete Slope Protection	4	03-Nov-22	09-Nov-22	162
S1B-B4NB-1040	S1B B4 NB Demo - Replace Bearings	15	11-Nov-22	12-Dec-22	162
Stage 1B - I-81 Over RT 311 - NB - Structures					
Stage 1B - I-81 Over RT 311 - NB - Abutment A					
S1B-B4NB-2000	S1B B4 NB Abutment A - Install SOE Adjacent to Existing Bridge	3	21-Mar-23	24-Mar-23	119
S1B-B4NB-2010	S1B B4 NB Abutment A - Remove Existing Structure / Pavement	1	27-Mar-23	27-Mar-23	119
S1B-B4NB-2020	S1B B4 NB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	28-Mar-23	28-Mar-23	119
S1B-B4NB-2030	S1B B4 NB Abutment A - Install Pile	3	30-Mar-23	03-Apr-23	119
S1B-B4NB-2040	S1B B4 NB Abutment A - FRP Pile Cap	4	15-Jun-23	20-Jun-23	83
S1B-B4NB-2050	S1B B4 NB Abutment A - FRP Backwall	5	22-Jun-23	29-Jun-23	83
S1B-B4NB-2060	S1B B4 NB Abutment A - Backfill Abutment Seat	2	30-Jun-23	03-Jul-23	99
Stage 1B - I-81 Over RT 311 - NB - Abutment B					
S1B-B4NB-3000	S1B B4 NB Abutment B - Install SOE Adjacent to Existing Bridge	3	24-Apr-23	27-Apr-23	120



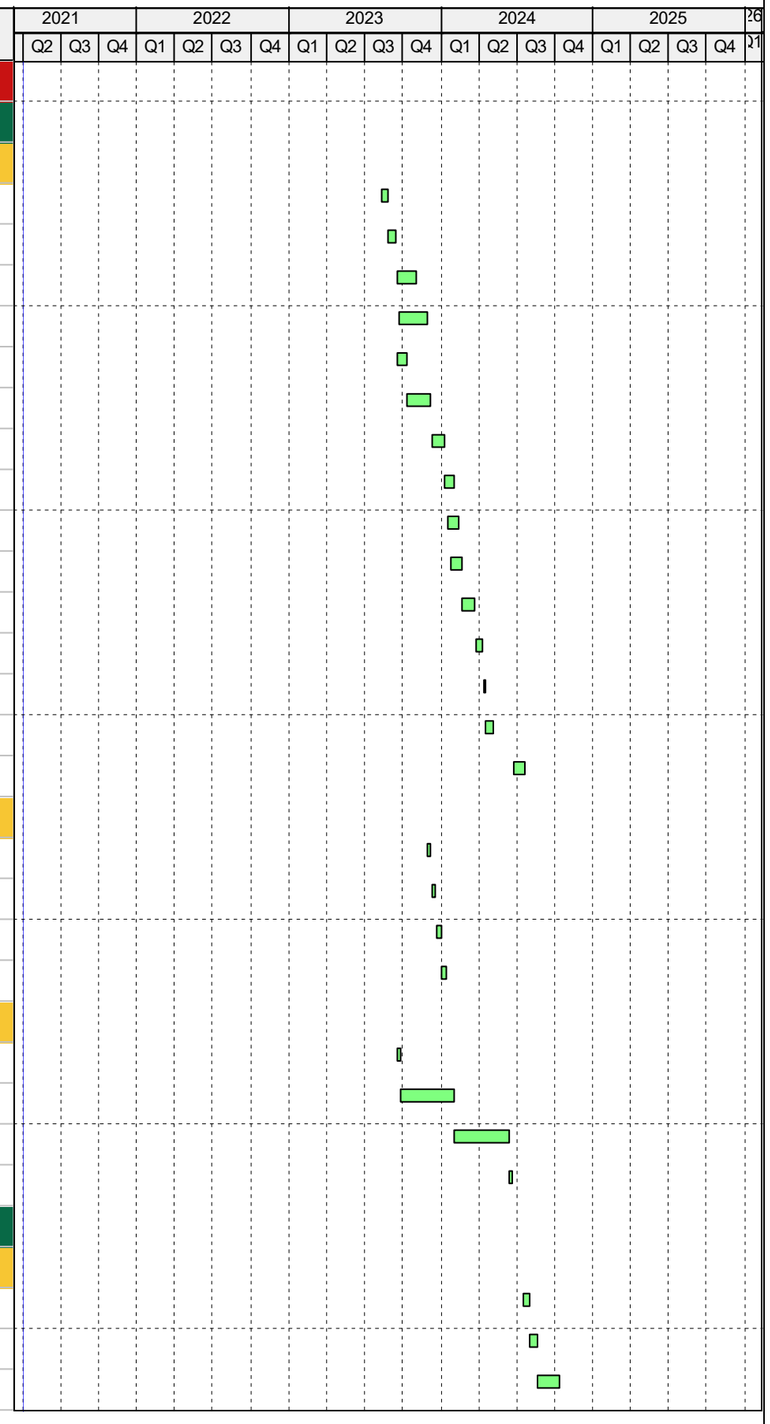
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B4NB-3010	S1B B4 NB Abutment B - Remove Existing Structure / Pavement	1	28-Apr-23	28-Apr-23	120
S1B-B4NB-3020	S1B B4 NB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	01-May-23	01-May-23	120
S1B-B4NB-3030	S1B B4 NB Abutment B - Install Pile	2	02-May-23	04-May-23	120
S1B-B4NB-3040	S1B B4 NB Abutment B - FRP Pile Cap	4	17-Jul-23	21-Jul-23	83
S1B-B4NB-3050	S1B B4 NB Abutment B - FRP Backwall	5	24-Jul-23	31-Jul-23	83
S1B-B4NB-3060	S1B B4 NB Abutment B - Backfill Abutment Seat	2	01-Aug-23	03-Aug-23	83
Stage 1B - I-81 Over RT 311 - NB - Superstructure					
S1B-B4NB-4000	S1B B4 NB Superstructure - Erect Girders	1	04-Aug-23	04-Aug-23	83
S1B-B4NB-4010	S1B B4 NB Superstructure - Install Underbridge Protection / Overhangs	4	07-Aug-23	11-Aug-23	83
S1B-B4NB-4020	S1B B4 NB Superstructure - Install FRP Backwall Abutment A	5	14-Aug-23	21-Aug-23	83
S1B-B4NB-4030	S1B B4 NB Superstructure - Install FRP Backwall Abutment B	5	22-Aug-23	29-Aug-23	83
S1B-B4NB-4040	S1B B4 NB Superstructure - Install SIP Decking Spa	5	31-Aug-23	08-Sep-23	83
S1B-B4NB-4050	S1B B4 NB Superstructure - Install Rebar	4	11-Sep-23	18-Sep-23	88
S1B-B4NB-4060	S1B B4 NB Superstructure - Install Screed Rail / Dry Run	3	19-Sep-23	22-Sep-23	88
S1B-B4NB-4070	S1B B4 NB Superstructure - Deck Pour	1	25-Sep-23	25-Sep-23	88
S1B-B4NB-4080	S1B B4 NB Superstructure - FRP Sleeper Slab North Approach	3	26-Sep-23	29-Sep-23	88
S1B-B4NB-4090	S1B B4 NB Superstructure - FRP Approach Slab North Approach	5	02-Oct-23	09-Oct-23	88
S1B-B4NB-4100	S1B B4 NB Superstructure - FRP Sleeper Slab North Approach	3	11-Oct-23	16-Oct-23	88
S1B-B4NB-4110	S1B B4 NB Superstructure - FRP Approach Slab North Approach	5	18-Oct-23	26-Oct-23	88
S1B-B4NB-4120	S1B B4 NB Superstructure - FRP Barrier Walls / Install Conduit	6	27-Oct-23	03-Nov-23	88
S1B-B4NB-4130	S1B B4 NB Superstructure - Groove Bridge Deck	1	06-Nov-23	06-Nov-23	91
S1B-B4NB-4140	S1B B4 NB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	06-Nov-23	15-Nov-23	88
S1B-B4NB-4150	S1B B4 NB Superstructure - Striping	1	08-Nov-23	08-Nov-23	91
Stage 1B - Structures - I-81 Over RT 311 - SB					
Stage 1B - I-81 Over RT 311 - SB - Demo Existing Structure					
S1B-B4SB-1000	S1B B4 SB Demo - Demo Existing Bridge Deck	5	07-Oct-22	17-Oct-22	171
S1B-B4SB-1010	S1B B4 SB Demo - Demo Existing Backwall	6	19-Oct-22	28-Oct-22	171
S1B-B4SB-1020	S1B B4 SB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	31-Oct-22	01-Nov-22	171
S1B-B4SB-1030	S1B B4 SB Demo - Demo Existing Concrete Slope Protection	4	03-Nov-22	09-Nov-22	171
S1B-B4SB-1040	S1B B4 SB Demo - Replace Bearings	15	11-Nov-22	12-Dec-22	171
Stage 1B - I-81 Over RT 311 - SB - Structures					
Stage 1B - I-81 Over RT 311 - SB - Abutment A					
S1B-B4SB-2000	S1B B4 SB Abutment A - Install SOE Adjacent to Existing Bridge	3	04-Apr-23	10-Apr-23	120



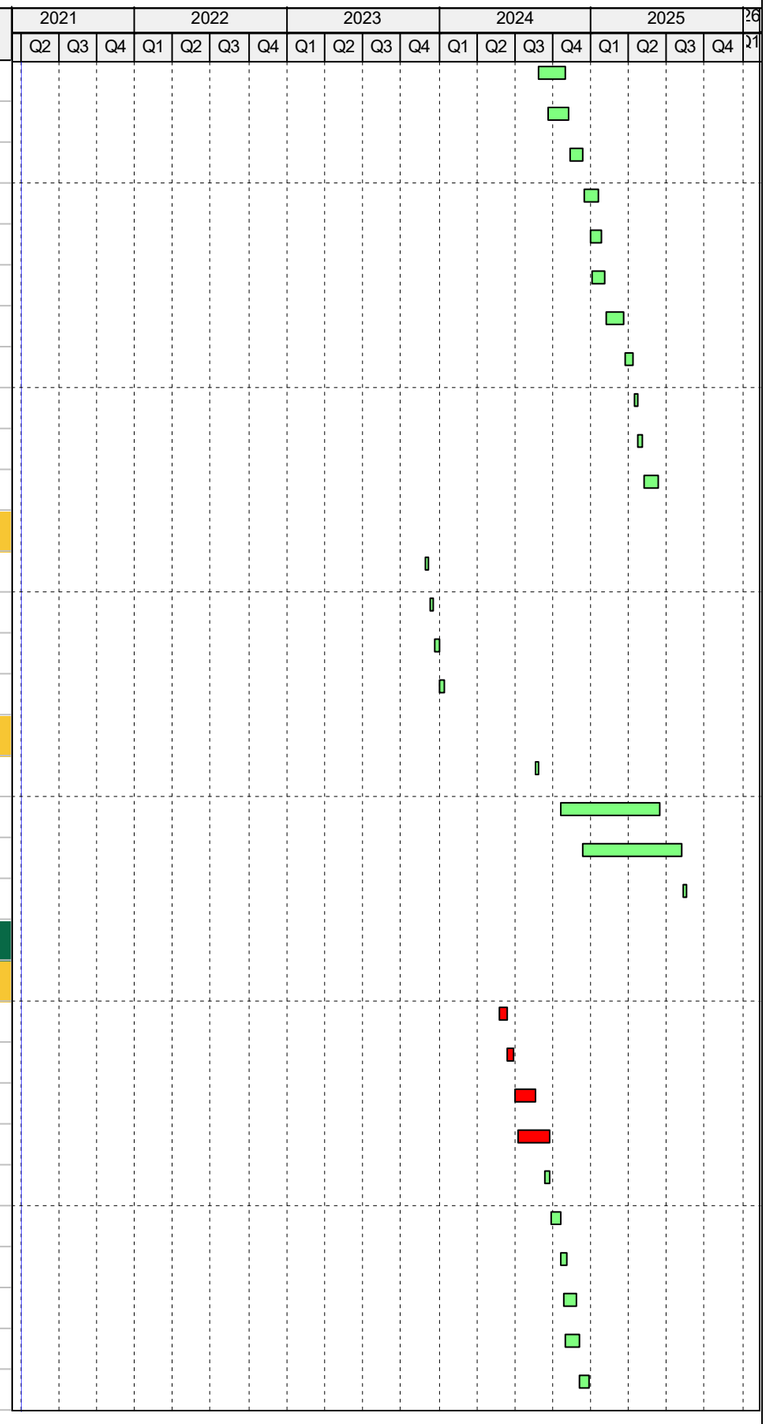
Activity ID	Activity Name	OD	Start	Finish	TF
S1B-B4SB-2010	S1B B4 SB Abutment A - Remove Existing Structure / Pavement	1	12-Apr-23	12-Apr-23	120
S1B-B4SB-2020	S1B B4 SB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	14-Apr-23	14-Apr-23	120
S1B-B4SB-2030	S1B B4 SB Abutment A - Install Pile	3	17-Apr-23	21-Apr-23	120
S1B-B4SB-2040	S1B B4 SB Abutment A - FRP Pile Cap	4	30-Jun-23	07-Jul-23	83
S1B-B4SB-2050	S1B B4 SB Abutment A - FRP Backwall	3	10-Jul-23	14-Jul-23	83
S1B-B4SB-2060	S1B B4 SB Abutment A - Backfill Abutment Seat	2	17-Jul-23	18-Jul-23	103
Stage 1B - I-81 Over RT 311 - SB - Abutment B					
S1B-B4SB-3000	S1B B4 SB Abutment B - Install SOE Adjacent to Existing Bridge	3	05-May-23	10-May-23	125
S1B-B4SB-3010	S1B B4 SB Abutment B - Remove Existing Structure / Pavement	1	12-May-23	12-May-23	125
S1B-B4SB-3020	S1B B4 SB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	15-May-23	15-May-23	125
S1B-B4SB-3030	S1B B4 SB Abutment B - Install Pile	3	17-May-23	22-May-23	125
S1B-B4SB-3040	S1B B4 SB Abutment B - FRP Pile Cap	4	01-Aug-23	07-Aug-23	87
S1B-B4SB-3050	S1B B4 SB Abutment B - FRP Backwall	3	08-Aug-23	11-Aug-23	87
S1B-B4SB-3060	S1B B4 SB Abutment B - Backfill Abutment Seat	2	14-Aug-23	15-Aug-23	87
Stage 1B - I-81 Over RT 311 - SB - Superstructure					
S1B-B4SB-4000	S1B B4 SB Superstructure - Erect Girders	1	17-Aug-23	17-Aug-23	87
S1B-B4SB-4010	S1B B4 SB Superstructure - Install Underbridge Protection / Overhangs	4	18-Aug-23	24-Aug-23	87
S1B-B4SB-4020	S1B B4 SB Superstructure - Install FRP Backwall Abutment A	2	31-Aug-23	01-Sep-23	84
S1B-B4SB-4030	S1B B4 SB Superstructure - Install FRP Backwall Abutment B	2	05-Sep-23	07-Sep-23	84
S1B-B4SB-4040	S1B B4 SB Superstructure - Install SIP Decking Spa	5	11-Sep-23	19-Sep-23	83
S1B-B4SB-4050	S1B B4 SB Superstructure - Install Rebar	4	21-Sep-23	26-Sep-23	83
S1B-B4SB-4060	S1B B4 SB Superstructure - Install Screed Rail / Dry Run	3	28-Sep-23	02-Oct-23	83
S1B-B4SB-4070	S1B B4 SB Superstructure - Deck Pour	1	03-Oct-23	03-Oct-23	83
S1B-B4SB-4080	S1B B4 SB Superstructure - FRP Sleeper Slab North Approach	3	05-Oct-23	09-Oct-23	83
S1B-B4SB-4090	S1B B4 SB Superstructure - FRP Approach Slab North Approach	5	11-Oct-23	20-Oct-23	83
S1B-B4SB-4100	S1B B4 SB Superstructure - FRP Sleeper Slab North Approach	3	23-Oct-23	26-Oct-23	83
S1B-B4SB-4110	S1B B4 SB Superstructure - FRP Approach Slab North Approach	5	27-Oct-23	02-Nov-23	83
S1B-B4SB-4120	S1B B4 SB Superstructure - FRP Barrier Walls / Install Conduit	6	03-Nov-23	15-Nov-23	83
S1B-B4SB-4130	S1B B4 SB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	17-Nov-23	28-Nov-23	83
S1B-B4SB-4140	S1B B4 SB Superstructure - Groove Bridge Deck	1	17-Nov-23	17-Nov-23	86
S1B-B4SB-4150	S1B B4 SB Superstructure - Striping	1	20-Nov-23	20-Nov-23	86
Stage 2 Outside Lanes Area 1 to 3					
Stage 2 - Roadwork					



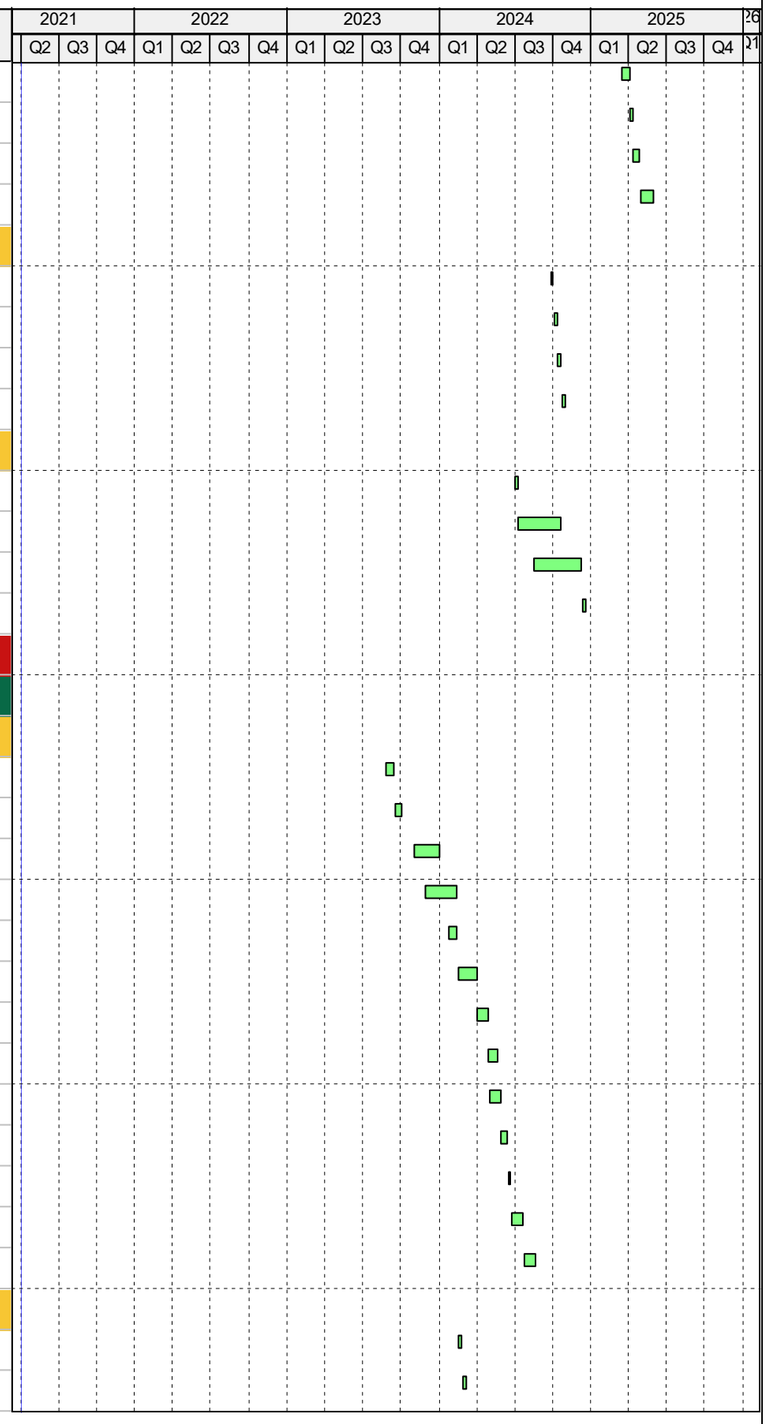
Activity ID	Activity Name	OD	Start	Finish	TF
Stage 2 Northbound					
Stage 2 NB Area 1 Sta 100+00 to 175+00					
Stage 2 - NB Area 1 Roadwork					
S2-RNB-A1-1000	S2 RNB A1 - Relocate Barrier from Median / Temp Striping / Shift Traffic	10	10-Aug-23	25-Aug-23	1
S2-RNB-A1-1010	S2 RNB A1 - Install E&S Controls	10	28-Aug-23	15-Sep-23	14
S2-RNB-A1-1020	S2 RNB A1 - Demo Existing Barrier / Guardrail / Pavement	26	18-Sep-23	02-Nov-23	14
S2-RNB-A1-1030	S2 RNB A1 - Excavate / Embankment to Subgrade	35	21-Sep-23	28-Nov-23	14
S2-RNB-A1-1040	S2 RNB A1 - Construct SWM #2 Facility	14	18-Sep-23	11-Oct-23	46
S2-RNB-A1-1050	S2 RNB A1 - Install Drainage	29	11-Oct-23	08-Dec-23	33
S2-RNB-A1-1060	S2 RNB A1 - Fine Grade for Roadway / Barrier	13	11-Dec-23	08-Jan-24	33
S2-RNB-A1-1070	S2 RNB A1 - Install Barrier Footer	11	10-Jan-24	01-Feb-24	33
S2-RNB-A1-1080	S2 RNB A1 - Install Subbase	13	19-Jan-24	14-Feb-24	33
S2-RNB-A1-1090	S2 RNB A1 - Install Underdrain	13	24-Jan-24	19-Feb-24	33
S2-RNB-A1-1100	S2 RNB A1 - Install Barrier Walls	15	21-Feb-24	22-Mar-24	33
S2-RNB-A1-1110	S2 RNB A1 - Asphalt Paving - Base Asphalt	10	25-Mar-24	11-Apr-24	35
S2-RNB-A1-1120	S2 RNB A1 - Asphalt Paving - Intermediate Asphalt	4	12-Apr-24	18-Apr-24	35
S2-RNB-A1-1130	S2 RNB A1 - Install Guardrail	10	19-Apr-24	06-May-24	39
S2-RNB-A1-1150	S2 RNB A1 - Fine Grade Slopes & Ditch / Seed	16	24-Jun-24	22-Jul-24	14
Stage 2 - NB Area 1 TMS					
S2-RNB-A1-2000	S2 RNB A1 - Install TMS Ductbank / Junction Boxes	5	30-Nov-23	08-Dec-23	337
S2-RNB-A1-2010	S2 RNB A1 - Install TMS / Sign Foundations / Light Foundations	5	11-Dec-23	19-Dec-23	337
S2-RNB-A1-2020	S2 RNB A1 - Install TMS / Sign Structures / Light Structures	5	21-Dec-23	02-Jan-24	337
S2-RNB-A1-2030	S2 RNB A1 - Pull & Terminate Power and Fiber	5	03-Jan-24	12-Jan-24	337
Stage 2 - NB Area 1 Soundwalls					
S2-RNB-A1-3000	S2 RNB A1 - Rough Grading for Soundwalls	5	18-Sep-23	25-Sep-23	14
S2-RNB-A1-3010	S2 RNB A1 - Install Soundwall Posts	61	26-Sep-23	01-Feb-24	14
S2-RNB-A1-3020	S2 RNB A1 - Install Wall Panels for Soundwalls	65	02-Feb-24	13-Jun-24	14
S2-RNB-A1-3030	S2 RNB A1 - Backfill / Grade / Seed for Soundwalls	5	14-Jun-24	21-Jun-24	14
Stage 2 NB Area 2 Sta 175+00 to Route 705 Overpass (245+00)					
Stage 2 - NB Area 2 Roadwork					
S2-RNB-A2-1000	S2 RNB A2 - Relocate Barrier from Median / Temp Striping / Shift Traffic	10	16-Jul-24	01-Aug-24	4
S2-RNB-A2-1010	S2 RNB A2 - Install E&S Controls	10	02-Aug-24	20-Aug-24	15
S2-RNB-A2-1020	S2 RNB A2 - Demo Existing Barrier / Guardrail / Pavement	28	22-Aug-24	10-Oct-24	15



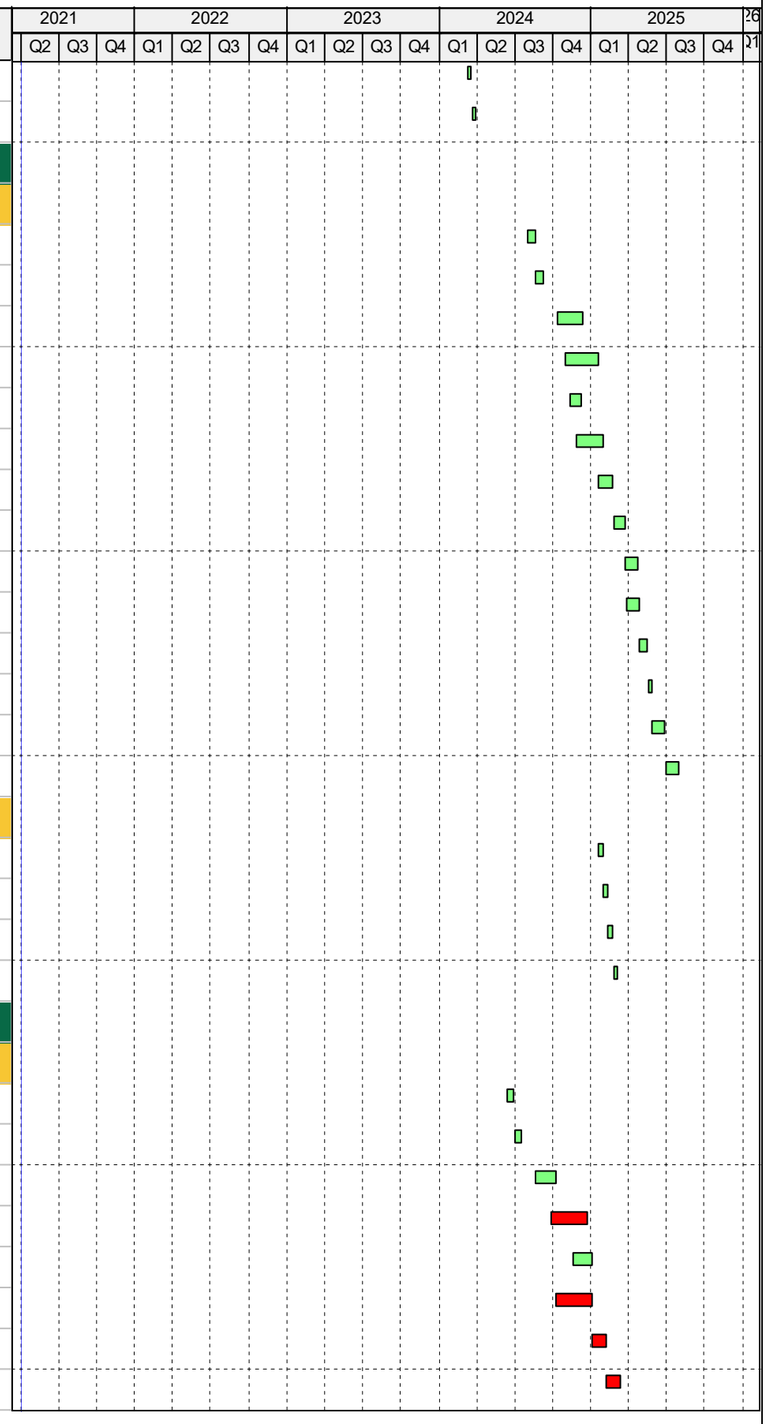
Activity ID	Activity Name	OD	Start	Finish	TF
S2-RNB-A2-1030	S2 RNB A2 - Excavate / Embankment to Subgrade	35	27-Aug-24	31-Oct-24	15
S2-RNB-A2-1040	S2 RNB A2 - Install Drainage	28	20-Sep-24	08-Nov-24	16
S2-RNB-A2-1050	S2 RNB A2 - Fine Grade for Roadway / Barrier	14	11-Nov-24	13-Dec-24	16
S2-RNB-A2-1060	S2 RNB A2 - Install Barrier Footer	16	16-Dec-24	17-Jan-25	16
S2-RNB-A2-1070	S2 RNB A2 - Install Subbase	14	30-Dec-24	27-Jan-25	16
S2-RNB-A2-1080	S2 RNB A2 - Install Underdrain	14	03-Jan-25	03-Feb-25	16
S2-RNB-A2-1090	S2 RNB A2 - Install Barrier Walls	21	05-Feb-25	21-Mar-25	16
S2-RNB-A2-1100	S2 RNB A2 - Asphalt Paving - Base Asphalt	12	24-Mar-25	11-Apr-25	18
S2-RNB-A2-1110	S2 RNB A2 - Asphalt Paving - Intermediate Asphalt	4	14-Apr-25	21-Apr-25	18
S2-RNB-A2-1120	S2 RNB A2 - Install Guardrail	9	23-Apr-25	06-May-25	42
S2-RNB-A2-1130	S2 RNB A2 - Fine Grade Slopes & Ditch / Seed	18	08-May-25	12-Jun-25	42
Stage 2 - NB Area 2 TMS					
S2-RNB-A2-2000	S2 RNB A2 - Install TMS Ductbank / Junction Boxes	5	30-Nov-23	08-Dec-23	337
S2-RNB-A2-2010	S2 RNB A2 - Install TMS / Sign Foundations / Light Foundations	5	11-Dec-23	19-Dec-23	337
S2-RNB-A2-2020	S2 RNB A2 - Install TMS / Sign Structures / Light Structures	5	21-Dec-23	02-Jan-24	337
S2-RNB-A2-2030	S2 RNB A2 - Pull & Terminate Power and Fiber	5	03-Jan-24	12-Jan-24	337
Stage 2 - NB Area 2 Soundwalls					
S2-RNB-A2-3000	S2 RNB A2 - Rough Grading for Soundwalls	5	22-Aug-24	29-Aug-24	35
S2-RNB-A2-3010	S2 RNB A2 - Install Soundwall Posts	112	21-Oct-24	13-Jun-25	8
S2-RNB-A2-3020	S2 RNB A2 - Install Wall Panels for Soundwalls	120	11-Dec-24	08-Aug-25	5
S2-RNB-A2-3030	S2 RNB A2 - Backfill / Grade / Seed for Soundwalls	5	11-Aug-25	19-Aug-25	5
Stage 2 NB Area 3 Route 705 Overpass (245+00) to Sta 312+00					
Stage 2 - NB Area 3 Roadwork					
S2-RNB-A3-1000	S2 RNB A3 - Relocate Barrier from Median / Temp Striping / Shift Traffic	10	24-May-24	11-Jun-24	0
S2-RNB-A3-1010	S2 RNB A3 - Install E&S Controls	10	13-Jun-24	28-Jun-24	0
S2-RNB-A3-1020	S2 RNB A3 - Demo Existing Barrier / Guardrail / Pavement	27	01-Jul-24	19-Aug-24	0
S2-RNB-A3-1030	S2 RNB A3 - Excavate / Embankment to Subgrade	43	08-Jul-24	24-Sep-24	0
S2-RNB-A3-1040	S2 RNB A3 - Install Drainage	8	11-Sep-24	24-Sep-24	52
S2-RNB-A3-1050	S2 RNB A3 - Fine Grade for Roadway / Barrier	14	26-Sep-24	18-Oct-24	52
S2-RNB-A3-1060	S2 RNB A3 - Install Barrier Footer	8	21-Oct-24	04-Nov-24	52
S2-RNB-A3-1070	S2 RNB A3 - Install Subbase	14	29-Oct-24	25-Nov-24	52
S2-RNB-A3-1080	S2 RNB A3 - Install Underdrain	14	01-Nov-24	02-Dec-24	52
S2-RNB-A3-1090	S2 RNB A3 - Install Barrier Walls	11	04-Dec-24	27-Dec-24	52



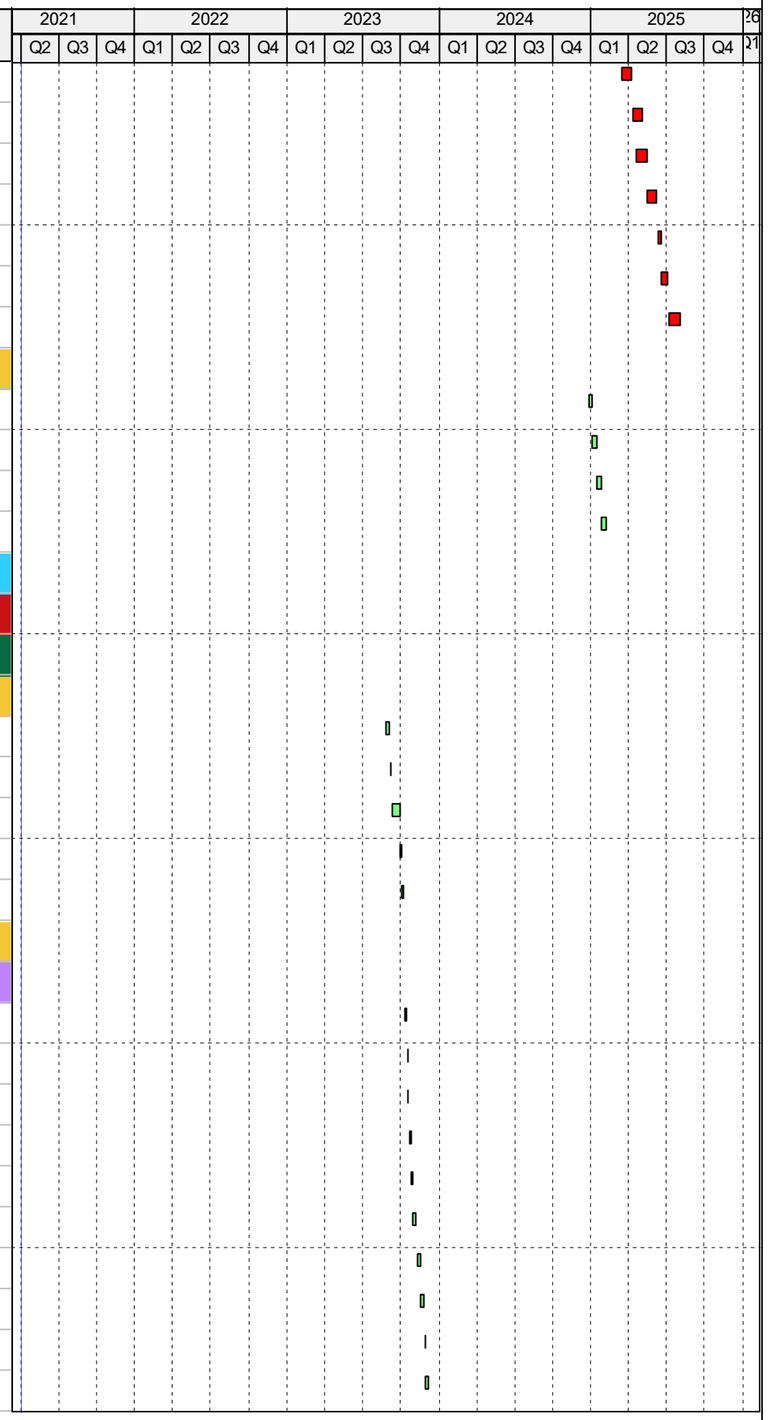
Activity ID	Activity Name	OD	Start	Finish	TF
S2-RNB-A3-1100	S2 RNB A3 - Asphalt Paving - Base Asphalt	11	17-Mar-25	03-Apr-25	19
S2-RNB-A3-1110	S2 RNB A3 - Asphalt Paving - Intermediate Asphalt	4	04-Apr-25	10-Apr-25	19
S2-RNB-A3-1120	S2 RNB A3 - Install Guardrail	8	11-Apr-25	28-Apr-25	39
S2-RNB-A3-1130	S2 RNB A3 - Fine Grade Slopes & Ditch / Seed	17	29-Apr-25	30-May-25	39
Stage 2 - NB Area 3 TMS					
S2-RNB-A3-2000	S2 RNB A3 - Install TMS Ductbank / Junction Boxes	5	26-Sep-24	02-Oct-24	188
S2-RNB-A3-2010	S2 RNB A3 - Install TMS / Sign Foundations / Light Foundations	5	03-Oct-24	10-Oct-24	188
S2-RNB-A3-2020	S2 RNB A3 - Install TMS / Sign Structures / Light Structures	5	11-Oct-24	21-Oct-24	188
S2-RNB-A3-2030	S2 RNB A3 - Pull & Terminate Power and Fiber	5	23-Oct-24	31-Oct-24	188
Stage 2 - NB Area 3 Soundwalls					
S2-RNB-A3-3000	S2 RNB A3 - Rough Grading for Soundwalls	5	01-Jul-24	09-Jul-24	5
S2-RNB-A3-3010	S2 RNB A3 - Install Soundwall Posts	55	11-Jul-24	18-Oct-24	5
S2-RNB-A3-3020	S2 RNB A3 - Install Wall Panels for Soundwalls	58	16-Aug-24	09-Dec-24	5
S2-RNB-A3-3030	S2 RNB A3 - Backfill / Grade / Seed for Soundwalls	5	11-Dec-24	20-Dec-24	98
Stage 2 Southbound					
Stage 2 SB Area 1 Sta 511+10 to 574+50					
Stage 2 - SB Area 1 Roadwork					
S2-RSB-A1-1000	S2 RSB A1 - Relocate Barrier from Median / Temp Striping / Shift Traffic	10	28-Aug-23	15-Sep-23	14
S2-RSB-A1-1010	S2 RSB A1 - Install E&S Controls	10	18-Sep-23	03-Oct-23	39
S2-RSB-A1-1020	S2 RSB A1 - Demo Existing Barrier / Guardrail / Pavement	26	03-Nov-23	02-Jan-24	23
S2-RSB-A1-1030	S2 RSB A1 - Excavate / Embankment to Subgrade	35	30-Nov-23	14-Feb-24	14
S2-RSB-A1-1040	S2 RSB A1 - Install Drainage	11	24-Jan-24	14-Feb-24	36
S2-RSB-A1-1050	S2 RSB A1 - Install Retaining Wall 2 at Sta 566	22	16-Feb-24	02-Apr-24	14
S2-RSB-A1-1060	S2 RSB A1 - Fine Grade for Roadway	13	04-Apr-24	29-Apr-24	14
S2-RSB-A1-1070	S2 RSB A1 - Install Subbase	13	30-Apr-24	23-May-24	14
S2-RSB-A1-1080	S2 RSB A1 - Install Underdrain	13	03-May-24	28-May-24	14
S2-RSB-A1-1090	S2 RSB A1 - Asphalt Paving - Base Asphalt	10	30-May-24	14-Jun-24	14
S2-RSB-A1-1100	S2 RSB A1 - Asphalt Paving - Intermediate Asphalt	4	17-Jun-24	21-Jun-24	14
S2-RSB-A1-1110	S2 RSB A1 - Install Guardrail	16	24-Jun-24	22-Jul-24	14
S2-RSB-A1-1130	S2 RSB A1 - Fine Grade Slopes & Ditch / Seed	16	23-Jul-24	20-Aug-24	14
Stage 2 - SB Area 1 TMS					
S2-RSB-A1-2000	S2 RSB A1 - Install TMS Ductbank / Junction Boxes	5	16-Feb-24	26-Feb-24	302
S2-RSB-A1-2010	S2 RSB A1 - Install TMS / Sign Foundations / Light Foundations	5	28-Feb-24	08-Mar-24	302



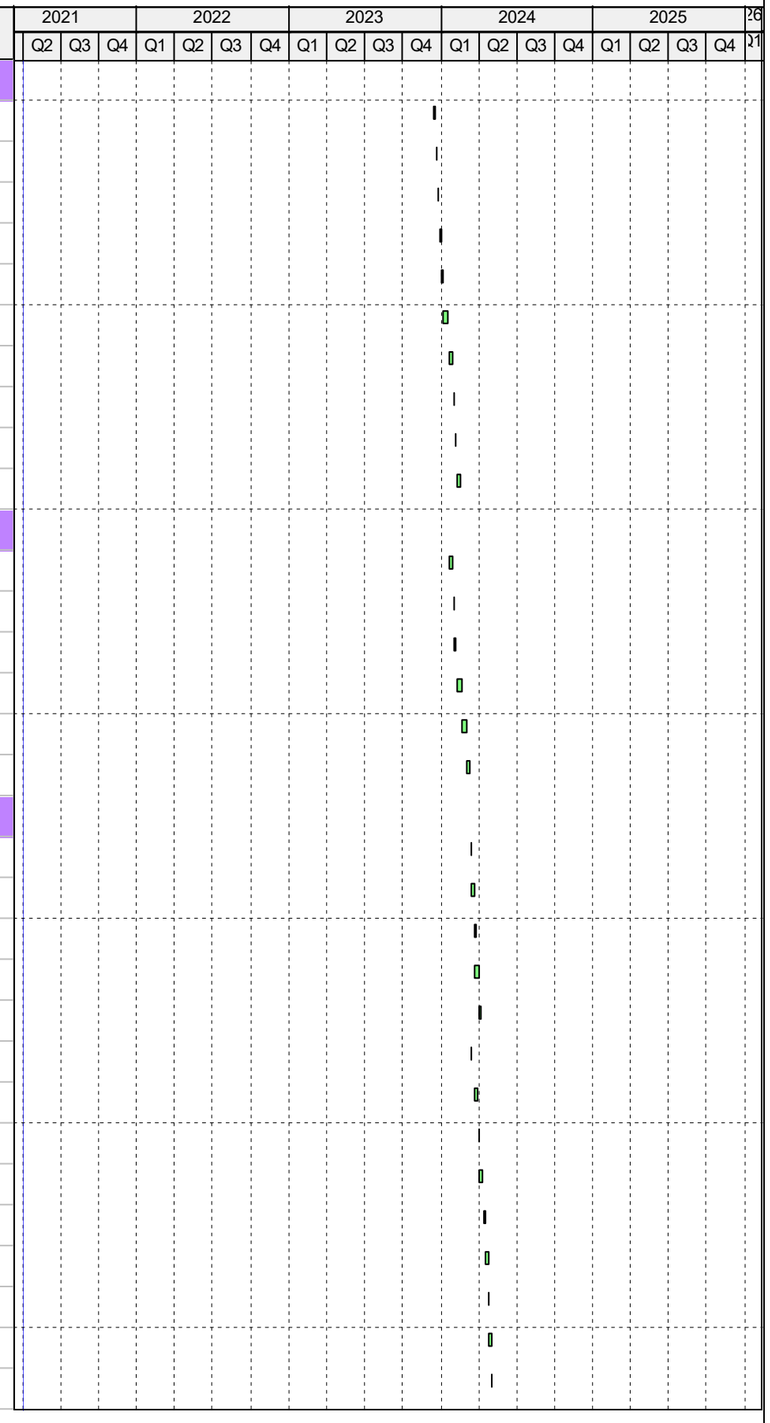
Activity ID	Activity Name	OD	Start	Finish	TF
S2-RSB-A1-2020	S2 RSB A1 - Install TMS / Sign Structures / Light Structures	5	11-Mar-24	19-Mar-24	302
S2-RSB-A1-2030	S2 RSB A1 - Pull & Terminate Power and Fiber	5	21-Mar-24	28-Mar-24	302
Stage 2 SB Area 2 Sta 574+50 to Route 705 Overpass (644+50)					
Stage 2 - SB Area 2 Roadwork					
S2-RSB-A2-1000	S2 RSB A2 - Relocate Barrier from Median / Temp Striping / Shift Traffic	10	02-Aug-24	20-Aug-24	13
S2-RSB-A2-1010	S2 RSB A2 - Install E&S Controls	10	22-Aug-24	09-Sep-24	41
S2-RSB-A2-1020	S2 RSB A2 - Demo Existing Barrier / Guardrail / Pavement	28	11-Oct-24	11-Dec-24	23
S2-RSB-A2-1030	S2 RSB A2 - Excavate / Embankment to Subgrade	35	01-Nov-24	17-Jan-25	15
S2-RSB-A2-1040	S2 RSB A2 - Construct SWM #7 Facility	11	11-Nov-24	06-Dec-24	32
S2-RSB-A2-1050	S2 RSB A2 - Install Drainage	28	27-Nov-24	29-Jan-25	25
S2-RSB-A2-1060	S2 RSB A2 - Install Retaining Wall 3 at Sta 618+50 (70 LF)	15	20-Jan-25	21-Feb-25	15
S2-RSB-A2-1070	S2 RSB A2 - Fine Grade for Roadway	14	24-Feb-25	24-Mar-25	15
S2-RSB-A2-1080	S2 RSB A2 - Install Subbase	14	25-Mar-25	21-Apr-25	15
S2-RSB-A2-1090	S2 RSB A2 - Install Underdrain	14	28-Mar-25	25-Apr-25	15
S2-RSB-A2-1100	S2 RSB A2 - Asphalt Paving - Base Asphalt	12	28-Apr-25	16-May-25	15
S2-RSB-A2-1110	S2 RSB A2 - Asphalt Paving - Intermediate Asphalt	4	19-May-25	27-May-25	15
S2-RSB-A2-1120	S2 RSB A2 - Install Guardrail	18	29-May-25	27-Jun-25	15
S2-RSB-A2-1130	S2 RSB A2 - Fine Grade Slopes & Ditch / Seed	18	30-Jun-25	31-Jul-25	15
Stage 2 - SB Area 2 TMS					
S2-RSB-A2-2000	S2 RSB A2 - Install TMS Ductbank / Junction Boxes	5	20-Jan-25	29-Jan-25	133
S2-RSB-A2-2010	S2 RSB A2 - Install TMS / Sign Foundations / Light Foundations	5	31-Jan-25	10-Feb-25	133
S2-RSB-A2-2020	S2 RSB A2 - Install TMS / Sign Structures / Light Structures	5	12-Feb-25	21-Feb-25	133
S2-RSB-A2-2030	S2 RSB A2 - Pull & Terminate Power and Fiber	5	24-Feb-25	05-Mar-25	133
Stage 2 SB Area 3 Route 705 Overpass (644+50) to Sta 711+50					
Stage 2 - SB Area 3 Roadwork					
S2-RSB-A3-1000	S2 RSB A3 - Relocate Barrier from Median / Temp Striping / Shift Traffic	10	13-Jun-24	28-Jun-24	8
S2-RSB-A3-1010	S2 RSB A3 - Install E&S Controls	10	01-Jul-24	18-Jul-24	34
S2-RSB-A3-1020	S2 RSB A3 - Demo Existing Barrier / Guardrail / Pavement	27	20-Aug-24	07-Oct-24	17
S2-RSB-A3-1030	S2 RSB A3 - Excavate / Embankment to Subgrade	43	26-Sep-24	23-Dec-24	0
S2-RSB-A3-1040	S2 RSB A3 - Install Drainage	20	18-Nov-24	02-Jan-25	31
S2-RSB-A3-1050	S2 RSB A3 - Install Retaining Wall 4 at Sta 662	40	08-Oct-24	02-Jan-25	0
S2-RSB-A3-1060	S2 RSB A3 - Install Retaining Wall 5 at Sta 669	15	03-Jan-25	05-Feb-25	0
S2-RSB-A3-1070	S2 RSB A3 - Install Retaining Wall 6 at Sta 697	16	07-Feb-25	14-Mar-25	0



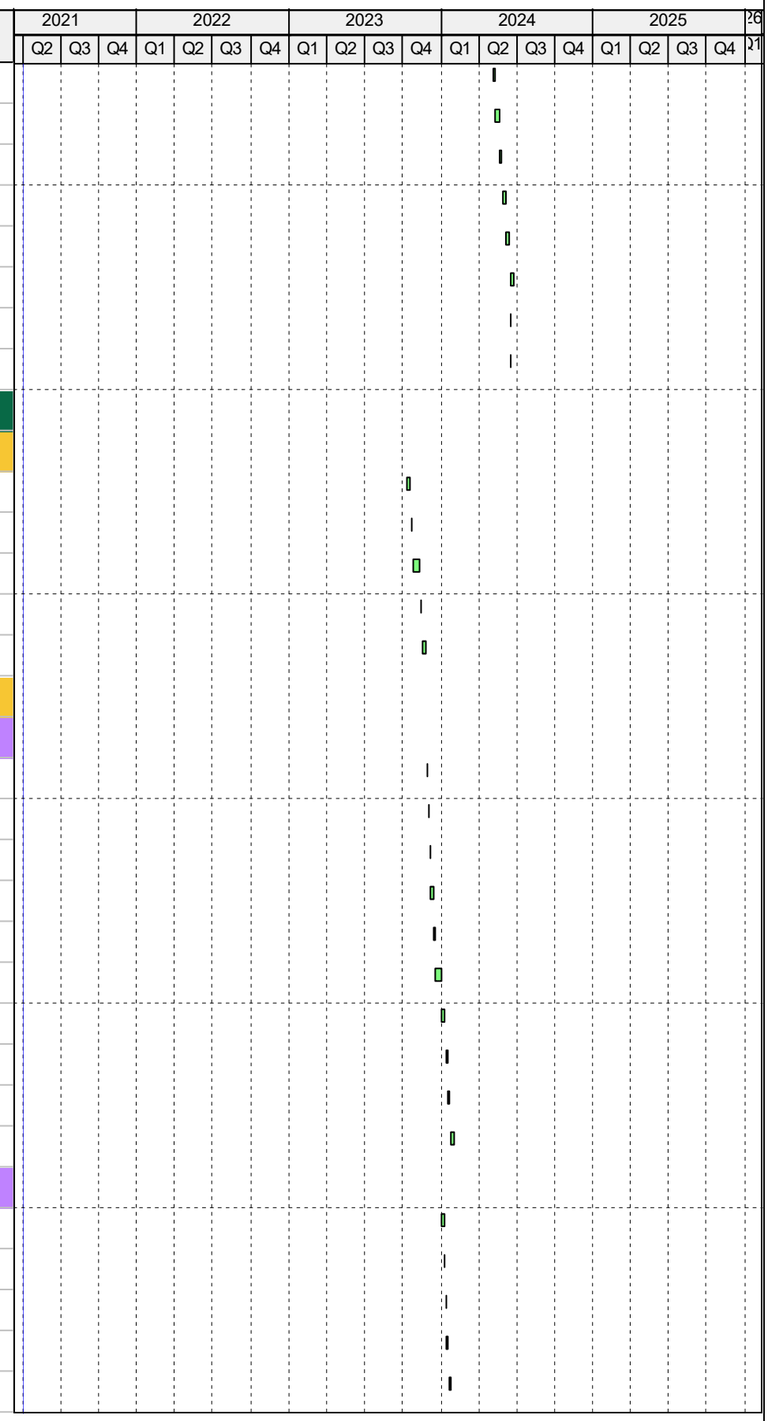
Activity ID	Activity Name	OD	Start	Finish	TF
S2-RSB-A3-1080	S2 RSB A3 - Fine Grade for Roadway	14	17-Mar-25	09-Apr-25	0
S2-RSB-A3-1090	S2 RSB A3 - Install Subbase	14	11-Apr-25	06-May-25	0
S2-RSB-A3-1100	S2 RSB A3 - Install Underdrain	14	21-Apr-25	14-May-25	0
S2-RSB-A3-1110	S2 RSB A3 - Asphalt Paving - Base Asphalt	12	16-May-25	09-Jun-25	0
S2-RSB-A3-1120	S2 RSB A3 - Asphalt Paving - Intermediate Asphalt	5	10-Jun-25	17-Jun-25	0
S2-RSB-A3-1130	S2 RSB A3 - Install Guardrail	9	19-Jun-25	03-Jul-25	0
S2-RSB-A3-1140	S2 RSB A3 - Fine Grade Slopes & Ditch / Seed	17	07-Jul-25	04-Aug-25	0
Stage 2 - SB Area 3 TMS					
S2-RSB-A3-2000	S2 RSB A3 - Install TMS Ductbank / Junction Boxes	5	26-Dec-24	02-Jan-25	145
S2-RSB-A3-2010	S2 RSB A3 - Install TMS / Sign Foundations / Light Foundations	5	03-Jan-25	13-Jan-25	145
S2-RSB-A3-2020	S2 RSB A3 - Install TMS / Sign Structures / Light Structures	5	15-Jan-25	24-Jan-25	145
S2-RSB-A3-2030	S2 RSB A3 - Pull & Terminate Power and Fiber	5	27-Jan-25	05-Feb-25	145
Stage 2 - Structures					
Stage 2 - Structures - Bridge 1: I-81 Over RT 112					
Stage 2 - Structures - I-81 Over RT 112 - NB					
Stage 2 - I-81 Over RT112 - NB - Demo Existing Structure					
S2-B1NB-1000	S2 B1 NB Demo - Demo Existing Bridge Deck	5	28-Aug-23	05-Sep-23	1
S2-B1NB-1010	S2 B1 NB Demo - Demo Existing Beams	2	07-Sep-23	08-Sep-23	1
S2-B1NB-1020	S2 B1 NB Demo - Demo Existing Piers / Abutment	10	11-Sep-23	28-Sep-23	1
S2-B1NB-1030	S2 B1 NB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	29-Sep-23	02-Oct-23	1
S2-B1NB-1040	S2 B1 NB Demo - Demo Existing Concrete Slope Protection	4	03-Oct-23	09-Oct-23	1
Stage 2 - I-81 Over RT112 - NB - Structures					
Stage 2 - I-81 Over RT112 - NB - Abutment A					
S2-B1NB-2000	S2 B1 NB Abutment A - Install SOE Adjacent to Existing Bridge	3	11-Oct-23	16-Oct-23	16
S2-B1NB-2010	S2 B1 NB Abutment A - Remove Existing Structure / Pavement	1	18-Oct-23	18-Oct-23	16
S2-B1NB-2020	S2 B1 NB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	20-Oct-23	20-Oct-23	16
S2-B1NB-2030	S2 B1 NB Abutment A - Install Pile	3	23-Oct-23	26-Oct-23	16
S2-B1NB-2040	S2 B1 NB Abutment A - FRP Concrete Footer - MSE at Abutment	2	27-Oct-23	30-Oct-23	36
S2-B1NB-2050	S2 B1 NB Abutment A - Erect / Backfill - MSE at Abutment	6	31-Oct-23	08-Nov-23	36
S2-B1NB-2060	S2 B1 NB Abutment A - FRP Pile Cap	4	10-Nov-23	17-Nov-23	36
S2-B1NB-2070	S2 B1 NB Abutment A - FRP Back Wall	3	20-Nov-23	27-Nov-23	36
S2-B1NB-2080	S2 B1 NB Abutment A - Backfill Abutment Seat	2	28-Nov-23	30-Nov-23	51
S2-B1NB-2090	S2 B1 NB Abutment A - Finish MSE Wall & Install Coping	4	01-Dec-23	08-Dec-23	51



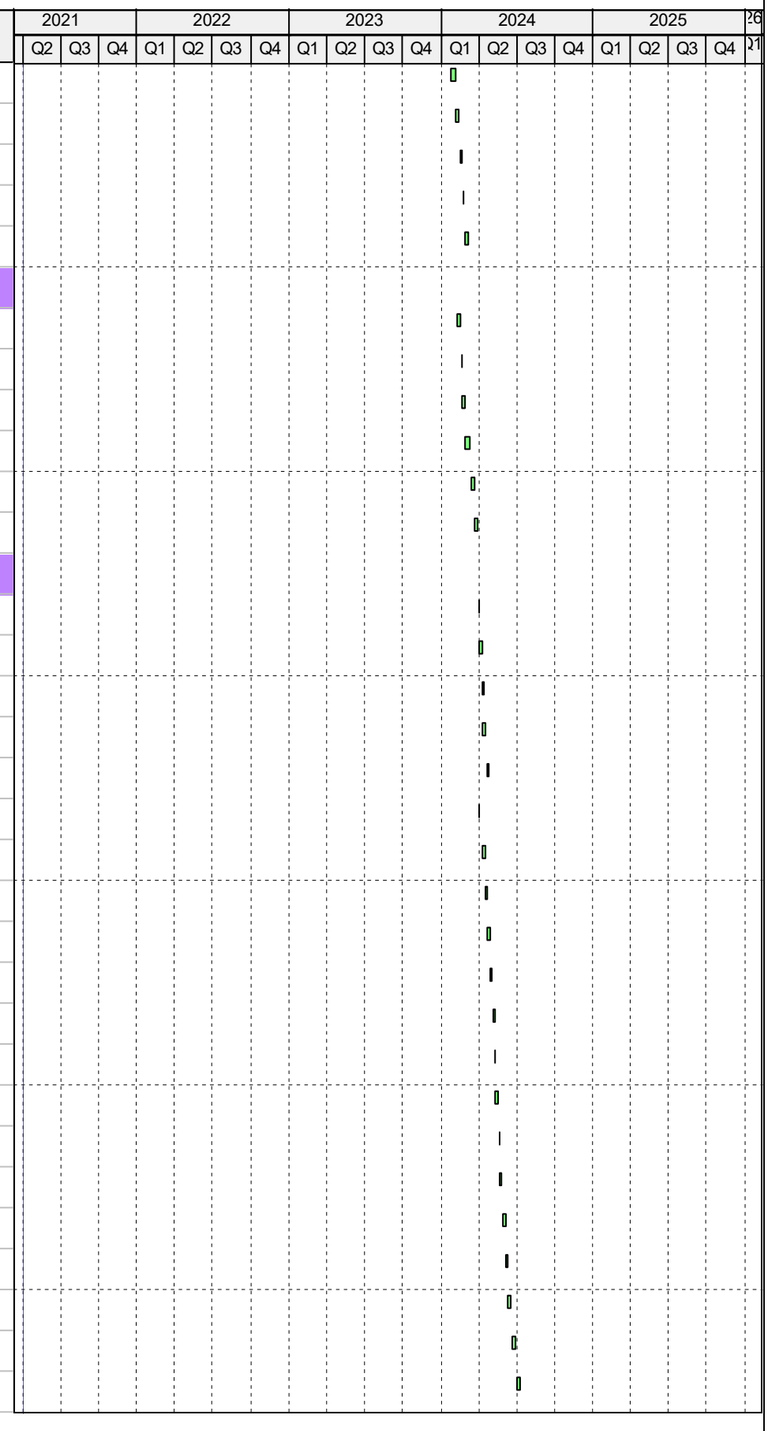
Activity ID	Activity Name	OD	Start	Finish	TF
Stage 2 - I-81 Over RT112 - NB - Abutment B					
S2-B1NB-3000	S2 B1 NB Abutment B - Install SOE Adjacent to Existing Bridge	3	15-Dec-23	19-Dec-23	1
S2-B1NB-3010	S2 B1 NB Abutment B - Remove Existing Structure / Pavement	1	21-Dec-23	21-Dec-23	1
S2-B1NB-3020	S2 B1 NB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	26-Dec-23	26-Dec-23	1
S2-B1NB-3030	S2 B1 NB Abutment B - Install Pile	3	28-Dec-23	02-Jan-24	1
S2-B1NB-3040	S2 B1 NB Abutment B - FRP Concrete Footer - MSE at Abutment	2	03-Jan-24	05-Jan-24	12
S2-B1NB-3050	S2 B1 NB Abutment B - Erect / Backfill - MSE at Abutment	6	08-Jan-24	19-Jan-24	12
S2-B1NB-3060	S2 B1 NB Abutment B - FRP Pile Cap	4	22-Jan-24	29-Jan-24	12
S2-B1NB-3070	S2 B1 NB Abutment B - FRP Back Wall	3	31-Jan-24	02-Feb-24	12
S2-B1NB-3080	S2 B1 NB Abutment B - Backfill Abutment Seat	2	05-Feb-24	07-Feb-24	20
S2-B1NB-3090	S2 B1 NB Abutment B - Finish MSE Wall & Install Coping	4	09-Feb-24	16-Feb-24	20
Stage 2 - I-81 Over RT112 - NB - Pier					
S2-B1NB-4000	S2 B1 NB Pier - Install SOE	4	22-Jan-24	29-Jan-24	1
S2-B1NB-4010	S2 B1 NB Pier - Excavate to Grade	1	31-Jan-24	31-Jan-24	1
S2-B1NB-4020	S2 B1 NB Pier - Install Pile	4	01-Feb-24	07-Feb-24	1
S2-B1NB-4030	S2 B1 NB Pier - FRP Pile Cap	5	09-Feb-24	19-Feb-24	10
S2-B1NB-4040	S2 B1 NB Pier - FRP Column	5	21-Feb-24	01-Mar-24	10
S2-B1NB-4050	S2 B1 NB Pier - FRP Cap	4	04-Mar-24	11-Mar-24	10
Stage 2 - I-81 Over RT112 - NB - Superstructure					
S2-B1NB-5000	S2 B1 NB Superstructure - Erect Girders Span A	1	13-Mar-24	13-Mar-24	10
S2-B1NB-5010	S2 B1 NB Superstructure - Install Underbridge Protection / Overhangs Span A	4	15-Mar-24	21-Mar-24	10
S2-B1NB-5020	S2 B1 NB Superstructure - FRP Integral Backwall Abutment A	2	22-Mar-24	25-Mar-24	21
S2-B1NB-5030	S2 B1 NB Superstructure - Install SIP Decking Span A	5	22-Mar-24	01-Apr-24	10
S2-B1NB-5040	S2 B1 NB Superstructure - Install Rebar Span A	3	02-Apr-24	05-Apr-24	15
S2-B1NB-5050	S2 B1 NB Superstructure - Erect Girders Span B	1	15-Mar-24	15-Mar-24	14
S2-B1NB-5060	S2 B1 NB Superstructure - Install Underbridge Protection / Overhangs Span B	4	22-Mar-24	28-Mar-24	11
S2-B1NB-5070	S2 B1 NB Superstructure - FRP Integral Backwall Abutment B	2	01-Apr-24	02-Apr-24	20
S2-B1NB-5080	S2 B1 NB Superstructure - Install SIP Decking Span B	5	02-Apr-24	10-Apr-24	10
S2-B1NB-5090	S2 B1 NB Superstructure - Install Rebar Span B	3	12-Apr-24	17-Apr-24	10
S2-B1NB-5100	S2 B1 NB Superstructure - Install Screed Rail / Dry Run	3	19-Apr-24	23-Apr-24	10
S2-B1NB-5110	S2 B1 NB Superstructure - Deck Pour 1	1	25-Apr-24	25-Apr-24	10
S2-B1NB-5120	S2 B1 NB Superstructure - Cure Deck Pour 1	7	26-Apr-24	02-May-24	18
S2-B1NB-5130	S2 B1 NB Superstructure - Pier Closure Pour	1	03-May-24	03-May-24	9



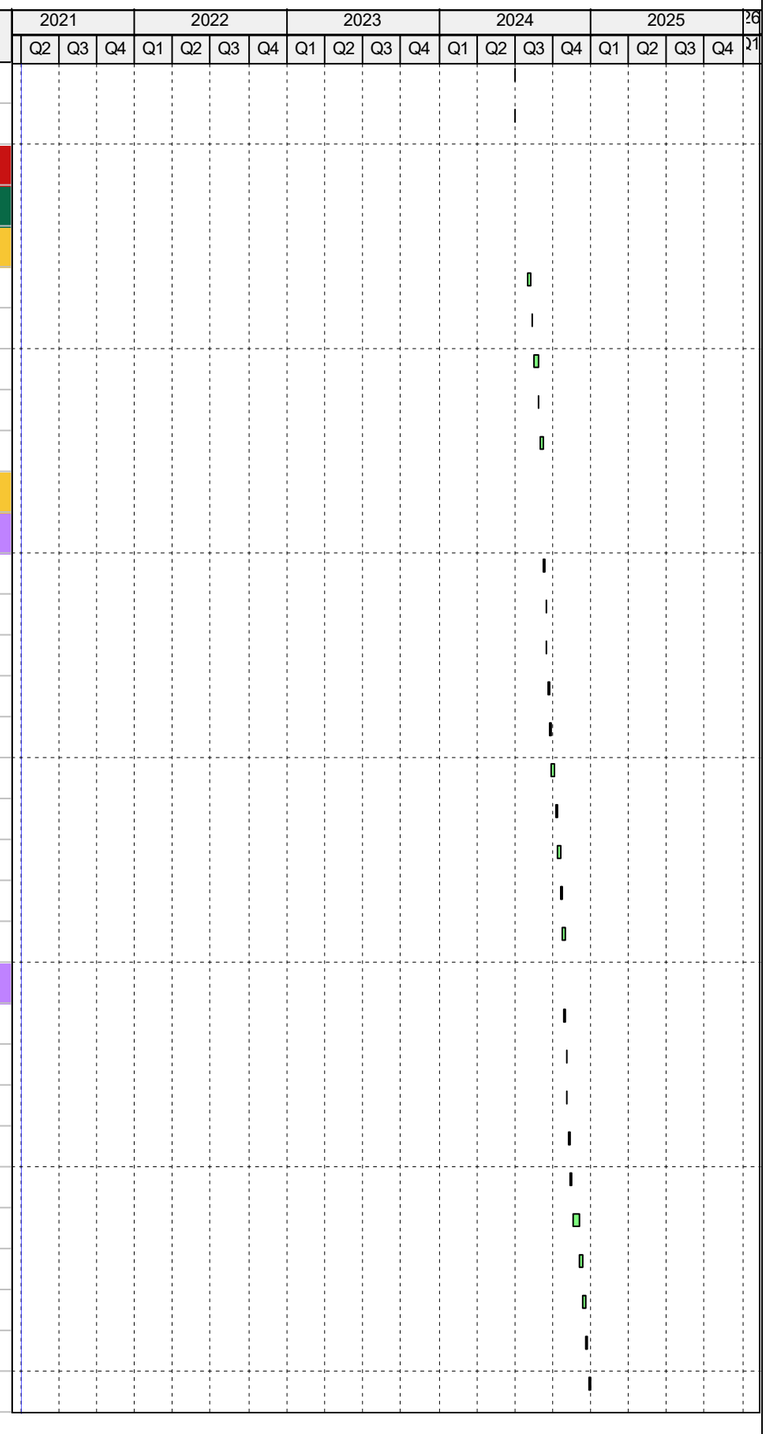
Activity ID	Activity Name	OD	Start	Finish	TF
S2-B1NB-5140	S2 B1 NB Superstructure - FRP Sleeper Slab North Approach	3	06-May-24	09-May-24	9
S2-B1NB-5150	S2 B1 NB Superstructure - FRP Approach Slab North Approach	5	10-May-24	20-May-24	9
S2-B1NB-5160	S2 B1 NB Superstructure - FRP Sleeper Slab South Approach	3	21-May-24	24-May-24	9
S2-B1NB-5170	S2 B1 NB Superstructure - FRP Approach Slab South Approach	5	28-May-24	04-Jun-24	9
S2-B1NB-5180	S2 B1 NB Superstructure - FRP Barrier Walls / Install Conduit	6	06-Jun-24	14-Jun-24	9
S2-B1NB-5190	S2 B1 NB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	17-Jun-24	24-Jun-24	9
S2-B1NB-5200	S2 B1 NB Superstructure - Groove Bridge Deck	1	17-Jun-24	17-Jun-24	12
S2-B1NB-5210	S2 B1 NB Superstructure - Striping	1	18-Jun-24	18-Jun-24	12
Stage 2 - Structures - I-81 Over RT 112 - SB					
Stage 2 - I-81 Over RT112 - SB - Demo Existing Structure					
S2-B1SB-1000	S2 B1 SB Demo - Demo Existing Bridge Deck	5	11-Oct-23	20-Oct-23	1
S2-B1SB-1010	S2 B1 SB Demo - Demo Existing Beams	2	23-Oct-23	24-Oct-23	1
S2-B1SB-1020	S2 B1 SB Demo - Demo Existing Piers	10	26-Oct-23	10-Nov-23	1
S2-B1SB-1030	S2 B1 SB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	13-Nov-23	15-Nov-23	1
S2-B1SB-1040	S2 B1 SB Demo - Demo Existing Concrete Slope Protection	4	17-Nov-23	27-Nov-23	1
Stage 2 - I-81 Over RT112 - SB - Structures					
Stage 2 - I-81 Over RT112 - SB - Abutment A					
S2-B1SB-2000	S2 B1 SB Abutment A - Install SOE Adjacent to Existing Bridge	3	28-Nov-23	01-Dec-23	1
S2-B1SB-2010	S2 B1 SB Abutment A - Remove Existing Structure / Pavement	1	04-Dec-23	04-Dec-23	1
S2-B1SB-2020	S2 B1 SB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	06-Dec-23	06-Dec-23	1
S2-B1SB-2030	S2 B1 SB Abutment A - Install Pile	3	08-Dec-23	13-Dec-23	1
S2-B1SB-2040	S2 B1 SB Abutment A - FRP Concrete Footer - MSE at Abutment	2	15-Dec-23	18-Dec-23	13
S2-B1SB-2050	S2 B1 SB Abutment A - Erect / Backfill - MSE at Abutment	6	19-Dec-23	02-Jan-24	13
S2-B1SB-2060	S2 B1 SB Abutment A - FRP Pile Cap	4	03-Jan-24	10-Jan-24	13
S2-B1SB-2070	S2 B1 SB Abutment A - FRP Back Wall	3	12-Jan-24	17-Jan-24	13
S2-B1SB-2080	S2 B1 SB Abutment A - Backfill Abutment Seat	2	19-Jan-24	22-Jan-24	28
S2-B1SB-2090	S2 B1 SB Abutment A - Finish MSE Wall & Install Coping	4	24-Jan-24	31-Jan-24	28
Stage 2 - I-81 Over RT112 - SB - Abutment B					
S2-B1SB-3000	S2 B1 SB Abutment B - Install SOE Adjacent to Existing Bridge	3	03-Jan-24	08-Jan-24	1
S2-B1SB-3010	S2 B1 SB Abutment B - Remove Existing Structure / Pavement	1	10-Jan-24	10-Jan-24	1
S2-B1SB-3020	S2 B1 SB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	12-Jan-24	12-Jan-24	1
S2-B1SB-3030	S2 B1 SB Abutment B - Install Pile	3	15-Jan-24	19-Jan-24	1
S2-B1SB-3040	S2 B1 SB Abutment B - FRP Concrete Footer - MSE at Abutment	2	22-Jan-24	24-Jan-24	4



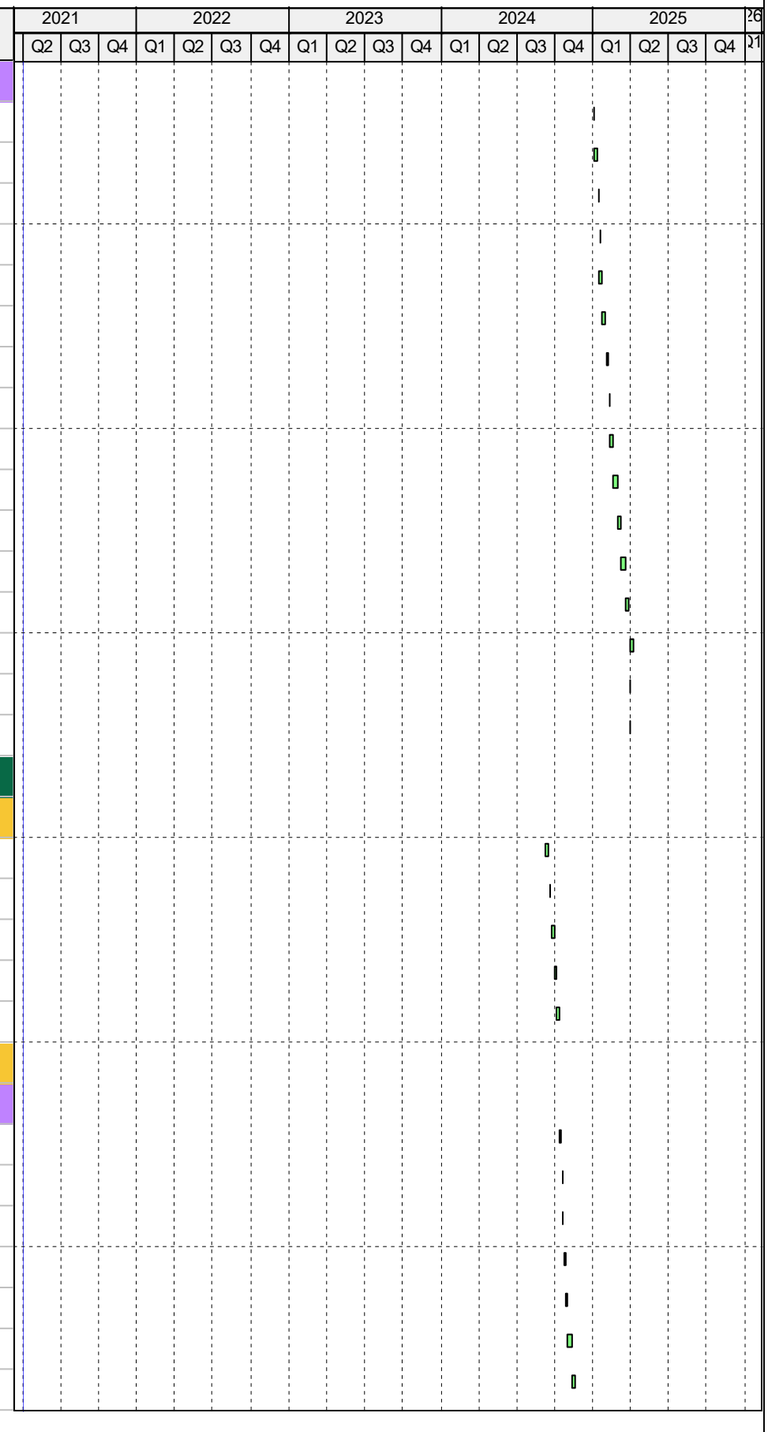
Activity ID	Activity Name	OD	Start	Finish	TF
S2-B1SB-3050	S2 B1 SB Abutment B - Erect / Backfill - MSE at Abutment	6	26-Jan-24	05-Feb-24	4
S2-B1SB-3060	S2 B1 SB Abutment B - FRP Pile Cap	4	07-Feb-24	14-Feb-24	4
S2-B1SB-3070	S2 B1 SB Abutment B - FRP Back Wall	3	16-Feb-24	21-Feb-24	4
S2-B1SB-3080	S2 B1 SB Abutment B - Backfill Abutment Seat	2	23-Feb-24	26-Feb-24	12
S2-B1SB-3090	S2 B1 SB Abutment B - Finish MSE Wall & Install Coping	4	28-Feb-24	06-Mar-24	12
Stage 2 - I-81 Over RT112 - SB - Pier					
S2-B1SB-4000	S2 B1 SB Pier - Install SOE	4	09-Feb-24	16-Feb-24	1
S2-B1SB-4010	S2 B1 SB Pier - Excavate to Grade	1	19-Feb-24	19-Feb-24	1
S2-B1SB-4020	S2 B1 SB Pier - Install Pile	4	21-Feb-24	28-Feb-24	1
S2-B1SB-4030	S2 B1 SB Pier - FRP Pile Cap	5	01-Mar-24	11-Mar-24	1
S2-B1SB-4040	S2 B1 SB Pier - FRP Column	5	13-Mar-24	21-Mar-24	1
S2-B1SB-4050	S2 B1 SB Pier - FRP Cap	4	22-Mar-24	28-Mar-24	1
Stage 2 - I-81 Over RT112 - SB - Superstructure					
S2-B1SB-5000	S2 B1 SB Superstructure - Erect Girders Span A	1	01-Apr-24	01-Apr-24	1
S2-B1SB-5010	S2 B1 SB Superstructure - Install Underbridge Protection / Overhangs Span A	4	02-Apr-24	08-Apr-24	1
S2-B1SB-5020	S2 B1 SB Superstructure - FRP Integral Backwall Abutment A	2	10-Apr-24	12-Apr-24	12
S2-B1SB-5030	S2 B1 SB Superstructure - Install SIP Decking Span A	5	10-Apr-24	19-Apr-24	1
S2-B1SB-5040	S2 B1 SB Superstructure - Install Rebar Span A	3	22-Apr-24	25-Apr-24	6
S2-B1SB-5050	S2 B1 SB Superstructure - Erect Girders Span B	1	02-Apr-24	02-Apr-24	5
S2-B1SB-5060	S2 B1 SB Superstructure - Install Underbridge Protection / Overhangs Span B	4	10-Apr-24	17-Apr-24	2
S2-B1SB-5070	S2 B1 SB Superstructure - FRP Integral Backwall Abutment B	2	19-Apr-24	22-Apr-24	11
S2-B1SB-5080	S2 B1 SB Superstructure - Install SIP Decking Span B	5	22-Apr-24	29-Apr-24	1
S2-B1SB-5090	S2 B1 SB Superstructure - Install Rebar Span B	3	30-Apr-24	03-May-24	1
S2-B1SB-5100	S2 B1 SB Superstructure - Install Screed Rail / Dry Run	3	06-May-24	09-May-24	1
S2-B1SB-5110	S2 B1 SB Superstructure - Deck Pour 1	1	10-May-24	10-May-24	1
S2-B1SB-5120	S2 B1 SB Superstructure - Cure Deck Pour 1	7	11-May-24	17-May-24	3
S2-B1SB-5130	S2 B1 SB Superstructure - Pier Closure Pour	1	20-May-24	20-May-24	1
S2-B1SB-5140	S2 B1 SB Superstructure - FRP Sleeper Slab North Approach	3	21-May-24	24-May-24	1
S2-B1SB-5150	S2 B1 SB Superstructure - FRP Approach Slab North Approach	5	28-May-24	04-Jun-24	1
S2-B1SB-5160	S2 B1 SB Superstructure - FRP Sleeper Slab South Approach	3	06-Jun-24	10-Jun-24	1
S2-B1SB-5170	S2 B1 SB Superstructure - FRP Approach Slab South Approach	5	11-Jun-24	18-Jun-24	1
S2-B1SB-5180	S2 B1 SB Superstructure - FRP Barrier Walls / Install Conduit	6	20-Jun-24	28-Jun-24	1
S2-B1SB-5190	S2 B1 SB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	01-Jul-24	09-Jul-24	1



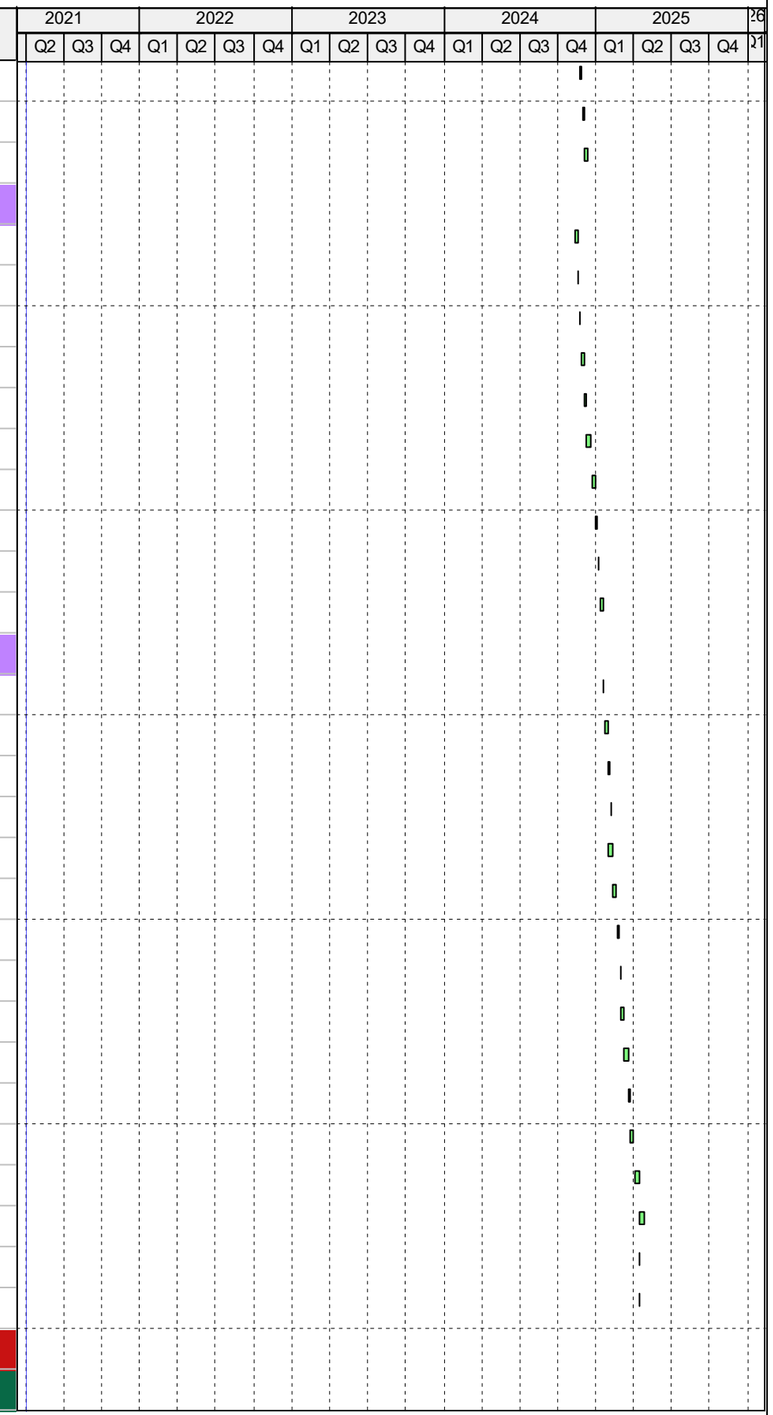
Activity ID	Activity Name	OD	Start	Finish	TF
S2-B1SB-5200	S2 B1 SB Superstructure - Groove Bridge Deck	1	01-Jul-24	01-Jul-24	4
S2-B1SB-5210	S2 B1 SB Superstructure - Striping	1	03-Jul-24	03-Jul-24	4
Stage 2 - Structures - Bridge 2: I-81 Over RT 635					
Stage 2 - Structures - I-81 Over RT 635 - NB					
Stage 2 - I-81 Over RT 635 - NB - Demo Existing Structure					
S2-B2NB-1000	S2 B2 NB Demo - Demo Existing Bridge Deck	5	02-Aug-24	09-Aug-24	4
S2-B2NB-1010	S2 B2 NB Demo - Demo Existing Beams	2	12-Aug-24	14-Aug-24	4
S2-B2NB-1020	S2 B2 NB Demo - Demo Existing Piers	6	16-Aug-24	26-Aug-24	4
S2-B2NB-1030	S2 B2 NB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	27-Aug-24	29-Aug-24	4
S2-B2NB-1040	S2 B2 NB Demo - Demo Existing Concrete Slope Protection	4	30-Aug-24	06-Sep-24	4
Stage 2 - I-81 Over RT 635 - NB - Structures					
Stage 2 - I-81 Over RT 635 - NB - Abutment A					
S2-B2NB-2000	S2 B2 NB Abutment A - Install SOE Adjacent to Existing Bridge	3	09-Sep-24	13-Sep-24	29
S2-B2NB-2010	S2 B2 NB Abutment A - Remove Existing Structure / Pavement	1	16-Sep-24	16-Sep-24	29
S2-B2NB-2020	S2 B2 NB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	17-Sep-24	17-Sep-24	29
S2-B2NB-2030	S2 B2 NB Abutment A - Install Pile	3	19-Sep-24	23-Sep-24	29
S2-B2NB-2040	S2 B2 NB Abutment A - FRP Concrete Footer - MSE at Abutment	2	24-Sep-24	26-Sep-24	80
S2-B2NB-2050	S2 B2 NB Abutment A - Erect / Backfill - MSE at Abutment	6	27-Sep-24	04-Oct-24	80
S2-B2NB-2060	S2 B2 NB Abutment A - FRP Pile Cap	4	07-Oct-24	11-Oct-24	80
S2-B2NB-2070	S2 B2 NB Abutment A - FRP Back Wall	3	14-Oct-24	18-Oct-24	80
S2-B2NB-2080	S2 B2 NB Abutment A - Backfill Abutment Seat	2	21-Oct-24	23-Oct-24	87
S2-B2NB-2090	S2 B2 NB Abutment A - Finish MSE Wall & Install Coping	4	25-Oct-24	31-Oct-24	87
Stage 2 - I-81 Over RT 635 - NB - Abutment B					
S2-B2NB-3000	S2 B2 NB Abutment B - Install SOE Adjacent to Existing Bridge	3	29-Oct-24	01-Nov-24	18
S2-B2NB-3010	S2 B2 NB Abutment B - Remove Existing Structure / Pavement	1	04-Nov-24	04-Nov-24	18
S2-B2NB-3020	S2 B2 NB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	05-Nov-24	05-Nov-24	18
S2-B2NB-3030	S2 B2 NB Abutment B - Install Pile	3	07-Nov-24	11-Nov-24	18
S2-B2NB-3040	S2 B2 NB Abutment B - FRP Concrete Footer - MSE at Abutment	2	13-Nov-24	15-Nov-24	60
S2-B2NB-3050	S2 B2 NB Abutment B - Erect / Backfill - MSE at Abutment	6	18-Nov-24	02-Dec-24	60
S2-B2NB-3060	S2 B2 NB Abutment B - FRP Pile Cap	4	04-Dec-24	11-Dec-24	60
S2-B2NB-3070	S2 B2 NB Abutment B - FRP Back Wall	3	13-Dec-24	18-Dec-24	60
S2-B2NB-3080	S2 B2 NB Abutment B - Backfill Abutment Seat	2	20-Dec-24	23-Dec-24	60
S2-B2NB-3090	S2 B2 NB Abutment B - Finish MSE Wall & Install Coping	4	26-Dec-24	31-Dec-24	60



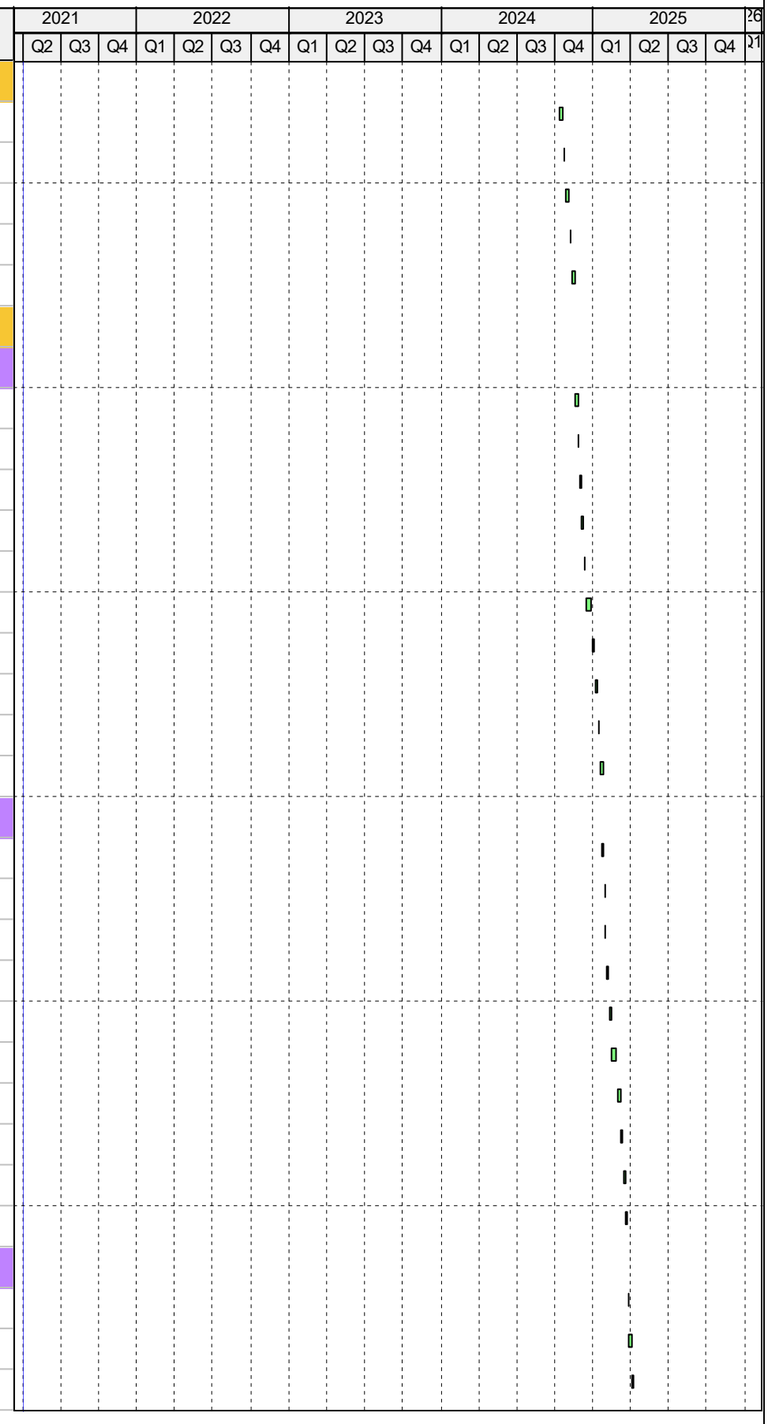
Activity ID	Activity Name	OD	Start	Finish	TF
Stage 2 - I-81 Over RT 635 - NB - Superstructure					
S2-B2NB-4000	S2 B2 NB Superstructure - Erect Girders	1	02-Jan-25	02-Jan-25	60
S2-B2NB-4010	S2 B2 NB Superstructure - Install Underbridge Protection / Overhangs	4	03-Jan-25	10-Jan-25	60
S2-B2NB-4020	S2 B2 NB Superstructure - FRP Integral Backwall Abutment A	2	13-Jan-25	15-Jan-25	68
S2-B2NB-4030	S2 B2 NB Superstructure - FRP Integral Backwall Abutment B	2	17-Jan-25	20-Jan-25	68
S2-B2NB-4040	S2 B2 NB Superstructure - Install SIP Decking Spa	5	13-Jan-25	22-Jan-25	60
S2-B2NB-4050	S2 B2 NB Superstructure - Install Rebar	4	24-Jan-25	31-Jan-25	60
S2-B2NB-4060	S2 B2 NB Superstructure - Install Screed Rail / Dry Run	3	03-Feb-25	07-Feb-25	60
S2-B2NB-4070	S2 B2 NB Superstructure - Deck Pour	1	10-Feb-25	10-Feb-25	60
S2-B2NB-4080	S2 B2 NB Superstructure - FRP Sleeper Slab North Approach	3	12-Feb-25	17-Feb-25	60
S2-B2NB-4090	S2 B2 NB Superstructure - FRP Approach Slab North Approach	5	19-Feb-25	28-Feb-25	60
S2-B2NB-4100	S2 B2 NB Superstructure - FRP Sleeper Slab North Approach	3	03-Mar-25	07-Mar-25	60
S2-B2NB-4110	S2 B2 NB Superstructure - FRP Approach Slab North Approach	5	10-Mar-25	18-Mar-25	60
S2-B2NB-4120	S2 B2 NB Superstructure - FRP Barrier Walls / Install Conduit	6	20-Mar-25	28-Mar-25	60
S2-B2NB-4130	S2 B2 NB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	31-Mar-25	07-Apr-25	60
S2-B2NB-4140	S2 B2 NB Superstructure - Groove Bridge Deck	1	31-Mar-25	31-Mar-25	67
S2-B2NB-4150	S2 B2 NB Superstructure - Striping	1	01-Apr-25	01-Apr-25	67
Stage 2 - Structures - I-81 Over RT 635 - SB					
Stage 2 - I-81 Over RT 635 - SB - Demo Existing Structure					
S2-B2SB-1000	S2 B2 SB Demo - Demo Existing Bridge Deck	5	09-Sep-24	17-Sep-24	4
S2-B2SB-1010	S2 B2 SB Demo - Demo Existing Beams	2	19-Sep-24	20-Sep-24	4
S2-B2SB-1020	S2 B2 SB Demo - Demo Existing Piers	6	23-Sep-24	01-Oct-24	4
S2-B2SB-1030	S2 B2 SB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	02-Oct-24	03-Oct-24	4
S2-B2SB-1040	S2 B2 SB Demo - Demo Existing Concrete Slope Protection	4	04-Oct-24	10-Oct-24	4
Stage 2 - I-81 Over RT 635 - SB - Structures					
Stage 2 - I-81 Over RT 635 - SB - Abutment A					
S2-B2SB-2000	S2 B2 SB Abutment A - Install SOE Adjacent to Existing Bridge	3	11-Oct-24	16-Oct-24	18
S2-B2SB-2010	S2 B2 SB Abutment A - Remove Existing Structure / Pavement	1	18-Oct-24	18-Oct-24	18
S2-B2SB-2020	S2 B2 SB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	21-Oct-24	21-Oct-24	18
S2-B2SB-2030	S2 B2 SB Abutment A - Install Pile	3	23-Oct-24	28-Oct-24	18
S2-B2SB-2040	S2 B2 SB Abutment A - FRP Concrete Footer - MSE at Abutment	2	29-Oct-24	31-Oct-24	46
S2-B2SB-2050	S2 B2 SB Abutment A - Erect / Backfill - MSE at Abutment	6	01-Nov-24	11-Nov-24	46
S2-B2SB-2060	S2 B2 SB Abutment A - FRP Pile Cap	4	13-Nov-24	20-Nov-24	46



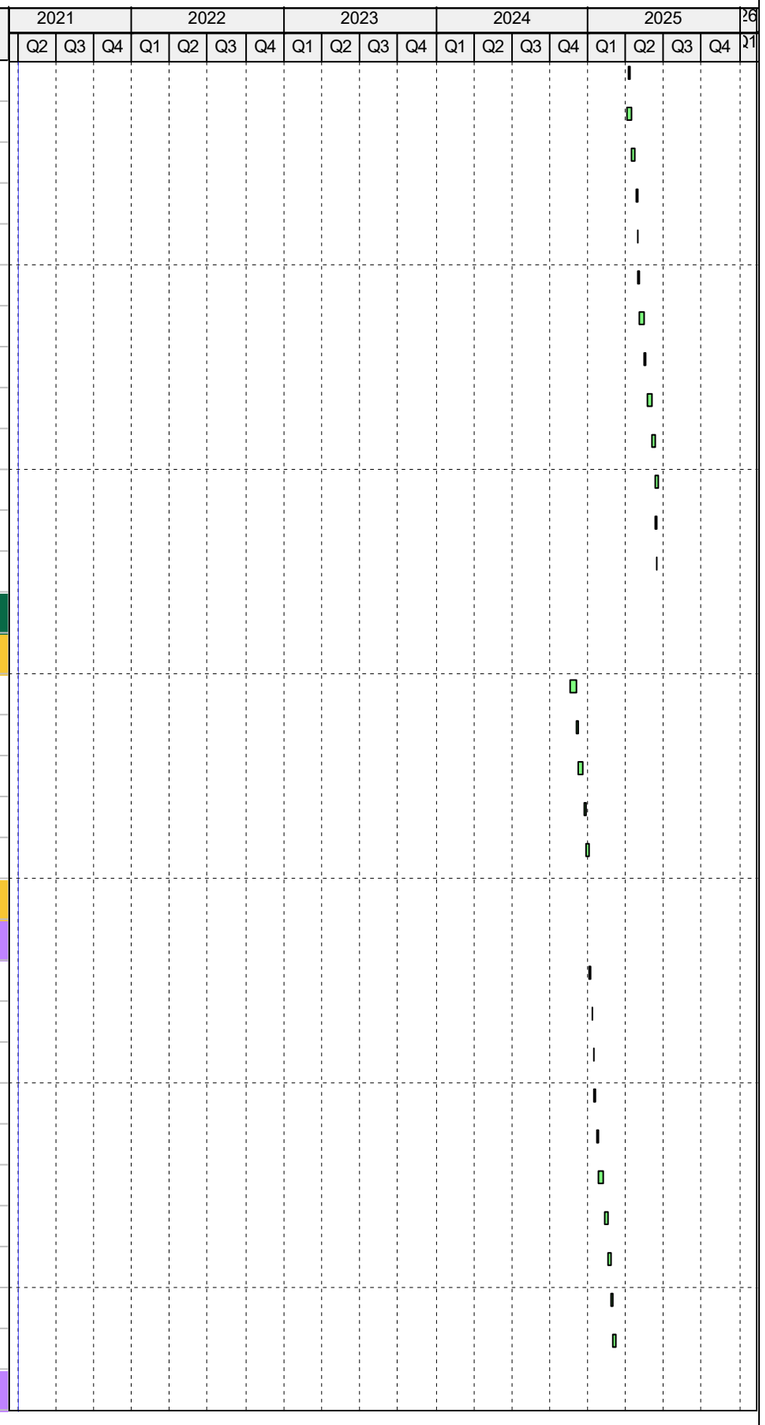
Activity ID	Activity Name	OD	Start	Finish	TF
S2-B2SB-2070	S2 B2 SB Abutment A - FRP Back Wall	3	22-Nov-24	27-Nov-24	46
S2-B2SB-2080	S2 B2 SB Abutment A - Backfill Abutment Seat	2	02-Dec-24	04-Dec-24	53
S2-B2SB-2090	S2 B2 SB Abutment A - Finish MSE Wall & Install Coping	4	06-Dec-24	13-Dec-24	53
Stage 2 - I-81 Over RT 635 - SB - Abutment B					
S2-B2SB-3000	S2 B2 SB Abutment B - Install SOE Adjacent to Existing Bridge	3	13-Nov-24	18-Nov-24	18
S2-B2SB-3010	S2 B2 SB Abutment B - Remove Existing Structure / Pavement	1	20-Nov-24	20-Nov-24	18
S2-B2SB-3020	S2 B2 SB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	22-Nov-24	22-Nov-24	18
S2-B2SB-3030	S2 B2 SB Abutment B - Install Pile	3	25-Nov-24	02-Dec-24	18
S2-B2SB-3040	S2 B2 SB Abutment B - FRP Concrete Footer - MSE at Abutment	2	04-Dec-24	06-Dec-24	37
S2-B2SB-3050	S2 B2 SB Abutment B - Erect / Backfill - MSE at Abutment	6	09-Dec-24	20-Dec-24	37
S2-B2SB-3060	S2 B2 SB Abutment B - FRP Pile Cap	4	23-Dec-24	30-Dec-24	37
S2-B2SB-3070	S2 B2 SB Abutment B - FRP Back Wall	3	31-Dec-24	03-Jan-25	37
S2-B2SB-3080	S2 B2 SB Abutment B - Backfill Abutment Seat	2	06-Jan-25	08-Jan-25	37
S2-B2SB-3090	S2 B2 SB Abutment B - Finish MSE Wall & Install Coping	4	10-Jan-25	17-Jan-25	37
Stage 2 - I-81 Over RT 635 - SB - Superstructure					
S2-B2SB-4000	S2 B2 SB Superstructure - Erect Girders	1	20-Jan-25	20-Jan-25	37
S2-B2SB-4010	S2 B2 SB Superstructure - Install Underbridge Protection / Overhangs	4	22-Jan-25	29-Jan-25	37
S2-B2SB-4020	S2 B2 SB Superstructure - FRP Integral Backwall Abutment A	2	31-Jan-25	03-Feb-25	45
S2-B2SB-4030	S2 B2 SB Superstructure - FRP Integral Backwall Abutment B	2	05-Feb-25	07-Feb-25	45
S2-B2SB-4040	S2 B2 SB Superstructure - Install SIP Decking Spa	5	31-Jan-25	10-Feb-25	37
S2-B2SB-4050	S2 B2 SB Superstructure - Install Rebar	4	12-Feb-25	19-Feb-25	37
S2-B2SB-4060	S2 B2 SB Superstructure - Install Screed Rail / Dry Run	3	21-Feb-25	26-Feb-25	37
S2-B2SB-4070	S2 B2 SB Superstructure - Deck Pour	1	28-Feb-25	28-Feb-25	37
S2-B2SB-4080	S2 B2 SB Superstructure - FRP Sleeper Slab North Approach	3	03-Mar-25	07-Mar-25	37
S2-B2SB-4090	S2 B2 SB Superstructure - FRP Approach Slab North Approach	5	10-Mar-25	18-Mar-25	37
S2-B2SB-4100	S2 B2 SB Superstructure - FRP Sleeper Slab North Approach	3	20-Mar-25	24-Mar-25	37
S2-B2SB-4110	S2 B2 SB Superstructure - FRP Approach Slab North Approach	5	25-Mar-25	01-Apr-25	37
S2-B2SB-4120	S2 B2 SB Superstructure - FRP Barrier Walls / Install Conduit	6	03-Apr-25	14-Apr-25	37
S2-B2SB-4130	S2 B2 SB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	15-Apr-25	25-Apr-25	37
S2-B2SB-4140	S2 B2 SB Superstructure - Groove Bridge Deck	1	15-Apr-25	15-Apr-25	57
S2-B2SB-4150	S2 B2 SB Superstructure - Striping	1	17-Apr-25	17-Apr-25	57
Stage 2 - Structures - Bridge 3: I-81 Over RT 619					
Stage 2 - Structures - I-81 Over RT 619 - NB					



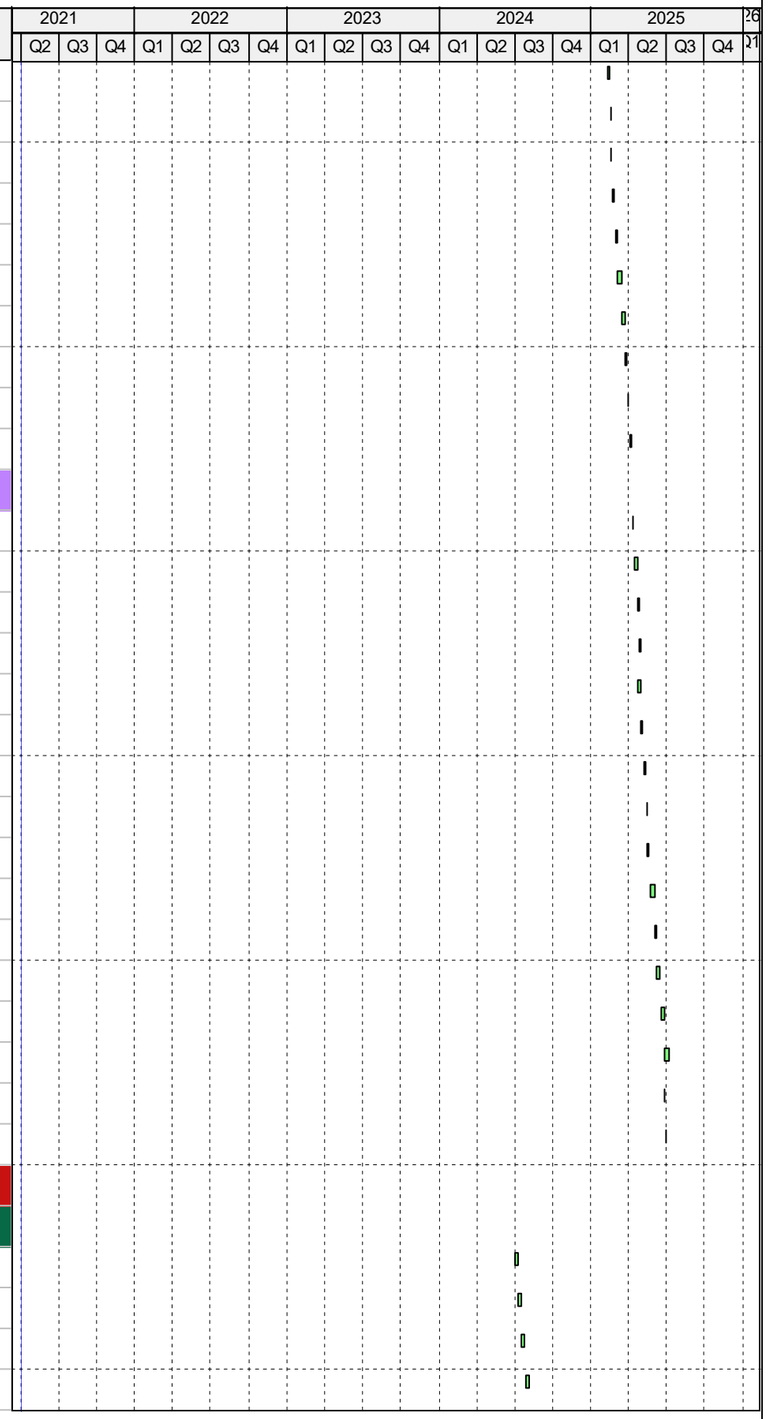
Activity ID	Activity Name	OD	Start	Finish	TF
Stage 2 - I-81 Over RT 619 - NB - Demo Existing Structure					
S2-B3NB-1000	S2 B3 NB Demo - Demo Existing Bridge Deck	5	11-Oct-24	21-Oct-24	4
S2-B3NB-1010	S2 B3 NB Demo - Demo Existing Beams	2	23-Oct-24	25-Oct-24	4
S2-B3NB-1020	S2 B3 NB Demo - Demo Existing Piers	6	28-Oct-24	05-Nov-24	4
S2-B3NB-1030	S2 B3 NB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	07-Nov-24	08-Nov-24	4
S2-B3NB-1040	S2 B3 NB Demo - Demo Existing Concrete Slope Protection	4	11-Nov-24	18-Nov-24	4
Stage 2 - I-81 Over RT 619 - NB - Structures					
Stage 2 - I-81 Over RT 619 - NB - Abutment A					
S2-B3NB-2000	S2 B3 NB Abutment A - Install SOE Adjacent to Existing Bridge	3	20-Nov-24	25-Nov-24	15
S2-B3NB-2010	S2 B3 NB Abutment A - Remove Existing Structure / Pavement	1	27-Nov-24	27-Nov-24	15
S2-B3NB-2020	S2 B3 NB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	02-Dec-24	02-Dec-24	15
S2-B3NB-2030	S2 B3 NB Abutment A - Install Pile	3	04-Dec-24	09-Dec-24	15
S2-B3NB-2040	S2 B3 NB Abutment A - FRP Concrete Footer - MSE at Abutment	2	11-Dec-24	13-Dec-24	47
S2-B3NB-2050	S2 B3 NB Abutment A - Erect / Backfill - MSE at Abutment	6	16-Dec-24	27-Dec-24	47
S2-B3NB-2060	S2 B3 NB Abutment A - FRP Pile Cap	4	30-Dec-24	03-Jan-25	47
S2-B3NB-2070	S2 B3 NB Abutment A - FRP Back Wall	3	06-Jan-25	10-Jan-25	47
S2-B3NB-2080	S2 B3 NB Abutment A - Backfill Abutment Seat	2	13-Jan-25	15-Jan-25	54
S2-B3NB-2090	S2 B3 NB Abutment A - Finish MSE Wall & Install Coping	4	17-Jan-25	24-Jan-25	54
Stage 2 - I-81 Over RT 619 - NB - Abutment B					
S2-B3NB-3000	S2 B3 NB Abutment B - Install SOE Adjacent to Existing Bridge	3	22-Jan-25	27-Jan-25	4
S2-B3NB-3010	S2 B3 NB Abutment B - Remove Existing Structure / Pavement	1	29-Jan-25	29-Jan-25	4
S2-B3NB-3020	S2 B3 NB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	31-Jan-25	31-Jan-25	4
S2-B3NB-3030	S2 B3 NB Abutment B - Install Pile	3	03-Feb-25	07-Feb-25	4
S2-B3NB-3040	S2 B3 NB Abutment B - FRP Concrete Footer - MSE at Abutment	2	10-Feb-25	12-Feb-25	27
S2-B3NB-3050	S2 B3 NB Abutment B - Erect / Backfill - MSE at Abutment	6	14-Feb-25	26-Feb-25	27
S2-B3NB-3060	S2 B3 NB Abutment B - FRP Pile Cap	4	28-Feb-25	07-Mar-25	27
S2-B3NB-3070	S2 B3 NB Abutment B - FRP Back Wall	3	10-Mar-25	14-Mar-25	27
S2-B3NB-3080	S2 B3 NB Abutment B - Backfill Abutment Seat	2	17-Mar-25	18-Mar-25	27
S2-B3NB-3090	S2 B3 NB Abutment B - Finish MSE Wall & Install Coping	4	20-Mar-25	25-Mar-25	27
Stage 2 - I-81 Over RT 619 - NB - Superstructure					
S2-B3NB-4000	S2 B3 NB Superstructure - Erect Girders	1	27-Mar-25	27-Mar-25	27
S2-B3NB-4010	S2 B3 NB Superstructure - Install Underbridge Protection / Overhangs	4	28-Mar-25	03-Apr-25	27
S2-B3NB-4020	S2 B3 NB Superstructure - FRP Integral Backwall Abutment A	2	04-Apr-25	07-Apr-25	35



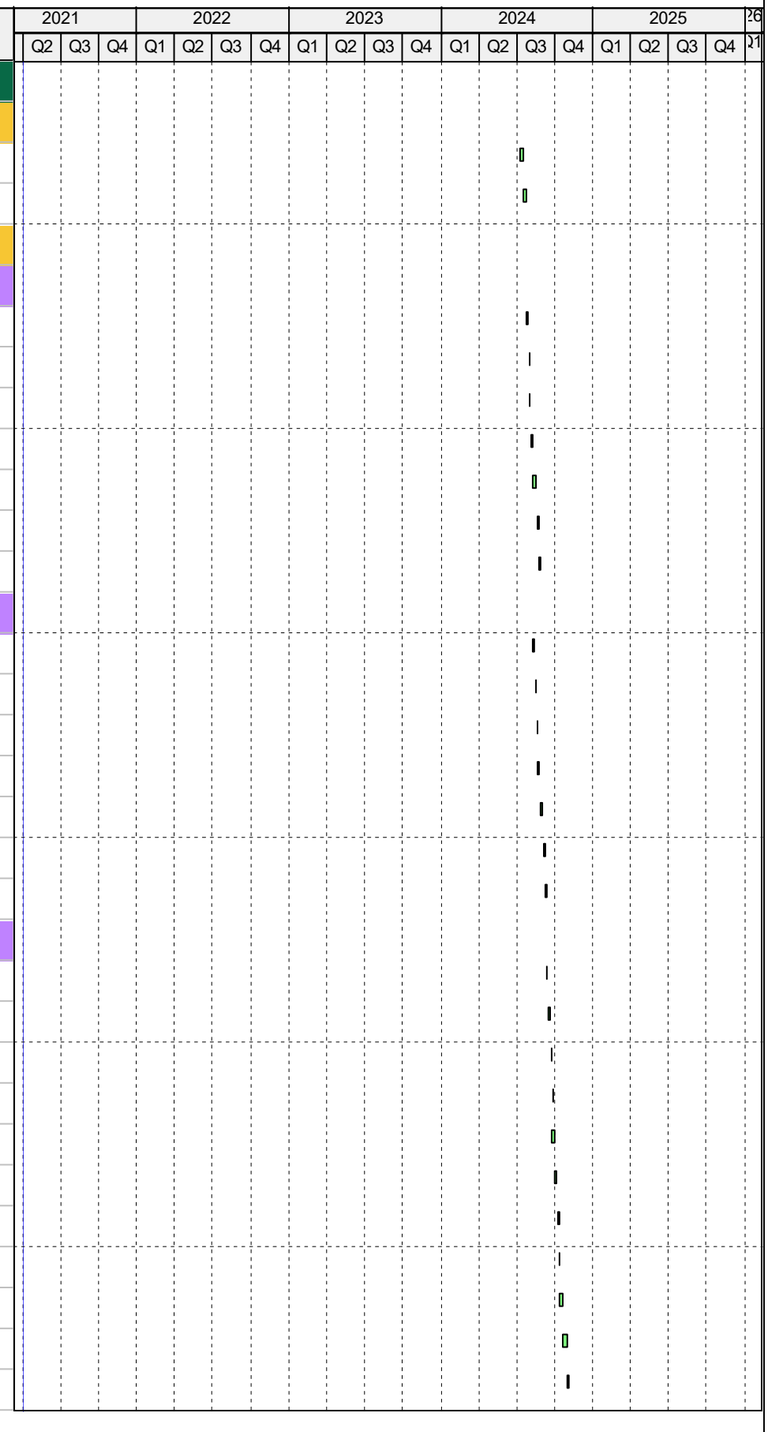
Activity ID	Activity Name	OD	Start	Finish	TF
S2-B3NB-4030	S2 B3 NB Superstructure - FRP Integral Backwall Abutment B	2	09-Apr-25	11-Apr-25	35
S2-B3NB-4040	S2 B3 NB Superstructure - Install SIP Decking Spa	5	04-Apr-25	14-Apr-25	27
S2-B3NB-4050	S2 B3 NB Superstructure - Install Rebar	4	15-Apr-25	23-Apr-25	27
S2-B3NB-4060	S2 B3 NB Superstructure - Install Screed Rail / Dry Run	3	25-Apr-25	29-Apr-25	27
S2-B3NB-4070	S2 B3 NB Superstructure - Deck Pour	1	30-Apr-25	30-Apr-25	27
S2-B3NB-4080	S2 B3 NB Superstructure - FRP Sleeper Slab North Approach	3	01-May-25	05-May-25	27
S2-B3NB-4090	S2 B3 NB Superstructure - FRP Approach Slab North Approach	5	06-May-25	14-May-25	27
S2-B3NB-4100	S2 B3 NB Superstructure - FRP Sleeper Slab North Approach	3	16-May-25	21-May-25	27
S2-B3NB-4110	S2 B3 NB Superstructure - FRP Approach Slab North Approach	5	23-May-25	02-Jun-25	27
S2-B3NB-4120	S2 B3 NB Superstructure - FRP Barrier Walls / Install Conduit	6	03-Jun-25	12-Jun-25	27
S2-B3NB-4130	S2 B3 NB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	13-Jun-25	20-Jun-25	27
S2-B3NB-4140	S2 B3 NB Superstructure - Groove Bridge Deck	1	13-Jun-25	13-Jun-25	30
S2-B3NB-4150	S2 B3 NB Superstructure - Striping	1	16-Jun-25	16-Jun-25	30
Stage 2 - Structures - I-81 Over RT 619 - SB					
Stage 2 - I-81 Over RT 619 - SB - Demo Existing Structure					
S2-B3SB-1000	S2 B3 SB Demo - Demo Existing Bridge Deck	5	20-Nov-24	02-Dec-24	4
S2-B3SB-1010	S2 B3 SB Demo - Demo Existing Beams	2	04-Dec-24	06-Dec-24	4
S2-B3SB-1020	S2 B3 SB Demo - Demo Existing Piers	6	09-Dec-24	20-Dec-24	4
S2-B3SB-1030	S2 B3 SB Demo - Demo Existing Concrete Footers (Pile to Remain)	2	23-Dec-24	26-Dec-24	4
S2-B3SB-1040	S2 B3 SB Demo - Demo Existing Concrete Slope Protection	4	27-Dec-24	02-Jan-25	4
Stage 2 - I-81 Over RT 619 - SB - Structures					
Stage 2 - I-81 Over RT 619 - SB - Abutment A					
S2-B3SB-2000	S2 B3 SB Abutment A - Install SOE Adjacent to Existing Bridge	3	03-Jan-25	08-Jan-25	4
S2-B3SB-2010	S2 B3 SB Abutment A - Remove Existing Structure / Pavement	1	10-Jan-25	10-Jan-25	4
S2-B3SB-2020	S2 B3 SB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	13-Jan-25	13-Jan-25	4
S2-B3SB-2030	S2 B3 SB Abutment A - Install Pile	3	15-Jan-25	20-Jan-25	4
S2-B3SB-2040	S2 B3 SB Abutment A - FRP Concrete Footer - MSE at Abutment	2	22-Jan-25	24-Jan-25	13
S2-B3SB-2050	S2 B3 SB Abutment A - Erect / Backfill - MSE at Abutment	6	27-Jan-25	07-Feb-25	13
S2-B3SB-2060	S2 B3 SB Abutment A - FRP Pile Cap	4	10-Feb-25	17-Feb-25	13
S2-B3SB-2070	S2 B3 SB Abutment A - FRP Back Wall	3	19-Feb-25	24-Feb-25	13
S2-B3SB-2080	S2 B3 SB Abutment A - Backfill Abutment Seat	2	26-Feb-25	28-Feb-25	20
S2-B3SB-2090	S2 B3 SB Abutment A - Finish MSE Wall & Install Coping	4	03-Mar-25	10-Mar-25	20
Stage 2 - I-81 Over RT 619 - SB - Abutment B					



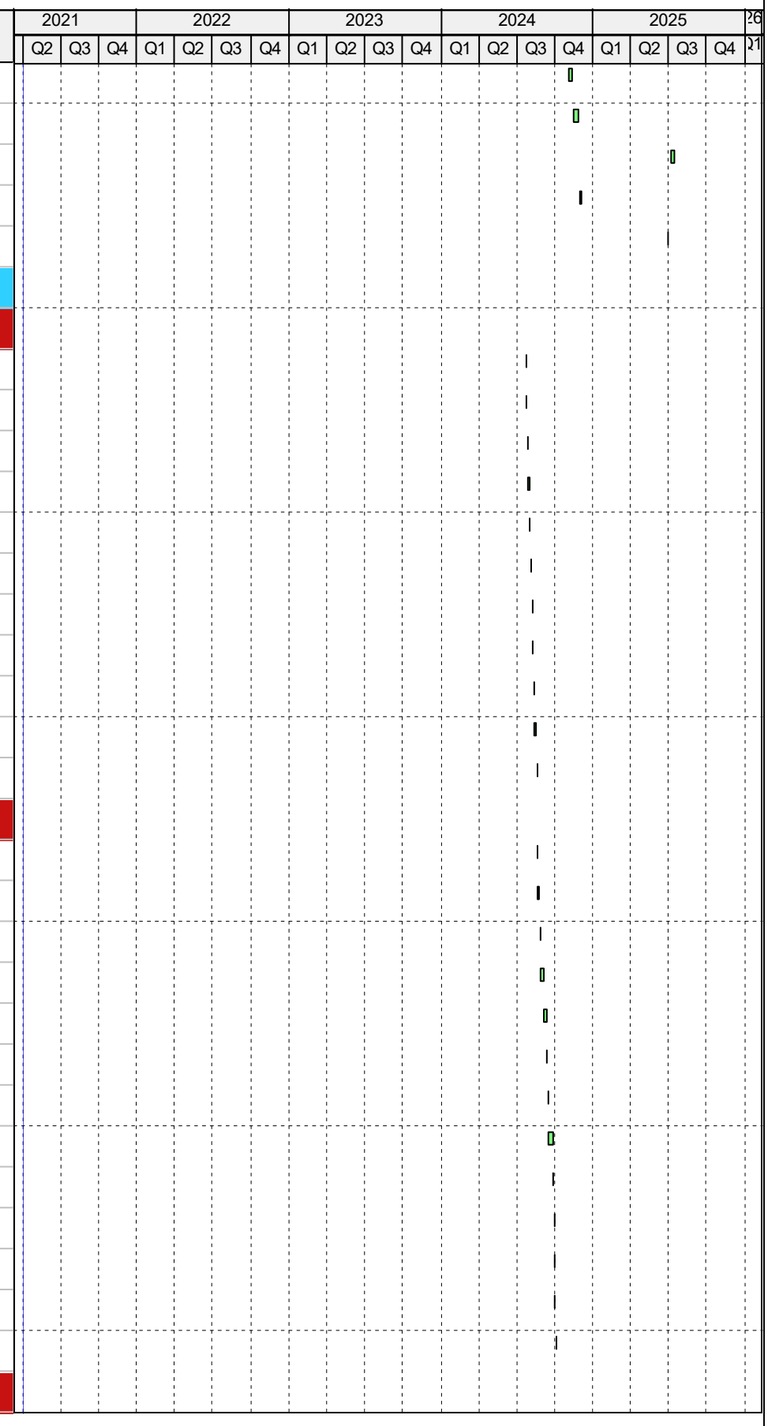
Activity ID	Activity Name	OD	Start	Finish	TF
S2-B3SB-3000	S2 B3 SB Abutment B - Install SOE Adjacent to Existing Bridge	3	10-Feb-25	14-Feb-25	4
S2-B3SB-3010	S2 B3 SB Abutment B - Remove Existing Structure / Pavement	1	17-Feb-25	17-Feb-25	4
S2-B3SB-3020	S2 B3 SB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	19-Feb-25	19-Feb-25	4
S2-B3SB-3030	S2 B3 SB Abutment B - Install Pile	3	21-Feb-25	26-Feb-25	4
S2-B3SB-3040	S2 B3 SB Abutment B - FRP Concrete Footer - MSE at Abutment	2	28-Feb-25	03-Mar-25	4
S2-B3SB-3050	S2 B3 SB Abutment B - Erect / Backfill - MSE at Abutment	6	05-Mar-25	17-Mar-25	4
S2-B3SB-3060	S2 B3 SB Abutment B - FRP Pile Cap	4	18-Mar-25	24-Mar-25	4
S2-B3SB-3070	S2 B3 SB Abutment B - FRP Back Wall	3	25-Mar-25	28-Mar-25	4
S2-B3SB-3080	S2 B3 SB Abutment B - Backfill Abutment Seat	2	31-Mar-25	01-Apr-25	4
S2-B3SB-3090	S2 B3 SB Abutment B - Finish MSE Wall & Install Coping	4	03-Apr-25	09-Apr-25	4
Stage 2 - I-81 Over RT 619 - SB - Superstructure					
S2-B3SB-4000	S2 B3 SB Superstructure - Erect Girders	1	11-Apr-25	11-Apr-25	4
S2-B3SB-4010	S2 B3 SB Superstructure - Install Underbridge Protection / Overhangs	4	14-Apr-25	21-Apr-25	4
S2-B3SB-4020	S2 B3 SB Superstructure - FRP Integral Backwall Abutment A	2	23-Apr-25	25-Apr-25	12
S2-B3SB-4030	S2 B3 SB Superstructure - FRP Integral Backwall Abutment B	2	28-Apr-25	29-Apr-25	12
S2-B3SB-4040	S2 B3 SB Superstructure - Install SIP Decking Spa	5	23-Apr-25	30-Apr-25	4
S2-B3SB-4050	S2 B3 SB Superstructure - Install Rebar	4	01-May-25	06-May-25	4
S2-B3SB-4060	S2 B3 SB Superstructure - Install Screed Rail / Dry Run	3	08-May-25	12-May-25	4
S2-B3SB-4070	S2 B3 SB Superstructure - Deck Pour	1	14-May-25	14-May-25	4
S2-B3SB-4080	S2 B3 SB Superstructure - FRP Sleeper Slab North Approach	3	16-May-25	21-May-25	4
S2-B3SB-4090	S2 B3 SB Superstructure - FRP Approach Slab North Approach	5	23-May-25	02-Jun-25	4
S2-B3SB-4100	S2 B3 SB Superstructure - FRP Sleeper Slab North Approach	3	03-Jun-25	06-Jun-25	4
S2-B3SB-4110	S2 B3 SB Superstructure - FRP Approach Slab North Approach	5	09-Jun-25	16-Jun-25	4
S2-B3SB-4120	S2 B3 SB Superstructure - FRP Barrier Walls / Install Conduit	6	17-Jun-25	26-Jun-25	4
S2-B3SB-4130	S2 B3 SB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	27-Jun-25	07-Jul-25	4
S2-B3SB-4140	S2 B3 SB Superstructure - Groove Bridge Deck	1	27-Jun-25	27-Jun-25	20
S2-B3SB-4150	S2 B3 SB Superstructure - Striping	1	30-Jun-25	30-Jun-25	20
Stage 2 - Structures - Bridge 4: I-81 Over RT 311					
Stage 2 - Structures - I-81 Over RT 311 - NB					
S2-B4NB-1000	S2 B4 NB - Demo Existing Barrier	5	01-Jul-24	09-Jul-24	8
S2-B4NB-1010	S2 B4 NB - Install Barrier	5	11-Jul-24	18-Jul-24	173
S2-B4NB-1020	S2 B4 NB - Joint Repair	5	19-Jul-24	26-Jul-24	173
S2-B4NB-1030	S2 B4 NB - Latex Overlay	5	29-Jul-24	05-Aug-24	173



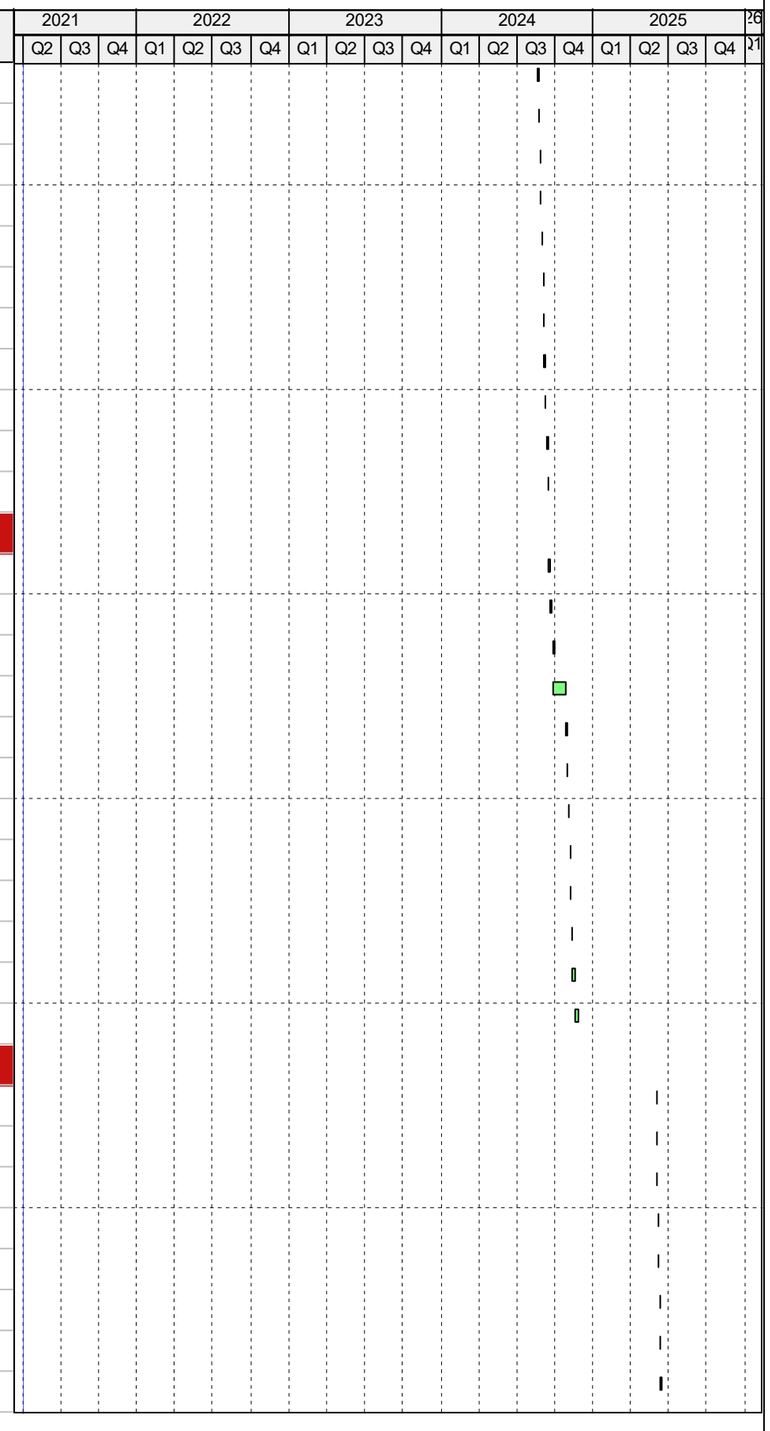
Activity ID	Activity Name	OD	Start	Finish	TF
Stage 2 - Structures - I-81 Over RT 311 - SB					
Stage 2 - I-81 Over RT 311 - SB - Demo Existing Structure					
S2-B4SB-1000	S2 B4 SB Demo - Demo Existing Barrier	5	11-Jul-24	18-Jul-24	8
S2-B4SB-1010	S2 B4 SB Demo - Demo Existing Concrete Slope Protection	4	19-Jul-24	25-Jul-24	8
Stage 2 - I-81 Over RT 311 - SB - Structures					
Stage 2 - I-81 Over RT 311 - SB - Abutment A					
S2-B4SB-2000	S2 B4 SB Abutment A - Install SOE Adjacent to Existing Bridge	3	26-Jul-24	30-Jul-24	36
S2-B4SB-2010	S2 B4 SB Abutment A - Remove Existing Structure / Pavement	1	01-Aug-24	01-Aug-24	36
S2-B4SB-2020	S2 B4 SB Abutment A - Excavate / Embankment to Subgrade for Driving Pile	1	02-Aug-24	02-Aug-24	36
S2-B4SB-2030	S2 B4 SB Abutment A - Install Pile	3	05-Aug-24	08-Aug-24	36
S2-B4SB-2040	S2 B4 SB Abutment A - FRP Pile Cap	4	09-Aug-24	16-Aug-24	110
S2-B4SB-2050	S2 B4 SB Abutment A - FRP Back Wall	3	19-Aug-24	22-Aug-24	110
S2-B4SB-2060	S2 B4 SB Abutment A - Backfill Abutment Seat	2	23-Aug-24	26-Aug-24	117
Stage 2 - I-81 Over RT 311 - SB - Abutment B					
S2-B4SB-3000	S2 B4 SB Abutment B - Install SOE Adjacent to Existing Bridge	3	09-Aug-24	14-Aug-24	36
S2-B4SB-3010	S2 B4 SB Abutment B - Remove Existing Structure / Pavement	1	16-Aug-24	16-Aug-24	36
S2-B4SB-3020	S2 B4 SB Abutment B - Excavate / Embankment to Subgrade for Driving Pile	1	19-Aug-24	19-Aug-24	36
S2-B4SB-3030	S2 B4 SB Abutment B - Install Pile	3	20-Aug-24	23-Aug-24	36
S2-B4SB-3040	S2 B4 SB Abutment B - FRP Pile Cap	4	26-Aug-24	30-Aug-24	109
S2-B4SB-3050	S2 B4 SB Abutment B - FRP Back Wall	3	03-Sep-24	06-Sep-24	109
S2-B4SB-3060	S2 B4 SB Abutment B - Backfill Abutment Seat	2	09-Sep-24	11-Sep-24	109
Stage 2 - I-81 Over RT 311 - SB - Superstructure					
S2-B4SB-4000	S2 B4 SB Superstructure - Erect Girders	1	13-Sep-24	13-Sep-24	109
S2-B4SB-4010	S2 B4 SB Superstructure - Install Underbridge Protection / Overhangs	4	16-Sep-24	20-Sep-24	109
S2-B4SB-4020	S2 B4 SB Superstructure - FRP Backwall Abutment A	2	23-Sep-24	24-Sep-24	117
S2-B4SB-4030	S2 B4 SB Superstructure - FRP Backwall Abutment B	2	26-Sep-24	27-Sep-24	117
S2-B4SB-4040	S2 B4 SB Superstructure - Install SIP Decking Spa	5	23-Sep-24	30-Sep-24	109
S2-B4SB-4050	S2 B4 SB Superstructure - Install Rebar	4	01-Oct-24	04-Oct-24	109
S2-B4SB-4060	S2 B4 SB Superstructure - Install Screed Rail / Dry Run	3	07-Oct-24	10-Oct-24	109
S2-B4SB-4070	S2 B4 SB Superstructure - Deck Pour	1	11-Oct-24	11-Oct-24	109
S2-B4SB-4080	S2 B4 SB Superstructure - FRP Sleeper Slab North Approach	3	14-Oct-24	18-Oct-24	109
S2-B4SB-4090	S2 B4 SB Superstructure - FRP Approach Slab North Approach	5	21-Oct-24	29-Oct-24	109
S2-B4SB-4100	S2 B4 SB Superstructure - FRP Sleeper Slab North Approach	3	31-Oct-24	04-Nov-24	109



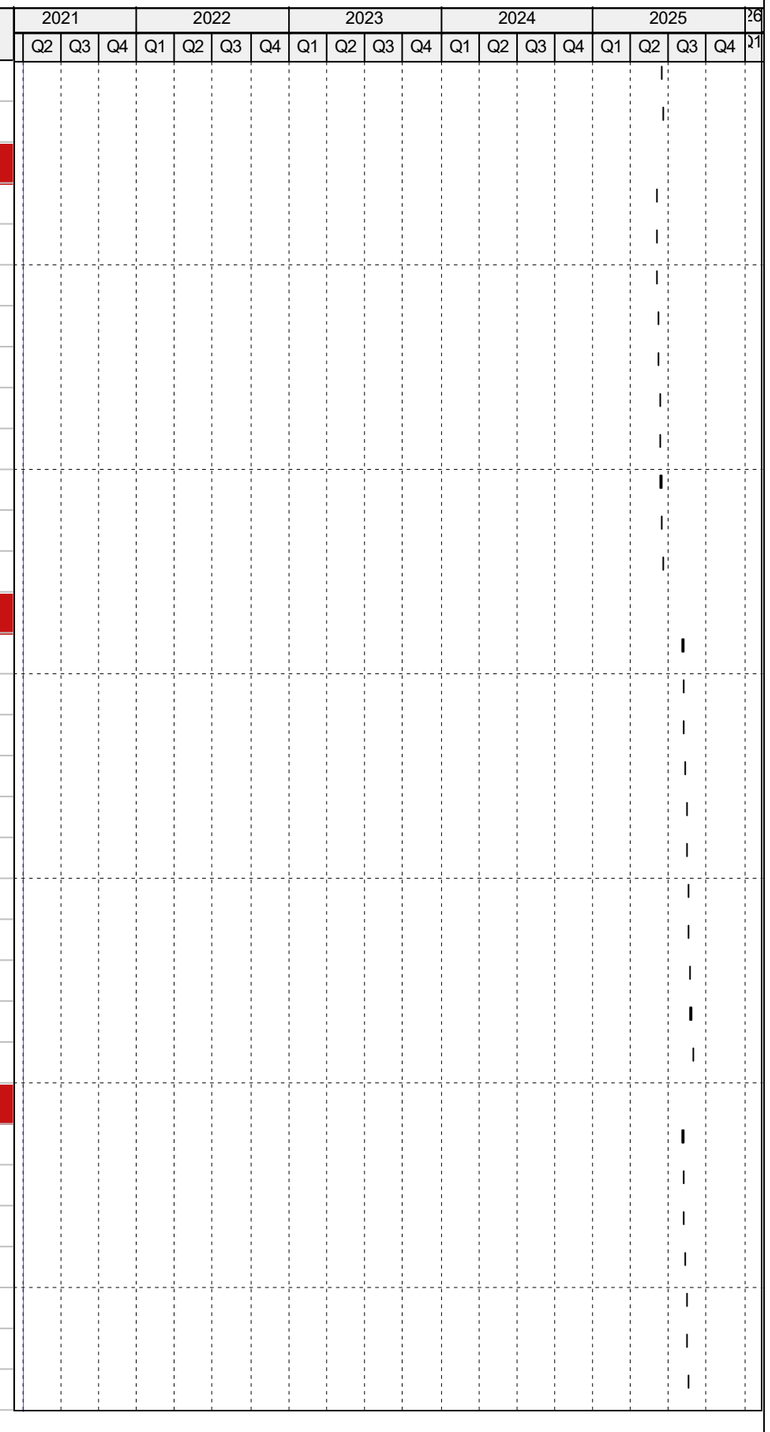
Activity ID	Activity Name	OD	Start	Finish	TF
S2-B4SB-4110	S2 B4 SB Superstructure - FRP Approach Slab North Approach	5	05-Nov-24	13-Nov-24	109
S2-B4SB-4120	S2 B4 SB Superstructure - FRP Barrier Walls / Install Conduit	6	15-Nov-24	27-Nov-24	109
S2-B4SB-4130	S2 B4 SB Superstructure - Strip Edge Forms / Overhangs / Underbridge Protection	5	08-Jul-25	15-Jul-25	4
S2-B4SB-4140	S2 B4 SB Superstructure - Groove Bridge Deck	1	02-Dec-24	02-Dec-24	121
S2-B4SB-4150	S2 B4 SB Superstructure - Striping	1	01-Jul-25	01-Jul-25	20
Stage 2 - Ramps					
Stage 2 - Route 112 Ramp A					
S2-RAMP-1000	S2 Ramp Route 112 Ramp A - Set MOT Barrier / Temp Striping / Shift Traffic	1	23-Jul-24	23-Jul-24	27
S2-RAMP-1010	S2 Ramp Route 112 Ramp A - Demo Existing Barrier / Pavement	2	25-Jul-24	26-Jul-24	27
S2-RAMP-1020	S2 Ramp Route 112 Ramp A - Install Drainage	1	29-Jul-24	29-Jul-24	27
S2-RAMP-1030	S2 Ramp Route 112 Ramp A - Fine Grade for Roadway	2	30-Jul-24	01-Aug-24	27
S2-RAMP-1040	S2 Ramp Route 112 Ramp A - Install Subbase	1	02-Aug-24	02-Aug-24	27
S2-RAMP-1050	S2 Ramp Route 112 Ramp A - Install Underdrain	2	05-Aug-24	06-Aug-24	27
S2-RAMP-1060	S2 Ramp Route 112 Ramp A - Asphalt Paving - Base Asphalt	1	08-Aug-24	08-Aug-24	28
S2-RAMP-1070	S2 Ramp Route 112 Ramp A - Asphalt Paving - Intermediate Asphalt	1	09-Aug-24	09-Aug-24	28
S2-RAMP-1080	S2 Ramp Route 112 Ramp A - Asphalt Paving - Surface Asphalt	1	12-Aug-24	12-Aug-24	28
S2-RAMP-1090	S2 Ramp Route 112 Ramp A - Install Guardrail	2	14-Aug-24	16-Aug-24	27
S2-RAMP-1100	S2 Ramp Route 112 Ramp A - Fine Grade Slopes & Ditch / Seed	1	19-Aug-24	19-Aug-24	27
Stage 2 - Route 112 Ramp B					
S2-RAMP-2000	S2 Ramp Route 112 Ramp B - Set MOT Barrier / Temp Striping / Shift Traffic	1	20-Aug-24	20-Aug-24	27
S2-RAMP-2010	S2 Ramp Route 112 Ramp B - Demo Existing Barrier / Pavement	2	22-Aug-24	23-Aug-24	27
S2-RAMP-2020	S2 Ramp Route 112 Ramp B - Install Drainage	1	26-Aug-24	26-Aug-24	27
S2-RAMP-2030	S2 Ramp Route 112 Ramp B - Fine Grade for Roadway / Barrier	4	27-Aug-24	03-Sep-24	27
S2-RAMP-2040	S2 Ramp Route 112 Ramp B - Install Barrier Footer	4	05-Sep-24	11-Sep-24	27
S2-RAMP-2050	S2 Ramp Route 112 Ramp B - Install Subbase	1	13-Sep-24	13-Sep-24	27
S2-RAMP-2060	S2 Ramp Route 112 Ramp B - Install Underdrain	1	16-Sep-24	16-Sep-24	27
S2-RAMP-2070	S2 Ramp Route 112 Ramp B - Install Barrier Walls	6	17-Sep-24	26-Sep-24	27
S2-RAMP-2080	S2 Ramp Route 112 Ramp B - Asphalt Paving - Base Asphalt	1	27-Sep-24	27-Sep-24	30
S2-RAMP-2090	S2 Ramp Route 112 Ramp B - Asphalt Paving - Intermediate Asphalt	1	30-Sep-24	30-Sep-24	30
S2-RAMP-2100	S2 Ramp Route 112 Ramp B - Asphalt Paving - Surface Asphalt	1	01-Oct-24	01-Oct-24	30
S2-RAMP-2110	S2 Ramp Route 112 Ramp B - Install Guardrail	1	02-Oct-24	02-Oct-24	26
S2-RAMP-2120	S2 Ramp Route 112 Ramp B - Fine Grade Slopes & Ditch / Seed	1	03-Oct-24	03-Oct-24	26
Stage 2 - Route 112 Ramp D					



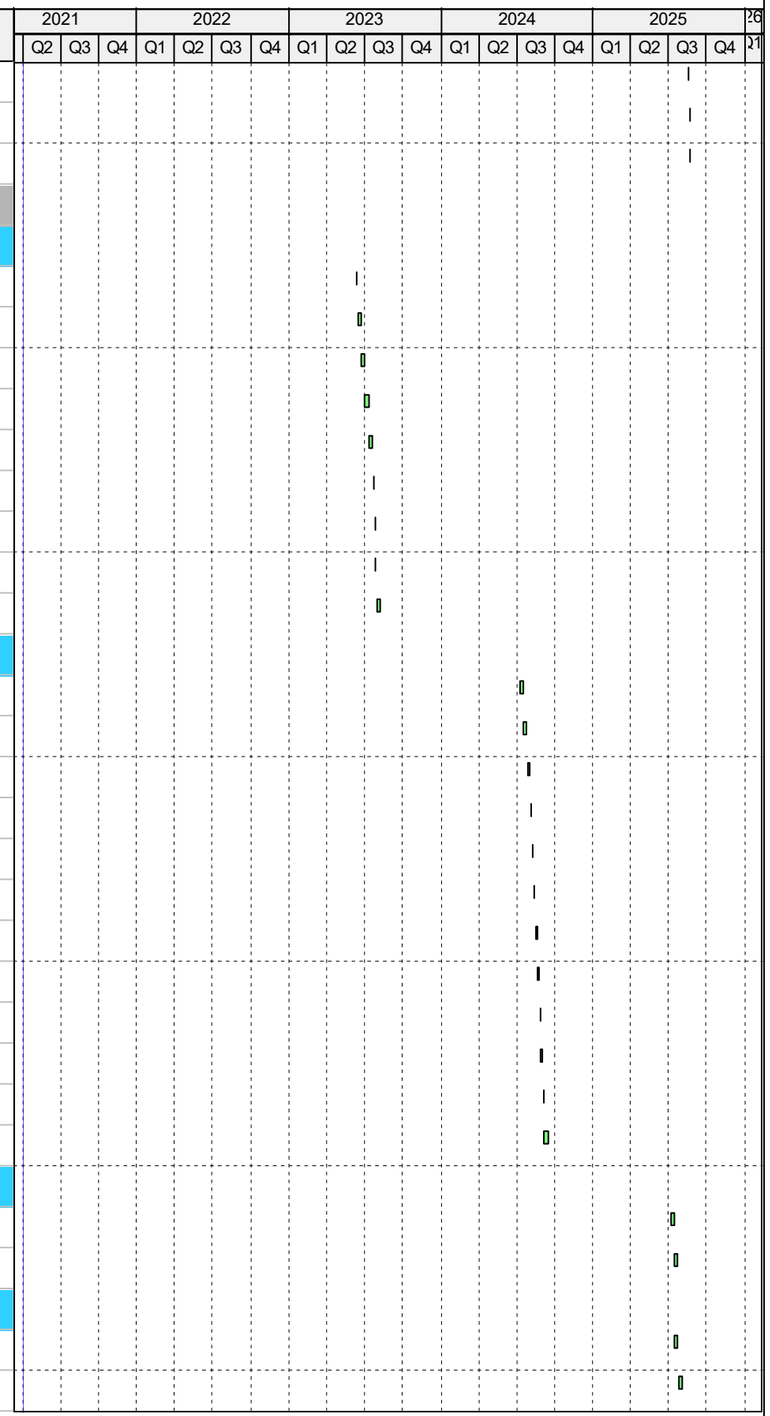
Activity ID	Activity Name	OD	Start	Finish	TF
S2-RAMP-3000	S2 Ramp Route 112 Ramp D - Set MOT Barrier / Temp Striping / Shift Traffic	1	22-Aug-24	22-Aug-24	37
S2-RAMP-3010	S2 Ramp Route 112 Ramp D - Demo Existing Barrier / Pavement	1	23-Aug-24	23-Aug-24	37
S2-RAMP-3020	S2 Ramp Route 112 Ramp D - Install Drainage	1	26-Aug-24	26-Aug-24	37
S2-RAMP-3030	S2 Ramp Route 112 Ramp D - Fine Grade for Roadway	2	27-Aug-24	29-Aug-24	37
S2-RAMP-3040	S2 Ramp Route 112 Ramp D - Install Subbase	1	30-Aug-24	30-Aug-24	37
S2-RAMP-3050	S2 Ramp Route 112 Ramp D - Install Underdrain	1	03-Sep-24	03-Sep-24	37
S2-RAMP-3060	S2 Ramp Route 112 Ramp D - Asphalt Paving - Base Asphalt	1	05-Sep-24	05-Sep-24	40
S2-RAMP-3070	S2 Ramp Route 112 Ramp D - Asphalt Paving - Intermediate Asphalt	1	06-Sep-24	06-Sep-24	40
S2-RAMP-3080	S2 Ramp Route 112 Ramp D - Asphalt Paving - Surface Asphalt	1	09-Sep-24	09-Sep-24	40
S2-RAMP-3090	S2 Ramp Route 112 Ramp D - Install Guardrail	3	11-Sep-24	16-Sep-24	36
S2-RAMP-3100	S2 Ramp Route 112 Ramp D - Fine Grade Slopes & Ditch / Seed	1	17-Sep-24	17-Sep-24	36
Stage 2 - Route 112 Loop D					
S2-RAMP-4000	S2 Ramp Route 112 Loop D - Set MOT Barrier / Temp Striping / Shift Traffic	2	17-Sep-24	19-Sep-24	1
S2-RAMP-4010	S2 Ramp Route 112 Loop D - Demo Existing Guardrail / Pavement	3	20-Sep-24	24-Sep-24	1
S2-RAMP-4020	S2 Ramp Route 112 Loop D - Install Drainage	5	26-Sep-24	02-Oct-24	14
S2-RAMP-4030	S2 Ramp Route 112 Loop D - Install Retaining Wall 1	18	26-Sep-24	28-Oct-24	1
S2-RAMP-4040	S2 Ramp Route 112 Loop D - Fine Grade for Roadway	2	29-Oct-24	31-Oct-24	1
S2-RAMP-4050	S2 Ramp Route 112 Loop D - Install Subbase	1	01-Nov-24	01-Nov-24	1
S2-RAMP-4060	S2 Ramp Route 112 Loop D - Install Underdrain	2	04-Nov-24	05-Nov-24	1
S2-RAMP-4070	S2 Ramp Route 112 Loop D - Asphalt Paving - Base Asphalt	1	07-Nov-24	07-Nov-24	1
S2-RAMP-4080	S2 Ramp Route 112 Loop D - Asphalt Paving - Intermediate Asphalt	1	08-Nov-24	08-Nov-24	1
S2-RAMP-4090	S2 Ramp Route 112 Loop D - Asphalt Paving - Surface Asphalt	1	11-Nov-24	11-Nov-24	1
S2-RAMP-4100	S2 Ramp Route 112 Loop D - Install Guardrail	3	13-Nov-24	18-Nov-24	0
S2-RAMP-4110	S2 Ramp Route 112 Loop D - Fine Grade Slopes & Ditch / Seed	3	20-Nov-24	25-Nov-24	0
Stage 2 - Route 311 Ramp A					
S2-RAMP-5000	S2 Ramp Route 311 Ramp A - Set MOT Barrier / Temp Striping / Shift Traffic	1	02-Jun-25	02-Jun-25	39
S2-RAMP-5010	S2 Ramp Route 311 Ramp A - Demo Existing Barrier / Pavement	1	03-Jun-25	03-Jun-25	39
S2-RAMP-5020	S2 Ramp Route 311 Ramp A - Install Drainage	1	05-Jun-25	05-Jun-25	39
S2-RAMP-5030	S2 Ramp Route 311 Ramp A - Fine Grade for Roadway	1	06-Jun-25	06-Jun-25	39
S2-RAMP-5040	S2 Ramp Route 311 Ramp A - Install Subbase	1	09-Jun-25	09-Jun-25	39
S2-RAMP-5050	S2 Ramp Route 311 Ramp A - Install Underdrain	1	10-Jun-25	10-Jun-25	39
S2-RAMP-5060	S2 Ramp Route 311 Ramp A - Asphalt Paving - Base Asphalt	1	12-Jun-25	12-Jun-25	39
S2-RAMP-5070	S2 Ramp Route 311 Ramp A - Asphalt Paving - Intermediate Asphalt	1	13-Jun-25	13-Jun-25	39



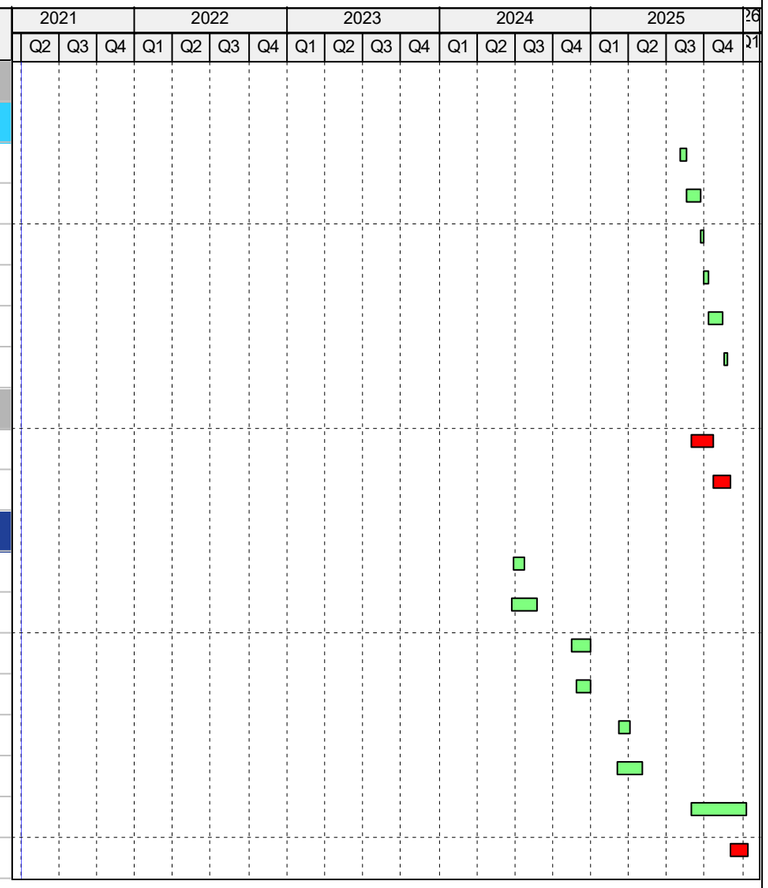
Activity ID	Activity Name	OD	Start	Finish	TF
S2-RAMP-5080	S2 Ramp Route 311 Ramp A - Asphalt Paving - Surface Asphalt	1	16-Jun-25	16-Jun-25	39
S2-RAMP-5090	S2 Ramp Route 311 Ramp A - Fine Grade Slopes & Ditch / Seed	1	17-Jun-25	17-Jun-25	39
Stage 2 - Route 311 Ramp B					
S2-RAMP-6000	S2 Ramp Route 311 Ramp B - Set MOT Barrier / Temp Striping / Shift Traffic	1	02-Jun-25	02-Jun-25	39
S2-RAMP-6010	S2 Ramp Route 311 Ramp B - Demo Existing Barrier / Pavement	1	03-Jun-25	03-Jun-25	39
S2-RAMP-6020	S2 Ramp Route 311 Ramp B - Install Drainage	1	05-Jun-25	05-Jun-25	39
S2-RAMP-6030	S2 Ramp Route 311 Ramp B - Fine Grade for Roadway	1	06-Jun-25	06-Jun-25	39
S2-RAMP-6040	S2 Ramp Route 311 Ramp B - Install Subbase	1	09-Jun-25	09-Jun-25	39
S2-RAMP-6050	S2 Ramp Route 311 Ramp B - Install Underdrain	1	10-Jun-25	10-Jun-25	39
S2-RAMP-6060	S2 Ramp Route 311 Ramp B - Asphalt Paving - Base Asphalt	1	12-Jun-25	12-Jun-25	39
S2-RAMP-6070	S2 Ramp Route 311 Ramp B - Asphalt Paving - Intermediate Asphalt	1	13-Jun-25	13-Jun-25	39
S2-RAMP-6080	S2 Ramp Route 311 Ramp B - Asphalt Paving - Surface Asphalt	1	16-Jun-25	16-Jun-25	39
S2-RAMP-6090	S2 Ramp Route 311 Ramp B - Fine Grade Slopes & Ditch / Seed	1	17-Jun-25	17-Jun-25	39
Stage 2 - Route 311 Ramp D					
S2-RAMP-7000	S2 Ramp Route 311 Ramp D - Set MOT Barrier / Temp Striping / Shift Traffic	1	05-Aug-25	05-Aug-25	0
S2-RAMP-7010	S2 Ramp Route 311 Ramp D - Demo Existing Barrier / Pavement	1	07-Aug-25	07-Aug-25	0
S2-RAMP-7020	S2 Ramp Route 311 Ramp D - Install Drainage	1	08-Aug-25	08-Aug-25	0
S2-RAMP-7030	S2 Ramp Route 311 Ramp D - Fine Grade for Roadway	1	11-Aug-25	11-Aug-25	0
S2-RAMP-7040	S2 Ramp Route 311 Ramp D - Install Subbase	1	13-Aug-25	13-Aug-25	0
S2-RAMP-7050	S2 Ramp Route 311 Ramp D - Install Underdrain	1	15-Aug-25	15-Aug-25	0
S2-RAMP-7060	S2 Ramp Route 311 Ramp D - Asphalt Paving - Base Asphalt	1	18-Aug-25	18-Aug-25	0
S2-RAMP-7070	S2 Ramp Route 311 Ramp D - Asphalt Paving - Intermediate Asphalt	1	19-Aug-25	19-Aug-25	0
S2-RAMP-7080	S2 Ramp Route 311 Ramp D - Asphalt Paving - Surface Asphalt	1	21-Aug-25	21-Aug-25	0
S2-RAMP-7090	S2 Ramp Route 311 Ramp D - Install Guardrail	3	22-Aug-25	26-Aug-25	0
S2-RAMP-7100	S2 Ramp Route 311 Ramp D - Fine Grade Slopes & Ditch / Seed	1	28-Aug-25	28-Aug-25	0
Stage 2 - Route 311 Loop D					
S2-RAMP-8000	S2 Ramp Route 311 Loop D - Set MOT Barrier / Temp Striping / Shift Traffic	1	05-Aug-25	05-Aug-25	3
S2-RAMP-8010	S2 Ramp Route 311 Loop D - Demo Existing Barrier / Pavement	1	07-Aug-25	07-Aug-25	3
S2-RAMP-8020	S2 Ramp Route 311 Loop D - Install Drainage	1	08-Aug-25	08-Aug-25	3
S2-RAMP-8030	S2 Ramp Route 311 Loop D - Fine Grade for Roadway	1	11-Aug-25	11-Aug-25	3
S2-RAMP-8040	S2 Ramp Route 311 Loop D - Install Subbase	1	13-Aug-25	13-Aug-25	3
	S2 Ramp Route 311 Loop D - Install Underdrain	1	15-Aug-25	15-Aug-25	3
S2-RAMP-8060	S2 Ramp Route 311 Loop D - Asphalt Paving - Base Asphalt	1	18-Aug-25	18-Aug-25	3



Activity ID	Activity Name	OD	Start	Finish	TF
S2-RAMP-8070	S2 Ramp Route 311 Loop D - Asphalt Paving - Intermediate Asphalt	1	19-Aug-25	19-Aug-25	3
S2-RAMP-8080	S2 Ramp Route 311 Loop D - Asphalt Paving - Surface Asphalt	1	21-Aug-25	21-Aug-25	3
S2-RAMP-8090	S2 Ramp Route 311 Loop D - Fine Grade Slopes & Ditch / Seed	1	22-Aug-25	22-Aug-25	3
Underpass Road Work					
Stage 2 - Roadwork - RT 635					
S2-R635-1000	S2 RT635 - Set MOT Barrier / Temp Striping / Shift Traffic	2	12-Jun-23	13-Jun-23	101
S2-R635-1010	S2 RT635 - Sawcut / Demo Existing Roadway	5	15-Jun-23	22-Jun-23	101
S2-R635-1020	S2 RT635 - Fine Grade for Roadway	5	23-Jun-23	30-Jun-23	101
S2-R635-1030	S2 RT635 - Install Subbase	5	03-Jul-23	12-Jul-23	101
S2-R635-1040	S2 RT635 - Install Underdrain	5	14-Jul-23	21-Jul-23	101
S2-R635-1050	S2 RT635 - Asphalt Paving - Base Asphalt	2	24-Jul-23	25-Jul-23	101
S2-R635-1060	S2 RT635 - Asphalt Paving - Intermediate Asphalt	1	27-Jul-23	27-Jul-23	101
S2-R635-1070	S2 RT635 - Asphalt Paving - Surface Asphalt	1	28-Jul-23	28-Jul-23	101
S2-R635-1080	S2 RT635 - Fine Grade Slopes & Ditch / Seed	5	31-Jul-23	07-Aug-23	101
Stage 2 - Roadwork - RT 112					
S2-R112-1000	S2 RT112 - Set MOT Barrier / Temp Striping / Shift Traffic	5	11-Jul-24	18-Jul-24	1
S2-R112-1010	S2 RT112 - Sawcut / Demo Existing Roadway	5	19-Jul-24	26-Jul-24	1
S2-R112-1020	S2 RT112 - Fine Grade for Roadway / Barrier at Median	4	29-Jul-24	02-Aug-24	1
S2-R112-1030	S2 RT112 - Install Barrier Footer at Median	2	05-Aug-24	06-Aug-24	1
S2-R112-1040	S2 RT112 - Install Subbase at Median	2	08-Aug-24	09-Aug-24	1
S2-R112-1050	S2 RT112 - Install Underdrain at Median	2	12-Aug-24	14-Aug-24	1
S2-R112-1060	S2 RT112 - Install Barrier Walls at Median	3	16-Aug-24	20-Aug-24	1
S2-R112-1070	S2 RT112 - Asphalt Paving - Base Asphalt at Median	2	22-Aug-24	23-Aug-24	1
S2-R112-1080	S2 RT112 - Asphalt Paving - Intermediate Asphalt at Median	2	26-Aug-24	27-Aug-24	1
S2-R112-1090	S2 RT112 - Asphalt Paving - Mill Existing RT 112	2	29-Aug-24	30-Aug-24	1
S2-R112-1100	S2 RT112 - Asphalt Paving - Surface Asphalt / Overlay	2	03-Sep-24	05-Sep-24	1
S2-R112-1110	S2 RT112 - Fine Grade Slopes & Ditch / Seed	5	06-Sep-24	16-Sep-24	1
Stage 2 - Roadwork - RT 619					
S2-R619-1000	S2 RT619 - Set MOT Barrier / Temp Striping / Shift Traffic	5	08-Jul-25	15-Jul-25	19
S2-R619-1010	S2 RT619 - Mill & Overlay	5	17-Jul-25	24-Jul-25	19
Stage 2 - Roadwork - RT 311					
S2-R311-1000	S2 RT311 - Set MOT Barrier / Temp Striping / Shift Traffic	5	17-Jul-25	24-Jul-25	4
S2-R311-1010	S2 RT311 - Mill & Overlay	5	25-Jul-25	01-Aug-25	4



Activity ID	Activity Name	OD	Start	Finish	TF
Bridge 4: I-81 Over Rt 311 Joint Repair / Overlay					
Bridge 4 SB I-81 Over Rt 311 Joint Repair / Overlay					
S3-B4SB-1000	S3 B4 SB Repair - Set MOT & Shift Traffic	7	05-Aug-25	18-Aug-25	2
S3-B4SB-1010	S3 B4 SB Repair - Joint Repairs	18	19-Aug-25	22-Sep-25	2
S3-B4SB-1020	S3 B4 SB Repair - Latex Overlay	4	23-Sep-25	29-Sep-25	2
S3-B4SB-1030	S3 B4 SB Repair - Set MOT & Shift Traffic 2	7	30-Sep-25	09-Oct-25	2
S3-B4SB-1040	S3 B4 SB Repair - Joint Repairs 2	18	10-Oct-25	14-Nov-25	2
S3-B4SB-1050	S3 B4 SB Repair - Latex Overlay 2	4	17-Nov-25	24-Nov-25	2
Stage 3 Mill & Surface Asphalt					
S3-1000	S3 NB - Mill & Surface Asphalt Area 1-3	30	29-Aug-25	20-Oct-25	0
S3-1010	S3 SB - Mill & Surface Asphalt Area 1-3	24	21-Oct-25	02-Dec-25	0
Testing & Closeout					
CO-1000	TMS Initial Testing for Unique Milestone #1	15	27-Jun-24	23-Jul-24	80
CO-1010	Area 4 ITS Acceptance Test (60 Days) for Unique Milestone #1	60	26-Jun-24	24-Aug-24	129
CO-1020	Punch List for Unique Milestone #1 Area 4	20	15-Nov-24	31-Dec-24	0
CO-1030	Punch List for Unique Milestone #2 Ramp 112	15	27-Nov-24	31-Dec-24	0
CO-1040	TMS Initial Testing	15	07-Mar-25	03-Apr-25	144
CO-1050	Project Wide ITS Acceptance Test (60 Days)	60	06-Mar-25	04-May-25	256
CO-1060	Final Completion Closeout Documents / As-Built Plans	90	29-Aug-25	09-Jan-26	4
CO-1070	Final Completion Punch List	20	03-Dec-25	14-Jan-26	0



Dewberry