Response to Request for Proposals

I-64 CAPACITY IMPROVEMENTS – SEGMENT III

York County, Virginia

State Project Nos.: 0064-965-229, P-101, R-201, C-501, B-638, B-639, B-640, B-641, B-642, B-643, D-609, D-610, D-611
Federal Project No: NHPP-064-3 (498)
Contract ID No.: C00106689DB97

VOLUME I: TECHNICAL PROPOSAL

SUBMITTED BY:

SHIRLEY CONTRACTING COMPANY, LLC

IN ASSOCIATION WITH:

Dewberry®

Attachment 4.0.1.1 - Technical Proposal Checklist

ATTACHMENT 4.0.1.1 – ADDENDUM NO. 2

I-64 CAPACITY IMPROVEMENTS – SEGMENT III

VDOT PROJECT NO.: 0064-965-229

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	N/A
Acknowledgement of RFP, Revisions, and/or Addenda	Attachment 3.6 (Form C-78-RFP)	Sections 3.6, 4.0.1.1	no	N/A
Letter of Submittal	NA	Sections 4.1		Page 1
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	Page 1
Offeror's official representative information	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
Principal Officer information	NA	Section 4.1.5	yes	Page 1
Final Completion Date	NA	Section 4.1.6	yes	Page 1
Provide any Unique Milestone Dates	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~~8	no	N/A
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.~~8~~9	no	N/A
Written statement of percent DBE participation	NA	Section 4.1.10	yes	Page 1

ATTACHMENT 4.0.1.1 – ADDENDUM NO. 2

I-64 CAPACITY IMPROVEMENTS – SEGMENT III

VDOT PROJECT NO.: 0064-965-229

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Offeror's Qualifications	NA	Section 4.2		Page 2
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT.	NA	Section 4.2.1	yes	Page 2
Design Concept	NA	Section 4.3		Page 3-15
Conceptual Roadway Plans and description	NA	Section 4.3.1.1	yes	Page 3-10
Conceptual Structural Plans and description	NA	Section 4.3.1.2	yes	Page 10-15
Project Approach	NA	Section 4.4		Page 16-32
Environmental Management	NA	Section 4.4.1	yes	Page 16-20
Hydraulics	NA	Section 4.4.2	yes	Page 20-22
Geotechnical	NA	Section 4.4.3	yes	Page 22-24
Quality Assurance/ Quality Control (QA/QC)	NA	Section 4.4.4	yes	Page 22-32
Construction of Project	NA	Section 4.5		Page 33-54
Sequence of Construction	NA	Section 4.5.1	yes	Page 33-44
Transportation Management Plan	NA	Section 4.5.2	yes	Page 44-54

ATTACHMENT 4.0.1.1 – ADDENDUM NO. 2

I-64 CAPACITY IMPROVEMENTS – SEGMENT III

VDOT PROJECT NO.: 0064-965-229

TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

Attachment 3.6 - Form C-78

Form C-78-RFP

ATTACHMENT 3.6

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

RFP NO. C00106689DB97

PROJECT NO.: 0064-965-229

ACKNOWLEDGEMENT OF RFP, REVISION AND/OR ADDENDA

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

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

1. Cover letter of June 21, 2017 – RFP (Date)
2. Cover letter of RFP Addendum No. 1 – July 24, 2017 (Date)
3. Cover letter of RFP Addendum No. 2 – August 14, 2017 (Date)
4. Cover letter of RFP Addendum No. 3 – September 1, 2017 (Date)

SIGNATURE

9/14/17
DATE

Daniel E. Clymore
PRINTED NAME

Vice President
TITLE

4.1 - Letter of Submittal

SHIRLEY
CONTRACTING COMPANY, LLC

September 14, 2017

Mr. Joseph A. Clarke, PE
Alternative Project Delivery Division
Virginia Department of Transportation
1401 East Broad Street
Annex Building, 8th Floor
Richmond, Virginia 23219

RE: I-64 Capacity Improvements – Segment III
York County, Virginia
Contract ID Number: C00106689DB97

Dear Mr. Clarke:

Shirley Contracting Company, LLC (Shirley), as the Offeror, and Dewberry Consultants LLC (Dewberry), as the Lead Designer, are pleased to submit our Technical Proposal for the I-64 Capacity Improvements-Segment III Project (the Project). Our Team's experience is unmatched, having completed 18 VDOT Design-Build Projects valued at more than $1.1 billion. Additionally, as the Design-Build Team on the I-64 Capacity Improvements - Segment I Project, we intend to leverage our experience and knowledge to the benefit of the Segment III Project and to the public.

4.1.2 - 4.1.3 - Declarations: Should Shirley be selected, it is our intent to enter into a contract with VDOT for the Project in accordance with the terms of this Request for Proposal (RFP). Further, the offer represented by our Technical and Price Proposals will remain in full force and effect for one hundred twenty (120) days from the date this Technical Proposal is actually submitted to VDOT.

4.1.4 - Point of Contact: Garry A. Palleschi, Vice President, Shirley Contracting Company, LLC, 8435 Backlick Road, Lorton, VA 22079, 703.550.3579(P), 703.550.9346 (F) gpalleschi@shirleycontracting.com.

4.1.5 - Principal Officer: Michael E. Post, President/CEO/Manager, Shirley Contracting Company, LLC 8435 Backlick Road, Lorton, VA 22079, 703.550.8100(P).

4.1.6 - Final Completion Date: September 24, 2021

4.1.7 - Unique Milestone Date: I-64 EB open from Station 1352+00 to end of Project: April 13, 2021

4.1.8 - Proposal Payment Agreement: An executed Proposal Payment Agreement, Attachment 9.3.1, is included in the Appendix.

4.1.9 - Certification of Debarment: Signed Certification Regarding Debarment Forms from all team members are included as an attachment in the Appendix.

4.1.10 - DBE Participation Goal: Shirley commits that we will achieve a 12% DBE participation goal for the entire value of the contract.

On behalf of the entire Shirley/Dewberry Team, we thank VDOT for the opportunity to submit this Technical Proposal and look forward to your favorable review.

Sincerely,

Daniel E. Clymore
Vice President

4.2 - Offeror's Qualifications

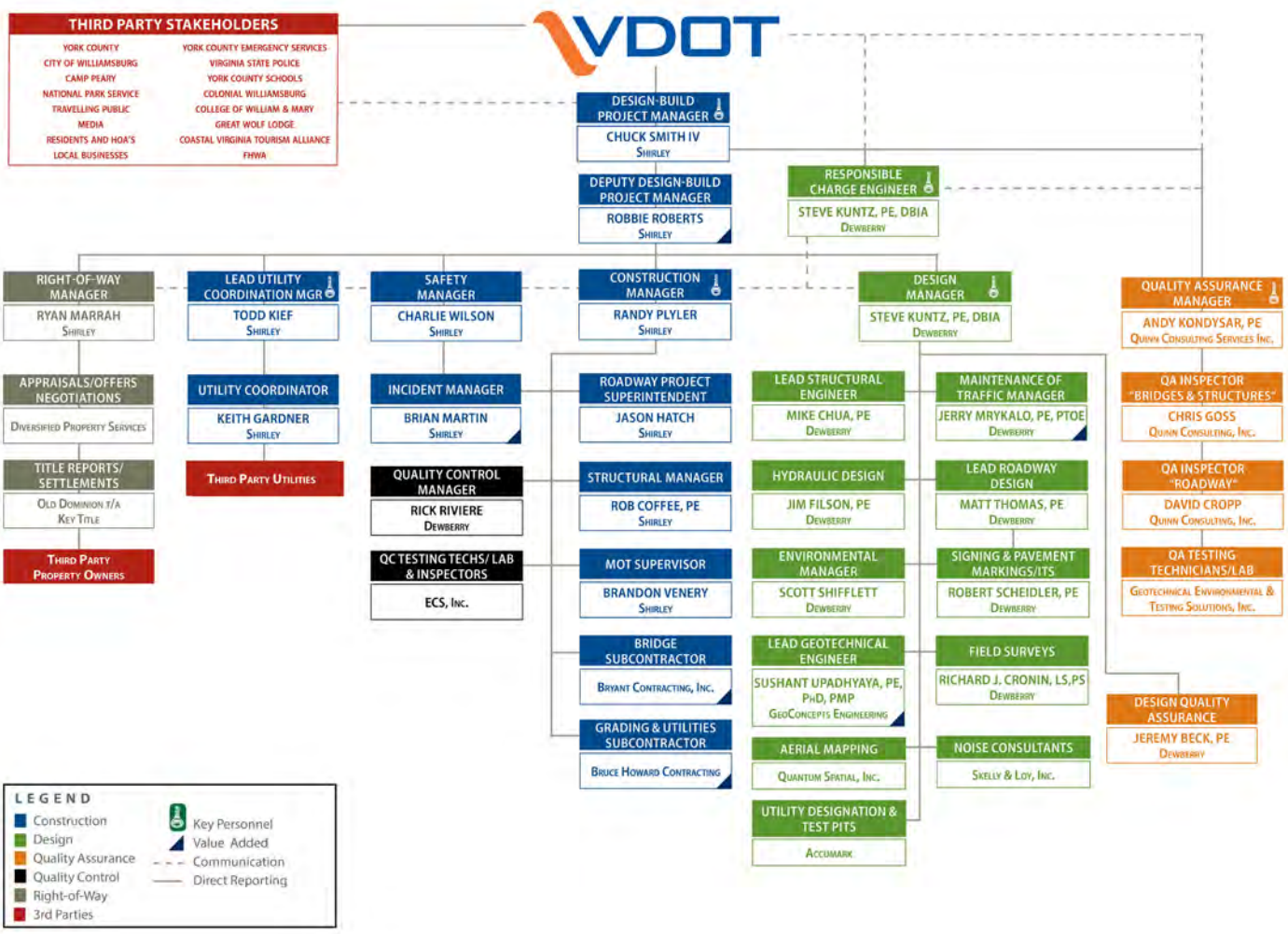
4.2 Offeror's Qualifications

4.2.1 Confirmation

We confirm that the information contained in our Statement of Qualifications (SOQ) remains true and accurate in accordance with Part 1, Section 11.4, with the exception of Ryan Marrah who has been assigned to the Project as the Right-of-Way Manager, replacing Gary Christensen who is no longer with Shirley Contracting Company, LLC. This change was submitted to VDOT and approved on August 21, 2017. We also confirm the RFP requirement for a full-time Quality Assurance Manager (QAM) for the duration of construction on the project, confirming that Andy Kondysar, PE, of Quinn Consulting Services, Inc. will meet the requirement.

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. The Organizational Chart has been updated to reflect the change in the Right-of-Way Manager. As there is no change to the functional relationships among participants, an updated narrative is not required.



4.3 - Design Concept

4.3 Design Concept

Introduction

Our Team's approach to developing our Conceptual Design and Technical Proposal is based on a complete review of the Request for Proposal (RFP) documents and requirements and numerous visits to the Project site. It also focused on incorporating enhancements gained from our knowledge and experience working on the I-64 Capacity Improvements – Segment I Project (Segment I) now nearing completion. These enhancements aim to achieve the following goals:

- reduce impacts to the traveling public and stakeholders;
- reduce environmental impacts;
- reduce right-of-way (ROW) and easement impacts, including to Camp Peary;
- reduce long-term structure maintenance costs;
- improve safety for the traveling public, construction and inspection staff; and
- assure early completion and earning the maximum incentive.

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

- ✓ meets or exceeds all requirements listed in the Design Criteria Table;
- ✓ provides the limits of construction, including stormwater management facilities, are within the existing/proposed ROW limits shown in the RFP Conceptual Plans, with the exception of permanent and temporary easements; and
- ✓ does not include design elements that require Design Waivers and/or Design Exceptions beyond those identified or included in the RFP or Addenda.

Throughout the procurement phase, our Team held weekly meetings to discuss the Project's challenges, develop solutions addressing the RFP requirements, and the goals identified by our Team. These meetings included representatives from each discipline including roadway, structures, hydraulics, geotechnical, environmental, traffic, ROW, utilities, and construction. As a result, our Team identified numerous enhancements which have been incorporated in our Technical Proposal. These enhancements described in Table 1 are also highlighted in our Volume II - Design Concept plans with call-out boxes.

Table 1 - Design Enhancements

Location/Design Element	Enhancement	Project Benefit
Eastbound Horizontal Alignment from western termini to just west of Barlow Road, and from just east of Barlow Road to Route 143 Interchange	Shifted the alignment towards the median while maintaining a minimum median width of 52-feet	▪ Eliminates temporary outside shoulder strengthening, eliminates temporary traffic shifts, and maintains a full continuous shoulder for more than 5-miles ▪ Maintains adequate median ditch width to accommodate underdrain outfalls and maximize ditch capacity ▪ Eliminates outside slope widening and Intelligent Transportation Systems (ITS) impacts ▪ Reduces risk of construction maintenance impacts to traffic
Westbound Horizontal Alignment from western termini to just west of Route 199 Interchange and from just east of Route 199 overpass to approximately Station 2168+00	Shifted the alignment towards the median while maintaining a minimum median width of 52-feet	▪ Eliminates temporary outside shoulder strengthening, eliminates temporary traffic shifts, and maintains a full continuous shoulder for more than 2-miles ▪ Maintains adequate median ditch width to accommodate underdrain outfalls and maximize ditch capacity ▪ Eliminates outside slope widening and Intelligent Transportation Systems (ITS) impacts ▪ Reduces risk of construction maintenance impacts to traffic

Location/Design Element	Enhancement	Project Benefit
Eastbound Exit Ramp to Route 143	Shifted ramp alignment to the north to not overlap the existing ramp	▪ Minimizes impacts to traffic during construction by reducing the number of construction stages and avoiding temporary ramp closures ▪ Increases intersection spacing on Route 143 between interchange ramp and East Rochambeau Drive
Retaining Wall from Station 2325+50 to Station 2346+00	Eliminated the 2,050-foot retaining wall in the median	▪ Eliminates long-term maintenance ▪ Eliminates deep excavation adjacent to traffic during construction, improving roadside safety and stability ▪ Reduces construction costs
Stormwater Management	Reduced number of facilities from 92 to 15	▪ Reduces ROW impacts by 6.3-acres, a 30% reduction ▪ Avoids impacts to 11 properties, a 50% reduction ▪ Reduces long-term maintenance
Queens Creek Bridges - Design	Increased span lengths from 55-feet to 80-feet	▪ Improves construction access over the main channel by reducing construction in the deepest flow areas ▪ Reduces the number of piers on westbound bridge from 16 to 11 and on the eastbound bridge from 16 to 10 ▪ Avoids conflicts with existing pile bents during construction of new sub-structure elements
Queens Creek Bridges - Design	Reduced westbound bridge length from 906-feet to 890-feet and eastbound from 937-feet to 835-feet	▪ Reduces construction costs ▪ Minimizes construction schedule risk ▪ Reduces long-term maintenance
Queens Creek Bridges - Construction	Maintains westbound traffic on the westbound bridge during final stage of construction	▪ Eliminates a median crossover during final stage of bridge construction ▪ Reduces environmental impacts associated with temporary causeway construction
Detour Elimination at Route 199 Interchange	Construct temporary pavement to accommodate northbound to westbound movement as an alternate to the RFP detour	▪ Eliminates an 8-mile detour proposed as part of the RFP plans ▪ Reduces traffic congestion on I-64 ▪ Minimizes traffic times ▪ Avoids routing traffic thru the Segment II project ▪ Improves public safety

4.3.1 Conceptual Roadway Plans

Completion of this Project will result in a new facility for approximately 8-miles, beginning just west of the Route 199 Interchange and continuing to the western end of the I-64 Capacity Improvements – Segment II Project (Segment II). In addition to completely reconstructing the existing roadway, an additional thru lane will be added in each direction, acceleration and deceleration lanes will be lengthened at each interchange, and full width shoulders will be incorporated. Bridges over Colonial Parkway and Lakeshead Drive will be widened and repaired, and the bridges over Queens Creek will be replaced to accommodate the proposed 6-lane typical section. Design waivers and exceptions identified in the RFP documents have been incorporated into our Conceptual Plans, and consist primarily of reduced shoulder widths in an effort to avoid impacts to and replacement of existing bridge overpass structures. No additional design waivers or exceptions are required by our Team's design concept.

(a.) General Geometry

Following completion, I-64 will consist of a 6-lane median divided facility with three general purpose lanes in each direction. The design of these I-64 improvements have been completed in accordance with the Design Criteria Table, and specifically to meet the requirements of a GS-1 Interstate facility with a

75 mph design speed. Longer auxiliary lanes, meeting the lengths identified in the RFP requirements, have also been incorporated at each of the interchange entrance and exit ramp locations. As discussed at our Team's proprietary meeting, measurements of the deceleration and acceleration lane lengths are based on the distances from the ramp PC's and PT's, ensuring all auxiliary lane lengths provide the necessary deceleration and acceleration lengths outside of the adjacent thru lanes. Our Volume II - Design Concept includes information related to horizontal curve data and required superelevation rates. Since the project scope includes the complete reconstruction of the existing pavement, ***our Team has incorporated horizontal alignment enhancements which exceed the minimum median widths required by the RFP documents, thereby providing increased median ditch capacity for large storm events, while also reducing impacts to the traveling public during construction.*** By shifting the horizontal alignments towards the median as compared to the RFP concept, we have eliminated the need to temporarily shift lanes to the outside shoulders of I-64 for more than half of the total project length. ***This enhancement reduces initial night-time construction activities for pavement strengthening, and reduces maintenance concerns during construction associated with operation of travel lanes on temporary pavement sections.*** An additional enhancement of our horizontal alignment adjustment is the full existing shoulder width to the right of traffic being maintained during construction, providing areas for disabled vehicles and emergency equipment operation.

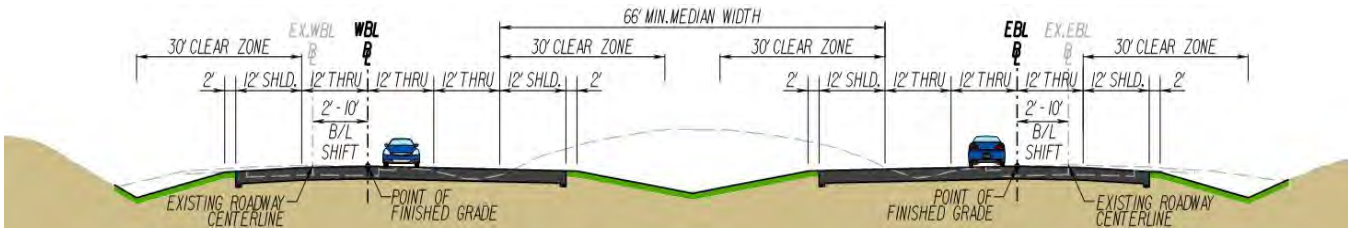
(b.) Horizontal Alignments

The horizontal alignments proposed by our Team are similar to the RFP in that an ultimate six-lane section will be provided and geometry associated with the approved design waivers and exceptions has been incorporated. However, based on our Team's experience on the Segment I Project and in recognition of challenges which occurred on the Segment II Project, we have made some significant enhancements as previously mentioned in order to:

- reduce temporary pavement strengthening areas and limits, thereby reducing impacts to the traveling public;
- reduce limits of outside slope "sliver" widening and associated clearing;
- reduce impacts to the existing VDOT ITS system along the outside of I-64;
- minimize impacts to environmentally sensitive areas; and
- avoid multi-staged construction of ramp improvements.

At the west end of the Project, the horizontal alignment will transition to match the existing roadway centerline locations, and at the east end, the horizontal alignments will match with the Segment II improvements currently under construction. Beginning at the west end of the Project, horizontal shifts have been introduced which shift the baseline locations approximately 10-feet as compared to the existing centerlines, as shown in Figure 4.3.1.1.

Figure 4.3.1.1 - Typical Section - Shifted Alignment

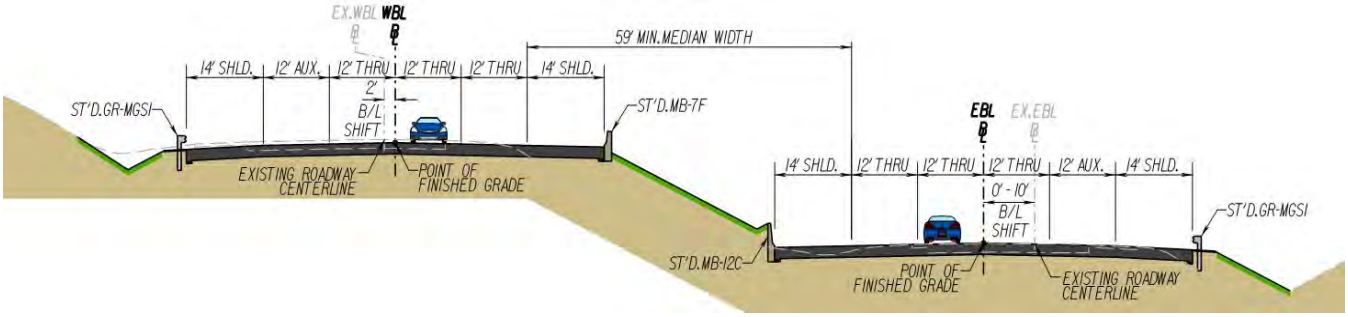


This shift has been introduced to maximize the construction which can be completed in the existing median while not requiring temporary shifting of traffic. This is discussed in more detail in Section 4.5.2. These horizontal shifts have been incorporated for approximately 5.3-miles in the eastbound direction and 2-miles in the westbound direction, and transitions have been designed to meet or exceed the shift rate required for a 75 mph facility while also avoiding impacts to existing overpass bridge piers. ***This alignment***

modification incorporated by our Team not only represents a major construction enhancement which allows for more work to be completed in the earliest construction stage, but also reduces impacts to traffic before and during major construction activities.

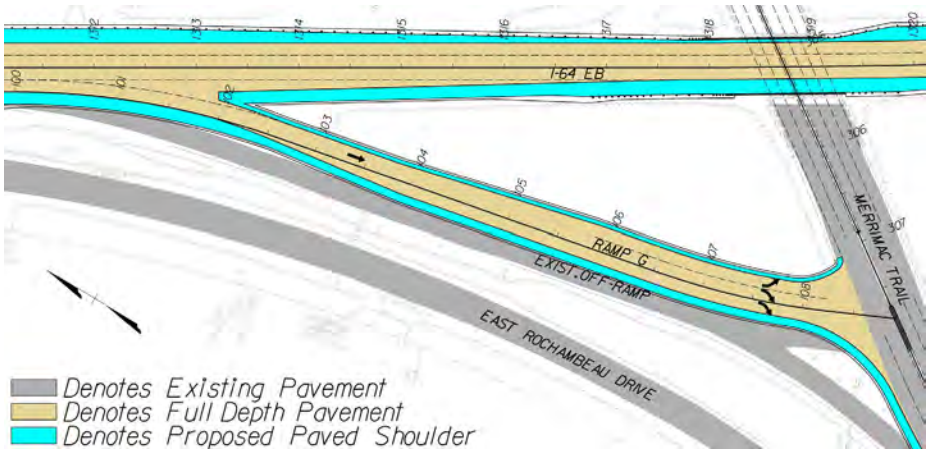
Although we have shifted the horizontal alignments towards the median, immediately east of the Route 143 Interchange, ***our Team eliminated the 2,050-foot retaining wall identified in the RFP plans. This not only represents a large reduction in long-term maintenance for VDOT, but also simplifies and accelerates construction in this area.*** Elimination of the retaining wall was possible by introducing grades not steeper than 2:1 and incorporating standard single-face barriers along portions of the eastbound and westbound median shoulders as shown in Figure 4.3.1.2. Median drainage will be conveyed through open ditches and closed storm sewer systems. The remainder of the I-64 median will consist of open ditch sections, with minimum ditch depths provided to ensure adequate drainage capacity, as well as providing proper outfalls for pavement underdrains without needing to provide additional closed system drainage facilities.

Figure 4.3.1.2 - Retaining Wall Elimination



At each interchange ramp, as discussed in our Proprietary Meeting and ultimately incorporated into the RFP requirements, ramp gore designs have been developed which are fully compliant with the VDOT Road Design Manual, including gore offset and "z" recovery areas. This enhancement ensures motorists are provided with full recovery areas at each interchange ramp should they make a late lane change to either take or avoid an exit ramp. Baselines and defined geometry have also been developed for each interchange ramp, ensuring superelevation transitions are positioned appropriately to connect between the existing ramp and the new I-64 auxiliary lanes.

Figure 4.3.1.3 - Route 143 Ramp Shift



An additional enhancement made by our Team is at the eastbound I-64 exit ramp to Route 143, where the entire ramp alignment has been shifted to the inside (north) of the existing ramp as shown in Figure 4.3.1.3, allowing for construction to be accomplished outside of the existing ramp. In accordance with RFP requirements, a 3-lane ramp will be provided, and widening on Route 143 has been incorporated to accommodate side-by-side operation of the dual-right turn movement. Baselines and lane-lines have been identified for Route 143 ensuring the pavement widening has been developed appropriately and while accounting for the existing lane transitions and independent alignments of the

northbound and southbound lanes. In addition to the enhancement of constructing the ramp in a single stage, shifting the ramp to the north has also increased the intersection spacing to the East Rochambeau intersection, thereby improving the weave condition and increasing storage lengths at the approach to East Rochambeau.

(c.) Maximum Grades

The proposed design will closely match the profile of the existing road, except along eastbound I-64 just west of the Route 143 Interchange where the profile will be adjusted (raised) to correct an existing sub-standard sag vertical curve. Profiles for the eastbound and westbound lanes have been developed independently, and are based on GS-1 Interstate criteria utilizing a 75 mph design speed and a maximum grade of 3%. Because the roadway will be completely reconstructed, our Team has developed vertical profiles which closely mimic the existing profiles in order to maintain positive drainage from the existing travel lanes during staged construction of the new pavement in the existing median. As required by the RFP documents, our Team's maximum grade on I-64 is 3%, located on eastbound I-64 from approximately Station 1284+00 to Station 1285+50 and on westbound I-64 from approximately Station 2279+50 to Station 2282+25. Vertical curves, meeting 75 mph criteria, are located immediately adjacent to these station ranges, and act to reduce the vertical profile grades leading into and out-of each of these areas.

Our Team has also developed profiles for each of the ramp connections entering or exiting I-64 to ensure proper vertical curves and superelevation can be incorporated while minimizing impacts and adjustment to the existing ramps. Profiles for ramps where only minor modifications are necessary have been established based on spline grades, reflecting the required cross-slopes on I-64 and the ramp. For the eastbound exit ramp to Route 143 (Ramp G), a maximum vertical grade of 3.4% is proposed adjacent to Route 143, and is necessary to mimic existing conditions approaching the existing road. Since the location of this vertical grade is closest to the stop condition, it is well less than the 6-8% maximum grade identified in the VDOT Road Design Manual GS-R criteria for a 15-20 mph design speed, which is appropriate for the stop condition and right and left turn lanes.

(d.) Typical Sections of Roadway Segments

In addition to widening I-64 to 6-lanes, the Project includes full width shoulders ranging from 4-feet to 14-feet, which accounts for narrow shoulder widths adjacent to existing bridge structures as allowed by the approved design exceptions and waivers, as well as for the additional offset required when guardrail or barrier is proposed adjacent to the shoulders.

While the RFP allows for a minimum median width of 40-feet as measured from the edges of the inside thru lanes, our Team has prepared our concept to provide a minimum median width of 52-feet to ensure ditch grading can be completed without the need for additional guardrail and while maintaining adequate depths to accommodate underdrain outfalls. The majority of the median will consist of an open section design, and guardrails are only proposed where traversable and recoverable slopes couldn't be incorporated due to the bifurcation between the eastbound and westbound lanes. As previously identified, the retaining wall shown in the median of the RFP plans just east of the Route 143 interchange has been eliminated by our Team, and replaced with standard barriers that will be located adjacent to the paved shoulders. Closed system drainage and open ditches behind the barriers will be utilized to maintain flow within these areas.

An additional enhancement made possible by our Team's shifted horizontal alignments is the ability to reduce work on the existing outside roadway slopes. Within the areas of the horizontal shift, existing pavement will be removed, and slopes will be graded to maintain positive drainage away from the permanent shoulders while avoiding sliver fills or cuts along the existing slope. This modification reduces impacts to existing utilities, and also reduces areas of tree clearing and grubbing as compared to the RFP

concept. By maintaining the existing roadway embankment on the outsides of the permanent roadway, the need for guardrail has also been reduced, representing a safety improvement since guardrail is a hazard. Additional typical section graphics are included in our Volume II - Design Concept, and discussion of the bridge typical sections is included in Section 4.3.2.

(e.) Hydraulic and Stormwater Management (SWM)

Storm Drainage

Storm drainage improvements will be completed along the entire limits of the Project in order to properly convey flow from the new travel lanes and shoulders to stormwater management basins, large culverts, and adequate outfalls. Computations will be developed by our Team as part of the roadway design development, and will be submitted along with each plan submission for review and approval. Median ditches have been designed to convey the design storm, and minimum ditch depths have been identified to accommodate underdrain outfalls without the need to introduce additional closed storm sewer systems. By shifting the horizontal alignments to the median as previously described, we reduced the limits of slope widening required on the outsides of the existing road, allowing our Team to reduce clearing and grading impacts, reduce disturbed flow runoff, and maintain existing roadside ditches along the outside of I-64.

For the majority of the Project length, an open median ditch will be graded to convey surface runoff to desired outfall locations. Just east of the Route 143 interchange, our unique concept has eliminated the retaining wall, but standard roadside barriers used to retain minimal fill heights requires implementation of closed system drainage to collect surface runoff and convey it to stormwater management basins and adequate outfall locations. In this area, a trunk line will be provided along the eastbound lanes which will convey flow to Queens Creek, while a smaller storm sewer system along the westbound lanes will convey flow to an existing ditch and adequate outfall. Our Team reviewed the pipe inspections completed by VDOT and provided with the RFP documents, and based on existing conditions identified in those reports, we identified pipes which can be rehabilitated or repaired as opposed to introducing new crossings. Where pipe conditions do not allow for repair and rehabilitation, new crossings have been identified. Based on our unique storm drainage configuration, only 38 new pipe crossings are required, as compared to the 77 identified in the RFP concept.

Stormwater Management

Stormwater management will be designed in accordance with Virginia Department of Environmental Quality (DEQ) II-C Criteria. Stricter criteria will be used to analyze water quantity at the outfalls leading to the National Park Service (NPS) property and all outfalls located between Station 2398+00 and 2447+00. Our unique stormwater management approach ***reduces the number of proposed stormwater management BMP's from the 92 facilities identified in the RFP concept to 15*** by optimizing the type and placement of stormwater facilities. Based on our Team's unique design concept, stormwater management is required to treat 147 lbs of phosphorous. The 15 facilities proposed with our concept treat a total of 118 lbs of phosphorous, which when combined with the purchase of 29 lbs of credit (or 20% of the Project requirements), meet the Project requirements. While VDOT criteria allows for the purchase of up to 25% of the nutrient credits, our conceptual plan allows for flexibility in the ultimate stormwater management approach. Should additional treatment be required based on final design elements (such as increased shoulder widths or other additional impervious area), the remaining amount can be purchased while not exceeding the 25% threshold. Additional details related to our stormwater management approach and concept are included in Section 4.4.2.

Stormwater Management Enhancements

- Reduced number of facilities from 92 to 15.
- Optimized BMP locations to reduce ROW impacts.
- Minimized long-term maintenance needs.
- Avoided use of bioretention media.

Additional Hydraulic Considerations

There are several additional hydraulic challenges which our Team investigated and addressed through development of our hydraulic design concept. This includes repairs to eroded channels, upgrades to existing outfalls, analysis of outfalls onto Camp Peary and Colonial Parkway, and tidal and scour effects of Queens Creek. A more detailed discussion is included in Section 4.3.2 and 4.4.2.

(f.) Proposed Right-of-Way Limits

Since the existing ROW along I-64 is relatively wide, easement and ROW acquisition needs as depicted in the RFP plans were primarily associated with the construction of stormwater management basins or other drainage outfall improvements. Based on our Team's unique stormwater management concept, we have reduced the ROW and easement needs. Specifically, ***we have reduced the number of impacted properties by 50% (22 to 11) and reduced the ROW impacts by 30% (approximately 6.3-acres).*** Locations of these ROW reductions are shown in our Volume II – Design Concept. Although not shown on the RFP conceptual plans, additional temporary grading or permanent slope easements are also expected to have been necessary at the interchanges to facilitate construction of the lengthened auxiliary lanes. Based on our Team's unique horizontal alignments, auxiliary lane lengthening can be completed with minimal outside slope widening at the Route 199 Interchange, thereby eliminating the need to obtain additional temporary or permanent easements for slope widening, ditch grading, or new culvert installations.

(g.) Utility Impacts

Our goal is to avoid conflicts with existing utilities and eliminate the need for relocations, minimize environmental impacts, and integrate necessary impacts for utility relocations into the Project permits. The horizontal alignment enhancements described previously assists in this goal by reducing impacts to the existing VDOT ITS facility located directly behind the existing guardrail. ***By adjusting the horizontal alignment and developing a profile which closely matches the existing conditions, we can reduce impacts to this facility by approximately 50% and maintain operations throughout all stages of construction.*** In addition to the ITS facilities, Table 2 identifies proposed utility impacts to public facilities:

Table 2 - Proposed Utility Impacts

Utility/Owner Description	Approximate Location	Potential Conflict	Relocation Plan/ Avoidance Strategy
UNDERGROUND POWER/COMMUNICATION LINES			
Verizon	I-64 EB Station 1055+00	Conflict with Proposed Access Road and Storm	Adjust in Place
Verizon	I-64 WB Station 2078+00	Conflict with Proposed Access Road and Storm	Adjust in Place
Quest	I-64 WB Station 2078+00	Conflict with Proposed Access Road and Storm	Adjust in Place
Cox	I-64 WB Station 2124+00 to 2133+00	Conflict with Proposed Access Road and Storm	Adjust in Place
Cox	I-64 WB Station 2167+00	Conflict with Proposed Access Road and Storm	Adjust in Place
Dominion Energy	I-64 EB Station 1428+00	Conflict with Proposed Bridge	In-Kind Relocation
WATER			
Newport News Waterworks 16"	I-64 EB Station 1107+00	Potential Conflict with Access Road and Storm	In-Kind Relocation
Newport News Waterworks 16" in 30" Casing	I-64 EB Station 1116+00	Potential Conflict with BMP and Median Ditch	In-Kind Relocation
Newport News Waterworks 10" in 20" Casing	I-64 EB Station 1280+00	Potential Conflict with Ditch and Storm	In-Kind Relocation
Newport News Waterworks 8"	I-64 EB Station 1399+00	Potential Conflict with pier protection	In-Kind Relocation

Utility/Owner Description	Approximate Location	Potential Conflict	Relocation Plan/ Avoidance Strategy
SEWER			
Hampton Roads Sanitation District	I-64 EB Station 1107+00	Potential Conflict with Access Road and Storm	In-Kind Relocation
Hampton Roads Sanitation District	I-64 EB Station 1117+00	Potential Conflict with BMP and Median Ditch	In-Kind Relocation
U.S. Government	I-64 EB Station 1275+00	Potential Conflict with Ditch	In-Kind Relocation
York County	I-64 WB from Station 2435+00 to 2442+00	Conflict with SWM Ponds	In-Kind Relocation
GAS			
Virginia Natural Gas 8”	I-64 EB Station 1107+00	Potential Conflict with Access Road and Storm	In-Kind Relocation
Virginia Natural Gas 6”	I-64 EB Station 1308+00	Potential Conflict with Ditch	In-Kind Relocation
Virginia Natural Gas 4”	I-64 EB Station 1399+00	Potential Conflict with Ditch	In-Kind Relocation

(h.) Noise Wall Locations

Three separate noise walls identified in the preliminary noise analysis have been accounted for in our conceptual design and the 89,220 SF of ground mounted noise wall and 6,080 SF of structure mounted wall will be accounted for in our Price Proposal. 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. On the Queens Creek Bridge, structural details will be developed to mount the noise wall behind the parapet. Conceptual details of this attachment are shown in our Volume II – Design Concept. Where the noise walls will be ground mounted, we expect them to be located at the top of the existing slope and behind new guardrail in an effort to minimize slope widening and eliminate the need for additional closed system drainage facilities. Underdrain will be outfalled behind the noise walls in an effort to reduce ditch depths between the roadway and the front of the noise walls.

4.3.2 Conceptual Structural Plans

We will use our experience gained working with the Hampton Roads District on the Segment I project to ensure that a consistent approach is used for the design and construction of the Segment III bridges. In order to ensure our Technical Proposal was compliant with the RFP documents and achieved the goals identified for the Project, we reviewed the RFP documents for each bridge and evaluated multiple configurations and alternatives for each structure. Alternatives studied included different span arrangements, adjusted abutment locations, and different types of superstructure elements (conventional and pre-fabricated units). Based on this comprehensive analysis and review, we have developed our design approach as described below and as shown on our Team’s Conceptual Structural Plans included in Volume II - Design Concept.

I-64 over Queens Creek (B642 and B643)

Our Team considered multiple alignments and span arrangements for the Queens Creek Bridges. Alternate alignments which would have minimized or maximized the median opening were considered in order to reduce environmental impacts as well as to improve on the construction sequence. Alternate span arrangements were considered to improve constructability, access, and hydraulic properties. Based on this analysis, and in accordance with guidance obtained at our Team’s proprietary meeting, we have chosen to utilize alignments which are consistent with the RFP concept but optimized span arrangements which will improve constructability and access as well as reduce the overall length of the bridges. The width of each bridge (64-foot out-to-out), number and width of travel lanes and shoulders (3 - 12-foot lanes and 2 - 12-foot shoulders on each bridge), type of abutments (Virginia Alternate Abutments with tooth joints), and piers (pile bents utilizing VDOT standard square prestressed concrete piles with a concrete cap) match the

RFP and RFP Concept plans. As described in RFP Part 2, Section 2.4.9, a noise wall has been accounted for on the eastbound bridge and will be incorporated based on the results of the final noise analysis. If a noise wall is required, it will utilize transparent panels and will be attached to the bridge(s) utilizing the details in the VDOT Manual of the Structure and Bridge Division, Volume V, Part 2, Chapter 25.

As mentioned above, while the alignment and typical sections are consistent with the RFP concept, our Team has incorporated the following unique and innovative elements:

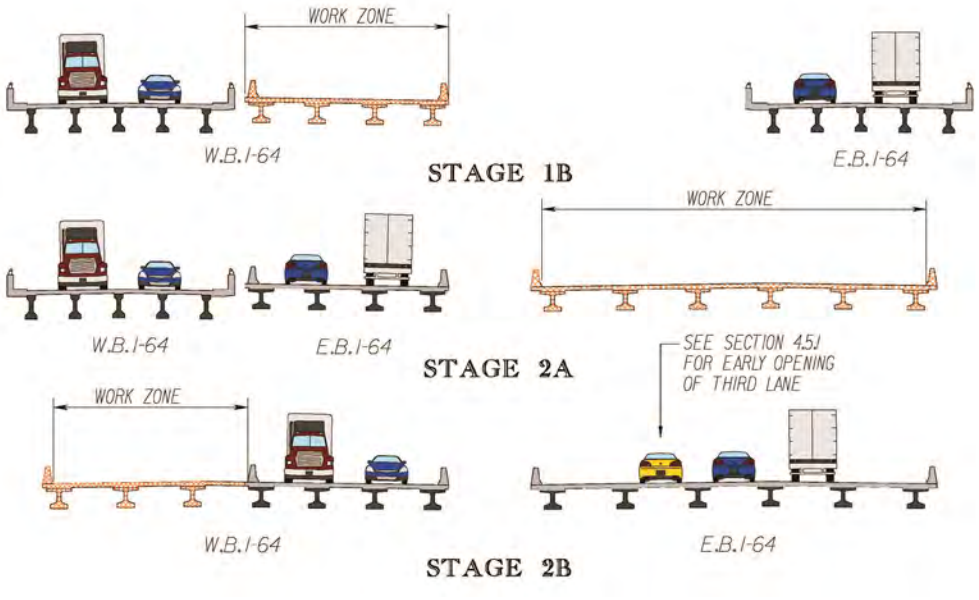
- Developing a Construction Sequence that eliminates a median crossover;
- Reducing the length of bridges while meeting RFP requirement to provide bridges that are hydraulically equivalent to the existing bridges and maintaining existing low chord elevation;
- Eliminating all conflicts between existing and proposed piers;
- Skewing several piers and Abutment B to improve hydraulic performance;
- Reducing the number of piers of each bridge (WB from 16 to 11 and EB from 16 to 10);
- Reducing the number of girders of each bridge (WB from 10 to 7 and EB from 9 to 6);
- Minimizing long-term VDOT maintenance costs due to reduced bridge area, piers, and girders;
- Avoiding impacts to the traveling public; and
- Reducing Environmental Impacts.

Environmental Considerations

Our layout also considered the environmental impact associated with the construction of these bridges. Specifically, our Team developed an approach to constructing the temporary causeways to minimize construction time to less than a year for each causeway. ***This reduces tidal wetland impacts by 0.25 acres.***

Sequence of Construction

Figure 4.3.2.1 - Sequence of Construction Queens Creek Bridges



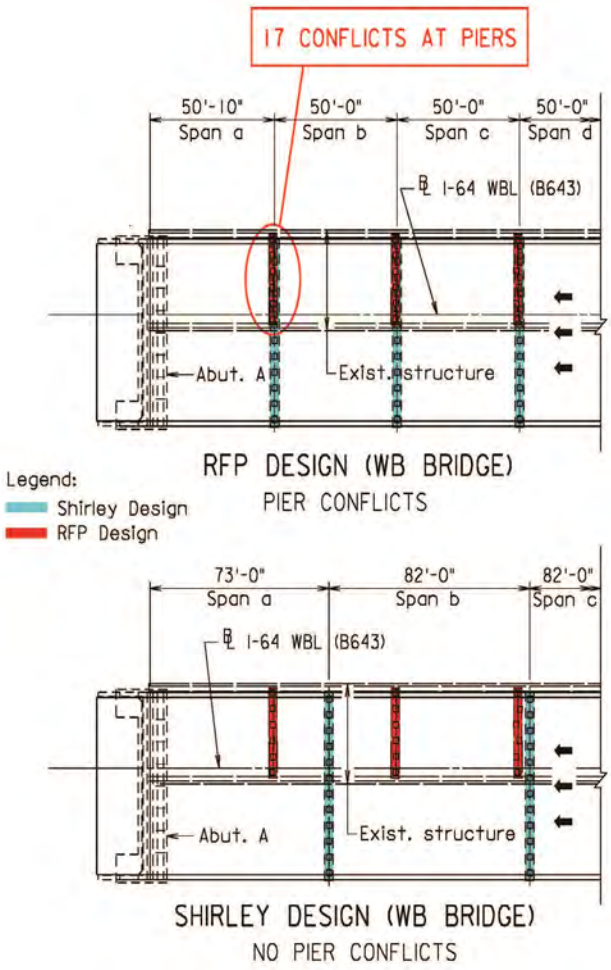
Our Team evaluated the RFP Concept for the replacement of these bridges, and realized that the duration required for three-staged construction could be the greatest challenge for completion of the project. While two-phased construction for each bridge would have been the preferred, and possibly the quickest way to complete construction, the width of the existing bridges (29-foot curb-to-curb) and the space between the existing bridges (approximately 78-feet) made this phasing infeasible due to an inadequate space between bridges to erect girders and efficiently complete the multiple construction activities. Recognizing this challenge, we developed a solution which is similar to the RFP sequence, but while minimizing the amount of temporary pavement and degree of horizontal shifts for the eastbound and westbound travel lanes. Figure 4.3.2.1 shows our proposed construction sequence, which only requires a single median crossover for the eastbound travel lanes. Our proposed sequence is also described in detail in Section 4.5.

Design Enhancements

As indicated above, our Team developed a preliminary hydraulic model that has allowed us to reduce the length of the bridges as compared to the RFP Concept Plans (westbound bridge reduction from 906-feet to 890-feet, eastbound bridge reduction from 937-feet to 835-feet) while providing bridges that are hydraulically equivalent to the existing bridges. This bridge length reduction was possible due to our Team's reduction in the number of piers (westbound bridge reduced from 16 to 11, eastbound bridge reduced from 16 to 10), skewing three piers (as opposed to two shown on the RFP Concept plans), and skewing Abutment B. These enhancements result in fewer blockages to flow in Queens Creek and increased the efficiency of the flow. These enhancements are further described in the "Major Drainage Structure" section below.

In addition to reducing the number of piers on each bridge, we also eliminated all conflicts between the existing and proposed piers which were introduced by the RFP Concept. The RFP pier locations had 17 total direct conflicts between proposed and existing piers (see Figure 4.3.2.2), which would have required the complete removal of the existing piles (as opposed to cutting them off 2 feet below finished ground as allowed by the RFP), which would have resulted in increased construction costs, longer construction durations, and more construction equipment and activity exposure to flows in Queens Creek and the associated floodplain.

Figure 4.3.2.2 - Elimination of Pier Conflicts



The final design enhancement incorporated by our Team is a reduction in the number of girder lines as compared to the RFP Concept Plans. The reduction in the number of girders is partially feasible due to the unique construction sequence described above, which allows the eastbound bridge to be constructed in a single stage. Further reductions in the number of girders was possible based on a thorough analysis of the span arrangements proposed by our Team. The combined result is a reduction from 10 to 7 girder lines on the westbound bridge and from 9 to 6 on the eastbound bridge. ***Overall, our unique structural concept has eliminated six girder lines, or over 5,500 LF of girder that will not need to be inspected or maintained over the service life of the bridges.*** Further, this reduction has been completed while maintaining the low-chord elevations required by the RFP.

I-64 over Historic Colonial Parkway (B639 and B640)

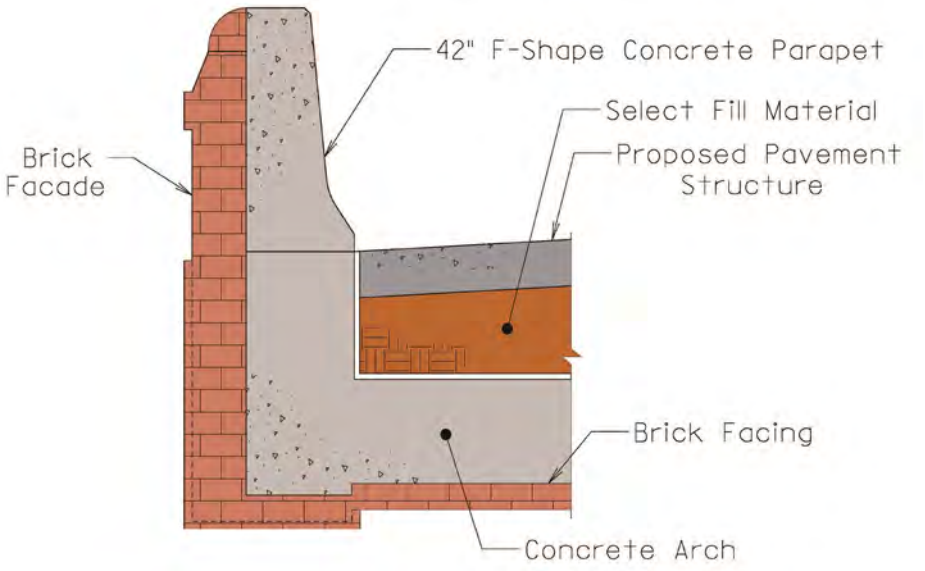
The RFP requires the bridges over Colonial Parkway to be widened utilizing cast-in-place concrete arches matching the geometry of the existing. Additionally, it is required to match the existing facade and architectural finish of the existing structures utilizing solid bricks matching the size and thickness of the existing brick. The brick facing will be placed on both the new headwalls and the undersides of the widened arches. Our Team understands this and intends to meet these requirements. These requirements are a key component of our design.

The final typical section of each bridge will provide 3-12-foot travel lanes and a 12-foot shoulder on each side of traffic. The minimum vertical clearance of the widened structures will not reduce the existing (approximately 14-feet, 8-inches) vertical clearance between Colonial Parkway and the underside of the arches.

The design challenge of these bridges is the requirement to utilize the AASHTO LRFD Bridge Design Specifications while minimizing any structural stiffness between the existing and new portions of the arches, since the original arch structures were designed utilizing AASHTO Standard Specifications and allowable stress design. Our Team performed a preliminary analysis of the new portion of the bridges and determined that we can match the concrete thickness of the existing bridges when designing using the LRFD code. As such, the stiffness between the new and existing bridges will be compatible, avoiding concerns associated with differential live load deflection between the existing and proposed bridge elements. This will virtually eliminate any issues with reflective cracking of the mortar joints between the brick facing on the underside of the arches at the construction joints.

The foundations of the existing arches are tied together utilizing reinforced concrete struts inside of steel pipes. We have analyzed the need for additional ties for the widenings and have determined that we will be able to resist the additional arching action by the use of either group pile action or battered piles. The final determination of which method will be based on our Team's complete geotechnical investigation, which will occur following award of the Project. By avoiding additional ties between the abutment foundations, we will minimize temporary impacts to Colonial Parkway traffic and avoid the need to fully reconstruct the existing concrete pavement.

Figure 4.3.2.3 - Brick Facade Detail



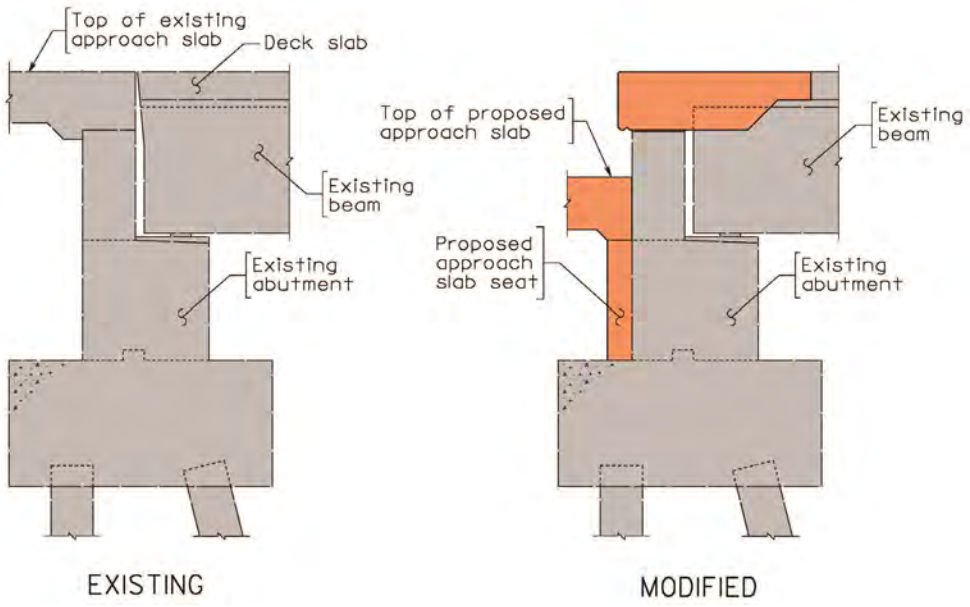
As previously discussed, our Team recognizes the importance of matching the aesthetics of the existing bridges. We will meet the RFP requirement to reuse and supplement the bricks to be installed on the façade of the new endwalls and the underside of the widened arches (see Figure 4.3.2.3). Existing bricks on the inside headwalls and those on the underside of the arches impacted by the widening will be carefully removed and cleaned of mortar and other debris. Those that can be reused will be stored and protected until it is time to reattach them to the new headwalls and arch undersides. Any new bricks utilized will match the size, thickness, and color of the existing. Additionally, the attachment of the bricks to the concrete will utilize stainless steel anchors and ties at no less than the minimum spacings required by the RFP. However, we will analyze these connections to ensure that the spacing will result in a strong connection with no chance of failure.

In addition to the widening construction described above, all repairs to the existing structures required by the RFP will be completed. Additional discussion related to the sequence of construction for these bridges is included in Section 4.5.

I-64 over Lakesheads Drive (B638 and B641)

We reviewed the RFP Concept and the bridge inspection reports for these bridges and considered several replacement options, including conversion of the bridges to single span structures. However, given the condition of the existing bridges and the likelihood of significant settlement due to increased fill placement to convert the bridges to single span structures, we determined that widening, modification, and repair of the structures while maintaining the 3-span configuration is the most cost effective option that minimizes impacts to the traveling public and provides the required service life.

Figure 4.3.2.4 - Existing Abutment Modification



Based on the analysis described above, both Lakeshead Drive bridges will be widened to provide an additional lane. The final typical section of each bridge will provide three 12-foot travel lanes and a 12-foot shoulder on each side of traffic. The abutments and piers will be widened to support the three new prestressed concrete girders (either VDOT PCB or PCBT series), and the pier widening will consist of two-column bents supported on pile foundations. Based on our analysis of the RFP documents and survey information, pier protection along Lakeshead Drive is not expected to be required. However, this will be confirmed during final design based on additional surveys completed along Lakeshead Drive and on the existing piers. The existing abutments will be modified to accommodate deck slab extensions and buried approach slabs (see Figure 4.3.2.4) and the widened portion of the abutments, will be supported on pile foundations, and will incorporate deck slab extensions and buried approach slabs.

All repairs to the existing superstructure and substructure required by the RFP will be completed utilizing details that were developed and approved during out Segment I Project, and locations of required repairs will be shown on the structural plans. Existing joints at the piers will be eliminated, using the detail shown in the Structure and Bridge Manual, Volume V, Part 2, File No. 10.02-2;

Retaining Walls

Along with our Team's focus on optimizing the bridge design, we also looked closely at the retaining wall proposed in the RFP plans. As described in Section 4.3.1, we have adjusted the horizontal alignments and vertical profiles of I-64 in a manner which has eliminated the 2,050-foot retaining wall in the median of I-64. Additionally, while no additional retaining walls were depicted on the RFP plans, by shifting the horizontal alignments towards the median, we have ensured that retaining walls on the outsides of the road will not be necessary to avoid environmental, utility, or ROW impacts.

Major Drainage Structures

While the bridges over Queens Creek are not necessarily "drainage structures", they have a major drainage component which must be considered during their design. In developing our concept for these bridges, our

Team has studied the wind and wave action tidal influences of the Queens Creek crossing and floodplain. The Federal Emergency Management Agency (FEMA) has a detailed study which demonstrates that the 100-year floodplain elevation is controlled by both the still water elevation and the wind and wave action. As part of our Conceptual Design Plans, we have optimized the bridge spans and overall length to ensure that the proposed bridge low chord is not lower than the existing bridge elevations and that the new structure is hydraulically equivalent. Span arrangements have been developed to minimize work within the main channel, and to ensure a minimum 15-foot wide and 3-foot deep channel is maintained during all stages of construction as required by the RFP. During final design, a HEC-RAS model will be generated to address the still water influences (riverine). Wind/wave action impacts (tidal) will be investigated based on TIDEROUT2 modeling and analysis, and scour will be analyzed using ABSCOUR. The combined results of these models and analysis ensures that the bridge abutments, piers, and foundations will be designed to meet design requirements while minimizing environmental and hydraulic impacts.

While less visible than the Queens Creek Bridge, multiple large culverts are located within the limits of the Project and will be analyzed by our Team during final design. As shown in our Volume II – Design Concept, our enhancements have already reduced these impacts. The largest drainage structure, shown to be extended in the RFP Concept Plans – a double box culvert located near westbound Station 2289+00 does not need to be extended based on our unique design concept. By shifting the widening to the median of I-64, the only modifications necessary to this structure are to connect proposed storm sewer pipes to the sidewalls of the existing box. Consistent with modifications our Team has successfully completed in the past, structural details for placement of additional reinforcement in the box culvert side-walls will be shown in the plans based on the size of the pipe openings to ensure structural integrity of the box is maintained. Avoidance of extensions at the inlet and outlet ends also minimizes the amount of regrading necessary to connect to the existing channels, thereby reducing environmental impacts.

Material Selection, Maintenance, and Construction Considerations

Our Team has reviewed the RFP, Special Provisions, and the RFP Concept Plans with a goal of selecting materials which will require minimal long-term maintenance. The VDOT requirement to utilize low permeability concrete and corrosion resistant reinforcing steel will greatly reduce maintenance for both the new Queens Creek bridges as well as the Lakeshead Drive and Colonial Parkway overpass widenings. Additionally, repairs to the existing substructure and superstructure of the Colonial Parkway and Lakeshead Drive bridges and elimination of joints at piers and abutments at Lakeshead Drive, once complete, will greatly reduce any future maintenance costs for these bridges.

Finally, reducing the bridge lengths, reducing the number of spans\piers and reducing the number of girders required for the Queens Creek bridges, utilizing prestressed concrete girders and constructing a jointless bridge, virtually eliminates any maintenance issues associated with these bridges.

4.4 - Project Approach

4.4 Project Approach

4.4.1 Environmental Management Approach

Environmental Management is a primary component of our Team's approach to all of our projects. Each discipline lead is included in project planning beginning in the RFP phase and continuing through project completion to ensure all parties are aware of project constraints, schedule limitations and to assure constructability. Our fully integrated environmental approach ensures that:

- All necessary permits are identified at the beginning of the Project;
- Project environmental constraints are identified and reflected;
- Adequate timelines are identified in the schedule for environmental risks/permits;
- Disturbance and permit impacts are fully defined and completely contained within the Project; and
- Construction is completed in accordance with contract, permits, National Environmental Policy Act (NEPA) commitments, and Project specifications.

Our integrated process shown in Figure 4.4.1.1 ensures schedule risk and costs are minimized. Environmental Management is achieved by implementing the following concepts throughout project development:

Figure 4.4.1.1 - Integrated Process

INTEGRATE →	IDENTIFY →	COORDINATE →	EDUCATE →	COMMUNICATE
Our Team is fully integrated into the design-build process - from development of this Technical Proposal to final acceptance with direct input into design, ROW, utility, and construction disciplines. We proactively avoid and minimize impacts, create a realistic project schedule that mitigates potential for delays, and ensures compliance.	Early identification of project constraints, survey limits, and environmental commitments during the RFP stage facilitates avoidance and minimization of potential impacts and recognized environmental conditions across the Project implementation.	Proactive coordination with entire Project Team. Regular meetings with VDOT and early regulatory agency coordination regarding project impacts and methods to refine avoidance and minimization opportunities, address LEDPA concerns and determine schedule efficiencies. This provides the foundation for project permit acquisition.	Education by the Team across disciplines facilitates creative and innovation solutions to perform the work in an environmentally responsible manner, while meeting schedule and assuring constructability, compliance and meeting or exceeding project goals.	Constant communication across disciplines ensures environmental compliance. RFI's are reviewed by all disciplines when minor plan or field changes are requested to ensure changes do not violate existing permits and authorization. If modifications are necessary, communication ensures they are coordinated prior to action.

An example of our successful Environmental Management Approach is the I-64 - Segment I Project. As demonstrated, our approach integrates environmental considerations into every stage from design development to construction. Additionally, our experience on Segment I provided lasting relationships with federal and state regulatory staff, and a deep understanding of project specific needs, such as the inclusion of MOT/TTC and tree clearing activities in the early schedule and permit acquisition process.

Approach During Design and Construction

During the design phase, our Team focuses on identifying and incorporating additional project constraints, commitments, and risks into both the design and project schedule. This risk management approach is accomplished through our integrated environmental management process with key elements noted in

Table 3. Once plans are finalized and released for construction, the environmental team shifts focus to assuring construction staff understands the Project constraints as they relate to each phase of construction. Our environmental professionals work closely with field staff to address construction monitoring of the permit and environmental commitments in the field.

Table 3 - Key Elements

Design Phase
▪ Informal "Over the Shoulder" interaction **daily** with engineers and the Environmental Manager to avoid and minimize impacts within the Project area and resolve any design issues or concerns. ▪ **Bi-Weekly** Technical Design Meetings - attended by environmental staff, design engineers, and construction representatives to comment on the design activities, schedules, issues, and concerns. Technical input, recommendations, and ideas related to the permit requirements, project constraints and commitments are offered in order to stay in compliance, circumvent conflicts between design and construction, and look for ways to streamline or provide further avoidance and minimization opportunities while maintaining constructability. ▪ Internal reviews are conducted **regularly** to ensure the subsequent design revisions are in compliance with the Project environmental commitments.
Construction Phase
▪ Preconstruction **constraints and commitments training** – led by the environmental staff, ensuring the construction team understands the constraints, where they are located, and how they are identified in the field. ▪ **Twice Weekly** Erosion & Sediment (E&S) compliance checks – performed by the Project Inspectors to identify good trends and areas where additional work is needed. These checks are also intended as a part of the ROD and permit commitment checks through the life of construction. ▪ **Monthly** meetings with the Inspector and Construction Manager to discuss environmentally sensitive areas included in the next month's work. ▪ Construction Field Revision Reviews are conducted and reviewed by both the design and environmental teams. This limits risks and potential for non-compliance for environmental items.

Because our process starts during the RFP phase, we have already begun to identify critical areas of concern which will have to be addressed or avoided prior to submitting final permit applications. Table 4 identifies additional coordination and methods to limit risks, which will be completed during design to ensure that the Project complies with the commitments made.

Figure 4.4.1.2 - ECM and Avoidance at Waller Mill Park

As each of these items are coordinated, the results and requirements of the agencies having jurisdiction will be tracked and updated in our Environmental Constraint Map (ECM) and placed within our Environmental Commitment Tracking Database (ECTD). The use of these documents which ***exceed the requirements of the RFP,*** assist our Team in tracking each commitment and risk. We have found value in using our ECM and ECTD across a wide variety of projects, as they provide visual representation of project constraints. This is especially important in critically sensitive areas, such as Queens Creek tidal marsh and the Camp Peary PCB site. While these locations are reflected on the roadway construction plan, the ECM and ECTD details additional project elements, such as limits of environmental studies and the limits of the 4(f)/6(f) properties and can be produced at a larger scale to provide additional details and dimensions to guarantee avoidance. An example is shown in Figure 4.4.1.2, where our Team has already made adjustments to the drainage of the Project, completely avoiding impacts to Waller Mill Park, a 4(f) and 6(f) property, outside of the existing VDOT ROW.

4.4 **Project Approach**

This integrated Environmental Management process is particularly vital given the numerous constraints along and immediately adjacent to the ROW. As our process begins at the RFP stage, we have created our ECM to begin to identify areas for design modifications to assist us in avoidance and minimization efforts and ultimately, project permitting. Based on our preliminary design and stormwater management adjustments, ***wetland and stream impacts have been reduced by approximately 0.5-acres and we have eliminated all 4(f) and 6(f) impacts outside of existing ROW.***

Table 4 - Additional Coordination And Methods To Limit Risks

Environmental Resources	Requirements	Method to Limit Risk
EQ-103 & RFP Commitments Not noted below	▪ Notify VDOT if outside of ROW beyond 30% conceptual plan, cultural resources or other surveys may be required	▪ Utilize ECM, over the shoulder and weekly design review to address minimization efforts
Threatened and Endangered Species (T&E species)	▪ Coordinate with USFWS, VDGIF & VDCR regarding the identification of state and federal T&E species, as well as addressing the impact assessment ▪ Project and schedule will include provision for Threatened and Endangered (T&E) species Time of Year (TOY) restriction as required	▪ Incorporate TOY for species in project schedule, as appropriate, perform bat inspections on bridges. ▪ Use ECM, put on plans and mark in field: LOD and habitat areas to be avoided ▪ No impacts to T&E species expected based on distance from work area. ▪ Coordinate with T&E agencies during permitting
Noise Wall	▪ Final barrier conditions determined in final design: Conform with VDOT requirements and public commitments. ▪ Complete Final Noise Analysis based on design. ▪ Comply with Section 107.16 (b)(2) of VDOT Road and Bridge Specifications. ▪ Begin construction of new noise wall within 60 days of the start of demolition of an existing barrier or cutting trees. ▪ Complete construction of any new noise wall intended to replace an existing noise wall or trees within 240 days from the start of demolition or cutting of trees	▪ Review prior noise model and run preliminary model of concept design to determine compliance ▪ Inform public during “pardon our dust” meetings ▪ Schedule noise barrier and clearing work to ensure the time frames detailed in the RFP are adhered to
4(f) and 6(f) Resources Outside of Existing ROW	▪ Considered to be design constraints and shall be avoided beyond the limits of the RFP plans ▪ Avoid, staging, borrow/disposal, and temporary or permanent easements on 4(f)/6(f) properties ▪ Have no more than 2.69-acres of impact to the Battle of Williamsburg Battlefield (099-5282) ▪ The 4(f)/6(f) properties for the Project include: • Colonial National Historic Park/ Colonial Parkway • The Battle of Williamsburg Battlefield • Waller Mill Park	▪ Use ECM to show limits of 4(f) properties ▪ Coordinate with designers and construction personnel to ensure no additional work is set to occur on 4(f) properties ▪ Clearly demark 4(f) properties and/ or LOD in the field to prevent un-intentional impacts to these properties. ▪ Identify laydown areas, staging, borrow and disposal areas early in design/during RFP process

Environmental Resources	Requirements	Method to Limit Risk
Cultural Resource Constraints Commitments	▪ Conform to the Programmatic Agreement. ▪ Remain within the ROW limits noted on the RFP to avoid additional impacts to Battlefield, park, Redoubt nine and other cultural resources ▪ Portion of sites 44YO0051/099-0040 and 44YO1187 outside ROW eligible for listing, design and construction project improvements within the existing ROW to avoid impacts to the site ▪ Construct improvements within existing ROW ▪ Avoid cemetery near Merrimac Trail interchange	▪ Use ECM overlay of cultural resource study limits to avoid need for additional surveys ▪ Clearly mark study limits or LOD prior to construction to avoid construction disturbance for staging/ laydown ▪ Assure project grading & utilities do not encroach outside ROW ▪ Require minimization of ditches adjacent to special sites to assure avoidance. ▪ Coordinate with SHPO/NPS through design submittals to obtain comments on proposed work in and around the Colonial Parkway, including landscape plans
Wetlands/ Streams/WQ Permitting	▪ Conduct wetland delineation and obtain Corps Jurisdictional Determination and Obtain WQ permits ▪ Continue to Evaluate and document possible avoidance and minimization alternatives ▪ Provide mitigation for unavoidable wetland and waters impacts ▪ Conservation easement at Station 1390+50 ▪ Maintaining 15-foot wide channel in Queens Creek	▪ Study existing and historic aerial photographs, DEM, field checks, topography & delineation from Segment I to accurately estimate probable wetland impacts ▪ Begin wetland delineation at Notice to Proceed (NTP) ▪ Document avoidance/minimization efforts for rapid permit issuance ▪ Conduct early coordination during JD to address questions concerns early and facilitate permitting
Hazardous Materials	▪ Conduct Phase I ESA for all ROW acquisitions ▪ No ROW to be taken from Camp Peary ▪ Conduct Asbestos and Lead Based Paint testing of bridges & structure demolitions by independent asbestos inspector licensed in VA by DPOR, perform abatement prior to demolition ▪ Avoid PCB site at Camp Peary ▪ Handle all hazardous waste, solid waste, and hazardous materials in compliance with local, state, and federal regulations ▪ Complete and distribute comprehensive spill prevention, control, and countermeasure (SPCC) plan	▪ Conduct review of State and federal databases ▪ NO ROW from Camp Peary ▪ Avoided ground disturbance to the maximum extent practical at and around the PCB area in Camp Peary ▪ Begin Phase I ESAs as following NTP as parcel impacts mirror RFP Concept ▪ Prepare and maintain SPCC

The bridge over Queens Creek involves some of the most environmentally sensitive areas on the Project. As market availability of tidal mitigation is limited, ***our Team has developed an approach to the bridge construction which limits the temporary impacts to the estuarine wetland systems and ensures that construction time in these systems is completed in less than one year.*** The United States Army Corps of Engineers (USACE) has made the determination that any temporary impact that will be in place for over one year needs to be permitted and mitigated as a permanent impact. Our unique construction approach allows our Team to utilize the existing bridges to the maximum extent possible to construct the new bridges. We estimate this approach reduces tidal wetland impacts by 0.25-acres.

The ultimate goal of our Environmental Management Program is to facilitate the schedule while ensuring that all commitments and permit requirements are adhered to. One of our early goals is to create a project schedule that realistically accounts for the time to obtain the required permits and clearances, and incorporates any TOY restrictions. Based on recent VDOT design-build projects, regulatory agencies are closely scrutinizing proposed permit applications with a concentration on the avoidance/minimization efforts made during the design stage. During design, we document each avoidance and minimization effort and include them in support of the Joint Permit Application (JPA) and NEPA commitments. This minimizes the risk of a lengthier permitting and approvals process.

As with Segment I, our Team is proposing to use a phased construction approach which allows for advanced TTC work and flexible work areas should the need to avoid environmental sites or ROW arises. The approach involves the implementation of early TTC plans and clearing in non-jurisdictional areas within the median. Once plans are developed to at least 60% with grading and drainage, our Team moves forward with permitting. After permit approval, project construction begins in jurisdictional areas. This Phased approach reduces overall project delivery risk by allowing schedule flexibility. Given our Teams comprehensive integrated environmental approach, our schedule and design are inclusive of the typical risks found on design-build projects. After design, our environmental team transitions to the field working with project inspectors to track permit and NEPA compliance ensuring the Project is meeting schedules and goals set forth by our Team.

All constraints and permits noted include the integration of not only the construction elements, but utility relocations, ROW acquisitions and project laydown needs as well. Environmental coordination with the construction team is invaluable in assuring compliance, and is discussed further in Section 4.5.1 - Sequence of Construction.

4.4.2 Hydraulics

Stormwater Management

Our Team's approach to hydraulics and stormwater management minimizes impacts to the environment and reduces ROW acquisition needs. Our concept will ensure drainage systems provide efficient collection and conveyance of runoff, directing it to stormwater management facilities or adequate outfalls in compliance with the Virginia Department of Environmental Quality (DEQ) II-C criteria. In addition to this approach, our Team will adhere to the stricter project criteria to analyze water quantity at the outfalls leading to the NPS property and all outfalls located between Stations 2398+00 and 2447+00. To ensure compliance with stormwater and permitting requirements, our stormwater management concept addresses the following goals:

Stormwater Management Enhancements

- Managing flows at Jones Mill and Waller Mill Reservoir
- Improving eroded channels
- Providing TMDL credits for Chesapeake Bay watershed

Water Quality - Our innovative stormwater design has reduced the proposed ROW impacts and maintenance costs associated with the RFP stormwater design through optimizing the placement and types of BMPs. The RFP SWM design utilized 24 ponds (Bioretention and Extended Detention Enhanced facilities), 61 dry swales (which required placement and routine maintenance of media), and seven water quality swales for a total of 92 stormwater management facilities. These BMPs consisted of facilities which incorporated expensive soil media that would have required replacement approximately every five years, resulting in continued maintenance efforts and associated costs. These facilities are also more sensitive to high groundwater levels, and may have been infeasible or introduced additional maintenance challenges due to their close proximity to Queens Creek. Based on our experience locating and designing stormwater facilities in compliance with II-C criteria, and our unique design concept which minimizes impacts to the

existing outside roadway slopes, ***our conceptual design proposes 15 ponds, including Extended Detention, Extended Detention Enhanced, and Retention BMPs as compared to the 92 facilities identified in the RFP plans.*** Our design also eliminates the need for facilities that require media, thereby reducing ongoing maintenance costs and reducing the likelihood of problems associated with high groundwater.

Water Quantity - The proposed improvements will affect approximately 35 locations where concentrated flow leaves the "site" as defined by MS-19 criteria. In addition to addressing stormwater management quality needs as described above, our stormwater management approach also addresses quantity requirements by controlling the discharge which leaves the Project site. Facilities have been designed to ensure stormwater runoff reduces the peak flows to be less than the pre-developed condition, and also ensures that runoff will not adversely affect the NPS property near the east end of the Project.

Eroded Outfalls - In addition to achieving the stormwater quality and quantity requirements, our Team's drainage concept will also incorporate modifications and grading adjustments to address each of the eroded outfalls listed in the RFP information package. During preliminary design, each outfall will be documented with photographs and investigated to determine the best approach to return them to a functional and stable condition. Natural stream channel designs including benches, meandering geometry (where appropriate) and lining will be identified on the plans. In combination with the stormwater quantity approach, excessive runoff will be detained and/or diverted to ensure the final product provides a stable outfall configuration. The roadway alignment concept proposed by our Team also reduces impacts to these channels, as outside slope widening has been reduced, eliminating the need to significantly alter the geometry of the existing channels. Finally, as part of our final design computations and documentation, our Team will submit the request for pollutant removal credits to support VDOT's Chesapeake Bay TMDL Action Plan.

As described above, our Team's overall approach to stormwater management is intended to provide a fully functioning system which meets criteria, minimizes environmental impacts, reduces ROW acquisition needs, and reduces long-term maintenance requirements. Based on our unique concept and reconfiguration of the proposed drainage systems, our design provides enhancements identified in Table 5:

Table 5 - Hydraulic Enhancements

Hydraulic Items	Hydraulic Enhancements
Mitigation Strategies To Reduce Design And Construction Durations	▪ Reduced number of SWM facilities from 92 to 15 ▪ Eliminated ROW impacts to 11 properties ▪ Reduce utility and ITS impacts ▪ Placed proposed SWM in interchange loop areas ▪ Meet RFP requirements for NPS property and York County Watershed Management and Protection area overlay district (Jones Mill and Waller Mill Reservoir) ▪ Utilized II-C SWM facilities; Extended Detention, Extended Detention Enhanced, and Retention BMPs.
Reduce ROW	▪ Reduced 6.3-acres of RFP proposed ROW ▪ Provided flexibility in final SWM design by utilizing nutrient credits for 20% of treatment (Can use up to 25%) ▪ Avoid the VDOT Cultural Resources areas
Reduce Tree Clearing	▪ Reduced SWM outside the existing ROW, reducing clearing ▪ Widen roadway to inside median where possible to avoid impacts outside ROW. ▪ Reduced pipe and box culvert extensions ▪ Reduced impacts to wetlands and stream in proposed SWM areas
Reduce Long Term Maintenance Costs	▪ Eliminated all SWM BMPs requiring long term maintenance cost associated with media and/or media replacement. ▪ Reduced the number of proposed SWM BMPs to maintain in the future by 83% ▪ Avoided placement of SWM BMPs adjacent to residential properties

Hydraulic Items	Hydraulic Enhancements
Provide Maintenance Access	▪ All Maintenance access has been provided from I-64 ROW area ▪ Maintenance crews can access around each SWM BMP ▪ Safe area for pulling off I-64 and its ramps
Combat Water Table Variances	▪ Eliminated any bioretention type and/or SWM BMP requiring media for water quality ▪ Utilized II-C SWM facilities; Extended Detention, Extended Detention Enhanced, and Retention BMPs ▪ Used SWM BMP that can utilize clay linings to combat ground water
Improve Runoff Quality & Reduce Flooding And Erosion Within and Adjacent To Project Limits	▪ Meet RFP more stringent requirements for NPS property and York County Watershed Management and Protection area overlay district (Jones Mill and Waller Mill Reservoir) ▪ Improving eroded ditches and outfalls ▪ Submitting for Chesapeake Bay TMDL credits through DEQ ▪ Shifted SWM BMP Design and grading to reduce impacts to approximately 150 LF of streams and 0.5 acres of wetlands

Finally, we recognize that the stormwater management approach developed during this conceptual stage of design may need to be adjusted and enhanced as part of final design activities. During final design, elements such as increased shoulder widths associated with installation of guardrail and slope protection can impact the amount of stormwater treatment required. It is for this reason that we developed a concept which currently obtains only 20% of the treatment requirements through purchase of offsite nutrient credits. During final design, should additional treatment be required, our Team will have the flexibility to purchase additional nutrient credits without exceeding the 25% threshold and also without needing to introduce additional ROW impacts.

4.4.3 Geotechnical

Our Team has the unique ability to take lessons learned from our Segment I project and apply them to ensure a safe and accurate program is completed on Segment III. One of the unique challenges for geotechnical exploration is that the vast majority of field exploration will need to be completed at night to reduce impacts to the traveling public. The experience gained from I-64 - Segment I, including coordination with State Police, traffic control, and VDOT ensures the geotechnical program is safely managed.

Figure 4.4.3.1 - Drilling in Close Proximity to existing NPS Bridge

The Project alignment is underlain by a series of unconsolidated sedimentary layers consisting of gravels, sands, silts and clays. Road and bridge construction over soft and compressible soils presents great challenges, not only in the terrain that has to be crossed but also in the management of the engineering properties of soft soils including high water content, high compressibility, and low shear strength. Also, the thickness of highly plastic clays and silts are highly variable. Subsurface exploration will be completed in accordance with the VDOT Materials Manual of Instruction (MOI), taking into consideration all previous test borings performed within the Project area. In-situ CPT, VST, DMT tests and collection of undisturbed samples are planned at bridges, critical slopes, major culverts, and the noise walls. Test borings along with laboratory tests and in-situ tests provides better confidence on the soils physical properties and their engineering behavior.

The sequence of the subsurface exploration will be coordinated such that the test borings required for design of the bridges, and critical slopes will be completed early, allowing design activities on critical elements to be advanced without impacting either the design or construction schedule. Selection of boring locations will be coordinated with design, construction, and permitting staff, ensuring that appropriate geotechnical information can be collected while avoiding environmentally sensitive areas. Site visits have been completed by our Team to identify critical areas, some of which have been addressed by the design enhancements described in previous sections. Once more detailed plans are developed and a final boring layout has been identified and marked, visits by geotechnical, environmental, design, and construction staff will be completed to identify best field access locations, areas where boring adjustments would be beneficial and acceptable, and to identify restricted areas where impacts are to be avoided.

Geotechnical Project Risks

The geotechnical risks are mainly related to the presence of compressible soils that could result in significant settlement for roadway embankments, bridge piers, abutments, and global stability issues. From the information obtained from the RFP GDR, the compressible soils consist mainly of silty sands (SM), clayey sands (SC), lean clay (CL), fat clay (CH), and occasionally elastic silt (MH) ranging from depths of 10-feet to 30-feet from the existing ground surface. Detailed information on the risks, potential impacts, and recommended mitigation strategies are presented in Table 6.

Table 6 - Mitigation Strategies

Risk Factor	Potential Risk	Modifications & Mitigation
Working within the Vicinity of Existing Structures	▪ Excessive settlement up to seven inches ▪ Additional downdrag load and stresses on existing foundations ▪ Slope and global stability ▪ Lateral squeeze	▪ Adjust horizontal alignment to avoid slope widening ▪ Pin piles to address global stability concerns ▪ Develop a zone of influence based on the vibration and settlement criteria ▪ Perform additional field investigation including, VST and DMT ▪ Use of drilled foundation system ▪ Instrumentation and monitoring
Maintaining Existing Structures	▪ Localized liquefaction due to consolidation of soils during pile driving ▪ Additional downdrag load and stresses on existing foundations. ▪ Pile heave	▪ Perform preconstruction survey of existing structures and surrounding areas ▪ Install structural monitoring points ▪ Determine threshold level and action level vibration limits based on conditions of existing structures based on Federal Transit Administration (FTA) and the United States Bureau of Mines (USBM) ▪ Monitor vibrations on existing bridges during pile driving Pre-bore piles to eliminate vibration concerns ▪ Instrumentation and monitoring; vibration monitoring, inclinometers, and settlement points ▪ Retrofitting of existing structure
Maintaining or Reconstructing Existing Slopes	▪ Slope failure adjacent to existing drainage channels ▪ Discovery of shallow groundwater ▪ Inadequate slope and global stability for placement of additional fill material ▪ Lateral Squeeze	▪ Install temporary groundwater monitoring wells to record long-term groundwater ▪ Perform additional field investigation (VST and DMT). ▪ Perform probabilistic analyses related to shear strength parameters ▪ Incorporation of laboratory test results from vane shear testing that may indicate higher undrained shear strength of unconsolidated soils ▪ Rapid drawdown analysis for abutments at Queens Creek ▪ Incorporate displacement monitoring during construction at critical locations

Risk Factor	Potential Risk	Modifications & Mitigation
Bridge Embankments and Foundations	▪ Extension of abutment will induce stresses and consolidation settlement ▪ Differential settlement may cause localized distress of bridge joints and irregularities in pavement surface ▪ Addition of new fill on soft and compressible layers may result in negative skin resistance ▪ Vertical ground movements from swelling soils ▪ Lateral squeeze of foundation soils ▪ Pile heave	▪ Surcharge and wick drains for Queens Creek Bridge ▪ Lightweight fill, Stone Columns to increase shear strength; Column Supported Embankments to transfer load to stiffer soil stratum for Colonial Parkway and Lakeshead Drive Bridge Consolidation and triaxial testing to determine compressibility and shear strength characteristics of the underlying soils ▪ Preconsolidation of compressible soil layers ▪ Lightweight fill or foam concrete to reduce settlement ▪ Evaluate the axial resistance of various pile types based on the soil setup and relaxation in the cohesive and cohesionless soils ▪ Install piezometers within the influence zone to monitor pore pressure dissipation ▪ Drivability of the piles will be evaluated using Wave Equations and dynamic load testing
Storm Water Management (SWM) Facilities	▪ No infiltration testing was performed ▪ Shallow groundwater may affect SWM performance ▪ About 30-feet of cut and up to about 15-feet of fill ▪ Slope stability of basin embankment	▪ Perform infiltration testing for basins ▪ Textural analyses will be performed on the subgrade soils to evaluate infiltration rates based on published values ▪ Rapid drawdown analysis for slope stability

4.4.4 Quality Assurance/Quality Control (QA/QC)

Over the past 15 years of performing Quality Assurance/Quality Control (QA/QC) on VDOT design-build projects, we have continuously refined our approach resulting in a reduction of VDOT staffing and oversight. Most recently we have refined our QA/QC plan and approach to be coordinated and acceptable to VDOT's Hampton Roads District on the I-64 - Segment I Project. This document will serve as the basis for our Segment III QA/QC plan. Our QA/QC Plan addresses both design and construction and defines the organization, work processes, and systems necessary to provide assurance and evidence that the Project is another quality undertaking successfully delivered by our Team. Our QA/QC Plan is in accordance with *VDOT's Minimum Requirements for Quality Assurance and Quality Control on Design-Build and Public-Private Transportation Act Projects (January 2012)* and establishes criteria for quality control, quality assurance, owners independent assurance, verification and oversight duties for all personnel.

Design QA/QC Approach

Our approach to design QA/QC includes implementing multiple processes with various QA/QC personnel throughout the duration of the Project. This ensures that appropriate quality standards are included in the plans and other design documents, suitable materials are selected, and work is constructed in a safe manner. Our design QA/QC process is well-structured, easily audited and is continually maintained to minimize VDOT's resource requirements.

Our Team implements design QA/QC by adhering to the approved QA/QC Plan, conducting design reviews, completing interdisciplinary coordination, performing constructability reviews, involving VDOT in the overall design review process, and ensuring that all field changes follow the same process as original design. A brief discussion of these activities is provided on the following pages.

Design QA/QC Plan

As the Design Manager, Steve Kuntz, PE implements and manages the overall Design QA/QC program (a subset of our QA/QC Plan) which identifies design quality assurance and quality control requirements. The Design QA/QC program establishes the following:

- Procedures for preparing and checking all drawings, specifications, and other design submittals including procedures to correct errors and deficiencies prior to submission;
- Processes to ensure design submittals are stamped, signed, and dated by the responsible Professional Engineer licensed by the Commonwealth of Virginia;
- Actions to ensure that the level, frequency, and methods for review of design, including independent review are in compliance with VDOT's functional requirements for the Project;
- Procedures for coordinating work performed by different persons in the same or different area, fabrication shops, casting yards, and other pertinent fabrication facilities at remote locations, or in related tasks to ensure conflicts, omission, or misalignments do not occur;
- Procedures for identifying elements of design that require special construction QA/QC attention or emphasis;
- Identification by firm, discipline, name, qualification, duty, responsibility, and authority for all personnel and/or entities responsible for Design QA/QC, including sub-consultants; and
- Establishment of Design QA/QC functions, including scheduled activities for design QA/QC, identifying the drawings, specifications, and other design submittals that will be submitted to VDOT.

Steve verifies conformance with the QA/QC Plan using informal observations or by conducting audits of the checking and review processes established within the QA/QC Plan. Documents identified as "Released for Construction" are accompanied by written notification from Steve certifying that the documents were reviewed in accordance with the QA/QC Plan.

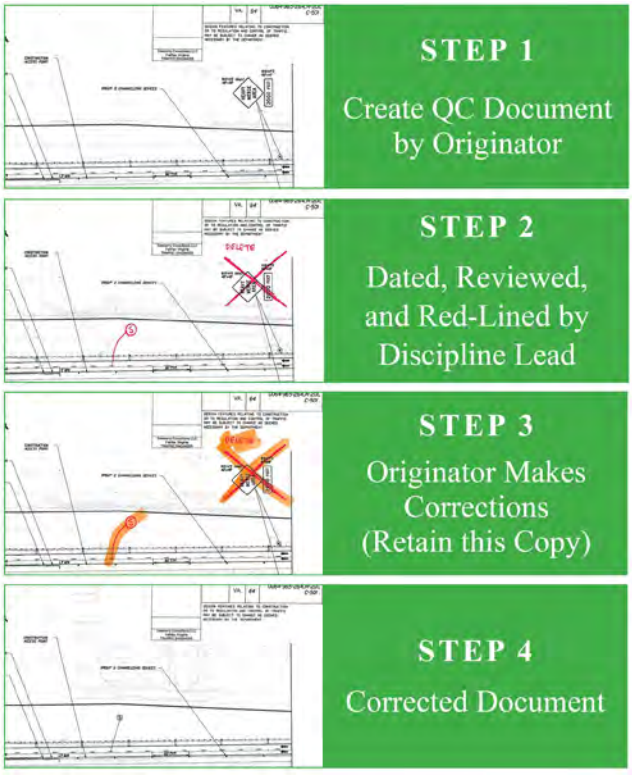
Design Review

Design quality control includes review of drawings, engineering computations, and other design related documents for technical accuracy, conformance to Contract requirements, as well as form, content, and spelling. Design quality assurance evaluates whether the designers assessed problems appropriately, applied correct analyses, and assigned qualified personnel to tasks when conducting design related activities.

Design quality control functions are provided by design discipline leads checking completed work and are carried out to a level commensurate with the complexity of the design element. This effort is managed by the Design Manager who ensures formal and documented reviews occur at predetermined times for submitted design documents as identified within the QA/QC Plan.

The process (shown in Figure 4.4.4.1) of checking deliverable documents first involves the creation of the QC Document (a copy of the deliverable) by the Originator (designer, writer, etc.). The QC Document

Figure 4.4.4.1 - QC Design Review Steps



is then dated, reviewed, and "red-lined" as appropriate by the design discipline leads who then return the QC Document to the Originator. The Originator "highlights" the "red-line" comments on the QC Document once the correction has been made or discusses the comments with the discipline leader for final determination, making note of final resolution. The Originator keeps the QC Document for record purposes and as evidence of performing design quality reviews in accordance with the QA/QC Plan. The Design Quality Assurance Supervisor, Jeremy Beck, PE, ensures that design activities adhere to this process and records of reviews are kept.

Jeremy performs design quality assurance reviews throughout the duration of the Project as set forth in the QA/QC Plan. He ensures and verifies that required quality control functions were performed properly, and in conjunction with the Design Manager, and directs the correction of nonconforming design practices. He ensures design standards, methods, and requirements of the Project are met, professional engineering judgment was applied correctly, and appropriate degree of care was utilized.

Interdisciplinary Coordination

Coordination between disciplines is critical to the success of the Project, not just during design, but also during ROW acquisition, utility relocation, permitting, and construction phases. Interaction between all discipline leaders through all phases ensures that project elements are properly coordinated, and schedule impacts and conflicts are avoided from the outset. During design, weekly meetings are held so details can be discussed and coordinated with the multiple design discipline leaders including roadway, structural, hydraulics, geotechnical, and traffic engineers. Additionally, environmental permitting, utility relocation, ROW acquisition, and construction staff are involved to ensure design progresses in a manner which considers long lead items (such as environmental permits or structural steel orders), is compliant with environmental regulations (including consideration and documentation of avoidance and minimization strategies), and matches the required phasing for completion of the Project (such as advancing ROW plans on critical properties). Potential conflicts or challenges are recognized and discussed at these meetings, and the entire project team is able to efficiently identify alternate solutions. Coordination between disciplines continues beyond the design phase, ensuring that unforeseen situations which may arise are addressed as efficiently and collectively throughout the duration of the Project.

Constructability Review

Throughout our Team's history of working together on VDOT design-build projects, we have found that regular, informal, over-the-shoulder type reviews from construction personnel work best to produce quality designs. These types of reviews are conducted at bi-weekly internal progress meetings where the Design Manager (and the discipline leads as appropriate) present roll plots and/or developed plans to the construction personnel who are building particular pieces of the Project. Immediate feedback regarding the design is provided and appropriate adjustments are discussed so that unnecessarily difficult, unsafe, or out of schedule construction is avoided. Conversely, explanations regarding design requirements are conveyed to construction personnel, ultimately resulting in a greater overall understanding of project requirements. This type of on-the-spot review regularly occurs within our design offices between discipline leads and construction personnel, as is typical of all of our VDOT design-build work.

In addition to informal constructability reviews, the Design Manager and Design-Build Project Manager coordinate formal reviews of the design by construction personnel prior to each plan submission. Comments regarding the constructability of the design is provided to the Design Manager for incorporation and/or further discussion prior to completing each design phase.

Quality Assurance and Quality Control of Design and Field Changes

Design changes, including field adjustments, will adhere to the requirements of the QA/QC Plan,

commensurate with those applied to the original design. The Design Manager ensures that QA and QC reviews of changes after plan approval occur throughout the duration of the Project. Each change is submitted to VDOT for concurrence prior to implementation in the field.

Description of Construction QA/QC Procedures

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

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

Construction Quality Assurance

The Quality Assurance Manager (QAM), Andy Kondysar, P.E. with Quinn Consulting Services, Inc., is independent of the Designer, Contractor, and QC Team, and is responsible for Quality Assurance of the roadway, bridges, and other physical construction operations, including the independent QA testing technicians. The QAM will be onsite full-time during construction, reports directly to the Design-Build Project Manager, and has the authority and responsibility to stop work and withhold payment for any work not being performed in accordance with the Contract requirements or lacking the QA/QC documentation necessary to prove that the work meets Contract requirements. The QAM oversees and directs personnel responsible for performing QA inspections and testing of all materials used and work performed on the Project. He has personnel representing the QA Team that reports directly to him and is not part of the QC Team.

All QA inspection staff complete daily reports and QA Independent Assurance (QA IA) and verification sampling and testing (QA VST) reports of all quality assurance inspections. The QAM compares QA IA and QA VST results to the QC, Owner Independent Assurance (OIA) and Owner Verification Sampling and Testing (OVST) results to ensure consistency and accuracy at all testing levels. The QAM determines and certifies to VDOT whether the materials and work are in compliance with the approved drawings, specifications, and applicable VDOT standards and reference documents as outlined in the Contract. The QAM ensures that all inspectors have adequate certifications for the testing performed and that copies are maintained in the QAM project files on site. The QAM has autonomy and the responsibility to coordinate QA inspections and report findings directly to VDOT.

Construction Quality Control

The Construction Quality Control Manager (QCM), Rick Riviere, with Dewberry Consultants LLC, manages the day-to-day QC inspections and material testing of the construction as directed by the Construction Manager and reports directly to the Construction Manager. The QCM and the QC Team are responsible for inspection of the construction activities and all QC sampling, testing and analysis of materials to ensure that construction quality is verified at frequencies exceeding those required by the *VDOT Construction Manual*, the *VDOT Materials Manual of Instructions* and Tables A-3 and A-4 of VDOT's Minimum QA/QC Requirements. As the QCM, he assures that the QC materials sampling and testing is consistent with the QC plan.

All QC staff actively inspecting and/or testing segments of work complete an Inspector Daily Report (IDR). The IDR's are electronic dairies in accordance with VDOT's Construction Division Memorandum CD-2000-14 and include, as an attachment, copies of all QC materials tests completed for the day's activities. Signed hard copies of the IDR's are submitted to the QCM on a daily basis for review and approval. The QCM completes an electronic Daily General Report, which summarizes the work covered by the IDR's. Copies of all signed Daily General Reports, IDR's, and test reports are then forwarded to the Construction Manager, QA Manager and others on the design-build team for use and review while the original documents are placed in three-ring binders, by project and month and maintained as part of the permanent QC records. All binders are stored in fireproof storage cabinets at the Project site and are available for audit by the QAM and VDOT at any time. A weekly report is produced by the QCM that contains summaries of tests, materials placed, actions taken for failing materials, NCR's, safety, inspection, environmental and schedule challenges.

QA/QC Staffing Plan

The personnel selected and staffing commitments of our QA/QC Team provides VDOT with an unparalleled experience and understanding of the quality processes and coordination needed to successfully deliver the Project. Our design and construction staff has worked together and with VDOT for many years and is responsible for assembling and overseeing our QA/QC Plan. A description of our QA/QC staff and duties as well as our staffing commitments are in Table 7:

Table 7 - QA/QC Staff and Duties

Design-Build Project Manager
As Design-Build Project Manager, ***Chuck Smith***, provides supervision and administrative management of the entire project including the overall design and construction and reports at the executive level. He establishes the QA/QC program and adjusts the process as needed to assure quality of design and construction. Chuck will be assisted by the Deputy DB-PM, Robbie Roberts, who is serving a similar role on the I-64 Segment I Project. Collectively, they will be able to ensure both design and construction QA and QC efforts are adequate for the Project, and are being adjusted on a regular basis during construction dependent on the actual activities underway at any given time.
Quality Assurance Manager
Andy Kondysar, PE is the Quality Assurance Manager and is responsible for the development of and adherence to the QA/QC Plan, ensuring all work and materials as well as testing and sampling is performed in accordance with the Contract and approved construction plans and specifications. Andy will be on-site full time during construction activities, and will ensure that QA and QC staffing levels are adequate and comprehensive based on the work activities underway at any time. Andy will be supported by at least one full-time QA inspector for roadway activities (David Cropp), and an additional full-time QA inspector for bridge activities (Chris Goss) since it is expected that construction on at least one of the bridges will be underway at all times during construction. These QA inspectors will be supported by several QA materials testing technicians, the number of which will vary depending on the number and locations of construction activities underway at any time. Andy has full authority to initiate work stoppage and is able to recommend to VDOT withholding payment for design and/or construction activities that are not acceptable - this authority will be made in writing as part of the QA/QC Plan.
Quality Assurance Testing and Inspection Technicians
Quinn Consulting Services, Inc. will provide full-time Quality Assurance Inspectors for both roadway and bridge construction elements. As noted above, it is expected that one full time QA Inspector will be provided for both the roadway and bridge construction elements. These QA inspectors will be supported by additional part-time inspectors to ensure quality assurance testing and inspections of work items is performed, QC inspections are observed, and correction of non-conformities are completed in accordance with the Contract documents. Based on the scope of the work and our preliminary schedule of construction activities, we anticipate an additional 1 to 4 QA inspectors to be on-site during construction depending on the level of work activity. The Lead QA inspector reports directly to our Quality Assurance Manager. ***Geotechnical Environmental & Testing Solutions, Inc. (GET Solutions, Inc.)*** will perform QA laboratory testing for the Project. GET Solutions, Inc. is a AMRL and CCRL certified laboratory and is independent from QC laboratory testing on the Project.

Design Manager
Steve Kuntz, PE, DBIA, directs and coordinates the design process including work by sub consultants and is accountable for the design QA/QC Plan. He is responsible for implementing, monitoring, and as necessary adjusting the Design QA/QC Plan to ensure acceptable quality of the design work. Steve will also remain involved during construction to ensure design reviews are comprehensive of all construction submittals, and to ensure design involvement is appropriate for reviews of field adjustments, RFI's, and shop drawing reviews.
Design Quality Assurance Supervisor
Jeremy Beck, PE, is responsible for quality assurance of design elements included in the Project. Following completion of quality control reviews he performs a complete QA review of all design documents prior to submission to VDOT.
Independent Design QC Reviewers
Independent Design QC Reviewers perform the design QC function on each design element. The Design QC reviews are completed by qualified independent reviewers who do not have a direct role in the design development or the QA review function. Each of the QC staff will have prior design experience for the discipline they are responsible for reviewing, ensuring reviews are thorough and accurate.
Construction Manager
Randy Plyler, is the Construction Manager and is accountable for day-to-day construction operations, the construction portion of the QA/QC Plan, and for ensuring construction is in accordance with the Project requirements. He is on the Project site full-time for the duration of construction operations.
Construction Quality Control Manager
Rick Riviere, is responsible for construction quality control and oversees construction quality control testing and inspection operations. Rick assigns inspectors and testing technicians for each work package and monitor reporting documentation to ensure that the work packages were completed in conformance with the contract requirements. Based on the preliminary schedule and overlapping work activities, we anticipate 10 to 15 QC inspectors and technicians will be on-site during peak construction periods. The number of QC inspectors and technicians will decrease during slower periods, such as during winter months and as work decreases towards the completion of the Project.
Construction Quality Control Inspections and Testing
Together, Dewberry Consultants LLC & ECS, Inc. are responsible for quality control testing and inspection of construction for conformance with the QA/QC Plan and project related documentation. They possess current VDOT materials certifications for the types of testing and/or inspections they are assigned to complete. ECS provides the independent AMRL and CCRL certified QC Laboratory to perform all QC laboratory tests.

Design QA/QC Procedure for One Unique Project Element

The design element which we consider to be most unique on this Project is the widening of the bridges over Colonial Parkway. What makes this a unique element is the significant importance of the aesthetics of the bridges and the need to design the widened portions utilizing Load and Resistance Factor Design (LRFD) while the existing bridges were designed in accordance with Allowable Stress Design (ASD) criteria. Care must be taken to ensure differential deflection is minimized or eliminated, the brick façade is consistent between the existing structure and proposed widening, and all existing as-built information and dimensions are accurately accounted for in the detailed design of the widening.

The difference in design methodologies between the existing and proposed structure is not typically one of major concern, but in this particular case becomes more challenging and critical since the underside of the arch is faced with bricks, and therefore the stiffness of both the existing and proposed arches must be compatible. Also, the design vehicular load for LRFD design (HL-93) is heavier than for ASD design (HS-20). Additionally the lateral soil loads and foundation resistance are typically different between the two design codes. These differences make for design challenges which, if not fully understood and considered, could result in a different stiffness between the existing and proposed structure. This could result in cracking of the arch at the interface between the new and existing structure, which in turn could cause issues with the attachment of the brick facing (especially on the underside of the arches) if not adequately addressed.

The first step in developing the design of the proposed widening of the arches is to review the existing plans and understand how the existing structure was designed and performs. This consists of comparing the amount of fill placed on the new, widened structure and comparing it with that over the existing arches to understand any differences in the dead load between to the two pieces. Coordination with the Project geotechnical engineer at this point is also critical to the design of the new arches to determine the horizontal design forces as well as the allowable foundation resistances. It is important to understand these same design parameters for the existing arches. Along with the soil loads, the live load must be considered and combined with the weight of the structure itself to arrive at the total design load for the existing and proposed arches. Only when the existing and proposed design criteria is established and understood can a design be developed for the proposed, widened portion of the arches be established.

Once all design parameters and criteria are determined, the next step is to design the widening utilizing the LRFD code required by the RFP. The results of the structural design will be checked in accordance with the Design QA/QC Plan previously described. Upon confirmation that the structural design meets all code requirements, a comparison will be made between the new and existing portions of the arches (particularly at the interface between the two) to determine whether there are any differences (reinforcing steel size and spacing or concrete thickness) that could impact the long term performance of the entire (existing and new) structure. This may require development of a more in-depth model of the combined structure to ensure minimal or no differential deflection is introduced between the two "pieces". If our analysis determines that measures need to be taken to mitigate differential deflection (or other issues) between the new and existing portions of the arch, we will then determine the most cost effective manner that addresses the issue (e.g. change in concrete thickness, reinforcing steel size and spacing, concrete mix or admixtures) and modify our design and detailing accordingly.

The final element that must be designed, checked, and detailed is the connection of the brick facing to the concrete structure. This is a critical element since the underside of the arch is to receive the brick facing as well as the end walls. Any lapse in the design or detailing of this connection could result in portions of the brick facing detaching and falling on the road. To ensure this connection is not just structurally sound, but lasts for the lifespan of the arches, the use of stainless steel anchors and ties will be used to eliminate any potential for corrosions of these elements. Our design will use conservative assumptions ensuring spacing of the anchors and ties to not just meet the minimum requirement, but have sufficient excess capacity for unforeseen occurrences.

During each stage of plan development, QC checks will be completed to ensure no details have been overlooked or improperly accounted for. QC checking of design calculations will be completed before design progresses to detailed drawing development, and detailed drawings will be separately checked to ensure the design is properly reflected on the final plans. QC checks will also involve reviews by the geotechnical engineer to ensure design loads are properly accounted for in the geotechnical analysis. Due to the unique nature of the structure and the minimal vertical clearance, close coordination with construction staff will also occur to ensure temporary construction loads and construction methods are properly accounted for. Since strengthening of the structure could require additional temporary shoring, close communication will be required to ensure adequate vertical clearances are maintained below temporary shoring elements which can adequately handle both temporary and permanent loading of the structure. Only after QC reviews by the design, geotechnical, and construction staff have been completed and verified by the QA reviewers, will the design plans be submitted to VDOT for review.

Construction QA/QC Procedure For One Unique Project Element

Cold Central Plant Recycling Material

A critical and unique construction element will be the manufacture and placement of the Cold Central Plant

Recycling Material (CCPRM). This material is specified for use as the base layer in the pavement section for both the new inside lane and shoulder as well as the reconstruction of the existing I-64 travel lanes throughout the Project. The Virginia Center for Transportation and Innovation and Research (VCTIR) has been instrumental in developing, researching, testing and ultimately specifying this material for use on the Project. Our Team will deliver the CCPRM through a highly qualified specialty contractor.

Figure 4.4.4.2 - CCPRM Plant

A thorough review of the two CCPRM special provisions included with the RFP have been made in preparation of our Technical Proposal. Our Team will provide and implement an I-64 - Segment III Project Specific Quality Control Plan to ensure all material and Job Mix Formulas are in compliance with the special provisions. Furthermore, this plan will address all placement procedures, testing and sampling frequencies and weather limitations of the CCPRM. The Technical Representative (TR) for CCPRM, will be a highly qualified and experienced individual submitted and approved by VDOT Materials section. The TR will be present on-site to train all contractor's inspectors, technicians, and key personnel for best practices for production, laydown, and testing of the CCPRM material and paving.

Following approval of the CCPRM QC Plan and prior to Job Mix formulation, our Team will arrange a Kick-Off Meeting with the CCPRM TR and VDOT QA/QC staff to discuss plans and procedures for development of the Job Mix Formulas. It will be important that the TR walk through the planned steps from material transportation to lab procedures to assure that all parties are confident in the process.

Likewise, following approval of the Job Mix Formulas but prior to placement, an additional Preparatory Inspection Meeting will be held to discuss the test CCPRM Trial Section plan and procedures. Our Team's Quality Assurance Manager along with VDOT QA staff will meet to again ensure the process is communicated properly amongst all parties.

Job Mix Formulas: The CCPRM specialty contractor will be able to supply the Project for raw recycled materials for the CCPRM from current stockpiles of recycled asphalt materials (RAP) located in regional asphalt plants. The CCPRM mix designs will be performed by the CCPRM TR at an approved AASHTO Materials Reference Library (AMRL) R18 accredited laboratory. The laboratory will be highly experienced in performing in-place recycling mix designs, such as CCPRM, cold in-place recycling, and full depth reclamation. Testing capabilities include asphalt binders, asphalt emulsions, aggregate, soil, mixtures, and mixture performance testing. Multiple Job Mix designs will be performed due to using the various stockpiles of RAP; some of the larger stockpiles may require multiple designs. The Job Mix Formulas will also include trials with additional aggregates from the regional stone yards to assure that a contingency plan is in place in case RAP supply becomes an issue in the area. The mix designs will be established to produce mixtures exceeding the specification requirements for a consistent and reliable product. Following VDOT's review of the Job Mix Formula, we will request a CCPRM Material Production Preparatory Meeting to include all VDOT Quality Assurance Staff and the Project Jobsite QA/QC Staffing. The intent of the meeting will be to discuss the results of the Job Mix Formulation review, methodology of production, review of RAP stockpiles, inspection of equipment and overall Plant procedures and testing as required by Specification.

The CCPRM Plant will be placed in a regional asphalt plant location no less than 60 days prior to starting job mix production on the Project. The CCPRM TR will assist the Asphalt Producer's Control Manager

and VDOT QC Staff with initial 1,000-foot long trial section production and to assure reliability of plant operations and consistency of the job mix formulas. During CCPRM production the following steps will be taken to assure conformance with specifications and reliance of the Job Mix Formulas:

- Perform sample testing at the rate of no less than 1 per 1,000 tons of mix produced;
- Perform Asphalt Content testing in accordance with VTM-102;
- Assure that the approved testing lab for the Project has the trained personnel and testing equipment adequate for the CCPRM requirements; and
- Assure that all Project samples are delivered timely to the approved lab in the area.

CCPRM Placement: The CCPRM Subcontractor's TR will be on site during the initial Trial Section of the CCPRM placement. This trial will take place no less than 30 days prior to the start of CCPRM production for new pavement sections. Our Team is aware that VDOT will be responsible for QA inspection and testing of the CCPRM placement. Our Team will coordinate all QC and VDOT QA activities to assure that the Trial Section is representative of the materials, placement procedures, and testing required for a successful CCPRM operation.

Figure 4.4.4.3 - CCPRM Placement

Working under VDOT's Quality Assurance Inspection Staff, the CCPRM subcontractor's Quality Control technicians and the Project's QC Team will be responsible for inspection of the CCPRM placement and laydown activities. The QC Team will perform all required sampling, testing and analysis of materials to ensure that construction quality is verified at frequencies exceeding those required by the Project requirements. The QCM assures that the QC materials sampling and testing is consistent with the QC plan. Test and inspection records for the Project will be filled out daily by the QC personnel and checked by the QCM and TR. Records will be stored in a location accessible to VDOT QA personnel.

During CCPRM placement the following steps will be taken to assure conformance with specifications:

- Review of weather forecasts including overnight temperatures to assure placement limitations are within acceptable ranges;
- All nuclear density gauges are in good working order and calibrated to VDOT specifications;
- Test control strips and roller patterns are performed at the proper frequency and marked per VTM-76 procedures. Additional control strips will be constructed if Job Mix Formulas change or density tests are failing;
- Depth checks are performed at the proper frequencies; and
- Any required curing materials, fog sealers, and blotter sand are installed at the proper rates of application and at the proper time in the placement operations to prevent CCPRM raveling. Prior to placement of any ensuing asphalt layers the QC team will ensure proper curing of the CCPRM has occurred by moisture testing in accordance with AASHTO/VTM procedures.

The Quality Control procedures described above along with the qualified personnel that our Team is bringing to the Project for the CCPRM will provide confidence to VDOT that the operations will be carried out in accordance with the RFP requirements with minimal VDOT intervention.

4.5 - Construction of the Project

4.5 Construction of the Project

4.5.1 Sequence of Construction

Throughout development of our Technical Proposal, our Team focused on means and methods to finish critical stages of work safely, quickly and efficiently. Key elements of our Team's collaborative process included optimizing the sequence of work which allows our Team to achieve the goals of:

- Ensuring the safety of the traveling public and workers;
- Early completion of the Project achieving the maximum No Excuse Incentive;
- Providing efficient mobility and full connectivity for the traveling public;
- Effective management of environmental and geotechnical constraints; and
- Proactive stakeholder coordination.

Our Team's Proposal Schedule, presented in Section 4.7, was developed with input from all Project disciplines including design, permitting, utilities, ROW, QA/QC, and construction. We planned for and incorporated numerous enhancements, which are listed in Table 8 to exceed the above objectives, including:

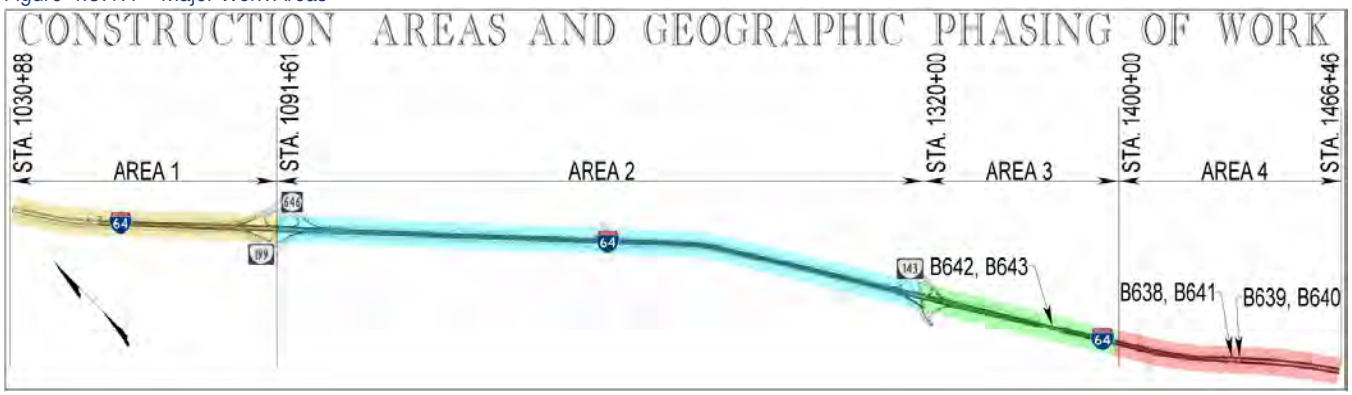
Table 8 - Project Enhancements and Benefits

Enhancements	Benefits
Early opening of Eastbound lanes from Station 1352+00 to end of Project by April 13, 2021 (Unique Milestone)	▪ Allows traveling public full benefit of third through lane at the eastern terminus of the Project as it ties into Segment II.
Scheduling of work to achieve the maximum incentives available for early completion.	▪ Allows early completion of new travel lanes and increased mobility through corridor.
Use of early MOT (TTC) Plan set to allow work to commence within existing VDOT ROW	▪ Allows critical construction work to begin prior to completion of environmental permitting and ROW acquisitions.
Logical segmentation of project to four Work Areas	▪ Allows for focused construction management teams and utilizes allowable maximum work zones for efficient staging and sequencing.
Narrowed permanent median width for over 45% of the Project's length	▪ Reduces amount of shoulder strengthening and temporary traffic shifts. ▪ Allows for maintenance of a right shoulder for incident management. ▪ Allows for maintenance of 12-foot wide lanes during median widening.
Optimize noise wall locations to avoid utility conflicts and environmental impacts	▪ Allows noise walls to be constructed early in the schedule. ▪ Eliminates costly impacts to existing facilities and features.
Lengthening emergency pull-offs from 500-foot minimum length to the desirable 1320-foot listed in the Work Area Protection Manual	▪ Provides motorists and emergency personnel with more refuge area, and allows acceleration and deceleration lengths for vehicles pulling into or out of the pull-offs. ▪ Allows for construction vehicles to use these pull-offs in order to decelerate and accelerate without impacting I-64 thru traffic.

Project Work Areas

In order to efficiently execute our construction plan, the Project length has been broken into four major Roadway Work Areas and two distinct Bridge Construction Areas as shown in Figure 4.5.1.1. The areas are divided by break points that allow for effective construction sequencing. This segmentation was also developed in conjunction with our MOT Plan (Temporary Traffic Control (TTC) plan) and is of sufficient scope and size to allow individual construction management teams to oversee the operations. This allows for efficient utilization of resources and oversight of construction activities from a safety and quality perspective.

Figure 4.5.1.1 - Major Work Areas



Construction Sequence

We propose three major Stages of roadway construction corresponding to our Team's Transportation Management Plan (TMP) detailed in Section 4.5.2 - Transportation Management Plan. Each Stage corresponds to a major traffic control sequence as construction activities progress. Work along the 8.2-mile long corridor, in the four Work Areas shown in Figure 4.5.1.1, will be constructed concurrently during each major traffic Stage. Space will be reserved in each Stage for temporary pull-offs strategically located to meet the RFP requirements of one mile maximum spacing. A brief summary of construction staging is as follows in Table 9:

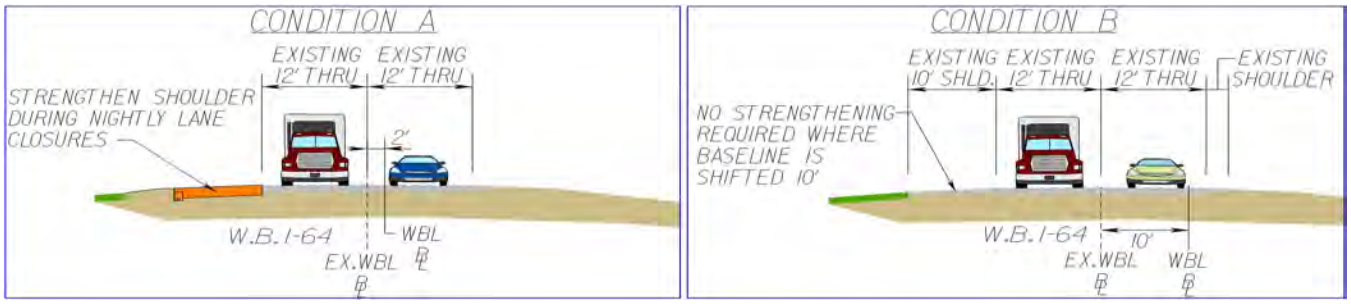
Table 9 - Construction Stages

Stage	Activity
Stage 1A	▪ Perform shoulder strengthening along both I-64 eastbound and westbound only in areas outside of our unique design concept of narrowed medians. ▪ Place temporary pavement markings and shift traffic towards outside to allow placement of temporary traffic barrier service adjacent to the median widening.
Stage 1B	▪ Construct the median widenings along both I-64 eastbound and westbound. ▪ Construct one-half portion of the new westbound Bridge B-643 over Queens Creek and demolish and construct new portions of Bridges B-638, and B-641 over Lakeshead Drive, and Bridges B-639 and B-640 over Colonial Parkway Drive. ▪ Upon completion, shift traffic towards the newly constructed median widening.
Stage 2A	▪ Demolish existing asphalt concrete and hydraulic cement pavement. ▪ Perform Full Depth Reclamation (FDR), reconstruct remaining portion of the existing roadway and, first half of entrance and exit ramps of I-64 Exits 234 and 238. ▪ Demolish and reconstruct the entire eastbound span of Bridge B-642 over Queens Creek. ▪ Perform required joint repairs, deck slab extensions, and substructure improvements for remaining portions of Bridges B-638, and B-641 over Lakeshead Drive, and Bridges B-639 and B-640 over Colonial Parkway Drive. ▪ Majority of noise wall and permanent Stormwater Management Basin construction.
Stage 2B	▪ Shift traffic at the entrance and exit ramps of I-64 Exits 234 and 238 and then demolish and reconstruct the remaining portions of existing pavement. ▪ At the Queens Creek crossing, the remaining portion of westbound Bridge B-643 will be demolished and reconstructed to complete the entire westbound span.
Stage 3	▪ Place all surface asphalt, permanent pavement markings, construction signs and complete all "Finishing" items.

Provided below is a detailed description of each stage and the benefits of our Team's proposed sequence:

STAGE 1A - OUTSIDE SHOULDER STRENGTHENING

Figure 4.5.1.2 - Stage 1A - Strengthen Outside Shoulder



Our Team developed a TTC Sequence that eliminated nearly 45% of the required shoulder strengthening as shown on the RFP Concept Plans. Therefore, our Stage 1 work will consist of Stage 1A which will entail the strengthened shoulder work as shown in Figure 4.5.1.2, and Stage 1B involving the new median widening construction.

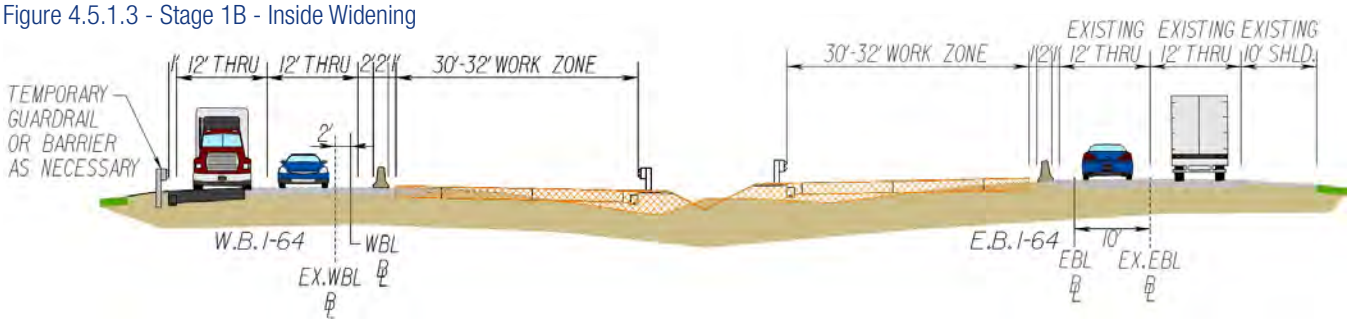
Since all Stage 1A work is contained within existing VDOT ROW and requires no drainage adjustments, upon approval of the early TTC Plan Set, we will begin the outside shoulder strengthening in July 2018. This allows the lanes shifts to the outside to be completed when permitting and final plan approval is obtained in November 2018. The varying depth existing shoulder will be removed by milling and repaved with temporary base and intermediate asphalt. The exact pavement section will be determined upon the recommendations of the pavement analyses performed in our preliminary engineering design phase. This shoulder strengthening operation will be performed at night with required lane closures. Operations will be planned so that no drop-offs greater than 2-inches are remaining at the end of the shift.

Following the shoulder strengthening, temporary pavement markings and markers will be placed on the new aligned areas and temporary concrete barrier along the entire length of the Project to safely separate traffic from the Stage 1B median work. At all times, 12-foot travel lanes will be maintained. Due to our Team's unique concept of reducing the permanent median widths for the western half of the Project, ***no shifting of traffic is necessary and a full right shoulder will be maintained.***

Correct placement of temporary traffic barrier service in Stage 1A is critical in the overall traffic sequencing. As shown in Figure 4.5.1.3, we will be constructing 30 to 32-feet of new roadway in Stage 1B. This is necessary at the completion of Stage 1B so that two-12-foot wide travel lanes can be provided with room for traffic barrier and allowable offsets. By building additional width in Stage 1B, the demolition of existing concrete pavement and installation of new pavement is performed safely behind traffic barrier service.

STAGE 1B - I-64 NEW INSIDE LANES AND WIDENING OF EXISTING OF BRIDGES

Figure 4.5.1.3 - Stage 1B - Inside Widening



Once our Team shifts traffic at the end of Stage 1A, construction of the majority of Project elements will begin. Specifically, Stage 1B consists of all of the I-64 median widening, drainage improvements, and bridge widening. All Project Work Areas will be constructed concurrently with emphasis on Area 4 to allow for the early completion of the eastern quadrant to tie into the Segment II Project.

Stage 1B Roadway and Drainage Construction

Following the issuance of final environmental permits, clearing and grubbing activities, roadway drainage and excavation activities will commence concurrently for all Work Areas. For this median widening work it is planned that all construction run-off can be controlled in Phase 1 E&S control devices such as check dams, silt logs, sediment traps, and inlet protections. Drainage work in the Stage 1B median widening areas includes construction of the required culvert median connections. All new longitudinal median drainage piping and inlets will be installed, and the initial half of storm drainage crossings will be installed utilizing conventional installation methods to a point that allows us to continue the balance of the crossings in the Stage 2 when traffic is shifted to pavement constructed in Stage 1B.

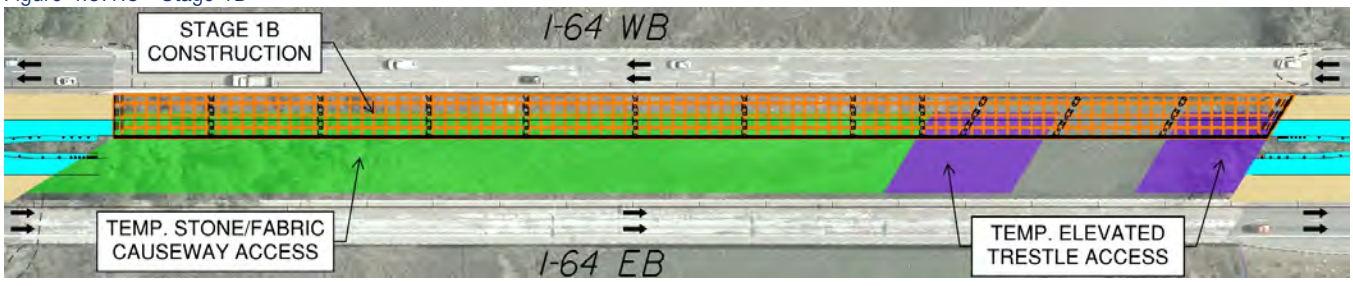
Roadway excavation and grading consists of stripping of all native topsoil. Any suitable excavation will be cut and placed in fill areas such as backfilled box culvert areas up to subgrade. In all areas, we have allowed time in our excavation activities to account for the remediation, or removal and replacement, of soft or unsuitable soils. Furthermore, our Team has secured the required crushed concrete and/or recycled asphalt pavement required to be processed and treated with cement to be placed as the pavement subbase. Installation of any required median barriers occurs at this time and asphalt crews place the 2-inch Open Graded Drainage Layer followed by the 6-inch of CCPRM. Finally, 2-inches of Intermediate Asphalt (SMA-19.0) will be placed prior to temporary pavement markings and the required guardrail installations.

Stage 1B Bridge Construction

Queens Creek Bridge - In Stage 1B, our Team will construct the new median widened portion of westbound Bridge B-643 over Queens Creek. Temporary access will be constructed in the existing median between the two bridges. The existing channel between our future Piers 9 and 10 will be maintained at all times. It is anticipated that the western portion of the access will be engineered and constructed of crushed stone or recycled materials with reinforcing fabrics to rest on the existing low marsh land. The eastern portion of the access will be an elevated trestle similar to that shown in Figure 4.5.1.4 supported above the water via temporary piling and cross members, in the locations shown in purple on Figure 4.5.1.5. Once completed, this portion of the newly constructed westbound bridge will temporarily receive existing eastbound traffic. A temporary roadway median crossover will be constructed and eastbound traffic will be transitioned to the new structure. This shift allows the existing eastbound Bridge B-642 to be safely demolished and reconstructed in one stage and away from existing traffic in the next Stage.

Figure 4.5.1.4 - Elevated Trestle

Figure 4.5.1.5 - Stage 1B



Colonial Parkway and Lakeshead Drive Bridges - A key advantage of our Team is that we have recently completed nearly identical sequencing, and methods of construction on the Segment I Project. Stage 1B bridge work will focus on the median widened portions of structures over Colonial Parkway and Lakeshead Drive similar to that shown in Figure 4.5.1.6. These pair of bridges will be worked on concurrently to economize the use of specialty crews such as bridge demolition and pile driving. Stage 1B bridge work will require the partial demolition of the existing structure parapets and portion of deck to create the joint as necessary for the widening tie-in. Temporary shoring will be required to support excavation of new piers and abutment elements. The Lakeshead Drive Bridges have a 3-Span arrangement very similar to the I-64/Fort Eustis Boulevard overpass just recently completed on the Segment I Project. The eastbound and westbound spans will be worked concurrently to economize manpower and equipment in the constrained median portion of the work.

Figure 4.5.1.6 - Median Widened Bridge Construction

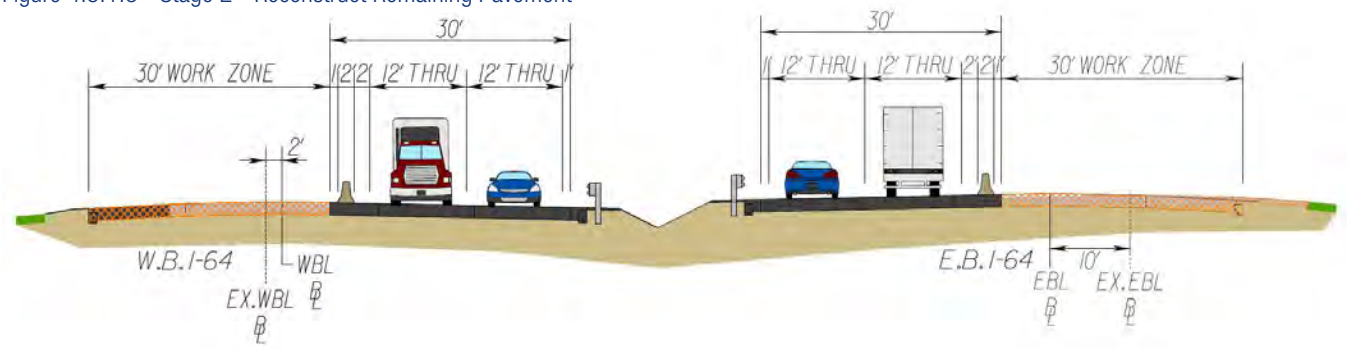
For the eastbound and westbound bridges over Colonial Parkway, the Stage 1B work consists of a widened extension of the existing concrete arch structure. The process of the widening work will start with the selective removal of the architectural brick facade so that the existing bricks can be salvaged and re-used for the widened bridges. The existing inside concrete parapets and arch side walls will be demolished to a point so that the fill overtop of the existing arches is retained and that the existing pavement section is not compromised during construction. Our construction team will use an engineered falsework system to form the correct radius of the arch. The falsework will be designed to allow the required flow of traffic along Colonial Parkway at all times similar to Figure 4.5.1.7. Once the new arch section is poured and proper curing of concrete has occurred, select fill will be placed to subgrade elevation and the pavement section will be installed. Scaffolding will be erected on the underside and sides of the bridge so that the masonry subcontractor can install the new brick facade. All structural work in Stage 1B is scheduled to complete by December 2019.

Figure 4.5.1.7 - Arch Falsework over Live Traffic

STAGE 2 - RECONSTRUCT EXISTING TRAVEL LANES

Following completion of Stage 1B work, travel lanes will be shifted to the newly constructed inside travel lane and left shoulder as shown in Figure 4.5.1.8. On the right side, the existing traffic barrier service will be relocated to allow all Stage 2 work to commence behind the temporary barrier. Similarly as in Stage 1B, emergency pull-offs will be provided exceeding minimum length requirements of the RFP.

Figure 4.5.1.8 - Stage 2 - Reconstruct Remaining Pavement



Stage 2 Roadway and Drainage Construction - As shown in Figure 4.5.1.9, demolition of existing concrete pavement will occur in Stage 2. Our Team will use a variety of methods to rubbilize and remove the concrete pavement. Some of these include excavator mounted hoe-rams, breaking sleds, and resonance machines.

Figure 4.5.1.9 - Breaking Sled and FDR Process

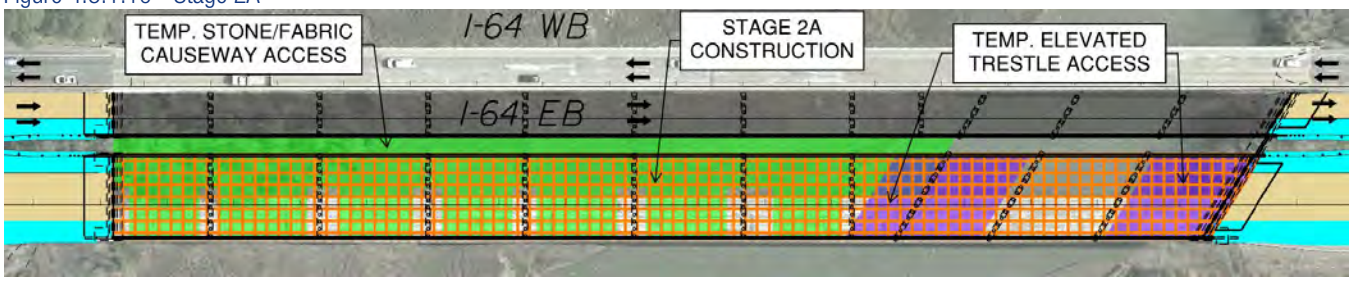
Upon removal of the concrete rubble and debris, the 12-inch deep FDR process of the existing subbase aggregates and soils will commence. This process requires planning and care to not allow over-exposure of the grade to wet weather elements. In some cases it may be advantageous to slow production in advance of impending weather to avoid costly schedule impacts, repairs, and rework. Following FDR, new underdrains will be installed and the 2-inch Open Graded Drainage Layer will be installed followed by the CCPRM and 2-inches of Intermediate Asphalt.

In Stage 2 we will complete the remaining half of the new drainage crossing pipes started in Stage 1B utilizing standard installation methods behind temporary barrier.

Stage 2 Queens Creek Bridge - The construction of Stage 2 bridges over Queens Creek has been separated into two sub-stages of work, Stages 2A and 2B. In Stage 2A, as shown in Figure 4.5.1.10 and 4.5.1.11, we will be demolishing and reconstructing the entire eastbound Bridge B-642 in one stage. A portion of the existing causeway and trestle that were built in Stage 1B can be utilized; however, additional access will be required. Following demolition of the existing eastbound structure, access will be constructed similar to Stage 1B. However, our access concept will not require any additional temporary or permanent environmental impacts to this southern side over Queens Creek. Construction will commence at the creek channel portion of the bridge and two crews will work concurrently constructing the bridge towards each abutment.

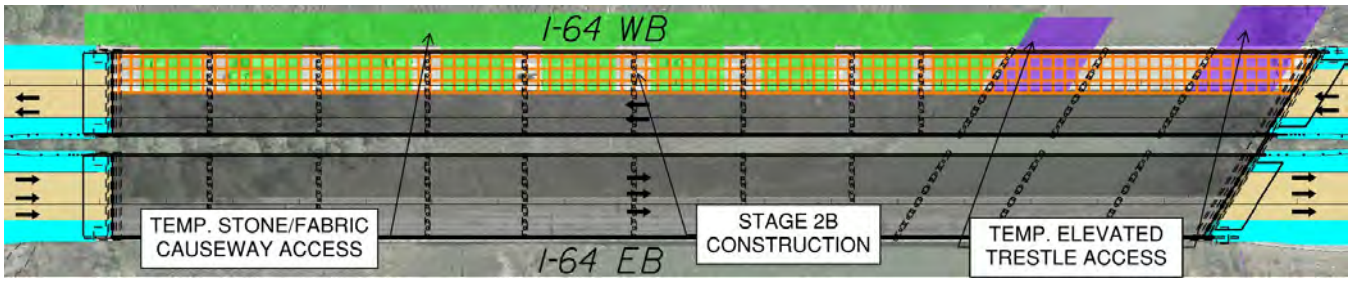
Following the completion of the new eastbound bridge, existing eastbound traffic will be shifted to the new structure. Existing westbound traffic over Queens Creek will then be shifted slightly to occupy the same space that eastbound traffic had just occupied on the portion of the westbound bridge completed in Stage 1B. This concept differs from the RFP staging and reduces an additional median cross-over with temporary pavement and signage.

Figure 4.5.1.10 - Stage 2A



As shown in Figure 4.5.1.11, Stage 2B Construction of the Queens Creek Bridges consists of the demolition of the existing westbound bridge and the tie-in of the final portion of the westbound structure to the portion constructed in Stage 1B. It is anticipated that a temporary causeway and elevated trestle will be constructed for access on the northern side of the new bridge. These temporary impacts are anticipated to last for less than one year and are able to be removed as the substructure of the bridge is completed.

Figure 4.5.1.11 - Stage 2B



Colonial Parkway and Lakeshead Drive Bridges - Stage 2 construction of Bridges over Colonial Parkway and Lakeshead Drive will be performed in this Stage. For the Lakeshead Drive Bridges, the existing bridge deck joints will be removed and the abutment backwalls will be reconstructed. Following placement of the required reinforcing steel, concrete closure pours will create the 'jointless' structures in accordance with the RFP requirements. The required milling of the bridge decks will be performed to determine the amount of deck surface repairs that will be required. Concurrently, bridge deck surface repairs will be performed. The existing approach slabs will be demolished and new 'buried' approach slabs will be formed and poured, and all required substructure repairs will be made. Finally, the decks will be overlaid to create a new riding surface.

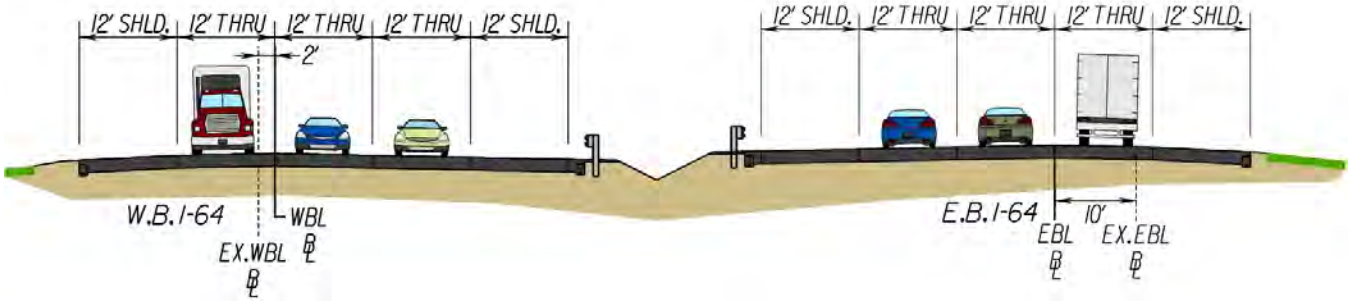
In Stage 2 at the Colonial Parkway Bridges, any required concrete surface repairs and epoxy crack injection will be performed. Brick repair, and brick replacement will also be performed as required by the RFP. Finally the existing pavement structure will be replaced over the bridge.

Stage 2 Work Beyond Travelway - As ROW and environmental permits are acquired for stormwater management controls, crews will construct the bio-retention basins or ponds in order to collect and treat the final run-off from the new impervious pavement areas. Construction run-off to these areas will be diverted and temporarily treated until establishment of the area is attained and approval of the basin construction are granted.

During Stage 2, work on the outside of the I-64 travel lanes will also include construction of the required noise wall located along the eastbound travel lanes east of the Queens Creek crossing. Crews will begin the majority of the construction of the noise walls in December 2019. Installation of the required ITS infrastructure and system requirements as well as any remaining outside foundations for the new overhead sign structures will also be constructed and erected in this Stage.

STAGE 3 - FINAL SURFACE PAVING AND PAVEMENT MARKINGS

Figure 4.5.1.12 - Final Configuration



As shown in Figure 4.5.1.12, Stage 3 work will consist of placement of all final surface asphalt material. Two-inches of SMA 12.5 PG76-22 asphalt will be placed on all new travel lanes and 2-inches of SM-12.5A will be placed on all new and reconstructed shoulders. Three months for asphalt overlay and

pavement markings is anticipated. Due to the multiple pavement shifts during construction, placement of surface asphalt at the end of all construction ensures that temporary pavement markings are not used on the finished product, and ensures that all final paving is completed at the same time. This provides for a smooth, "clean" look at the completion of the Project when all of the thru lanes are opened to traffic on a permanent basis.

Safety & Operations

It is our Team's number one goal to ensure the safety of the traveling public and the workers on the Project. We fully support VDOT's commitment to safety of the public, safety of its employees, and safety of all project stakeholders, and we plan to align our Team's vision of safety on the Project with VDOT. We expect each and every individual to be involved, empowered, and accountable for project safety. Our safety program will be led by Charlie Wilson, our Safety Manager who will implement a Project Specific Safety Program, and work directly with VDOT personnel. He will also have overall responsibility for ensuring the Project is delivered with a goal of zero incidents.

Safety Approach

Our Team's approach to safety is based on two primary facets each presenting their own safety challenges:

- Construction safety and;
- Traffic safety.

Construction Safety - Each Stage from earthwork to bridges, from utility installation to noise walls have distinct safety challenges associated with them. We will work closely with our design partners to finalize a design that incorporates and considers safety elements and fully integrates anticipated construction processes and staging requirements. As an example, our Team's concept includes reducing permanent median widths for nearly half of the Project. This allows the temporary traffic barrier service to be installed outside of the full deflection zone, saving hundreds of manhours of workers being exposed to traffic while pinning barrier, and creating safe work areas.

Traffic Safety - Our Team's TMP, TTC, and Construction Sequencing have all been developed to provide the safest work zones while attaining the peak operational capacity of the roadway. Following traffic counts at the onset of design, all plans will be adjusted to allow the maximum flow of traffic through the corridor. As detailed in Section 4.5.2, enhanced safety strategies exceeding VDOT requirements will also be utilized to maximize safety, such as better quality pavement markings, additional PCMS signs, and long emergency pull-offs that accommodate vehicle acceleration and deceleration needs, avoidance of lane shifts and maintenance of a shoulder during median widening. During construction, the VDOT Work Zone Safety Checklist will serve as the minimum standard to assure conformance with the Project's safety requirements, and checks will be performed daily.

Additionally, by use of our dedicated Incident Manager, Brian Martin, identified in our Organizational Chart, we plan to further mitigate traffic risks and issues by leveraging our experience gained on the Segment I Project. Brian performed a similar function on that Project and will serve as the primary point of contact to quickly coordinate and deploy any resources for incidents that require an urgent response to maintain safety and mobility on this critical corridor for the Segment III work. Brian will also establish and maintain lines of communication with VDOT construction and maintenance personnel, York County emergency responder staff, and the Virginia State Police. Brian will incorporate a daily roadway check list that can be used to monitor highway and roadway conditions. This is especially important during rain or snow events when potholes can occur rapidly.

Geotechnical Constraints

The sequence of the subsurface exploration will be coordinated such that test borings required for design of bridges and walls will be completed early, allowing design activities on critical elements to be advanced without impacting either the design or construction schedule. Selection of boring locations will be coordinated with design and permitting staff, ensuring that appropriate geotechnical information can be collected while avoiding environmentally sensitive areas.

Since our Team will complete the required geotechnical investigations and propose methods for remediation of poor soils along the roadway prior to construction, sequencing of work will be developed to include these geotechnical constraints/soil remediation. Roadway considerations such as unsuitable materials, low CBR value materials, and increased pipe bedding requirements will be identified in the geotechnical report and mitigation measures and recommendations may include practices such as:

- surcharging;
- undercut & replacement with suitable material;
- lime or cement soil stabilization; and
- use of geo-stabilization grids and fabrics.

Bridge geotechnical solutions will be based on the concerns of settlement and global stability of new fills at abutment locations, bridge foundation requirements and capacities, negative skin friction exerted on piles during anticipated settlement periods. Other constraints will also be identified in the geotechnical report and completed in conjunction with the appropriate elements and areas of improvement, and are not expected to cause any concerns or impacts to the construction schedule. As indicated in Section 4.7, we have allowed construction time for remediation of poor soils in all activities.

Environmental Impacts

Construction Phase

During the construction phase, our Team ensures that all permits necessary for the work have been obtained, and work is completed in compliance with all commitments and permit conditions. Incorporating permitted impact limits in the Environmental Constraint Maps (ECM) and including them on the Project plans assures full compliance during project construction. Our Team has a long standing relationship with the regulatory agencies which has served us well in coordinating projects, obtaining permits on-time, and ensuring construction is compliant with the conditions of the NEPA documents and permits. We recognize VDOT's heightened concern for environmental compliance during construction and to that end, we will continue to conduct our field inspections, provide early reporting of environmental issues to regulatory agencies, and conduct monthly coordination with the construction team.

Figure 4.5.1.13 is an excerpt from our Team's conceptual CPM schedule depicting the anticipated environmental activities. As shown, our Team has accounted for these constraints in all construction planning even at this early planning stage. This allows us to focus our environmental planning studies to critical areas of the schedule.

Figure 4.5.1.13 - Environmental Schedule Activities

Activity ID	Activity Name	Original Duration
I-64 CAPACITY IMPROVEMENTS SEGMENT III -PROPOSAL SCHEDULE (WORKING COPY)		163
Contract: C00106689DB97 I-64 CAPACITY IMPROVEMENTS SEGMENT III		163
ENVIRONMENTAL PERMITTING		163
D-1000	BEGIN ENVIRONMENTAL PERMITTING	0
D-1010	ENVIRONMENTAL PERMITTING COMPLETE	0
JOINT WETLANDS and WATERS PERMITTING		160
DA-1000	WETLAND DELINEATIONS-SURVEYS & FLAGGING	45
DA-1010	COE JURISDICTIONAL DETERMINATION	40
DA-1020	ENVIRONMENTAL PERMIT "EARLY COORDINATION"	20
DA-1030	PREPARE JOINT PERMIT APPLICATION	25
DA-1040	SUBMIT JOINT PERMIT APPLICATION	0
DA-1050	AGENCY REVIEW OF JPA	110
DA-1060	PROVISIONAL PERMIT APPROVAL- NTP MITIGATION PURCHASES	0
DA-1070	PURCHASE WETLAND AND STREAM MITIGATION CREDITS	20
DA-1080	PURCHASE NUTRIENT CREDITS	20
DA-1090	JPA APPROVED	0
THREATENED & ENDANGERED SPECIES		60
DA1-1000	T&E SPECIES IDENTIFICATION AND IMPACTS COORDINATION	40
DA1-1010	PREPARE AND SUBMIT T&E SPECIES DOCUMENTATION WITH AI	20
HAZMAT and ENVIRONMENTAL SITE ASSESSMENTS		58
D4-1000	LEAD AND ASBESTOS SURVEYS AND TESTING (BRIDGES)	35
DE1011	PHASE 1 ENVIRONMENTAL SITE ASSESSMENTS	20
DE1021	PREP/SUBMIT PHASE 1 ESA REPORTS	30
DE1031	VDOT REVIEW PHASE 1 ESA	21
DE1041	VDOT APPROVE PHASE 1 ESA's (HOLD POINT)	0
LD 445 / STORMWATER PERMIT		78
DC-1000	LD-445 FORMS - TO BE SUBMITTED WITH 60% PLANS	10
DC-1010	REQUEST PERMIT COVERAGE (APPLICATION COMPLETE - HOLD	0
DC-1020	AGENCY REVIEW OF LD-445 / SWPPP	21
DC-1030	COMPLETE SWPPP (LD-456E) CERTIFICATIONS	5
DC-1040	APP'D LAND DISTURBANCE PERMIT APPLICATION and SWPPP &	0
DC-1050	VDOT SECURE PERMIT COVERAGE and RELEASE WORK (HOLD	90
NOISE ANALYSIS		70
D1-1000	PERFORM NOISE STUDY	17
D1-1010	PERFORM NOISE ANALYSIS - MODELING ACTIVITIES	20
D1-1020	OPTIMIZATION of NOISE WALL ANALYSIS	9
D1-1030	SUBMIT NOISE REPORT	0
D1-1040	VDOT REVIEW & COMMENT ON NOISE REPORT	21
D1-1050	COMMENT RESPONSE/RE-SUBMIT NOISE REPORT	10
D1-1060	RE-SUBMIT NOISE REPORT	0
D1-1070	VDOT REVIEW 2nd SUBMISSION NOISE REPORT	21
D1-1080	NOISE REPORT APPROVED	0

Once plans are finalized and released for construction, the environmental team shifts focus to construction monitoring of the permit and environmental commitments in the field. Prior to the start of construction, our Team will conduct an educational program for the construction staff slated to work on the Project. The educational program will touch on the environmentally sensitive areas including but not limited to:

- wetlands and streams;
- threatened and endangered species;
- environmental protection, including E&S measures;
- the importance of staying within the approved LOD;
- the location and limits of 4(f) and 6(f) resources; and
- archaeological/architectural resources.

This program will then transition into the monthly progress meetings where a member of the environmental staff will meet with all construction personnel and discuss any lessons learned from work in the past month, room for improvement, and/or highlight compliance with environmental requirements.

Additionally, prior to the start of construction the original wetland team returns to the field to mark the limits of streams and wetlands at the permitted impact limits. Critical areas are delineated with safety or silt fence to prevent accidental access and prescribed E&S control measures are installed in accordance with the plans. During construction, we will utilize our ECTD to monitor the site and ensure construction is conducted in compliance with all permits, commitments and regulatory requirements.

As construction progresses, our Team ensures E&S control documents are strictly adhered to and the approved Stormwater Pollution Protection Plan (SWPPP) is available for review and is followed. This starts with installation of all Phase 1 E&S devices such as silt fence, diversion dikes, sediment traps and basins prior to grubbing and grading operations. Our Team ensures stabilization of denuded areas is performed within the required time frames. Most importantly, we dedicate an E&S maintenance crew to the Project at all times to monitor the site and relieve over-burdened E&S devices, re-install or reinforce existing devices and prepare for forecasted rain and storm events. The crew is led by a foreman carrying the VDOT ESCCC and DEQ Registered Land Disturber credentials. VDOT Forms C-107a and C-107b as well as proper documentation is kept current at all times per DEQ and VDOT regulations.

Right-of-Way Acquisition (ROW)

Similar to permitting, the ROW acquisition process must be well integrated into the design, utility and construction schedules, and started as early as possible. As we developed our schedule and sequence of work, we continually analyzed the affect these disciplines have on public and private properties and our ability to minimize and avoid them. As described on our Team's Design Concept in Section 4.3 and as detailed in our Volume II - Concept Plans, we already achieved a significant reduction in ROW parcels and total area of acquisitions. Furthermore, our planned construction sequencing and stormwater management phasing has allowed adequate time for all property rights acquisitions. Our plan removes the ROW process from the Critical Path of the proposed CPM Schedule.

For all planned acquisitions, our Team has prioritized their acquisition to match the sequence of work. This is critical to our ability to meet the planned traffic sequencing and completion of the stormwater management basins scheduled in Stage 2. If conditions change, we have the ability to immediately react by adjusting the priorities, resources, and sequence if necessary. Key to doing so is our Team's in-house ROW resources dedicated to managing the acquisition process. The highest priority parcels are those needed in Stage 2 required to construct Stormwater Management Basins on the outside of the Project. Our schedule of work has provided the maximum amount of float to acquire these properties. Our Proposal Schedule included in Section 4.7 outlines the complete acquisition process.

Staging and Storage Areas

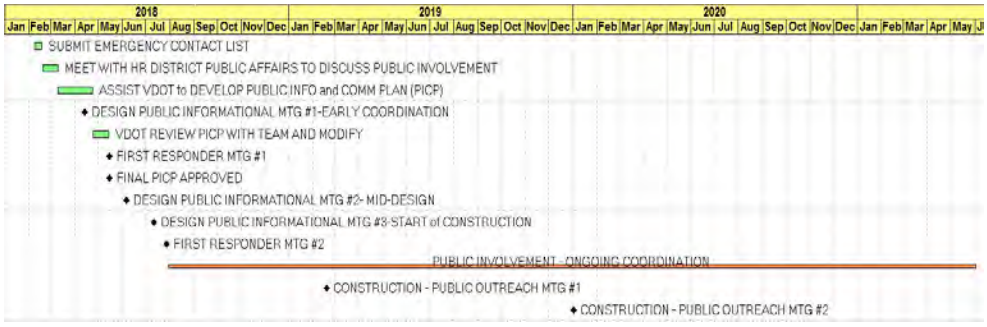
To maximize safety and avoid delays to the schedule, staging and storage areas must be well-planned and integrated into the overall sequence of work. When planning these areas, the objectives are to establish locations that minimize impacts to public traffic, do not create a public nuisance, and are close enough to the work area to avoid production inefficiencies.

Staging areas will be centric to these access points. As fully detailed in section 4.5.2, our Team plans to directly access the Project from the parallel routes to reduce the amount of construction traffic entering and exiting the work zone from I-64. Where access directly from I-64 is required, we developed a median access plan from I-64 that allows access to the work zones in a safe manner by utilizing the extra-long emergency pull-offs for decelerating and accelerating truck traffic. Staging of materials behind and outside the deflection zones of the temporary traffic barriers also serves as convenient areas for items such as storm water pipe and structures and bridge formwork and consumable materials.

Public Involvement/Stakeholder Coordination and Government Approvals

To avoid the risk of delays to the schedule due to stakeholder approvals, it is imperative that the Team understand all of the parties that have input, their procedures and timeframes for approval, and the affect they have on sequence of work. We identified stakeholders in our Organization Chart included in Section 4.2, as well as in the table in Section 4.5.2, and will refine this list as the Project moves forward. At this preliminary stage, we have included those stakeholders that could impact the completion milestones on the schedule included in Section 4.7.

Figure 4.5.1.14 - Public Involvement Activities



Immediately after Award, the Team will meet with each stakeholder individually to discuss the Project, understand their issues and concerns, and explain the schedule and sequence of work. Input is incorporated in the schedule based on these discussions, and the schedule will in turn be communicated to them. Figure 4.5.1.14 is an excerpt of our Proposal Schedule, we will plan and hold several Public Information Meetings with the public at critical stages of work to communicate Project details, our sequence of construction, and the overall schedule. We also use this forum to solicit feedback and establish lines of communication with those affected. Because traffic patterns change as the work progresses, it is imperative that we coordinate directly with police, fire and rescue, local schools, and public transportation by establishing points of contact, distributing flyer's, and presenting project details directly to them. Traffic changes are communicated on site through the effective use of signs and PCMS signs. The Team presents updates to local Homeowners Associations, County governments, and other groups. We will also communicate with the public by submitting updates and graphics describing traffic patterns to the local media in order to reach large audiences.

Mitigating Potential Delays

As described above, our Team has already advanced a number of concepts, plans and procedures for ensuring the Project is completed ahead of schedule without delay. As we develop our schedules, we are constantly focused on issues and concerns that have the potential to create delays and then direct our efforts on mitigating them. At various stages of the Project, we rely on proven methods for creating, monitoring, and maintaining the schedule:

- ***Technical Proposal Stage -*** As the groundwork for the Team's schedule is developed in this stage of the procurement, it is critical for all disciplines to have input. Our Team has met on a weekly basis since release of the RFP to discuss issues, create our concept, solicit feedback, and to make schedule adjustments accordingly. The schedule presented in Section 4.7 is the result of this close collaboration and has buy-in from all Team members.
- ***Design Stage -*** As we proceed through the design process, the integration of the various disciplines rises to a higher level. We continue to hold team meetings at a minimum on a weekly basis to provide an over-the-shoulder forum for review, discussion and feedback. During this time period, our formal project schedule is developed and reviewed with VDOT and other stakeholders. Should issues arise or conditions change during design that impact the sequence or completion milestones, the Team reviews schedule options for correction so that these milestones are maintained. Once finalized, it is communicated to each discipline, our construction forces, subcontractors and consultants, and other affected parties and is the basis for the Team's planning efforts moving forward. Throughout this Stage, the approved schedule is monitored, updated and communicated to VDOT by the DBPM to ensure that it remains compliant.
- ***Construction Stage -*** As the Project transitions to construction, the Construction Manager and DBPM closely monitor and update the schedule on a regular basis. The CM ensures the schedule is communicated to the entire Team, including utility companies, QA/QC, government agencies, and others. In addition, shorter, more detailed schedules are created by the construction teams to better aid planning their work. These two week and six week "look-ahead" schedules allow teams to plan activities on a daily basis and communicate specific tasks and milestones in a direct, concise way. Our Team also utilizes a proprietary "Daily Shift Cost Report" (DSCR) system that tracks the costs for certain critical activities each day and compares them to the budgeted cost. This is an excellent indicator that scheduled production rates are not being achieved and provides the construction team with "real-time" data. Throughout the construction schedule, these schedules and data are monitored and compared to the approved baseline schedule so that delays can be anticipated. Then, the Team evaluates options for avoiding delay or recovering the schedule including resequencing the work, adding resources, or redesign of certain features.

4.5.2 TRANSPORTATION MANAGEMENT PLAN

Our Team is dedicated to delivering this Project in a way that sets a new benchmark for the minimization of public impacts for all stakeholders during construction. All aspects of our TMP and the TTC Plans will be developed with a focus on maximizing safety for the traveling public and construction personnel while minimizing travel delays throughout all stages of construction. To accomplish these safety and mobility goals, we have committed to mitigation and communication strategies ***that exceed the requirements of the RFP***. Some of these strategies are listed below and are detailed on the following pages:

- Providing a full continuous 10-foot wide paved shoulder along the majority of the eastbound lanes and a portion of the westbound lanes during median widening;
- Providing temporary pavement at Exit 234 that eliminates an 8-mile detour;
- Analyzing existing safety concerns and mitigating them prior to major construction activities;
- Where traffic is shifted onto the existing shoulders, providing temporary pavement sections stronger than the RFP requires;
- Self-limiting lane closure hours to smaller windows than the RFP allows to minimize public impacts;
- Early opening of a critical portion of the third eastbound thru lane five months earlier than the Final Completion date;
- Utilizing enhanced safety devices such as higher visibility devices and wider than required markings;
- A sequence of construction that minimizes lane closures on I-64 by utilizing frontage roads for construction access;

- Increasing emergency pull-off lengths from the 500-feet RFP minimum to the recommended 1,320-feet;
- Utilization of a dedicated Incident Manager to expeditiously restore operations in the event of an incident in the travel way; and
- Enhanced public communication outreach such as Twitter alerts through social media and more "Public Informational Meetings" meetings.

TMP Philosophy

Our TMP and construction program is aimed at reducing the Project's anticipated impacts to the traveling public and exceeding the safety requirements of the RFP. Above all, our Team values safety as our highest priority in every facet of design and construction. Our TMP will place a particularly heavy focus on eliminating the need for temporary lane closures to the extent possible, as we thoroughly understand the important distinction that single lane closures on roadways with only two lanes in each direction have very high impacts on traffic.

To meet our high safety and mobility standards, the TTC and TMP plan development will be led by our Maintenance of Traffic Engineer, Jerry Mrykalo, who is a Professional Traffic Operations Engineer and a certified VDOT Work Zone Traffic Control Training Instructor. Jerry was also the lead traffic engineer for the Segment I Project, allowing him to understand the unique safety and mobility considerations of the I-64 corridor. Furthermore, to ensure the TMP development exceeds expectations, our design engineers have completed our in-house Work Zone Traffic Control Training Program and are all VDOT certified in the development of TTC and TMP plans, ***exceeding the requirements of the RFP.***

Sequencing of Work

As introduced in Section 4.5.1 - Sequence of Construction, the Project will be segmented into four areas (Areas 1 thru 4), each of which has a unique construction and temporary traffic control features. Utilizing the construction stages and sub-stages allows our Team to efficiently construct the Project while minimizing mobility impacts to the traveling public. We carefully studied numerous phasing options in conjunction with developing the permanent roadway alignment, and ultimately selected a permanent roadway alignment that, where possible, shifted new roadway further into the median than the RFP alignment. This alignment shift, which was achievable for approximately 45% of the length of the Project, allows our Team to deliver the following safety and mobility features that ***exceed the requirements of the RFP:***

- Allowing for a full continuous 10-foot paved shoulder during median widening for vehicle breakdown, incident management, and police enforcement;
- Proving 12-foot wide lanes where the existing 10-foot shoulder is maintained, instead of allowed 11-foot wide lanes;
- Minimizing temporary lane closures on I-64 by avoiding right shoulder strengthening and the need to shift lanes during 45% of the length of median widening; and
- Increasing worker and motorist safety by reducing interactions otherwise necessary for re-striping and shoulder strengthening.

For each of the four work areas, we have developed area-specific and bridge-specific temporary traffic control strategies as highlighted on Exhibit 4.5.2.1 and Exhibit 4.5.2.2 on pages 48 and 49. These exhibits depict the innovative phasing that we will use to safely maintain all lanes during construction based on unique challenges presented in each area and at each bridge. Throughout all areas in all phases, we strive to exceed required lane and shoulder widths whenever feasible.

Traffic Control Details

As shown on Exhibits 4.5.2.1 and 4.5.2.2, our Team has developed a temporary traffic control strategy for this Project that minimizes stakeholder impacts. Immediately after beginning the design of the Type C, Category V TMP upon Project Award, we will complete fully detailed design of the site-specific TTC plans. The TTC plans will detail specific elements required during construction, and will be developed for each stage of work to identify barrier and channelization locations, temporary sign locations, PCMS devices, construction access points, temporary pavement markings, temporary drainage, areas of construction, and all other requirements per VDOT's I&IM-241.7, the Virginia Work Area Protection Manual, and the Manual on Uniform Traffic Control Devices (MUTCD).

Our Team 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, we will ensure that barrier ends and impact attenuators are flared as far away from traffic as possible, as driver collisions with impact attenuators can result in high severity crashes. We also thoroughly understand the importance of avoiding "abrupt" lane shifts meeting only minimum lengths on high speed/high volume freeways, and avoiding frequent lane shifts from side to side that are difficult for drivers to navigate safely. Technical highlights of our approach are as follows:

I-64

- No planned long term lane closures or temporary detours;
- Time of day restrictions will follow Part 2, Section 2.10.4 of the RFP, with additional restrictions self-imposed to further minimize public impacts. Temporary lane closures are anticipated for night time paving, shoulder improvements, placement of traffic barriers, delivery of materials, and bridge work;
- Temporary 20 minute maximum full stoppages on I-64 during overnight hours are only expected for overhead sign work;
- No flagging operations are anticipated;
- Minimum 12-foot wide lanes will be maintained (11-foot wide where a 9-foot shoulder is provided); and
- All temporary traffic shifts will be designed to meet the full posted speed on I-64, double the minimum length requirements of the Virginia Work Area Protection Manual.

Interchange Ramps

- No long-term lane closures planned;
- No long-term temporary detours planned, eliminating the planned eight-mile, one month detour allowed in the RFP (single-night temporary detours may be necessary for paving tie-ins, where overnight detours will be completely analyzed for traffic operations, fully signed utilizing both static signs and PCMS devices, and coordinated with applicable localities);
- Time of day restrictions will follow Part 2, Section 2.10.4 of the RFP, with additional restrictions self-imposed to further minimize public impact;
- Temporary 20 minute maximum full stoppages on I-64 ramps during overnight hours are only expected for overhead sign work;
- No flagging operations are anticipated; and
- Minimum 12-foot wide lanes will be maintained.

Route 199, Route 143, Lakeshead Drive, Colonial Parkway

- The only long-term lane closure proposed is along Colonial Parkway for safety related to arch construction, as allowed per the RFP;
- No long-term temporary detours planned

- Time of day restrictions will follow Part 2, Section 2.10.4 of the RFP and locality requirements;
- Temporary 20 minute maximum full stoppages during overnight hours are only expected for overhead bridge work;
- Flagging operations are anticipated only on Lakeshead Drive and Colonial Parkway; and
- Minimum 11-foot wide lanes will be provided.

Speed Limits During Construction & Incident Management

Our Team has taken the proactive step of already completing an analysis utilizing VDOT's TE-350.1 process to determine the appropriate posted speed limit during construction. Based on this analysis, we recommend reducing the existing posted speed limit of 70 mph to 60 mph for the following reasons:

- 655 crashes within the Project limits since 2010 including eight fatality crashes; and
- The combination of high traffic volumes and high existing speed limit.

The proposed 60 mph speed limit is an enhancement that ensures safety during construction of both motorists and construction personnel. While our Team recommends reducing the speed limit to 60 mph, all of our temporary geometry and lane shifts will meet the standards for the existing speed limit of 70 mph to enhance safety. This will be discussed with VDOT's Traffic Engineering staff, and we understand that final determination will be made in coordination with the District Traffic Engineer Post-Award.

Recognizing the high rate of crashes within the corridor preconstruction (over 90 per year), ***our Team is exceeding the RFP requirements by utilizing an Incident Manager during construction to expeditiously restore operations in the event of an incident in the travel way.*** This individual, Brian Martin, will serve as a point of contact to coordinate major incidents, including coordinating the full-time wrecker service with the Virginia State Police, York County Fire/Rescue, and the VDOT Safety Service Patrol. He will also be prepared to mobilize Shirley's construction resources (such as detour implementation) at the direction of emergency responders and VDOT. Through use of this Incident Manager, our Team will help reduce travel delays and increase safety by minimizing incident response times and full lane restoration times.

Unique Project Challenges & Solutions

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 devised the following unique solutions:

1. Maintenance of Existing Shoulder

As detailed in the "Sequence of Work" above, providing a full 10-foot wide shoulder during approximately 45% of the median widening stage provides a safety enhancement and eliminates an estimated 150 lane closures associated with shoulder strengthening and restriping that is required for the RFP concept.

2. Existing Shoulder Strengthening

As shown on Exhibit 4.5.2.1, for the remaining 55% of the length of the Project where the permanent roadway could not be shifted further towards the median, traffic will need to be shifted onto the existing outside shoulder during Stage 1B to facilitate median widening. In order to accommodate the traffic loading, we anticipate this shoulder requires strengthening during Stage 1A. Although the RFP specifies a minimum 6-inch temporary pavement section, we analyzed the required section based on existing available CBR values and anticipated traffic loading. From this we calculated that 6-inch section will be insufficient. Therefore, our Team commits to ***utilizing a deeper section to avoid risk of pavement deterioration.***

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Exhibit 4.5.2.1

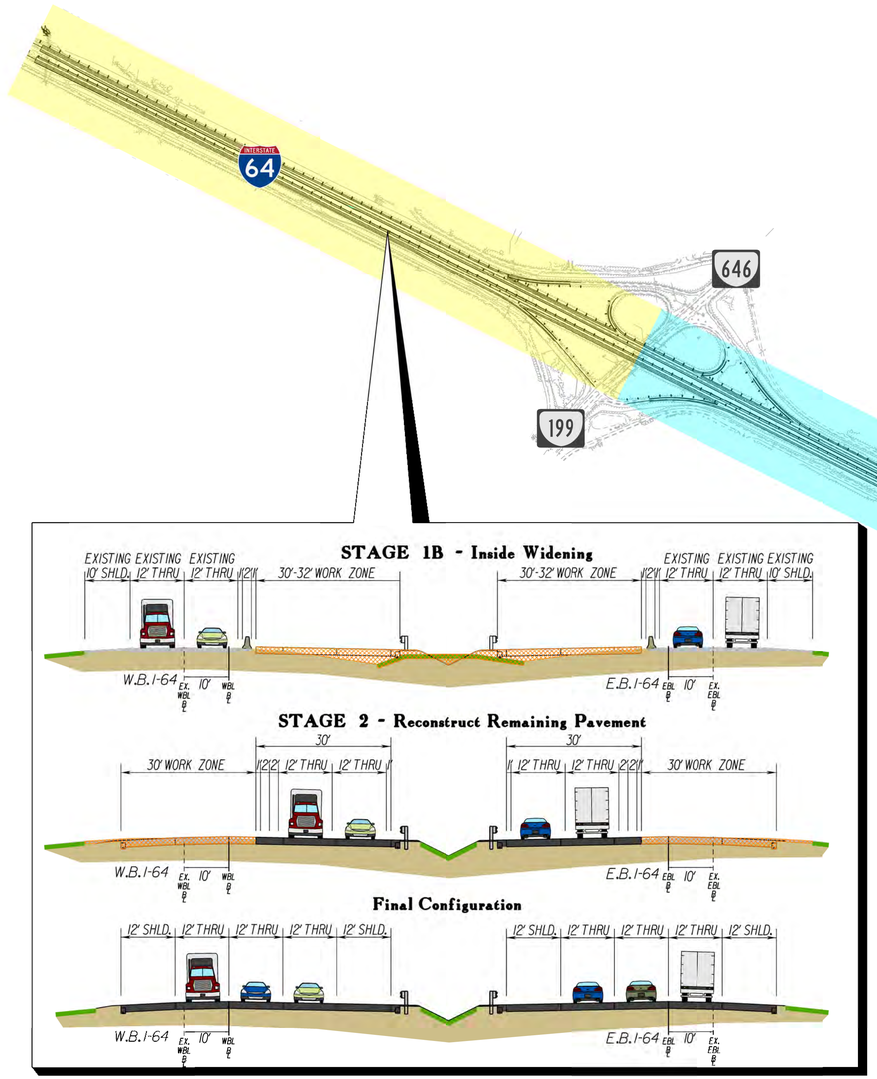
t106689-Exhibit 4.5.2.1.dgn
Plotted By: aahmad

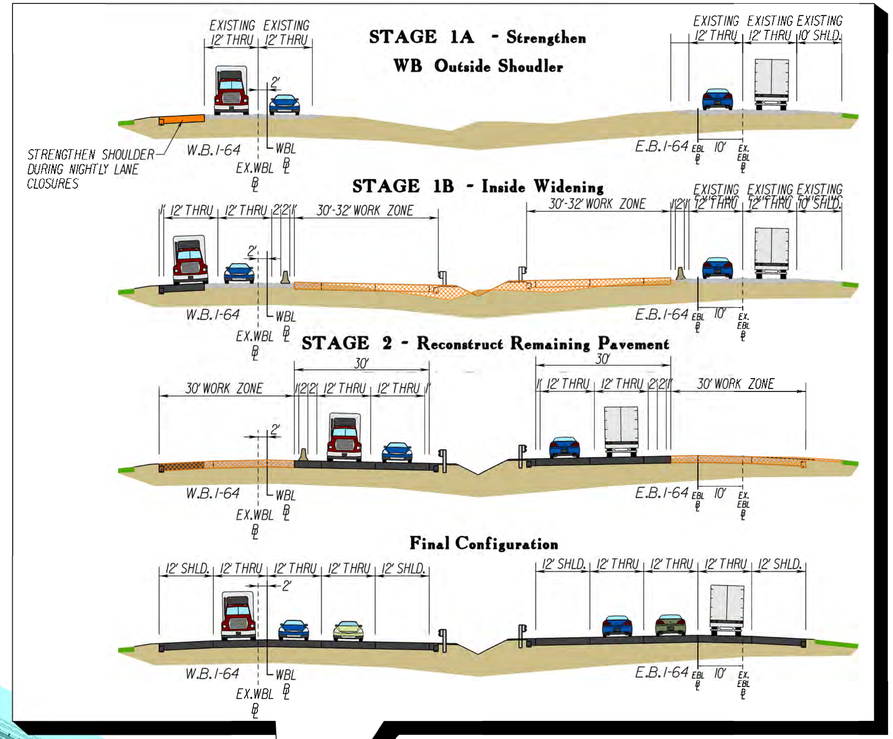
LIMITED ACCESS HIGHWAY — By Resolution of Highway Commission dated October 4, 1956

PROJECT MANAGER Shirley Contracting Company, LLC
SURVEYED BY, DATE
DESIGN BY Dewberry
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229, R-201; C-501	.





LEGEND
- Area 1
- Area 2
- Area 3
- Area 4

	PROJECT	SHEET NO.
	0064-965-229	.

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Exhibit 4.5.2.2

t106689-Exhibit 4.5.2.2.dgn
Plotted By: aahmad

LIMITED ACCESS HIGHWAY — By Resolution of Highway Commission dated October 4, 1956

PROJECT MANAGER: Shirley Contracting Company, LLC
SURVEYED BY, DATE:
DESIGN BY: Dewberry
SUBSURFACE UTILITY BY, DATE:

SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229, R-201; C-501	·

LEGEND
- Area 1
- Area 2
- Area 3
- Area 4

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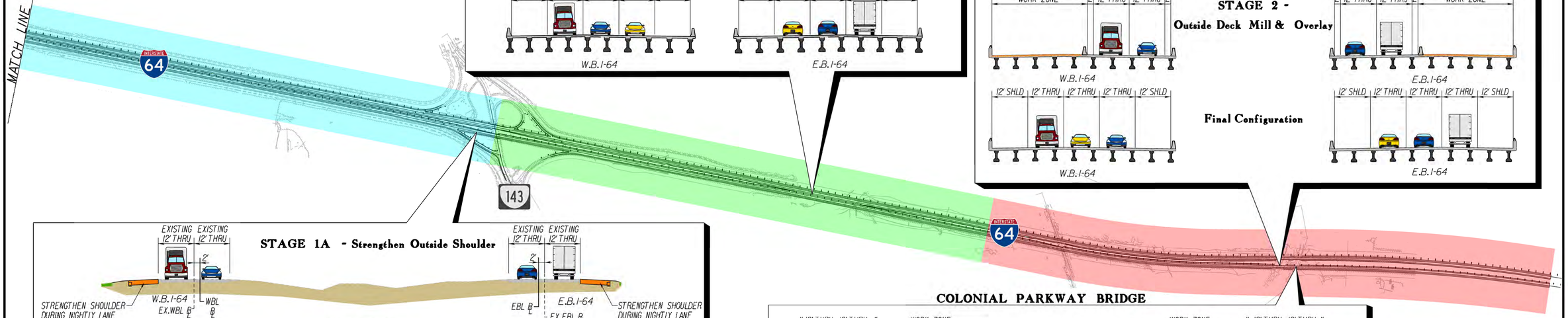
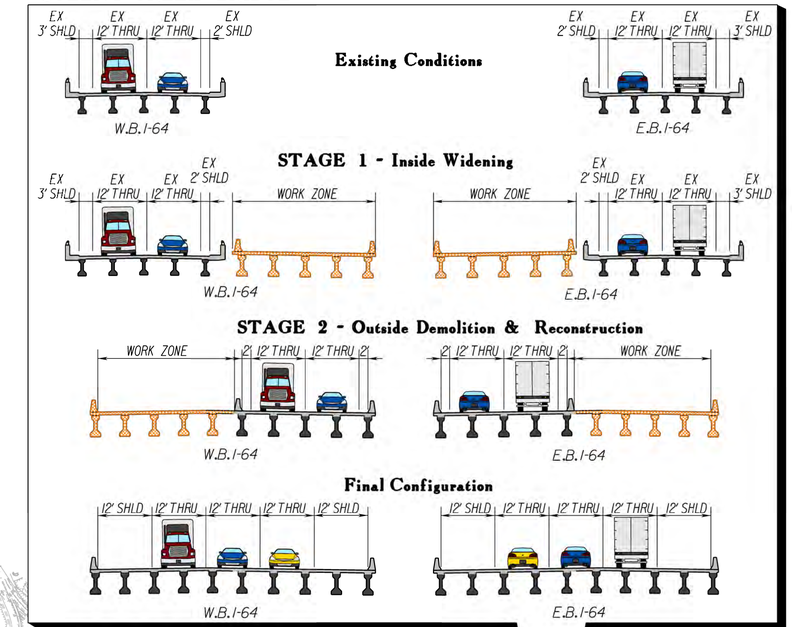
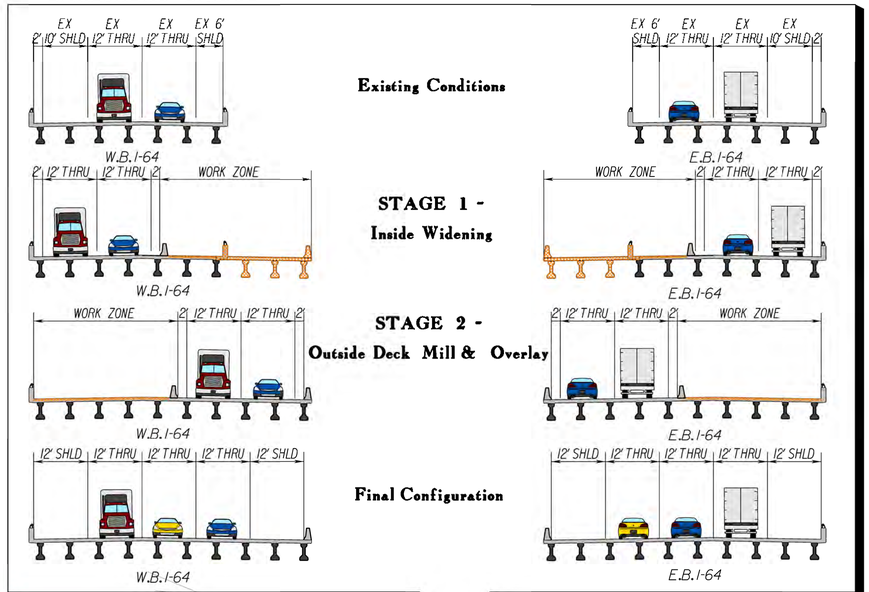


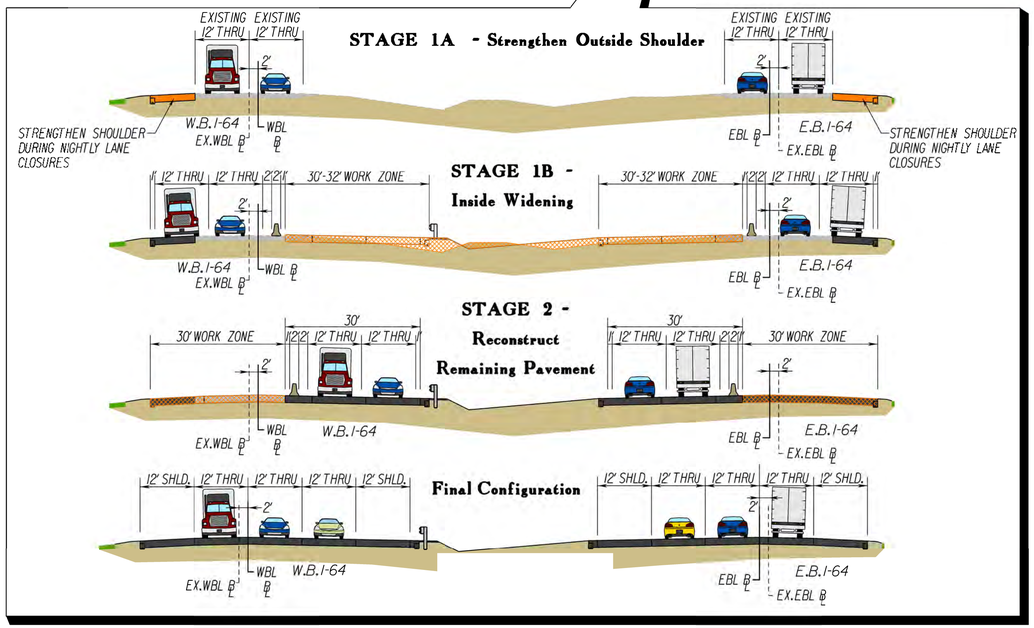
QUEEN'S CREEK BRIDGE



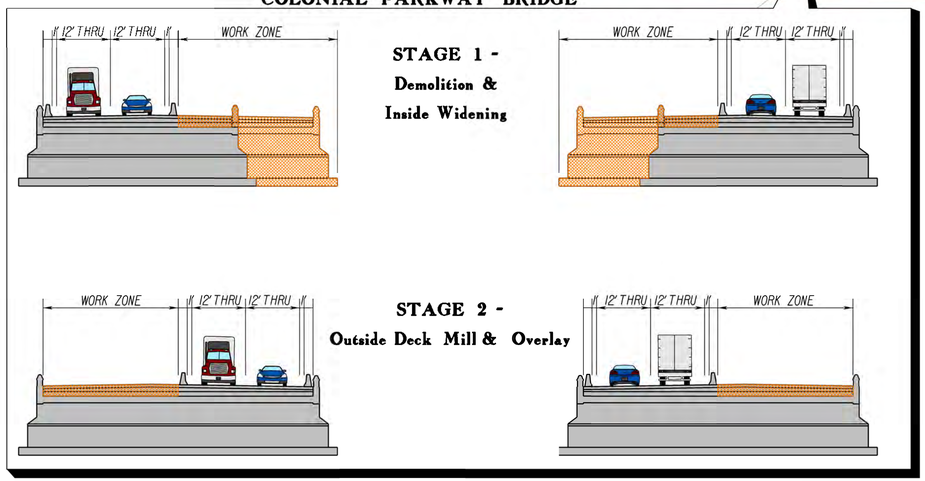
LAKESHEAD BRIDGE



STAGE 1A - Strengthen Outside Shoulder



COLONIAL PARKWAY BRIDGE



	PROJECT	SHEET NO.
	0064-965-229	·

3. Outside Reconstruction Access

Differences in speeds between public traffic and construction vehicles is a leading cause of work zone crashes. We recognize the potential for these speed differentials when construction vehicles enter and exit the outside construction area. To mitigate this risk, our Team plans to utilize temporary access points from low speed parallel routes (such as E. Rochambeau Drive) to reduce the amount of construction traffic entering the work zone directly from I-64. This direct access provides a significant safety benefit while also providing a mobility benefit for public traffic. An example access point is illustrated in Figure 4.5.2.1 and will be coordinated with VDOT (for a temporary Limited Access break) and with York County.

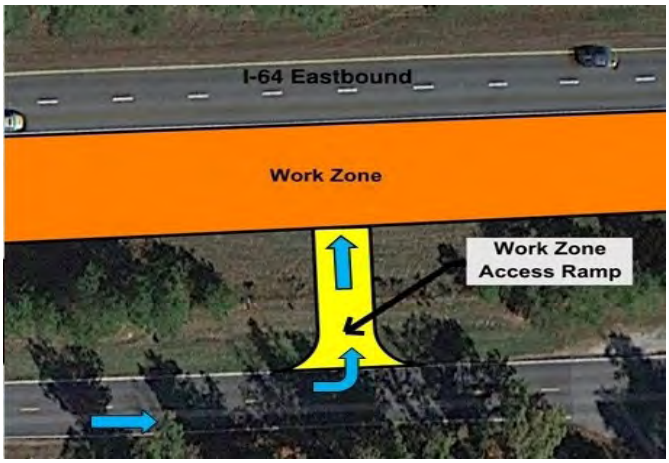


Figure 4.5.2.1 - Construction Access from Parallel Roads

Where direct access to the shoulder from I-64 is necessary, we will provide full 1,320-foot acceleration/deceleration lengths for trucks meeting AASHTO and Work Area Protection Manual recommendations, exceeding the 500-foot RFP requirement. This provides both a safety and operations benefit by avoiding slow work trucks in thru lanes. Enhanced warning signs will also be installed in advance of these locations, which will be coordinated with local emergency responders to ensure swift response to any incidents.

4. Maintenance of Ramp Movements and Detour Elimination

Another challenge in complete reconstruction projects, is the continuous maintenance of ramp movements. For "outer" ramps (non-loop) ramps, our Team will sub-stage construction in these areas to provide continuous full length acceleration and deceleration lanes. This concept is shown in Figure 4.5.2.2, which provides a great safety and operational benefit by avoiding shortened or eliminated acceleration lanes, where ramp traffic would need to stop or enter the thru lanes at low speeds.

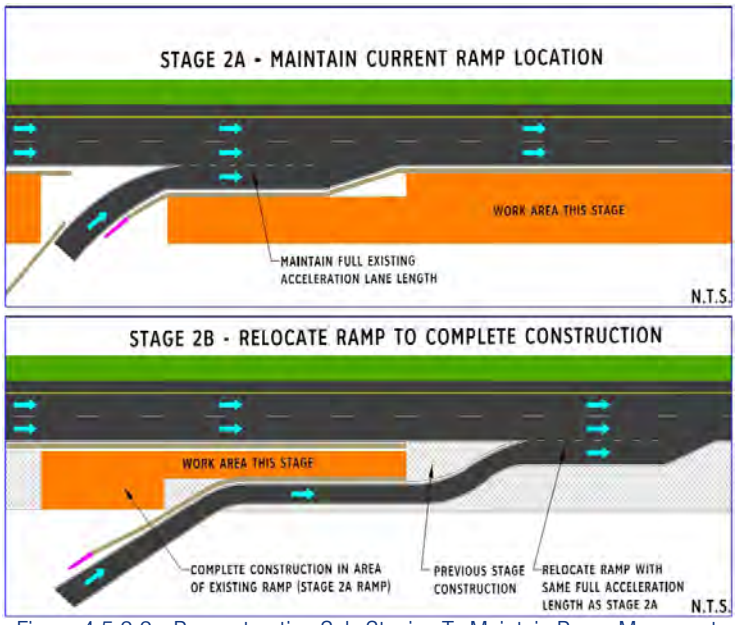


Figure 4.5.2.2 - Reconstruction Sub-Staging To Maintain Ramp Movements

Through careful coordination with the roadway design, we developed a sequence of construction that eliminates any ramp closures at Exit 238. We achieved this by realigning the permanent ramp to the inside of the existing ramp movements. This allows us to construct the permanent ramp without closing the existing ramp and detouring traffic, exceeding the requirements of the RFP.

For the loop ramps at Exit 234, our Team developed an innovative solution to create a temporary intersection on Route 646, eliminating the RFP allowed 8-mile detour. Figure 4.5.2.3 on the following page depicts how we will divert Route 199/646 northbound traffic towards the southbound on-ramp to access I-64 westbound by constructing temporary pavement in the median and ramp infield areas. Highlights of this enhancement include:

- Elimination of an 8-mile detour, equating to a savings of 1.5 million minutes of travel time for 6,200 vehicles per day over a one month duration;
- Temporary merge condition on the existing ramp to I-64 westbound that operates at an LOS (Level of Service) A, and a diverge from Route 646 that accommodates all ramps and thru volumes;
- Avoidance of an additional 600 cars/hour on both eastbound and westbound I-64 along the detour route, which would represent a 25% increase in volume on I-64, further congesting the thru lanes; and
- Elimination of sending detour traffic thru the Segment II work area.

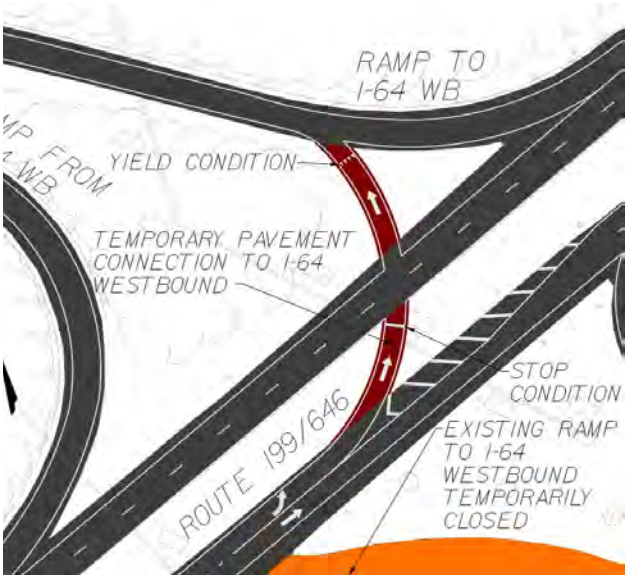
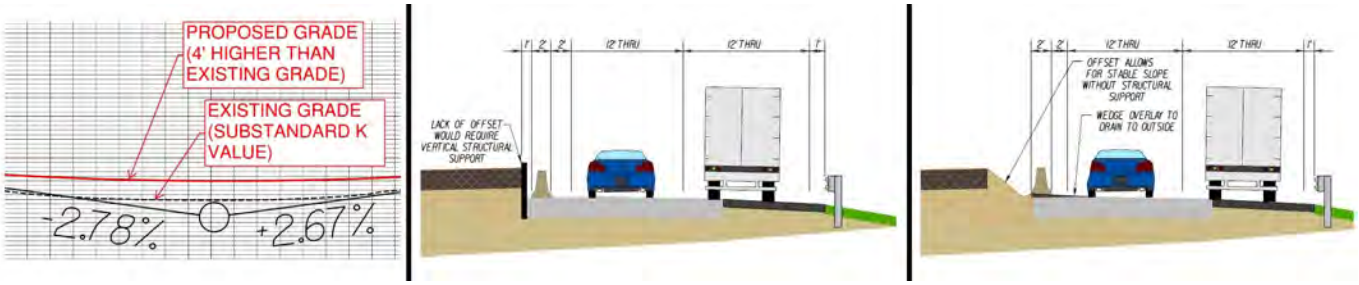


Figure 4.5.2.3 - Detour Elimination With Temporary Pavement (Shown In Red)

5. Construction of Vertical Adjustments

A major challenge is the reconstruction of the existing sag vertical curves in order to meet the current design standards, which results in the requirement to raise the vertical grade by up to 4-feet in some areas. This presents a constructability challenge, as a limited offset between the work area and the temporary barrier could create a vertical drop off immediately behind the temporary barrier. As shown in Figure 4.5.2.4, to overcome this challenge, our Team's solution of the narrowed permanent median width provides a wide buffer between the work area and the temporary barrier, allowing for a gradual slope instead of a vertical drop. This avoids a potential hazard for drivers and workers, eliminates the constructability challenge of building the vertical adjustment immediately behind the barrier, and avoids the need for temporary shoring. Furthermore, the proposed wedge overlay pavement allows the entire roadway to drain to the outside away from the work area, avoiding the potential for ponding water on the roadway.

Figure 4.5.2.4 - Profile and Typical Sections at Sag Vertical Curves



6. Queens Creek Bridge

Our Team has developed a sequence of construction that allows the bridge over Queens Creek to be constructed while providing numerous benefits to both motorists and construction personnel. Through careful coordination with the roadway and bridge designs, we have achieved this by eliminating one of the two crossovers proposed in the RFP sequence of construction. Not only does this improve safety by eliminating the need for westbound traffic to cross over to the eastbound bridge, the removal of the second crossover also reduces the amount of lane closures associated with constructing and ultimately removing the second crossover.

7. Early Opening of Eastbound Third Thru Lane

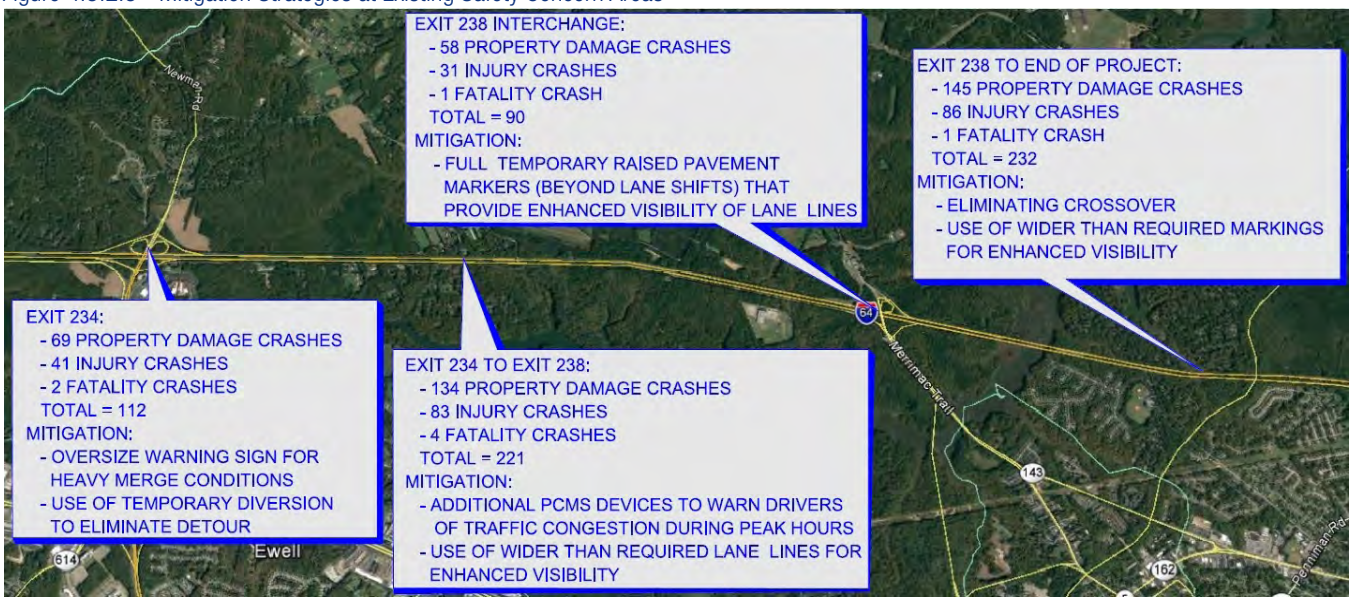
As detailed in Section 4.5.1, our Team commits to opening the new third eastbound lane by April 13,

2021, ***five months earlier than the Final Completion Date.*** This commitment to open the 2-mile section early expedites capacity improvements for the traveling public by connecting to the completed Segment II project for a continuous three-lane section from mile marker 238 to Hampton prior to the beginning of the 2021 beach traffic season.

Investigation and Mitigation of Existing Safety Issues

Our Team has performed an investigation of existing crash statistics and safety concerns within the Project limits and have already developed approaches to mitigate these risks. ***Our Team will surpass the RFP requirements by employing site-specific impact management strategies in order to maximize safety.*** As shown in Figure 4.5.2.5, the high traffic volume and congestion contribute to a high amount of crashes since 2010. Many of our proposed safety improvements detailed in this figure will be installed prior to major construction activities, as we intend to enhance public safety even though the permanent improvements are still in the design phase.

Figure 4.5.2.5 - Mitigation Strategies at Existing Safety Concern Areas



In addition to installing these enhancements on the existing roadway prior to construction, the following safety improvements will be utilized throughout construction stages, such as:

- The use of tighter than required channelizing device spacing for increased work zone delineation and construction personnel safety;
- Use of wider than required lane lines for increased delineation of lane shifts;
- Full continuous temporary raised pavement markers are used, as shown in Figure 4.5.2.6 for increased lane alignment and visibility, especially at night and during wet pavement conditions (only required at lane shifts per the Work Area Protection Manual);

Figure 4.5.2.6 - Raised Pavement Markers

- The placement of temporary barrier or guardrail along the edge of the I-64 outside shoulders where there are gaps in guardrail today, to provide protection for vehicles of roadside hazards where traffic is pushed towards these shoulders in some areas of Stage 1. ***This is a major safety enhancement, as a high proportion of interstate fatalities are a result of run-off-road fixed object crashes***; and

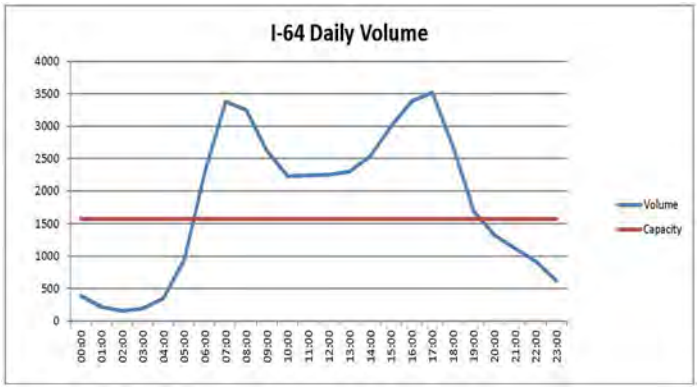
- Monitoring of traffic and safety conditions during construction. Our Team commits to monitoring traffic and safety conditions in the work zone throughout construction and reviewing conditions for safety upon implementation of new traffic control patterns. These reviews will be completed by traffic engineers to ensure that the controls have been implemented correctly, and to provide suggestions and recommendations for enhancements.

Lane Closure Optimization

When full construction starts, lane closure impact minimization will be critical when working along I-64. Our temporary traffic control strategy puts an emphasis on eliminating the need for temporary lane closures to the greatest extent possible. Where lane closures as necessary, our Team is committed to several enhancements to mitigate impacts that all ***exceed the requirements of the RFP:***

- ***Lane Closure Advisory Management System (LCAMS)*** - Our Construction Team is trained and proficient in VDOT Hampton Roads District's LCAMS system for temporary lane closure management. This allows our Team the advantage of being able to check our proposed lane closures versus planned construction and maintenance activities by others to ensure conflicts do not exist, providing measurable benefit to the Project.
- ***Additional Traffic Counts*** - to minimize travel delays, we will collect updated 24-hour volume information along I-64 as an initial design activity. We understand that the lane closure restrictions listed in Section 2.10.4 of the RFP are to be followed, but we also recognize that the impacts of closing a single lane on I-64 are significantly greater than closing a single lane on a facility with multiple through lanes. In addition, we recognize that constantly changing traffic volumes in this area may be different than previously collected volumes.

Figure 4.5.2.7 - Daily I-64 Traffic Volumes



An example of this from our Segment I project can be seen in Figure 4.5.2.7, which shows the 24-hour analysis. From the graph, our Team can determine the hours during which temporary lane closures might cause traffic backups and delays. This undesirable condition occurs when traffic volumes (blue line) exceed the capacity of the remaining open travel lane (shown in red horizontal line). Utilizing this type of analysis gives us the ability to schedule short duration work during low-volume hours where feasible. By taking this step, our Team provides tremendous safety and travel time benefits. This analysis will be performed by our Team during final design once our new data within the Project limits is available. This data will be used to validate the lane closure schedule in Section 2.10.4 of the RFP, and to ensure unintended delays will not occur due to possible recent changes in traffic patterns.

- ***Validation During Construction*** - Additionally, our Team commits to recounting traffic mid-way through construction to validate lane closure hours to ensure mobility impacts are minimized. We can also utilize this data in development of the TMP to allow for construction activities that require lane closures to occur during the hours of lowest volume. For example, this hour-by-hour analysis allows 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.

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 project, some inconvenience is unavoidable, but our Team's goal is to minimize these impacts. We have proactively identified project stakeholders, and have devised specific innovative communication and mitigation strategies that exceed project requirements. These include our commitment to use additional PCMS for motorist guidance, committing to hold additional "Public Informational Meetings" meetings, and utilizing enhanced safety devices. The stakeholders, their potential impacts, and our planned communication and mitigation strategies are detailed in Table 10.

Table 10 - Planned Stakeholder Communications and Mitigation Strategies

Stakeholders	Impacts	Communication/Mitigation Strategies
Traveling Public	Travel time delays for temporary operations	▪ Hold a minimum of three "Public Informational Meetings" for the general public and other stakeholders and two meetings for first responders throughout design and construction, especially prior to implementing major traffic pattern switches. ▪ Optimization of lane closure hours will limit closures to off-peak allowable hours of lowest volume. ▪ Work operations behind barrier will maximize lane widths. ▪ PCMS Signs and Twitter will be utilized for public notices. ▪ Encouragement for public to follow project Twitter feed.
Government/Military Camp Peary Government Facility Naval Supply Center-Cheatham Annex Yorktown Naval Weapons Station	Potential impacts to access routes	▪ Representatives will be notified of approved lane closures.
Local Residents	Possible construction noise and construction activities close to their property	▪ Coordination of construction activities with residential groups via notification and "Public Informational Meetings" meetings. ▪ Encouragement for residents to follow project Twitter feed. ▪ Installation of noise barrier to provide relief of construction and traffic noise.
Schools James City County Public Schools York County Schools Mt. Gilead Christian Academy College of William & Mary	Potential delays to school buses/ transportation services	▪ Coordinate construction activities directly with school staff. ▪ No lane closures during school bus operating hours when possible. ▪ Advance notification of traffic pattern changes.
Police, Fire & Rescue James City County Police & Fire York County Sheriff & Fire Virginia State Police Sentara Hospital	Potential response time impact	▪ Utilizing a dedicated Incident Manger to expeditiously restore traffic operations. ▪ Advance notification of temporary lane restrictions and changes to traffic patterns. ▪ Representatives will be notified of approved lane closure requests. ▪ Special emergency responder meetings.
Major Adjacent Projects **Segment II**	Potential construction coordination impacts between projects	▪ Temporary lane closures will be coordinated internally. ▪ Long-term traffic control set-ups will be coordinated internally to ensure seamless traffic flow between projects. ▪ Resources such as PCMS signs can be coordinated and shared for major events.
Williamsburg Area Transport	Potential impacts to bus transit routes	▪ Notifications of work will be sent to transit operators in advance of traffic switches or detour implementation.
Area Attractions Busch Gardens Water Country USA Golf Clubs Historical Attractions	Potential impact to access routes	▪ Representatives will be notified of approved lane closures. ▪ Limiting hauling activities to non-attraction routes wherever possible.

4.7 - Proposal Schedule

4.7 Proposal Schedule

4.7.1 Proposal Schedule

The Shirley Design-Build Team's Proposal Schedule is provided in our Volume II - Design Concept.

4.7.2 Proposal Schedule Narrative

Shirley has reviewed in detail the Project and schedule requirements of the RFP and has developed a Proposal Schedule outlining our plan to successfully manage all phases of this Project. This schedule has been optimized to deliver the Project in the shortest amount of time possible while meeting the requirements of the RFP, minimizing impacts to road users and local stakeholders, protecting the environment, and ensuring motorist's and worker's safety. Our Team plans to execute and deliver this Project by the June 26th, 2021 Early Completion deadline and earn the full $7,200,000 "No Excuse" Incentive. As an added benefit, we commit to a Unique Milestone and will open the eastbound travel lanes from Station 1352+00 to the eastern terminus of the Project by April 13, 2021, just prior to the beach season. The installation of the final asphalt surface and pavement markings and the completion of the punch list items will be completed after the Project is opened to traffic in order. A summary of this Contract and Schedule Milestones are shown in Table 11.

Table 11 - Contract and Schedule Milestones

Contract and Schedule Milestones	Date
Notice of Intent to Award	October 30, 2017
CTB Award / Notice of Award	December 6, 2017
Design-Build Contract Execution	January 9, 2018
Notice to Proceed	January 17, 2018
Begin Stage 1A Construction	July 11, 2018
Begin Stage 1B Construction	November 28, 2018
Begin Stage 2 Construction	September 4, 2019
Begin Stage 3 Construction	September 2, 2020
Unique Milestone-EB Traffic Open from Sta. 1352+00 to End of Project	April 13, 2021
Early Completion / "No Excuse" Incentive	June 26, 2021
Final Completion	September 24, 2021

Work Breakdown Structure

Our Team has developed a detailed Proposal Schedule in accordance with the RFP requirements. The Team has organized the schedule into a hierarchical Work Breakdown Structure (WBS) in order to demonstrate the relationships and activity durations amongst the milestones, scope validation period, design, public involvement, environmental permitting, ROW acquisition, utility relocation, construction, and project management disciplines. All elements of the design-build process are captured under these Level 1 tasks and are described below:

A. ***Schedule Milestones:*** Area reserved for easy review of the Project status. The Scope Validation Period has also been included in this section.
B. ***Design Phase:*** Includes preliminary engineering services, geotechnical work, plan development, design QA/QC reviews, submittal milestones, and VDOT and FHWA reviews and approvals. This section includes a second level WBS structure to group design activities by roadway and for each pair of bridge structures.

C. Public Involvement: This section of the schedule includes activities and milestones for developing the planned public involvement process including communication plans, public information meetings, first responder meetings and updates to the Office of Public Affairs for major traffic shifts and the VDOT website.

D. Environmental: Includes wetland and stream delineations, jurisdictional determinations, permit management and preparation, mitigation, permit submissions, and reviews from the authorities having jurisdiction. Also included are hazardous material surveys, threatened and endangered species identification and assessment, and noise analysis.

E. Right-of-way Acquisition: This section of the schedule is used to outline and monitor the acquisition of ROW and easements for the Project including title searches, appraisals and reviews, offers, negotiations, and settlements.

F. Utility Relocations: Includes activities for utility relocation such as UFI meetings, preparation of plans and estimates (P&E), approval of plans and estimates, utility relocation design by the utility owner, approval of the utility design, and utility relocation. The utility relocations are separated into second level WBS groups based on utility owner. The majority of the relocation work is required where new stormwater management facilities and their associated drainage piping may impact existing utilities. We have tied each utility to its associated potential impact area.

G. Construction: Includes all components of roadway and bridge construction including Project Management and the Quality Assurance/Quality Control processes. The Construction section of the schedule is segmented by additional levels of WBS structure to divide the construction activities into stages of work, areas of work, eastbound or westbound lanes and major portions of work such as roadway, bridge, box culvert or noise wall activities. This strategy and grouping of work packages has proven to allow for easy and clear tracking of activity progress to ensure on-time completion and in the case of this Project, Early Completion.

Table 12 is a complete outline of the WBS Structure for the Project:

Table 12 - WBS Structure

WBS Path	WBS Name
C00106689DB97-2.I-64 SEGIII.A	**SCHEDULE MILESTONES**
C00106689DB97-2.I-64 SEGIII.B	**DESIGN PHASE**
C00106689DB97-2.I-64 SEGIII.B.A	PRELIMINARY DESIGN WORK
C00106689DB97-2.I-64 SEGIII.B.A.A	SURVEY and MAPPING
C00106689DB97-2.I-64 SEGIII.B.A.B	GEOTECHNICAL INVESTIGATIONS and REPORTING
C00106689DB97-2.I-64 SEGIII.B.A.B.1	ROADWAY GER
C00106689DB97-2.I-64 SEGIII.B.A.B.2	BRIDGE GER
C00106689DB97-2.I-64 SEGIII.B.A.C	UTILITY DESIGNATIONS and TEST-PITS
C00106689DB97-2.I-64 SEGIII.B.B	STAGE 1A - EARLY START / MOT PLANS
C00106689DB97-2.I-64 SEGIII.B.C	ROADWAY DESIGN
C00106689DB97-2.I-64 SEGIII.B.D	BRIDGE DESIGN
C00106689DB97-2.I-64 SEGIII.B.D.A	BRIDGES B-642 & B-643 over QUEENS CREEK
C00106689DB97-2.I-64 SEGIII.B.D.B	BRIDGES B-638 & B-641 over LAKESHEAD DRIVE
C00106689DB97-2.I-64 SEGIII.B.D.C	BRIDGES B-639 & B-640 over COLONIAL PARKWAY
C00106689DB97-2.I-64 SEGIII.C	**PUBLIC INVOLVEMENT**
C00106689DB97-2.I-64 SEGIII.D	**ENVIRONMENTAL PERMITTING**
C00106689DB97-2.I-64 SEGIII.D.A	JOINT WETLANDS and WATERS PERMITTING
C00106689DB97-2.I-64 SEGIII.D.B	HAZMAT and ENVIRONMENTAL SITE ASSESSMENTS
C00106689DB97-2.I-64 SEGIII.D.C	LD 445 / STORMWATER PERMIT
C00106689DB97-2.I-64 SEGIII.D.D	NOISE ANALYSIS

WBS Path	WBS Name
C00106689DB97-2.I-64 SEGIII.E	**RIGHT-OF-WAY ACQUISITION/EASEMENTS**
C00106689DB97-2.I-64 SEGIII.E.A	RIGHT-OF-WAY PLANS
C00106689DB97-2.I-64 SEGIII.E.A.A	R/W PLAN SET
C00106689DB97-2.I-64 SEGIII.E.A.B	PROJECT SPECIFIC ACQUISITION and RELOCATION PLAN
C00106689DB97-2.I-64 SEGIII.E.B	ROW ACQUISITIONS (PARCELS Required for SWM BASINS)
C00106689DB97-2.I-64 SEGIII.F	**UTILITY RELOCATIONS**
C00106689DB97-2.I-64 SEGIII.G	**CONSTRUCTION**
C00106689DB97-2.I-64 SEGIII.G.A	PRE-CONSTRUCTION, SUBMITTALS and MATERIAL PROCUREMENT
C00106689DB97-2.I-64 SEGIII.G.A.A	SUBMITTALS ROADWAY
C00106689DB97-2.I-64 SEGIII.G.A.B	B-642/643-QUEENS CREEK
C00106689DB97-2.I-64 SEGIII.G.A.C	B-638/641-LAKESHEAD
C00106689DB97-2.I-64 SEGIII.G.A.D	B-639/640-COLONIAL
C00106689DB97-2.I-64 SEGIII.G.A.E	QUALITY ASSURANCE / QUALITY CONTROL PROCESS
C00106689DB97-2.I-64 SEGIII.G.B	STAGE 1A - SHOULDER STRENGTHENING and LANE SHIFT
C00106689DB97-2.I-64 SEGIII.G.B.A	I-64 EASTBOUND
C00106689DB97-2.I-64 SEGIII.G.B.B	I-64 WESTBOUND
C00106689DB97-2.I-64 SEGIII.G.C	STAGE 1B - I-64 NEW INSIDE LANES & 1ST PHASE OF BRIDGES
C00106689DB97-2.I-64 SEGIII.G.C.A	AREA 4 - 1400+00 to 1466+46 (6,646 LF)
C00106689DB97-2.I-64 SEGIII.G.C.A.1	AREA 4 - STAGE 1B ROADWAY
C00106689DB97-2.I-64 SEGIII.G.C.A.2	PHASE 1 BRIDGES B-638 and B-641 over LAKESHEAD DRIVE
C00106689DB97-2.I-64 SEGIII.G.C.A.2.a	PHASE 1 WB B-638 over LAKESHEAD DRIVE
C00106689DB97-2.I-64 SEGIII.G.C.A.2.b	PHASE 1 EB B-641 over LAKESHEAD DRIVE
C00106689DB97-2.I-64 SEGIII.G.C.A.3	PHASE 1 BRIDGES B-639 and B-640 over COLONIAL PARKWAY
C00106689DB97-2.I-64 SEGIII.G.C.A.3.a	PHASE 1 EB B-639 over COLONIAL PARKWAY
C00106689DB97-2.I-64 SEGIII.G.C.A.3.b	PHASE 1 WB B-640 over COLONIAL PARKWAY
C00106689DB97-2.I-64 SEGIII.G.C.B	AREA 2 - 1091+61 to 1320+00 (22,839 LF)
C00106689DB97-2.I-64 SEGIII.G.C.B.1	AREA 2 - STAGE 1B ROADWAY
C00106689DB97-2.I-64 SEGIII.G.C.C	AREA 3 - 1320+00 TO 1400+00 (8,000 LF)
C00106689DB97-2.I-64 SEGIII.G.C.C.1	AREA 3 - STAGE 1B ROADWAY
C00106689DB97-2.I-64 SEGIII.G.C.C.2	PHASE 1 FIRST HALF -BRIDGE WB B-643 over QUEENS CREEK
C00106689DB97-2.I-64 SEGIII.G.C.C.2.a	STAGE 1A BRIDGE ACCESS / CAUSEWAY / TRESTLE
C00106689DB97-2.I-64 SEGIII.G.C.C.2.b	WB B643 PHASE 1 - SUBSTRUCTURE -PIERS 1 THRU 8 and ABUTMENT 'A'
C00106689DB97.I-64 SEGIII.G.C.C.2.c	WB B643 PHASE 1 - SUBSTRUCTURE - PIERS 9 THRU 11 and ABUTMENT 'B'
C00106689DB97.I-64 SEGIII.G.C.C.2.d	WB B643 PHASE 1 - GIRDER INSTALLATION -PIERS 1 THRU 8
C00106689DB97.I-64 SEGIII.G.C.C.2.e	WB B643 PHASE 1 - DECK CONSTRUCTION
C00106689DB97.I-64 SEGIII.G.C.C.2.f	WB B643 PHASE 1 - CLOSURE POURS / DIAPHRAMS / PARAPETS
C00106689DB97-2.I-64 SEGIII.G.C.D	AREA 1 - 1030+88 to 1091+61 (6,073 LF)
C00106689DB97-2.I-64 SEGIII.G.C.D.1	AREA 1- STAGE 1B ROADWAY
C00106689DB97-2.I-64 SEGIII.G.D	STAGE 2 - I-64 NEW OUTSIDE LANES & 2ND PHASE OF BRIDGES
C00106689DB97-2.I-64 SEGIII.G.D.A	AREA 4 - 1400+00 to 1466+46 (6,646 LF)
C00106689DB97-2.I-64 SEGIII.G.D.A.1	AREA 4 - STAGE 2 ROADWAY

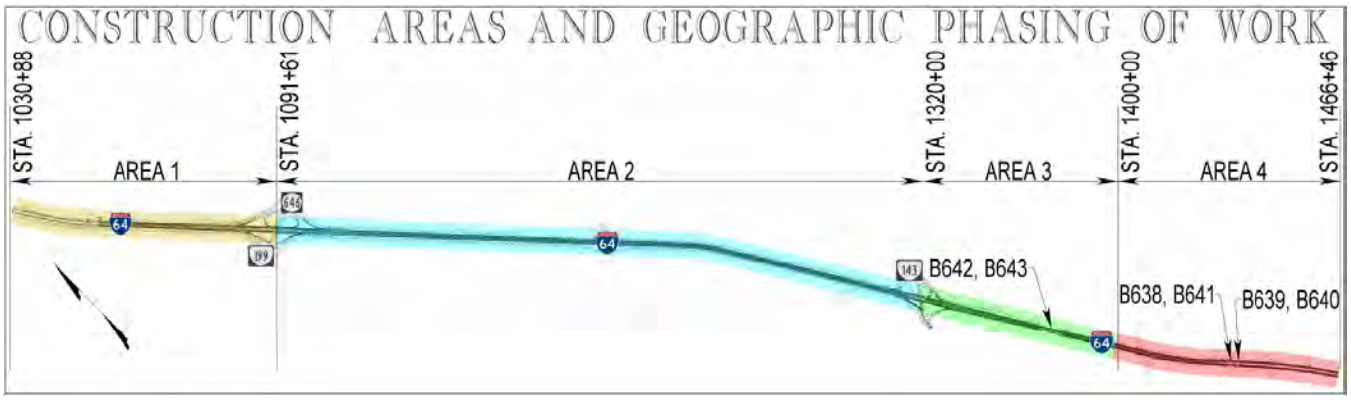
WBS Path	WBS Name
C00106689DB97-2.I-64 SEGIII.G.D.A.2	AREA 4 - STAGE 2 - OUTSIDE SWM WORK
C00106689DB97-2.I-64 SEGIII.G.D.A.3	PHASE 2 BRIDGE B-638 and B-641 over LAKESHEAD DRIVE
C00106689DB97.I-64 SEGIII.G.D.A.3.a	PHASE 2 BRIDGES - B-638 over LAKESHEAD DRIVE
C00106689DB97.I-64 SEGIII.G.D.A.3.b	PHASE 2 BRIDGES - B-641 over LAKESHEAD DRIVE
C00106689DB97-2.I-64 SEGIII.G.D.A.4	PHASE 2 BRIDGE B-639 and B-640 over COLONIAL PARKWAY
C00106689DB97.I-64 SEGIII.G.D.A.4.a	PHASE 2 BRIDGES - B-639 over COLONIAL PARKWAY
C00106689DB97.I-64 SEGIII.G.D.A.4.b	PHASE 2 BRIDGES - B-640 over COLONIAL PARKWAY
C00106689DB97-2.I-64 SEGIII.G.D.A.5	AREA 4 - STAGE 2 - NOISE WALLS
C00106689DB97-2.I-64 SEGIII.G.D.A.5.a	AREA 4 - STAGE 2 - NOISE WALL 1446+25 TO 1457+50 (1,150 LF)
C00106689DB97-2.I-64 SEGIII.G.D.A.5.b	AREA 4 - STAGE 2 - NOISE WALL 1432+00 TO 1443+25 (1,125 LF)
C00106689DB97-2.I-64 SEGIII.G.D.B	AREA 2 - 1091+61 to 1320+00 (22,839 LF)
C00106689DB97-2.I-64 SEGIII.G.D.B.1	AREA 2 - STAGE 2 ROADWAY
C00106689DB97-2.I-64 SEGIII.G.D.B.2	AREA 2 - STAGE 2 - OUTSIDE SWM WORK
C00106689DB97-2.I-64 SEGIII.G.D.C	AREA 3 - 1320+00 to 1400+00 (8,000 LF)
C00106689DB97-2.I-64 SEGIII.G.D.C.1	AREA 3 - STAGE 2 ROADWAY
C00106689DB97-2.I-64 SEGIII.G.D.C.2	STAGE 2A - EB BRIDGE B-642 over QUEENS CREEK
C00106689DB97-2.I-64 SEGIII.G.D.C.2.a	DEMOLITION / BRIDGE ACCESS / CAUSEWAY / TRESTLE
C00106689DB97-2.I-64 SEGIII.G.D.C.2.b	EB B642 - SUBSTRUCTURE -PIERS 1 THRU 8 and ABUTMENT 'A'
C00106689DB97-2.I-64 SEGIII.G.D.C.2.c	EB B642 - SUBSTRUCTURE - PIERS 9 THRU 11 and ABUTMENT 'B'
C00106689DB97-2.I-64 SEGIII.G.D.C.2.d	EB B642 - GIRDER INSTALLATION -PIERS 1 THRU 8
C00106689DB97-2.I-64 SEGIII.G.D.C.2.e	EB B642 - DECK CONSTRUCTION
C00106689DB97-2.I-64 SEGIII.G.D.C.2.f	EB B642 - NOISE WALL #1 -STRUCTURE MOUNTED
C00106689DB97-2.I-64 SEGIII.G.D.C.2.g	EB B642 - CLOSURE POURS / DIAPHRAMS / PARAPETS
C00106689DB97-2.I-64 SEGIII.G.D.C.3	STAGE 2B - PHASE 2 SECOND HALF -BRIDGE WB B-643 over QUEENS CREEK
C00106689DB97-2.I-64 SEGIII.G.D.C.3.a	PHASE 2 SECOND HALF WB B643 BRIDGE ACCESS / CAUSEWAY / TRESTLE
C00106689DB97-2.I-64 SEGIII.G.D.C.3.b	WB B643 PHASE 2 - SUBSTRUCTURE -PIERS 1 THRU 8 and ABUTMENT 'A'
C00106689DB97-2.I-64 SEGIII.G.D.C.3.c	WB B643 PHASE 2 - SUBSTRUCTURE - PIERS 9 THRU 11 and ABUTMENT 'B'
C00106689DB97-2.I-64 SEGIII.G.D.C.3.d	WB B643 PHASE 2 - GIRDER INSTALLATION -PIERS 1 THRU 8
C00106689DB97-2.I-64 SEGIII.G.D.C.3.e	WB B643 PHASE 2 - DECK CONSTRUCTION
C00106689DB97-2.I-64 SEGIII.G.D.C.3.f	WB B643 PHASE 2 - CLOSURE POURS / DIAPHRAMS / PARAPETS
C00106689DB97-2.I-64 SEGIII.G.D.C.4	AREA 3 - STAGE 2 - OUTSIDE SWM WORK
C00106689DB97-2.I-64 SEGIII.G.D.C.5	AREA 3 - STAGE 2 - NOISE WALL 1369+50 to 1395+00 (2,600 LF)
C00106689DB97-2.I-64 SEGIII.G.D.D	AREA 1 - 1030+88 to 1091+61 (6,073 LF)
C00106689DB97-2.I-64 SEGIII.G.D.D.1	AREA 1 - STAGE 2 ROADWAY
C00106689DB97-2.I-64 SEGIII.G.D.D.2	AREA 1 - STAGE 2 - OUTSIDE SWM WORK
C00106689DB97-2.I-64 SEGIII.G.E	STAGE 3 - FINAL OVERLAY and OPEN LANES
C00106689DB97-2.I-64 SEGIII.G.E.A	STAGE 3 PAVING and PAVEMENT MARKINGS
C00106689DB97-2.I-64 SEGIII.G.E.A.1	AREA 1 - 1030+88 to 1091+61 (6,073 LF)
C00106689DB97-2.I-64 SEGIII.G.E.A.2	AREA 2 - 1091+61 to 1320+00 (22,839 LF)

WBS Path	WBS Name
C00106689DB97-2.I-64 SEGIII.G.E.A.3	AREA 3 - 1320+00 TO 1400+00 (8,000 LF)
C00106689DB97-2.I-64 SEGIII.G.E.A.4	AREA 4 - 1400+00 to 1466+46 (6,646 LF)
C00106689DB97-2.I-64 SEGIII.G.E.B	SIGNAGE STAGE 3

Geography and Construction Staging

Our Team plans to construct this Project in four geographic areas during three stages of construction. The limits of these areas and stages were carefully planned in order to construct the Project as safely and efficiently as possible. Figure 4.7.1.1 illustrates and describes these areas and stages in greater detail:

Figure 4.7.1.1 - Construction Areas and Geographic Phasing of Work



The four geographic areas are defined by the following roadway stations:*

- ***AREA 1*** - Station 1030+88 to 1091+61 eastbound lanes (Station 2030+88 to 2091+61 westbound lanes) - 6,073 LF
- ***AREA 2*** - Station 1091+61 to 1320+00 eastbound lanes (Station 2091+61 to 2320+00 westbound lanes - 22,839 LF
- ***AREA 3*** - Station 1320+00 to 1400+00 eastbound lanes (Station 2320+00 to 2400+00 westbound lanes including Bridges B-642 and B-643 over Queens Creek) - 8,000 LF
- ***AREA 4*** - Station 1400+00 to 1466+46 eastbound lanes (Station 2400+00 to 2466+46 westbound lanes including Bridges B-638 and B-641 over Lakeshead Drive and Bridges B-639 and B-640 over Colonial Parkway) - 6,646 LF

*Reference to areas 1 thru 4 in our Proposal Schedule are denoted by the eastbound stationing convention. It should be noted that work activities shown in the schedule are for both eastbound and westbound lanes.

The four stages of construction are defined by the following work descriptions and areas:

- ***STAGE 1A*** - Outside shoulder strengthening only in areas required based on our revised horizontal alignments;
- ***STAGE 1B*** - Median Improvements in Areas 1 thru 4 will consist of construction of new inside travel lane and 12-foot shoulder; the median widening of the first phase of westbound Bridge B-643 over Queens Creek; and the median widening of Bridges B-638 and B-641 over Lakeshead Drive and B-639 and B-640 over Colonial Parkway.
- ***STAGE 2*** - Outside Improvements in Areas 1 thru 4 will consist of existing pavement demolition and reconstruction, the demolition and reconstruction of eastbound Bridge B-642 over Queens Creek, the second phase of westbound Bridge B-643 over Queens Creek, bridge repairs to the Lakeshead, Drive and Colonial Parkway overpasses, new noise walls and stormwater management basins.

- ***STAGE 3 -*** Final asphalt surface, pavement markings, and signage in all areas; final inspections and punchlist

Our Proposal Schedule reflects the total time duration required to construct the work required in each Stage and Phase. Scheduling of the sub stages necessary for the relocation of emergency pull offs and the construction of interchange ramp deceleration and acceleration lanes are included in the time frames of this Proposal Schedule and will be expanded and integrated into the Project baseline schedule after award of the contract and as the design progresses.

Schedule Calendars

The following is a description of the calendars used for this Project.

5 HOL: "5-Day Workweek with Holidays" – This calendar is based on five working days per week with the Holidays inserted as non-work days. This calendar is used for all design and administrative activities in the CPM network.

5 HOL_WTH: "5-Day with Normal Anticipated Weather" – This calendar is used for the majority of construction activities. It includes holidays as inserted in the '5 HOL' calendar as well as 'block-out' days for the anticipated normal weather in the region. The basis of the weather calendar was developed using a NOAA-based weather day assumption from the nearby military installation (Camp Peary), then modified to anticipate that the contractor and sub-contractors are responsible for making up normal weather days as part of their contractual requirements.

5HOL_WTH_LC: "Lane Closure Calendar" - Assigned to activities that must rely on lane closures in order to be performed; such as night-time paving operations. For this calendar we inserted 'non-work' days for lane closure restrictions preceding and following major holidays in accordance with the contract documents.

HOL_WTH_LC_SHDWN: "Winter Shutdown Calendar" - Assigned to activities that are unable to be performed during mid-December through mid-March due to cold weather. Activities such as, concrete deck pours, bridge overlay work, surface asphalt, cement treated aggregate, and wetland plantings and establishment are included in this restricted calendar.

7 DAY: "7-Day Calendar" – Assigned to activities that have durations based on calendar days instead of work days. Activities such as VDOT's 21 calendar day submittal review, Concrete curing activities and monthly maintenance items are included in this calendar.

Plan to Accomplish the Work/Means and Methods

The narrative below describes our Team's overall plan and sequence of operations grouped by the Level I WBS Project disciplines. These include design, public involvement, environmental permitting, ROW acquisition, utility relocation, construction and project management. The sequencing of all disciplines was developed by considering the construction phasing of operations and determining the longest path to project completion with all factors considered including manpower, subcontractors, materials, design, environmental constraints and most importantly, public safety and safety of the workforce. The Project phasing was developed based on the sequence and constraints shown in the RFP roadway and bridge concept plans and was further refined and developed by the Team based on the geographic areas and additional phasing necessary to meet the MOT requirements and critical elements of work. We divided the Project into four logical and manageable work areas that can be tracked and managed by dedicated supervision during construction as mentioned above while meeting the 2-mile maximum work zone limit.

Design

This section of the schedule includes those activities necessary for preliminary design, geotechnical work, early TMP and MOT/TTC plans, roadway design, bridge design and third party coordination including engineering plan preparation and approvals. It also includes time for the necessary Design QA/QC reviews at the multiple steps in the design process. As specified in the RFP we have included a 21-calendar day activity for VDOT review after each submission. The design phase also includes non-critical activities for the completion of surveys, test pits, H&HA studies, and geotechnical investigations, including a 90-calendar day activity for VDOT's review of the geotechnical report prior to submission of the final roadway and bridge plans.

Our Team begins the design phase immediately upon execution of the design-build Contract. Since the Queens Creek Bridge is the most critical item on the schedule, the Stage 1 Bridge Report will be submitted within two months of the January 17, 2018 NTP date. The Proposal Schedule reflects final approval of all roadway and bridge plans by November 28, 2018.

Critical Path activities in the design phase of the Proposal Schedule include the 15 day property owner notification timeline, establishment of survey controls, base mapping, and surveys necessary to start the design process. The preparation, review, and submission of the first submission (60%) Roadway Plans are next on the Critical Path in this Phase as that is a prerequisite for submission of the JPA to DEQ and the USACE. Ultimately, the Approval of the final JPA will enable the causeway and access work for the Queens Creek Bridge work to begin.

Public Involvement

The public involvement schedule includes submitting our emergency contact list upon NTP, assisting VDOT with development of the Public Information and Communication Plan (PICP) and holding Public Information Meetings in incremental stages during construction. This includes providing regular updates to the Office of Public Affairs. The schedule includes the major milestone activities for the Design Public Information Meetings which will include local businesses, local homeowners associations, local government representatives, and community groups. We will also provide information for regular construction updates on weekly lane closure plans to VDOT for use on its website.

Environmental Permitting

Environmental Permitting process will begin at NTP with gaining access to affected property owners along the Project's corridor to begin the required Phase I environmental surveys. Our Team immediately performs wetland delineations, obtains jurisdictional determinations and prepares the Joint Wetlands and Water Permit Application. Following completion and submission of the 60% roadway plans we will submit the necessary Permit Applications to the authorities having jurisdiction (AHJ). We anticipate that the Individual Permit for USACE as well as the Virginia Water Protection Permit from DEQ will require a four month approval time frame. Our Team will also complete the requisite VDOT forms LD-445, Stormwater Pollution Prevention Plans (SWPPP) and related information for inclusion on the VDOT SWPPP General Information sheets. The LD 445/VSMP permit will be acquired by August 28, 2018 with the completion of all permitting by November 26, 2018.

Right-of-Way Acquisition

The acquisition of property rights is required to obtain permanent ROW as well as permanent and temporary easements. The ROW required could impact the construction of the proposed stormwater management facilities if not managed correctly. Our Team is very familiar with the ROW process as shown on the Proposal Schedule. We have used the historical average timeframes that we anticipate for acquisition of property rights either by agreed negotiation or by certificate of take. We do not anticipate that the property

rights will become critical on this Project since no ROW acquisitions are required until Stage 2 of the Project. We will dedicate the necessary resources to ensure that schedule dates are adhered to and this process does not impact the Project completion.

Utility Relocations

Table 2 in Section 4.3(g) of our Technical Proposal lists the proposed utility impacts for the Project. To simplify and track the utility relocations, we created a WBS that groups the utility relocation activities by utility owner and Project location. This further allows us to coordinate the work with utility relocations using the construction sequencing. Within each utility owner group, we have included activities for holding the Utility Field Investigation (UFI) meeting, preparation of the plans and estimates by the utility owner, approval of the plans and estimates, design of the utility relocation, and relocation of the utility by area. The utility relocation schedule starts with formal UFI meetings held in August 2018 following completion of all utility test pits and progression of design documents to roughly 60%. This enables our Team to confirm and adjust our list of utility conflicts based on the field test pit data obtained prior to holding the formal UFI meetings. We continue this early coordination of utilities throughout the design phase of the Project to ensure that right-of-way and roadway plans are coordinated with the utility relocation plans. Currently, we are projecting that the underground facilities of Cox Communications, Dominion Virginia Power, Verizon, and Quest may be impacted. Water and Sewer potential impacts include Newport News Water, Hampton Roads Sanitation, York County Sewer and the U.S. Government facilities. Additionally, Virginia Natural Gas lines may require field relocation during construction. These dates are identified in our Proposal Schedule and linked to the appropriate construction activities. Utility relocations are not anticipated to be critical activities on this Project.

Construction

Project Management

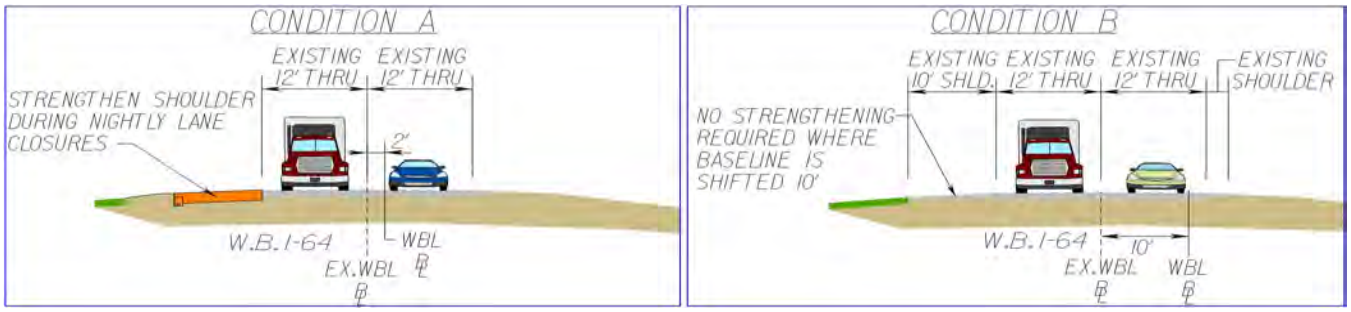
In this section of the schedule, we identified early construction activities such as schedule preparation, mobilization, submittals, subcontractor and major material procurement, production of shop drawings and fabrication of critical long lead time items such as precast concrete beams, noise walls, overhead signs, and complex shoring items such as those required for the Colonial Parkway Bridge.

Quality Assurance and Quality Control

In a separate WBS group we identified the QA/QC Activities for the Project. These include the submission and approval of the QA/QC plan and the Preparatory Meetings (Hold Points) that are required prior to commencing with construction activities. The overall Level of Effort for the QA/QC process is represented by a bar spanning all construction activities until final punch-out of the Project.

Construction Stage 1A - Shoulder Strengthening (starts Fall 2018)

Figure 4.7.1.2 - Stage 1A - Strengthen Outside Shoulder



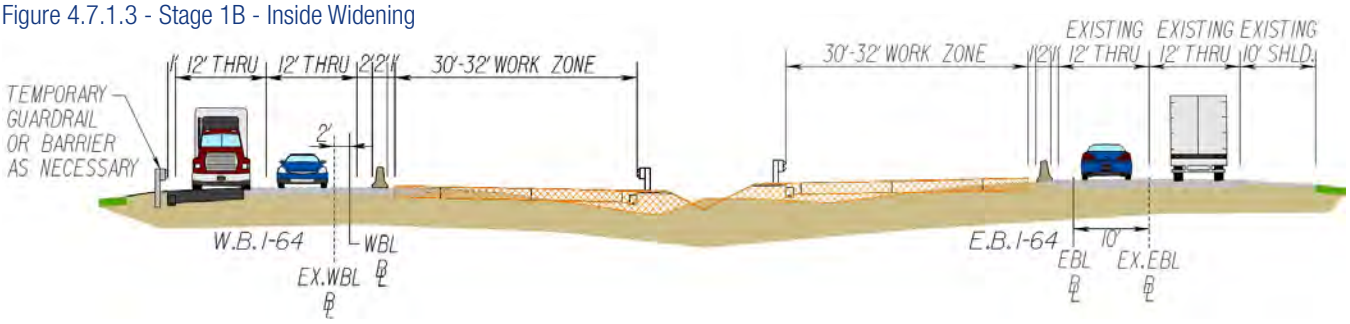
In those areas where the designed baseline alignment has not been shifted from the RFP design, the existing I-64 travel lanes must be shifted to the outside shoulders temporarily. This is accomplished by

strengthening the existing outside shoulder pavement prior to the shift (as shown in Figure 4.7.1.2). Since all of Stage 1A work for the Project is contained within existing VDOT ROW and requires no drainage adjustments, our construction team will begin the shoulder strengthening along the I-64 corridor in the Summer of 2018 upon approval of the early TMP and MOT/TTC plan set and all necessary permits. We have done this on many of our design-build projects with VDOT having great success maximizing the opportunities for early completion. This allows the lane shifts to be complete while permitting and final plan approval is obtained in late Fall 2018.

All work will be completed during night time operations utilizing temporary single lane closures adjacent to the work. At no time will this Stage be opened to traffic without the paving being completed within 2-inches of the existing pavement surface. Temporary pavement markings will be placed on the new alignment to maintain 12-foot travel lanes and traffic will be shifted just prior to the placement of the temporary traffic barrier service.

Stage 1B - Median Improvements in Areas 1 thru 4 (Fall 2018 thru Spring 2020)

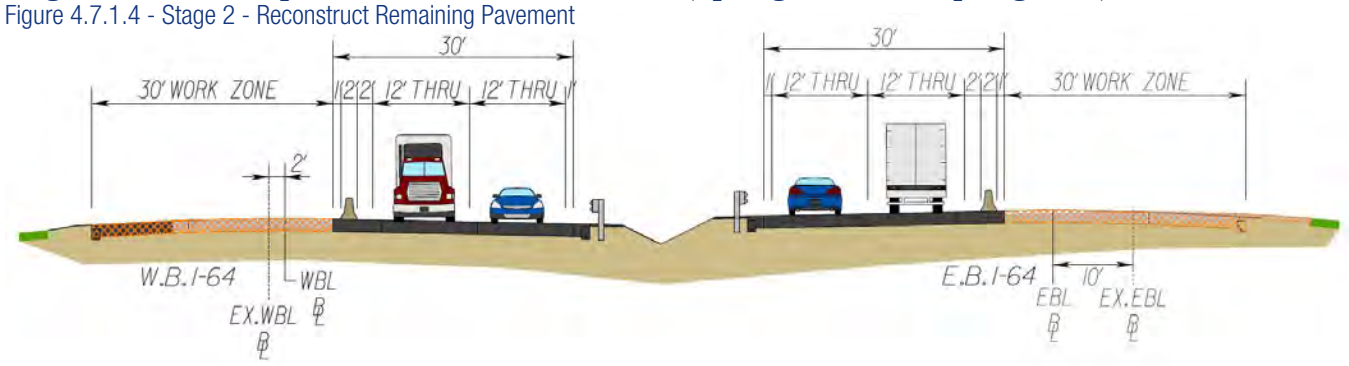
Figure 4.7.1.3 - Stage 1B - Inside Widening



Upon approval of the roadway design documents and final approval of the environmental permitting activities, construction of the majority of the Project elements will begin. Specifically, Stage 1B consists of all new I-64 median lane and shoulder pavement widening, drainage improvements, culvert connections and the first phase of bridge construction (as shown in Figure 4.7.1.3). Notably, our intent is to mobilize a minimum of three bridge crews to begin the first phase of westbound Bridge B-643 over Queens Creek, the inside widening of Bridges B-638 and B-641 over Lakeshead Drive, and Bridges B-639 and B-640 over Colonial Parkway. Because of our intent to open the eastbound lanes of I-64 earlier than the Project Completion Date, we will begin grading operations on the eastern end of the Project in Area 4. Crews will then move to the largest earthmoving and grading operations in Area 2 which is just over 4-miles in length. Area 3 will be worked as the Phase 1 westbound Queens Creek Bridge nears completion and will be the first Area complete in Stage 1B in order to move the eastbound I-64 traffic over Queens Creek to the new widened portion of B-643. This will occur in September 2019. Finally, Area 1 median grading and paving operations will occur and conclude in Spring 2020.

Stage 2 - Outside Improvements in Areas 1 thru 4 (Spring 2020 thru Spring 2021)

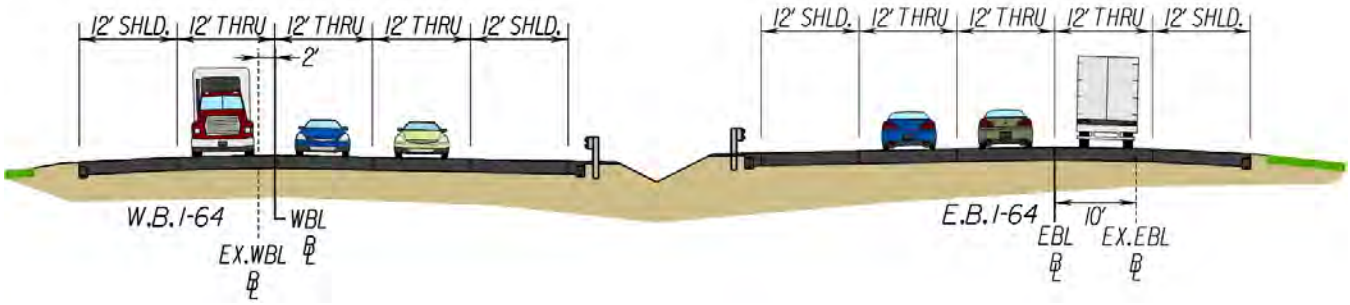
Figure 4.7.1.4 - Stage 2 - Reconstruct Remaining Pavement



Stage 2 consists of reconstruction of the existing pavement (as shown in Figure 4.7.1.4), ramp improvements at Exit 234 (Lightfoot) and Exit 238 (Route 143/Camp Peary) interchanges, noise wall construction, and constructing the storm water management basins. Drainage crossings from the median area will be completed. Bridge work will consist of the substructure and superstructure repairs and latex overlay of Bridges B-638 and B-641 over Lakeshead Drive and repairs to the Colonial Parkway concrete and brick work. For the Queens Creek Bridge construction we have created two sub-stages of work. Stage 2A will consist of the demolition and re-construction of the entire eastbound span (Bridge B-642), while eastbound traffic occupies the portion of westbound bridge B643 constructed in Stage 1B utilizing a temporary crossover. Following the completion of the new eastbound bridge, eastbound traffic will be shifted to the new structure; sequentially, westbound traffic will then be shifted slightly to occupy the same space that eastbound traffic had just occupied. Stage 2B consists of the final completion of the westbound Bridge B-643 traffic over Queens Creek. This concept differs from the RFP staging and reduces an additional median cross-over with temporary pavement and signage. Stage 2 also includes construction of ITS work and installation of overhead sign structures.

Stage 3 - Final Asphalt Surface and Pavement Markings - All Areas (Fall 2020 and Spring 2021)

Figure 4.7.1.5 - Final Configuration



Stage 3 will encompass the installation of the final asphalt surface, pavement markings, rumble strips, and placing traffic in its final configuration with the opening of new third inside travel lane and shoulder as shown in Figure 4.7.1.5. Work will begin following removal of all temporary traffic barrier in Area 4 in the Fall of 2020 following completion of the final bridge improvements of the Lakeshead Drive and Colonial Parkway overpasses. Final surface paving will resume in the Spring of 2021 in Areas 1 and 2. In Area 3 and 4, crews will focus on the eastbound lanes in order to open the third lane from Station 1352+00 to the eastern terminus of the Project. Following completion of the final Stage of the westbound Queens Creek Bridge all westbound lanes will be completed. Substantial completion will be achieved once these items are completed. Final completion will be achieved once the punch list is issued and completed.

Critical Path

Listed below is a description of the Project's Critical Path as depicted in the Proposal Schedule. As shown, the Critical Path runs directly through the design, environmental permitting and construction activities associated with the Queens Creek Bridges B-642 and B-643.

Design Phase

Preliminary Engineering

- DISTRIBUTE ACCESS LETTERS
- PROPERTY ACCESS HOLD
- SET CONTROL AND PANEL POINTS
- BASE MAPPING / FIELD SURVEY

Roadway Design

- SET HORIZONTAL AND VERTICAL GEOMETRY
- ROADWAY DRAINAGE DESIGN
- STORMWATER MANAGEMENT & ADEQUATE OUTFALL
- COMPLETE PLAN DETAILS
- COMPILE ROADWAY PLANS (1ST SUBMISSION)
- DESIGN QA/QC (1ST SUBMISSION)
- SUBMIT ROADWAY PLANS (1ST SUBMISSION)

Environmental Permitting Phase

- AGENCY REVIEW OF JPA
- SUBMIT JOINT PERMIT APPLICATION
- JPA APPROVED

Construction Phase

STAGE 1B - I-64 NEW INSIDE LANES & 1ST PHASE OF BRIDGES

Phase 1 - First Half of Westbound Bridge B-643 over QUEENS CREEK

- INSTALL PERIMETER EROSION CONTROL
- CLEAR AND GRUB
- INSTALL CAUSEWAY / ACCESS RD - ABUT A TO PIER 8
- TEST PILES WESTBOUND B643 PIER 8
- TEST PILES WESTBOUND B643 PIER 7
- TEST PILES WESTBOUND B643 PIER 6
- TEST PILES WESTBOUND B643 PIER 5
- TEST PILES WESTBOUND B643 PIER 4
- TEST PILES WESTBOUND B643 PIER 3
- TEST PILES WESTBOUND B643 PIER 2
- TEST PILES WESTBOUND B643 PIER 1
- PRODUCTION PILES WESTBOUND B643 PIER 8
- PRODUCTION PILES WESTBOUND B643 PIER 7
- PRODUCTION PILES WESTBOUND B643 PIER 6
- PRODUCTION PILES WESTBOUND B643 PIER 5
- PRODUCTION PILES WESTBOUND B643 PIER 4
- PRODUCTION PILES WESTBOUND B643 PIER 3
- PRODUCTION PILES WESTBOUND B643 PIER 2
- PRODUCTION PILES WESTBOUND B643 PIER 1
- GIRDER INSTALLATION WESTBOUND B643 SPAN 8
- DECK INSTALLATION WESTBOUND B643 SPAN 8
- DECK INSTALLATION WESTBOUND B643 SPAN 7
- DECK INSTALLATION WESTBOUND B643 SPAN 6
- DECK INSTALLATION WESTBOUND B643 SPAN 5
- DECK INSTALLATION WESTBOUND B643 SPAN 4
- DECK INSTALLATION WESTBOUND B643 SPAN 3
- DECK INSTALLATION WESTBOUND B643 SPAN 2
- DECK INSTALLATION WESTBOUND B643 SPAN 1
- APPROACH SLABS WESTBOUND B643
- SHIFT EXISTING EASTBOUND TRAFFIC TO NEW WESTBOUND B643

STAGE 2 - I-64 NEW OUTSIDE LANES & 2ND PHASE OF BRIDGES
STAGE 2A - EASTBOUND BRIDGE B-642 over QUEENS CREEK

- Begin Area 3 - Stage 2
- INSTALL PERIMETER EROSION CONTROL
- ADDITIONAL CAUSEWAY / ACCESS RD - ABUT A TO PIER 8
- TEST PILES EASTBOUND B642 PIER 8
- TEST PILES EASTBOUND B642 PIER 7
- TEST PILES EASTBOUND B642 PIER 6
- TEST PILES EASTBOUND B642 PIER 5
- TEST PILES EASTBOUND B642 PIER 4
- TEST PILES EASTBOUND B642 PIER 3
- TEST PILES EASTBOUND B642 PIER 2
- TEST PILES EASTBOUND B642 PIER 1
- PRODUCTION PILES EASTBOUND B642 PIER 8
- PRODUCTION PILES EASTBOUND B642 PIER 7
- PRODUCTION PILES EASTBOUND B642 PIER 6
- PRODUCTION PILES EASTBOUND B642 PIER 5
- PRODUCTION PILES EASTBOUND B642 PIER 4
- PRODUCTION PILES EASTBOUND B642 PIER 3
- PRODUCTION PILES EASTBOUND B642 PIER 2
- PRODUCTION PILES EASTBOUND B642 PIER 1
- GIRDER INSTALLATION EASTBOUND B642 SPAN 8
- DECK INSTALLATION EASTBOUND B642 SPAN 8
- DECK INSTALLATION EASTBOUND B642 SPAN 7
- DECK INSTALLATION EASTBOUND B642 SPAN 6
- DECK INSTALLATION EASTBOUND B642 SPAN 5
- DECK INSTALLATION EASTBOUND B642 SPAN 4
- DECK INSTALLATION EASTBOUND B642 SPAN 3
- DECK INSTALLATION EASTBOUND B642 SPAN 2
- DECK INSTALLATION EASTBOUND B642 SPAN 1
- INSTALL STRUCTURE MOUNTED NOISE WALL
- CLOSURE POURS / DIAPHRAMS EASTBOUND B642
- PARAPETS EASTBOUND B642
- APPROACH SLABS EASTBOUND B642
- SHIFT EASTBOUND TRAFFIC back to NEW EASTBOUND B642

STAGE 2B - PHASE 2 SECOND HALF -BRIDGE WESTBOUND B-643 over QUEENS CREEK

- INSTALL PERIMETER EROSION CONTROL
- INSTALL CAUSEWAY / ACCESS ROAD - ABUTMENT A TO PIER 8
- INSTALL TRESTLE IN QUEENS CREEK CHANNEL - ABUT B TO PIER 9
- TEST PILES WESTBOUND B643 PIER 9
- TEST PILES WESTBOUND B643 PIER 10
- TEST PILES WESTBOUND B643 PIER 11
- PRODUCTION PILES WESTBOUND B643 PIER 9
- PRODUCTION PILES WESTBOUND B643 PIER 10
- PRODUCTION PILES WESTBOUND B643 PIER 11
- BENT CAP CONSTRUCTION WESTBOUND B643 PIER 9
- BENT CAP CONSTRUCTION WESTBOUND B643 PIER 10
- BENT CAP CONSTRUCTION WESTBOUND B643 PIER 11

- SHORING FOR ABUTMENT 'B' EXCAVATION
- GIRDER INSTALLATION WESTBOUND B643 SPAN 9
- DECK INSTALLATION WESTBOUND B643 SPAN 9
- DECK INSTALLATION WESTBOUND B643 SPAN 10
- DECK INSTALLATION WESTBOUND B643 SPAN 11
- DECK INSTALLATION WESTBOUND B643 SPAN 12
- PARAPETS WESTBOUND B643
- APPROACH SLABS WESTBOUND B643
- Area 3 - WESTBOUND Approach Roadway Following Queens Creek Bridge

STAGE 3 - FINAL OVERLAY and OPEN LANES
STAGE 3 PAVING and PAVEMENT MARKINGS

- Area 3 - Place Surface Asphalt on I-64 Westbound
- Area 3 - Install Perm. Pavement Markings on I-64 Westbound
- Area 3 - Install Snowplowable Pavement Markers on I-64 Eastbound
- Area 3 - Install Snowplowable Pavement Markers on I-64 Westbound

FINAL MILESTONE ACTIVITIES

- VDOT PUNCHLIST/POST INSTALLATION VIDEO STORM
- EARLY COMPLETION - NO EXCUSE INCENTIVE (by JUNE 30, 2021)
- NO EXCUSE INCENTIVE DAILY RATE
- FINAL COMPLETION DATE

Key Scheduling Assumptions

- Environmental permitting agencies will accept VDOT's RFP avoidance and minimization efforts taken in the RFP phase as sufficient to process permit without delay.
- Utility companies will coordinate their relocations in accordance with our Project Schedule.
- There are no hazardous material, threatened & endangered species, or unforeseen environmental constraints, other than those identified in the RFP, that could delay the Project Schedule.
- Crew leveling has been developed through crew-flow relationships between like activities.
- Crews are based on an 8-hour workday and 5-day per workweek calendar. A detailed description of the calendars is included in this narrative.
- Generally, the schedule has been built with work in certain areas of the Project starting when access is available (either via work availability, property rights, or utility access) and/or at the completion of a prior stage of work. We have provided some crew flow predecessor relationships in several locations throughout the schedule mainly where adjacent work is available and crew flow is logical as to not 'stack' too many work areas on top of each other.
- Generally Finish-Start relationships are primarily used as much as possible to create logical flow of the work in one particular area. There is some overlap however of different types of activity in any one area. For example, the earthwork moving activities in any one area may be running concurrent with storm pipe installation. In this type scenario, both will conclude with a 'Rough Grade' activity and then the pavement section activities will begin.

Project Controls

Through our Team's experience delivering major design-build projects ahead of schedule, we have developed scheduling protocols to govern the development, implementation, progress tracking, and recovery of the CPM schedule through all of the Project stages.

Schedule Development

For any design-build project, it is imperative that the Project Team develop a detailed CPM schedule that considers the interrelationships between all of the design-build disciplines. Our Team has developed the Proposal Schedule with a WBS that clearly delineates the tasks of each discipline manager, including project management, design, permitting, ROW, utilities, and construction.

In order to develop the overall detailed CPM Schedule, each discipline manager is responsible for producing a schedule to govern his own work and providing insight into how his schedule activities affect and are affected by activities in other disciplines. Once each manager has prepared their individual schedule, we hold schedule development meetings run by the Design-Build Project Manager and attended by all discipline managers to review the individual schedules and integrate them into the overall CPM Schedule. These meetings ensure that:

- work packages within each discipline are comprehensive and define the work with no activities omitted;
- work packages are integrated within each discipline and between disciplines to generate a clearly defined project Critical Path, confirm the Critical Path makes sense, and the schedule shows that the Project will complete on-time or ahead of schedule;
- each discipline manager understands the schedules of the other disciplines and how their work inter-relates with the other disciplines;
- each discipline manager understands how his work affects the Critical Path and the priorities of the Design-Build Project Manager and other discipline managers; and
- the schedule meets or exceeds the requirements of the Contract.

These meetings enable our Team to create a detailed CPM Schedule that is jointly prepared by and agreed to by all of the discipline managers, providing realistic expectations of the schedule of work to be completed by all team members and third parties.

Throughout the design phase of the Project as more detailed plans are developed and utility conflicts are verified through test pitting, these meetings continue to further develop the CPM Schedule into the more detailed Baseline CPM Schedule. This schedule can then be utilized by all Team members to plan and track the progress of their work. It is submitted to VDOT for review and approval and utilized during the planning phases for utilities, permitting, ROW, design, and subcontractor/supplier scope and purchasing. Specific milestone dates from the CPM schedule will be written into subcontracts and purchase orders, making them contractually responsible for meeting schedule deadlines.

Mitigation of Major Delay Risks

Timely Review and Approval of Submittals

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

- design Submissions
- permits
- QA/QC Plan
- CPM Schedule and Updates
- MOT and TMP Plans
- materials documentation, including Source of Supply and Shop Drawings

4.7 **Proposal Schedule**

Submittals deemed critical to the success of the Project, including design and permitting submissions and major materials submissions (such as structural steel shop drawings), will be included in the Project CPM Schedule where the progress can be monitored concurrently with the affected construction activity. Each submittal includes a transmittal cover sheet identifying the submittal's priority level. For submittals between the contractor and design firm, normal priority submittals will be returned within four weeks; high priority submittals within two weeks and urgent submittals within three days. This also allows the Team to prioritize multiple submittals that are turned in concurrently. For submittals to government agencies and utilities, we include adequate review timeframes in the CPM Schedule for approval of environmental permits and utility submissions as applicable.

We also maintain a submittal log showing the status of all submittals. We will update the log with the submission and return of each submittal and will show the submission date, anticipated response date, priority, and status. The submittal log is reviewed at the weekly Design Coordination, Owner Progress, and Construction Progress meetings. It can easily be sorted to distribute lists of active and overdue submittals. We discuss issues affecting the timely completion of submittal reviews with the responsible party and a plan for resolving them are agreed to.

This process, along with diligent assessment of the CPM schedule, ensures that timely review of submittals will be constantly monitored and managed ensuring that no construction activities are delayed by the submittal process.

Utility Relocations

Some of the biggest risks to a design-build schedule involve public/private utility companies who do not have a vested interest in the Project and are not necessarily compelled to complete their work within the scheduled time constraints. To combat this risk, we have started our planning and coordination process for these utilities by meeting with each affected utility and discussing the Project, the utility impacts, potential relocation options, and discussing ways to accelerate the utility relocations after award.

This early coordination enables us to identify opportunities to advance the utility relocations and minimize the risk for utility delays after NTP. The early personal contact with each utility enables us to manage their issues and concerns and allows us to build float into the utility relocation activities on the Project.

Appendix

Attachment 9.3.1 - Proposal Payment Agreement

ATTACHMENT 9.3.1
PROPOSAL PAYMENT AGREEMENT

THIS PROPOSAL PAYMENT AGREEMENT (this "Agreement") is made and entered into as of this ____ day of _____, 2017, by and between the Virginia Department of Transportation ("VDOT"), and Shirley Contracting Co, LLC ("Offeror").

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's **March 29, 2017** Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the **I-64 Capacity Improvements – Segment III, Project No. 0064-965-229** ("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 **One Hundred Thousand and 00/100 Dollars ($100,000.00)** ("Proposal Payment"), which payment constitutes payment in full to Offeror for the conveyance of Offeror's Intellectual Property to VDOT in accordance with this Agreement. Payment of the Proposal Payment is conditioned upon: (a) Offeror's Proposal being, in the sole discretion of VDOT, responsive to the RFP; (b) Offeror complying with all other terms and conditions of this Agreement; and (c) either (i) Offeror is not awarded the Design-Build Contract, or (ii) VDOT cancels the procurement or decides not to award the Design-Build Contract to any Offeror.

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

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

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

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

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

9. Miscellaneous.

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

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

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

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

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

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

VIRGINIA DEPARTMENT OF TRANSPORTATION

By: _____

Name: _____

Title: _____

[Insert Offeror's Name] Shirley Contracting Company, LLC

By: _____

Name: Daniel E. Clymore

Title: Vice President

Attachment 11.8.6(a)(b) - Debarment Forms

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project No.: 0064-965-229
Contract ID: C00106689DB97

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

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

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

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

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

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

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

Signature	9/14/17 Date	Vice President Title

Shirley Contracting Company, LLC
Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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

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

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

Dave Mahoney 8/25/17 Executive Vice President
Signature Date Title

Dewberry Consultants LLC
Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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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	8/29/17 Date	President Title

GeoConcepts Engineering, Inc.
Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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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	August 22, 2017	President
	Date	Title

Quinn Consulting Services, Inc.
Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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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 | 8/22/17 Date | President Title

GET Solutions, Inc.
Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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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	9/12/17 Date	VP/Branch Manager Title

ECS Mid-Atlantic, LLC
Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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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 | Date 8/22/2017 | Title Pres.

Bruce Howard Contracting, Inc.
Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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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.

8/22/17 PRESIDENT

Signature Date Title

BRYANT CONTRACTING, INC.

Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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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.

W. J McKeague 8/25/2017 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.: 0064-965-229
Contract ID: C00106689DB97

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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] 8/28/17 Executive Vice President

Signature Date Title

Accumark, Inc.

Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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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	Date	Title
	08.29.17	President

Shelly and Lay, Inc.
Name of Firm

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

Project No.: 0064-965-229
Contract ID: C00106689DB97

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Patricia E. Dabbek 8/22/2017 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.: 0064-965-229
Contract ID: C00106689DB97

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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.

R Robert Burke 8.28.17 Vice President

Signature Date Title

Old Dominion Settlements, Inc., T/A Key Title.

Name of Firm

Response to Request for Proposals

I-64 CAPACITY IMPROVEMENTS - SEGMENT III

York County, Virginia

State Project Nos.: 0064-965-229, P-101, R-201, C-501, B-638, B-639, B-640, B-641, B-642, B-643, D-609, D-610, D-611
Federal Project No: NHPP-064-3 (498)
Contract ID No.: C00106689DB97

VOLUME II: DESIGN CONCEPT

Submitted By:

SHIRLEY
CONTRACTING COMPANY, LLC

In Association With:

Dewberry®

4.3.1 - Conceptual Roadway Plans

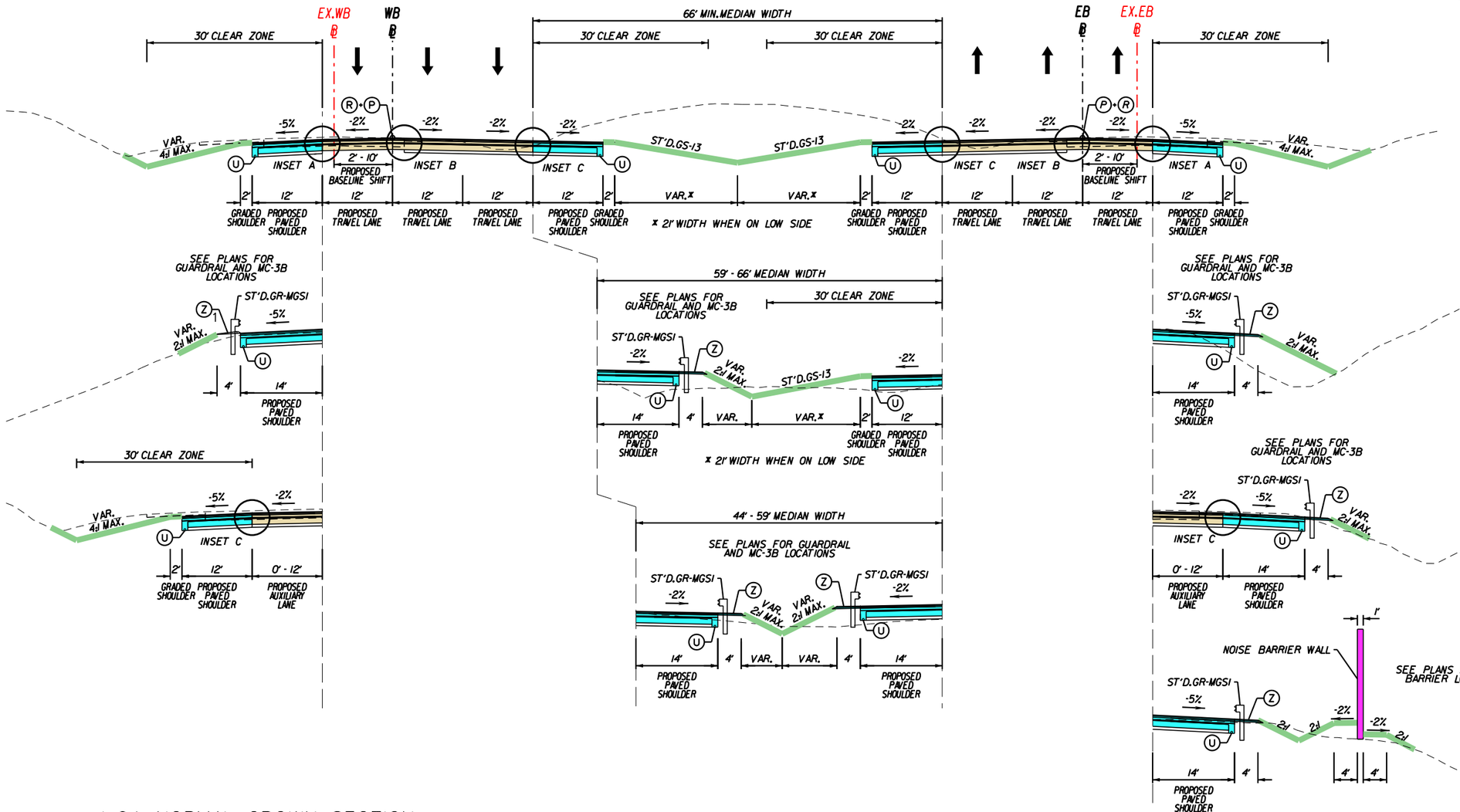
PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

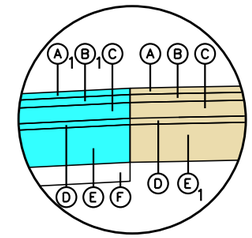
Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229 P-101, R-201, C-501	2A(1)

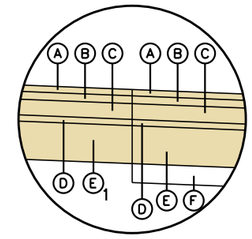
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

TYPICAL SECTIONS

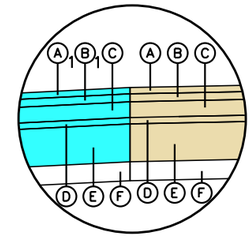




INSET A



INSET B



INSET C

I-64 NORMAL CROWN SECTION

WB STA. 2030+35.00 TO STA. 2232+04.88	EB STA. STA. 1030+88.00 TO STA. 1232+59.30
WB STA. 2248+06.46 TO STA. 2278+10.00	EB STA. STA. 1248+47.70 TO STA. 1278+42.94
WB STA. 2286+70.00 TO STA. 2324+67.37	EB STA. STA. 1287+02.94 TO STA. 1325+00.00
WB STA. 2345+67.01 TO STA. 2397+02.32	EB STA. STA. 1346+00.00 TO STA. 1397+40.45
WB STA. 2423+17.42 TO STA. 2466+14.09	EB STA. STA. 1420+80.66 TO STA. 1466+47.80

LEGEND

- (A) 2" Asphalt Concrete, SMA-12.5 PG76-22
- (A)$_1$ 2" Asphalt Concrete, SM-12.5A
- (A)$_2$ 8" Exposed Aggregate Jointed Reinforced Concrete Pavement
- (B) 2.5" Asphalt Concrete, SMA-19.0 PG76-22
- (B)$_1$ 2.5" Asphalt Concrete, IM-19.0A
- (C) 5" Cold Central Plant Recycling Material (CCPRM)
- (D) 2" Stabilized Open Graded Drainage Layer (OGDL) - Asphalt or Cement Stabilized
- (E) 12" Cement Treated Crushed Concrete or Cement Treated Recycled Asphalt Pavement (RAP)
- (E)$_1$ 12" Full Depth Reclamation (FDR)
- (E)$_2$ 6" Aggregate Base Material, Type I, Size No. 21B
- (F) 6" Cement Stabilized Subgrade (7% Cement by Volume)
- (P) Profile Grade Line
- (R) Point Of Rotation
- (U) Underdrain, St'd. UD-4
- (U)$_1$ Underdrain, St'd. UD-2
- (Z) St'd. MC-4
- (Z)$_1$ St'd. MC-3B

Denotes Full Depth Pavement
Denotes Proposed Grass Median
Denotes Proposed Paved Shoulder

SCALE 0 10' 20'

	PROJECT	SHEET NO.
	0064-965-229	2A(1)

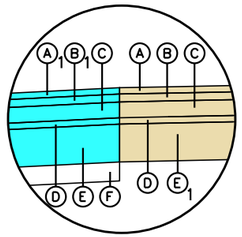
PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

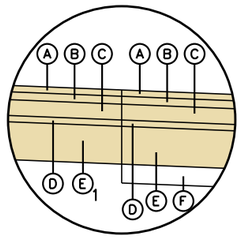
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229 P-101, R-201, C-501	2A(2)

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

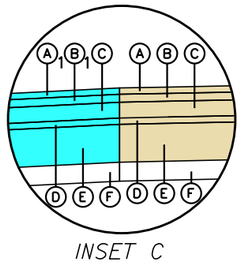
TYPICAL SECTIONS



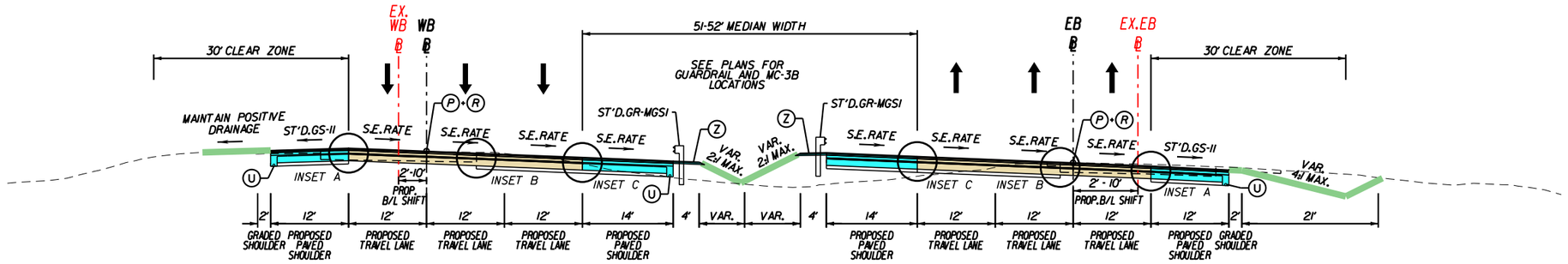
INSET A



INSET B

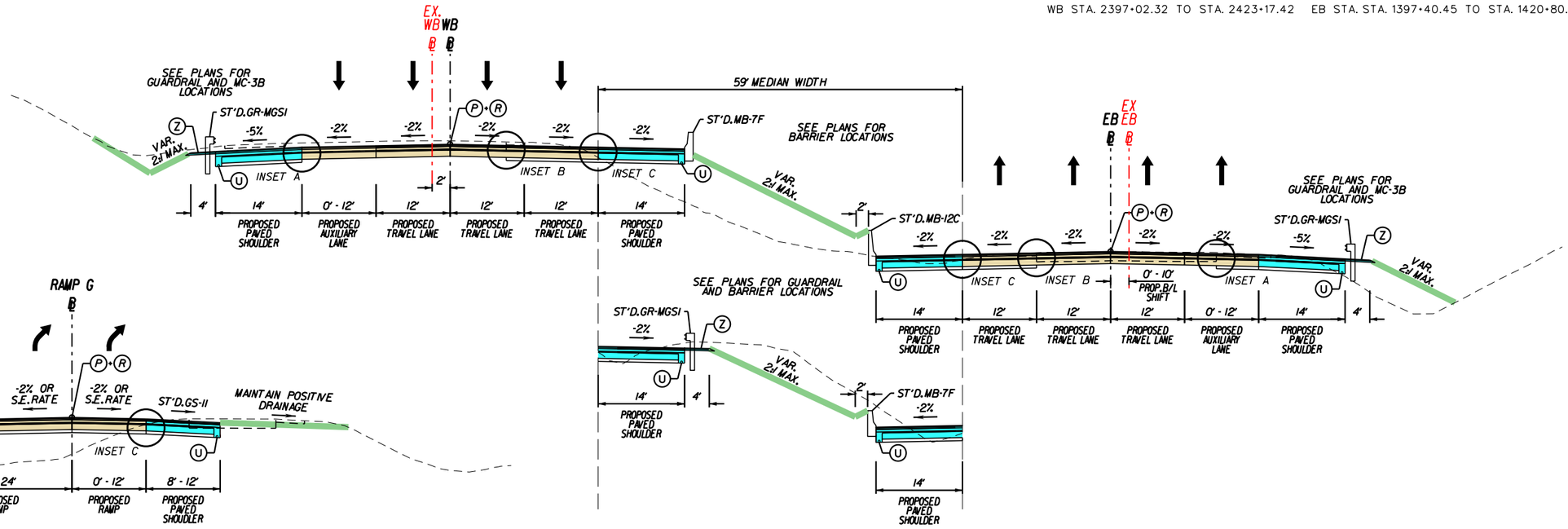


INSET C



I-64 SUPERELEVATED SECTION

WB STA. 2232+04.88 TO STA. 2248+06.46 EB STA. STA. 1232+59.30 TO STA. 1248+47.70
WB STA. 2397+02.32 TO STA. 2423+17.42 EB STA. STA. 1397+40.45 TO STA. 1420+80.66



RAMP G SECTION

STA. 100+00.00 TO STA. 108+91.97

I-64 BARRIER SECTION

WB STA. 2278+10.00 TO STA. 2286+70.00 EB STA. STA. 1278+42.94 TO STA. 1287+02.94
WB STA. 2324+67.37 TO STA. 2345+67.01 EB STA. STA. 1325+00.00 TO STA. 1346+00.00

LEGEND

- (A) 2" Asphalt Concrete, SMA-12.5 PG76-22
- (A)1 2" Asphalt Concrete, SM-12.5A
- (A)2 8" Exposed Aggregate Jointed Reinforced Concrete Pavement
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- (U)1 Underdrain, St'd. UD-2
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Denotes Full Depth Pavement
Denotes Proposed Grass Median
Denotes Proposed Paved Shoulder

SCALE 0 10' 20'

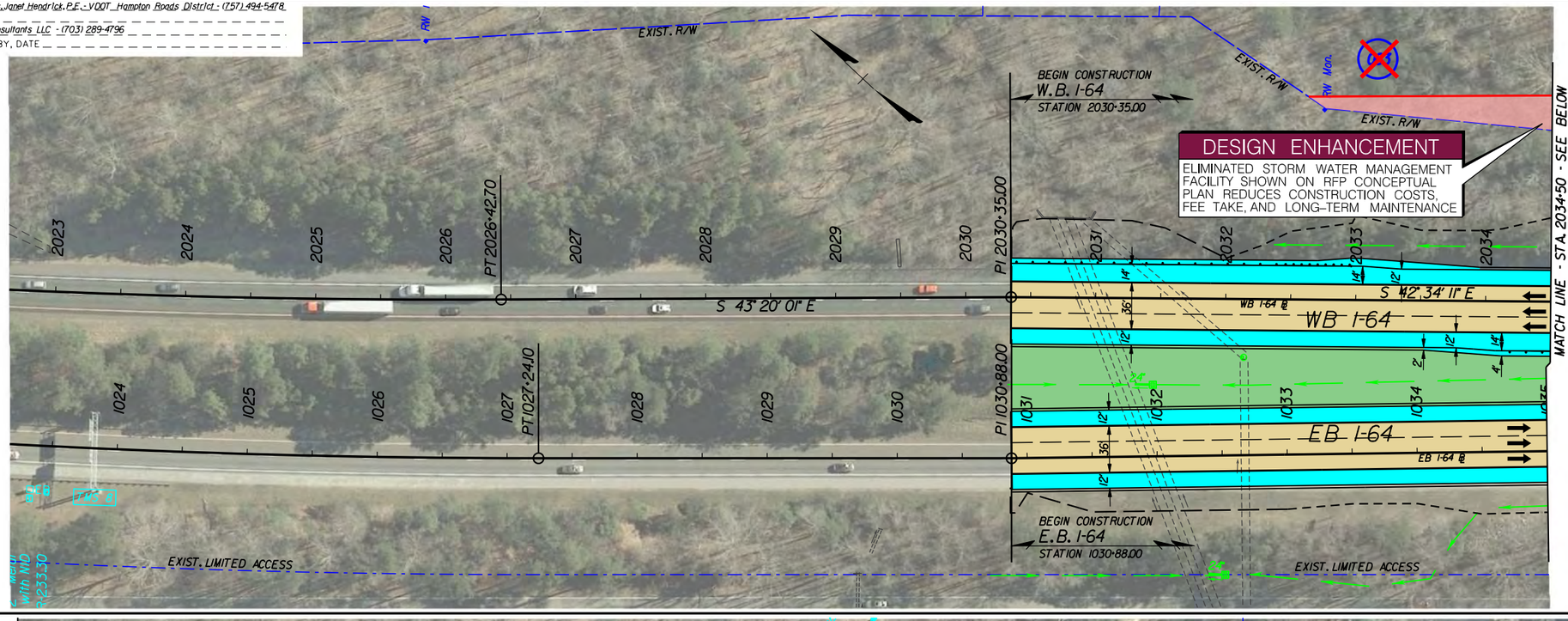
	PROJECT	SHEET NO.
	0064-965-229	2A(2)

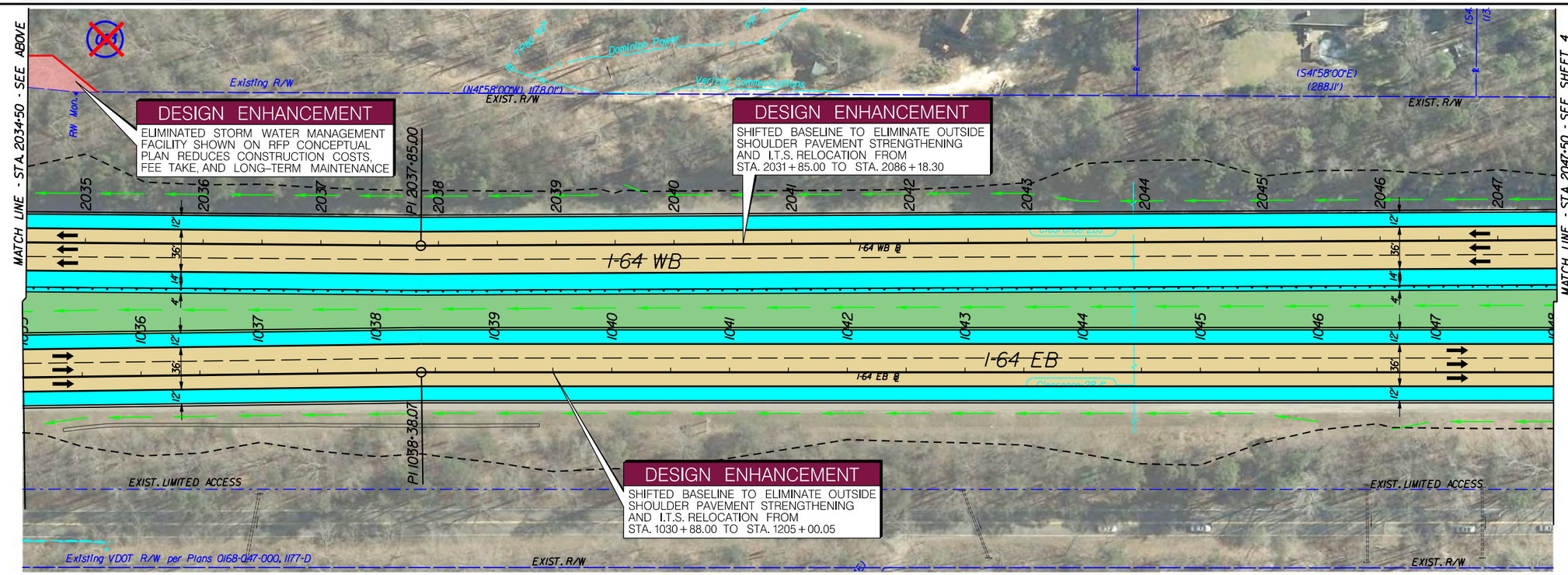
PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229 P-101, R-201, C-501	3

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

SHIRLEY CONTRACTING COMPANY, LLC
Dewberry





Note: Dot - dot - dashed lines denote Temporary Easements.
Dot - dashed lines denote Permanent Easements or Utility Easements.
C _ _ Denotes Construction Limits in Cuts
F _ _ Denotes Construction Limits in Fills

Denotes Full Depth Pavement
Denotes Proposed Grass Median
Denotes Proposed Paved Shoulder
Denotes Proposed Bridge
Denotes Area ROW Reduction
Denotes Milling and Overlay
Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

PROJECT	SHEET NO.
0064-965-229	3

d10668903.dgn 9/12/2017 9:12:49 AM

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry

SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229 P-101, R-201, C-501	4

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

MATCH LINE - STA. 2047+50 - SEE SHEET 3

MATCH LINE - STA. 2061+50 - SEE SHEET 5

DESIGN ENHANCEMENT
SHIFTED BASELINE TO ELIMINATE OUTSIDE SHOULDER PAVEMENT STRENTHENING AND I.T.S. RELOCATION FROM STA. 2031+85.00 TO STA. 2086+18.30

DESIGN ENHANCEMENT
ELIMINATED STORM WATER MANAGEMENT FACILITY SHOWN ON RFP CONCEPTUAL PLAN REDUCES CONSTRUCTION COSTS, FEE TAKE, AND LONG-TERM MAINTENANCE

DESIGN ENHANCEMENT
SHIFTED BASELINE TO ELIMINATE OUTSIDE SHOULDER PAVEMENT STRENGTHENING AND I.T.S. RELOCATION FROM STA. 1030+88.00 TO STA. 1205+00.05

Property Line Per York County GIS

EXIST. R/W

Existing VDOT R/W & Limited Access Line per Plans 0064-047-101, C-502

(S41°58'00"E) (285.00')

(N41°41'10"W) 240.00'

600' TAPER

1,580' ACCELERATION LANE

I-64 WB

I-64 EB

S 43° 20' 01" E

EXIST. LIMITED ACCESS.

ROCHAMBEAU DRIVE

Underground Telephone Line

Verizon Communications

Cox Communications

Existing R/W

EXIST. R/W

(S36°15'50"E) (100.51')

(S41°58'15"E) (69.12')

(30.88')

(S43°02'16"E)

(100.51')

(S48°44'54"E)

(S52°58'19"E) (130.38')

(S69°15'02"E) (194.44')

(S61°19'40"E) (396.15')

PROP. RW

SWM 3-4

063
GARNETT R BROOKS JR ETUX
INST #090013289
GPIN B20b-3185-4888
13.25 AC.

062
WILLIAMSBURG POTTERY FACTORY INC
DB 991 PG 235
GPIN B20b-4407-3129
97.57 AC.

CTV Ped
Marker Post
Light

RIP Rap

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Dot - dashed lines denote Permanent Easements or Utility Easements.

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Denotes Full Depth Pavement
Denotes Proposed Grass Median
Denotes Proposed Paved Shoulder
Denotes Proposed Bridge
Denotes Area ROW Reduction
Denotes Milling and Overlay
Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

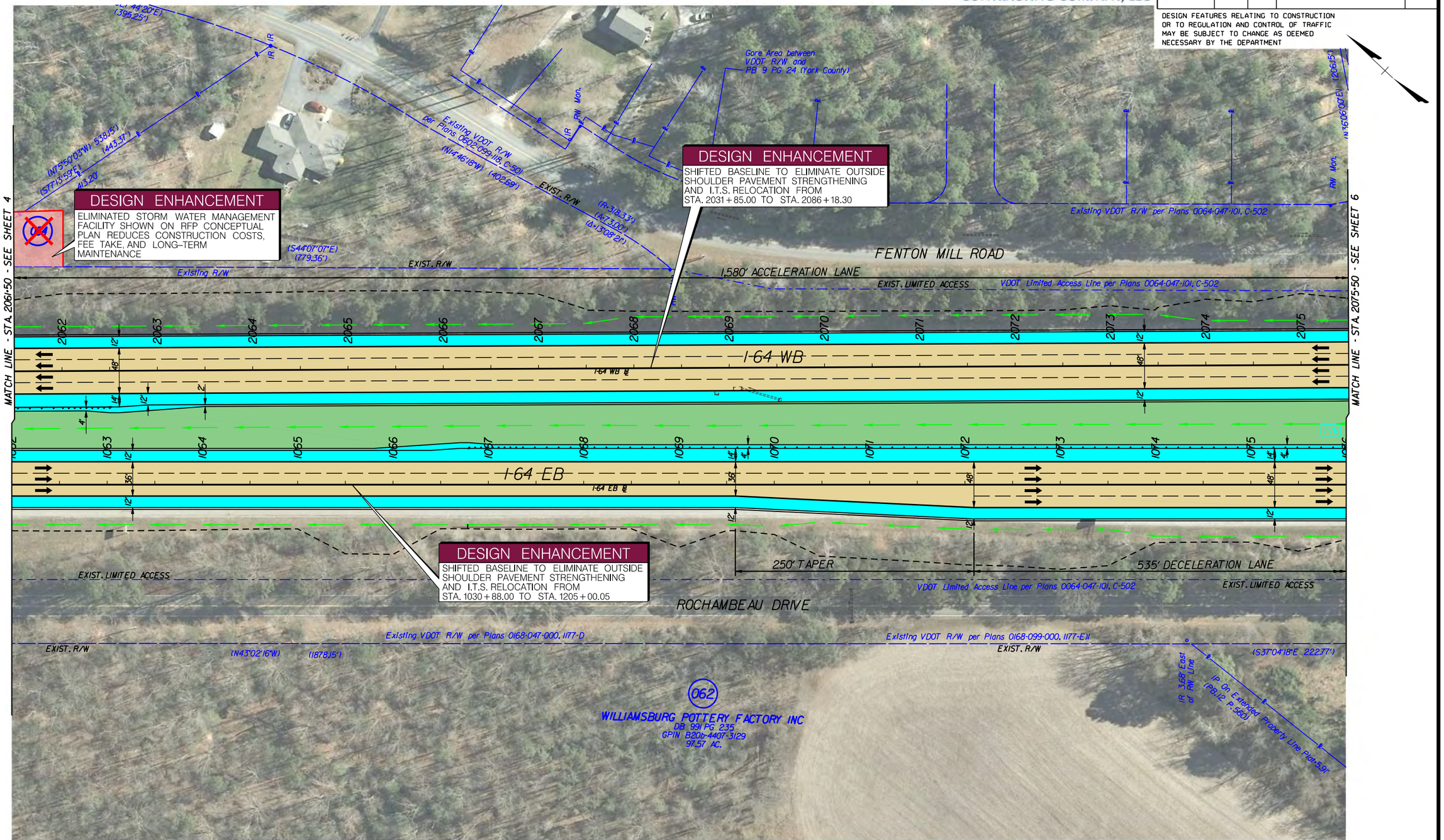
PROJECT	SHEET NO.
0064-965-229	4

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229 P-101, R-201, C-501	5

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



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F _ _ Denotes Construction Limits in Fills

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Denotes Proposed Grass Median
Denotes Proposed Paved Shoulder
Denotes Proposed Bridge
Denotes Area ROW Reduction
Denotes Milling and Overlay
Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

PROJECT	SHEET NO.
0064-965-229	5

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry

SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	6

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

DESIGN ENHANCEMENT
ELIMINATED STORM WATER MANAGEMENT FACILITY SHOWN ON RFP CONCEPTUAL PLAN REDUCES CONSTRUCTION COSTS, FEE TAKE, AND LONG-TERM MAINTENANCE

DESIGN ENHANCEMENT
SHIFTED BASELINE TO ELIMINATE OUTSIDE SHOULDER PAVEMENT STRENGTHENING AND I.T.S. RELOCATION FROM STA. 2031+85.00 TO STA. 2086+18.30

DESIGN ENHANCEMENT
SHIFTED BASELINE TO ELIMINATE OUTSIDE SHOULDER PAVEMENT STRENGTHENING AND I.T.S. RELOCATION FROM STA. 1030+88.00 TO STA. 1205+00.05

FENTON MILL ROAD
RAMP F
RAMP A
ROCHAMBEAU DRIVE
I-64 WB
I-64 EB
1,580' ACCELERATION LANE
535' DECELERATION LANE
SWM 3-6
RAMPF-01
RAMPE-02
RAMPE-01
164W-02
RAMPA-01
PC600+00.00
PT609+05.97
PC603+00.00
PT504+15.27
PC502+29.40
PC2080+39.56
PT2086+18.30
PC100+00.00
PT107+78.06
EXIST. R/W
EXIST. LIMITED ACCESS
PROP. R/W & LIMITED ACCESS
RW Mon.
10' Drainage and Utility Easement PB 9,Pg 24
5' Drainage and Utility Easement PB 9,Pg 24

Curve RAMPF-01
PI = 606+07.81
DELTA = 24° 47' 59.26" (RT)
D = 4° 05' 33"
T = 307.81'
L = 605.97'
R = 1,400.00'
PC = 603+00.00
PT = 609+05.97
E% = 0.025
DS = 25 MPH

Curve RAMPE-02
PI = 503+76.51
DELTA = 79° 08' 40.32" (RT)
D = 32° 11' 19"
T = 147.11'
L = 245.88'
R = 178.00'
PC = 502+29.40
PT = 504+75.27
E% = 0.077
DS = 25 MPH

Curve RAMPE-01
PI = 501+18.84
DELTA = 36° 55' 11.13" (RT)
D = 16° 05' 40"
T = 118.84'
L = 229.40'
R = 356.00'
PC = 500+00.00
PT = 502+29.40
E% = 0.06
DS = 25 MPH

Curve RAMPA-01
PI = 103+94.01
DELTA = 22° 17' 23.48" (RT)
D = 2° 51' 53"
T = 394.01'
L = 778.06'
R = 2,000.00'
PC = 100+00.00
PT = 107+78.06
E% = 0.03
DS = 35 MPH

Curve I64W-02
PI = 2083+28.93
DELTA = 0° 28' 56.48" (RT)
D = 0° 05' 00"
T = 289.37'
L = 578.74'
R = 68,745.00'
PC = 2080+39.56
PT = 2086+18.30
E% = 0.02NC
DS = 75 MPH

MATCH LINE - STA 2075+50 - SEE SHEET 5
MATCH LINE - STA 2089+50 - SEE SHEET 7

Note: Dot - dot - dashed lines denote Temporary Easements.
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C _ _ Denotes Construction Limits in Cuts
F _ _ Denotes Construction Limits in Fills

Denotes Full Depth Pavement
Denotes Proposed Grass Median
Denotes Proposed Paved Shoulder
Denotes Proposed Bridge
Denotes Area ROW Reduction
Denotes Milling and Overlay
Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

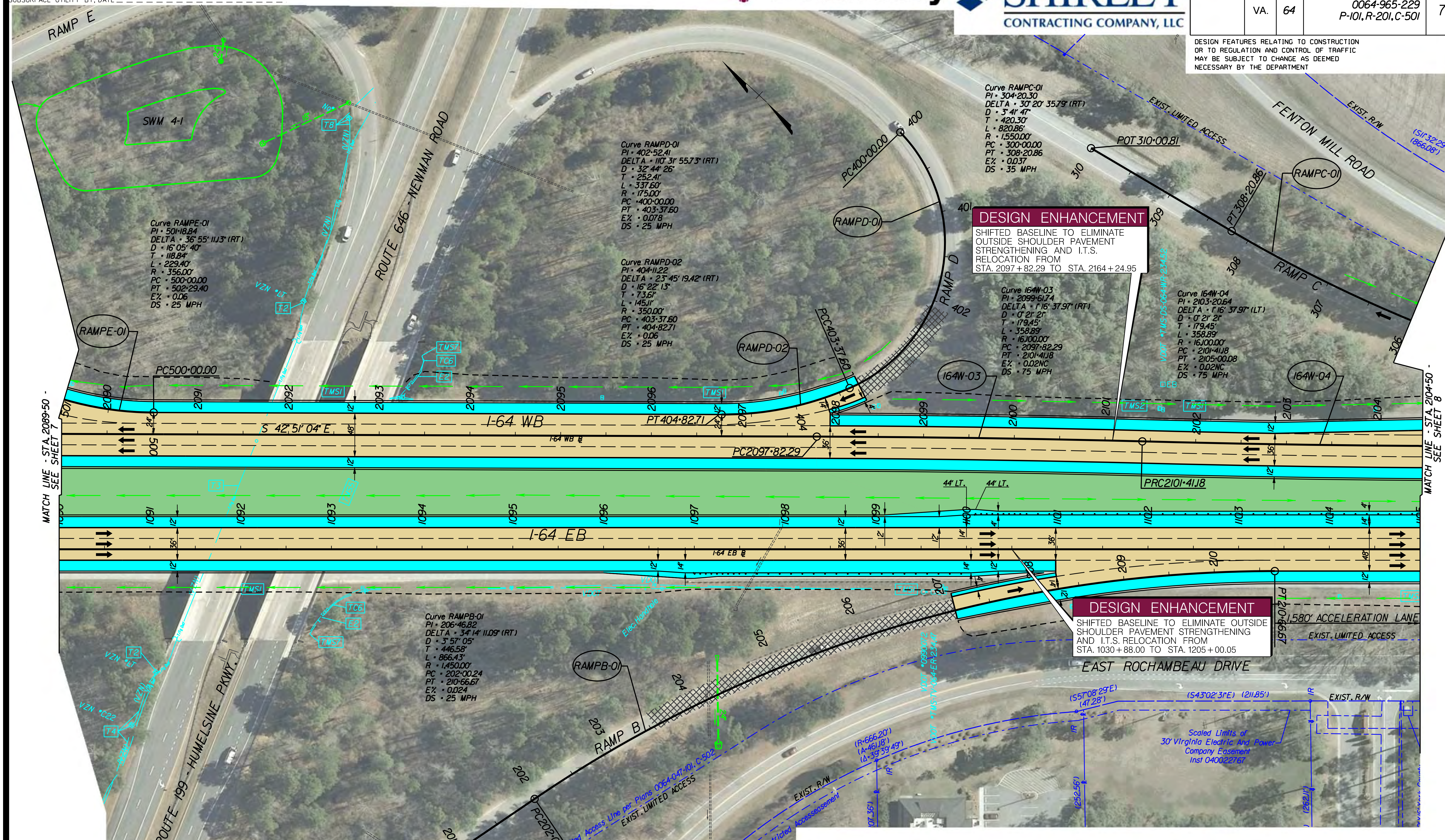
PROJECT	SHEET NO.
0064-965-229	6

PROJECT MANAGER Ms.Janet Hendrick,P.E.-VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229 P-101,R-201,C-501	7

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



Denotes Full Depth Pavement	Denotes Proposed Bridge		
Denotes Proposed Grass Median	Denotes Area ROW Reduction		
Denotes Proposed Paved Shoulder	Denotes Milling and Overlay		

C _ _ Denotes Construction Limits In Cuts
F _ _ Denotes Construction Limits In Fills

Note: Dot - dot - dashed lines denote Temporary Easements. Dot - dashed lines denote Permanent Easements or Utility Easements.

Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

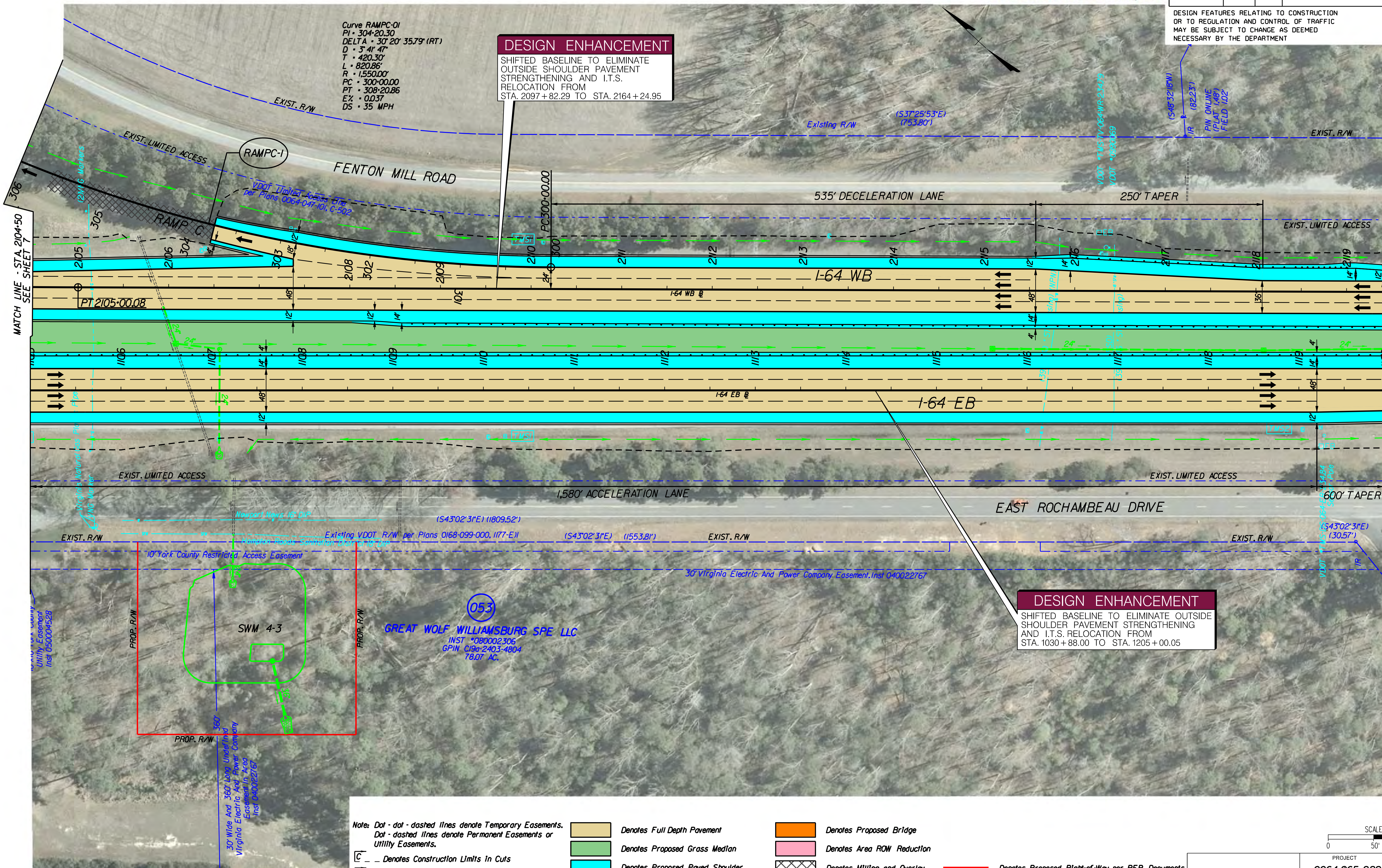
PROJECT 0064-965-229 SHEET NO. 7

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229 P-101, R-201, C-501	8

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



Curve RAMPC-01
PI = 304+20.30
DELTA = 30° 20' 35.79" (RT)
D = 3° 41' 47"
T = 420.30'
L = 820.86'
R = 1,550.00'
PC = 300+00.00
PT = 308+20.86
E% = 0.037
DS = 35 MPH
DESIGN ENHANCEMENT
SHIFTED BASELINE TO ELIMINATE OUTSIDE SHOULDER PAVEMENT STRENGTHENING AND I.T.S. RELOCATION FROM STA. 2097+82.29 TO STA. 2164+24.95
FENTON MILL ROAD
RAMPC-1
RAMP C
EXIST. R/W
EXIST. LIMITED ACCESS
Existing R/W
535' DECELERATION LANE
250' TAPER
I-64 WB
I-64 EB
PT 2105+00.08
PC 300+00.00
MATCH LINE - STA. 2104+50 - SEE SHEET 7
MATCH LINE - STA. 2119+50 - SEE SHEET 9
1,580' ACCELERATION LANE
600' TAPER
EAST ROCHAMBEAU DRIVE
Existing VDOT R/W per Plans 0168-099-000, 1177-E1
10' York County Restricted Access Easement
30' Virginia Electric And Power Company Easement, Inst 040022767
SWM 4-3
PROP. R/W
053
GREAT WOLF WILLIAMSBURG SPE LLC
INST #080002306
GPIN C19a-2403-4804
78.07 AC.
DESIGN ENHANCEMENT
SHIFTED BASELINE TO ELIMINATE OUTSIDE SHOULDER PAVEMENT STRENGTHENING AND I.T.S. RELOCATION FROM STA. 1030+88.00 TO STA. 1205+00.05
30' Wide And 360' Long Underground Virginia Electric And Power Company Easement Inst 040022767

Note: Dot - dot - dashed lines denote Temporary Easements. Dot - dashed lines denote Permanent Easements or Utility Easements.

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Denotes Proposed Bridge
Denotes Area ROW Reduction
Denotes Milling and Overlay
Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

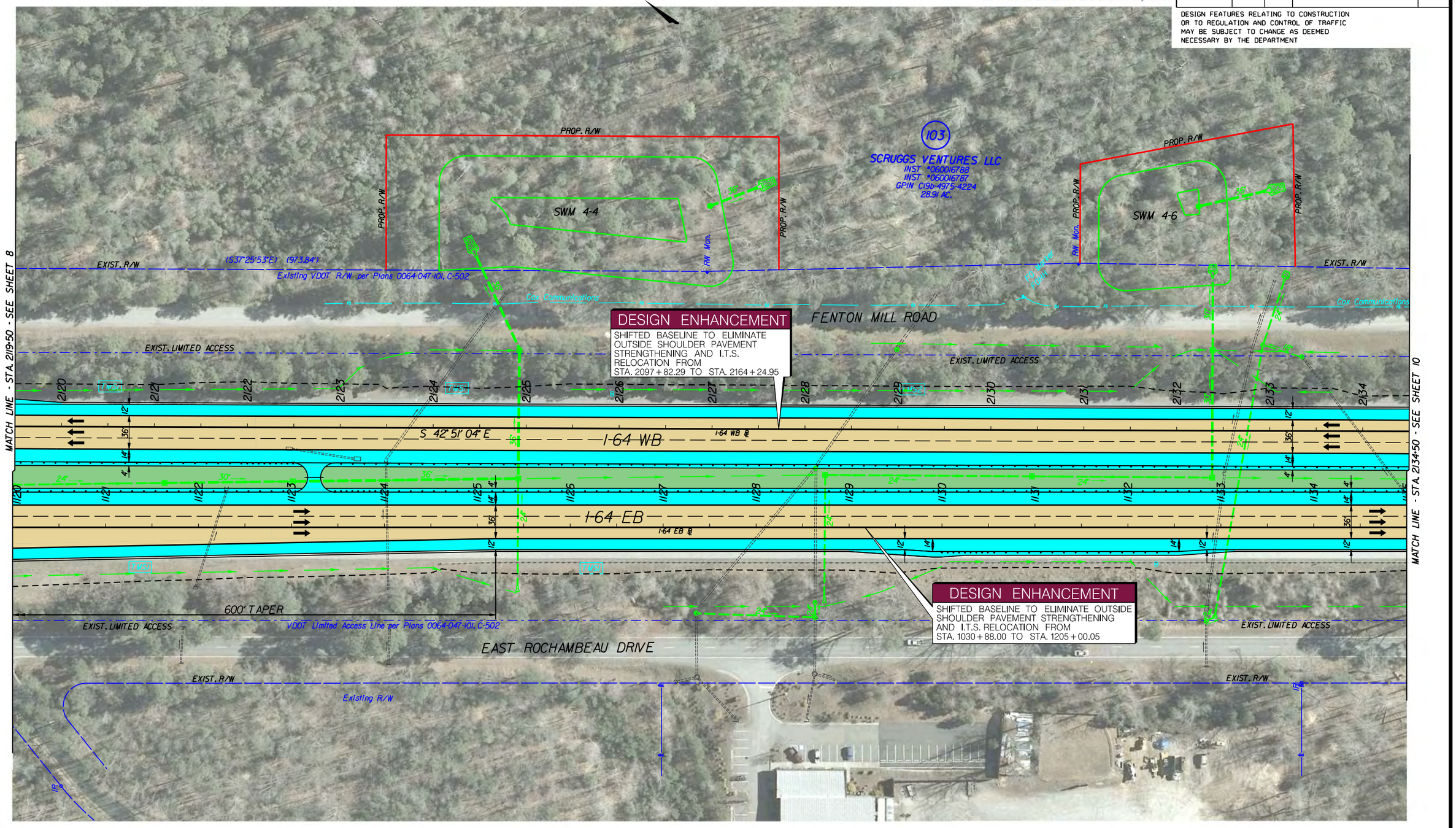
PROJECT	SHEET NO.
0064-965-229	8

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229 P-101, R-201, C-501	9

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



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Denotes Milling and Overlay
Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

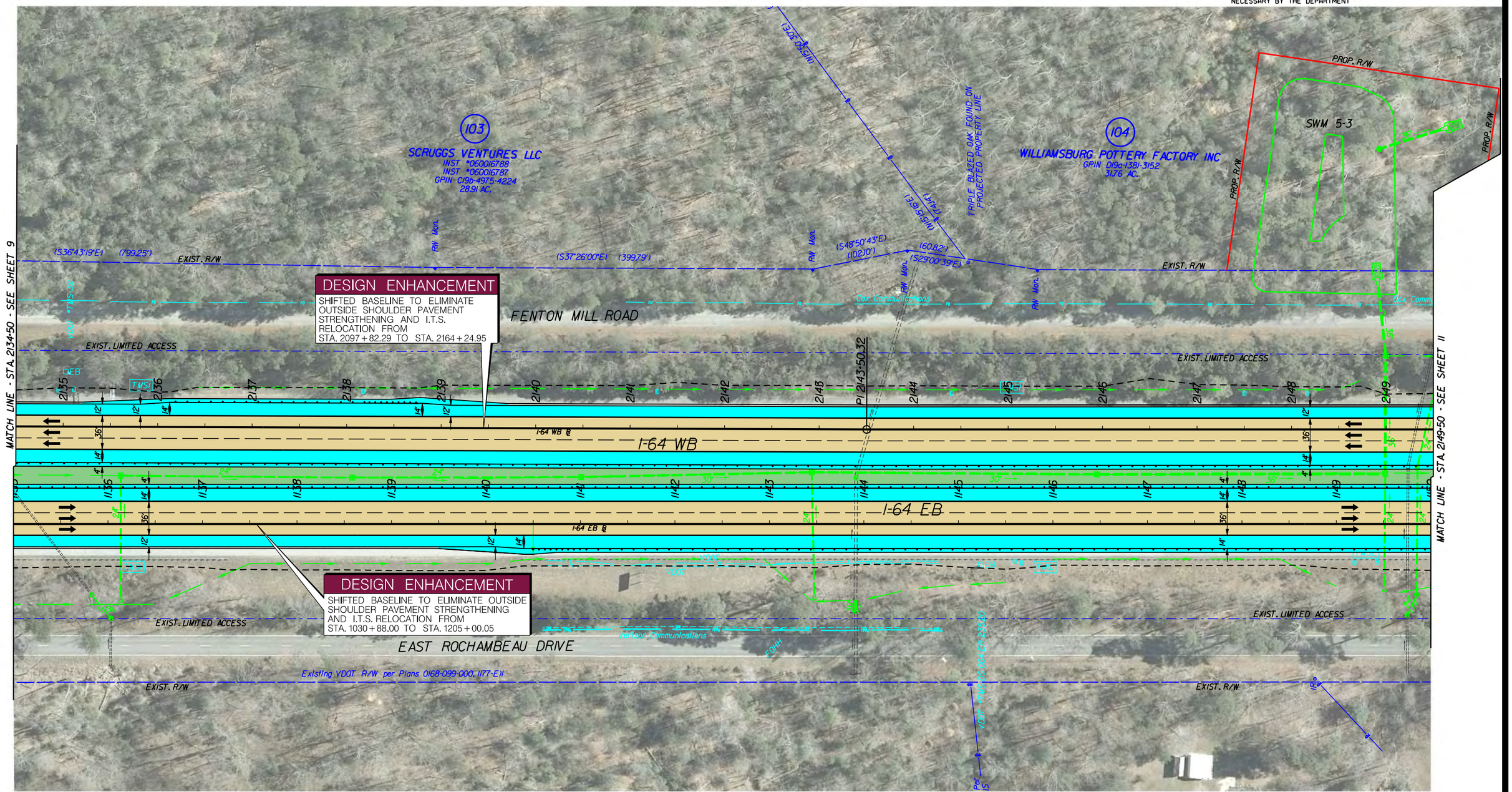
PROJECT	SHEET NO.
0064-965-229	9

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	10

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



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Denotes Milling and Overlay
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SCALE 0 50' 100'

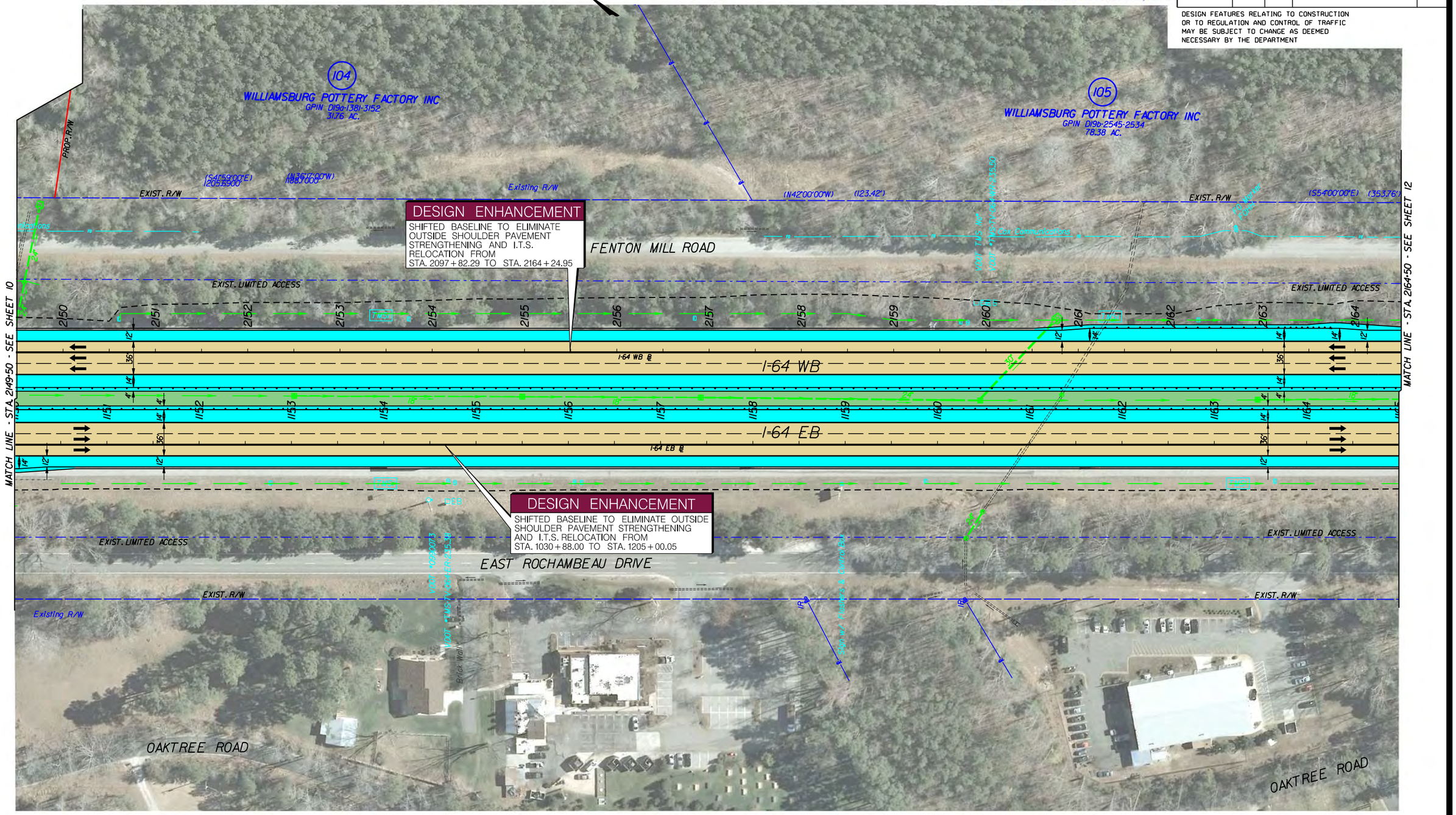
PROJECT	SHEET NO.
0064-965-229	10

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	64	0064-965-229 P-101, R-201, C-501	11

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



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SCALE 0 50' 100'

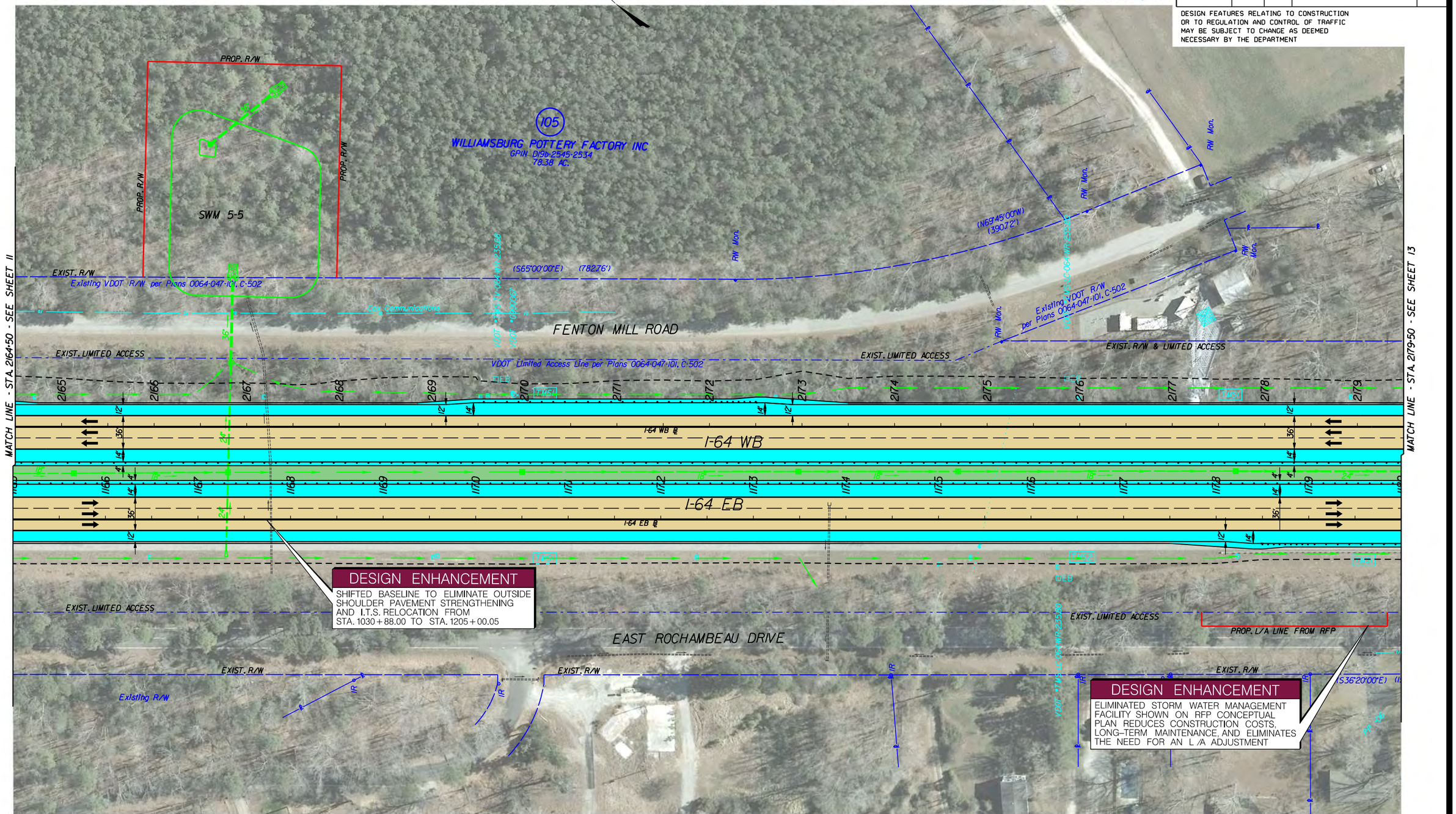
PROJECT	SHEET NO.
0064-965-229	11

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	12

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



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SCALE 0 50' 100'

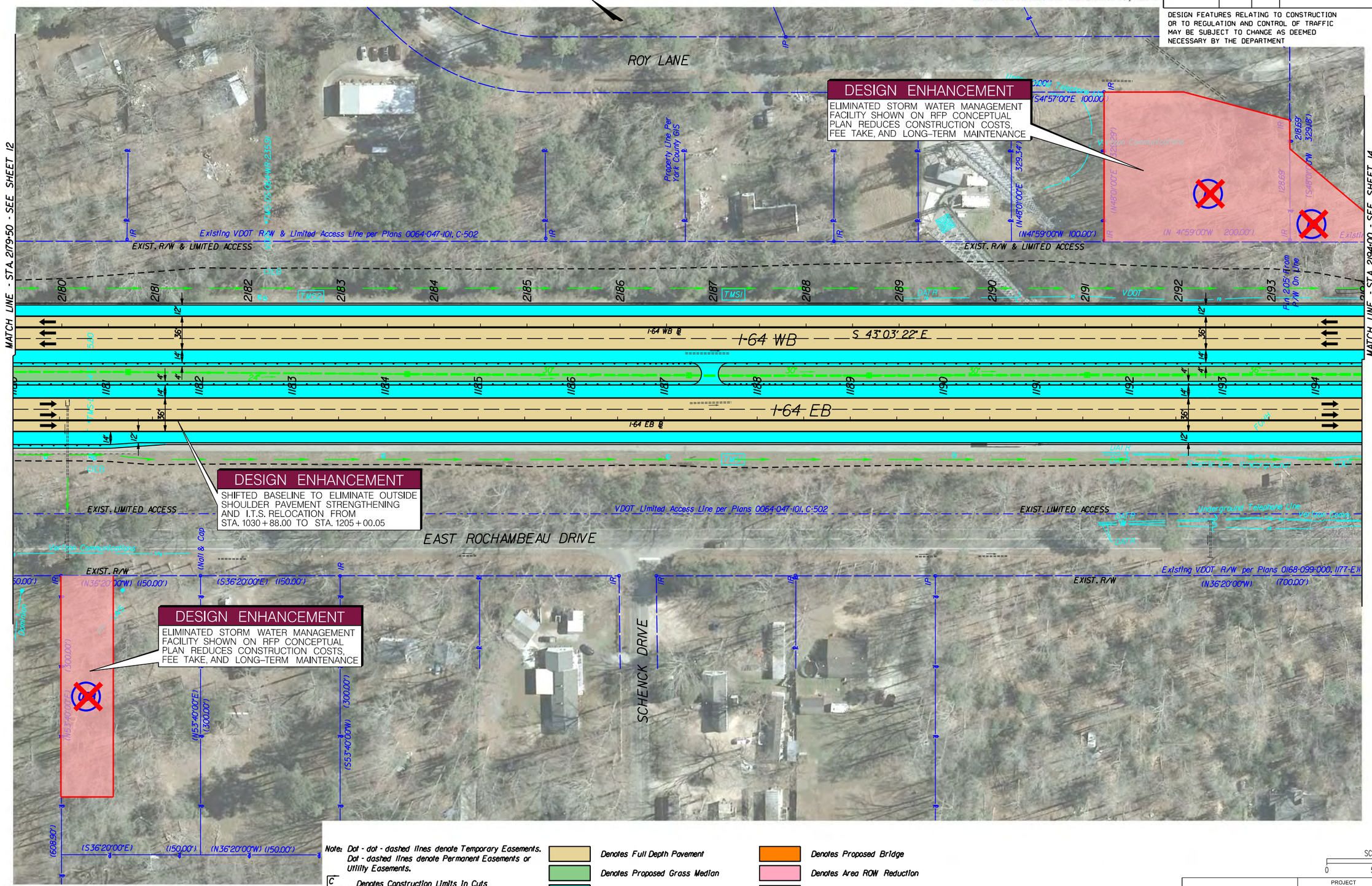
	PROJECT	SHEET NO.
	0064-965-229	12

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	13

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



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SCALE 0 50' 100'

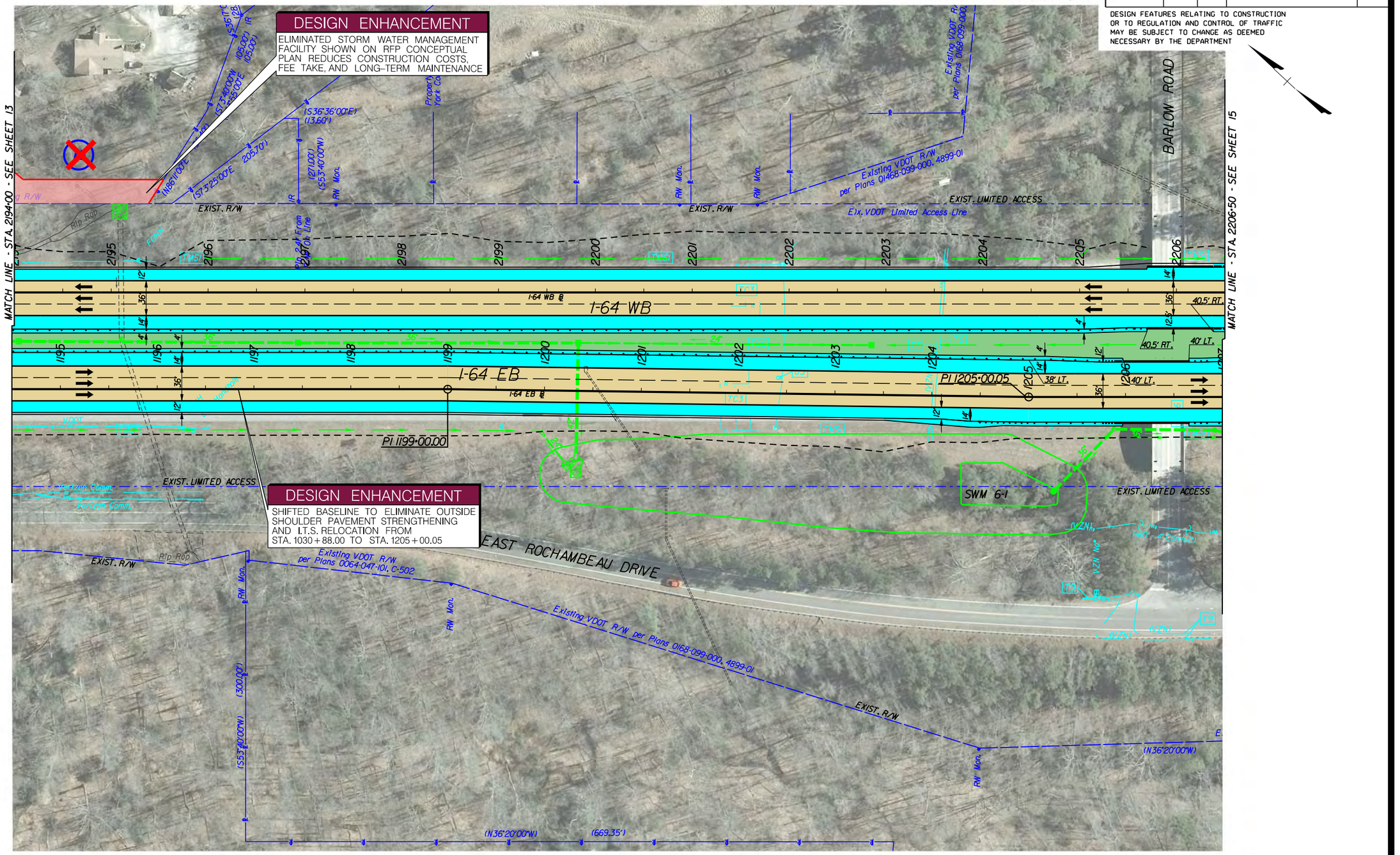
PROJECT	SHEET NO.
0064-965-229	13

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	14

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



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SCALE 0 50' 100'

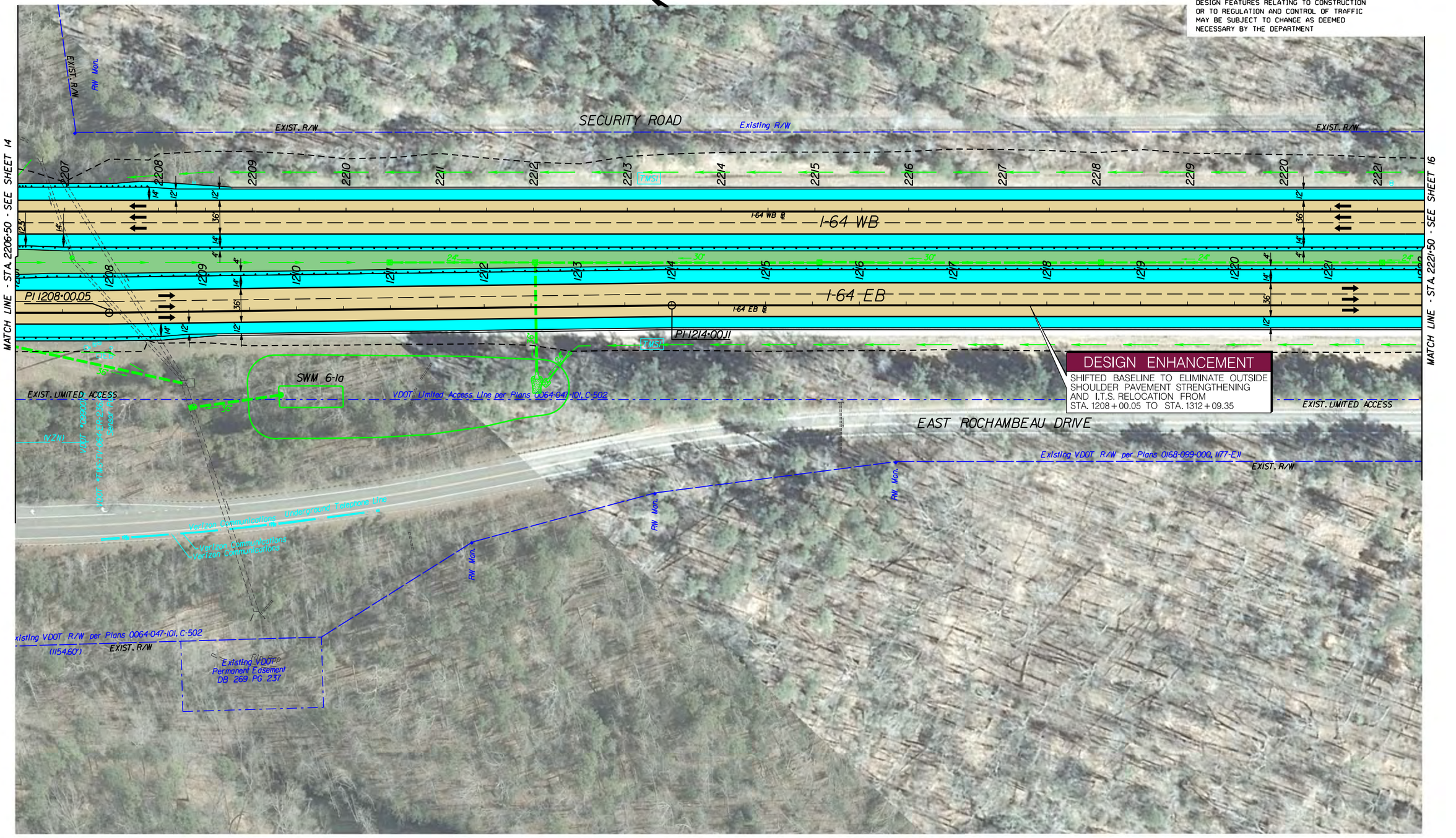
	PROJECT	SHEET NO.
	0064-965-229	14

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	15

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



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SCALE 0 50' 100'

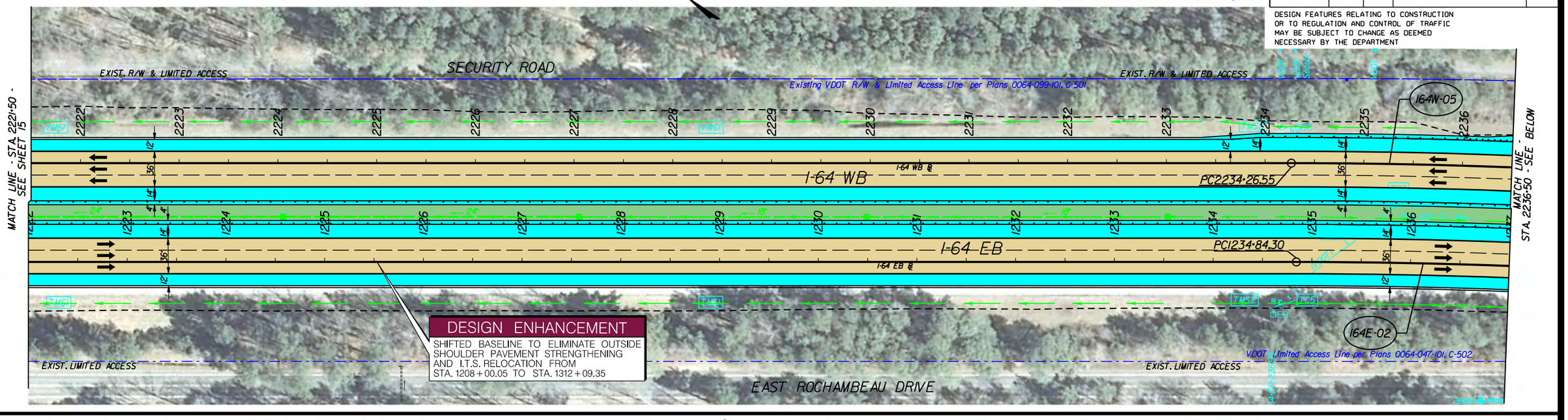
PROJECT	SHEET NO.
0064-965-229	15

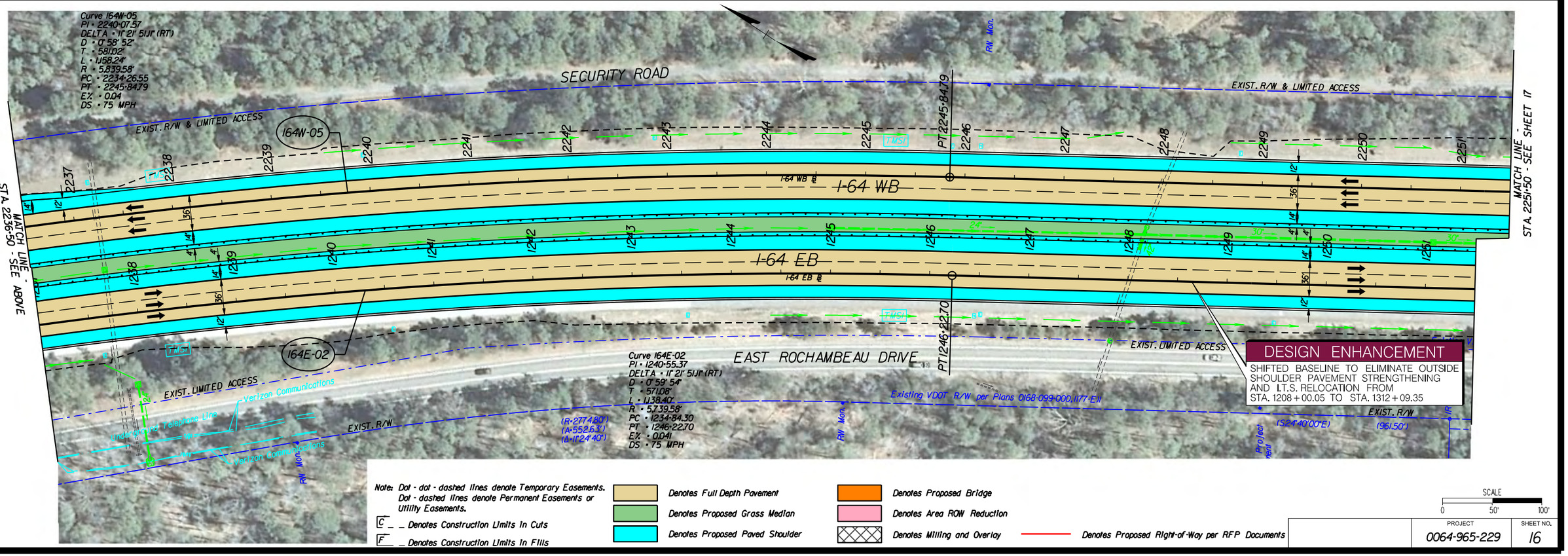
PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	16

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





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SCALE 0 50' 100'

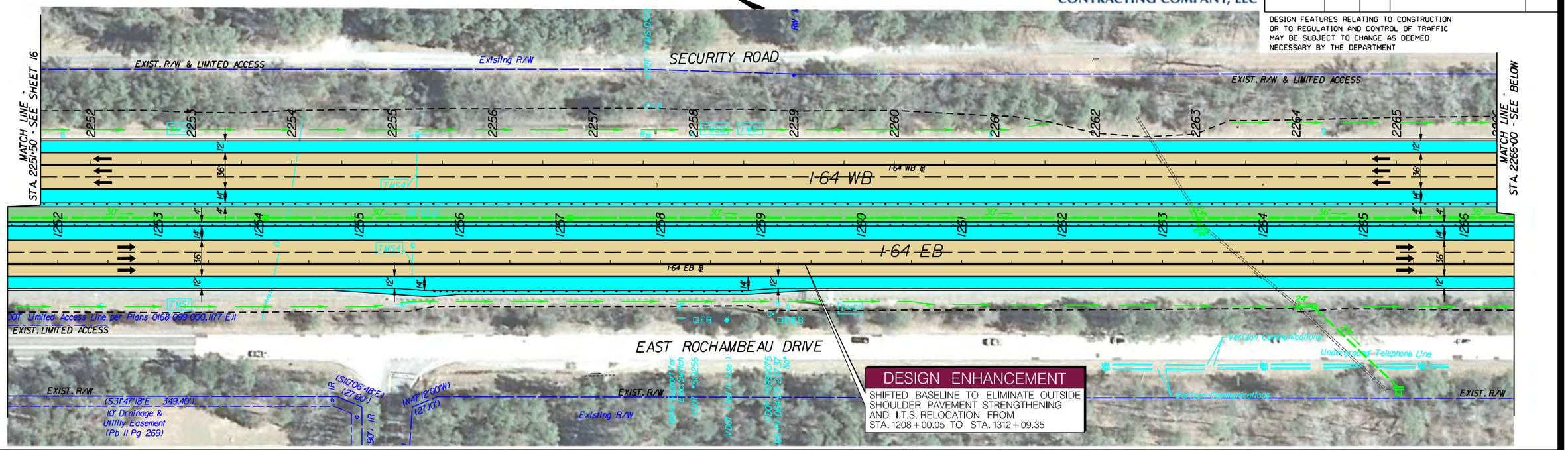
PROJECT	SHEET NO.
0064-965-229	16

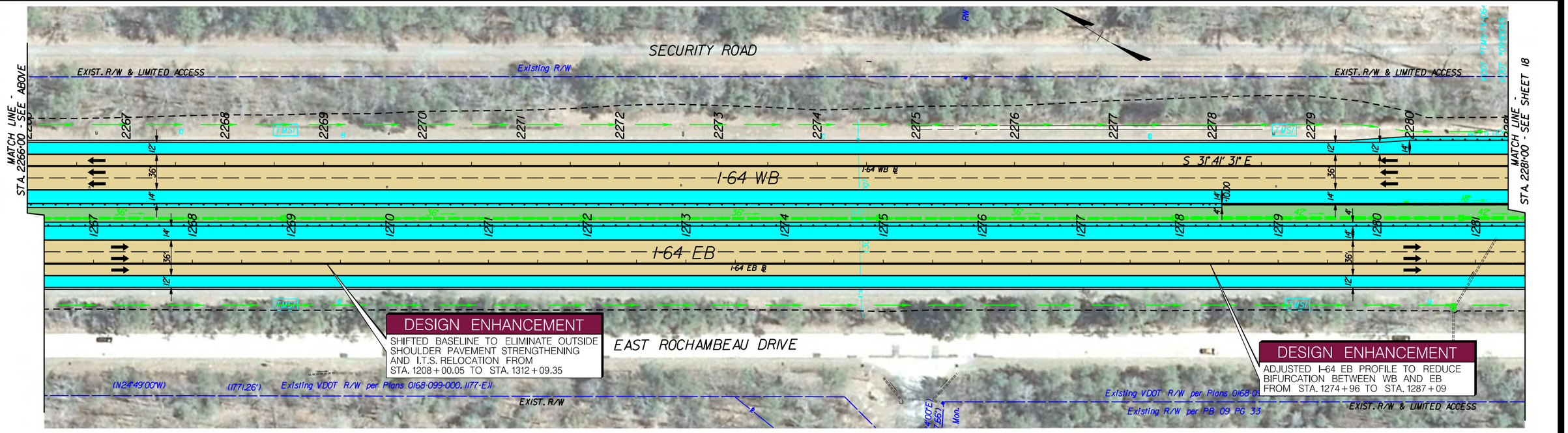
PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry | SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	17

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





Note: Dot - dot - dashed lines denote Temporary Easements.
Dot - dashed lines denote Permanent Easements or Utility Easements.
C _ _ Denotes Construction Limits in Cuts
F _ _ Denotes Construction Limits in Fills

Denotes Full Depth Pavement
Denotes Proposed Grass Median
Denotes Proposed Paved Shoulder
Denotes Proposed Bridge
Denotes Area ROW Reduction
Denotes Milling and Overlay
Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

PROJECT	SHEET NO.
0064-965-229	17

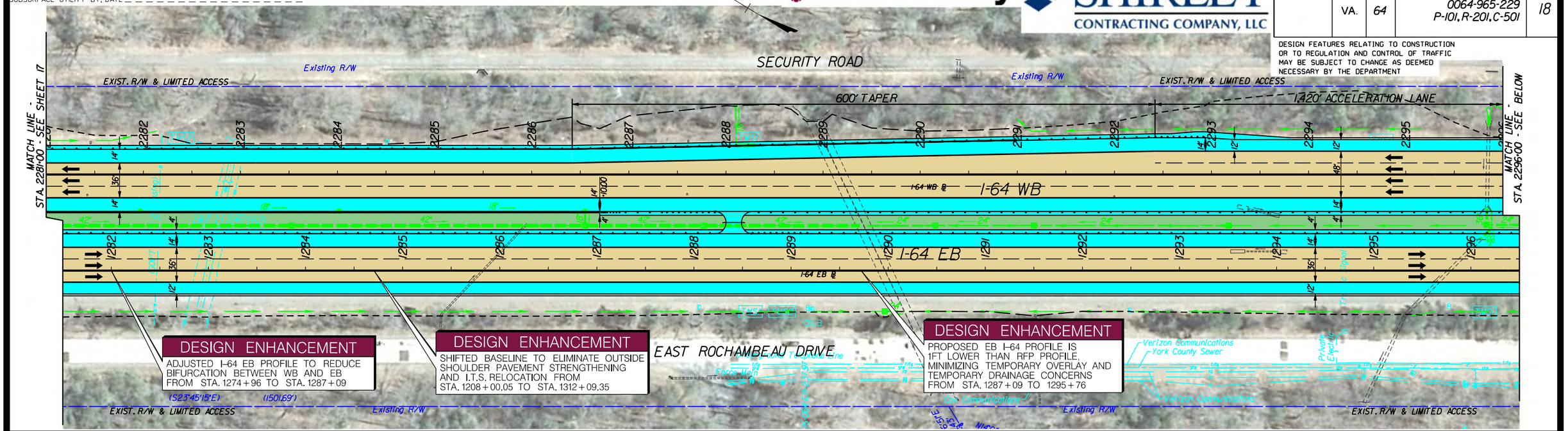
PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

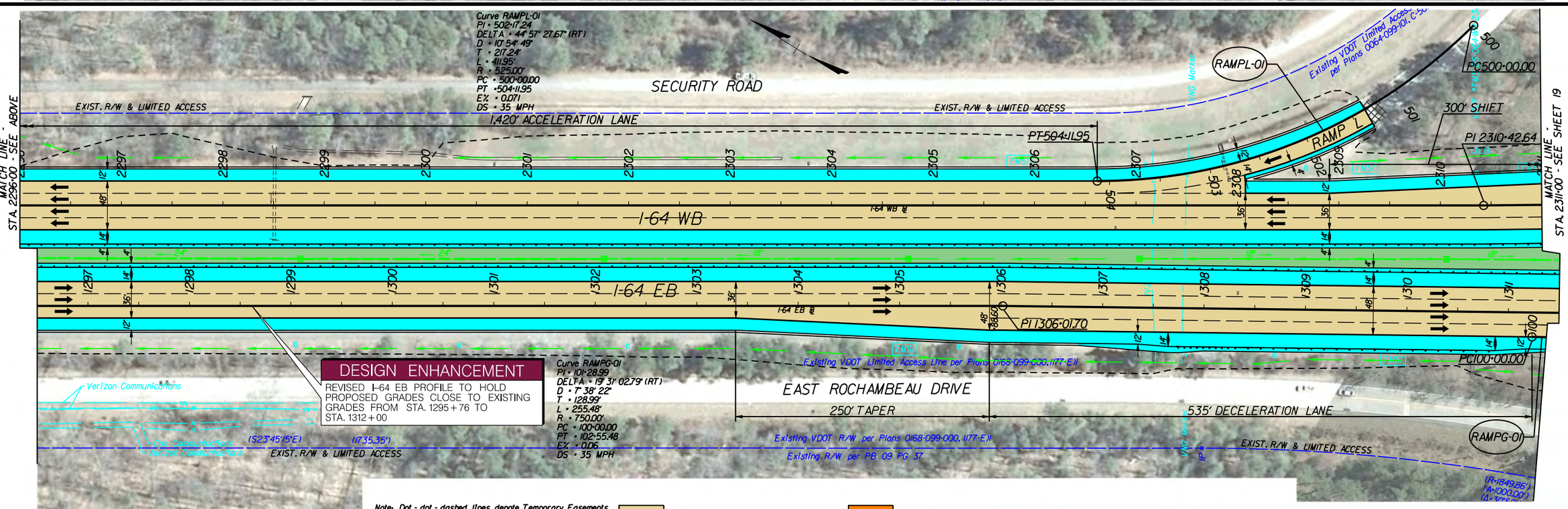
Dewberry

SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	18

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





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SCALE 0 50' 100'

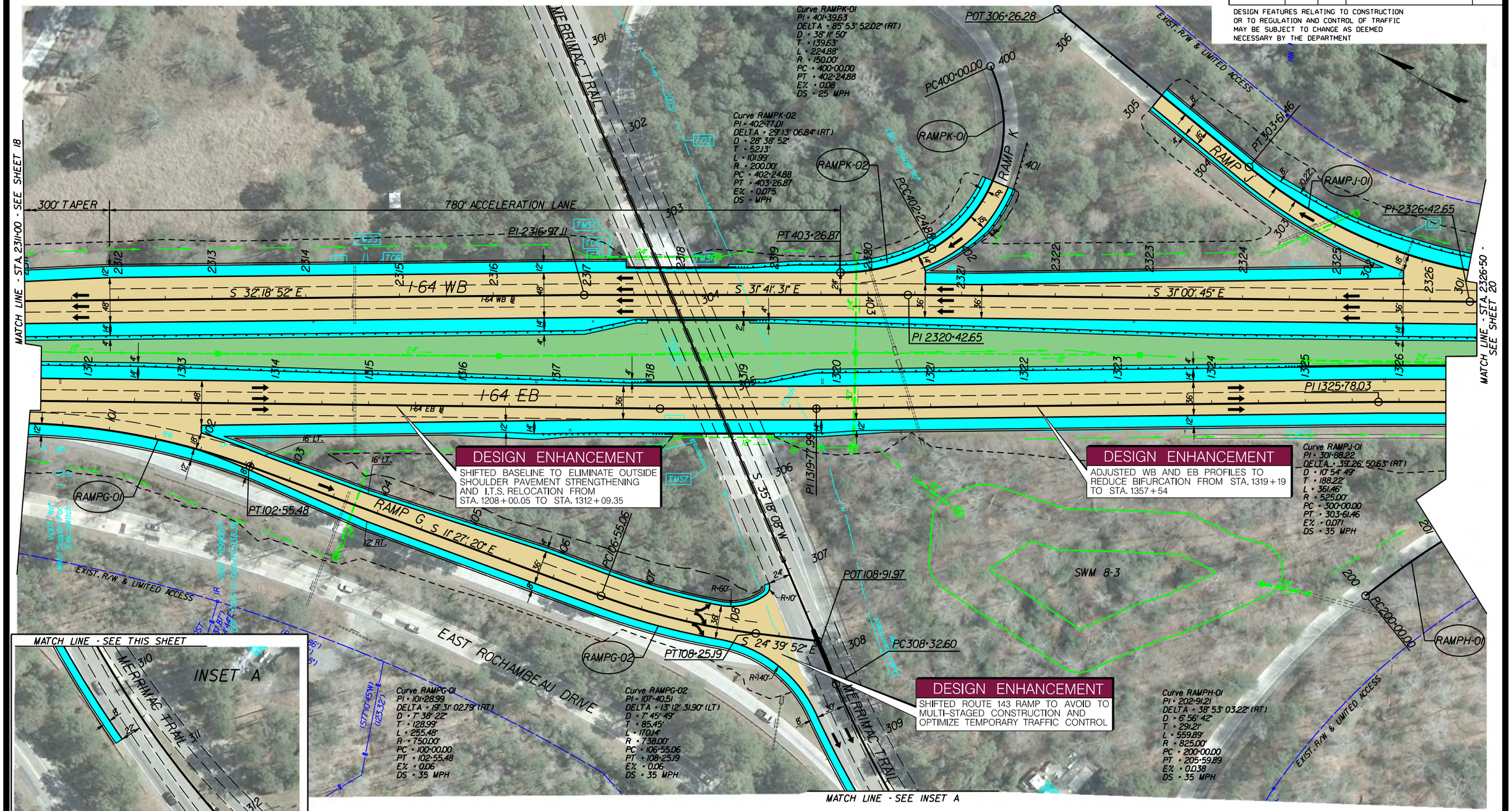
PROJECT	SHEET NO.
0064-965-229	18

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	19

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



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Denotes Proposed Bridge
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Denotes Milling and Overlay
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SCALE 0 50' 100'

	PROJECT	SHEET NO.
	0064-965-229	19

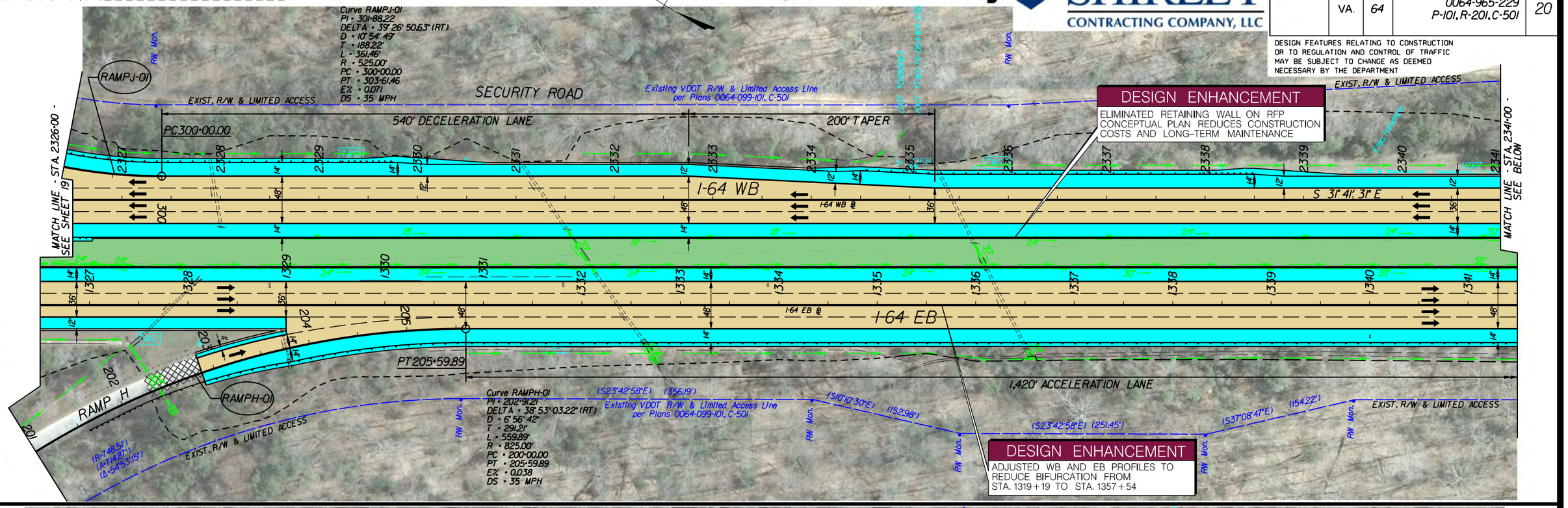
PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

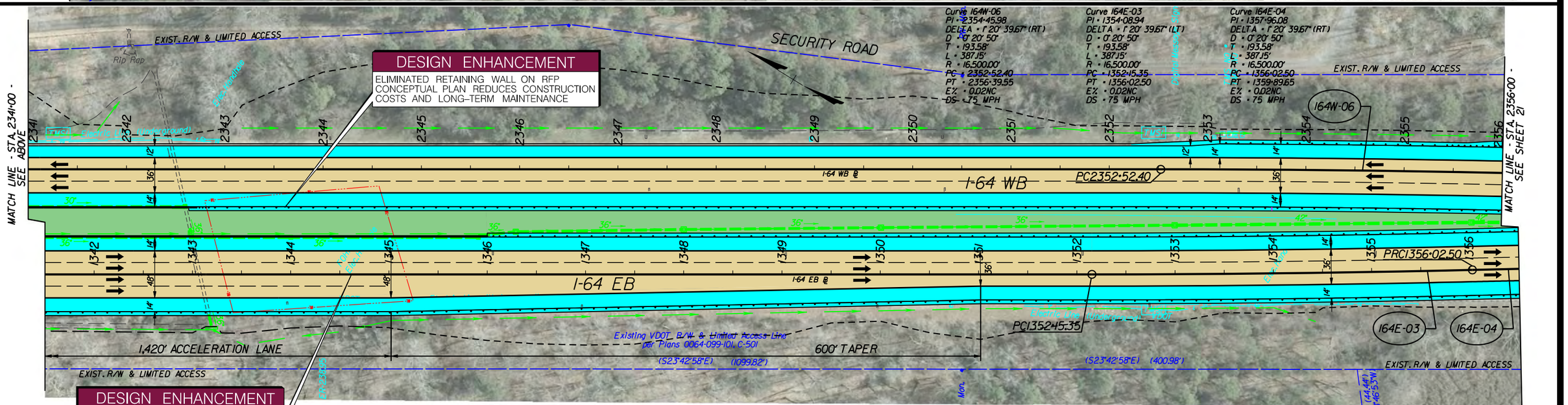
Dewberry

SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	20

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





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Denotes Proposed Bridge
Denotes Area ROW Reduction
Denotes Milling and Overlay
Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

PROJECT	SHEET NO.
0064-965-229	20

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry

SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	21

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

MATCH LINE - STA. 2356+00 - SEE SHEET 20

SECURITY ROAD

EXIST. R/W & LIMITED ACCESS

Existing VDOT R/W & Limited Access Line per Plans 0064-099-101, C-501

Curve 164W-06
PI = 2354+45.98
DELTA = 1° 20' 39.67" (RT)
D = 0° 20' 50"
T = 193.58'
L = 387.15'
R = 16,500.00'
PC = 2352+52.40
PT = 2356+39.55
E% = 0.02NC
DS = 75 MPH

Curve 164W-07
PI = 2358+33.13
DELTA = 1° 20' 39.67" (LT)
D = 0° 20' 50"
T = 193.58'
L = 387.15'
R = 16,500.00'
PC = 2356+39.55
PT = 2360+26.69
E% = 0.02NC
DS = 75 MPH

Curve 164W-08
PI = 2372+20.99
DELTA = 1° 20' 39.67" (LT)
D = 0° 20' 50"
T = 193.58'
L = 387.15'
R = 16,500.00'
PC = 2370+27.41
PT = 2374+14.56
E% = 0.02NC
DS = 75 MPH

164W-06 164W-07 164W-08

PRC2356+39.55 PT2360+26.69 PC2370+27.41 PI370+13.18

I-64 WB I-64 EB

S. 31° 41' 31" E

Curve 164E-04
PI = 1357+96.08
DELTA = 1° 20' 39.67" (RT)
D = 0° 20' 50"
T = 193.58'
L = 387.15'
R = 16,500.00'
PC = 1356+02.50
PT = 1359+89.65
E% = 0.02NC
DS = 75 MPH

PT1359+89.65

Curve 164E-05
PI = 1372+06.76
DELTA = 1° 20' 39.67" (RT)
D = 0° 20' 50"
T = 193.58'
L = 387.15'
R = 16,500.00'
PC = 1370+13.18
PT = 1374+00.32
E% = 0.02NC
DS = 75 MPH

Begin Prop. Noise Wall
POT 10+00.00

Proposed Noise Wall On Structure

Proposed Noise Wall

164E-05

(S31°41'24"E) (59.00')
(S18°32'20"E) (153.86')
(S31°40'53"E) (211.61')

MATCH LINE - STA. 2371+00 - SEE BELOW

DESIGN ENHANCEMENT

ELIMINATED STORM WATER MANAGEMENT FACILITY SHOWN ON RFP CONCEPTUAL PLAN REDUCES CONSTRUCTION COSTS, FEE TAKE, AND LONG-TERM MAINTENANCE

MATCH LINE - STA. 2371+00 - SEE ABOVE

Curve 164W-09
PI = 2376+08.14
DELTA = 1° 20' 39.67" (RT)
D = 0° 20' 50"
T = 193.58'
L = 387.15'
R = 16,500.00'
PC = 2374+14.56
PT = 2378+01.70
E% = 0.02NC
DS = 75 MPH

PRC2374+14.56 PT2378+01.70

164W-08 164W-09

I-64 WB I-64 EB

PRC1374+00.32 PT1377+87.47

164E-05 164E-06

Curve 164E-06
PI = 1375+93.91
DELTA = 1° 20' 39.67" (LT)
D = 0° 20' 50"
T = 193.58'
L = 387.15'
R = 16,500.00'
PC = 1374+00.32
PT = 1377+87.47
E% = 0.02NC
DS = 75 MPH

ROSALIE S DETCH
DB 372 PG 37
GPIN F15b-4585-4429
13.29 AC.

124

PROP. R/W & LIMITED ACCESS

EXIST. R/W & LIMITED ACCESS

Existing VDOT R/W & Limited Access Line per Plans 0064-099-10

Proposed Noise Wall

(N38°29'00"W 302.20')
(N2°26'00"W 203.20')
(N40°47'00"W 202.40')
(N22°50'00"W) 202.40')
(N31°38'00"W)
(S38°20'09"E) (302.74')
(S31°41'19"E) (950.49')

Note: Dot - dot - dashed lines denote Temporary Easements. Dot - dashed lines denote Permanent Easements or Utility Easements.

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F _ _ Denotes Construction Limits in Fills

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Denotes Proposed Grass Median
Denotes Proposed Paved Shoulder
Denotes Proposed Bridge
Denotes Area ROW Reduction
Denotes Milling and Overlay
Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

PROJECT	SHEET NO.
0064-965-229	21

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry

SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	22

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

ROSALIE S DETCH
DB 372 PG 37
GPIN F15b-4585-4429
13.29 AC.
124

MATCH LINE - STA. 2386+50 - SEE SHEET 21

EXIST. R/W & LIMITED ACCESS

Existing VDOT R/W & Limited Access Line per Plans 0064-099-101, C-501

I-64 WB

I-64 EB

PI 2395+83.70

PI 2397+33.70

PI 1397+79.96

PC 1399+05.45

PI+396+29.95

PC 2398+67.32

164W-10

164E-07

Proposed Noise Wall

End Prop. Noise Wall
POT 39+00.49

W QUEENS DRIVE

MATCH LINE - STA. 2400+60 - SEE BELOW

DESIGN ENHANCEMENT

ELIMINATED STORM WATER MANAGEMENT FACILITY SHOWN ON RFP CONCEPTUAL PLAN REDUCES CONSTRUCTION COSTS, FEE TAKE, AND LONG-TERM MAINTENANCE

SAXON ROAD

Curve 164W-10
PI • 2410+13.69
DELTA • 11° 27' 23.60" (LT)
D • 0° 30' 05"
T • 1,146.37'
L • 2,285.11'
R • 11,428.12'
PC • 2398+67.32
PT • 2421+52.42
E% • 0.022
DS • 75 MPH

15' Drainage & Utility Easement (PB 9 Pg 50)

Curve 164E-07
PI • 1409+13.17
DELTA • 10° 06' 11.50" (LT)
D • 0° 30' 09"
T • 1,007.72'
L • 2,010.21'
R • 11,400.00'
PC • 1399+05.45
PT • 1419+15.66
E% • 0.022
DS • 75 MPH

50' Drainage & Utility Easement PB 6 Pg 85

MATCH LINE - STA. 2414+50 - SEE SHEET 23

Note: Dot - dot - dashed lines denote Temporary Easements. Dot - dashed lines denote Permanent Easements or Utility Easements.

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Denotes Milling and Overlay
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SCALE 0 50' 100'

PROJECT	SHEET NO.
0064-965-229	22

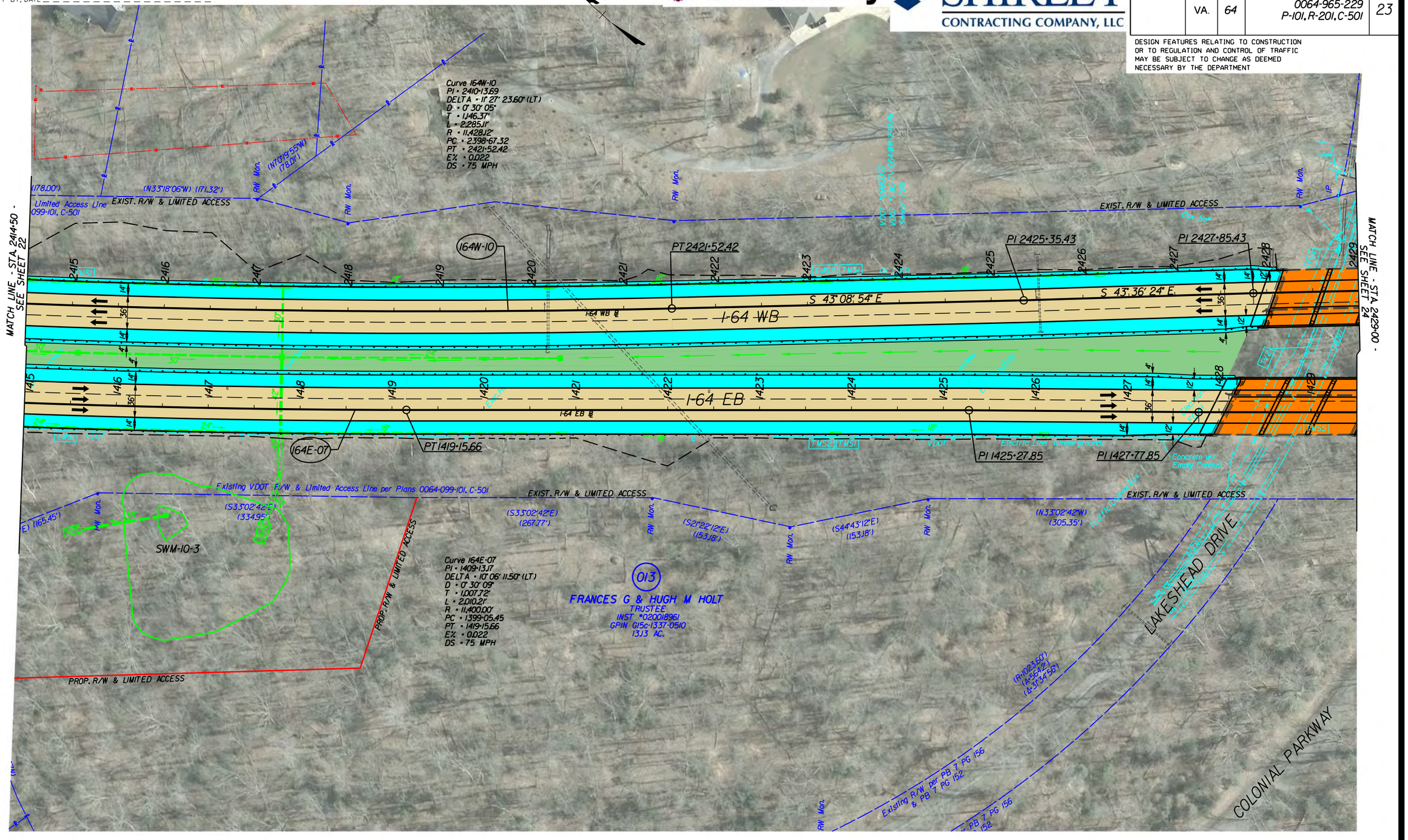
PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry

SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	23

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



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SCALE 0 50' 100'

PROJECT	SHEET NO.
0064-965-229	23

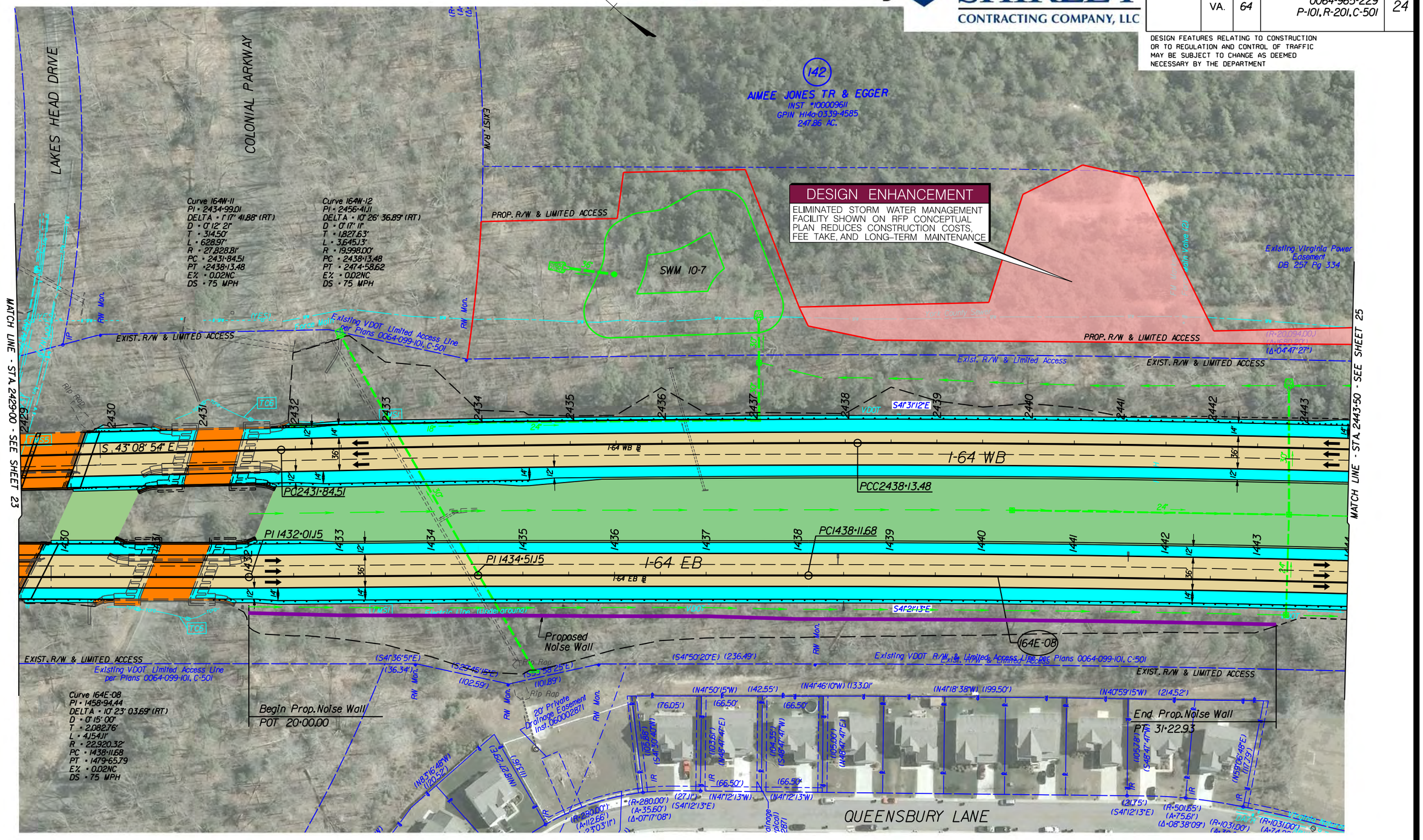
PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry

SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	24

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



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Denotes Proposed Bridge

Denotes Area ROW Reduction

Denotes Milling and Overlay

Denotes Proposed Right-of-Way per RFP Documents

SCALE 0 50' 100'

PROJECT	SHEET NO.
0064-965-229	24

PROJECT MANAGER Ms. Janet Hendrick, P.E. - VDOT Hampton Roads District - (757) 494-5478
SURVEYED BY, DATE
DESIGN BY Dewberry Consultants LLC - (703) 289-4796
SUBSURFACE UTILITY BY, DATE

Dewberry

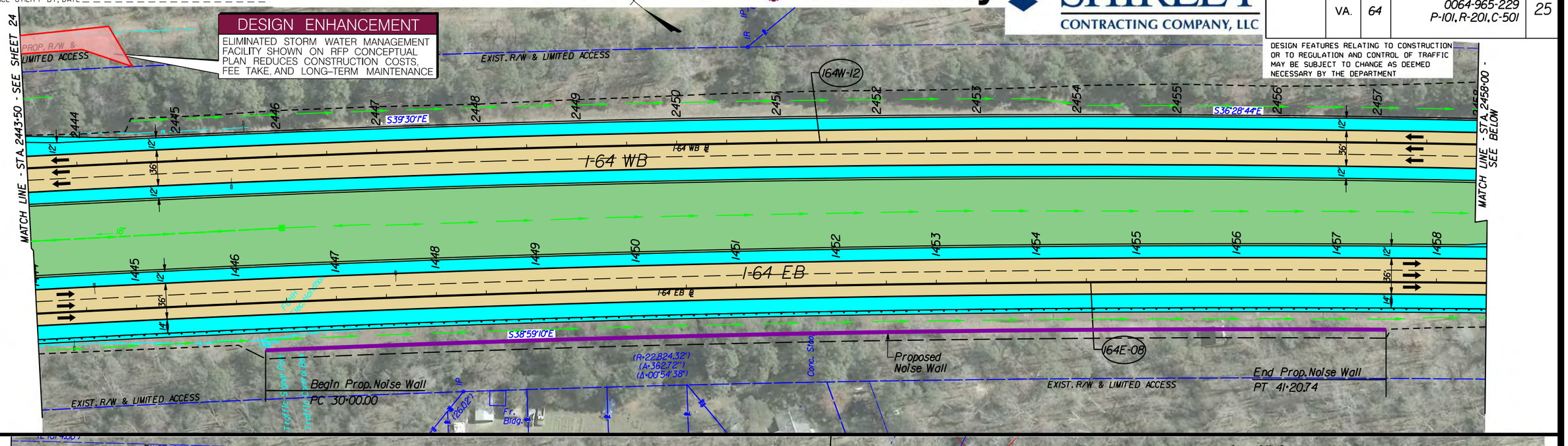
SHIRLEY CONTRACTING COMPANY, LLC

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO
	VA.	64	0064-965-229 P-101, R-201, C-501	25

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

DESIGN ENHANCEMENT

ELIMINATED STORM WATER MANAGEMENT FACILITY SHOWN ON RFP CONCEPTUAL PLAN REDUCES CONSTRUCTION COSTS, FEE TAKE, AND LONG-TERM MAINTENANCE



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SCALE 0 50' 100'

PROJECT	SHEET NO.
0064-965-229	25

4.3.2 - Conceptual Structural Plans

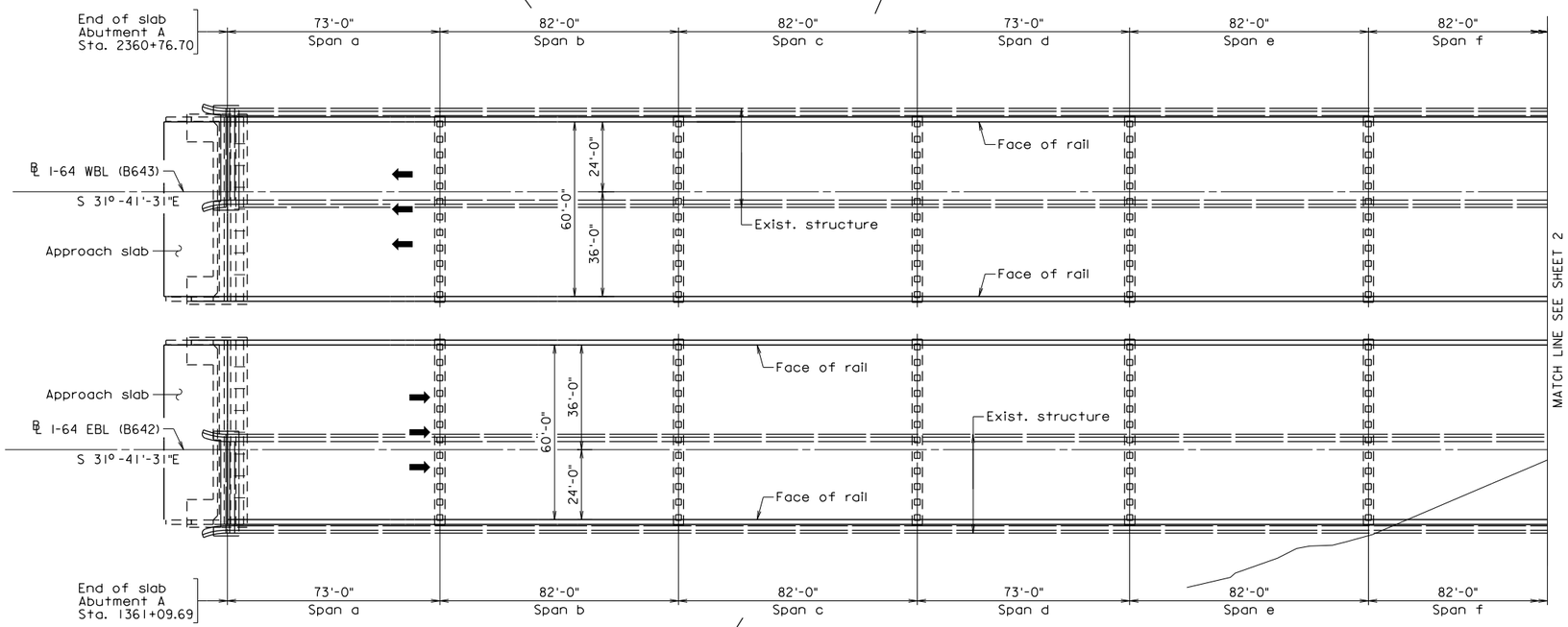
STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		I-64	0064-965-229, B642, B643	1
NBIS Number: 000000000019842 000000000019843			UPC No. 106689		
Federal Oversight Code: N/A			FHWA Construction and Scour Code:	X081-S8	

DESIGN ENHANCEMENT

SPAN LAYOUT HAS BEEN SELECTED TO AVOID ALL IT CONFLICTS SHOWN IN THE RFP PLAN BETWEEN THE EXISTING AND PROPOSED PIERS

DESIGN ENHANCEMENT

REDUCED NUMBER OF PIERS FROM 16 SHOWN IN RFP CONCEPT TO 11. REDUCES OVERALL BRIDGE CONSTRUCTION AND MAINTENANCE COSTS

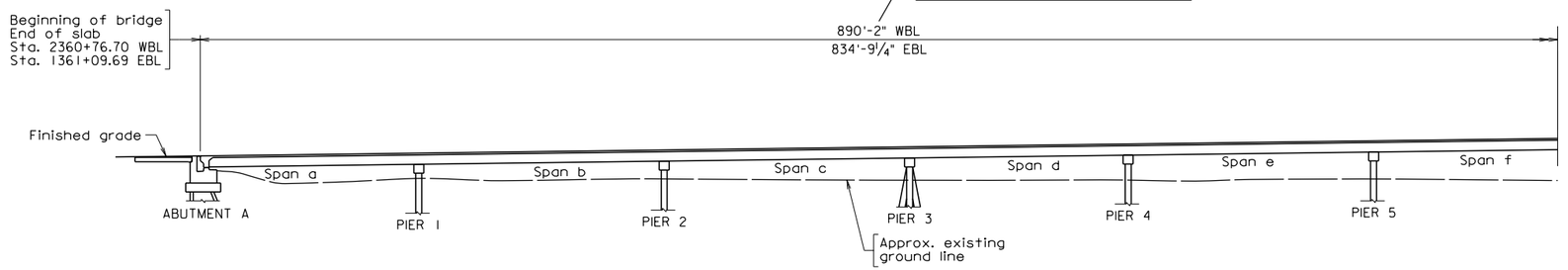


DESIGN ENHANCEMENT

REDUCED NUMBER OF PIERS FROM 16 SHOWN IN RFP CONCEPT TO 10. REDUCES OVERALL BRIDGE CONSTRUCTION AND MAINTENANCE COSTS

DESIGN ENHANCEMENT

REDUCED BRIDGE LENGTHS WHILE PROVIDING EQUIVALENT HYDRAULIC PERFORMANCE TO EXISTING BRIDGES



DEVELOPED SECTION ALONG CONSTR. ℄
WBL SHOWN EBL SIMILAR

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

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

Span layout: 73' - 82' - 82' - 73' - 82' - 82' - 82' - 52'-1" - 52'-1" - 70' - 80' - 80' prestressed concrete bulb-T beam spans continuous for live load WBL

73' - 82' - 82' - 73' - 82' - 82' - 82' - 48'-9¼" - 70' - 80' - 80' prestressed concrete bulb-T beam spans continuous for live load EBL

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2016.

Design: AASHTO LRFD Bridge Design Specifications, 7th Edition, 2014; and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016.

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

Bridge No. of existing bridge are 2007 (EB) and 2008 (WB). Existing Plan No. is 163-16.

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE REPLACEMENT ON
RTE. 64 OVER QUEENS CREEK
YORK COUNTY
PROJ. 0064-965-229

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

PRELIMINARY PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: 1" = 25'

No.	Description	Date

REVISIONS

For Table of Revisions, see Sheet 2.

Recommended for Approval: _____ District Project Development Engineer — Date

Approved: _____ District Administrator — Date

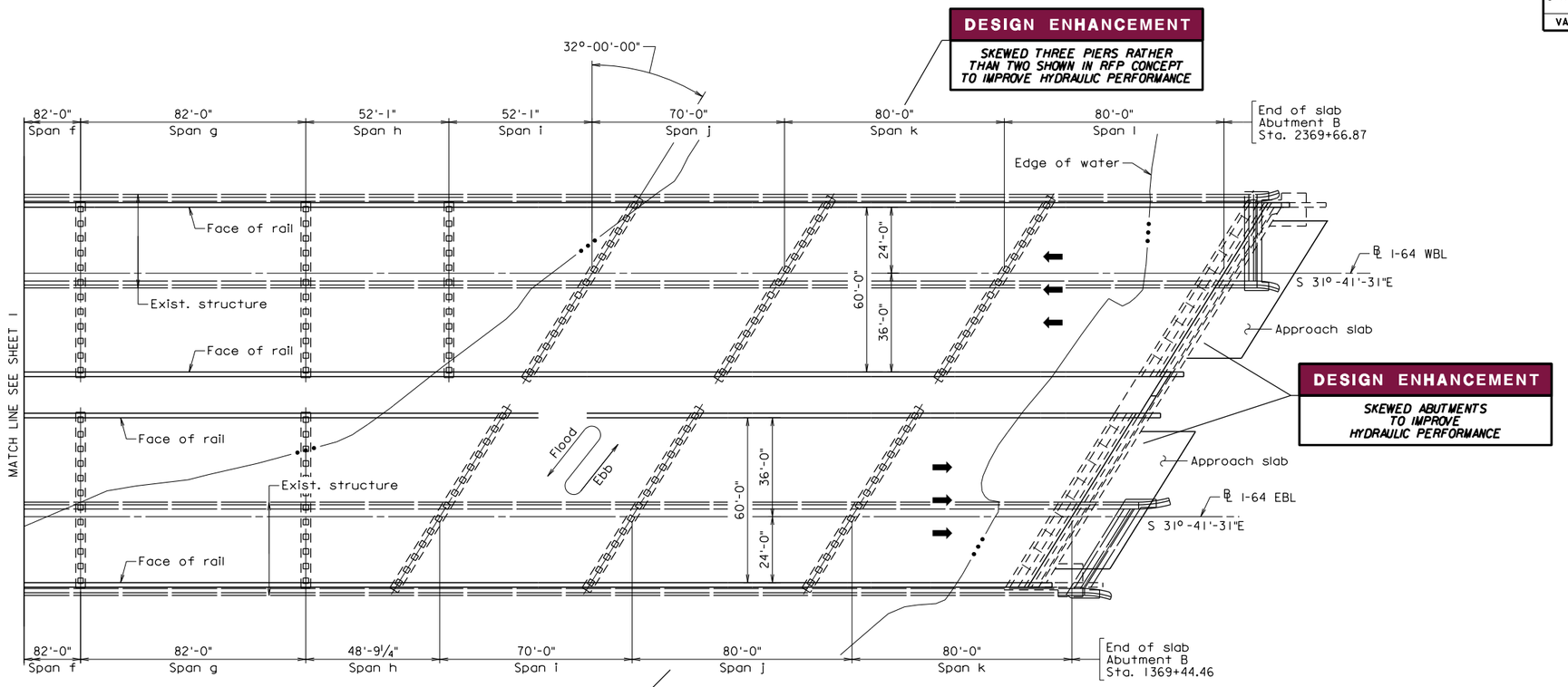
163-16A

Date: _____

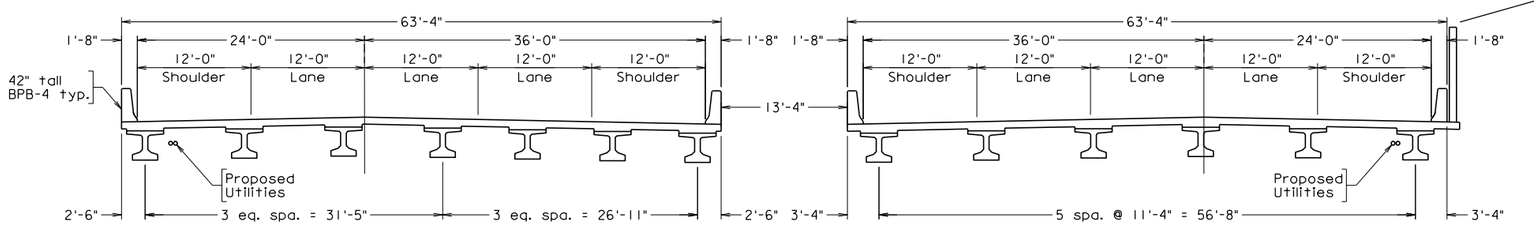
© 2017, Commonwealth of Virginia

$DATE$ $TIME$
GPE_64 over Queens Creek1_2_Exhibit.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		I-64	0064-968-229	

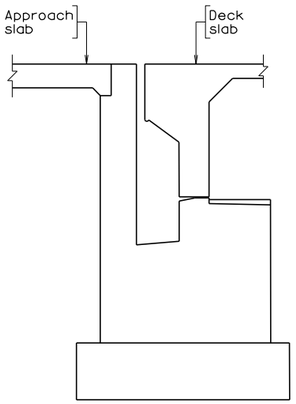


DEVELOPED SECTION ALONG CONSTR. ℄
WBL SHOWN EBL SIMILAR

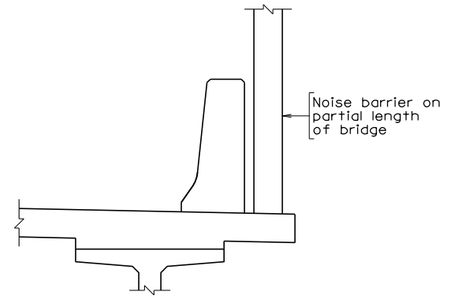


FINAL - TRANSVERSE SECTION
Scale: ⅛" = 1'-0"

DESIGN ENHANCEMENT
REDUCED NUMBER OF GIRDERS BY 3 PER BRIDGE FROM RFP CONCEPT. REDUCES OVERALL BRIDGE CONSTRUCTION AND MAINTENANCE COST



ABUTMENT SECTION
Not to scale



NOISE BARRIER
Not to scale

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: 1' = 25' unless otherwise shown

© 2017, Commonwealth of Virginia

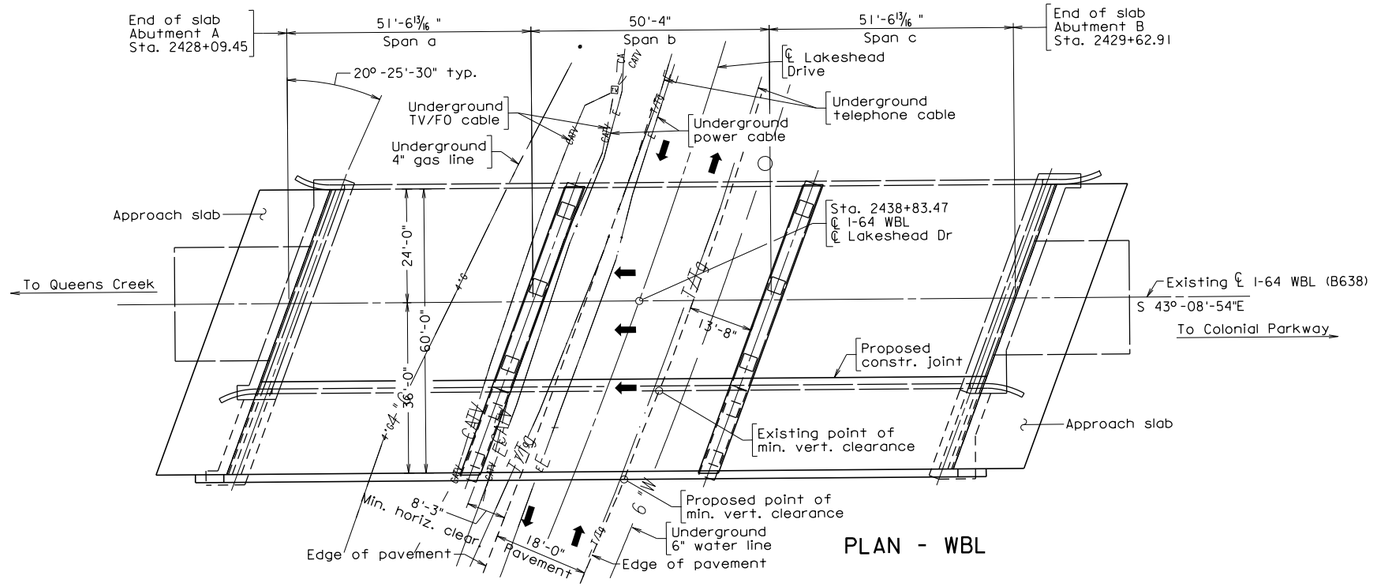
No.	Description	Date
Revisions		

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

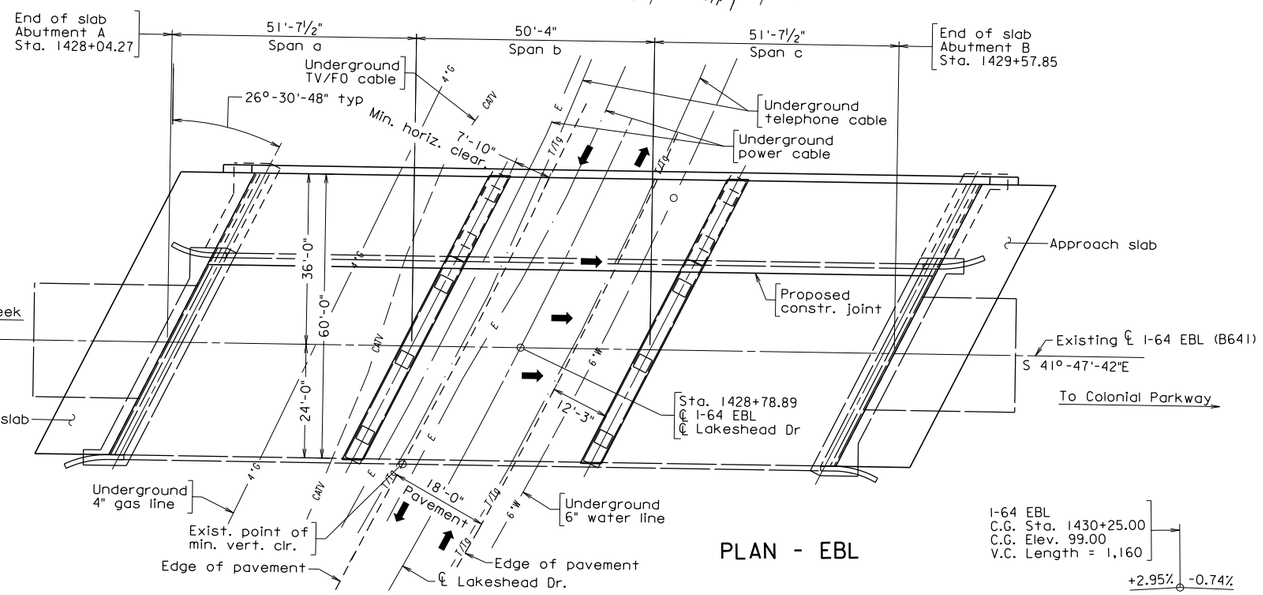
PLAN, ELEVATION AND TRANSVERSE SECTION

Designed:	Date	Plan No.	Sheet No.
Drawn:		163-16A	
Checked:			

$DATE$ $TIME$
GPE_64 over Queens Creek2.2_Exhibit.dgn

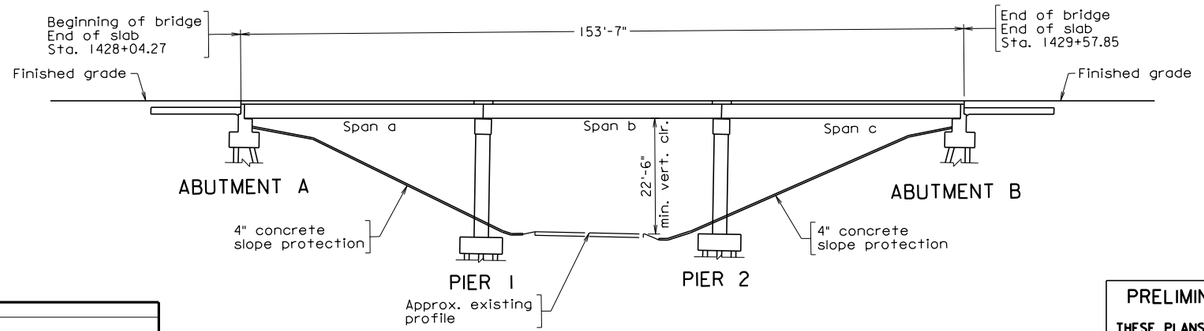


PLAN - WBL



PLAN - EBL

I-64 EBL
C.G. Sta. 1430+25.00
C.G. Elev. 99.00
V.C. Length = 1,160
+2.95% -0.74%



DEVELOPED SECTION ALONG WIDENING

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

PRELIMINARY PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

No.	Description	Date

REVISIONS

For Table of Revisions, see Sheet 2.

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	———	I-64	0064-965-229, B638, B641	1

NBIS Number: 000000000019836
000000000019834

UPC No. 106689

Federal Oversight Code: N/A

FHWA Construction and Scour Code: X281-SN

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

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

Span layout: 51'-6 13/16" - 50'-4" - 51'-6 13/16" WBL
51'-7 1/2" - 50'-4" - 51'-7 1/2" EBL

Capacity: HL-93 loading. (Widened portion only)

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2016.

Design: AASHTO LRFD Bridge Design Specifications, 7th Edition, 2014; and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016.

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

Bridge No. of existing bridge are 2004 (WB) and 2003 (EB). Plan No. is 163-18.

Bridge Repair\Modification Notes:

All superstructure and substructure repairs will be performed on the existing bridges in accordance with the RFP Requirements. This includes removing of existing deck slab overlay; existing deck slab milling, patching and overlay; repairing existing beams; repairing spalls and cracks on abutments and piers; and repairing existing slope protection.

Joints at piers will be retrofitted in accordance with Structure and Bridge Manual Volume V, Part 2, File No. 10.02-2.

All existing bearings will be replaced utilizing steel-reinforced elastomeric pads.

Existing deck slab and abutments will be modified to eliminate the existing deck joints at the abutments.

Replace the existing approach slabs with buried approach slabs extending from curb to curb.

Pier protection will be evaluated and installed as necessary.

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE WIDENING ON
RTE. 64 OVER RTE. 1314 (LAKESHEAD DRIVE)
YORK COUNTY
PROJ. 0064-965-229

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

Recommended for Approval: _____ _____
District Project Development Engineer Date

Approved: _____ _____
District Administrator Date

Date: _____

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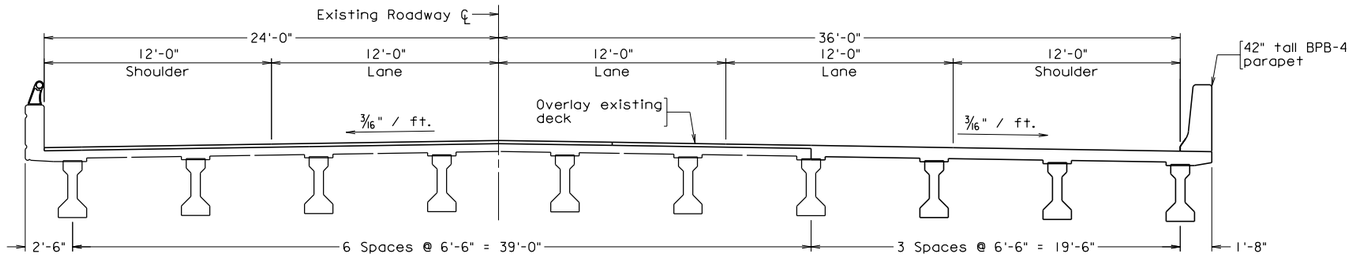
163-18A

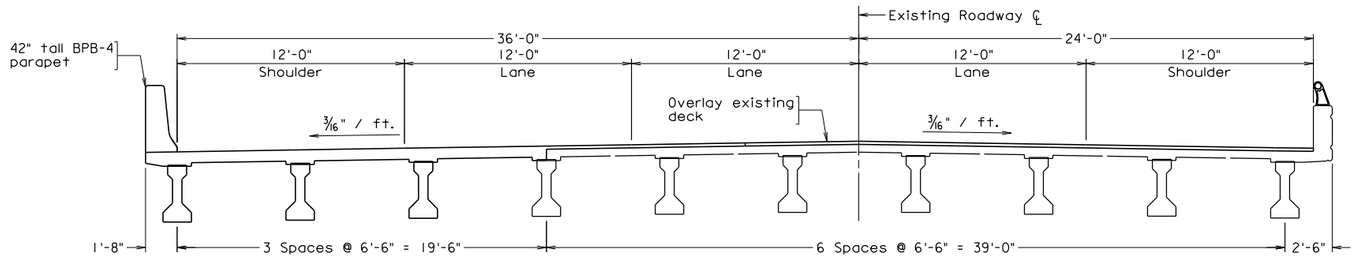
Sheet 1 of 2

$DATE$ $TIME$
GPE_64 over Rt 1314 Lakeshead_Exhibit.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		I-64	0064-968-229	2

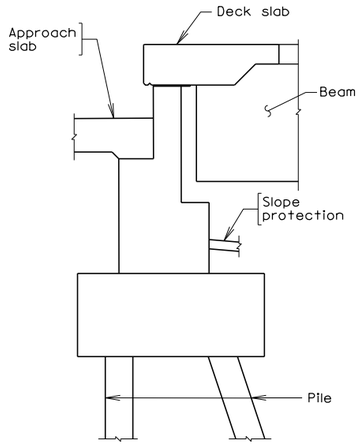


WBL



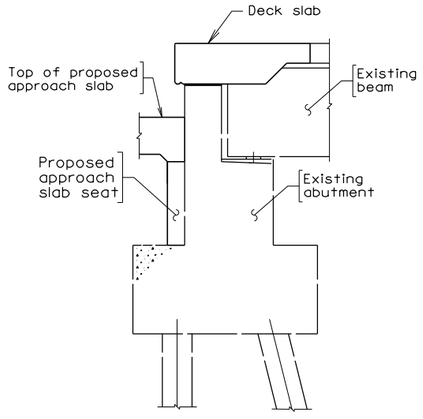
EBL

FINAL - TRANSVERSE SECTION



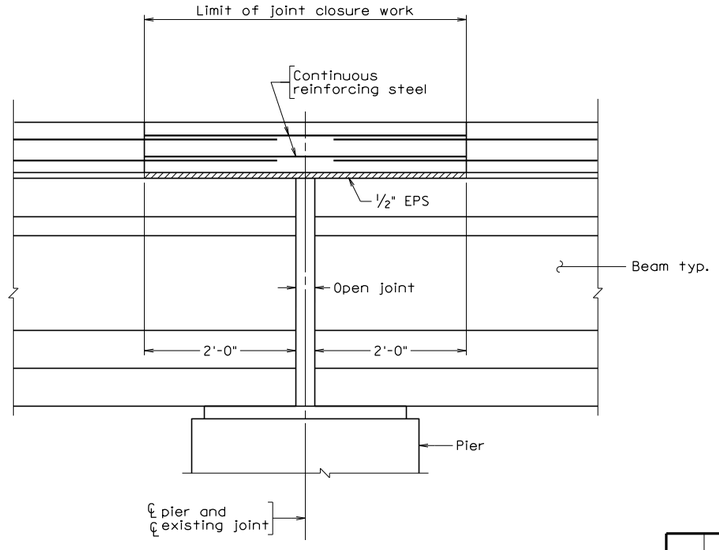
PROPOSED ABUTMENT SECTION

Not to scale



MODIFIED EXISTING ABUTMENT SECTION

Not to scale



JOINT CLOSURE DETAIL AT PIERS

Not to scale

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

PRELIMINARY PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: ¼" = 1'-0" unless otherwise shown

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No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

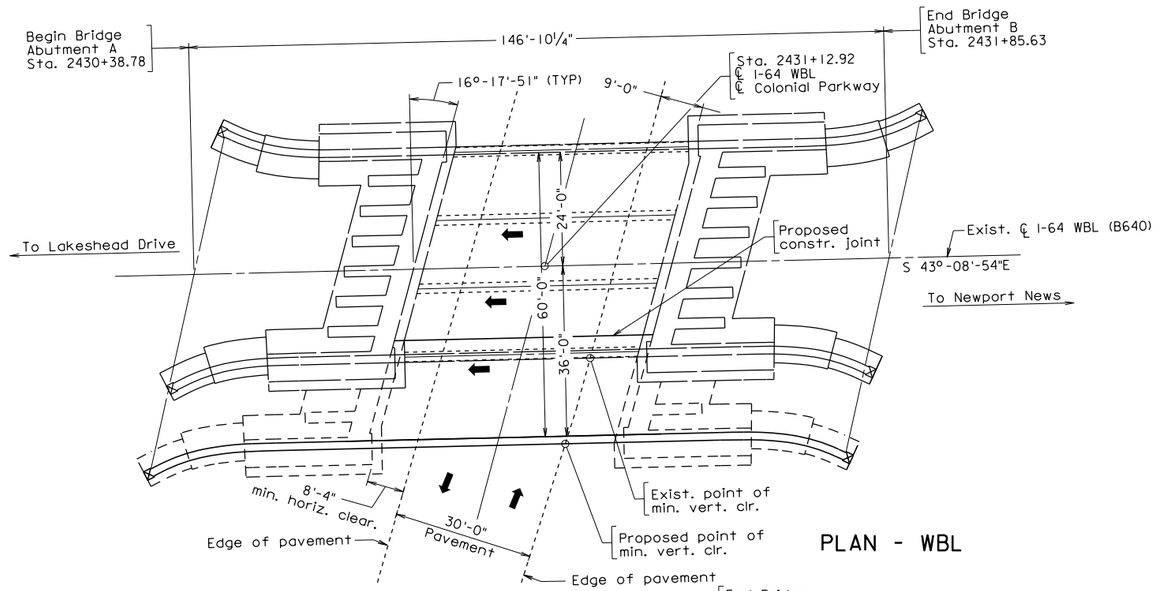
STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION AND DETAILS

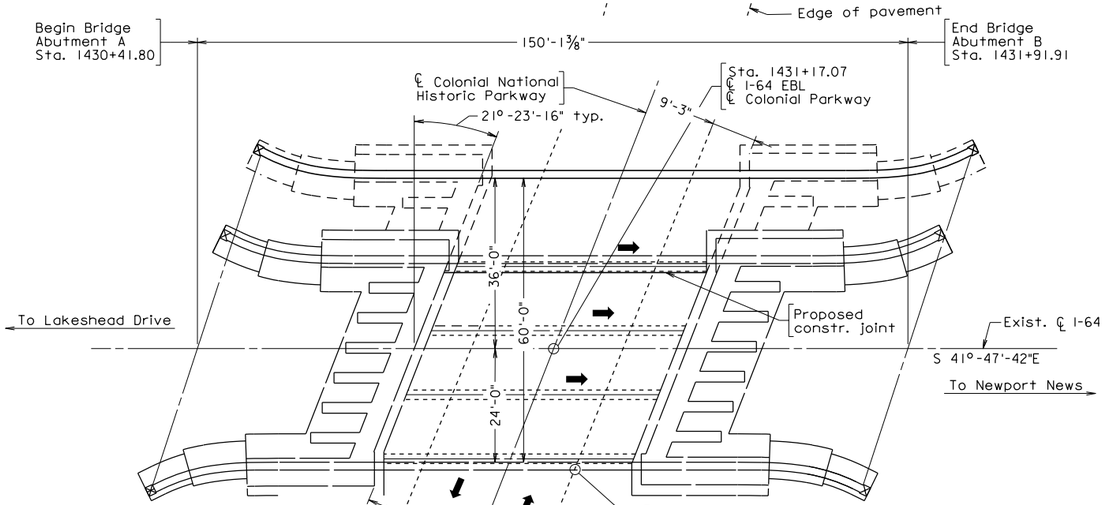
Designed: ..... Drawn: ..... Checked:	Date	Plan No.	Sheet No.
		163-18A	2 of 2

$DATE$ $TIME$
Typ Section_64 over Rt 1314 Lakeshead_Exhibit.dgn

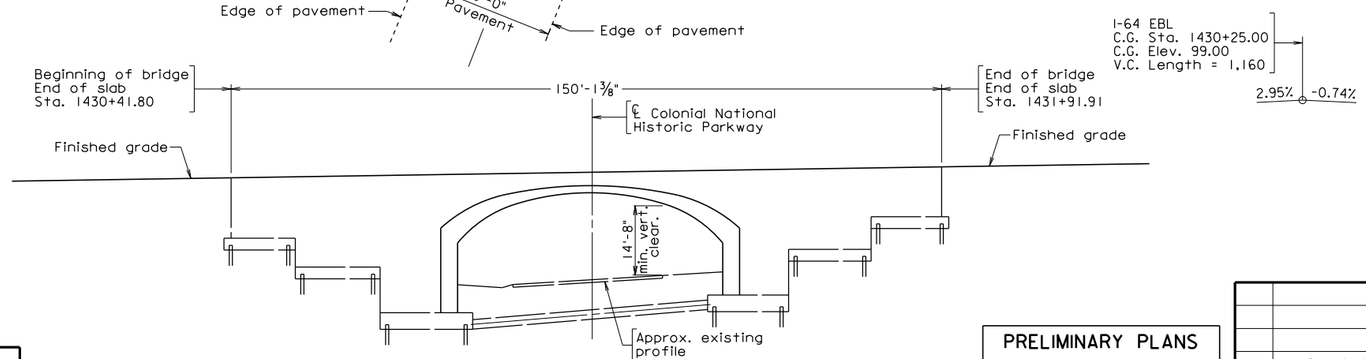
STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—		I-64	0064-965-229, B640, B639	1
NBIS Number: 000000000019840 000000000019838			UPC No. 106689		
Federal Oversight Code: N/A			FHWA Construction and Scour Code:	X224-SN	



PLAN - WBL



PLAN - EBL



DEVELOPED SECTION ALONG WIDENING

DESIGN EXCEPTION(S):

GENERAL NOTES:

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

Span layout: 146'-10¼" WBL, 150'-1⅜" EBL

Capacity: HL-93 loading. (Widened portion only)

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2016.

Design: AASHTO LRFD Bridge Design Specifications, 7th Edition, 2014; and VDOT Modifications.

Standards: Virginia Department of Transportation Road and Bridge Standards, 2016.

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

Bridge No. of existing bridge are 2006 (WBL) and 2005 (EBL). Plan No. is 163-19.

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE WIDENING ON RTE. 64 OVER COLONIAL NATIONAL HISTORICAL PARKWAY YORK COUNTY PROJ. 0064-965-229

VDOT S&B DIVISION
RICHMOND, VA
STRUCTURAL ENGINEER

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

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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

No.	Description	Date

REVISIONS

For Table of Revisions, see Sheet 2.

Recommended for Approval: _____ State Structure and Bridge Engineer Date

Approved: _____ Chief Engineer Date

Date: _____

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163-19A
Sheet 1 of 2

GPE_64 over Colonial Parkway_Exhibit.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		I-64	0064-968-229, B640, B639	2

Bridge Repair/Modification Notes:

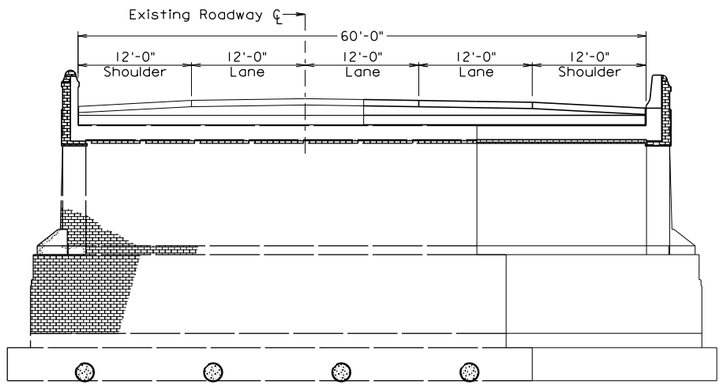
All superstructure and substructure repairs will be performed on the bridge in accordance with the RFP requirements.

The existing pavement structure over the bridge shall be replaced in accordance of the RFP.

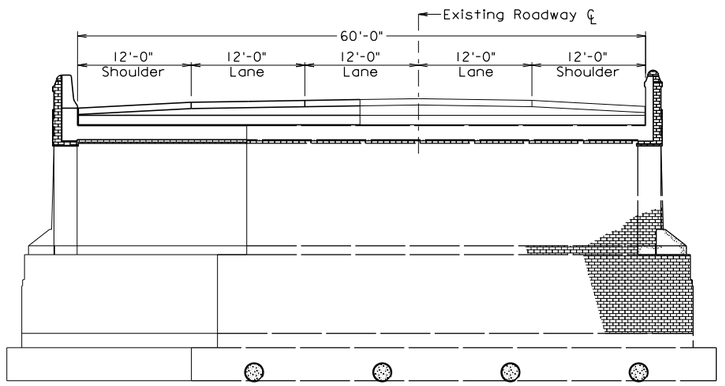
Replacing the existing material between the edge of Colonial Parkway and the face of each abutment with a free drainage layer to a depth of at least 12".

The brick facade shall consist of solid bricks matching the size and thickness of the existing bricks. Bricks shall be anchored to the concrete structure in a manner similar to the existing configuration as shown on the record drawings.

Masonry and aesthetics of proposed widening shall match the existing bridge in accordance with the special provisions provided with the RFP, and shall be approved by VDOT and the National Park Service.



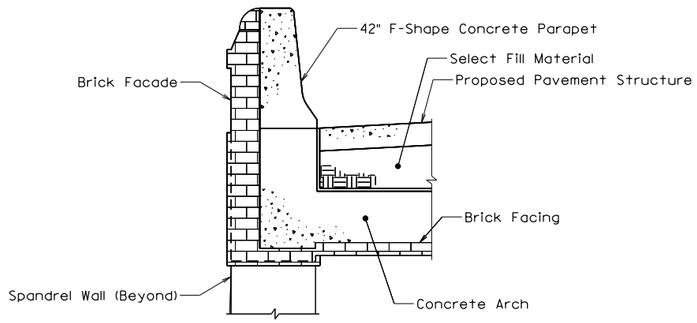
FINAL TRANSVERSE SECTION - WBL



FINAL TRANSVERSE SECTION - EBL

DESIGN ENHANCEMENT

ELIMINATED TIES IN WIDENED SECTIONS



Scale: 1/8" = 1'-0"

PRELIMINARY PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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Dewberry

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

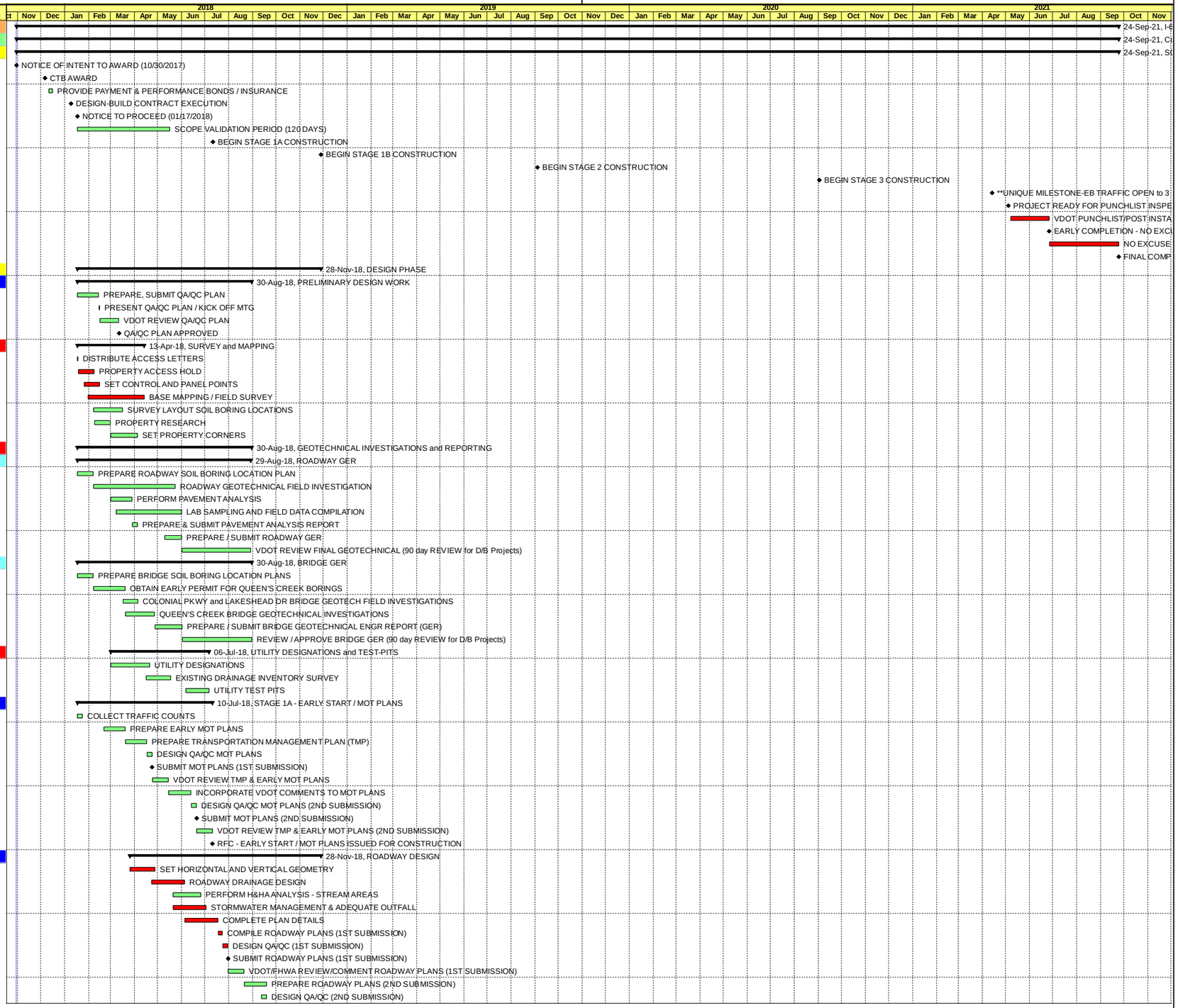
TRANSVERSE SECTION AND DETAILS

Designed:	Date	Plan No.	Sheet No.
Drawn:		163-19A	2 of 2
Checked:			

$DATE$ $TIME$
Typ Section_64 over Colonial Parkway_Exhibit.dgn

4.7.1 - Proposal Schedule

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
I-64 CAPACITY IMPROVEMENTS SEGMENT III -PROPOSAL SCHEDULE		811	30-Oct-17	24-Sep-21	0
Contract: C00106689DB97 I-64 CAPACITY IMPROVEMENTS SEGMENT III		811	30-Oct-17	24-Sep-21	0
SCHEDULE MILESTONES		1426	30-Oct-17	24-Sep-21	0
A-1000	NOTICE OF INTENT TO AWARD (10/30/2017)	0	30-Oct-17*		0
A-1020	CTB AWARD	0	06-Dec-17*		0
A-1030	PROVIDE PAYMENT & PERFORMANCE BONDS / INSURANCE	5	11-Dec-17	15-Dec-17	24
A-1040	DESIGN-BUILD CONTRACT EXECUTION	0	09-Jan-18*		0
A-1050	NOTICE TO PROCEED (01/17/2018)	0	17-Jan-18*		0
A-1060	SCOPE VALIDATION PERIOD (120 DAYS)	120	17-Jan-18	16-May-18	167
A-1070	BEGIN STAGE 1A CONSTRUCTION	0	11-Jul-18		14
A-1080	BEGIN STAGE 1B CONSTRUCTION	0	28-Nov-18		2
A-1100	BEGIN STAGE 2 CONSTRUCTION	0	04-Sep-19		0
A-1110	BEGIN STAGE 3 CONSTRUCTION	0	02-Sep-20		298
A-1120	**UNIQUE MILESTONE-EB TRAFFIC OPEN to 3 LANES (STA 1352+00 to EO.	0		13-Apr-21	74
A-1130	PROJECT READY FOR PUNCHLIST INSPECTIONS	0		04-May-21	3
A-1140	VDOT PUNCHLIST/POST INSTALLATION VIDEO STORM	50	08-May-21	26-Jun-21	0
A-1150	EARLY COMPLETION - NO EXCUSE INCENTIVE (by JUNE 30, 2021)	0		26-Jun-21	0
A-1160	NO EXCUSE INCENTIVE DAILY RATE	90	27-Jun-21	24-Sep-21	0
A-1170	FINAL COMPLETION DATE	0		24-Sep-21*	0
DESIGN PHASE		181	17-Jan-18	28-Nov-18	45
PRELIMINARY DESIGN WORK		128	17-Jan-18	30-Aug-18	43
BA-1000	PREPARE, SUBMIT QA/QC PLAN	20	17-Jan-18	13-Feb-18	32
BA-1010	PRESENT QA/QC PLAN / KICK OFF MTG	1	14-Feb-18	14-Feb-18	32
BA-1020	VDOT REVIEW QA/QC PLAN	25	15-Feb-18	11-Mar-18	46
BA-1030	QA/QC PLAN APPROVED	0		12-Mar-18	29
SURVEY and MAPPING		46	17-Jan-18	13-Apr-18	78
BAA-1000	DISTRIBUTE ACCESS LETTERS	1	17-Jan-18	17-Jan-18	1
BAA-1010	PROPERTY ACCESS HOLD	15	18-Jan-18	07-Feb-18	1
BAA-1020	SET CONTROL AND PANEL POINTS	20	26-Jan-18	14-Feb-18	1
BAA-1030	BASE MAPPING / FIELD SURVEY	40	31-Jan-18	13-Apr-18	1
BAA-1040	SURVEY LAYOUT SOIL BORING LOCATIONS	19	07-Feb-18	16-Mar-18	8
BAA-1050	PROPERTY RESEARCH	15	08-Feb-18	28-Feb-18	101
BAA-1060	SET PROPERTY CORNERS	20	01-Mar-18	04-Apr-18	83
GEOTECHNICAL INVESTIGATIONS and REPORTING		128	17-Jan-18	30-Aug-18	43
ROADWAY GER		127	17-Jan-18	29-Aug-18	44
BAB1-1000	PREPARE ROADWAY SOIL BORING LOCATION PLAN	15	17-Jan-18	06-Feb-18	13
BAB1-1010	ROADWAY GEOTECHNICAL FIELD INVESTIGATION	60	07-Feb-18	23-May-18	8
BAB1-1020	PERFORM PAVEMENT ANALYSIS	20	01-Mar-18	28-Mar-18	73
BAB1-1030	LAB SAMPLING AND FIELD DATA COMPILATION	60	08-Mar-18	31-May-18	50
BAB1-1040	PREPARE & SUBMIT PAVEMENT ANALYSIS REPORT	5	29-Mar-18	04-Apr-18	73
BAB1-1050	PREPARE / SUBMIT ROADWAY GER	15	10-May-18	31-May-18	50
BAB1-1060	VDOT REVIEW FINAL GEOTECHNICAL (90 day REVIEW for D/B Projects)	90	01-Jun-18	29-Aug-18	71
BRIDGE GER		128	17-Jan-18	30-Aug-18	21
BAB2-1000	PREPARE BRIDGE SOIL BORING LOCATION PLANS	15	17-Jan-18	06-Feb-18	28
BAB2-1010	OBTAIN EARLY PERMIT FOR QUEEN'S CREEK BORINGS	20	07-Feb-18	19-Mar-18	19
BAB2-1020	COLONIAL PKWY and LAKESHEAD DR BRIDGE GEOTECH FIELD INVESTI	20	17-Mar-18	05-Apr-18	55
BAB2-1030	QUEEN'S CREEK BRIDGE GEOTECHNICAL INVESTIGATIONS	25	20-Mar-18	26-Apr-18	19
BAB2-1040	PREPARE / SUBMIT BRIDGE GEOTECHNICAL ENGR REPORT (GER)	25	27-Apr-18	01-Jun-18	23
BAB2-1050	REVIEW / APPROVE BRIDGE GER (90 day REVIEW for D/B Projects)	90	02-Jun-18	30-Aug-18	34
UTILITY DESIGNATIONS and TEST-PITS		76	01-Mar-18	06-Jul-18	18
BAC-1000	UTILITY DESIGNATIONS	30	01-Mar-18	20-Apr-18	26
BAC-1010	EXISTING DRAINAGE INVENTORY SURVEY	20	16-Apr-18	17-May-18	11
BAC-1020	UTILITY TEST PITS	20	06-Jun-18	06-Jul-18	18
STAGE 1A - EARLY START / MOT PLANS		98	17-Jan-18	10-Jul-18	7
BB-1000	COLLECT TRAFFIC COUNTS	5	17-Jan-18	23-Jan-18	30
BB-1010	PREPARE EARLY MOT PLANS	20	20-Feb-18	19-Mar-18	11
BB-1020	PREPARE TRANSPORTATION MANAGEMENT PLAN (TMP)	20	20-Mar-18	16-Apr-18	11
BB-1030	DESIGN QA/QC MOT PLANS	5	17-Apr-18	23-Apr-18	11
BB-1040	SUBMIT MOT PLANS (1ST SUBMISSION)	0		23-Apr-18	11
BB-1050	VDOT REVIEW TMP & EARLY MOT PLANS	21	24-Apr-18	14-May-18	15
BB-1060	INCORPORATE VDOT COMMENTS TO MOT PLANS	20	15-May-18	12-Jun-18	10
BB-1070	DESIGN QA/QC MOT PLANS (2ND SUBMISSION)	5	13-Jun-18	19-Jun-18	10
BB-1080	SUBMIT MOT PLANS (2ND SUBMISSION)	0	20-Jun-18		10
BB-1090	VDOT REVIEW TMP & EARLY MOT PLANS (2ND SUBMISSION)	21	20-Jun-18	10-Jul-18	14
BB-1100	RFC - EARLY START / MOT PLANS ISSUED FOR CONSTRUCTION	0		10-Jul-18	14
ROADWAY DESIGN		147	26-Mar-18	28-Nov-18	2
BC-1000	SET HORIZONTAL AND VERTICAL GEOMETRY	25	26-Mar-18	27-Apr-18	1
BC-1010	ROADWAY DRAINAGE DESIGN	30	23-Apr-18	04-Jun-18	1
BC-1020	PERFORM H&HA ANALYSIS - STREAM AREAS	25	21-May-18	25-Jun-18	52
BC-1030	STORMWATER MANAGEMENT & ADEQUATE OUTFALL	30	21-May-18	02-Jul-18	1
BC-1040	COMPLETE PLAN DETAILS	30	05-Jun-18	17-Jul-18	1
BC-1050	COMPILE ROADWAY PLANS (1ST SUBMISSION)	4	18-Jul-18	23-Jul-18	1
BC-1060	DESIGN QA/QC (1ST SUBMISSION)	5	24-Jul-18	30-Jul-18	1
BC-1070	SUBMIT ROADWAY PLANS (1ST SUBMISSION)	0	31-Jul-18		1
BC-1080	VDOT/FHWA REVIEW/COMMENT ROADWAY PLANS (1ST SUBMISSION)	21	31-Jul-18	20-Aug-18	2
BC-1090	PREPARE ROADWAY PLANS (2ND SUBMISSION)	20	21-Aug-18	18-Sep-18	2
BC-1100	DESIGN QA/QC (2ND SUBMISSION)	5	12-Sep-18	18-Sep-18	2



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

TASK filter: All Activities

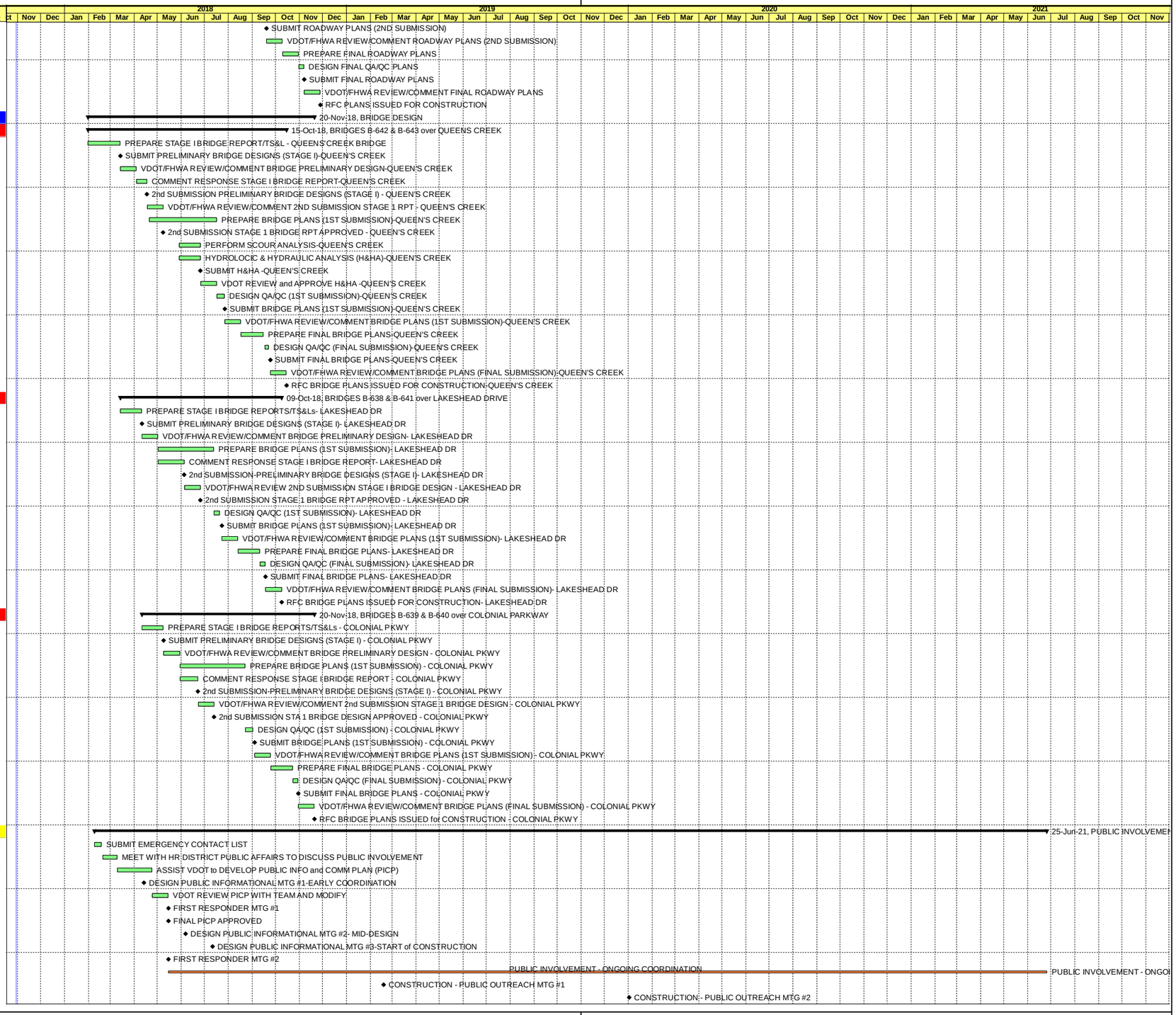
SHIRLEY CONTRACTING COMPANY, LLC

I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
BC-1110	SUBMIT ROADWAY PLANS (2ND SUBMISSION)	0	19-Sep-18		2
BC-1120	VDOT/FHWA REVIEW/COMMENT ROADWAY PLANS (2ND SUBMISSION)	21	19-Sep-18	09-Oct-18	2
BC-1130	PREPARE FINAL ROADWAY PLANS	15	10-Oct-18	30-Oct-18	2
BC-1140	DESIGN FINAL QA/QC PLANS	5	31-Oct-18	06-Nov-18	2
BC-1150	SUBMIT FINAL ROADWAY PLANS	0	07-Nov-18		2
BC-1160	VDOT/FHWA REVIEW/COMMENT FINAL ROADWAY PLANS	21	07-Nov-18	27-Nov-18	2
BC-1170	RFC PLANS ISSUED FOR CONSTRUCTION	0	28-Nov-18		2
BRIDGE DESIGN		171	31-Jan-18	20-Nov-18	49
BRIDGES B-642 & B-643 over QUEENS CREEK		148	31-Jan-18	15-Oct-18	42
BDA-1000	PREPARE STAGE I BRIDGE REPORT/TS&L - QUEENS CREEK BRIDGE	30	31-Jan-18	13-Mar-18	7
BDA-1010	SUBMIT PRELIMINARY BRIDGE DESIGNS (STAGE I)-QUEEN'S CREEK	0	14-Mar-18		55
BDA-1020	VDOT/FHWA REVIEW/COMMENT BRIDGE PRELIMINARY DESIGN-QUEEN'	21	14-Mar-18	03-Apr-18	78
BDA-1030	COMMENT RESPONSE STAGE I BRIDGE REPORT-QUEEN'S CREEK	10	04-Apr-18	17-Apr-18	55
BDA-1040	2nd SUBMISSION PRELIMINARY BRIDGE DESIGNS (STAGE I) - QUEEN'S C	0		17-Apr-18	55
BDA-1050	VDOT/FHWA REVIEW/COMMENT 2ND SUBMISSION STAGE 1 RPT - QUEEI	21	18-Apr-18	08-May-18	143
BDA-1060	PREPARE BRIDGE PLANS (1ST SUBMISSION)-QUEEN'S CREEK	60	20-Apr-18	16-Jul-18	53
BDA-1070	2nd SUBMISSION STAGE 1 BRIDGE RPT APPROVED - QUEEN'S CREEK	0		08-May-18	143
BDA-1080	PERFORM SCOUR ANALYSIS-QUEEN'S CREEK	20	29-May-18	25-Jun-18	67
BDA-1090	HYDROLOCIC & HYDRAULIC ANALYSIS (H&HA)-QUEEN'S CREEK	20	29-May-18	25-Jun-18	52
BDA-1100	SUBMIT H&HA -QUEEN'S CREEK	0		25-Jun-18	52
BDA-1110	VDOT REVIEW and APPROVE H&HA -QUEEN'S CREEK	21	26-Jun-18	16-Jul-18	74
BDA-1120	DESIGN QA/QC (1ST SUBMISSION)-QUEEN'S CREEK	10	17-Jul-18	26-Jul-18	74
BDA-1130	SUBMIT BRIDGE PLANS (1ST SUBMISSION)-QUEEN'S CREEK	0	27-Jul-18		51
BDA-1140	VDOT/FHWA REVIEW/COMMENT BRIDGE PLANS (1ST SUBMISSION)-QUE	21	27-Jul-18	16-Aug-18	74
BDA-1150	PREPARE FINAL BRIDGE PLANS-QUEEN'S CREEK	20	17-Aug-18	14-Sep-18	51
BDA-1160	DESIGN QA/QC (FINAL SUBMISSION)-QUEEN'S CREEK	5	17-Sep-18	21-Sep-18	51
BDA-1170	SUBMIT FINAL BRIDGE PLANS-QUEEN'S CREEK	0	24-Sep-18		51
BDA-1180	VDOT/FHWA REVIEW/COMMENT BRIDGE PLANS (FINAL SUBMISSION)-QU	21	24-Sep-18	14-Oct-18	73
BDA-1190	RFC BRIDGE PLANS ISSUED FOR CONSTRUCTION-QUEEN'S CREEK	0	15-Oct-18		50
BRIDGES B-638 & B-641 over LAKESHEAD DRIVE		125	14-Mar-18	09-Oct-18	74
BDB-1000	PREPARE STAGE I BRIDGE REPORTS/TS&Ls- LAKESHEAD DR	20	14-Mar-18	10-Apr-18	7
BDB-1010	SUBMIT PRELIMINARY BRIDGE DESIGNS (STAGE I)- LAKESHEAD DR	0	11-Apr-18		12
BDB-1020	VDOT/FHWA REVIEW/COMMENT BRIDGE PRELIMINARY DESIGN- LAKESI	21	11-Apr-18	01-May-18	16
BDB-1030	PREPARE BRIDGE PLANS (1ST SUBMISSION)- LAKESHEAD DR	50	02-May-18	12-Jul-18	12
BDB-1040	COMMENT RESPONSE STAGE I BRIDGE REPORT- LAKESHEAD DR	20	02-May-18	04-Jun-18	21
BDB-1050	2nd SUBMISSION-PRELIMINARY BRIDGE DESIGNS (STAGE I)- LAKESHEAI	0		04-Jun-18	21
BDB-1060	VDOT/FHWA REVIEW 2ND SUBMISSION STAGE I BRIDGE DESIGN - LAKES	21	05-Jun-18	25-Jun-18	35
BDB-1070	2nd SUBMISSION STAGE 1 BRIDGE RPT APPROVED - LAKESHEAD DR	0		25-Jun-18	19
BDB-1080	DESIGN QA/QC (1ST SUBMISSION)- LAKESHEAD DR	8	13-Jul-18	20-Jul-18	18
BDB-1090	SUBMIT BRIDGE PLANS (1ST SUBMISSION)- LAKESHEAD DR	0	23-Jul-18		12
BDB-1100	VDOT/FHWA REVIEW/COMMENT BRIDGE PLANS (1ST SUBMISSION)- LAK	21	23-Jul-18	12-Aug-18	16
BDB-1110	PREPARE FINAL BRIDGE PLANS- LAKESHEAD DR	20	13-Aug-18	10-Sep-18	12
BDB-1120	DESIGN QA/QC (FINAL SUBMISSION)- LAKESHEAD DR	5	11-Sep-18	17-Sep-18	12
BDB-1130	SUBMIT FINAL BRIDGE PLANS- LAKESHEAD DR	0	18-Sep-18		12
BDB-1140	VDOT/FHWA REVIEW/COMMENT BRIDGE PLANS (FINAL SUBMISSION)- LA	21	18-Sep-18	08-Oct-18	16
BDB-1150	RFC BRIDGE PLANS ISSUED FOR CONSTRUCTION- LAKESHEAD DR	0	09-Oct-18		96
BRIDGES B-639 & B-640 over COLONIAL PARKWAY		134	11-Apr-18	20-Nov-18	6
BDC-1000	PREPARE STAGE I BRIDGE REPORTS/TS&Ls - COLONIAL PKWY	20	11-Apr-18	08-May-18	7
BDC-1010	SUBMIT PRELIMINARY BRIDGE DESIGNS (STAGE I) - COLONIAL PKWY	0	09-May-18		7
BDC-1020	VDOT/FHWA REVIEW/COMMENT BRIDGE PRELIMINARY DESIGN - COLON	21	09-May-18	29-May-18	9
BDC-1030	PREPARE BRIDGE PLANS (1ST SUBMISSION) - COLONIAL PKWY	60	30-May-18	22-Aug-18	7
BDC-1040	COMMENT RESPONSE STAGE I BRIDGE REPORT - COLONIAL PKWY	15	30-May-18	22-Jun-18	27
BDC-1050	2nd SUBMISSION-PRELIMINARY BRIDGE DESIGNS (STAGE I) - COLONIAL	0		22-Jun-18	27
BDC-1060	VDOT/FHWA REVIEW/COMMENT 2nd SUBMISSION STAGE 1 BRIDGE DES	21	23-Jun-18	13-Jul-18	49
BDC-1070	2nd SUBMISSION STA 1 BRIDGE DESIGN APPROVED - COLONIAL PKWY	0		13-Jul-18	29
BDC-1080	DESIGN QA/QC (1ST SUBMISSION) - COLONIAL PKWY	10	23-Aug-18	01-Sep-18	12
BDC-1090	SUBMIT BRIDGE PLANS (1ST SUBMISSION) - COLONIAL PKWY	0	04-Sep-18		8
BDC-1100	VDOT/FHWA REVIEW/COMMENT BRIDGE PLANS (1ST SUBMISSION) - CO	21	04-Sep-18	24-Sep-18	10
BDC-1110	PREPARE FINAL BRIDGE PLANS - COLONIAL PKWY	20	25-Sep-18	22-Oct-18	8
BDC-1120	DESIGN QA/QC (FINAL SUBMISSION) - COLONIAL PKWY	5	23-Oct-18	29-Oct-18	8
BDC-1130	SUBMIT FINAL BRIDGE PLANS - COLONIAL PKWY	0	30-Oct-18		8
BDC-1140	VDOT/FHWA REVIEW/COMMENT BRIDGE PLANS (FINAL SUBMISSION) - C	21	30-Oct-18	19-Nov-18	10
BDC-1150	RFC BRIDGE PLANS ISSUED for CONSTRUCTION - COLONIAL PKWY	0	20-Nov-18		6
PUBLIC INVOLVEMENT		704	08-Feb-18	25-Jun-21	0
C-1000	SUBMIT EMERGENCY CONTACT LIST	10	08-Feb-18	17-Feb-18	1088
C-1010	MEET WITH HR DISTRICT PUBLIC AFFAIRS TO DISCUSS PUBLIC INVOLVE	15	19-Feb-18	09-Mar-18	756
C-1020	ASSIST VDOT to DEVELOP PUBLIC INFO and COMM PLAN (PICP)	45	10-Mar-18	23-Apr-18	1089
C-1030	DESIGN PUBLIC INFORMATIONAL MTG #1-EARLY COORDINATION	0		13-Apr-18	769
C-1040	VDOT REVIEW PICP WITH TEAM AND MODIFY	21	24-Apr-18	14-May-18	1089
C-1050	FIRST RESPONDER MTG #1	0		15-May-18	758
C-1060	FINAL PICP APPROVED	0	15-May-18		758
C-1070	DESIGN PUBLIC INFORMATIONAL MTG #2- MID-DESIGN	0	06-Jun-18		610
C-1080	DESIGN PUBLIC INFORMATIONAL MTG #3-START of CONSTRUCTION	0		11-Jul-18	589
C-1090	FIRST RESPONDER MTG #2	0		15-May-18	624
C-1100	PUBLIC INVOLVEMENT - ONGOING COORDINATION	652	15-May-18	25-Jun-21	0
C-1110	CONSTRUCTION - PUBLIC OUTREACH MTG #1	0	18-Feb-19		466
C-1120	CONSTRUCTION - PUBLIC OUTREACH MTG #2	0	02-Jan-20		278



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

TASK filter: All Activities

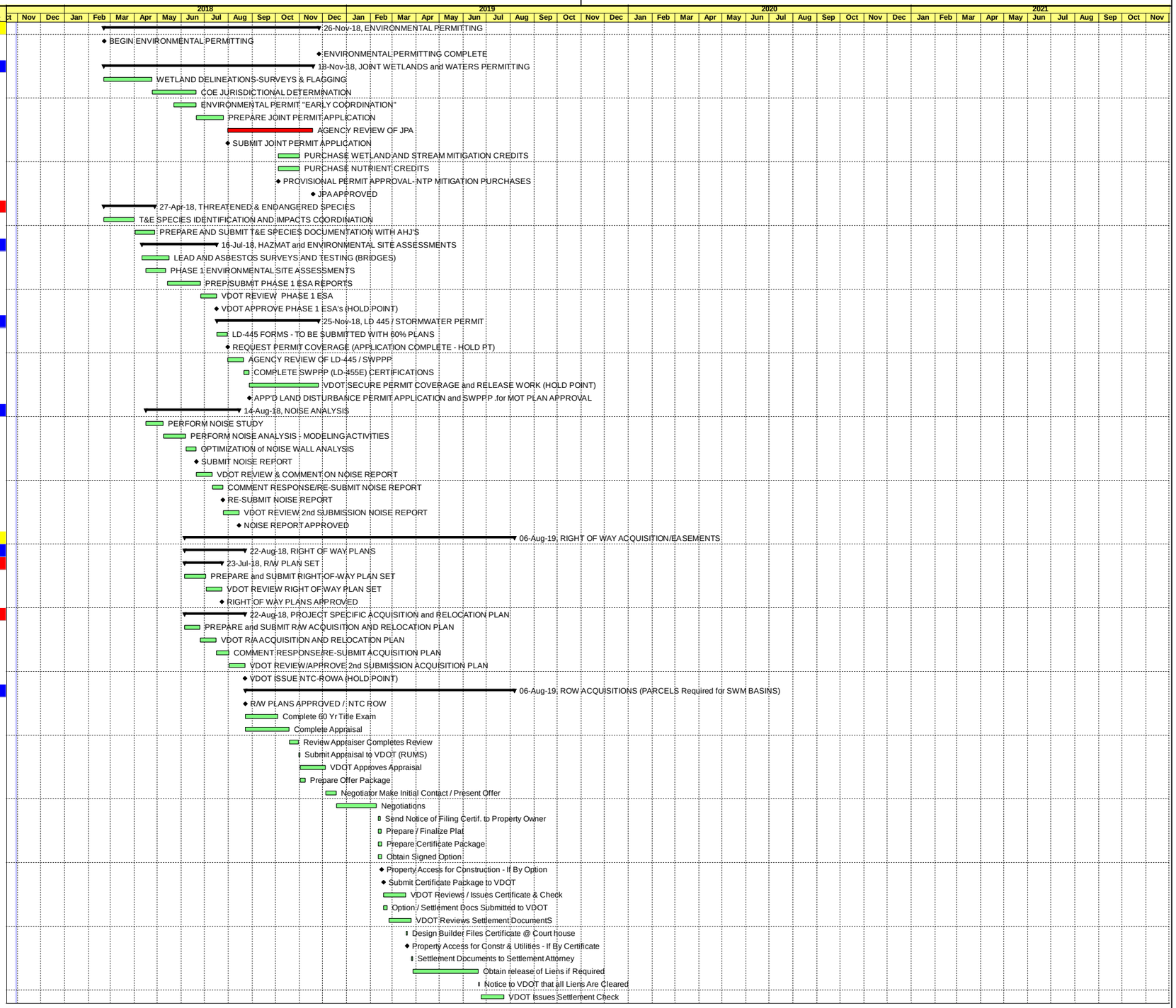
SHIRLEY CONTRACTING COMPANY, LLC

I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
ENVIRONMENTAL PERMITTING		163	20-Feb-18	26-Nov-18	4
D-1000	BEGIN ENVIRONMENTAL PERMITTING	0	21-Feb-18		40
D-1010	ENVIRONMENTAL PERMITTING COMPLETE	0	26-Nov-18		4
JOINT WETLANDS and WATERS PERMITTING		160	20-Feb-18	18-Nov-18	0
DA-1000	WETLAND DELINEATIONS-SURVEYS & FLAGGING	45	20-Feb-18	23-Apr-18	4
DA-1010	COE JURISDICTIONAL DETERMINATION	40	24-Apr-18	19-Jun-18	4
DA-1020	ENVIRONMENTAL PERMIT "EARLY COORDINATION"	20	22-May-18	19-Jun-18	86
DA-1030	PREPARE JOINT PERMIT APPLICATION	25	20-Jun-18	25-Jul-18	4
DA-1040	AGENCY REVIEW OF JPA	110	31-Jul-18	17-Nov-18	1
DA-1050	SUBMIT JOINT PERMIT APPLICATION	0	31-Jul-18		1
DA-1060	PURCHASE WETLAND AND STREAM MITIGATION CREDITS	20	04-Oct-18	31-Oct-18	12
DA-1070	PURCHASE NUTRIENT CREDITS	20	04-Oct-18	31-Oct-18	12
DA-1080	PROVISIONAL PERMIT APPROVAL- NTP MITIGATION PURCHASES	0	04-Oct-18		18
DA-1090	JPA APPROVED	0	18-Nov-18		1
THREATENED & ENDANGERED SPECIES		40	20-Feb-18	27-Apr-18	33
DAA-1000	T&E SPECIES IDENTIFICATION AND IMPACTS COORDINATION	40	20-Feb-18	31-Mar-18	58
DAA-1010	PREPARE AND SUBMIT T&E SPECIES DOCUMENTATION WITH AHJ'S	20	02-Apr-18	27-Apr-18	40
HAZMAT and ENVIRONMENTAL SITE ASSESSMENTS		58	11-Apr-18	16-Jul-18	72
DB-1000	LEAD AND ASBESTOS SURVEYS AND TESTING (BRIDGES)	35	11-Apr-18	15-May-18	168
DB-1010	PHASE 1 ENVIRONMENTAL SITE ASSESSMENTS	20	16-Apr-18	11-May-18	83
DB-1020	PREP/SUBMIT PHASE 1 ESA REPORTS	30	14-May-18	25-Jun-18	83
DB-1030	VDOT REVIEW PHASE 1 ESA	21	26-Jun-18	16-Jul-18	119
DB-1040	VDOT APPROVE PHASE 1 ESA's (HOLD POINT)	0		16-Jul-18	84
LD 445 / STORMWATER PERMIT		78	17-Jul-18	25-Nov-18	4
DC-1000	LD-445 FORMS - TO BE SUBMITTED WITH 60% PLANS	10	17-Jul-18	30-Jul-18	4
DC-1010	REQUEST PERMIT COVERAGE (APPLICATION COMPLETE - HOLD PT)	0	31-Jul-18		6
DC-1020	AGENCY REVIEW OF LD-445 / SWPPP	21	31-Jul-18	20-Aug-18	6
DC-1030	COMPLETE SWPPP (LD-455E) CERTIFICATIONS	5	21-Aug-18	27-Aug-18	4
DC-1040	VDOT SECURE PERMIT COVERAGE and RELEASE WORK (HOLD POINT)	90	28-Aug-18	25-Nov-18	4
DC-1050	APP'D LAND DISTURBANCE PERMIT APPLICATION and SWPPP .for MOT F	0	28-Aug-18		4
NOISE ANALYSIS		70	16-Apr-18	14-Aug-18	55
DD-1000	PERFORM NOISE STUDY	17	16-Apr-18	08-May-18	26
DD-1010	PERFORM NOISE ANALYSIS - MODELING ACTIVITIES	20	09-May-18	06-Jun-18	26
DD-1020	OPTIMIZATION of NOISE WALL ANALYSIS	9	07-Jun-18	19-Jun-18	26
DD-1030	SUBMIT NOISE REPORT	0	20-Jun-18		26
DD-1040	VDOT REVIEW & COMMENT ON NOISE REPORT	21	20-Jun-18	10-Jul-18	37
DD-1050	COMMENT RESPONSE/RE-SUBMIT NOISE REPORT	10	11-Jul-18	24-Jul-18	27
DD-1060	RE-SUBMIT NOISE REPORT	0		24-Jul-18	27
DD-1070	VDOT REVIEW 2nd SUBMISSION NOISE REPORT	21	25-Jul-18	14-Aug-18	37
DD-1080	NOISE REPORT APPROVED	0		14-Aug-18	86
RIGHT OF WAY ACQUISITION/EASEMENTS		242	05-Jun-18	06-Aug-19	143
RIGHT OF WAY PLANS		45	05-Jun-18	22-Aug-18	51
R/W PLAN SET		27	05-Jun-18	23-Jul-18	69
EAA-1000	PREPARE and SUBMIT RIGHT-OF-WAY PLAN SET	20	05-Jun-18	02-Jul-18	58
EAA-1010	VDOT REVIEW RIGHT OF WAY PLAN SET	21	03-Jul-18	23-Jul-18	112
EAA-1020	RIGHT OF WAY PLANS APPROVED	0		23-Jul-18	69
PROJECT SPECIFIC ACQUISITION and RELOCATION PLAN		45	05-Jun-18	22-Aug-18	51
EAB-1000	PREPARE and SUBMIT R/W ACQUISITION AND RELOCATION PLAN	20	05-Jun-18	24-Jun-18	81
EAB-1010	VDOT R/A ACQUISITION AND RELOCATION PLAN	21	25-Jun-18	15-Jul-18	81
EAB-1020	COMMENT RESPONSE/RE-SUBMIT ACQUISITION PLAN	10	16-Jul-18	01-Aug-18	50
EAB-1030	VDOT REVIEW/APPROVE 2nd SUBMISSION ACQUISITION PLAN	21	02-Aug-18	22-Aug-18	82
EAB-1040	VDOT ISSUE NTC-ROWA (HOLD POINT)	0		22-Aug-18	57
ROW ACQUISITIONS (PARCELS Required for SWM BASINS)		242	23-Aug-18	06-Aug-19	173
EB-1000	R/W PLANS APPROVED / NTC ROW	0	23-Aug-18		57
EB-1010	Complete 60 Yr Title Exam	29	23-Aug-18	03-Oct-18	58
EB-1020	Complete Appraisal	40	23-Aug-18	18-Oct-18	57
EB-1030	Review Appraiser Completes Review	8	19-Oct-18	30-Oct-18	57
EB-1040	Submit Appraisal to VDOT (RUMS)	2	31-Oct-18	01-Nov-18	57
EB-1050	VDOT Approves Appraisal	21	02-Nov-18	04-Dec-18	57
EB-1060	Prepare Offer Package	5	02-Nov-18	08-Nov-18	73
EB-1070	Negotiator Make Initial Contact / Present Offer	10	05-Dec-18	18-Dec-18	57
EB-1080	Negotiations	36	19-Dec-18	08-Feb-19	57
EB-1090	Send Notice of Filing Certif. to Property Owner	3	11-Feb-19	13-Feb-19	246
EB-1100	Prepare / Finalize Plat	4	11-Feb-19	14-Feb-19	63
EB-1110	Prepare Certificate Package	5	11-Feb-19	15-Feb-19	244
EB-1120	Obtain Signed Option	5	11-Feb-19	15-Feb-19	57
EB-1130	Property Access for Construction - If By Option	0		15-Feb-19	293
EB-1140	Submit Certificate Package to VDOT	0	18-Feb-19		244
EB-1150	VDOT Reviews / Issues Certificate & Check	21	18-Feb-19	18-Mar-19	244
EB-1160	Option / Settlement Docs Submitted to VDOT	5	18-Feb-19	22-Feb-19	57
EB-1170	VDOT Reviews Settlement DocumentS	21	25-Feb-19	25-Mar-19	57
EB-1180	Design Builder Files Certificate @ Court house	2	19-Mar-19	20-Mar-19	244
EB-1190	Property Access for Constr & Utilities - If By Certificate	0		20-Mar-19	244
EB-1200	Settlement Documents to Settlement Attorney	2	26-Mar-19	27-Mar-19	57
EB-1210	Obtain release of Liens if Required	60	28-Mar-19	20-Jun-19	57
EB-1220	Notice to VDOT that all Liens Are Cleared	1	21-Jun-19	21-Jun-19	57
EB-1230	VDOT Issues Settlement Check	21	24-Jun-19	23-Jul-19	57

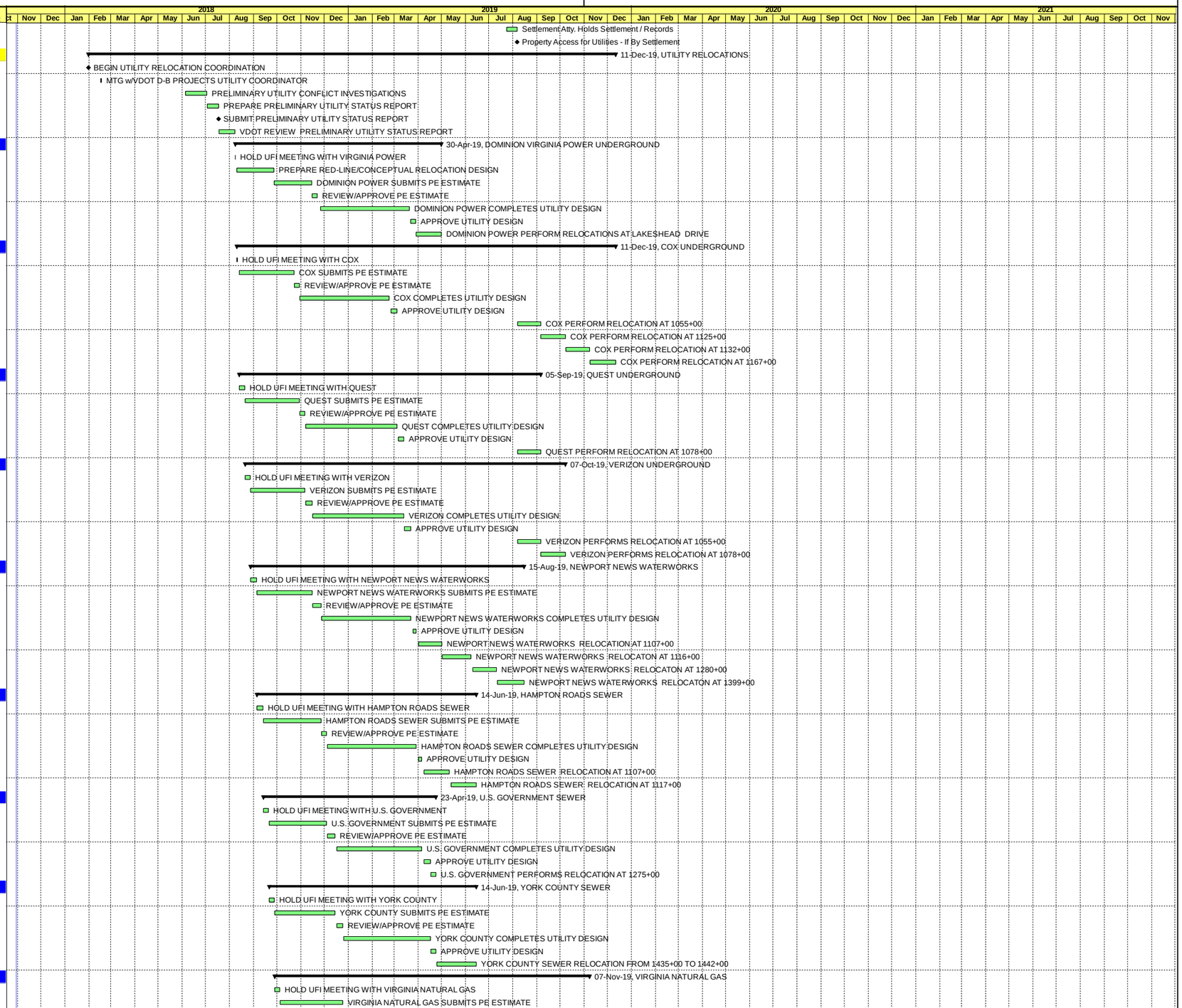


Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filter: All Activities

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
EB-1240	Settlement Atty. Holds Settlement / Records	10	24-Jul-19	06-Aug-19	57
EB-1250	Property Access for Utilities - If By Settlement	0		06-Aug-19	57
UTILITY RELOCATIONS		393	31-Jan-18	11-Dec-19	158
F-1000	BEGIN UTILITY RELOCATION COORDINATION	0	31-Jan-18		90
F-1010	MTG w/VDOT D-B PROJECTS UTILITY COORDINATOR	1	16-Feb-18	16-Feb-18	78
F-1020	PRELIMINARY UTILITY CONFLICT INVESTIGATIONS	20	05-Jun-18	02-Jul-18	3
F-1030	PREPARE PRELIMINARY UTILITY STATUS REPORT	10	03-Jul-18	17-Jul-18	3
F-1040	SUBMIT PRELIMINARY UTILITY STATUS REPORT	0		17-Jul-18	3
F-1050	VDOT REVIEW PRELIMINARY UTILITY STATUS REPORT	21	18-Jul-18	07-Aug-18	5
DOMINION VIRGINIA POWER UNDERGROUND		151	08-Aug-18	30-Apr-19	2
FA-1000	HOLD UFI MEETING WITH VIRGINIA POWER	1	08-Aug-18	08-Aug-18	2
FA-1010	PREPARE RED-LINE/CONCEPTUAL RELOCATION DESIGN	30	10-Aug-18	26-Sep-18	2
FA-1020	DOMINION POWER SUBMITS PE ESTIMATE	30	27-Sep-18	14-Nov-18	2
FA-1030	REVIEW/APPROVE PE ESTIMATE	5	15-Nov-18	21-Nov-18	2
FA-1040	DOMINION POWER COMPLETES UTILITY DESIGN	60	26-Nov-18	20-Mar-19	2
FA-1050	APPROVE UTILITY DESIGN	5	22-Mar-19	28-Mar-19	2
FA-1060	DOMINION POWER PERFORM RELOCATIONS AT LAKESHEAD DRIVE	20	29-Mar-19	30-Apr-19	2
COX UNDERGROUND		285	10-Aug-18	11-Dec-19	122
FB-1000	HOLD UFI MEETING WITH COX	1	10-Aug-18	10-Aug-18	106
FB-1010	COX SUBMITS PE ESTIMATE	45	13-Aug-18	22-Oct-18	211
FB-1020	REVIEW/APPROVE PE ESTIMATE	5	23-Oct-18	29-Oct-18	211
FB-1030	COX COMPLETES UTILITY DESIGN	60	30-Oct-18	22-Feb-19	211
FB-1040	APPROVE UTILITY DESIGN	5	25-Feb-19	04-Mar-19	211
FB-1050	COX PERFORM RELOCATION AT 1055+00	20	07-Aug-19	05-Sep-19	122
FB-1060	COX PERFORM RELOCATION AT 1125+00	20	06-Sep-19	07-Oct-19	122
FB-1070	COX PERFORM RELOCATION AT 1132+00	20	08-Oct-19	07-Nov-19	122
FB-1080	COX PERFORM RELOCATION AT 1167+00	20	08-Nov-19	11-Dec-19	122
QUEST UNDERGROUND		224	13-Aug-18	05-Sep-19	218
FC-1000	HOLD UFI MEETING WITH QUEST	5	13-Aug-18	20-Aug-18	106
FC-1010	QUEST SUBMITS PE ESTIMATE	45	21-Aug-18	29-Oct-18	302
FC-1020	REVIEW/APPROVE PE ESTIMATE	5	30-Oct-18	05-Nov-18	302
FC-1030	QUEST COMPLETES UTILITY DESIGN	60	07-Nov-18	04-Mar-19	302
FC-1040	APPROVE UTILITY DESIGN	5	06-Mar-19	13-Mar-19	302
FC-1050	QUEST PERFORM RELOCATION AT 1078+00	20	07-Aug-19	05-Sep-19	218
VERIZON UNDERGROUND		239	21-Aug-18	07-Oct-19	198
FD-1000	HOLD UFI MEETING WITH VERIZON	5	21-Aug-18	27-Aug-18	106
FD-1010	VERIZON SUBMITS PE ESTIMATE	45	28-Aug-18	05-Nov-18	277
FD-1020	REVIEW/APPROVE PE ESTIMATE	5	07-Nov-18	15-Nov-18	277
FD-1030	VERIZON COMPLETES UTILITY DESIGN	60	16-Nov-18	13-Mar-19	277
FD-1040	APPROVE UTILITY DESIGN	5	14-Mar-19	22-Mar-19	277
FD-1050	VERIZON PERFORMS RELOCATION AT 1055+00	20	07-Aug-19	05-Sep-19	198
FD-1060	VERIZON PERFORMS RELOCATION AT 1078+00	20	06-Sep-19	07-Oct-19	198
NEWPORT NEWS WATERWORKS		200	28-Aug-18	15-Aug-19	106
FE-1000	HOLD UFI MEETING WITH NEWPORT NEWS WATERWORKS	5	28-Aug-18	04-Sep-18	106
FE-1010	NEWPORT NEWS WATERWORKS SUBMITS PE ESTIMATE	45	05-Sep-18	15-Nov-18	106
FE-1020	REVIEW/APPROVE PE ESTIMATE	5	16-Nov-18	26-Nov-18	106
FE-1030	NEWPORT NEWS WATERWORKS COMPLETES UTILITY DESIGN	60	27-Nov-18	22-Mar-19	106
FE-1040	APPROVE UTILITY DESIGN	5	25-Mar-19	29-Mar-19	106
FE-1050	NEWPORT NEWS WATERWORKS RELOCATION AT 1107+00	20	01-Apr-19	01-May-19	106
FE-1060	NEWPORT NEWS WATERWORKS RELOCATON AT 1116+00	20	02-May-19	07-Jun-19	106
FE-1070	NEWPORT NEWS WATERWORKS RELOCATON AT 1280+00	20	10-Jun-19	10-Jul-19	106
FE-1080	NEWPORT NEWS WATERWORKS RELOCATON AT 1399+00	20	12-Jul-19	15-Aug-19	106
HAMPTON ROADS SEWER		160	05-Sep-18	14-Jun-19	171
FF-1000	HOLD UFI MEETING WITH HAMPTON ROADS SEWER	5	05-Sep-18	12-Sep-18	106
FF-1010	HAMPTON ROADS SEWER SUBMITS PE ESTIMATE	45	13-Sep-18	26-Nov-18	171
FF-1020	REVIEW/APPROVE PE ESTIMATE	5	27-Nov-18	03-Dec-18	171
FF-1030	HAMPTON ROADS SEWER COMPLETES UTILITY DESIGN	60	05-Dec-18	29-Mar-19	171
FF-1040	APPROVE UTILITY DESIGN	5	01-Apr-19	05-Apr-19	171
FF-1050	HAMPTON ROADS SEWER RELOCATION AT 1107+00	20	08-Apr-19	10-May-19	171
FF-1060	HAMPTON ROADS SEWER RELOCATION AT 1117+00	20	13-May-19	14-Jun-19	171
U.S. GOVERNMENT SEWER		125	13-Sep-18	23-Apr-19	201
FG-1000	HOLD UFI MEETING WITH U.S. GOVERNMENT	5	13-Sep-18	19-Sep-18	106
FG-1010	U.S. GOVERNMENT SUBMITS PE ESTIMATE	45	21-Sep-18	03-Dec-18	201
FG-1020	REVIEW/APPROVE PE ESTIMATE	5	05-Dec-18	14-Dec-18	201
FG-1030	U.S. GOVERNMENT COMPLETES UTILITY DESIGN	60	17-Dec-18	05-Apr-19	201
FG-1040	APPROVE UTILITY DESIGN	5	08-Apr-19	16-Apr-19	201
FG-1050	U.S. GOVERNMENT PERFORMS RELOCATION AT 1275+00	5	17-Apr-19	23-Apr-19	201
YORK COUNTY SEWER		150	21-Sep-18	14-Jun-19	208
FH-1000	HOLD UFI MEETING WITH YORK COUNTY	5	21-Sep-18	27-Sep-18	106
FH-1010	YORK COUNTY SUBMITS PE ESTIMATE	45	28-Sep-18	14-Dec-18	208
FH-1020	REVIEW/APPROVE PE ESTIMATE	5	17-Dec-18	24-Dec-18	208
FH-1030	YORK COUNTY COMPLETES UTILITY DESIGN	60	26-Dec-18	16-Apr-19	208
FH-1040	APPROVE UTILITY DESIGN	5	17-Apr-19	23-Apr-19	208
FH-1050	YORK COUNTY SEWER RELOCATION FROM 1435+00 TO 1442+00	30	25-Apr-19	14-Jun-19	208
VIRGINIA NATURAL GAS		234	28-Sep-18	07-Nov-19	52
FI-1000	HOLD UFI MEETING WITH VIRGINIA NATURAL GAS	5	28-Sep-18	04-Oct-18	106
FI-1010	VIRGINIA NATURAL GAS SUBMITS PE ESTIMATE	45	05-Oct-18	24-Dec-18	106

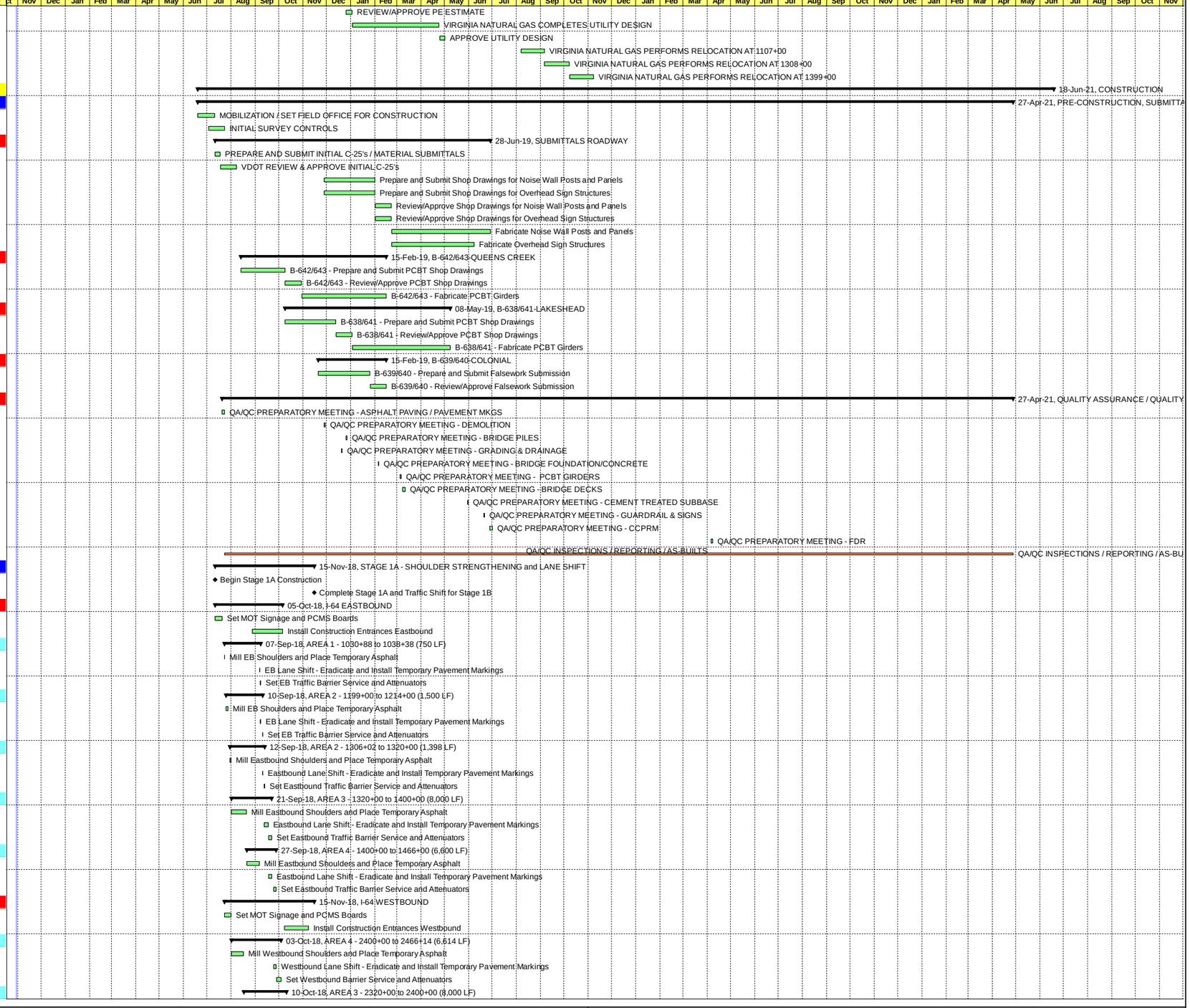


I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
FI-1020	REVIEW/APPROVE PE ESTIMATE	5	26-Dec-18	02-Jan-19	106
FI-1030	VIRGINIA NATURAL GAS COMPLETES UTILITY DESIGN	60	03-Jan-19	23-Apr-19	106
FI-1040	APPROVE UTILITY DESIGN	5	25-Apr-19	01-May-19	106
FI-1050	VIRGINIA NATURAL GAS PERFORMS RELOCATION AT 1107+00	20	07-Aug-19	05-Sep-19	52
FI-1060	VIRGINIA NATURAL GAS PERFORMS RELOCATION AT 1308+00	20	06-Sep-19	07-Oct-19	52
FI-1070	VIRGINIA NATURAL GAS PERFORMS RELOCATION AT 1399+00	20	08-Oct-19	07-Nov-19	52
CONSTRUCTION		627	19-Jun-18	18-Jun-21	58
PRE-CONSTRUCTION, SUBMITTALS and MATERIAL PROCUREMENT		596	19-Jun-18	27-Apr-21	89
GA-1000	MOBILIZATION / SET FIELD OFFICE FOR CONSTRUCTION	15	19-Jun-18	10-Jul-18	94
GA-1010	INITIAL SURVEY CONTROLS	10	03-Jul-18	23-Jul-18	79
SUBMITTALS ROADWAY		201	11-Jul-18	28-Jun-19	469
GAA-1000	PREPARE AND SUBMIT INITIAL C-25's / MATERIAL SUBMITTALS	7	11-Jul-18	17-Jul-18	1143
GAA-1010	VDOT REVIEW & APPROVE INITIAL C-25's	21	18-Jul-18	07-Aug-18	1143
GAA-1020	Prepare and Submit Shop Drawings for Noise Wall Posts and Panels	45	28-Nov-18	31-Jan-19	230
GAA-1030	Prepare and Submit Shop Drawings for Overhead Sign Structures	45	28-Nov-18	31-Jan-19	384
GAA-1040	Review/Approve Shop Drawings for Noise Wall Posts and Panels	21	01-Feb-19	21-Feb-19	332
GAA-1050	Review/Approve Shop Drawings for Overhead Sign Structures	21	01-Feb-19	21-Feb-19	551
GAA-1060	Fabricate Noise Wall Posts and Panels	90	22-Feb-19	28-Jun-19	229
GAA-1070	Fabricate Overhead Sign Structures	75	22-Feb-19	07-Jun-19	384
B-642/643-QUEENS CREEK		106	13-Aug-18	15-Feb-19	9
GAB-1000	B-642/643 - Prepare and Submit PCBT Shop Drawings	40	13-Aug-18	08-Oct-18	12
GAB-1010	B-642/643 - Review/Approve PCBT Shop Drawings	21	09-Oct-18	29-Oct-18	16
GAB-1020	B-642/643 - Fabricate PCBT Girders	75	30-Oct-18	15-Feb-19	12
B-638/641-LAKESHEAD		117	09-Oct-18	08-May-19	83
GAC-1000	B-638/641 - Prepare and Submit PCBT Shop Drawings	45	09-Oct-18	12-Dec-18	96
GAC-1010	B-638/641 - Review/Approve PCBT Shop Drawings	21	13-Dec-18	02-Jan-19	138
GAC-1020	B-638/641 - Fabricate PCBT Girders	90	03-Jan-19	08-May-19	98
B-639/640-COLONIAL		44	20-Nov-18	15-Feb-19	45
GAD-1000	B-639/640 - Prepare and Submit Falsework Submission	45	20-Nov-18	25-Jan-19	54
GAD-1010	B-639/640 - Review/Approve Falsework Submission	21	26-Jan-19	15-Feb-19	76
QUALITY ASSURANCE / QUALITY CONTROL PROCESS		578	20-Jul-18	27-Apr-21	89
GAE-1000	QA/QC PREPARATORY MEETING - ASPHALT PAVING / PAVEMENT MKGS	1	20-Jul-18	23-Jul-18	808
GAE-1010	QA/QC PREPARATORY MEETING - DEMOLITION	1	28-Nov-18	29-Nov-18	718
GAE-1020	QA/QC PREPARATORY MEETING - BRIDGE PILES	1	26-Dec-18	27-Dec-18	699
GAE-1030	QA/QC PREPARATORY MEETING - GRADING & DRAINAGE	1	20-Dec-18	21-Dec-18	702
GAE-1040	QA/QC PREPARATORY MEETING - BRIDGE FOUNDATION/CONCRETE	1	05-Feb-19	05-Feb-19	671
GAE-1050	QA/QC PREPARATORY MEETING - PCBT GIRDERS	1	05-Mar-19	06-Mar-19	651
GAE-1060	QA/QC PREPARATORY MEETING - BRIDGE DECKS	1	08-Mar-19	11-Mar-19	648
GAE-1070	QA/QC PREPARATORY MEETING - CEMENT TREATED SUBBASE	1	30-May-19	31-May-19	590
GAE-1080	QA/QC PREPARATORY MEETING - GUARDRAIL & SIGNS	1	20-Jun-19	21-Jun-19	575
GAE-1090	QA/QC PREPARATORY MEETING - CCPRM	1	28-Jun-19	01-Jul-19	470
GAE-1100	QA/QC PREPARATORY MEETING - FDR	1	06-Apr-20	08-Apr-20	309
GAE-1110	QA/QC INSPECTIONS / REPORTING / AS-BUILTS	703	23-Jul-18	27-Apr-21	2
STAGE 1A - SHOULDER STRENGTHENING and LANE SHIFT		77	11-Jul-18	15-Nov-18	8
GB-1000	Begin Stage 1A Construction	0	11-Jul-18		7
GB-1010	Complete Stage 1A and Traffic Shift for Stage 1B	0		15-Nov-18	8
I-64 EASTBOUND		53	11-Jul-18	05-Oct-18	9
GBA-1000	Set MOT Signage and PCMS Boards	5	11-Jul-18	20-Jul-18	6
GBA-1010	Install Construction Entrances Eastbound	25	28-Aug-18	05-Oct-18	7
AREA 1 - 1030+88 to 1038+38 (750 LF)		30	23-Jul-18	07-Sep-18	17
GBA1-1000	Mill EB Shoulders and Place Temporary Asphalt	1	23-Jul-18	23-Jul-18	10
GBA1-1010	EB Lane Shift - Eradicate and Install Temporary Pavement Markings	1	06-Sep-18	06-Sep-18	10
GBA1-1020	Set EB Traffic Barrier Service and Attenuators	1	07-Sep-18	07-Sep-18	18
AREA 2 - 1199+00 to 1214+00 (1,500 LF)		29	25-Jul-18	10-Sep-18	17
GBA2-1000	Mill EB Shoulders and Place Temporary Asphalt	2	25-Jul-18	27-Jul-18	10
GBA2-1010	EB Lane Shift - Eradicate and Install Temporary Pavement Markings	1	07-Sep-18	07-Sep-18	10
GBA2-1020	Set EB Traffic Barrier Service and Attenuators	1	10-Sep-18	10-Sep-18	18
AREA 2 - 1306+02 to 1320+00 (1,398 LF)		28	30-Jul-18	12-Sep-18	17
GBA3-1000	Mill Eastbound Shoulders and Place Temporary Asphalt	2	30-Jul-18	31-Jul-18	10
GBA3-1010	Eastbound Lane Shift - Eradicate and Install Temporary Pavement Markings	1	10-Sep-18	10-Sep-18	10
GBA3-1020	Set Eastbound Traffic Barrier Service and Attenuators	1	12-Sep-18	12-Sep-18	18
AREA 3 - 1320+00 to 1400+00 (8,000 LF)		32	01-Aug-18	21-Sep-18	15
GBA4-1000	Mill Eastbound Shoulders and Place Temporary Asphalt	11	01-Aug-18	20-Aug-18	10
GBA4-1010	Eastbound Lane Shift - Eradicate and Install Temporary Pavement Markings	4	12-Sep-18	17-Sep-18	10
GBA4-1020	Set Eastbound Traffic Barrier Service and Attenuators	4	18-Sep-18	21-Sep-18	15
AREA 4 - 1400+00 to 1466+00 (6,600 LF)		25	21-Aug-18	27-Sep-18	15
GBA5-1000	Mill Eastbound Shoulders and Place Temporary Asphalt	9	21-Aug-18	05-Sep-18	10
GBA5-1010	Eastbound Lane Shift - Eradicate and Install Temporary Pavement Markings	4	18-Sep-18	21-Sep-18	10
GBA5-1020	Set Eastbound Traffic Barrier Service and Attenuators	4	24-Sep-18	27-Sep-18	15
I-64 WESTBOUND		72	23-Jul-18	15-Nov-18	8
GBB-1000	Set MOT Signage and PCMS Boards	5	23-Jul-18	31-Jul-18	6
GBB-1010	Install Construction Entrances Westbound	20	08-Oct-18	07-Nov-18	7
AREA 4 - 2400+00 to 2466+14 (6,614 LF)		40	01-Aug-18	03-Oct-18	15
GBB1-1000	Mill Westbound Shoulders and Place Temporary Asphalt	9	01-Aug-18	16-Aug-18	6
GBB1-1010	Westbound Lane Shift - Eradicate and Install Temporary Pavement Markings	4	24-Sep-18	27-Sep-18	10
GBB1-1020	Set Westbound Barrier Service and Attenuators	4	28-Sep-18	03-Oct-18	15
AREA 3 - 2320+00 to 2400+00 (8,000 LF)		35	17-Aug-18	10-Oct-18	15



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

TASK filter: All Activities

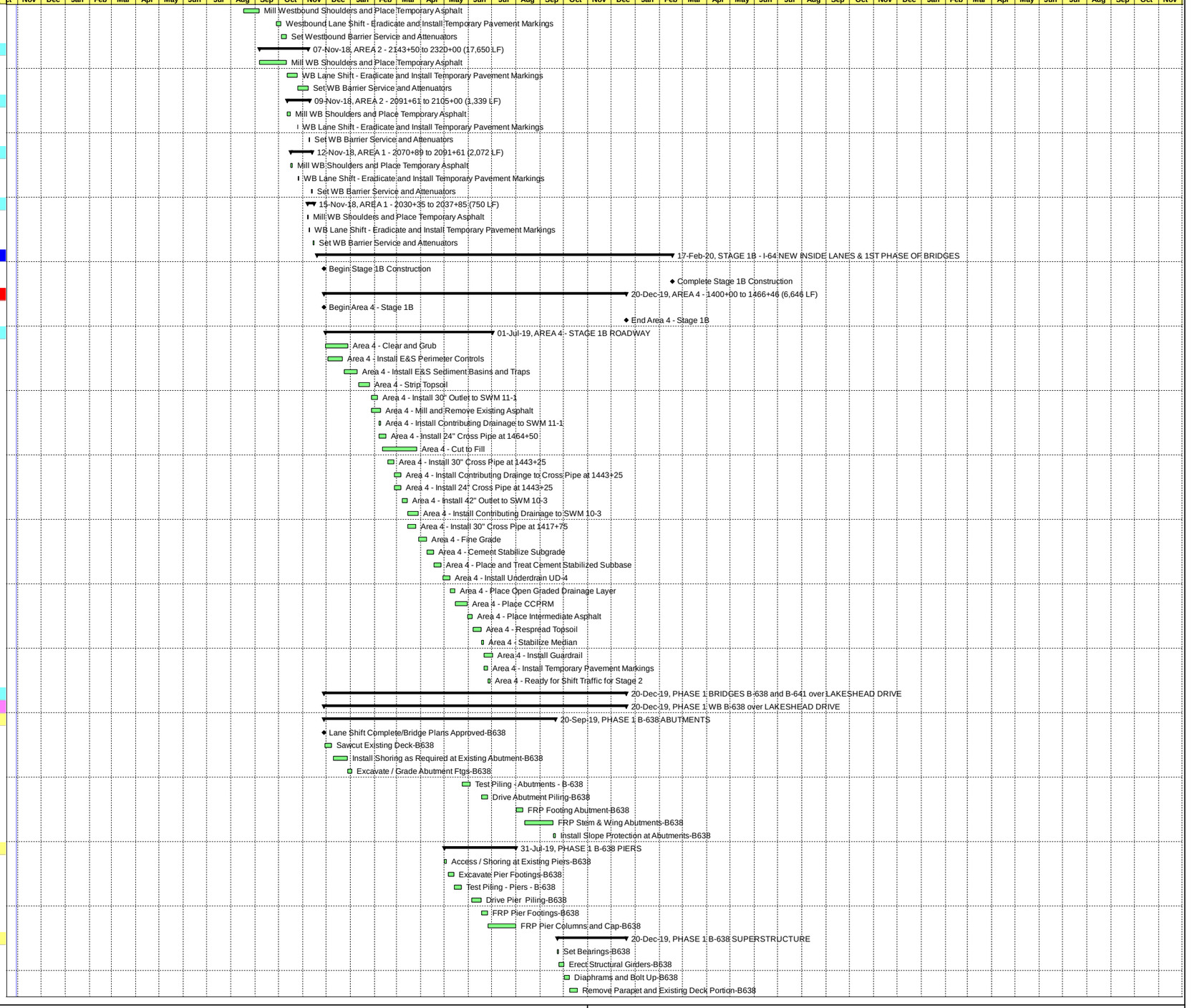
SHIRLEY CONTRACTING COMPANY, LLC

I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GBB2-1000	Mill Westbound Shoulders and Place Temporary Asphalt	11	17-Aug-18	05-Sep-18	6
GBB2-1010	Westbound Lane Shift - Eradicate and Install Temporary Pavement Markings	4	28-Sep-18	03-Oct-18	10
GBB2-1020	Set Westbound Barrier Service and Attenuators	4	04-Oct-18	10-Oct-18	15
AREA 2 - 2143+50 to 2320+00 (17,650 LF)		40	06-Sep-18	07-Nov-18	6
GBB3-1000	Mill WB Shoulders and Place Temporary Asphalt	23	06-Sep-18	10-Oct-18	6
GBB3-1010	WB Lane Shift - Eradicate and Install Temporary Pavement Markings	9	12-Oct-18	24-Oct-18	6
GBB3-1020	Set WB Barrier Service and Attenuators	9	25-Oct-18	07-Nov-18	6
AREA 2 - 2091+61 to 2105+00 (1,339 LF)		19	12-Oct-18	09-Nov-18	6
GBB4-1000	Mill WB Shoulders and Place Temporary Asphalt	2	12-Oct-18	15-Oct-18	19
GBB4-1010	WB Lane Shift - Eradicate and Install Temporary Pavement Markings	1	25-Oct-18	25-Oct-18	14
GBB4-1020	Set WB Barrier Service and Attenuators	1	09-Nov-18	09-Nov-18	6
AREA 1 - 2070+89 to 2091+61 (2,072 LF)		18	16-Oct-18	12-Nov-18	6
GBB5-1000	Mill WB Shoulders and Place Temporary Asphalt	3	16-Oct-18	18-Oct-18	19
GBB5-1010	WB Lane Shift - Eradicate and Install Temporary Pavement Markings	1	26-Oct-18	26-Oct-18	14
GBB5-1020	Set WB Barrier Service and Attenuators	1	12-Nov-18	12-Nov-18	6
AREA 1 - 2030+35 to 2037+85 (750 LF)		5	07-Nov-18	15-Nov-18	8
GBB6-1000	Mill WB Shoulders and Place Temporary Asphalt	1	07-Nov-18	07-Nov-18	7
GBB6-1010	WB Lane Shift - Eradicate and Install Temporary Pavement Markings	1	09-Nov-18	09-Nov-18	7
GBB6-1020	Set WB Barrier Service and Attenuators	2	14-Nov-18	15-Nov-18	6
STAGE 1B - I-64 NEW INSIDE LANES & 1ST PHASE OF BRIDGES		255	19-Nov-18	17-Feb-20	284
GC-1000	Begin Stage 1B Construction	0	28-Nov-18		2
GC-1010	Complete Stage 1B Construction	0		17-Feb-20	284
AREA 4 - 1400+00 to 1466+46 (6,646 LF)		223	28-Nov-18	20-Dec-19	27
GCA-1000	Begin Area 4 - Stage 1B	0	28-Nov-18		2
GCA-1010	End Area 4 - Stage 1B	0		20-Dec-19	2
AREA 4 - STAGE 1B ROADWAY		117	30-Nov-18	01-Jul-19	131
GCA1-1000	Area 4 - Clear and Grub	15	30-Nov-18	28-Dec-18	2
GCA1-1010	Area 4 - Install E&S Perimeter Controls	10	03-Dec-18	21-Dec-18	2
GCA1-1020	Area 4 - Install E&S Sediment Basins and Traps	10	24-Dec-18	09-Jan-19	2
GCA1-1030	Area 4 - Strip Topsoil	7	11-Jan-19	25-Jan-19	2
GCA1-1040	Area 4 - Install 30" Outlet to SWM 11-1	5	28-Jan-19	04-Feb-19	2
GCA1-1050	Area 4 - Mill and Remove Existing Asphalt	7	28-Jan-19	08-Feb-19	10
GCA1-1060	Area 4 - Install Contributing Drainage to SWM 11-1	2	06-Feb-19	08-Feb-19	15
GCA1-1070	Area 4 - Install 24" Cross Pipe at 1464+50	5	06-Feb-19	15-Feb-19	2
GCA1-1080	Area 4 - Cut to Fill	24	11-Feb-19	26-Mar-19	10
GCA1-1090	Area 4 - Install 30" Cross Pipe at 1443+25	5	18-Feb-19	25-Feb-19	2
GCA1-1100	Area 4 - Install Contributing Drainge to Cross Pipe at 1443+25	5	26-Feb-19	06-Mar-19	7
GCA1-1110	Area 4 - Install 24" Cross Pipe at 1443+25	5	26-Feb-19	06-Mar-19	2
GCA1-1120	Area 4 - Install 42" Outlet to SWM 10-3	5	08-Mar-19	14-Mar-19	2
GCA1-1130	Area 4 - Install Contributing Drainage to SWM 10-3	8	15-Mar-19	28-Mar-19	2
GCA1-1140	Area 4 - Install 30" Cross Pipe at 1417+75	5	15-Mar-19	25-Mar-19	190
GCA1-1150	Area 4 - Fine Grade	7	29-Mar-19	08-Apr-19	8
GCA1-1160	Area 4 - Cement Stabilize Subgrade	7	09-Apr-19	17-Apr-19	10
GCA1-1170	Area 4 - Place and Treat Cement Stabilized Subbase	7	18-Apr-19	26-Apr-19	10
GCA1-1180	Area 4 - Install Underdrain UD-4	7	29-Apr-19	08-May-19	13
GCA1-1190	Area 4 - Place Open Graded Drainage Layer	4	09-May-19	14-May-19	17
GCA1-1200	Area 4 - Place CCPRM	12	15-May-19	30-May-19	17
GCA1-1210	Area 4 - Place Intermediate Asphalt	4	31-May-19	05-Jun-19	17
GCA1-1220	Area 4 - Respread Topsoil	7	07-Jun-19	17-Jun-19	26
GCA1-1230	Area 4 - Stabilize Median	2	18-Jun-19	20-Jun-19	26
GCA1-1240	Area 4 - Install Guardrail	7	21-Jun-19	01-Jul-19	26
GCA1-1250	Area 4 - Install Temporary Pavement Markings	3	21-Jun-19	25-Jun-19	106
GCA1-1260	Area 4 - Ready for Shift Traffic for Stage 2	3	26-Jun-19	28-Jun-19	116
PHASE 1 BRIDGES B-638 and B-641 over LAKESHEAD DRIVE		223	28-Nov-18	20-Dec-19	2
PHASE 1 WB B-638 over LAKESHEAD DRIVE		223	28-Nov-18	20-Dec-19	2
PHASE 1 B-638 ABUTMENTS		167	28-Nov-18	20-Sep-19	2
GCA2a1-1000	Lane Shift Complete/Bridge Plans Approved-B638	0	28-Nov-18		64
GCA2a1-1010	Sawcut Existing Deck-B638	5	29-Nov-18	07-Dec-18	64
GCA2a1-1020	Install Shoring as Required at Existing Abutment-B638	10	10-Dec-18	27-Dec-18	69
GCA2a1-1030	Excavate / Grade Abutment Ftgs-B638	3	28-Dec-18	02-Jan-19	69
GCA2a1-1040	Test Piling - Abutments - B-638	6	24-May-19	03-Jun-19	2
GCA2a1-1050	Drive Abutment Piling-B638	5	18-Jun-19	25-Jun-19	22
GCA2a1-1060	FRP Footing Abutment-B638	5	01-Aug-19	09-Aug-19	2
GCA2a1-1070	FRP Stem & Wing Abutments-B638	25	12-Aug-19	17-Sep-19	2
GCA2a1-1080	Install Slope Protection at Abutments-B638	2	18-Sep-19	20-Sep-19	2
PHASE 1 B-638 PIERS		52	01-May-19	31-Jul-19	2
GCA2a2-1000	Access / Shoring at Existing Piers-B638	3	01-May-19	03-May-19	2
GCA2a2-1010	Excavate Pier Footings-B638	4	06-May-19	13-May-19	2
GCA2a2-1020	Test Piling - Piers - B-638	6	14-May-19	22-May-19	2
GCA2a2-1030	Drive Pier Piling-B638	8	05-Jun-19	17-Jun-19	2
GCA2a2-1040	FRP Pier Footings-B638	5	18-Jun-19	25-Jun-19	2
GCA2a2-1050	FRP Pier Columns and Cap-B638	20	26-Jun-19	31-Jul-19	2
PHASE 1 B-638 SUPERSTRUCTURE		56	23-Sep-19	20-Dec-19	2
GCA2a3-1000	Set Bearings-B638	2	23-Sep-19	24-Sep-19	2
GCA2a3-1010	Erect Structural Girders-B638	5	25-Sep-19	01-Oct-19	2
GCA2a3-1020	Diaphrams and Bolt Up-B638	5	02-Oct-19	08-Oct-19	2
GCA2a3-1030	Remove Parapet and Existing Deck Portion-B638	6	09-Oct-19	18-Oct-19	2

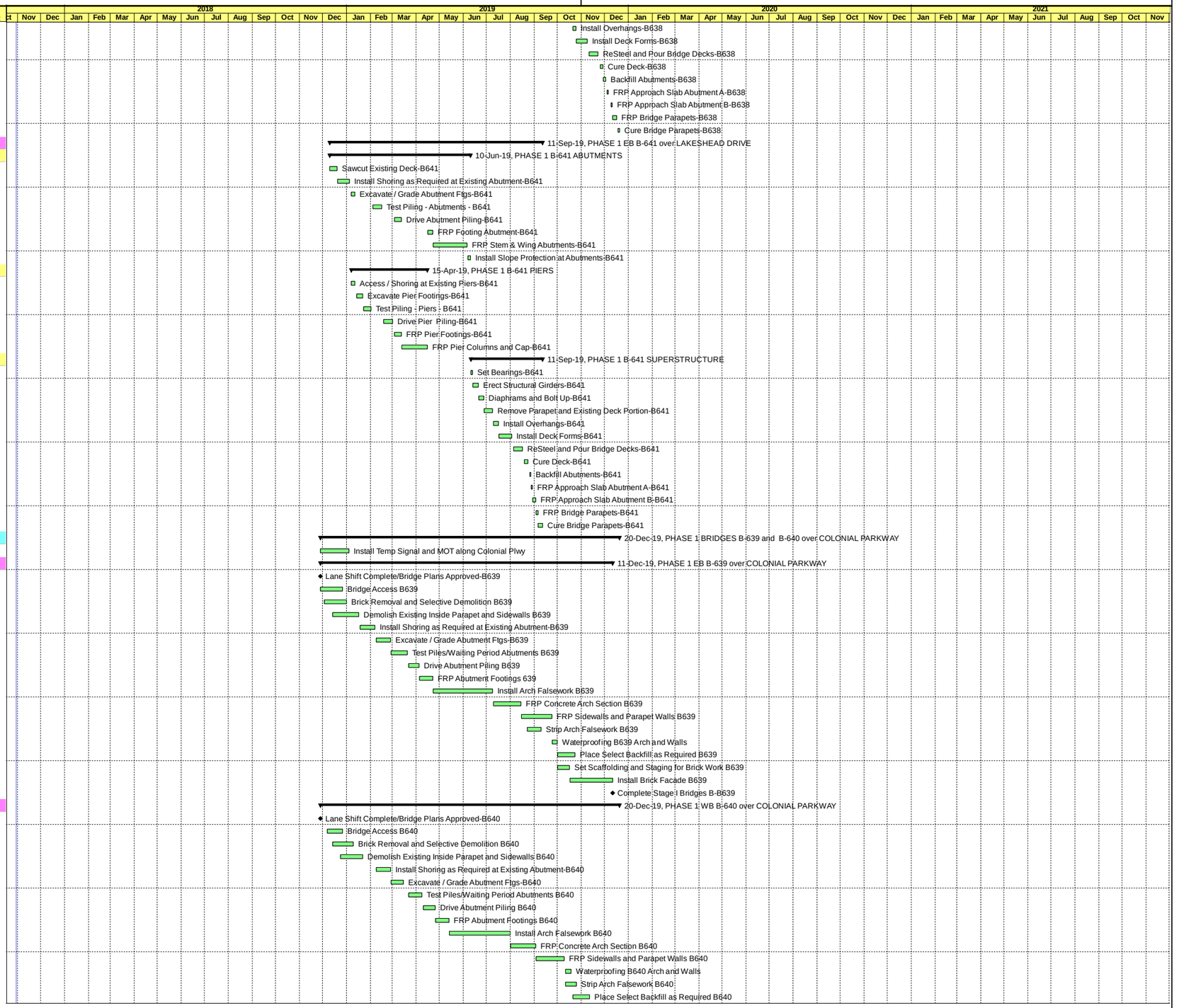


Remaining Level of Effort | Remaining Work | Milestone
Actual Work | Critical Remaining Work | Summary

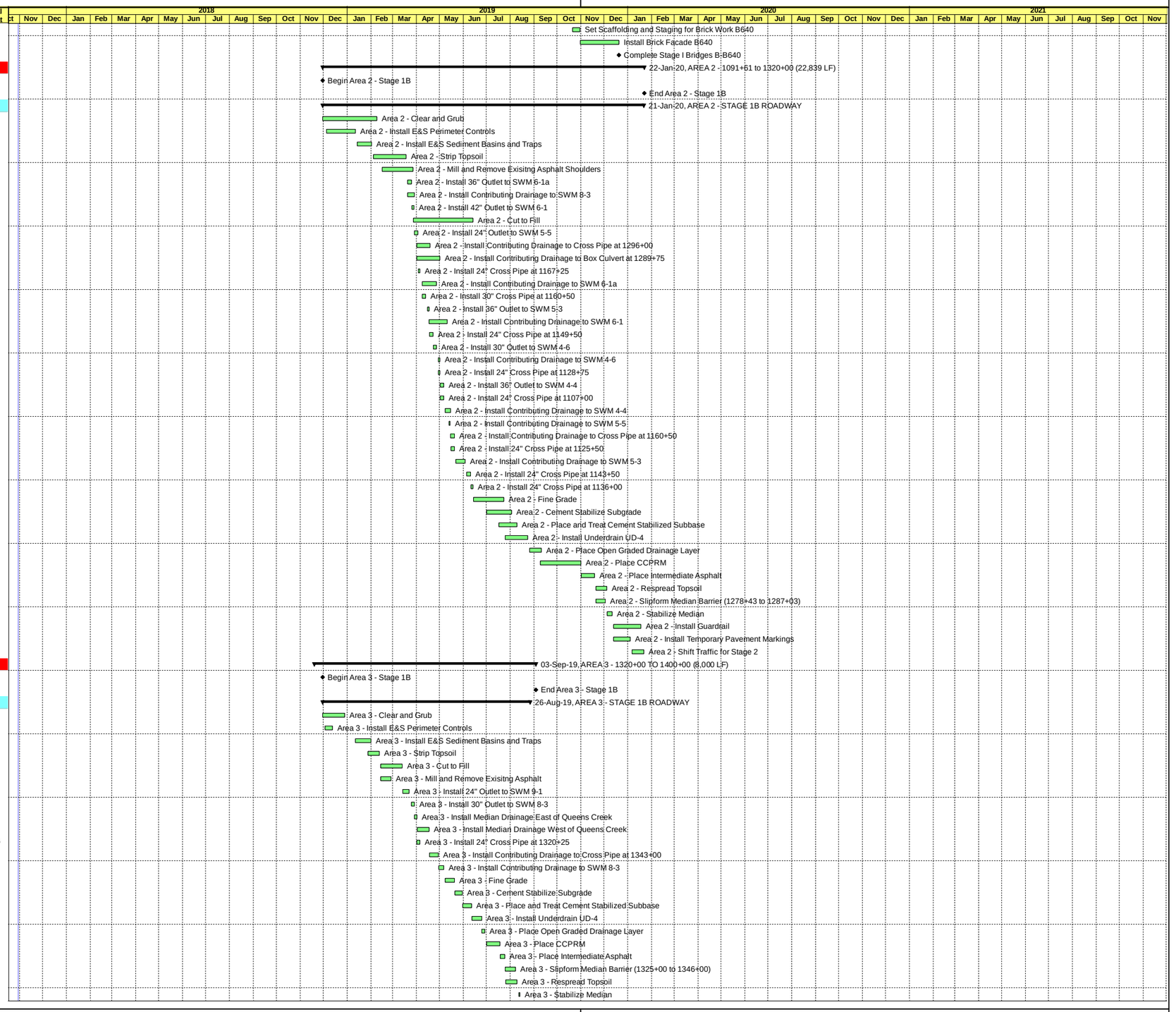
TASK filter: All Activities

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GCA2a3-1040	Install Overhangs-B638	4	21-Oct-19	24-Oct-19	2
GCA2a3-1050	Install Deck Forms-B638	10	25-Oct-19	08-Nov-19	2
GCA2a3-1060	ReSteel and Pour Bridge Decks-B638	8	11-Nov-19	22-Nov-19	2
GCA2a3-1070	Cure Deck-B638	4	25-Nov-19	28-Nov-19	2
GCA2a3-1080	Backfill Abutments-B638	2	29-Nov-19	02-Dec-19	2
GCA2a3-1090	FRP Approach Slab Abutment A-B638	2	04-Dec-19	05-Dec-19	2
GCA2a3-1100	FRP Approach Slab Abutment B-B638	2	09-Dec-19	10-Dec-19	2
GCA2a3-1110	FRP Bridge Parapets-B638	3	11-Dec-19	16-Dec-19	2
GCA2a3-1120	Cure Bridge Parapets-B638	3	18-Dec-19	20-Dec-19	2
PHASE 1 EB B-641 over LAKESHEAD DRIVE		155	10-Dec-18	11-Sep-19	64
PHASE 1 B-641 ABUTMENTS		99	10-Dec-18	10-Jun-19	64
GCA2b1-1000	Sawcut Existing Deck-B641	5	10-Dec-18	19-Dec-18	64
GCA2b1-1010	Install Shoring as Required at Existing Abutment-B641	10	20-Dec-18	04-Jan-19	64
GCA2b1-1020	Excavate / Grade Abutment Ftgs-B641	3	07-Jan-19	11-Jan-19	64
GCA2b1-1030	Test Piling - Abutments - B641	6	04-Feb-19	15-Feb-19	64
GCA2b1-1040	Drive Abutment Piling-B641	5	04-Mar-19	12-Mar-19	84
GCA2b1-1050	FRP Footing Abutment-B641	5	16-Apr-19	22-Apr-19	64
GCA2b1-1060	FRP Stem & Wing Abutments-B641	25	23-Apr-19	05-Jun-19	64
GCA2b1-1070	Install Slope Protection at Abutments-B641	2	07-Jun-19	10-Jun-19	64
PHASE 1 B-641 PIERS		52	07-Jan-19	15-Apr-19	64
GCA2b2-1000	Access / Shoring at Existing Piers-B641	3	07-Jan-19	11-Jan-19	64
GCA2b2-1010	Excavate Pier Footings-B641	4	14-Jan-19	21-Jan-19	64
GCA2b2-1020	Test Piling - Piers - B641	6	23-Jan-19	01-Feb-19	64
GCA2b2-1030	Drive Pier Piling-B641	8	18-Feb-19	01-Mar-19	64
GCA2b2-1040	FRP Pier Footings-B641	5	04-Mar-19	12-Mar-19	64
GCA2b2-1050	FRP Pier Columns and Cap-B641	20	13-Mar-19	15-Apr-19	64
PHASE 1 B-641 SUPERSTRUCTURE		56	11-Jun-19	11-Sep-19	64
GCA2b3-1000	Set Bearings-B641	2	11-Jun-19	12-Jun-19	64
GCA2b3-1010	Erect Structural Girders-B641	5	13-Jun-19	20-Jun-19	64
GCA2b3-1020	Diaphrams and Bolt Up-B641	5	21-Jun-19	27-Jun-19	64
GCA2b3-1030	Remove Parapet and Existing Deck Portion-B641	6	28-Jun-19	08-Jul-19	64
GCA2b3-1040	Install Overhangs-B641	4	10-Jul-19	16-Jul-19	64
GCA2b3-1050	Install Deck Forms-B641	10	17-Jul-19	02-Aug-19	64
GCA2b3-1060	ReSteel and Pour Bridge Decks-B641	8	05-Aug-19	16-Aug-19	64
GCA2b3-1070	Cure Deck-B641	4	19-Aug-19	23-Aug-19	64
GCA2b3-1080	Backfill Abutments-B641	2	26-Aug-19	27-Aug-19	64
GCA2b3-1090	FRP Approach Slab Abutment A-B641	2	28-Aug-19	29-Aug-19	64
GCA2b3-1100	FRP Approach Slab Abutment B-B641	2	30-Aug-19	02-Sep-19	64
GCA2b3-1110	FRP Bridge Parapets-B641	3	03-Sep-19	05-Sep-19	64
GCA2b3-1120	Cure Bridge Parapets-B641	3	06-Sep-19	11-Sep-19	64
PHASE 1 BRIDGES B-639 and B-640 over COLONIAL PARKWAY		223	28-Nov-18	20-Dec-19	2
GCA3-1000	Install Temp Signal and MOT along Colonial Plwy	20	28-Nov-18	03-Jan-19	8
PHASE 1 EB B-639 over COLONIAL PARKWAY		218	28-Nov-18	11-Dec-19	7
GCA3a-1000	Lane Shift Complete/Bridge Plans Approved-B639	0	28-Nov-18		2
GCA3a-1010	Bridge Access B639	15	28-Nov-18	26-Dec-18	2
GCA3a-1020	Brick Removal and Selective Demolition B639	15	03-Dec-18	31-Dec-18	2
GCA3a-1030	Demolish Existing Inside Parapet and Sidewalls B639	18	14-Dec-18	16-Jan-19	2
GCA3a-1040	Install Shoring as Required at Existing Abutment-B639	10	18-Jan-19	06-Feb-19	2
GCA3a-1050	Excavate / Grade Abutment Ftgs-B639	10	08-Feb-19	26-Feb-19	2
GCA3a-1060	Test Piles/Waiting Period Abutments B639	12	27-Feb-19	20-Mar-19	2
GCA3a-1070	Drive Abutment Piling B639	10	22-Mar-19	04-Apr-19	4
GCA3a-1080	FRP Abutment Footings 639	10	05-Apr-19	22-Apr-19	4
GCA3a-1090	Install Arch Falsework B639	45	23-Apr-19	08-Jul-19	7
GCA3a-1100	FRP Concrete Arch Section B639	20	10-Jul-19	14-Aug-19	7
GCA3a-1110	FRP Sidewalls and Parapet Walls B639	25	15-Aug-19	23-Sep-19	7
GCA3a-1120	Strip Arch Falsework B639	12	23-Aug-19	09-Sep-19	20
GCA3a-1130	Waterproofing B639 Arch and Walls	5	24-Sep-19	30-Sep-19	7
GCA3a-1140	Place Select Backfill as Required B639	15	01-Oct-19	23-Oct-19	7
GCA3a-1150	Set Scaffolding and Staging for Brick Work B639	10	01-Oct-19	16-Oct-19	7
GCA3a-1160	Install Brick Facade B639	35	17-Oct-19	11-Dec-19	7
GCA3a-1170	Complete Stage I Bridges B-B639	0		11-Dec-19	7
PHASE 1 WB B-640 over COLONIAL PARKWAY		223	28-Nov-18	20-Dec-19	2
GCA3b-1000	Lane Shift Complete/Bridge Plans Approved-B640	0	28-Nov-18		17
GCA3b-1010	Bridge Access B640	10	07-Dec-18	26-Dec-18	12
GCA3b-1020	Brick Removal and Selective Demolition B640	15	14-Dec-18	09-Jan-19	12
GCA3b-1030	Demolish Existing Inside Parapet and Sidewalls B640	15	24-Dec-18	21-Jan-19	12
GCA3b-1040	Install Shoring as Required at Existing Abutment-B640	10	08-Feb-19	26-Feb-19	4
GCA3b-1050	Excavate / Grade Abutment Ftgs-B640	10	27-Feb-19	15-Mar-19	4
GCA3b-1060	Test Piles/Waiting Period Abutments B640	12	22-Mar-19	08-Apr-19	2
GCA3b-1070	Drive Abutment Piling B640	10	10-Apr-19	25-Apr-19	2
GCA3b-1080	FRP Abutment Footings B640	10	26-Apr-19	13-May-19	2
GCA3b-1090	Install Arch Falsework B640	45	14-May-19	31-Jul-19	2
GCA3b-1100	FRP Concrete Arch Section B640	20	01-Aug-19	02-Sep-19	2
GCA3b-1110	FRP Sidewalls and Parapet Walls B640	25	03-Sep-19	09-Oct-19	2
GCA3b-1120	Waterproofing B640 Arch and Walls	5	11-Oct-19	18-Oct-19	2
GCA3b-1130	Strip Arch Falsework B640	10	11-Oct-19	25-Oct-19	4
GCA3b-1140	Place Select Backfill as Required B640	15	21-Oct-19	11-Nov-19	2



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GCA3b-1150	Set Scaffolding and Staging for Brick Work B640	8	21-Oct-19	30-Oct-19	2
GCA3b-1160	Install Brick Facade B640	30	31-Oct-19	20-Dec-19	2
GCA3b-1170	Complete Stage I Bridges B-B640	0		20-Dec-19	2
AREA 2 - 1091+61 to 1320+00 (22,839 LF)		235	30-Nov-18	22-Jan-20	24
GCB-1000	Begin Area 2 - Stage 1B	0	30-Nov-18		22
GCB-1010	End Area 2 - Stage 1B	0		22-Jan-20	24
AREA 2 - STAGE 1B ROADWAY		235	30-Nov-18	21-Jan-20	24
GCB1-1000	Area 2 - Clear and Grub	35	30-Nov-18	08-Feb-19	22
GCB1-1010	Area 2 - Install E&S Perimeter Controls	20	05-Dec-18	11-Jan-19	22
GCB1-1020	Area 2 - Install E&S Sediment Basins and Traps	10	14-Jan-19	01-Feb-19	22
GCB1-1030	Area 2 - Strip Topsoil	23	04-Feb-19	18-Mar-19	22
GCB1-1040	Area 2 - Mill and Remove Exisitng Asphalt Shoulders	23	15-Feb-19	27-Mar-19	22
GCB1-1050	Area 2 - Install 36" Outlet to SWM 6-1a	3	20-Mar-19	25-Mar-19	29
GCB1-1060	Area 2 - Install Contributing Drainage to SWM 8-3	7	20-Mar-19	29-Mar-19	22
GCB1-1070	Area 2 - Install 42" Outlet to SWM 6-1	3	26-Mar-19	28-Mar-19	29
GCB1-1080	Area 2 - Cut to Fill	46	28-Mar-19	13-Jun-19	22
GCB1-1090	Area 2 - Install 24" Outlet to SWM 5-5	3	29-Mar-19	02-Apr-19	29
GCB1-1100	Area 2 - Install Contributing Drainage to Cross Pipe at 1296+00	12	01-Apr-19	18-Apr-19	37
GCB1-1110	Area 2 - Install Contributing Drainage to Box Culvert at 1289+75	20	01-Apr-19	01-May-19	22
GCB1-1120	Area 2 - Install 24" Cross Pipe at 1167+25	3	03-Apr-19	05-Apr-19	29
GCB1-1130	Area 2 - Install Contributing Drainage to SWM 6-1a	12	08-Apr-19	26-Apr-19	22
GCB1-1140	Area 2 - Install 30" Cross Pipe at 1160+50	3	08-Apr-19	12-Apr-19	29
GCB1-1150	Area 2 - Install 36" Outlet to SWM 5-3	3	15-Apr-19	17-Apr-19	29
GCB1-1160	Area 2 - Install Contributing Drainage to SWM 6-1	15	17-Apr-19	10-May-19	22
GCB1-1170	Area 2 - Install 24" Cross Pipe at 1149+50	3	18-Apr-19	22-Apr-19	29
GCB1-1180	Area 2 - Install 30" Outlet to SWM 4-6	3	23-Apr-19	26-Apr-19	29
GCB1-1190	Area 2 - Install Contributing Drainage to SWM 4-6	3	29-Apr-19	01-May-19	32
GCB1-1200	Area 2 - Install 24" Cross Pipe at 1128+75	3	29-Apr-19	01-May-19	29
GCB1-1210	Area 2 - Install 36" Outlet to SWM 4-4	3	02-May-19	06-May-19	29
GCB1-1220	Area 2 - Install 24" Cross Pipe at 1107+00	3	02-May-19	06-May-19	43
GCB1-1230	Area 2 - Install Contributing Drainage to SWM 4-4	5	08-May-19	15-May-19	29
GCB1-1240	Area 2 - Install Contributing Drainage to SWM 5-5	2	13-May-19	14-May-19	22
GCB1-1250	Area 2 - Install Contributing Drainage to Cross Pipe at 1160+50	4	15-May-19	20-May-19	22
GCB1-1260	Area 2 - Install 24" Cross Pipe at 1125+50	3	16-May-19	20-May-19	29
GCB1-1270	Area 2 - Install Contributing Drainage to SWM 5-3	7	22-May-19	03-Jun-19	22
GCB1-1280	Area 2 - Install 24" Cross Pipe at 1143+50	3	05-Jun-19	10-Jun-19	22
GCB1-1290	Area 2 - Install 24" Cross Pipe at 1136+00	3	11-Jun-19	13-Jun-19	22
GCB1-1300	Area 2 - Fine Grade	23	14-Jun-19	23-Jul-19	22
GCB1-1310	Area 2 - Cement Stabilize Subgrade	23	01-Jul-19	02-Aug-19	28
GCB1-1320	Area 2 - Place and Treat Cement Stabilized Subbase	18	17-Jul-19	09-Aug-19	28
GCB1-1330	Area 2 - Install Underdrain UD-4	18	25-Jul-19	23-Aug-19	23
GCB1-1340	Area 2 - Place Open Graded Drainage Layer	12	26-Aug-19	10-Sep-19	25
GCB1-1350	Area 2 - Place CCPRM	39	09-Sep-19	31-Oct-19	25
GCB1-1360	Area 2 - Place Intermediate Asphalt	12	01-Nov-19	18-Nov-19	25
GCB1-1370	Area 2 - Respread Topsoil	10	20-Nov-19	04-Dec-19	20
GCB1-1380	Area 2 - Slipform Median Barrier (1278+43 to 1287+03)	9	20-Nov-19	02-Dec-19	20
GCB1-1390	Area 2 - Stabilize Median	4	05-Dec-19	11-Dec-19	20
GCB1-1400	Area 2 - Install Guardrail	18	13-Dec-19	17-Jan-20	20
GCB1-1410	Area 2 - Install Temporary Pavement Markings	12	13-Dec-19	03-Jan-20	20
GCB1-1420	Area 2 - Shift Traffic for Stage 2	12	06-Jan-20	21-Jan-20	32
AREA 3 - 1320+00 TO 1400+00 (8,000 LF)		161	19-Nov-18	03-Sep-19	69
GCC-1000	Begin Area 3 - Stage 1B	0	30-Nov-18		33
GCC-1010	End Area 3 - Stage 1B	0		03-Sep-19	0
AREA 3 - STAGE 1B ROADWAY		148	30-Nov-18	26-Aug-19	75
GCC1-1000	Area 3 - Clear and Grub	15	30-Nov-18	28-Dec-18	33
GCC1-1010	Area 3 - Install E&S Perimeter Controls	5	03-Dec-18	12-Dec-18	42
GCC1-1020	Area 3 - Install E&S Sediment Basins and Traps	10	11-Jan-19	31-Jan-19	27
GCC1-1030	Area 3 - Strip Topsoil	8	28-Jan-19	11-Feb-19	20
GCC1-1040	Area 3 - Cut to Fill	16	13-Feb-19	13-Mar-19	20
GCC1-1050	Area 3 - Mill and Remove Exisitng Asphalt	8	13-Feb-19	26-Feb-19	20
GCC1-1060	Area 3 - Install 24" Outlet to SWM 9-1	5	14-Mar-19	22-Mar-19	20
GCC1-1070	Area 3 - Install 30" Outlet to SWM 8-3	5	25-Mar-19	29-Mar-19	20
GCC1-1080	Area 3 - Install Median Drainage East of Queens Creek	2	29-Mar-19	01-Apr-19	2
GCC1-1090	Area 3 - Install Median Drainage West of Queens Creek	10	02-Apr-19	17-Apr-19	2
GCC1-1100	Area 3 - Install 24" Cross Pipe at 1320+25	5	01-Apr-19	05-Apr-19	156
GCC1-1110	Area 3 - Install Contributing Drainage to Cross Pipe at 1343+00	7	18-Apr-19	29-Apr-19	2
GCC1-1120	Area 3 - Install Contributing Drainage to SWM 8-3	5	30-Apr-19	06-May-19	2
GCC1-1130	Area 3 - Fine Grade	8	08-May-19	20-May-19	2
GCC1-1140	Area 3 - Cement Stabilize Subgrade	8	21-May-19	30-May-19	4
GCC1-1150	Area 3 - Place and Treat Cement Stabilized Subbase	8	31-May-19	11-Jun-19	4
GCC1-1160	Area 3 - Install Underdrain UD-4	8	12-Jun-19	24-Jun-19	4
GCC1-1170	Area 3 - Place Open Graded Drainage Layer	4	25-Jun-19	28-Jun-19	4
GCC1-1180	Area 3 - Place CCPRM	12	01-Jul-19	18-Jul-19	4
GCC1-1190	Area 3 - Place Intermediate Asphalt	4	19-Jul-19	24-Jul-19	4
GCC1-1200	Area 3 - Slipform Median Barrier (1325+00 to 1346+00)	10	25-Jul-19	07-Aug-19	4
GCC1-1210	Area 3 - Respread Topsoil	8	26-Jul-19	09-Aug-19	3
GCC1-1220	Area 3 - Stabilize Median	2	12-Aug-19	13-Aug-19	3

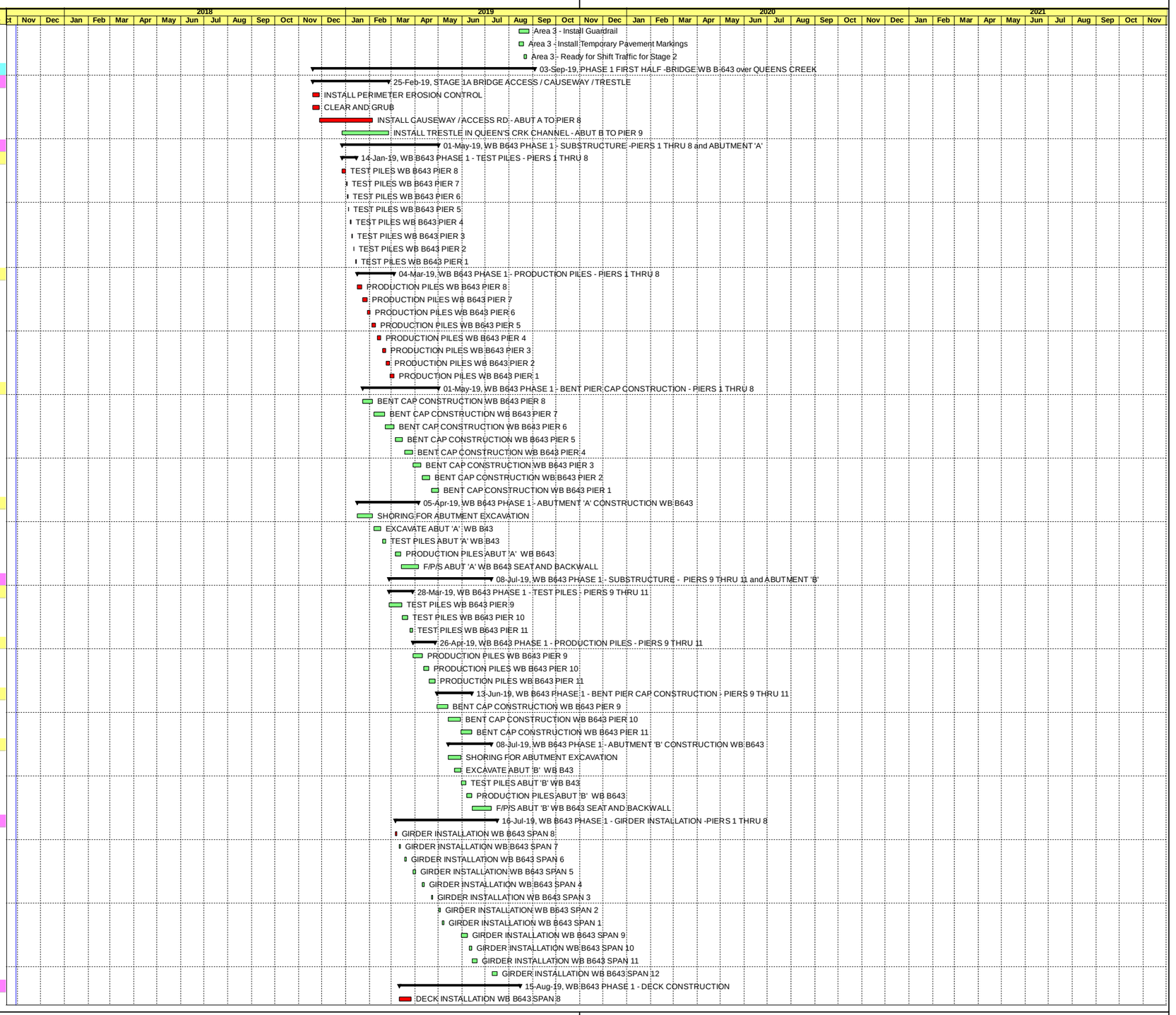


Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filter: All Activities

SHIRLEY CONTRACTING COMPANY, LLC

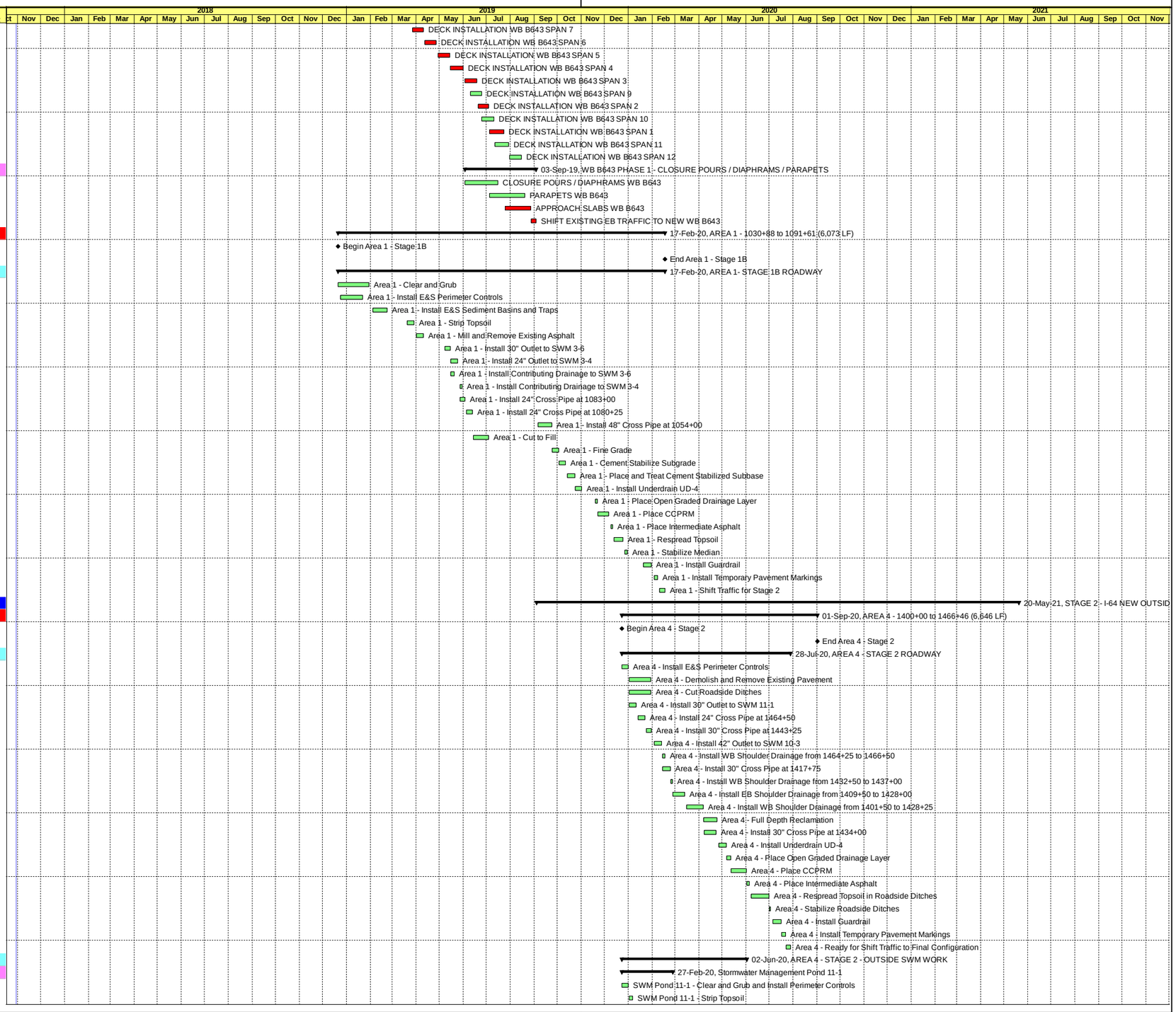
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GCC1-1230	Area 3 - Install Guardrail	8	14-Aug-19	26-Aug-19	3
GCC1-1240	Area 3 - Install Temporary Pavement Markings	4	14-Aug-19	19-Aug-19	3
GCC1-1250	Area 3 - Ready for Shift Traffic for Stage 2	4	20-Aug-19	23-Aug-19	4
PHASE 1 FIRST HALF -BRIDGE WB B-643 over QUEENS CREEK		161	19-Nov-18	03-Sep-19	0
STAGE 1A BRIDGE ACCESS / CAUSEWAY / TRESTLE		50	19-Nov-18	25-Feb-19	7
GCC2a-1000	INSTALL PERIMETER EROSION CONTROL	5	19-Nov-18	27-Nov-18	0
GCC2a-1010	CLEAR AND GRUB	5	19-Nov-18	27-Nov-18	0
GCC2a-1020	INSTALL CAUSEWAY / ACCESS RD - ABUT A TO PIER 8	35	28-Nov-18	04-Feb-19	0
GCC2a-1030	INSTALL TRESTLE IN QUEEN'S CRK CHANNEL - ABUT B TO PIER 9	30	27-Dec-18	25-Feb-19	7
WB B643 PHASE 1 - SUBSTRUCTURE -PIERS 1 THRU 8 and ABUTMENT 'A'		69	27-Dec-18	01-May-19	35
WB B643 PHASE 1 - TEST PILES - PIERS 1 THRU 8		10	27-Dec-18	14-Jan-19	0
GCC2b1-1000	TEST PILES WB B643 PIER 8	3	27-Dec-18	31-Dec-18	0
GCC2b1-1010	TEST PILES WB B643 PIER 7	1	02-Jan-19	02-Jan-19	0
GCC2b1-1020	TEST PILES WB B643 PIER 6	1	03-Jan-19	03-Jan-19	0
GCC2b1-1030	TEST PILES WB B643 PIER 5	1	04-Jan-19	04-Jan-19	0
GCC2b1-1040	TEST PILES WB B643 PIER 4	1	07-Jan-19	07-Jan-19	0
GCC2b1-1050	TEST PILES WB B643 PIER 3	1	09-Jan-19	09-Jan-19	0
GCC2b1-1060	TEST PILES WB B643 PIER 2	1	11-Jan-19	11-Jan-19	0
GCC2b1-1070	TEST PILES WB B643 PIER 1	1	14-Jan-19	14-Jan-19	0
WB B643 PHASE 1 - PRODUCTION PILES - PIERS 1 THRU 8		24	16-Jan-19	04-Mar-19	0
GCC2b2-1000	PRODUCTION PILES WB B643 PIER 8	3	16-Jan-19	21-Jan-19	0
GCC2b2-1010	PRODUCTION PILES WB B643 PIER 7	3	23-Jan-19	28-Jan-19	0
GCC2b2-1020	PRODUCTION PILES WB B643 PIER 6	3	29-Jan-19	01-Feb-19	0
GCC2b2-1030	PRODUCTION PILES WB B643 PIER 5	3	04-Feb-19	08-Feb-19	0
GCC2b2-1040	PRODUCTION PILES WB B643 PIER 4	3	11-Feb-19	15-Feb-19	0
GCC2b2-1050	PRODUCTION PILES WB B643 PIER 3	3	18-Feb-19	21-Feb-19	0
GCC2b2-1060	PRODUCTION PILES WB B643 PIER 2	3	22-Feb-19	26-Feb-19	0
GCC2b2-1070	PRODUCTION PILES WB B643 PIER 1	3	27-Feb-19	04-Mar-19	0
WB B643 PHASE 1 - BENT PIER CAP CONSTRUCTION - PIERS 1 THRU 8		56	23-Jan-19	01-May-19	33
GCC2b3-1000	BENT CAP CONSTRUCTION WB B643 PIER 8	7	23-Jan-19	04-Feb-19	7
GCC2b3-1010	BENT CAP CONSTRUCTION WB B643 PIER 7	7	06-Feb-19	20-Feb-19	7
GCC2b3-1020	BENT CAP CONSTRUCTION WB B643 PIER 6	7	21-Feb-19	04-Mar-19	10
GCC2b3-1030	BENT CAP CONSTRUCTION WB B643 PIER 5	7	06-Mar-19	15-Mar-19	13
GCC2b3-1040	BENT CAP CONSTRUCTION WB B643 PIER 4	7	18-Mar-19	28-Mar-19	16
GCC2b3-1050	BENT CAP CONSTRUCTION WB B643 PIER 3	7	29-Mar-19	08-Apr-19	33
GCC2b3-1060	BENT CAP CONSTRUCTION WB B643 PIER 2	7	10-Apr-19	19-Apr-19	33
GCC2b3-1070	BENT CAP CONSTRUCTION WB B643 PIER 1	7	22-Apr-19	01-May-19	33
WB B643 PHASE 1 - ABUTMENT 'A' CONSTRUCTION WB B643		44	16-Jan-19	05-Apr-19	50
GCC2b4-1000	SHORING FOR ABUTMENT EXCAVATION	10	16-Jan-19	04-Feb-19	56
GCC2b4-1010	EXCAVATE ABUT 'A' WB B43	5	06-Feb-19	15-Feb-19	56
GCC2b4-1020	TEST PILES ABUT 'A' WB B43	3	18-Feb-19	21-Feb-19	56
GCC2b4-1030	PRODUCTION PILES ABUT 'A' WB B643	5	06-Mar-19	13-Mar-19	50
GCC2b4-1040	F/P/S ABUT 'A' WB B643 SEAT AND BACKWALL	15	14-Mar-19	05-Apr-19	50
WB B643 PHASE 1 - SUBSTRUCTURE - PIERS 9 THRU 11 and ABUTMENT 'B'		78	26-Feb-19	08-Jul-19	14
WB B643 PHASE 1 - TEST PILES - PIERS 9 THRU 11		18	26-Feb-19	28-Mar-19	7
GCC2c1-1000	TEST PILES WB B643 PIER 9	10	26-Feb-19	14-Mar-19	7
GCC2c1-1010	TEST PILES WB B643 PIER 10	4	15-Mar-19	22-Mar-19	7
GCC2c1-1020	TEST PILES WB B643 PIER 11	4	25-Mar-19	28-Mar-19	7
WB B643 PHASE 1 - PRODUCTION PILES - PIERS 9 THRU 11		18	29-Mar-19	26-Apr-19	7
GCC2c2-1000	PRODUCTION PILES WB B643 PIER 9	8	29-Mar-19	10-Apr-19	7
GCC2c2-1010	PRODUCTION PILES WB B643 PIER 10	5	12-Apr-19	18-Apr-19	7
GCC2c2-1020	PRODUCTION PILES WB B643 PIER 11	5	19-Apr-19	26-Apr-19	7
WB B643 PHASE 1 - BENT PIER CAP CONSTRUCTION - PIERS 9 THRU 11		27	29-Apr-19	13-Jun-19	19
GCC2c3-1000	BENT CAP CONSTRUCTION WB B643 PIER 9	9	29-Apr-19	13-May-19	7
GCC2c3-1010	BENT CAP CONSTRUCTION WB B643 PIER 10	9	14-May-19	29-May-19	19
GCC2c3-1020	BENT CAP CONSTRUCTION WB B643 PIER 11	9	30-May-19	13-Jun-19	19
WB B643 PHASE 1 - ABUTMENT 'B' CONSTRUCTION WB B643		33	14-May-19	08-Jul-19	14
GCC2c4-1000	SHORING FOR ABUTMENT EXCAVATION	10	14-May-19	30-May-19	7
GCC2c4-1010	EXCAVATE ABUT 'B' WB B43	5	22-May-19	30-May-19	14
GCC2c4-1020	TEST PILES ABUT 'B' WB B43	3	31-May-19	05-Jun-19	14
GCC2c4-1030	PRODUCTION PILES ABUT 'B' WB B643	5	07-Jun-19	13-Jun-19	14
GCC2c4-1040	F/P/S ABUT 'B' WB B643 SEAT AND BACKWALL	15	14-Jun-19	08-Jul-19	14
WB B643 PHASE 1 - GIRDER INSTALLATION -PIERS 1 THRU 8		78	06-Mar-19	16-Jul-19	14
GCC2d-1000	GIRDER INSTALLATION WB B643 SPAN 8	2	06-Mar-19	08-Mar-19	0
GCC2d-1010	GIRDER INSTALLATION WB B643 SPAN 7	2	11-Mar-19	12-Mar-19	8
GCC2d-1020	GIRDER INSTALLATION WB B643 SPAN 6	2	18-Mar-19	20-Mar-19	13
GCC2d-1030	GIRDER INSTALLATION WB B643 SPAN 5	2	29-Mar-19	01-Apr-19	16
GCC2d-1040	GIRDER INSTALLATION WB B643 SPAN 4	2	10-Apr-19	12-Apr-19	43
GCC2d-1050	GIRDER INSTALLATION WB B643 SPAN 3	2	22-Apr-19	23-Apr-19	38
GCC2d-1060	GIRDER INSTALLATION WB B643 SPAN 2	2	02-May-19	03-May-19	33
GCC2d-1070	GIRDER INSTALLATION WB B643 SPAN 1	2	06-May-19	08-May-19	33
GCC2d-1080	GIRDER INSTALLATION WB B643 SPAN 9	4	31-May-19	07-Jun-19	7
GCC2d-1090	GIRDER INSTALLATION WB B643 SPAN 10	4	10-Jun-19	13-Jun-19	13
GCC2d-1100	GIRDER INSTALLATION WB B643 SPAN 11	4	14-Jun-19	20-Jun-19	19
GCC2d-1110	GIRDER INSTALLATION WB B643 SPAN 12	4	10-Jul-19	16-Jul-19	14
WB B643 PHASE 1 - DECK CONSTRUCTION		93	11-Mar-19	15-Aug-19	7
GCC2e-1000	DECK INSTALLATION WB B643 SPAN 8	10	11-Mar-19	26-Mar-19	0



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

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GCC2e-1010	DECK INSTALLATION WB B643 SPAN 7	10	27-Mar-19	10-Apr-19	0
GCC2e-1020	DECK INSTALLATION WB B643 SPAN 6	10	12-Apr-19	26-Apr-19	0
GCC2e-1030	DECK INSTALLATION WB B643 SPAN 5	10	29-Apr-19	14-May-19	0
GCC2e-1040	DECK INSTALLATION WB B643 SPAN 4	10	15-May-19	31-May-19	0
GCC2e-1050	DECK INSTALLATION WB B643 SPAN 3	10	03-Jun-19	18-Jun-19	0
GCC2e-1060	DECK INSTALLATION WB B643 SPAN 9	10	10-Jun-19	24-Jun-19	7
GCC2e-1070	DECK INSTALLATION WB B643 SPAN 2	10	20-Jun-19	03-Jul-19	0
GCC2e-1080	DECK INSTALLATION WB B643 SPAN 10	10	25-Jun-19	10-Jul-19	7
GCC2e-1090	DECK INSTALLATION WB B643 SPAN 1	10	05-Jul-19	23-Jul-19	0
GCC2e-1100	DECK INSTALLATION WB B643 SPAN 11	10	12-Jul-19	29-Jul-19	7
GCC2e-1110	DECK INSTALLATION WB B643 SPAN 12	10	31-Jul-19	15-Aug-19	7
WB B643 PHASE 1 - CLOSURE POURS / DIAPHRAMS / PARAPETS		55	03-Jun-19	03-Sep-19	0
GCC2f-1000	CLOSURE POURS / DIAPHRAMS WB B643	25	03-Jun-19	15-Jul-19	5
GCC2f-1010	PARAPETS WB B643	25	05-Jul-19	19-Aug-19	5
GCC2f-1020	APPROACH SLABS WB B643	20	25-Jul-19	27-Aug-19	0
GCC2f-1030	SHIFT EXISTING EB TRAFFIC TO NEW WB B643	5	28-Aug-19	03-Sep-19	0
AREA 1 - 1030+88 to 1091+61 (6,073 LF)		238	21-Dec-18	17-Feb-20	284
GCD-1000	Begin Area 1 - Stage 1B	0	21-Dec-18		319
GCD-1010	End Area 1 - Stage 1B	0		17-Feb-20	284
AREA 1- STAGE 1B ROADWAY		238	21-Dec-18	17-Feb-20	284
GCD1-1000	Area 1 - Clear and Grub	20	21-Dec-18	29-Jan-19	316
GCD1-1010	Area 1 - Install E&S Perimeter Controls	15	24-Dec-18	21-Jan-19	320
GCD1-1020	Area 1 - Install E&S Sediment Basins and Traps	10	04-Feb-19	22-Feb-19	314
GCD1-1030	Area 1 - Strip Topsoil	7	20-Mar-19	29-Mar-19	301
GCD1-1040	Area 1 - Mill and Remove Existing Asphalt	7	01-Apr-19	10-Apr-19	385
GCD1-1050	Area 1 - Install 30" Outlet to SWM 3-6	5	08-May-19	15-May-19	108
GCD1-1060	Area 1 - Install 24" Outlet to SWM 3-4	5	16-May-19	24-May-19	108
GCD1-1070	Area 1 - Install Contributing Drainage to SWM 3-6	3	16-May-19	20-May-19	110
GCD1-1080	Area 1 - Install Contributing Drainage to SWM 3-4	3	28-May-19	30-May-19	369
GCD1-1090	Area 1 - Install 24" Cross Pipe at 1083+00	5	28-May-19	03-Jun-19	108
GCD1-1100	Area 1 - Install 24" Cross Pipe at 1080+25	5	05-Jun-19	12-Jun-19	108
GCD1-1110	Area 1 - Install 48" Cross Pipe at 1054+00	10	06-Sep-19	23-Sep-19	301
GCD1-1120	Area 1 - Cut to Fill	13	14-Jun-19	03-Jul-19	348
GCD1-1130	Area 1 - Fine Grade	7	24-Sep-19	02-Oct-19	301
GCD1-1140	Area 1 - Cement Stabilize Subgrade	7	03-Oct-19	11-Oct-19	265
GCD1-1150	Area 1 - Place and Treat Cement Stabilized Subbase	8	14-Oct-19	23-Oct-19	265
GCD1-1160	Area 1 - Install Underdrain UD-4	7	24-Oct-19	01-Nov-19	300
GCD1-1170	Area 1 - Place Open Graded Drainage Layer	3	19-Nov-19	21-Nov-19	255
GCD1-1180	Area 1 - Place CCPRM	11	22-Nov-19	06-Dec-19	255
GCD1-1190	Area 1 - Place Intermediate Asphalt	3	09-Dec-19	11-Dec-19	255
GCD1-1200	Area 1 - Respread Topsoil	7	13-Dec-19	24-Dec-19	292
GCD1-1210	Area 1 - Stabilize Median	2	27-Dec-19	30-Dec-19	292
GCD1-1220	Area 1 - Install Guardrail	7	20-Jan-20	30-Jan-20	283
GCD1-1230	Area 1 - Install Temporary Pavement Markings	3	03-Feb-20	07-Feb-20	283
GCD1-1240	Area 1 - Shift Traffic for Stage 2	6	10-Feb-20	17-Feb-20	342
STAGE 2 - I-64 NEW OUTSIDE LANES & 2ND PHASE OF BRIDGES		357	04-Sep-19	20-May-21	0
AREA 4 - 1400+00 to 1466+46 (6,646 LF)		143	23-Dec-19	01-Sep-20	126
GDA-1000	Begin Area 4 - Stage 2	0	23-Dec-19		2
GDA-1010	End Area 4 - Stage 2	0		01-Sep-20	126
AREA 4 - STAGE 2 ROADWAY		121	23-Dec-19	28-Jul-20	148
GDA1-1000	Area 4 - Install E&S Perimeter Controls	5	23-Dec-19	31-Dec-19	2
GDA1-1010	Area 4 - Demolish and Remove Existing Pavement	14	02-Jan-20	29-Jan-20	9
GDA1-1020	Area 4 - Cut Roadside Ditches	14	02-Jan-20	29-Jan-20	38
GDA1-1030	Area 4 - Install 30" Outlet to SWM 11-1	5	02-Jan-20	10-Jan-20	2
GDA1-1040	Area 4 - Install 24" Cross Pipe at 1464+50	5	13-Jan-20	22-Jan-20	2
GDA1-1050	Area 4 - Install 30" Cross Pipe at 1443+25	5	24-Jan-20	30-Jan-20	2
GDA1-1060	Area 4 - Install 42" Outlet to SWM 10-3	5	03-Feb-20	12-Feb-20	2
GDA1-1070	Area 4 - Install WB Shoulder Drainage from 1464+25 to 1466+50	2	14-Feb-20	17-Feb-20	5
GDA1-1080	Area 4 - Install 30" Cross Pipe at 1417+75	5	14-Feb-20	24-Feb-20	2
GDA1-1090	Area 4 - Install WB Shoulder Drainage from 1432+50 to 1437+00	2	25-Feb-20	26-Feb-20	2
GDA1-1100	Area 4 - Install EB Shoulder Drainage from 1409+50 to 1428+00	10	27-Feb-20	13-Mar-20	2
GDA1-1110	Area 4 - Install WB Shoulder Drainage from 1401+50 to 1428+25	14	16-Mar-20	06-Apr-20	2
GDA1-1120	Area 4 - Full Depth Reclamation	14	07-Apr-20	24-Apr-20	4
GDA1-1130	Area 4 - Install 30" Cross Pipe at 1434+00	10	08-Apr-20	23-Apr-20	47
GDA1-1140	Area 4 - Install Underdrain UD-4	7	27-Apr-20	06-May-20	124
GDA1-1150	Area 4 - Place Open Graded Drainage Layer	4	07-May-20	12-May-20	141
GDA1-1160	Area 4 - Place CCPRM	12	13-May-20	01-Jun-20	141
GDA1-1170	Area 4 - Place Intermediate Asphalt	4	02-Jun-20	05-Jun-20	141
GDA1-1180	Area 4 - Respread Topsoil in Roadside Ditches	14	08-Jun-20	30-Jun-20	143
GDA1-1190	Area 4 - Stabilize Roadside Ditches	2	01-Jul-20	02-Jul-20	143
GDA1-1200	Area 4 - Install Guardrail	7	06-Jul-20	16-Jul-20	146
GDA1-1210	Area 4 - Install Temporary Pavement Markings	4	17-Jul-20	22-Jul-20	146
GDA1-1220	Area 4 - Ready for Shift Traffic to Final Configuration	4	23-Jul-20	28-Jul-20	180
AREA 4 - STAGE 2 - OUTSIDE SWM WORK		89	23-Dec-19	02-Jun-20	38
Stormwater Management Pond 11-1		33	23-Dec-19	27-Feb-20	38
GDA2a-1000	SWM Pond 11-1 - Clear and Grub and Install Perimeter Controls	5	23-Dec-19	31-Dec-19	38
GDA2a-1010	SWM Pond 11-1 - Strip Topsoil	3	02-Jan-20	06-Jan-20	38



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

TASK filter: All Activities

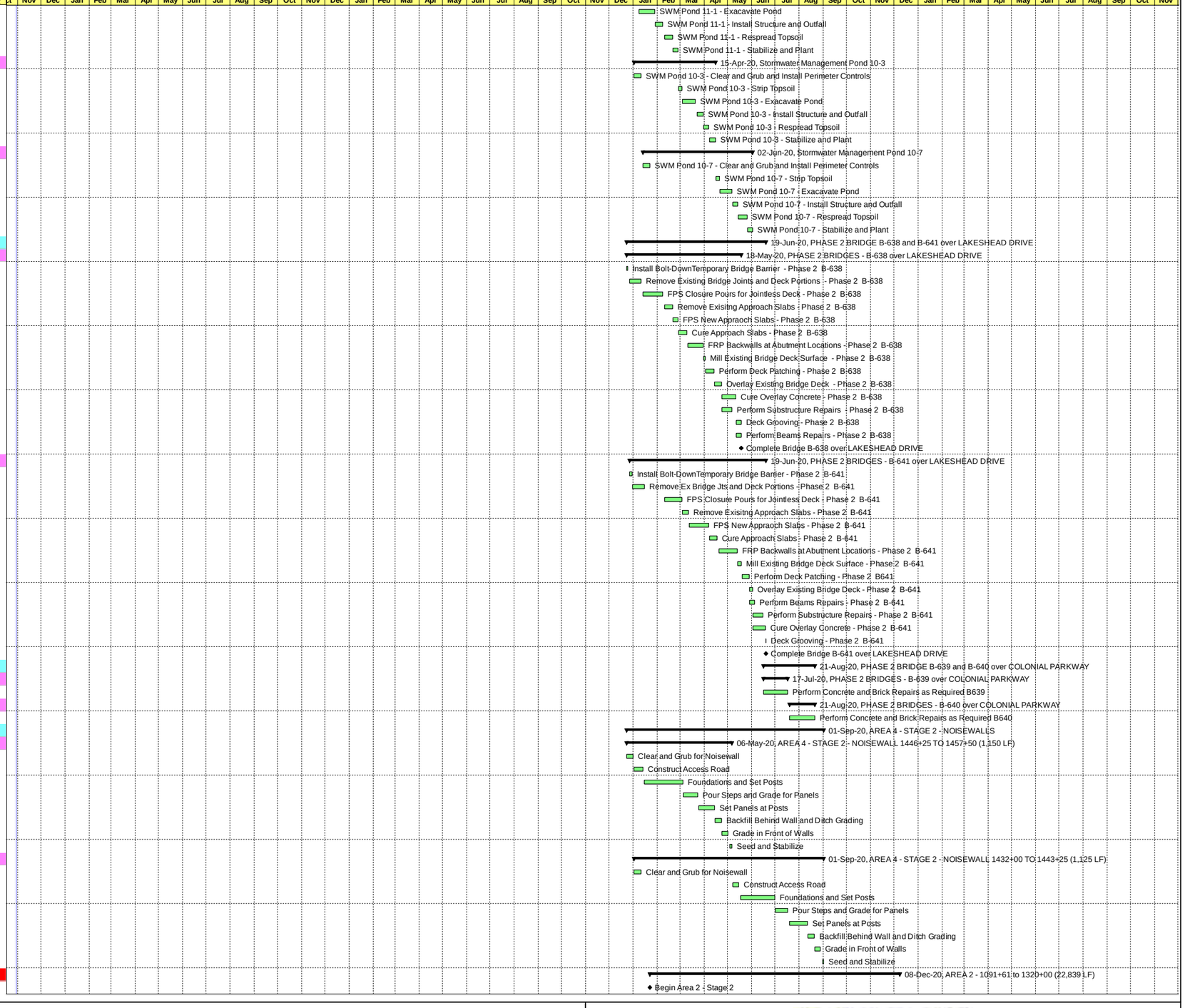
SHIRLEY CONTRACTING COMPANY, LLC

I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GDA2a-1020	SWM Pond 11-1 - Excavate Pond	10	08-Jan-20	28-Jan-20	38
GDA2a-1030	SWM Pond 11-1 - Install Structure and Outfall	5	29-Jan-20	07-Feb-20	38
GDA2a-1040	SWM Pond 11-1 - Respread Topsoil	5	10-Feb-20	20-Feb-20	38
GDA2a-1050	SWM Pond 11-1 - Stabilize and Plant	5	21-Feb-20	27-Feb-20	38
Stormwater Management Pond 10-3		56	02-Jan-20	15-Apr-20	38
GDA2b-1000	SWM Pond 10-3 - Clear and Grub and Install Perimeter Controls	5	02-Jan-20	10-Jan-20	61
GDA2b-1010	SWM Pond 10-3 - Strip Topsoil	3	28-Feb-20	03-Mar-20	38
GDA2b-1020	SWM Pond 10-3 - Excavate Pond	10	04-Mar-20	20-Mar-20	38
GDA2b-1030	SWM Pond 10-3 - Install Structure and Outfall	5	23-Mar-20	30-Mar-20	38
GDA2b-1040	SWM Pond 10-3 - Respread Topsoil	5	31-Mar-20	06-Apr-20	38
GDA2b-1050	SWM Pond 10-3 - Stabilize and Plant	5	08-Apr-20	15-Apr-20	38
Stormwater Management Pond 10-7		79	13-Jan-20	02-Jun-20	38
GDA2c-1000	SWM Pond 10-7 - Clear and Grub and Install Perimeter Controls	5	13-Jan-20	22-Jan-20	84
GDA2c-1010	SWM Pond 10-7 - Strip Topsoil	3	16-Apr-20	20-Apr-20	38
GDA2c-1020	SWM Pond 10-7 - Excavate Pond	10	21-Apr-20	06-May-20	38
GDA2c-1030	SWM Pond 10-7 - Install Structure and Outfall	5	08-May-20	14-May-20	38
GDA2c-1040	SWM Pond 10-7 - Respread Topsoil	5	15-May-20	26-May-20	38
GDA2c-1050	SWM Pond 10-7 - Stabilize and Plant	5	27-May-20	02-Jun-20	38
PHASE 2 BRIDGE B-638 and B-641 over LAKESHEAD DRIVE		100	23-Dec-19	19-Jun-20	169
PHASE 2 BRIDGES - B-638 over LAKESHEAD DRIVE		81	23-Dec-19	18-May-20	188
GDA3a-1000	Install Bolt-DownTemporary Bridge Barrier - Phase 2 B-638	2	23-Dec-19	24-Dec-19	133
GDA3a-1010	Remove Existing Bridge Joints and Deck Portions - Phase 2 B-638	8	27-Dec-19	10-Jan-20	133
GDA3a-1020	FPS Closure Pours for Jointless Deck - Phase 2 B-638	13	13-Jan-20	07-Feb-20	133
GDA3a-1030	Remove Exisitng Approach Slabs - Phase 2 B-638	5	10-Feb-20	20-Feb-20	141
GDA3a-1040	FPS New Appraoch Slabs - Phase 2 B-638	5	21-Feb-20	27-Feb-20	141
GDA3a-1050	Cure Approach Slabs - Phase 2 B-638	7	28-Feb-20	09-Mar-20	145
GDA3a-1060	FRP Backwalls at Abutment Locations - Phase 2 B-638	11	11-Mar-20	30-Mar-20	145
GDA3a-1070	Mill Existing Bridge Deck Surface - Phase 2 B-638	3	31-Mar-20	02-Apr-20	153
GDA3a-1080	Perform Deck Patching - Phase 2 B-638	5	03-Apr-20	13-Apr-20	153
GDA3a-1090	Overlay Existing Bridge Deck - Phase 2 B-638	7	14-Apr-20	23-Apr-20	153
GDA3a-1100	Cure Overlay Concrete - Phase 2 B-638	10	24-Apr-20	11-May-20	187
GDA3a-1110	Perform Substructure Repairs - Phase 2 B-638	8	24-Apr-20	06-May-20	195
GDA3a-1120	Deck Grooving - Phase 2 B-638	5	12-May-20	18-May-20	187
GDA3a-1130	Perform Beams Repairs - Phase 2 B-638	5	12-May-20	18-May-20	188
GDA3a-1140	Complete Bridge B-638 over LAKESHEAD DRIVE	0		18-May-20	188
PHASE 2 BRIDGES - B-641 over LAKESHEAD DRIVE		98	27-Dec-19	19-Jun-20	169
GDA3b-1000	Install Bolt-DownTemporary Bridge Barrier - Phase 2 B-641	2	27-Dec-19	30-Dec-19	144
GDA3b-1010	Remove Ex Bridge Jts and Deck Portions - Phase 2 B-641	8	31-Dec-19	15-Jan-20	144
GDA3b-1020	FPS Closure Pours for Jointless Deck - Phase 2 B-641	13	10-Feb-20	03-Mar-20	133
GDA3b-1030	Remove Exisitng Approach Slabs - Phase 2 B-641	5	04-Mar-20	11-Mar-20	133
GDA3b-1040	FPS New Appraoch Slabs - Phase 2 B-641	15	13-Mar-20	06-Apr-20	133
GDA3b-1050	Cure Approach Slabs - Phase 2 B-641	7	08-Apr-20	17-Apr-20	133
GDA3b-1060	FRP Backwalls at Abutment Locations - Phase 2 B-641	15	20-Apr-20	13-May-20	133
GDA3b-1070	Mill Existing Bridge Deck Surface - Phase 2 B-641	3	14-May-20	18-May-20	133
GDA3b-1080	Perform Deck Patching - Phase 2 B641	5	20-May-20	28-May-20	133
GDA3b-1090	Overlay Existing Bridge Deck - Phase 2 B-641	3	29-May-20	02-Jun-20	133
GDA3b-1100	Perform Beams Repairs - Phase 2 B-641	5	29-May-20	04-Jun-20	178
GDA3b-1110	Perform Substructure Repairs - Phase 2 B-641	7	03-Jun-20	15-Jun-20	133
GDA3b-1120	Cure Overlay Concrete - Phase 2 B-641	10	03-Jun-20	18-Jun-20	169
GDA3b-1130	Deck Grooving - Phase 2 B-641	1	19-Jun-20	19-Jun-20	169
GDA3b-1140	Complete Bridge B-641 over LAKESHEAD DRIVE	0		19-Jun-20	169
PHASE 2 BRIDGE B-639 and B-640 over COLONIAL PARKWAY		40	16-Jun-20	21-Aug-20	133
PHASE 2 BRIDGES - B-639 over COLONIAL PARKWAY		20	16-Jun-20	17-Jul-20	133
GDA4a-1000	Perform Concrete and Brick Repairs as Required B639	20	16-Jun-20	17-Jul-20	133
PHASE 2 BRIDGES - B-640 over COLONIAL PARKWAY		20	20-Jul-20	21-Aug-20	133
GDA4b-1000	Perform Concrete and Brick Repairs as Required B640	20	20-Jul-20	21-Aug-20	133
AREA 4 - STAGE 2 - NOISEWALLS		143	23-Dec-19	01-Sep-20	72
AREA 4 - STAGE 2 - NOISEWALL 1446+25 TO 1457+50 (1,150 LF)		74	23-Dec-19	06-May-20	72
GDA5a-1000	Clear and Grub for Noisewall	5	23-Dec-19	31-Dec-19	72
GDA5a-1010	Construct Access Road	6	02-Jan-20	13-Jan-20	72
GDA5a-1020	Foundations and Set Posts	26	15-Jan-20	04-Mar-20	72
GDA5a-1030	Pour Steps and Grade for Panels	10	05-Mar-20	23-Mar-20	72
GDA5a-1040	Set Panels at Posts	13	25-Mar-20	14-Apr-20	72
GDA5a-1050	Backfill Behind Wall and Ditch Grading	6	15-Apr-20	23-Apr-20	72
GDA5a-1060	Grade in Front of Walls	6	24-Apr-20	01-May-20	72
GDA5a-1070	Seed and Stabilize	2	04-May-20	06-May-20	72
AREA 4 - STAGE 2 - NOISEWALL 1432+00 TO 1443+25 (1,125 LF)		138	02-Jan-20	01-Sep-20	72
GDA5b-1000	Clear and Grub for Noisewall	5	02-Jan-20	10-Jan-20	136
GDA5b-1010	Construct Access Road	6	08-May-20	15-May-20	72
GDA5b-1020	Foundations and Set Posts	26	18-May-20	30-Jun-20	72
GDA5b-1030	Pour Steps and Grade for Panels	10	01-Jul-20	17-Jul-20	72
GDA5b-1040	Set Panels at Posts	13	20-Jul-20	11-Aug-20	72
GDA5b-1050	Backfill Behind Wall and Ditch Grading	6	12-Aug-20	20-Aug-20	72
GDA5b-1060	Grade in Front of Walls	6	21-Aug-20	28-Aug-20	72
GDA5b-1070	Seed and Stabilize	2	31-Aug-20	01-Sep-20	72
AREA 2 - 1091+61 to 1320+00 (22,839 LF)		187	22-Jan-20	08-Dec-20	10
GDB-1000	Begin Area 2 - Stage 2	0	22-Jan-20		24

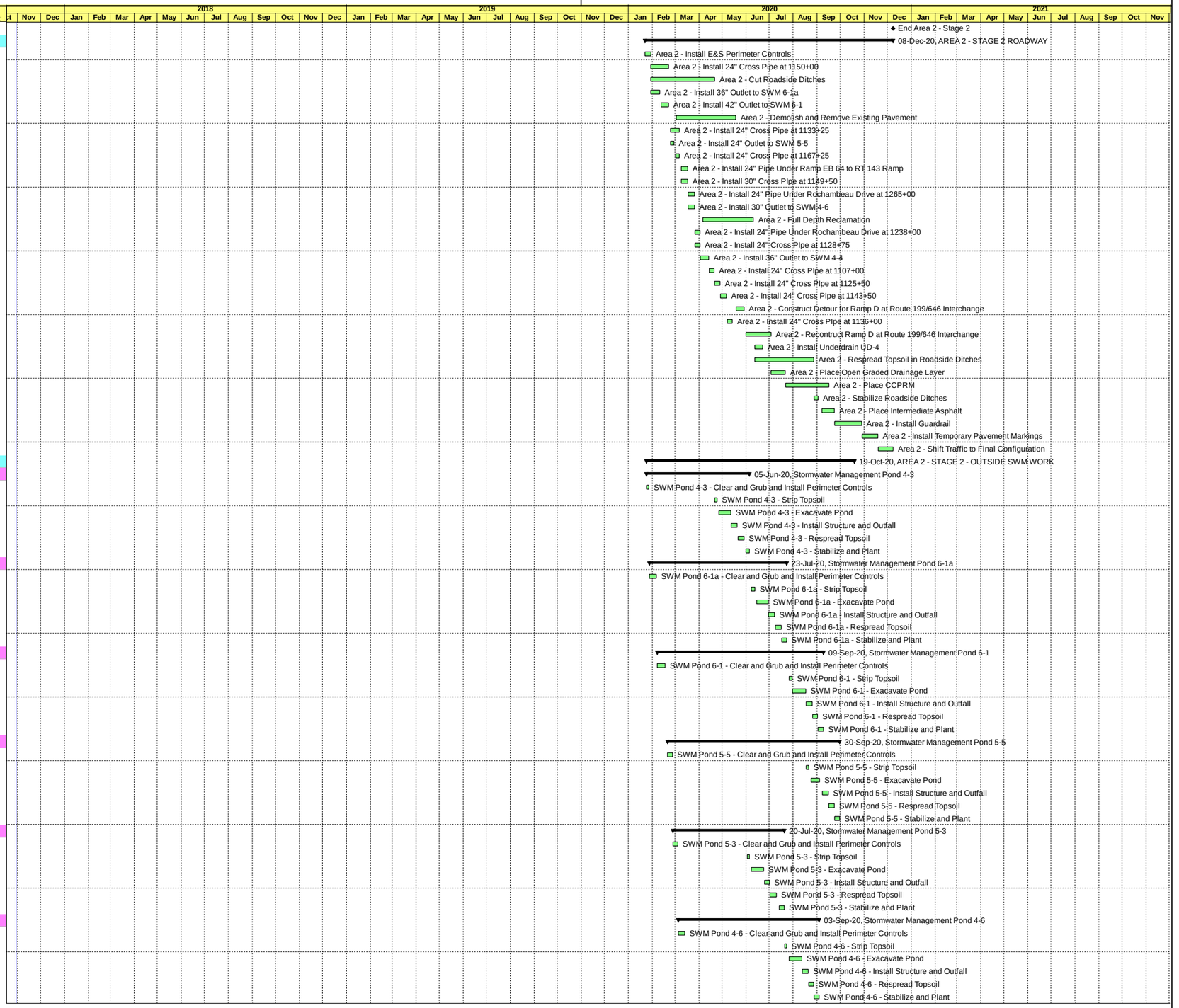


Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filter: All Activities

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GDB-1010	End Area 2 - Stage 2	0		08-Dec-20	10
AREA 2 - STAGE 2 ROADWAY		187	22-Jan-20	08-Dec-20	9
GDB1-1000	Area 2 - Install E&S Perimeter Controls	5	22-Jan-20	29-Jan-20	24
GDB1-1010	Area 2 - Install 24" Cross Pipe at 1150+00	10	30-Jan-20	21-Feb-20	25
GDB1-1020	Area 2 - Cut Roadside Ditches	46	30-Jan-20	21-Apr-20	38
GDB1-1030	Area 2 - Install 36" Outlet to SWM 6-1a	5	30-Jan-20	10-Feb-20	24
GDB1-1040	Area 2 - Install 42" Outlet to SWM 6-1	5	12-Feb-20	21-Feb-20	24
GDB1-1050	Area 2 - Demolish and Remove Existing Pavement	46	03-Mar-20	18-May-20	9
GDB1-1060	Area 2 - Install 24" Cross Pipe at 1133+25	10	24-Feb-20	06-Mar-20	25
GDB1-1070	Area 2 - Install 24" Outlet to SWM 5-5	5	24-Feb-20	28-Feb-20	24
GDB1-1080	Area 2 - Install 24" Cross Plpe at 1167+25	5	02-Mar-20	06-Mar-20	24
GDB1-1090	Area 2 - Install 24" Pipe Under Ramp EB 64 to RT 143 Ramp	5	09-Mar-20	17-Mar-20	56
GDB1-1100	Area 2 - Install 30" Cross Plpe at 1149+50	5	09-Mar-20	17-Mar-20	24
GDB1-1110	Area 2 - Install 24" Pipe Under Rochambeau Drive at 1265+00	5	18-Mar-20	26-Mar-20	56
GDB1-1120	Area 2 - Install 30" Outlet to SWM 4-6	5	18-Mar-20	26-Mar-20	24
GDB1-1130	Area 2 - Full Depth Reclamation	46	06-Apr-20	10-Jun-20	11
GDB1-1140	Area 2 - Install 24" Pipe Under Rochambeau Drive at 1238+00	5	27-Mar-20	02-Apr-20	56
GDB1-1150	Area 2 - Install 24" Cross Plpe at 1128+75	5	27-Mar-20	02-Apr-20	24
GDB1-1160	Area 2 - Install 36" Outlet to SWM 4-4	5	03-Apr-20	13-Apr-20	24
GDB1-1170	Area 2 - Install 24" Cross Plpe at 1107+00	5	14-Apr-20	20-Apr-20	24
GDB1-1180	Area 2 - Install 24" Cross Plpe at 1125+50	5	21-Apr-20	28-Apr-20	24
GDB1-1190	Area 2 - Install 24" Cross Plpe at 1143+50	5	29-Apr-20	06-May-20	24
GDB1-1200	Area 2 - Construct Detour for Ramp D at Route 199/646 Interchange	7	19-May-20	29-May-20	13
GDB1-1210	Area 2 - Install 24" Cross Plpe at 1136+00	5	08-May-20	14-May-20	24
GDB1-1220	Area 2 - Recontruct Ramp D at Route 199/646 Interchange	25	01-Jun-20	03-Jul-20	13
GDB1-1230	Area 2 - Install Underdrain UD-4	7	12-Jun-20	22-Jun-20	9
GDB1-1240	Area 2 - Respread Topsoil in Roadside Ditches	46	12-Jun-20	27-Aug-20	21
GDB1-1250	Area 2 - Place Open Graded Drainage Layer	12	03-Jul-20	21-Jul-20	2
GDB1-1260	Area 2 - Place CCPRM	39	22-Jul-20	16-Sep-20	2
GDB1-1270	Area 2 - Stabilize Roadside Ditches	4	28-Aug-20	02-Sep-20	21
GDB1-1280	Area 2 - Place Intermediate Asphalt	12	07-Sep-20	23-Sep-20	2
GDB1-1290	Area 2 - Install Guardrail	23	24-Sep-20	28-Oct-20	9
GDB1-1300	Area 2 - Install Temporary Pavement Markings	12	29-Oct-20	18-Nov-20	9
GDB1-1310	Area 2 - Shift Traffic to Final Configuration	12	19-Nov-20	08-Dec-20	11
AREA 2 - STAGE 2 - OUTSIDE SWM WORK		158	24-Jan-20	19-Oct-20	38
Stormwater Management Pond 4-3		77	24-Jan-20	05-Jun-20	50
GDB2a-1000	SWM Pond 4-3 - Clear and Grub and Install Perimeter Controls	2	24-Jan-20	27-Jan-20	90
GDB2a-1010	SWM Pond 4-3 - Strip Topsoil	3	21-Apr-20	24-Apr-20	50
GDB2a-1020	SWM Pond 4-3 - Exacavate Pond	10	27-Apr-20	12-May-20	50
GDB2a-1030	SWM Pond 4-3 - Install Structure and Outfall	5	13-May-20	20-May-20	50
GDB2a-1040	SWM Pond 4-3 - Respread Topsoil	5	22-May-20	29-May-20	50
GDB2a-1050	SWM Pond 4-3 - Stabilize and Plant	5	01-Jun-20	05-Jun-20	50
Stormwater Management Pond 6-1a		103	28-Jan-20	23-Jul-20	50
GDB2b-1000	SWM Pond 6-1a - Clear and Grub and Install Perimeter Controls	5	28-Jan-20	05-Feb-20	90
GDB2b-1010	SWM Pond 6-1a - Strip Topsoil	3	08-Jun-20	12-Jun-20	50
GDB2b-1020	SWM Pond 6-1a - Exacavate Pond	10	15-Jun-20	29-Jun-20	50
GDB2b-1030	SWM Pond 6-1a - Install Structure and Outfall	5	30-Jun-20	07-Jul-20	50
GDB2b-1040	SWM Pond 6-1a - Respread Topsoil	5	09-Jul-20	16-Jul-20	50
GDB2b-1050	SWM Pond 6-1a - Stabilize and Plant	5	17-Jul-20	23-Jul-20	50
Stormwater Management Pond 6-1		126	07-Feb-20	09-Sep-20	58
GDB2c-1000	SWM Pond 6-1 - Clear and Grub and Install Perimeter Controls	5	07-Feb-20	17-Feb-20	90
GDB2c-1010	SWM Pond 6-1 - Strip Topsoil	3	27-Jul-20	30-Jul-20	50
GDB2c-1020	SWM Pond 6-1 - Exacavate Pond	10	31-Jul-20	17-Aug-20	50
GDB2c-1030	SWM Pond 6-1 - Install Structure and Outfall	5	18-Aug-20	25-Aug-20	58
GDB2c-1040	SWM Pond 6-1 - Respread Topsoil	5	26-Aug-20	01-Sep-20	58
GDB2c-1050	SWM Pond 6-1 - Stabilize and Plant	5	02-Sep-20	09-Sep-20	58
Stormwater Management Pond 5-5		134	20-Feb-20	30-Sep-20	50
GDB2d-1000	SWM Pond 5-5 - Clear and Grub and Install Perimeter Controls	5	20-Feb-20	26-Feb-20	90
GDB2d-1010	SWM Pond 5-5 - Strip Topsoil	3	18-Aug-20	21-Aug-20	50
GDB2d-1020	SWM Pond 5-5 - Exacavate Pond	10	24-Aug-20	04-Sep-20	50
GDB2d-1030	SWM Pond 5-5 - Install Structure and Outfall	5	08-Sep-20	15-Sep-20	50
GDB2d-1040	SWM Pond 5-5 - Respread Topsoil	5	16-Sep-20	23-Sep-20	50
GDB2d-1050	SWM Pond 5-5 - Stabilize and Plant	5	24-Sep-20	30-Sep-20	50
Stormwater Management Pond 5-3		85	27-Feb-20	20-Jul-20	38
GDB2e-1000	SWM Pond 5-3 - Clear and Grub and Install Perimeter Controls	5	27-Feb-20	04-Mar-20	90
GDB2e-1010	SWM Pond 5-3 - Strip Topsoil	3	03-Jun-20	05-Jun-20	38
GDB2e-1020	SWM Pond 5-3 - Exacavate Pond	10	08-Jun-20	23-Jun-20	38
GDB2e-1030	SWM Pond 5-3 - Install Structure and Outfall	5	25-Jun-20	01-Jul-20	38
GDB2e-1040	SWM Pond 5-3 - Respread Topsoil	5	02-Jul-20	10-Jul-20	38
GDB2e-1050	SWM Pond 5-3 - Stabilize and Plant	5	14-Jul-20	20-Jul-20	38
Stormwater Management Pond 4-6		108	05-Mar-20	03-Sep-20	38
GDB2f-1000	SWM Pond 4-6 - Clear and Grub and Install Perimeter Controls	5	05-Mar-20	13-Mar-20	113
GDB2f-1010	SWM Pond 4-6 - Strip Topsoil	3	21-Jul-20	23-Jul-20	38
GDB2f-1020	SWM Pond 4-6 - Exacavate Pond	10	27-Jul-20	12-Aug-20	38
GDB2f-1030	SWM Pond 4-6 - Install Structure and Outfall	5	13-Aug-20	20-Aug-20	38
GDB2f-1040	SWM Pond 4-6 - Respread Topsoil	5	21-Aug-20	27-Aug-20	38
GDB2f-1050	SWM Pond 4-6 - Stabilize and Plant	5	28-Aug-20	03-Sep-20	38



Remaining Level of Effort
Actual Work
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Summary

TASK filter: All Activities

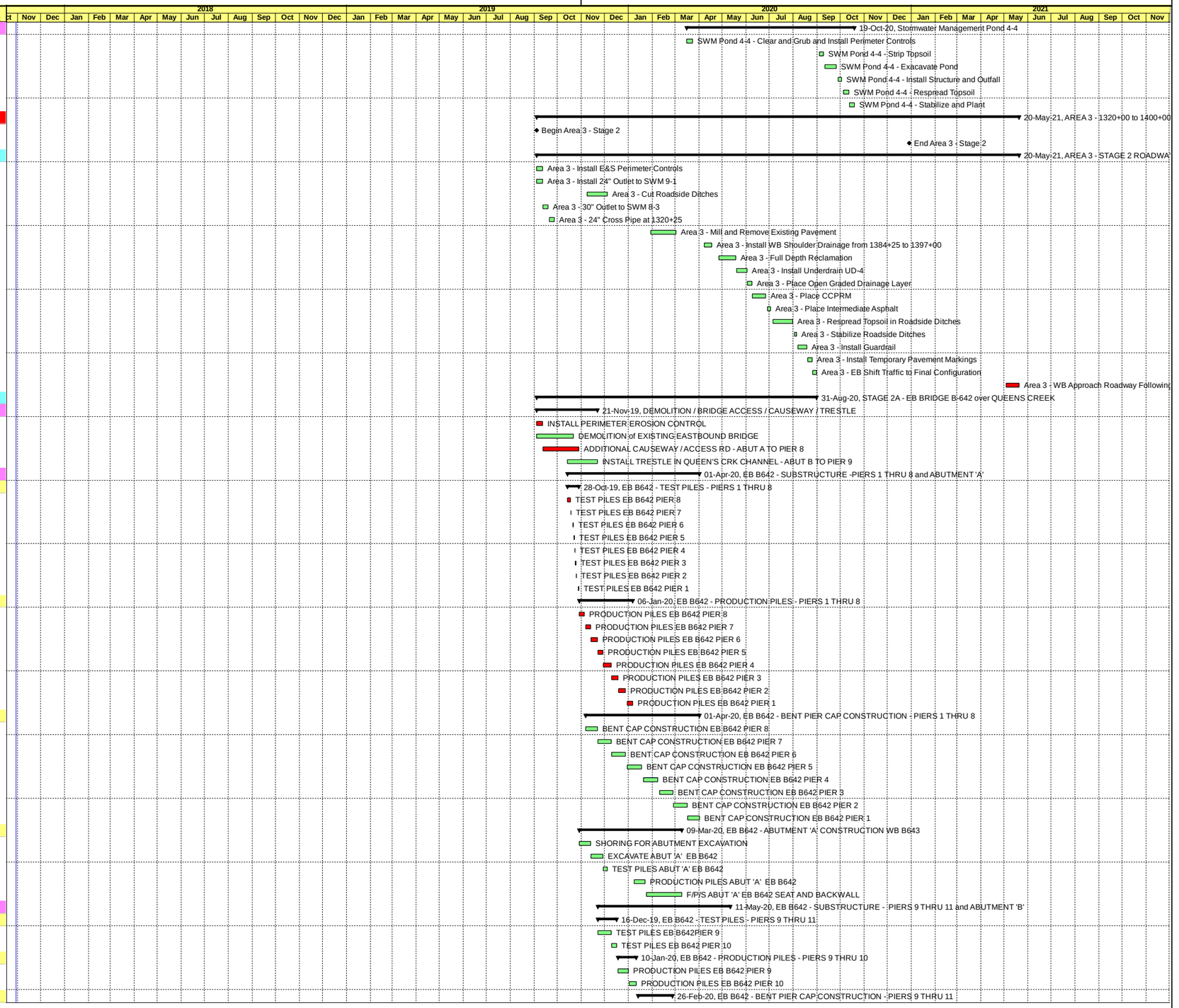
SHIRLEY CONTRACTING COMPANY, LLC

I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
Stormwater Management Pond 4-4		131	16-Mar-20	19-Oct-20	38
GDB2g-1000	SWM Pond 4-4 - Clear and Grub and Install Perimeter Controls	5	16-Mar-20	23-Mar-20	136
GDB2g-1010	SWM Pond 4-4 - Strip Topsoil	3	04-Sep-20	09-Sep-20	38
GDB2g-1020	SWM Pond 4-4 - Excavate Pond	10	11-Sep-20	25-Sep-20	38
GDB2g-1030	SWM Pond 4-4 - Install Structure and Outfall	5	28-Sep-20	02-Oct-20	38
GDB2g-1040	SWM Pond 4-4 - Respread Topsoil	5	05-Oct-20	12-Oct-20	38
GDB2g-1050	SWM Pond 4-4 - Stabilize and Plant	5	13-Oct-20	19-Oct-20	38
AREA 3 - 1320+00 to 1400+00 (8,000 LF)		357	04-Sep-19	20-May-21	0
GDC-1000	Begin Area 3 - Stage 2	0	04-Sep-19		0
GDC-1010	End Area 3 - Stage 2	0		29-Dec-20	72
AREA 3 - STAGE 2 ROADWAY		357	04-Sep-19	20-May-21	0
GDC1-1000	Area 3 - Install E&S Perimeter Controls	5	04-Sep-19	11-Sep-19	89
GDC1-1010	Area 3 - Install 24" Outlet to SWM 9-1	5	04-Sep-19	11-Sep-19	59
GDC1-1020	Area 3 - Cut Roadside Ditches	16	08-Nov-19	04-Dec-19	52
GDC1-1030	Area 3 - 30" Outlet to SWM 8-3	5	12-Sep-19	18-Sep-19	59
GDC1-1040	Area 3 - 24" Cross Pipe at 1320+25	5	20-Sep-19	26-Sep-19	59
GDC1-1050	Area 3 - Mill and Remove Existing Pavement	16	30-Jan-20	02-Mar-20	9
GDC1-1060	Area 3 - Install WB Shoulder Drainage from 1384+25 to 1397+00	7	08-Apr-20	17-Apr-20	8
GDC1-1070	Area 3 - Full Depth Reclamation	16	27-Apr-20	18-May-20	4
GDC1-1080	Area 3 - Install Underdrain UD-4	8	20-May-20	02-Jun-20	2
GDC1-1090	Area 3 - Place Open Graded Drainage Layer	4	03-Jun-20	08-Jun-20	2
GDC1-1100	Area 3 - Place CCPRM	14	09-Jun-20	26-Jun-20	2
GDC1-1110	Area 3 - Place Intermediate Asphalt	4	29-Jun-20	02-Jul-20	2
GDC1-1120	Area 3 - Respread Topsoil in Roadside Ditches	16	06-Jul-20	31-Jul-20	143
GDC1-1130	Area 3 - Stabilize Roadside Ditches	2	03-Aug-20	05-Aug-20	143
GDC1-1140	Area 3 - Install Guardrail	8	07-Aug-20	18-Aug-20	143
GDC1-1150	Area 3 - Install Temporary Pavement Markings	4	20-Aug-20	25-Aug-20	143
GDC1-1160	Area 3 - EB Shift Traffic to Final Configuration	4	26-Aug-20	31-Aug-20	173
GDC1-1170	Area 3 - WB Approach Roadway Following Queen's Crk Br	10	04-May-21	20-May-21	0
STAGE 2A - EB BRIDGE B-642 over QUEENS CREEK		209	04-Sep-19	31-Aug-20	0
DEMOLITION / BRIDGE ACCESS / CAUSEWAY / TRESTLE		50	04-Sep-19	21-Nov-19	1
GDC2a-1000	INSTALL PERIMETER EROSION CONTROL	5	04-Sep-19	11-Sep-19	0
GDC2a-1010	DEMOLITION of EXISTING EASTBOUND BRIDGE	30	04-Sep-19	21-Oct-19	5
GDC2a-1020	ADDITIONAL CAUSEWAY / ACCESS RD - ABUT A TO PIER 8	30	12-Sep-19	28-Oct-19	0
GDC2a-1030	INSTALL TRESTLE IN QUEEN'S CRK CHANNEL - ABUT B TO PIER 9	25	14-Oct-19	21-Nov-19	1
EB B642 - SUBSTRUCTURE -PIERS 1 THRU 8 and ABUTMENT 'A'		95	14-Oct-19	01-Apr-20	60
EB B642 - TEST PILES - PIERS 1 THRU 8		10	14-Oct-19	28-Oct-19	0
GDC2b1-1000	TEST PILES EB B642 PIER 8	3	14-Oct-19	17-Oct-19	0
GDC2b1-1010	TEST PILES EB B642 PIER 7	1	18-Oct-19	18-Oct-19	0
GDC2b1-1020	TEST PILES EB B642 PIER 6	1	21-Oct-19	21-Oct-19	0
GDC2b1-1030	TEST PILES EB B642 PIER 5	1	22-Oct-19	22-Oct-19	0
GDC2b1-1040	TEST PILES EB B642 PIER 4	1	23-Oct-19	23-Oct-19	0
GDC2b1-1050	TEST PILES EB B642 PIER 3	1	24-Oct-19	24-Oct-19	0
GDC2b1-1060	TEST PILES EB B642 PIER 2	1	25-Oct-19	25-Oct-19	0
GDC2b1-1070	TEST PILES EB B642 PIER 1	1	28-Oct-19	28-Oct-19	0
EB B642 - PRODUCTION PILES - PIERS 1 THRU 8		40	29-Oct-19	06-Jan-20	0
GDC2b2-1000	PRODUCTION PILES EB B642 PIER 8	5	29-Oct-19	04-Nov-19	0
GDC2b2-1010	PRODUCTION PILES EB B642 PIER 7	5	06-Nov-19	12-Nov-19	0
GDC2b2-1020	PRODUCTION PILES EB B642 PIER 6	5	13-Nov-19	21-Nov-19	0
GDC2b2-1030	PRODUCTION PILES EB B642 PIER 5	5	22-Nov-19	28-Nov-19	0
GDC2b2-1040	PRODUCTION PILES EB B642 PIER 4	5	29-Nov-19	09-Dec-19	0
GDC2b2-1050	PRODUCTION PILES EB B642 PIER 3	5	10-Dec-19	18-Dec-19	0
GDC2b2-1060	PRODUCTION PILES EB B642 PIER 2	5	19-Dec-19	27-Dec-19	0
GDC2b2-1070	PRODUCTION PILES EB B642 PIER 1	5	30-Dec-19	06-Jan-20	0
EB B642 - BENT PIER CAP CONSTRUCTION - PIERS 1 THRU 8		80	06-Nov-19	01-Apr-20	56
GDC2b3-1000	BENT CAP CONSTRUCTION EB B642 PIER 8	10	06-Nov-19	21-Nov-19	15
GDC2b3-1010	BENT CAP CONSTRUCTION EB B642 PIER 7	10	22-Nov-19	09-Dec-19	15
GDC2b3-1020	BENT CAP CONSTRUCTION EB B642 PIER 6	10	10-Dec-19	27-Dec-19	20
GDC2b3-1030	BENT CAP CONSTRUCTION EB B642 PIER 5	10	30-Dec-19	17-Jan-20	25
GDC2b3-1040	BENT CAP CONSTRUCTION EB B642 PIER 4	10	20-Jan-20	07-Feb-20	30
GDC2b3-1050	BENT CAP CONSTRUCTION EB B642 PIER 3	10	10-Feb-20	27-Feb-20	56
GDC2b3-1060	BENT CAP CONSTRUCTION EB B642 PIER 2	10	28-Feb-20	16-Mar-20	56
GDC2b3-1070	BENT CAP CONSTRUCTION EB B642 PIER 1	10	17-Mar-20	01-Apr-20	56
EB B642 - ABUTMENT 'A' CONSTRUCTION WB B643		72	29-Oct-19	09-Mar-20	73
GDC2b4-1000	SHORING FOR ABUTMENT EXCAVATION	10	29-Oct-19	12-Nov-19	90
GDC2b4-1010	EXCAVATE ABUT 'A' EB B642	10	13-Nov-19	28-Nov-19	90
GDC2b4-1020	TEST PILES ABUT 'A' EB B642	3	29-Nov-19	04-Dec-19	90
GDC2b4-1030	PRODUCTION PILES ABUT 'A' EB B642	7	08-Jan-20	22-Jan-20	73
GDC2b4-1040	F/P/S ABUT 'A' EB B642 SEAT AND BACKWALL	25	24-Jan-20	09-Mar-20	73
EB B642 - SUBSTRUCTURE - PIERS 9 THRU 11 and ABUTMENT 'B'		93	22-Nov-19	11-May-20	1
EB B642 - TEST PILES - PIERS 9 THRU 11		14	22-Nov-19	16-Dec-19	1
GDC2c1-1000	TEST PILES EB B642PIER 9	10	22-Nov-19	09-Dec-19	1
GDC2c1-1010	TEST PILES EB B642 PIER 10	4	10-Dec-19	16-Dec-19	1
EB B642 - PRODUCTION PILES - PIERS 9 THRU 10		13	18-Dec-19	10-Jan-20	1
GDC2c2-1000	PRODUCTION PILES EB B642 PIER 9	8	18-Dec-19	31-Dec-19	1
GDC2c2-1010	PRODUCTION PILES EB B642 PIER 10	5	02-Jan-20	10-Jan-20	1
EB B642 - BENT PIER CAP CONSTRUCTION - PIERS 9 THRU 11		22	13-Jan-20	26-Feb-20	1



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

TASK filter: All Activities

SHIRLEY CONTRACTING COMPANY, LLC

I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GDC2c3-1000	BENT CAP CONSTRUCTION EB B642 PIER 9	11	13-Jan-20	03-Feb-20	1
GDC2c3-1010	BENT CAP CONSTRUCTION EB B642 PIER 10	11	05-Feb-20	26-Feb-20	1
EB B642 - ABUTMENT 'B' CONSTRUCTION EB B642		44	27-Feb-20	11-May-20	1
GDC2c4-1000	SHORING FOR ABUTMENT EXCAVATION	10	27-Feb-20	13-Mar-20	1
GDC2c4-1010	EXCAVATE ABUT 'B' EB B642	6	16-Mar-20	25-Mar-20	1
GDC2c4-1020	TEST PILES ABUT 'B' EB B642	3	26-Mar-20	30-Mar-20	1
GDC2c4-1030	PRODUCTION PILES ABUT 'B' EB B642	5	31-Mar-20	06-Apr-20	1
GDC2c4-1040	F/P/S ABUT 'B' EB B642 SEAT AND BACKWALL	20	08-Apr-20	11-May-20	1
EB B642 - GIRDER INSTALLATION -PIERS 1 THRU 8		72	08-Jan-20	15-May-20	37
GDC2d-1000	GIRDER INSTALLATION EB B642 SPAN 8	4	08-Jan-20	15-Jan-20	0
GDC2d-1010	GIRDER INSTALLATION EB B642 SPAN 7	4	17-Jan-20	24-Jan-20	11
GDC2d-1020	GIRDER INSTALLATION EB B642 SPAN 6	4	27-Jan-20	30-Jan-20	22
GDC2d-1030	GIRDER INSTALLATION EB B642 SPAN 5	4	10-Feb-20	17-Feb-20	30
GDC2d-1040	GIRDER INSTALLATION EB B642 SPAN 4	4	28-Feb-20	04-Mar-20	68
GDC2d-1050	GIRDER INSTALLATION EB B642 SPAN 9	4	16-Mar-20	20-Mar-20	3
GDC2d-1060	GIRDER INSTALLATION EB B642 SPAN 3	4	17-Mar-20	23-Mar-20	62
GDC2d-1070	GIRDER INSTALLATION EB B642 SPAN 10	4	23-Mar-20	27-Mar-20	15
GDC2d-1080	GIRDER INSTALLATION EB B642 SPAN 11	4	12-May-20	15-May-20	1
GDC2d-1090	GIRDER INSTALLATION EB B642 SPAN 2	4	02-Apr-20	08-Apr-20	56
GDC2d-1100	GIRDER INSTALLATION EB B642 SPAN 1	4	10-Apr-20	15-Apr-20	56
EB B642 - DECK CONSTRUCTION		120	17-Jan-20	14-Aug-20	0
GDC2e-1000	DECK INSTALLATION EB B642 SPAN 8	15	17-Jan-20	17-Feb-20	0
GDC2e-1010	DECK INSTALLATION EB B642 SPAN 7	15	20-Feb-20	13-Mar-20	0
GDC2e-1020	DECK INSTALLATION EB B642 SPAN 6	15	16-Mar-20	08-Apr-20	0
GDC2e-1030	DECK INSTALLATION EB B642 SPAN 9	16	23-Mar-20	16-Apr-20	3
GDC2e-1040	DECK INSTALLATION EB B642 SPAN 5	15	10-Apr-20	01-May-20	0
GDC2e-1050	DECK INSTALLATION EB B642 SPAN 10	16	17-Apr-20	13-May-20	3
GDC2e-1060	DECK INSTALLATION EB B642 SPAN 4	15	04-May-20	29-May-20	0
GDC2e-1070	DECK INSTALLATION EB B642 SPAN 11	16	18-May-20	15-Jun-20	1
GDC2e-1080	DECK INSTALLATION EB B642 SPAN 3	15	01-Jun-20	23-Jun-20	0
GDC2e-1090	DECK INSTALLATION EB B642 SPAN 2	15	25-Jun-20	20-Jul-20	0
GDC2e-1100	DECK INSTALLATION EB B642 SPAN 1	15	21-Jul-20	14-Aug-20	0
EB B642 - NOISEWALL #1 -STRUCTURE MOUNTED		40	17-Jun-20	24-Aug-20	0
GDC2f-1000	INSTALL STRUCTURE MOUNTED NOISEWALL	40	17-Jun-20	24-Aug-20	0
EB B642 - CLOSURE POURS / DIAPHRAMS / PARAPETS		55	01-Jun-20	31-Aug-20	0
GDC2g-1000	CLOSURE POURS / DIAPHRAMS EB B642	45	01-Jun-20	14-Aug-20	0
GDC2g-1010	PARAPETS EB B642	30	02-Jul-20	24-Aug-20	0
GDC2g-1020	APPROACH SLABS EB B642	20	21-Jul-20	24-Aug-20	0
GDC2g-1030	SHIFT EB TRAFFIC back to NEW EB B642	5	25-Aug-20	31-Aug-20	0
STAGE 2B - PHASE 2 SECOND HALF -BRIDGE WB B-643 over QUEENS CREEK		138	01-Sep-20	03-May-21	0
PHASE 2 SECOND HALF WB B643 BRIDGE ACCESS / CAUSEWAY / TRESTLE		30	01-Sep-20	16-Oct-20	0
GDC3a-1000	INSTALL PERIMETER EROSION CONTROL	5	01-Sep-20	08-Sep-20	0
GDC3a-1010	INSTALL CAUSEWAY / ACCESS RD - ABUT A TO PIER 8	15	01-Sep-20	24-Sep-20	0
GDC3a-1020	INSTALL TRESTLE IN QUEEN'S CRK CHANNEL - ABUT B TO PIER 9	20	17-Sep-20	16-Oct-20	0
WB B643 PHASE 2 - SUBSTRUCTURE -PIERS 1 THRU 8 and ABUTMENT 'A'		69	25-Sep-20	28-Jan-21	37
WB B643 PHASE 2 - TEST PILES - PIERS 1 THRU 8		10	25-Sep-20	09-Oct-20	2
GDC3b1-1000	TEST PILES WB B643 PIER 8	3	25-Sep-20	29-Sep-20	2
GDC3b1-1010	TEST PILES WB B643 PIER 7	1	30-Sep-20	30-Sep-20	2
GDC3b1-1020	TEST PILES WB B643 PIER 6	1	01-Oct-20	01-Oct-20	2
GDC3b1-1030	TEST PILES WB B643 PIER 5	1	02-Oct-20	02-Oct-20	2
GDC3b1-1040	TEST PILES WB B643 PIER 4	1	05-Oct-20	05-Oct-20	2
GDC3b1-1050	TEST PILES WB B643 PIER 3	1	06-Oct-20	06-Oct-20	2
GDC3b1-1060	TEST PILES WB B643 PIER 2	1	07-Oct-20	07-Oct-20	2
GDC3b1-1070	TEST PILES WB B643 PIER 1	1	09-Oct-20	09-Oct-20	2
WB B643 PHASE 2 - PRODUCTION PILES - PIERS 1 THRU 8		24	12-Oct-20	18-Nov-20	2
GDC3b2-1000	PRODUCTION PILES WB B643 PIER 8	3	12-Oct-20	14-Oct-20	2
GDC3b2-1010	PRODUCTION PILES WB B643 PIER 7	3	15-Oct-20	19-Oct-20	2
GDC3b2-1020	PRODUCTION PILES WB B643 PIER 6	3	21-Oct-20	23-Oct-20	2
GDC3b2-1030	PRODUCTION PILES WB B643 PIER 5	3	26-Oct-20	28-Oct-20	2
GDC3b2-1040	PRODUCTION PILES WB B643 PIER 4	3	29-Oct-20	02-Nov-20	2
GDC3b2-1050	PRODUCTION PILES WB B643 PIER 3	3	03-Nov-20	05-Nov-20	2
GDC3b2-1060	PRODUCTION PILES WB B643 PIER 2	3	09-Nov-20	12-Nov-20	2
GDC3b2-1070	PRODUCTION PILES WB B643 PIER 1	3	13-Nov-20	18-Nov-20	2
WB B643 PHASE 2 - BENT PIER CAP CONSTRUCTION - PIERS 1 THRU 8		56	15-Oct-20	28-Jan-21	35
GDC3b3-1000	BENT CAP CONSTRUCTION WB B643 PIER 8	7	15-Oct-20	26-Oct-20	9
GDC3b3-1010	BENT CAP CONSTRUCTION WB B643 PIER 7	7	27-Oct-20	04-Nov-20	9
GDC3b3-1020	BENT CAP CONSTRUCTION WB B643 PIER 6	7	05-Nov-20	18-Nov-20	12
GDC3b3-1030	BENT CAP CONSTRUCTION WB B643 PIER 5	7	19-Nov-20	01-Dec-20	15
GDC3b3-1040	BENT CAP CONSTRUCTION WB B643 PIER 4	7	03-Dec-20	15-Dec-20	18
GDC3b3-1050	BENT CAP CONSTRUCTION WB B643 PIER 3	7	17-Dec-20	29-Dec-20	35
GDC3b3-1060	BENT CAP CONSTRUCTION WB B643 PIER 2	7	30-Dec-20	13-Jan-21	35
GDC3b3-1070	BENT CAP CONSTRUCTION WB B643 PIER 1	7	15-Jan-21	28-Jan-21	35
WB B643 PHASE 2 - ABUTMENT 'A' CONSTRUCTION WB B643		49	12-Oct-20	06-Jan-21	47
GDC3b4-1000	SHORING FOR ABUTMENT EXCAVATION	10	12-Oct-20	26-Oct-20	48
GDC3b4-1010	EXCAVATE ABUT 'A' WB B43	10	27-Oct-20	10-Nov-20	48
GDC3b4-1020	TEST PILES ABUT 'A' WB B43	3	12-Nov-20	17-Nov-20	48
GDC3b4-1030	PRODUCTION PILES ABUT 'A' WB B643	5	19-Nov-20	25-Nov-20	47

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

TASK filter: All Activities

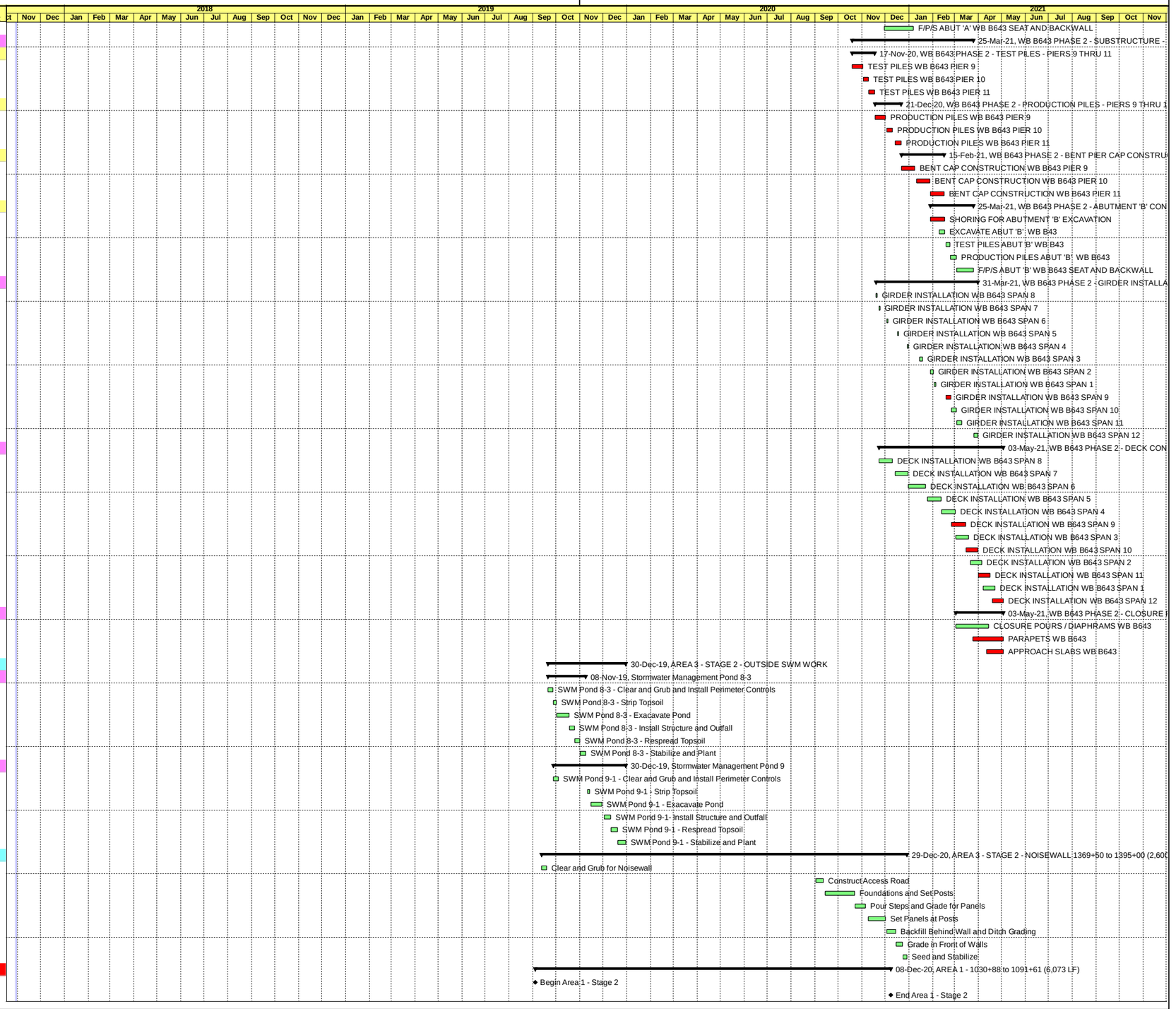
SHIRLEY CONTRACTING COMPANY, LLC

I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GDC3b4-1040	F/P/S ABUT 'A' WB B643 SEAT AND BACKWALL	20	30-Nov-20	06-Jan-21	47
WB B643 PHASE 2 - SUBSTRUCTURE - PIERS 9 THRU 11 and ABUTMENT 'B'		84	19-Oct-20	25-Mar-21	10
WB B643 PHASE 2 - TEST PILES - PIERS 9 THRU 11		18	19-Oct-20	17-Nov-20	0
GDC3c1-1000	TEST PILES WB B643 PIER 9	10	19-Oct-20	02-Nov-20	0
GDC3c1-1010	TEST PILES WB B643 PIER 10	4	03-Nov-20	09-Nov-20	0
GDC3c1-1020	TEST PILES WB B643 PIER 11	4	10-Nov-20	17-Nov-20	0
WB B643 PHASE 2 - PRODUCTION PILES - PIERS 9 THRU 11		18	18-Nov-20	21-Dec-20	0
GDC3c2-1000	PRODUCTION PILES WB B643 PIER 9	8	18-Nov-20	01-Dec-20	0
GDC3c2-1010	PRODUCTION PILES WB B643 PIER 10	5	03-Dec-20	10-Dec-20	0
GDC3c2-1020	PRODUCTION PILES WB B643 PIER 11	5	14-Dec-20	21-Dec-20	0
WB B643 PHASE 2 - BENT PIER CAP CONSTRUCTION - PIERS 9 THRU 11		27	22-Dec-20	15-Feb-21	0
GDC3c3-1000	BENT CAP CONSTRUCTION WB B643 PIER 9	9	22-Dec-20	08-Jan-21	0
GDC3c3-1010	BENT CAP CONSTRUCTION WB B643 PIER 10	9	11-Jan-21	28-Jan-21	0
GDC3c3-1020	BENT CAP CONSTRUCTION WB B643 PIER 11	9	29-Jan-21	15-Feb-21	0
WB B643 PHASE 2 - ABUTMENT 'B' CONSTRUCTION WB B643		30	29-Jan-21	25-Mar-21	10
GDC3c4-1000	SHORING FOR ABUTMENT 'B' EXCAVATION	10	29-Jan-21	16-Feb-21	0
GDC3c4-1010	EXCAVATE ABUT 'B' WB B43	5	09-Feb-21	16-Feb-21	10
GDC3c4-1020	TEST PILES ABUT 'B' WB B43	3	18-Feb-21	23-Feb-21	10
GDC3c4-1030	PRODUCTION PILES ABUT 'B' WB B643	5	24-Feb-21	03-Mar-21	10
GDC3c4-1040	F/P/S ABUT 'B' WB B643 SEAT AND BACKWALL	12	04-Mar-21	25-Mar-21	10
WB B643 PHASE 2 - GIRDER INSTALLATION -PIERS 1 THRU 8		69	19-Nov-20	31-Mar-21	10
GDC3d-1000	GIRDER INSTALLATION WB B643 SPAN 8	2	19-Nov-20	20-Nov-20	2
GDC3d-1010	GIRDER INSTALLATION WB B643 SPAN 7	2	23-Nov-20	24-Nov-20	10
GDC3d-1020	GIRDER INSTALLATION WB B643 SPAN 6	2	03-Dec-20	04-Dec-20	15
GDC3d-1030	GIRDER INSTALLATION WB B643 SPAN 5	2	17-Dec-20	18-Dec-20	18
GDC3d-1040	GIRDER INSTALLATION WB B643 SPAN 4	2	30-Dec-20	31-Dec-20	45
GDC3d-1050	GIRDER INSTALLATION WB B643 SPAN 3	2	15-Jan-21	18-Jan-21	40
GDC3d-1060	GIRDER INSTALLATION WB B643 SPAN 2	2	29-Jan-21	01-Feb-21	35
GDC3d-1070	GIRDER INSTALLATION WB B643 SPAN 1	2	03-Feb-21	04-Feb-21	35
GDC3d-1080	GIRDER INSTALLATION WB B643 SPAN 9	4	18-Feb-21	24-Feb-21	0
GDC3d-1090	GIRDER INSTALLATION WB B643 SPAN 10	4	25-Feb-21	03-Mar-21	6
GDC3d-1100	GIRDER INSTALLATION WB B643 SPAN 11	4	04-Mar-21	10-Mar-21	12
GDC3d-1110	GIRDER INSTALLATION WB B643 SPAN 12	4	26-Mar-21	31-Mar-21	10
WB B643 PHASE 2 - DECK CONSTRUCTION		87	23-Nov-20	03-May-21	0
GDC3e-1000	DECK INSTALLATION WB B643 SPAN 8	10	23-Nov-20	10-Dec-20	2
GDC3e-1010	DECK INSTALLATION WB B643 SPAN 7	10	14-Dec-20	30-Dec-20	2
GDC3e-1020	DECK INSTALLATION WB B643 SPAN 6	10	31-Dec-20	22-Jan-21	2
GDC3e-1030	DECK INSTALLATION WB B643 SPAN 5	10	25-Jan-21	11-Feb-21	2
GDC3e-1040	DECK INSTALLATION WB B643 SPAN 4	10	12-Feb-21	02-Mar-21	2
GDC3e-1050	DECK INSTALLATION WB B643 SPAN 9	10	25-Feb-21	15-Mar-21	0
GDC3e-1060	DECK INSTALLATION WB B643 SPAN 3	10	03-Mar-21	19-Mar-21	2
GDC3e-1070	DECK INSTALLATION WB B643 SPAN 10	10	16-Mar-21	31-Mar-21	0
GDC3e-1080	DECK INSTALLATION WB B643 SPAN 2	10	22-Mar-21	05-Apr-21	2
GDC3e-1090	DECK INSTALLATION WB B643 SPAN 11	10	01-Apr-21	16-Apr-21	0
GDC3e-1100	DECK INSTALLATION WB B643 SPAN 1	10	07-Apr-21	22-Apr-21	2
GDC3e-1110	DECK INSTALLATION WB B643 SPAN 12	10	19-Apr-21	03-May-21	0
WB B643 PHASE 2 - CLOSURE POURS / DIAPHRAMS / PARAPETS		37	03-Mar-21	03-May-21	0
GDC3f-1000	CLOSURE POURS / DIAPHRAMS WB B643	25	03-Mar-21	14-Apr-21	7
GDC3f-1010	PARAPETS WB B643	25	25-Mar-21	03-May-21	0
GDC3f-1020	APPROACH SLABS WB B643	15	12-Apr-21	03-May-21	0
AREA 3 - STAGE 2 - OUTSIDE SWM WORK		61	20-Sep-19	30-Dec-19	115
Stormwater Management Pond 8-3		33	20-Sep-19	08-Nov-19	115
GDC4a-1000	SWM Pond 8-3 - Clear and Grub and Install Perimeter Controls	5	20-Sep-19	26-Sep-19	115
GDC4a-1010	SWM Pond 8-3 - Strip Topsoil	3	27-Sep-19	01-Oct-19	115
GDC4a-1020	SWM Pond 8-3 - Exacavate Pond	10	02-Oct-19	17-Oct-19	115
GDC4a-1030	SWM Pond 8-3 - Install Structure and Outfall	5	18-Oct-19	24-Oct-19	115
GDC4a-1040	SWM Pond 8-3 - Respread Topsoil	5	25-Oct-19	31-Oct-19	115
GDC4a-1050	SWM Pond 8-3 - Stabilize and Plant	5	01-Nov-19	08-Nov-19	115
Stormwater Management Pond 9		56	27-Sep-19	30-Dec-19	115
GDC4b-1000	SWM Pond 9-1 - Clear and Grub and Install Perimeter Controls	5	27-Sep-19	03-Oct-19	138
GDC4b-1010	SWM Pond 9-1 - Strip Topsoil	3	11-Nov-19	13-Nov-19	115
GDC4b-1020	SWM Pond 9-1 - Exacavate Pond	10	15-Nov-19	29-Nov-19	115
GDC4b-1030	SWM Pond 9-1- Install Structure and Outfall	5	02-Dec-19	10-Dec-19	115
GDC4b-1040	SWM Pond 9-1 - Respread Topsoil	5	11-Dec-19	19-Dec-19	115
GDC4b-1050	SWM Pond 9-1 - Stabilize and Plant	5	20-Dec-19	30-Dec-19	115
AREA 3 - STAGE 2 - NOISEWALL 1369+50 to 1395+00 (2,600 LF)		274	12-Sep-19	29-Dec-20	72
GDC5-1000	Clear and Grub for Noisewall	5	12-Sep-19	18-Sep-19	115
GDC5-1010	Construct Access Road	6	02-Sep-20	11-Sep-20	72
GDC5-1020	Foundations and Set Posts	26	14-Sep-20	22-Oct-20	72
GDC5-1030	Pour Steps and Grade for Panels	10	23-Oct-20	05-Nov-20	72
GDC5-1040	Set Panels at Posts	13	09-Nov-20	01-Dec-20	72
GDC5-1050	Backfill Behind Wall and Ditch Grading	6	03-Dec-20	14-Dec-20	72
GDC5-1060	Grade in Front of Walls	6	15-Dec-20	23-Dec-20	72
GDC5-1070	Seed and Stabilize	2	24-Dec-20	29-Dec-20	72
AREA 1 - 1030+88 to 1091+61 (6,073 LF)		268	04-Sep-19	08-Dec-20	2
GDD-1000	Begin Area 1 - Stage 2	0	04-Sep-19		175
GDD-1010	End Area 1 - Stage 2	0		08-Dec-20	2

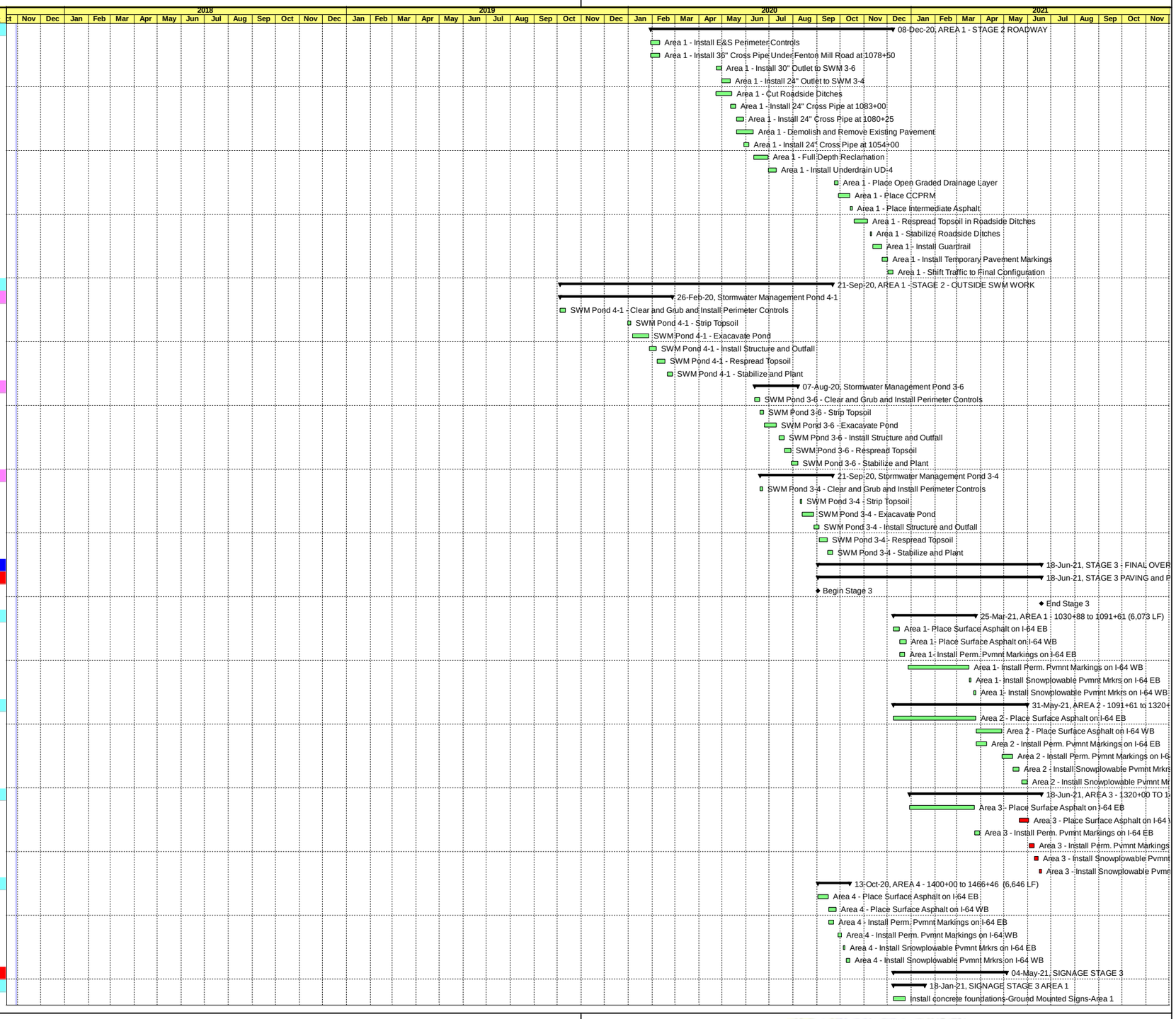


Remaining Level of Effort | Remaining Work | Milestone
Actual Work | Critical Remaining Work | Summary

TASK filter: All Activities

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
AREA 1 - STAGE 2 ROADWAY		182	30-Jan-20	08-Dec-20	2
GDD1-1000	Area 1 - Install E&S Perimeter Controls	5	30-Jan-20	10-Feb-20	89
GDD1-1010	Area 1 - Install 36" Cross Pipe Under Fenton Mill Road at 1078+50	5	30-Jan-20	10-Feb-20	134
GDD1-1020	Area 1 - Install 30" Outlet to SWM 3-6	5	24-Apr-20	30-Apr-20	47
GDD1-1030	Area 1 - Install 24" Outlet to SWM 3-4	5	01-May-20	11-May-20	47
GDD1-1040	Area 1 - Cut Roadside Ditches	13	23-Apr-20	13-May-20	73
GDD1-1050	Area 1 - Install 24" Cross Pipe at 1083+00	5	12-May-20	18-May-20	47
GDD1-1060	Area 1 - Install 24" Cross Pipe at 1080+25	5	20-May-20	28-May-20	47
GDD1-1070	Area 1 - Demolish and Remove Existing Pavement	13	20-May-20	10-Jun-20	44
GDD1-1080	Area 1 - Install 24" Cross Pipe at 1054+00	5	29-May-20	04-Jun-20	47
GDD1-1090	Area 1 - Full Depth Reclamation	13	11-Jun-20	29-Jun-20	53
GDD1-1100	Area 1 - Install Underdrain UD-4	7	30-Jun-20	10-Jul-20	46
GDD1-1110	Area 1 - Place Open Graded Drainage Layer	3	24-Sep-20	28-Sep-20	2
GDD1-1120	Area 1 - Place CCPRM	11	29-Sep-20	13-Oct-20	2
GDD1-1130	Area 1 - Place Intermediate Asphalt	3	14-Oct-20	16-Oct-20	2
GDD1-1140	Area 1 - Respread Topsoil in Roadside Ditches	13	19-Oct-20	05-Nov-20	1
GDD1-1150	Area 1 - Stabilize Roadside Ditches	2	09-Nov-20	10-Nov-20	1
GDD1-1160	Area 1 - Install Guardrail	7	12-Nov-20	23-Nov-20	1
GDD1-1170	Area 1 - Install Temporary Pavement Markings	4	24-Nov-20	01-Dec-20	1
GDD1-1180	Area 1 - Shift Traffic to Final Configuration	5	02-Dec-20	08-Dec-20	2
AREA 1 - STAGE 2 - OUTSIDE SWM WORK		202	04-Oct-19	21-Sep-20	48
Stormwater Management Pond 4-1		79	04-Oct-19	26-Feb-20	115
GDD2a-1000	SWM Pond 4-1 - Clear and Grub and Install Perimeter Controls	5	04-Oct-19	11-Oct-19	161
GDD2a-1010	SWM Pond 4-1 - Strip Topsoil	3	31-Dec-19	03-Jan-20	115
GDD2a-1020	SWM Pond 4-1 - Exacavate Pond	10	06-Jan-20	27-Jan-20	115
GDD2a-1030	SWM Pond 4-1 - Install Structure and Outfall	5	28-Jan-20	05-Feb-20	115
GDD2a-1040	SWM Pond 4-1 - Respread Topsoil	5	07-Feb-20	17-Feb-20	115
GDD2a-1050	SWM Pond 4-1 - Stabilize and Plant	5	20-Feb-20	26-Feb-20	115
Stormwater Management Pond 3-6		33	12-Jun-20	07-Aug-20	48
GDD2b-1000	SWM Pond 3-6 - Clear and Grub and Install Perimeter Controls	5	12-Jun-20	18-Jun-20	48
GDD2b-1010	SWM Pond 3-6 - Strip Topsoil	3	19-Jun-20	23-Jun-20	48
GDD2b-1020	SWM Pond 3-6 - Exacavate Pond	10	25-Jun-20	10-Jul-20	48
GDD2b-1030	SWM Pond 3-6 - Install Structure and Outfall	5	14-Jul-20	20-Jul-20	48
GDD2b-1040	SWM Pond 3-6 - Respread Topsoil	5	21-Jul-20	29-Jul-20	48
GDD2b-1050	SWM Pond 3-6 - Stabilize and Plant	5	30-Jul-20	07-Aug-20	48
Stormwater Management Pond 3-4		56	19-Jun-20	21-Sep-20	48
GDD2c-1000	SWM Pond 3-4 - Clear and Grub and Install Perimeter Controls	2	19-Jun-20	22-Jun-20	74
GDD2c-1010	SWM Pond 3-4 - Strip Topsoil	3	10-Aug-20	12-Aug-20	48
GDD2c-1020	SWM Pond 3-4 - Exacavate Pond	10	13-Aug-20	27-Aug-20	48
GDD2c-1030	SWM Pond 3-4 - Install Structure and Outfall	5	28-Aug-20	03-Sep-20	48
GDD2c-1040	SWM Pond 3-4 - Respread Topsoil	5	04-Sep-20	14-Sep-20	48
GDD2c-1050	SWM Pond 3-4 - Stabilize and Plant	5	15-Sep-20	21-Sep-20	48
STAGE 3 - FINAL OVERLAY and OPEN LANES		164	02-Sep-20	18-Jun-21	4
STAGE 3 PAVING and PAVEMENT MARKINGS		164	02-Sep-20	18-Jun-21	4
GEA-1000	Begin Stage 3	0	02-Sep-20		168
GEA-1010	End Stage 3	0		18-Jun-21	0
AREA 1 - 1030+88 to 1091+61 (6,073 LF)		55	09-Dec-20	25-Mar-21	27
GEA1-1000	Area 1- Place Surface Asphalt on I-64 EB	6	09-Dec-20	16-Dec-20	31
GEA1-1010	Area 1- Place Surface Asphalt on I-64 WB	6	17-Dec-20	25-Dec-20	31
GEA1-1020	Area 1- Install Perm. Pvmnt Markings on I-64 EB	5	17-Dec-20	23-Dec-20	32
GEA1-1030	Area 1- Install Perm. Pvmnt Markings on I-64 WB	5	28-Dec-20	16-Mar-21	31
GEA1-1040	Area 1- Install Snowplowable Pvmnt Mrkrs on I-64 EB	3	17-Mar-21	19-Mar-21	31
GEA1-1050	Area 1- Install Snowplowable Pvmnt Mrkrs on I-64 WB	3	23-Mar-21	25-Mar-21	31
AREA 2 - 1091+61 to 1320+00 (22,839 LF)		94	09-Dec-20	31-May-21	12
GEA2-1000	Area 2 - Place Surface Asphalt on I-64 EB	24	09-Dec-20	25-Mar-21	13
GEA2-1010	Area 2 - Place Surface Asphalt on I-64 WB	24	26-Mar-21	28-Apr-21	13
GEA2-1020	Area 2 - Install Perm. Pvmnt Markings on I-64 EB	10	26-Mar-21	08-Apr-21	27
GEA2-1030	Area 2 - Install Perm. Pvmnt Markings on I-64 WB	10	29-Apr-21	12-May-21	13
GEA2-1040	Area 2 - Install Snowplowable Pvmnt Mrkrs on I-64 EB	6	13-May-21	20-May-21	13
GEA2-1050	Area 2 - Install Snowplowable Pvmnt Mrkrs on I-64 WB	6	24-May-21	31-May-21	13
AREA 3 - 1320+00 TO 1400+00 (8,000 LF)		95	30-Dec-20	18-Jun-21	0
GEA3-1000	Area 3 - Place Surface Asphalt on I-64 EB	8	30-Dec-20	23-Mar-21	42
GEA3-1010	Area 3 - Place Surface Asphalt on I-64 WB	8	21-May-21	02-Jun-21	0
GEA3-1020	Area 3 - Install Perm. Pvmnt Markings on I-64 EB	5	24-Mar-21	30-Mar-21	45
GEA3-1030	Area 3 - Install Perm. Pvmnt Markings on I-64 WB	5	03-Jun-21	09-Jun-21	0
GEA3-1040	Area 3 - Install Snowplowable Pvmnt Mrkrs on I-64 EB	3	10-Jun-21	14-Jun-21	0
GEA3-1050	Area 3 - Install Snowplowable Pvmnt Mrkrs on I-64 WB	3	16-Jun-21	18-Jun-21	0
AREA 4 - 1400+00 to 1466+46 (6,646 LF)		26	02-Sep-20	13-Oct-20	124
GEA4-1000	Area 4 - Place Surface Asphalt on I-64 EB	8	02-Sep-20	15-Sep-20	103
GEA4-1010	Area 4 - Place Surface Asphalt on I-64 WB	8	16-Sep-20	25-Sep-20	103
GEA4-1020	Area 4 - Install Perm. Pvmnt Markings on I-64 EB	5	16-Sep-20	22-Sep-20	106
GEA4-1030	Area 4 - Install Perm. Pvmnt Markings on I-64 WB	5	28-Sep-20	02-Oct-20	103
GEA4-1040	Area 4 - Install Snowplowable Pvmnt Mrkrs on I-64 EB	3	05-Oct-20	07-Oct-20	155
GEA4-1050	Area 4 - Install Snowplowable Pvmnt Mrkrs on I-64 WB	3	09-Oct-20	13-Oct-20	155
SIGNAGE STAGE 3		80	09-Dec-20	04-May-21	2
SIGNAGE STAGE 3 AREA 1		20	09-Dec-20	18-Jan-21	2
GEB1-1000	Install concrete foundations-Ground Mounted Signs-Area 1	10	09-Dec-20	24-Dec-20	2

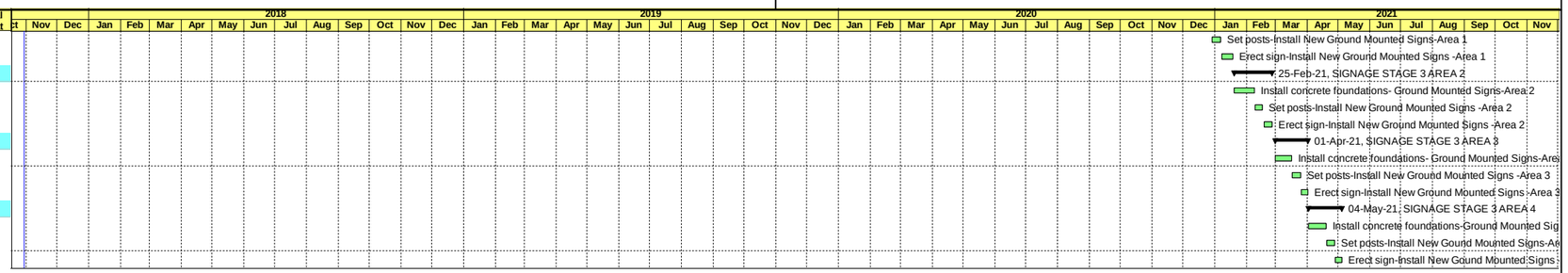


Remaining Level of Effort | Remaining Work | Milestone
Actual Work | Critical Remaining Work | Summary

TASK filter: All Activities

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GEB1-1010	Set posts-Install New Ground Mounted Signs-Area 1	5	29-Dec-20	06-Jan-21	2
GEB1-1020	Erect sign-Install New Ground Mounted Signs -Area 1	5	08-Jan-21	18-Jan-21	2
SIGNAGE STAGE 3 AREA 2		20	20-Jan-21	25-Feb-21	2
GEB2-1000	Install concrete foundations- Ground Mounted Signs-Area 2	10	20-Jan-21	08-Feb-21	2
GEB2-1010	Set posts-Install New Ground Mounted Signs -Area 2	5	09-Feb-21	16-Feb-21	2
GEB2-1020	Erect sign-Install New Ground Mounted Signs -Area 2	5	18-Feb-21	25-Feb-21	2
SIGNAGE STAGE 3 AREA 3		20	01-Mar-21	01-Apr-21	2
GEB3-1000	Install concrete foundations- Ground Mounted Signs-Area 3	10	01-Mar-21	16-Mar-21	2
GEB3-1010	Set posts-Install New Ground Mounted Signs -Area 3	5	17-Mar-21	25-Mar-21	2
GEB3-1020	Erect sign-Install New Ground Mounted Signs -Area 3	5	26-Mar-21	01-Apr-21	2
SIGNAGE STAGE 3 AREA 4		20	02-Apr-21	04-May-21	2
GEB4-1000	Install concrete foundations-Ground Mounted Signs-Area 4	10	02-Apr-21	19-Apr-21	2
GEB4-1010	Set posts-Install New Gound Mounted Signs-Area 4	5	20-Apr-21	27-Apr-21	2
GEB4-1020	Erect sign-Install New Gound Mounted Signs -Area 4	5	28-Apr-21	04-May-21	2

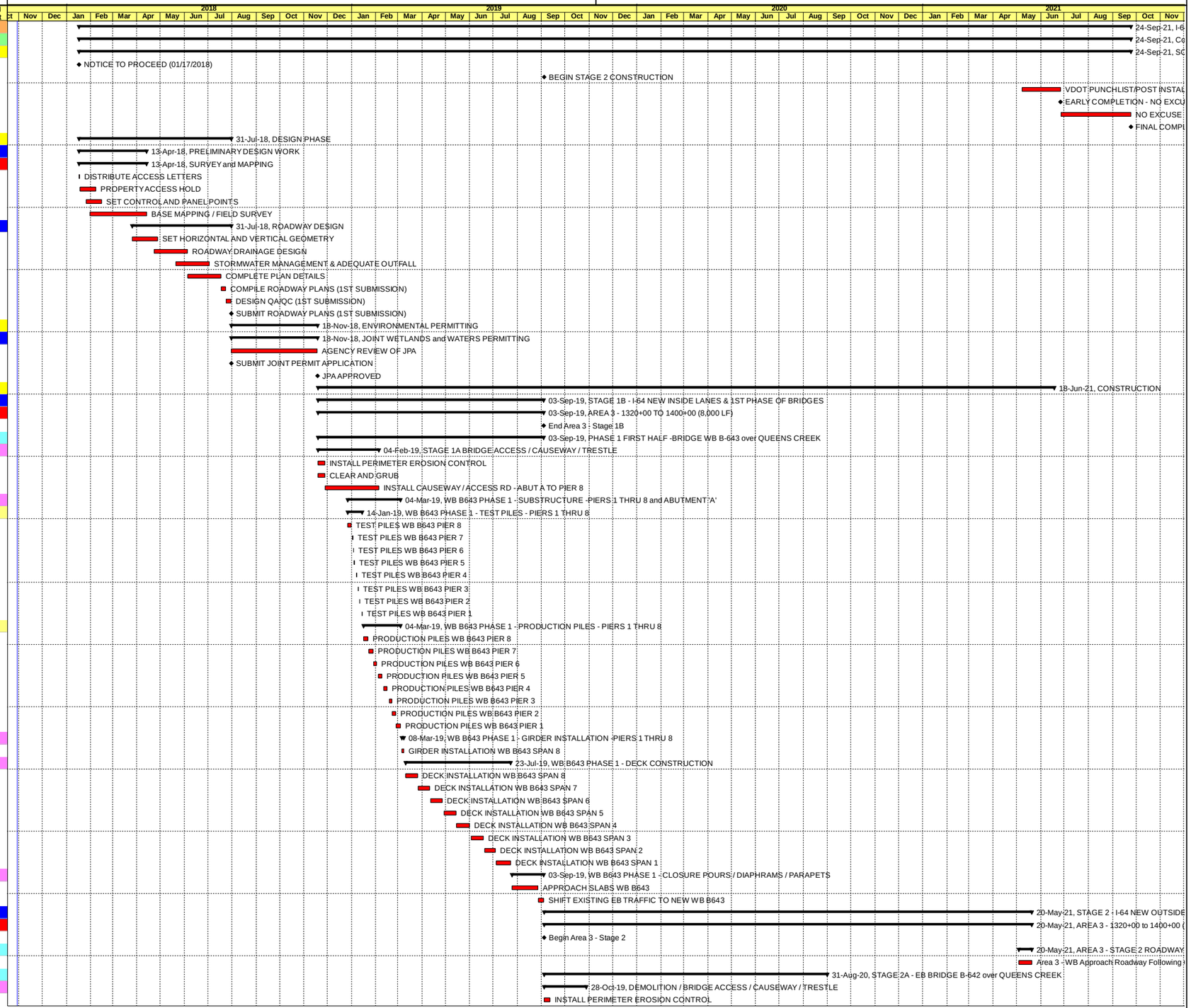


I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
I-64 CAPACITY IMPROVEMENTS SEGMENT III -PROPOSAL SCHEDULE		769	17-Jan-18	24-Sep-21	0
Contract: C00106689DB97 I-64 CAPACITY IMPROVEMENTS SEGMENT III		769	17-Jan-18	24-Sep-21	0
SCHEDULE MILESTONES		1347	17-Jan-18	24-Sep-21	0
A-1050	NOTICE TO PROCEED (01/17/2018)	0	17-Jan-18*		0
A-1100	BEGIN STAGE 2 CONSTRUCTION	0	04-Sep-19		0
A-1140	VDOT PUNCHLIST/POST INSTALLATION VIDEO STORM	50	08-May-21	26-Jun-21	0
A-1150	EARLY COMPLETION - NO EXCUSE INCENTIVE (by JUNE 30, 2021)	0		26-Jun-21	0
A-1160	NO EXCUSE INCENTIVE DAILY RATE	90	27-Jun-21	24-Sep-21	0
A-1170	FINAL COMPLETION DATE	0		24-Sep-21*	0
DESIGN PHASE		108	17-Jan-18	31-Jul-18	1
PRELIMINARY DESIGN WORK		46	17-Jan-18	13-Apr-18	1
SURVEY and MAPPING		46	17-Jan-18	13-Apr-18	1
BAA-1000	DISTRIBUTE ACCESS LETTERS	1	17-Jan-18	17-Jan-18	1
BAA-1010	PROPERTY ACCESS HOLD	15	18-Jan-18	07-Feb-18	1
BAA-1020	SET CONTROL AND PANEL POINTS	20	26-Jan-18	14-Feb-18	1
BAA-1030	BASE MAPPING / FIELD SURVEY	40	31-Jan-18	13-Apr-18	1
ROADWAY DESIGN		89	26-Mar-18	31-Jul-18	1
BC-1000	SET HORIZONTAL AND VERTICAL GEOMETRY	25	26-Mar-18	27-Apr-18	1
BC-1010	ROADWAY DRAINAGE DESIGN	30	23-Apr-18	04-Jun-18	1
BC-1030	STORMWATER MANAGEMENT & ADEQUATE OUTFALL	30	21-May-18	02-Jul-18	1
BC-1040	COMPLETE PLAN DETAILS	30	05-Jun-18	17-Jul-18	1
BC-1050	COMPILE ROADWAY PLANS (1ST SUBMISSION)	4	18-Jul-18	23-Jul-18	1
BC-1060	DESIGN QA/QC (1ST SUBMISSION)	5	24-Jul-18	30-Jul-18	1
BC-1070	SUBMIT ROADWAY PLANS (1ST SUBMISSION)	0	31-Jul-18		1
ENVIRONMENTAL PERMITTING		68	31-Jul-18	18-Nov-18	0
JOINT WETLANDS and WATERS PERMITTING		68	31-Jul-18	18-Nov-18	0
DA-1040	AGENCY REVIEW OF JPA	110	31-Jul-18	17-Nov-18	1
DA-1050	SUBMIT JOINT PERMIT APPLICATION	0	31-Jul-18		1
DA-1090	JPA APPROVED	0	18-Nov-18		1
CONSTRUCTION		535	19-Nov-18	18-Jun-21	0
STAGE 1B - I-64 NEW INSIDE LANES & 1ST PHASE OF BRIDGES		161	19-Nov-18	03-Sep-19	0
AREA 3 - 1320+00 TO 1400+00 (8,000 LF)		161	19-Nov-18	03-Sep-19	0
GCC-1010	End Area 3 - Stage 1B	0		03-Sep-19	0
PHASE 1 FIRST HALF -BRIDGE WB B-643 over QUEENS CREEK		161	19-Nov-18	03-Sep-19	0
STAGE 1A BRIDGE ACCESS / CAUSEWAY / TRESTLE		40	19-Nov-18	04-Feb-19	0
GCC2a-1000	INSTALL PERIMETER EROSION CONTROL	5	19-Nov-18	27-Nov-18	0
GCC2a-1010	CLEAR AND GRUB	5	19-Nov-18	27-Nov-18	0
GCC2a-1020	INSTALL CAUSEWAY / ACCESS RD - ABUT A TO PIER 8	35	28-Nov-18	04-Feb-19	0
WB B643 PHASE 1 - SUBSTRUCTURE -PIERS 1 THRU 8 and ABUTMENT 'A'		34	27-Dec-18	04-Mar-19	0
WB B643 PHASE 1 - TEST PILES - PIERS 1 THRU 8		10	27-Dec-18	14-Jan-19	0
GCC2b1-1000	TEST PILES WB B643 PIER 8	3	27-Dec-18	31-Dec-18	0
GCC2b1-1010	TEST PILES WB B643 PIER 7	1	02-Jan-19	02-Jan-19	0
GCC2b1-1020	TEST PILES WB B643 PIER 6	1	03-Jan-19	03-Jan-19	0
GCC2b1-1030	TEST PILES WB B643 PIER 5	1	04-Jan-19	04-Jan-19	0
GCC2b1-1040	TEST PILES WB B643 PIER 4	1	07-Jan-19	07-Jan-19	0
GCC2b1-1050	TEST PILES WB B643 PIER 3	1	09-Jan-19	09-Jan-19	0
GCC2b1-1060	TEST PILES WB B643 PIER 2	1	11-Jan-19	11-Jan-19	0
GCC2b1-1070	TEST PILES WB B643 PIER 1	1	14-Jan-19	14-Jan-19	0
WB B643 PHASE 1 - PRODUCTION PILES - PIERS 1 THRU 8		24	16-Jan-19	04-Mar-19	0
GCC2b2-1000	PRODUCTION PILES WB B643 PIER 8	3	16-Jan-19	21-Jan-19	0
GCC2b2-1010	PRODUCTION PILES WB B643 PIER 7	3	23-Jan-19	28-Jan-19	0
GCC2b2-1020	PRODUCTION PILES WB B643 PIER 6	3	29-Jan-19	01-Feb-19	0
GCC2b2-1030	PRODUCTION PILES WB B643 PIER 5	3	04-Feb-19	08-Feb-19	0
GCC2b2-1040	PRODUCTION PILES WB B643 PIER 4	3	11-Feb-19	15-Feb-19	0
GCC2b2-1050	PRODUCTION PILES WB B643 PIER 3	3	18-Feb-19	21-Feb-19	0
GCC2b2-1060	PRODUCTION PILES WB B643 PIER 2	3	22-Feb-19	26-Feb-19	0
GCC2b2-1070	PRODUCTION PILES WB B643 PIER 1	3	27-Feb-19	04-Mar-19	0
WB B643 PHASE 1 - GIRDER INSTALLATION -PIERS 1 THRU 8		2	06-Mar-19	08-Mar-19	0
GCC2d-1000	GIRDER INSTALLATION WB B643 SPAN 8	2	06-Mar-19	08-Mar-19	0
WB B643 PHASE 1 - DECK CONSTRUCTION		80	11-Mar-19	23-Jul-19	0
GCC2e-1000	DECK INSTALLATION WB B643 SPAN 8	10	11-Mar-19	26-Mar-19	0
GCC2e-1010	DECK INSTALLATION WB B643 SPAN 7	10	27-Mar-19	10-Apr-19	0
GCC2e-1020	DECK INSTALLATION WB B643 SPAN 6	10	12-Apr-19	26-Apr-19	0
GCC2e-1030	DECK INSTALLATION WB B643 SPAN 5	10	29-Apr-19	14-May-19	0
GCC2e-1040	DECK INSTALLATION WB B643 SPAN 4	10	15-May-19	31-May-19	0
GCC2e-1050	DECK INSTALLATION WB B643 SPAN 3	10	03-Jun-19	18-Jun-19	0
GCC2e-1070	DECK INSTALLATION WB B643 SPAN 2	10	20-Jun-19	03-Jul-19	0
GCC2e-1090	DECK INSTALLATION WB B643 SPAN 1	10	05-Jul-19	23-Jul-19	0
WB B643 PHASE 1 - CLOSURE POURS / DIAPHRAMS / PARAPETS		25	25-Jul-19	03-Sep-19	0
GCC2f-1020	APPROACH SLABS WB B643	20	25-Jul-19	27-Aug-19	0
GCC2f-1030	SHIFT EXISTING EB TRAFFIC TO NEW WB B643	5	28-Aug-19	03-Sep-19	0
STAGE 2 - I-64 NEW OUTSIDE LANES & 2ND PHASE OF BRIDGES		357	04-Sep-19	20-May-21	0
AREA 3 - 1320+00 to 1400+00 (8,000 LF)		357	04-Sep-19	20-May-21	0
GDC-1000	Begin Area 3 - Stage 2	0	04-Sep-19		0
AREA 3 - STAGE 2 ROADWAY		10	04-May-21	20-May-21	0
GDC1-1170	Area 3 - WB Approach Roadway Following Queen's Crk Br	10	04-May-21	20-May-21	0
STAGE 2A - EB BRIDGE B-642 over QUEENS CREEK		209	04-Sep-19	31-Aug-20	0
DEMOLITION / BRIDGE ACCESS / CAUSEWAY / TRESTLE		35	04-Sep-19	28-Oct-19	0
GDC2a-1000	INSTALL PERIMETER EROSION CONTROL	5	04-Sep-19	11-Sep-19	0



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

TASK filter: Critical.

SHIRLEY CONTRACTING COMPANY, LLC

I-64 CAPACITY IMPROVEMENTS SEGMENT III
C00106689DB97

4.7.1 PROPOSAL SCHEDULE

09-14-2017

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float
GDC2a-1020	ADDITIONAL CAUSEWAY / ACCESS RD - ABUT A TO PIER 8	30	12-Sep-19	28-Oct-19	0
EB B642 - SUBSTRUCTURE -PIERS 1 THRU 8 and ABUTMENT 'A'		50	14-Oct-19	06-Jan-20	0
EB B642 - TEST PILES - PIERS 1 THRU 8		10	14-Oct-19	28-Oct-19	0
GDC2b1-1000	TEST PILES EB B642 PIER 8	3	14-Oct-19	17-Oct-19	0
GDC2b1-1010	TEST PILES EB B642 PIER 7	1	18-Oct-19	18-Oct-19	0
GDC2b1-1020	TEST PILES EB B642 PIER 6	1	21-Oct-19	21-Oct-19	0
GDC2b1-1030	TEST PILES EB B642 PIER 5	1	22-Oct-19	22-Oct-19	0
GDC2b1-1040	TEST PILES EB B642 PIER 4	1	23-Oct-19	23-Oct-19	0
GDC2b1-1050	TEST PILES EB B642 PIER 3	1	24-Oct-19	24-Oct-19	0
GDC2b1-1060	TEST PILES EB B642 PIER 2	1	25-Oct-19	25-Oct-19	0
GDC2b1-1070	TEST PILES EB B642 PIER 1	1	28-Oct-19	28-Oct-19	0
EB B642 - PRODUCTION PILES - PIERS 1 THRU 8		40	29-Oct-19	06-Jan-20	0
GDC2b2-1000	PRODUCTION PILES EB B642 PIER 8	5	29-Oct-19	04-Nov-19	0
GDC2b2-1010	PRODUCTION PILES EB B642 PIER 7	5	06-Nov-19	12-Nov-19	0
GDC2b2-1020	PRODUCTION PILES EB B642 PIER 6	5	13-Nov-19	21-Nov-19	0
GDC2b2-1030	PRODUCTION PILES EB B642 PIER 5	5	22-Nov-19	28-Nov-19	0
GDC2b2-1040	PRODUCTION PILES EB B642 PIER 4	5	29-Nov-19	09-Dec-19	0
GDC2b2-1050	PRODUCTION PILES EB B642 PIER 3	5	10-Dec-19	18-Dec-19	0
GDC2b2-1060	PRODUCTION PILES EB B642 PIER 2	5	19-Dec-19	27-Dec-19	0
GDC2b2-1070	PRODUCTION PILES EB B642 PIER 1	5	30-Dec-19	06-Jan-20	0
EB B642 - GIRDER INSTALLATION -PIERS 1 THRU 8		4	08-Jan-20	15-Jan-20	0
GDC2d-1000	GIRDER INSTALLATION EB B642 SPAN 8	4	08-Jan-20	15-Jan-20	0
EB B642 - DECK CONSTRUCTION		120	17-Jan-20	14-Aug-20	0
GDC2e-1000	DECK INSTALLATION EB B642 SPAN 8	15	17-Jan-20	17-Feb-20	0
GDC2e-1010	DECK INSTALLATION EB B642 SPAN 7	15	20-Feb-20	13-Mar-20	0
GDC2e-1020	DECK INSTALLATION EB B642 SPAN 6	15	16-Mar-20	08-Apr-20	0
GDC2e-1040	DECK INSTALLATION EB B642 SPAN 5	15	10-Apr-20	01-May-20	0
GDC2e-1060	DECK INSTALLATION EB B642 SPAN 4	15	04-May-20	29-May-20	0
GDC2e-1080	DECK INSTALLATION EB B642 SPAN 3	15	01-Jun-20	23-Jun-20	0
GDC2e-1090	DECK INSTALLATION EB B642 SPAN 2	15	25-Jun-20	20-Jul-20	0
GDC2e-1100	DECK INSTALLATION EB B642 SPAN 1	15	21-Jul-20	14-Aug-20	0
EB B642 - NOISEWALL #1 -STRUCTURE MOUNTED		40	17-Jun-20	24-Aug-20	0
GDC2f-1000	INSTALL STRUCTURE MOUNTED NOISEWALL	40	17-Jun-20	24-Aug-20	0
EB B642 - CLOSURE POURS / DIAPHRAMS / PARAPETS		55	01-Jun-20	31-Aug-20	0
GDC2g-1000	CLOSURE POURS / DIAPHRAMS EB B642	45	01-Jun-20	14-Aug-20	0
GDC2g-1010	PARAPETS EB B642	30	02-Jul-20	24-Aug-20	0
GDC2g-1020	APPROACH SLABS EB B642	20	21-Jul-20	24-Aug-20	0
GDC2g-1030	SHIFT EB TRAFFIC back to NEW EB B642	5	25-Aug-20	31-Aug-20	0
STAGE 2B - PHASE 2 SECOND HALF -BRIDGE WB B-643 over QUEENS CREEK		138	01-Sep-20	03-May-21	0
PHASE 2 SECOND HALF WB B643 BRIDGE ACCESS / CAUSEWAY / TRESTLE		30	01-Sep-20	16-Oct-20	0
GDC3a-1000	INSTALL PERIMETER EROSION CONTROL	5	01-Sep-20	08-Sep-20	0
GDC3a-1010	INSTALL CAUSEWAY / ACCESS RD - ABUT A TO PIER 8	15	01-Sep-20	24-Sep-20	0
GDC3a-1020	INSTALL TRESTLE IN QUEEN'S CRK CHANNEL - ABUT B TO PIER 9	20	17-Sep-20	16-Oct-20	0
WB B643 PHASE 2 - SUBSTRUCTURE - PIERS 9 THRU 11 and ABUTMENT 'B'		64	19-Oct-20	16-Feb-21	0
WB B643 PHASE 2 - TEST PILES - PIERS 9 THRU 11		18	19-Oct-20	17-Nov-20	0
GDC3c1-1000	TEST PILES WB B643 PIER 9	10	19-Oct-20	02-Nov-20	0
GDC3c1-1010	TEST PILES WB B643 PIER 10	4	03-Nov-20	09-Nov-20	0
GDC3c1-1020	TEST PILES WB B643 PIER 11	4	10-Nov-20	17-Nov-20	0
WB B643 PHASE 2 - PRODUCTION PILES - PIERS 9 THRU 11		18	18-Nov-20	21-Dec-20	0
GDC3c2-1000	PRODUCTION PILES WB B643 PIER 9	8	18-Nov-20	01-Dec-20	0
GDC3c2-1010	PRODUCTION PILES WB B643 PIER 10	5	03-Dec-20	10-Dec-20	0
GDC3c2-1020	PRODUCTION PILES WB B643 PIER 11	5	14-Dec-20	21-Dec-20	0
WB B643 PHASE 2 - BENT PIER CAP CONSTRUCTION - PIERS 9 THRU 11		27	22-Dec-20	15-Feb-21	0
GDC3c3-1000	BENT CAP CONSTRUCTION WB B643 PIER 9	9	22-Dec-20	08-Jan-21	0
GDC3c3-1010	BENT CAP CONSTRUCTION WB B643 PIER 10	9	11-Jan-21	28-Jan-21	0
GDC3c3-1020	BENT CAP CONSTRUCTION WB B643 PIER 11	9	29-Jan-21	15-Feb-21	0
WB B643 PHASE 2 - ABUTMENT 'B' CONSTRUCTION WB B643		10	29-Jan-21	16-Feb-21	0
GDC3c4-1000	SHORING FOR ABUTMENT 'B' EXCAVATION	10	29-Jan-21	16-Feb-21	0
WB B643 PHASE 2 - GIRDER INSTALLATION -PIERS 1 THRU 8		4	18-Feb-21	24-Feb-21	0
GDC3d-1080	GIRDER INSTALLATION WB B643 SPAN 9	4	18-Feb-21	24-Feb-21	0
WB B643 PHASE 2 - DECK CONSTRUCTION		40	25-Feb-21	03-May-21	0
GDC3e-1050	DECK INSTALLATION WB B643 SPAN 9	10	25-Feb-21	15-Mar-21	0
GDC3e-1070	DECK INSTALLATION WB B643 SPAN 10	10	16-Mar-21	31-Mar-21	0
GDC3e-1090	DECK INSTALLATION WB B643 SPAN 11	10	01-Apr-21	16-Apr-21	0
GDC3e-1110	DECK INSTALLATION WB B643 SPAN 12	10	19-Apr-21	03-May-21	0
WB B643 PHASE 2 - CLOSURE POURS / DIAPHRAMS / PARAPETS		25	25-Mar-21	03-May-21	0
GDC3f-1010	PARAPETS WB B643	25	25-Mar-21	03-May-21	0
GDC3f-1020	APPROACH SLABS WB B643	15	12-Apr-21	03-May-21	0
STAGE 3 - FINAL OVERLAY and OPEN LANES		17	21-May-21	18-Jun-21	0
STAGE 3 PAVING and PAVEMENT MARKINGS		17	21-May-21	18-Jun-21	0
GEA-1010	End Stage 3	0		18-Jun-21	0
AREA 3 - 1320+00 TO 1400+00 (8,000 LF)		17	21-May-21	18-Jun-21	0
GEA3-1010	Area 3 - Place Surface Asphalt on I-64 WB	8	21-May-21	02-Jun-21	0
GEA3-1030	Area 3 - Install Perm. Pvmnt Markings on I-64 WB	5	03-Jun-21	09-Jun-21	0
GEA3-1040	Area 3 - Install Snowplowable Pvmnt Mrkrs on I-64 EB	3	10-Jun-21	14-Jun-21	0
GEA3-1050	Area 3 - Install Snowplowable Pvmnt Mrkrs on I-64 WB	3	16-Jun-21	18-Jun-21	0

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

TASK filter: Critical.

SHIRLEY CONTRACTING COMPANY, LLC