ORIGINAL

Response to Request for Revised Proposals

ROUTE 7 CORRIDOR IMPROVEMENTS

Fairfax County, Virginia

State Project Nos.: 0007-029-942 and 0007-028-225
Federal Project Nos: STP-5A01(745) and STP-5A01(790)
Contract ID No.: C00099478DB98

VOLUME I: REVISED TECHNICAL PROPOSAL

SUBMITTED BY:

SHIRLEY
CONTRACTING COMPANY, LLC

IN ASSOCIATION WITH:

Dewberry®

Summary of Changes

Route 7 Corridor Improvements
Revised Technical Proposal
Shirley Contracting Company, LLC
June 19, 2018

The following is a summary of changes included in our Revised Technical Proposal resulting from the Request for Revised Proposals:

General:

- Updated "Request for Proposals" (RFP) to "Request for Revised Proposals" (RFRP);
- Updated "Technical Proposal" to "Revised Technical Proposal";
- Reflected the conversion of Baron Cameron Partial Interchange to an At-Grade Intersection;
- Updated page numbers and figure references.

Volume 1

Section 4.1:

- Revised submittal date;
- Revised Offeror Declarations;
- Revised the Final Completion Date;
- Introduced Unique Milestone #3.

Section 4.2:

- No changes.

Section 4.3:

- Described reductions to right of way impacts.

Section 4.3.1:

- Deleted references to Baron Cameron Avenue Partial Interchange and replaced with the At-Grade Intersection;
- Described revisions to buffers; roadway, noise wall and shared use path alignments; and efforts to minimize utility relocations as permitted by the RFRP;
- Eliminated use of gabion walls;
- Described reductions to right of way impacts;

Section 4.3.2:

- Described change from BR-27 to CPSR barrier at Difficult Run Bridge;

Section 4.3.3:

- Deleted the Baron Cameron Avenue Partial Interchange and replaced with the At-Grade Intersection;
- Discussed Unique Milestone #3.

Section 4.4.1:

- No changes.

Section 4.4.2:

- Updated the anticipated utility conflicts to reflect efforts to minimize relocations as allowed by the RFRP. Revisions include adjustments to the noise barrier alignment, shared use path, roadway alignment, conversion of the Baron Cameron Avenue Partial Interchange to an at-grade intersection, and updated Fairfax Water and Williams Gas requirements.

Section 4.4.3:

- Removed references to the Baron Cameron Avenue Partial Interchange;
- Updated Washington Gas's schedule for their Transmission Line Upgrade Project.

Section 4.4.4:

- No changes.

Section 4.4.5:

- Updated the anticipated number of properties impacted by our revised Design Concept.

Section 4.5.1:

- Updated schedule references to reflect the delay to Notice to Proceed (NTP) and revised Final Completion Date;
- Updated Washington Gas's schedule for their Transmission Line Upgrade Project;
- Deleted the sequence of work narrative for Baron Cameron Avenue Partial Interchange;
- Added the sequence of work narrative for the Baron Cameron Avenue At-Grade Intersection;
- Discussed Unique Milestone #3.

Section 4.5.2:

- Deleted references to Baron Cameron Avenue Partial Interchange and replaced with the At-Grade Intersection;

- Discussed Unique Milestone #3;
- Updated schedule references to reflect the delay to Notice to Proceed (NTP) and revised Final Completion Date.

Section 4.6:

- Updated our Proposed Schedule to reflect the delay to the procurement schedule, revised Final Completion Date, Unique Milestone #3, revisions to utility relocations, reduction in right of way impacts, and conversion of Baron Cameron Avenue from a partial interchange to an at-grade intersection.

Volume 2

- Plans are updated to reflect the above changes.

Attachment 4.0.1.1 - Technical Proposal Checklist

ATTACHMENT 4.0.1.1

Route 7 Corridor Improvements – Request for Revised Proposals

REVISED TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

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

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Revised Technical Proposal Checklist and Contents	Attachment 4.0.1.1	Section 4.0.1.1	no	N/A
Acknowldgement 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		
Letter of Submittal on Offeror's letterhead	NA	Section 4.1.1	yes	Page 1
Identify the full legal name and address of Offeror	NA	Section 4.1.1	yes	Page 1
Authorized representative's original signature	NA	Section 4.1.1	yes	Page 2
Declaration of intent	NA	Section 4.1.2	yes	Page 1
120 day declaration	NA	Section 4.1.3	yes	Page 1
Point of Contact information	NA	Section 4.1.4	yes	Page 1
Principal Officer information	NA	Section 4.1.5	yes	Page 1
Final Completion Date	NA	Section 4.1.6	yes	Page 1
Unique Milestone Date (if applicable)	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 4.1.8	no	N/A
Certification Regarding Debarment Forms	Attachment 11.8.6(a) Attachment 11.8.6(b)	Section 4.1.9	no	N/A

ATTACHMENT 4.0.1.1

Route 7 Corridor Improvements – Request for Revised Proposals

REVISED TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Written statement of percent DBE participation	NA	Section 4.1.10	yes	Page 2
Offeror's Qualifications	NA	Section 4.2		
Confirmation that the information provided in the SOQ submittal remains true and accurate or indicates that any requested changes were previously approved by VDOT	NA	Section 4.2.1	yes	Page 3
Organizational chart with any updates since the SOQ submittal clearly identified	NA	Section 4.2.2	yes	Page 4
Revised narrative when organizational chart includes updates since the SOQ submittal	NA	Section 4.2.2	yes	Page 3
Design Concept	NA	Section 4.3		
Conceptual Roadway Plans and description	NA	Section 4.3.1	yes	Page 7
Conceptual Structural Plans and description – Route 7 Bridge over Difficult Run	NA	Section 4.3.2	yes	Page 18
Conceptual Intersection Plans and description – Route 7 & Baron Cameron Ave/Springvale Road At-Grade Intersection	NA	Section 4.3.3	yes	Page 22
Project Approach	NA	Section 4.4		
Environmental Management	NA	Section 4.4.1	yes	Page 27
Utilities	NA	Section 4.4.2	yes	Page 31

ATTACHMENT 4.0.1.1

Route 7 Corridor Improvements – Request for Revised Proposals

REVISED TECHNICAL PROPOSAL CHECKLIST AND CONTENTS

Technical Proposal Component	Form (if any)	RFP Part 1 Cross Reference	Included within page limit?	Technical Proposal Page Reference
Washington Gas Transmission Line	NA	Section 4.4.3	yes	Page 40
Stakeholders Communications	NA	Section 4.4.4	yes	Page 42
Right-of-Way Management	NA	Section 4.4.5	yes	Page 46
Construction of Project	NA	Section 4.5		
Sequence of Construction	NA	Section 4.5.1	yes	Page 51
Transportation Management Plan	NA	Section 4.5.2	yes	Page 73
Proposal Schedule	NA	Section 4.6		
Proposal Schedule	NA	Section 4.6	no	N/A
Proposal Schedule Narrative	NA	Section 4.6	no	N/A
Proposal Schedule in electronic format (CD-ROM)	NA	Section 4.6	no	N/A

Attachment 3.6 - Form C-78

Form C-78-RFP

ATTACHMENT 3.6

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

RFP NO. C00099478DB98

PROJECT NO.: 0007-029-942 and 0007-029-225

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:

Note: Offeror previously acknowledged receipt of original RFP dated November 21, 2017 through RFP Addendum No. 5 dated March 19, 2018.

7. Cover letter of Request for Revised Proposal – June 1, 2018
(Date)

SIGNATURE

June 19, 2018
DATE

Michael E. Post
PRINTED NAME

President/CEO/Manager
TITLE

4.1 - Letter of Submittal

SHIRLEY
CONTRACTING COMPANY, LLC

June 19, 2018

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

RE: Route 7 Corridor Improvements
Fairfax County, Virginia
Contract ID Number: C00099478DB98
4.1 Letter of Submittal

Dear Mr. Clarke:

Shirley Contracting Company, LLC (Shirley), as the Offeror, and Dewberry Engineers Inc. (Dewberry), as the Lead Designer, are pleased to submit our Team's Revised Technical Proposal for the Route 7 Corridor Improvements Project (the Project). Our Team will provide VDOT and the traveling public with an unequaled level of assurance that the Project is completed successfully and exceeds the priorities established while limiting risk to VDOT, the public, and project stakeholders. We are excited for this opportunity and look forward to continuing our partnership with VDOT.

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 Revised Proposals (RFRP). Further, the offer represented by our Revised Technical and Revised Price Proposals for the Base Scope will remain in full force and effect for one hundred twenty (120) days from the date this Revised Technical Proposal is actually submitted to VDOT. Additionally, the offer represented by our Revised Technical and Revised Price Proposal for Option 1 will remain in full force and effect for one hundred eighty (180) days after Notice to Proceed (NTP) for the Base Scope.

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: July 31, 2024

4.1.7 - Unique Milestone #1 and #2: October 25, 2022
Unique Milestone #3: August 29, 2019

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 to achieving 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 Revised Technical Proposal and look forward to your favorable review.

Sincerely,

Michael E. Post
President/CEO/Manager

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. Note that our Organizational Chart reflects the corporate name change of SoDeep, Inc. to SAM, LLC submitted to VDOT on March 6, 2018.

4.2.2 Organizational Chart

The Project Organizational Chart in Figure 4.2.2.1 on the following page identifies the "chain of command" and major functions to be performed and their reporting relationships in managing, designing and constructing the Project, including quality control/quality assurance. As there is no change to any functional relationships among the participants since the SOQ submittal, an updated narrative is not required.

FIGURE 4.2.2.1 - ORGANIZATIONAL CHART

OUTSIDE THIRD PARTIES

- FAIRFAX COUNTY
- RT. 7 CORRIDOR IMPROVE. PROJ. WORKING GROUP
- HOAs / CITIZENS' ASSOCIATIONS
- CHURCHES (INCL. MCLEAN BIBLE)
- LOCAL BUSINESSES
- FAIRFAX COUNTY POLICE
- FAIRFAX COUNTY FIRE / EMS
- VIRGINIA STATE POLICE
- MWAA (DULLES TOLL RD)
- ADJACENT PROJECTS
- FAIRFAX CONNECTOR BUS
- WMATA BUS
- WOLFTRAP
- MEDIA
- FAIRFAX COUNTY PARK AUTHORITY
- FAIRFAX COUNTY PUBLIC SCHOOLS
- TRAVELING PUBLIC
- TYSONS PARTNERSHIP
- LOUDOUN COUNTY
- PROPERTY OWNERS/RESIDENTS

PUBLIC RELATIONS SPECIALIST
LESLIE PEREIRA
Clark Construction Group, LLC

DESIGN-BUILD PROJECT MANAGER
JEFF AUSTIN, PE, DBIA
Shirley

DESIGN-BUILD INTEGRATOR
PETE KRAMER
Shirley

DESIGN-BUILD INTEGRATOR
JOE FRAGALE, PE, DBIA
Shirley

RIGHT-OF-WAY MANAGER
RYAN MARRAH
Shirley

APPRAISALS/OFFERS NEGOTIATIONS
Diversified Property Services, Inc.
Bowman Consulting

TITLE REPORTS/SETTTLEMENTS
Old Dominion t/a Key Title
Carteret Title L.L.C.

UTILITY COORDINATION MANAGER
TODD KIEF
Shirley

ASSISTANT UTILITY COORDINATOR
KEITH GARDNER, ASSOC. DBIA
Shirley

UTILITY FIELD COORDINATOR
TYLER BROWN
Shirley

THIRD PARTY UTILITIES

SAFETY MANAGER
JULIE TURNER
Shirley

CONSTRUCTION MANAGER
RICKY MEYER
Shirley

PROJECT QUALITY CONTROL MANAGER
SIA AGAHY, PE
Dewberry

QC TESTING TECHS/ LAB & INSPECTORS
Geoconcepts Engineering, Inc.

SEGMENT I PROJECT MANAGER
NINA DAVIT
Shirley

SEGMENT II PROJECT MANAGER
JOHN ALEXANDER
Shirley

SEGMENT III PROJECT MANAGER
KEVIN LYONS
Shirley

SEGMENT I SUPERINTENDENT
MIKE COOK
Shirley

SEGMENT II SUPERINTENDENT
JORGE GUADRON
Shirley

SEGMENT III SUPERINTENDENT
ERIC ANDREWS
Shirley

SUBCONTRACTORS

- CLEAR & GRUBBING
- SILT FENCE
- ASPHALT PAVING
- PAVEMENT MARKINGS
- ELECTRICAL/LIGHTING
- SIGNALIZATION
- SIGNING
- UNDERDRAIN
- SIP FORMS
- DRILLED SHAFTS
- CONCRETE FLATWORK
- UTILITIES
- WATER/SEWER
- REINFORCING STEEL
- ITS
- LANDSCAPING
- NOISE WALLS
- TRUCKING

DESIGN MANAGER
STEVE KUNTZ, PE, DBIA
Dewberry

LEAD DESIGN STAFF

- LEAD STRUCTURAL ENGINEER
  PARUL AMIN, PE
  Dewberry
- LEAD HYDRAULIC ENGINEER
  PHIL JONES, PE
  Dewberry
- LEAD TRAFFIC ENGINEER
  JERRY MRYKALO, PE, PTOE
  Dewberry
- SIGNAL DESIGN ENGINEER
  BOB SCHEIDLER, PE
  Dewberry
- ENVIRONMENTAL MANAGER
  KIM LARKIN
  Dewberry
- ROADWAY DESIGN LEAD SEG I
  ERIK DULL, PE
  Dewberry
- ROADWAY DESIGN LEAD SEG II
  RYAN SHERAN, PE
  Dewberry
- ROADWAY DESIGN LEAD SEG III
  DOUG LITCHFIELD, PE
  Dewberry
- SURVEY MANAGER
  JOE CRONIN, IV, LS
  Dewberry

DESIGN QUALITY ASSURANCE
JEREMY BECK, PE
Dewberry

DESIGN SUBCONSULTANTS

- AERIAL MAPPING
  Quantum Spatial
- UTILITY DESIGNATIONS, TEST PITS
  SAM, LLC
- GEOTECHNICAL INVESTIGATIONS
  Geoconcepts Engineering, Inc.
- NOISE ANALYSIS
- HAZMAT INSPECTIONS

QUALITY ASSURANCE MANAGER
KAUSHIK, VYAS, PE
Quinn Consulting Services, Inc.

LEAD QA INSPECTOR STRUCTURES/BRIDGE
DJ STOVER
Quinn Consulting Services, Inc.

LEAD QA INSPECTOR ROADWAY/DRAINAGE
DINESH MEHTA
Quinn Consulting Services, Inc.

QA INSPECTORS
Quinn Consulting Services, Inc.

QA TESTING TECHNICIANS/LAB
DIW Group, Inc. dba
Specialized Engineering

LEGEND

- Construction
- Design
- Safety
- Quality Assurance
- Quality Control
- Communication
- Direct Reporting
- Right-of-Way
- Public Relations
- Utilities
- Third Parties
- Key Personnel
- Value Added Personnel

4.3 - Design Concept

4.3 Design Concept

Introduction

Each of the design-build projects that our Team has completed for VDOT over the last 16 years has had their own unique set of challenges that we have successfully addressed. As we prepared this Revised Technical Proposal, it quickly became apparent that the Route 7 Corridor Improvements Project (Project) was no different, and we appreciate and understand the extensive public engagement process undertaken to date by VDOT. Our Team's Revised Technical Proposal demonstrates that we have faced these challenges directly, explored all feasible options for resolving them, and created solutions that limit risk and ensure success. These challenges include:

- Considerable number of utility facilities;
- A sizeable number of property acquisitions;
- A constrained project footprint;
- An engaged and knowledgeable public;
- An extraordinary number of affected stakeholders;
- An aggressive completion schedule; and
- Addressing public safety concerns.

Beginning with the release of the RFP, our Team has worked diligently to address these issues by focusing on the following:

- Optimizing the horizontal and vertical alignment within the project footprint;
- Avoiding impacts to major utilities such as the Verizon ductbank, 54" FCWA waterline, and 16" Washington Gas line;
- Plan construction phasing allowing for early construction prior to right-of-way (ROW) and utility relocations, mitigating potential delays.
- Minimizing impacts to Fairfax County Park Authority (FCPA) property; and
- Developing a safe, efficient and least obtrusive maintenance of traffic sequence.

In addition, our Team's concept also:

- ✓ Meets or exceeds all requirements listed in the Design Criteria Attachment 2.2(a) and Prescriptive Design Elements Attachment 2.2(b);
- ✓ Ensures that the limits of construction to include all stormwater management facilities are within the existing/proposed ROW limits shown in the RFP Conceptual Plans; and
- ✓ Does not include design elements that require Design Exceptions and/or Design Waivers unless they are identified or included in the RFP or Addendum.

Weekly team meetings and specific Task Group sessions during the procurement phase enabled our Team to identify and focus on enhancements that address these critical challenges. Representatives from each design discipline and environmental, ROW, utility, and construction staff all provided input to ensure design enhancements resulted in the desired improvement without adverse impacts to other project elements. As a result, we identified numerous enhancements which are depicted and highlighted in our Volume II – Design Concept and described in Table 1:

Table 1 - Enhancements and Benefits

Location/Design Element	Enhancement	Project Benefit
Horizontal alignment from western terminus to Carpers Farm Way	Introduced alignment shifts while maintaining existing and proposed ROW and easement limits.	▪ Avoids drainage conflicts with existing 16” gas facility. ▪ Avoids structural and drainage impacts to the Verizon facility at the Baron Cameron Avenue Intersection. ▪ Reduces horizontal alignment points of inflection (PIs), improving the alignment of the road.
Colvin Run Stream Relocation	Completed more detailed hydraulic analysis to verify the ability to reduce the channel section while accommodating the required design storm.	▪ Reduces the width of the stream relocation, resulting in reduced impacts on FCPA property. ▪ Avoids relocation of the 54” water line from west of Carpers Farm Way to Difficult Run. ▪ Eliminates Fairfax Water easement replacement and associated construction impacts on FCPA property.
ROW Acquisition	Reduced impacts due to optimized design and utility avoidance.	▪ Eliminated 3.52 acres of fee simple ROW acquisition. ▪ Eliminated fee simple ROW impact area on Nike Park property for SWM. ▪ Eliminated fee simple ROW from five parcels. ▪ Reduced fee simple ROW on 30 parcels. ▪ Eliminates the requirement to obtain a Fairfax Water easement at Difficult Run.
Difficult Run Bridge	Shifted the alignment to the north and reduced the bridge length by 60’.	▪ Avoids the relocation of the 54” water main. ▪ Reduces limit of Verizon relocation. ▪ Eliminates the design waiver associated with 6” of freeboard at the bridge. ▪ Reduces structure depth, allowing for optimization of the vertical profile. ▪ Reduces long-term structure maintenance costs.
Drainage Design	Utilized different structure types, consolidated trunk lines, and completed detailed ditch analysis.	▪ Allows for sequenced installation of drainage improvements to accommodate utility relocation schedule. ▪ Eliminates all 32 crossing conflicts with the Verizon facility shown in the RFP design. Crossings which are required have been located at or immediately adjacent to existing crossings to match with existing vertical offsets in the Verizon facility, also avoiding relocation needs. ▪ Reduces conflicts with gas and water facilities throughout the entire length of the Project. ▪ Improved stream relocation alignment at Difficult Run, combined with the shifted bridge alignment, avoids the 54” water main relocation. ▪ Reduces crossings of the Williams Gas Transmission facilities from four to one.
Lewinsville Road Intersection	Optimized lane configurations and geometry of the Westbound (WB) auxiliary lane and merge.	▪ Avoids impacts to the existing stormwater management facility on Providence Baptist Church property. ▪ Reduces area of fee simple ROW impacts on Parcels 217 and 220.
Stormwater Management	Reduces number of facilities from nine to seven.	▪ Eliminates stormwater management facility on Nike Park property. ▪ Accounts for 1.37 acres of a total of 3.52 acres of fee simple ROW reduction. ▪ Reduces long-term maintenance costs.

4.3.1 Conceptual Roadway Plans

(a) General Geometry

Following construction, Route 7 will consist of a 6-lane facility incorporating 11' wide thru lanes and 12' wide turn lanes. Design of these improvements meet the requirements of a GS-5 Principal Arterial facility, achieving a design speed of 60mph from the western terminus of the Project to a point approximately 1,600' west of the existing intersection with Lewinsville Road (Station 478+00), where the design speed is reduced to 45mph, continuing to the eastern terminus of the Project. Twenty-six major intersections or entrances to Route 7 have been incorporated as well as numerous driveway connections. Each of these intersections and entrances have been designed to be consistent with the RFP turn lane and geometric configurations, and all have been checked to ensure the appropriate design vehicle (WB-62, WB-40, or SU) is accommodated for the turning movements.

Horizontal alignment and curve data information is listed in the Volume II - Design Concept, and design speeds have been identified for each horizontal curve. Design speeds for each intersecting roadway and side-street are consistent with those identified on Attachment 2.2(a) and range from 25mph to 35mph. The only exceptions to this are Reston Parkway and Baron Cameron Avenue that have design speeds of 40mph and 45mph respectively.

Route 7 consists of an urban typical section, incorporating curb & gutter on the outsides and curb in the median. No shoulders are provided on Route 7 within project limits; however, additional pavement has been provided at Utterback Store Road, Atwood Road, and the Lewinsville Road displaced left turn to accommodate U-turn movements. On intersecting streets where open shoulder typical sections are provided to match existing conditions, 1' wide paved shoulders have been provided, and graded shoulder widths ranging from 8' to 12' have been provided based on existing conditions and whether guardrail is incorporated to protect vehicles from hazards and/or to connect to existing facilities.

Along the entire length of Route 7, 10' wide Shared Use Path (SUP) facilities are provided along both the EB and WB lanes. Where permitted by the approved or identified design waivers, SUPs have been reduced to 8' and buffers adjacent to auxiliary lanes and turn lanes have been reduced from 8' to 5' to provide reductions in ROW impacts consistent with the RFP Conceptual Plan configurations. Additionally, as allowed by the RFRP, the buffer between the face of curb and SUP has been adjusted along EB Route 7 from approximate Station 419+50 to Station 430+50 and from Station 459+00 to Station 461+00 so that noise barriers could be accommodated to avoid relocation of the 54" Fairfax County water main. Pedestrian facilities are also incorporated as identified in Table 2.

Table 2 - Pedestrian Facility Location and Type

Roadway	Facility Type and Width
Utterback Store Road	10' SUP on the east side
Bishopsgate Way	10' SUP connection to existing asphalt trail on the west side
Great Passage Boulevard	5' sidewalk connection to existing facility on the west side
Springvale Road	5' sidewalk connection to existing facility on the west side
Baron Cameron Avenue	10' SUP on east and west sides
Carpers Farm Way	8' trails on east and west sides connecting to existing trails through Difficult Run Park
Beulah Road	Connection to existing 8' sidewalk on the west side and 5' sidewalk connection to existing facility on the east side
Towlston Road	5' sidewalk on the west side north of Route 7 and connections to existing 5' sidewalks on both sides south of Route 7
Lewinsville Road	5' sidewalk on the east side

(b) Horizontal Alignments

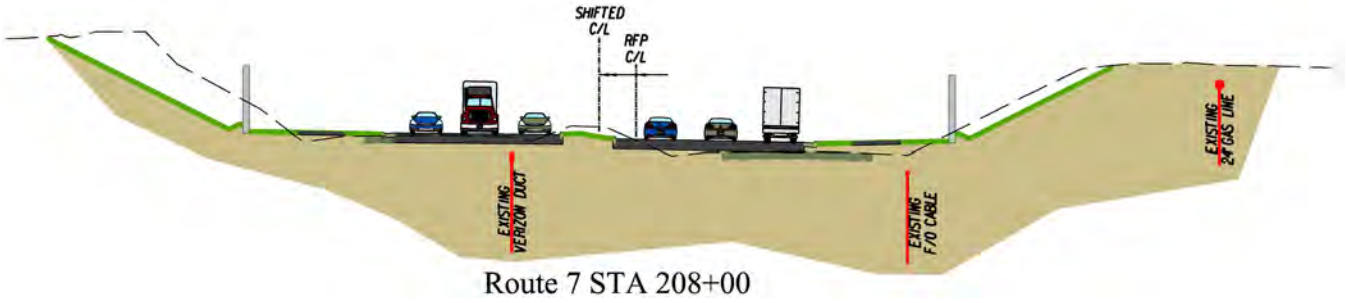
Horizontal alignments for the majority of the Project improvements are consistent with those depicted on the RFP Conceptual Plans, and following completion, Route 7 will be converted to a 6-lane facility with a

raised median. However, our Team recognized that the width of the existing ROW on the Route 7 corridor allows for optimization of the horizontal alignment to avoid utility and drainage conflicts, and reduce the acquisition of fee simple ROW or easements.

Western Limits to Riva Ridge Drive

From the west end to near the Riva Ridge Drive intersection, our Team has shifted the horizontal alignment to the north by as much as 7.5' minimizing the occurrences of the existing Verizon ductbank manholes located in the wheel path, allowing the utility to remain in place as shown in Figure 4.3.1.1. Additional benefits include the elimination of the horizontal "PI" breaks at the west end, and the avoidance of drainage conflicts with multiple utilities including water, fiber optic, the Verizon ductbank, and other utilities.

Figure 4.3.1.1 - Our shifted alignment at the west end of the Project avoids utility conflicts and facilitates concurrent construction of the 16" gas relocation and proposed storm drainage installation.



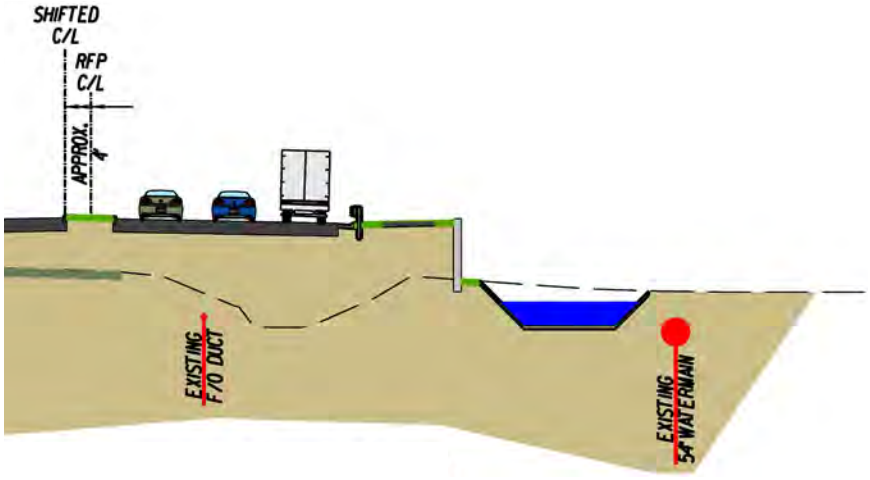
Riva Ridge Drive to Delta Glen Court

Consistent with the requirements of the RFRP, our Team has developed a new alignment for Route 7 from Riva Ridge Drive to Delta Glen Court which avoids impacts to the Verizon duct bank, Williams Gas crossings, Fairfax County 54" and 30" water mains, and eliminates fee acquisition from all but seven properties. Access to and from the businesses on the south side of Route 7 just west of Baron Cameron Avenue is maintained via the existing service road. Details of the proposed intersection configuration and geometry are included in Section 4.3.3.

Delta Glen Court to Difficult Run

Beginning east of the Baron Cameron Avenue Intersection and continuing to west of Carpers Farm Way, we shifted the alignment to the north to avoid impacts to the existing 54" Fairfax Water transmission line and associated with storm drainage installations. Combined with minor adjustments to proposed noise barriers and drainage facilities, this reduces the length of 54" water main relocation in this section by 2,800'.

Figure 4.3.1.2 – Between Carpers Farm Way and Difficult Run, the stream realignment typical section has been refined to avoid relocation of the 54" water main.



Immediately adjacent to the Carpers Farm Way intersection, the horizontal alignment is consistent with the RFP conceptual alignment due to the narrow ROW corridor. However, east of Carpers Farm Way where the existing ROW expands, we have again shifted the alignment to the north to reduce impacts to the FCPA property at Difficult Run

and Colvin Mill. The northern shift has been coordinated with temporary traffic control configurations which will allow for two staged construction of the Difficult Run bridge. A detailed analysis of the stream relocation approaching Difficult Run has identified a narrower channel footprint as shown in Figure 4.3.1.2, and described in the Stream Relocation Diversion Channel in Part (d). The combined effect of shifting the alignment to the north, and narrowing the stream relocation width, has allowed us to avoid relocation of the existing 54" water main from Carpers Farm Way to the intersection with Faulkner Drive.

Difficult Run to Eastern Limits

East of Difficult Run and continuing to the eastern Project limit, the existing ROW corridor is narrower, precluding the ability to make horizontal alignment adjustments. However, based on the modifications allowed as part of the RFRP, our Team has adjusted the horizontal alignment of Route 7 immediately in front of the St. Athanasia Church (from Station 455+61 to Station 462+15) in order to avoid impacts to the 54" water main. In addition to the horizontal alignment adjustment, the buffer between the face of curb and the front of the SUP has been reduced to 5' for approximately 180' just west of Trap Road to accommodate installation of the proposed noise barrier. By implementing these adjustments, we have avoided impacts to the 54" water main in this area, eliminating approximately 400' of relocation and associated easements. These adjustments are consistent with the RFRP, and only result in an additional 0.064 acres of right-of-way impacts to Parcel 193.

Lewinsville Road Intersection

At the Lewinsville Road intersection, our Team has incorporated median width adjustments (maintaining a minimum 16' Route 7 median) and refined the alignment of the displaced left and WB auxiliary lane to avoid impacts to the existing stormwater management facility on Parcel 217 as shown in Figure 4.3.1.3. Recognizing the house on Parcel 220 represents the only relocation required for the entire Project, our Team developed an alternate concept (not included in this Proposal) for the Lewinsville Road area which would avoid impacts to the house. As directed after our Proprietary Meeting, we will discuss this concept post Award with VDOT.

Figure 4.3.1.3 – Alternate configuration to be discussed with VDOT post Award.

Intersecting Roadways

Due to the relatively short lengths of improvements on the side roads, the horizontal alignments of the intersecting streets, entrances, and driveway connections remain unchanged as compared to the RFP Conceptual Plans. As described previously, the horizontal alignments for all of the roadways being improved meet the design speeds required by the RFP documents.

(c) Maximum Grades

Maximum grades of each alignment are provided in Table 3. Each roadway profile has been developed to reduce variable depth overlays of the existing pavement and limit the reconstruction required on the intersecting roadways. As our Team considered the flexibility to build-up or reconstruct the existing pavement, we quickly recognized that build-up would introduce challenges for temporary traffic control, since the existing pavement overlays couldn't be completed simultaneously with widening necessary for temporary shifts in traffic. Recognizing this challenge, we have developed profiles which are based on reconstruction of the majority of the Route 7 pavement. Critical areas such as intersections will still require build-up and overlay in order to maintain access and allow for flexibility during widening.

(d) Typical Sections

Typical sections for each roadway segment and Route 7 are included in our Volume II - Design Concept and provide additional details consistent with the descriptions provided below:

Table 3 - Maximum Grades

Alignment	Maximum Grade	Alignment	Maximum Grade
WB Route 7	6.0%	Middleton Ridge Road	4.5%
EB Route 7	5.6%	Newcombs Farm Road	3.4%
Reston Parkway	3.4%	Trotting Horse Lane	4.0%
Utterback Store Road	4.4%	Beulah Road	2.6%
Bishopsgate Way	4.8%	Forestville Drive	4.3%
Great Passage Boulevard	6.5%	Atwood Road	6.0%
Markell Court	4.0%	Lyons Street	2.0%
Amanda Drive	1.9%	Stokley Way	6.2%
Riva Ridge Drive	2.6%	Towlston Road (north of Route 7)	2.9%
Crippen Vale Court	2.8%	Towlston Road (south of Route 7)	9.0%
Springvale Road	4.0%	Trapp Road	7.0%
Baron Cameron Avenue	3.0%	Lucky Estates Drive	2.0%
Downey Drive	2.2%	Royal Estates Drive	2.0%
Colvin Run Road (western intersection)	2.7%	Wolftrap Run Road	3.7%
Delta Glen Court	4.4%	Brook Road	4.0%
Colvin Forest Drive	8.7%	Lewinsville Road	8.0%
Colvin Run Road (eastern intersection)	2.5%	Lewinsville WB Merge	2.9%
Carpers Farm Way	2.7%	Displaced Left	3.0%
Faulkner Drive	2.4%	Laurel Hill Road	4.0%
		Old Ash Grove Road	6.2%

Roadway Segments and SUPs - Route 7 generally consists of six 11' wide travel lanes, a 16' raised median, curb & gutter along the outside, and 10' wide SUPs along both the EB and WB lanes. At intersections, 12' left and right turn lanes are provided. While the majority of the SUPs are 10' wide and are adjacent to an 8' offset from the face of the curb & gutter, these widths have been adjusted to incorporate an 8' SUP in the Difficult Run area and 5' offsets to the face of curb adjacent to auxiliary lanes and turn lanes. These adjustments are consistent with the approved or supported design exceptions and waivers identified in the RFP documents. Additionally, as allowed by the RFRP, the buffer width has also been reduced to 5' from Station 419+50 to Station 430+50 and from Station 459+00 to Station 461+00 in order to avoid impacts to the 54" water main. Intersecting street typical sections have been developed to match the existing conditions. Lane widths vary from 10' to 12' based on the existing configuration and required geometric standard, and curb and gutter extends from the curb returns on Route 7 either to connect to the existing curb & gutter sections, or terminates at the end of the curb return to accommodate an open shoulder design (consistent with existing conditions). Sidewalk and SUP connections are provided on the intersecting streets to maintain connections to existing facilities, and their locations and widths were described previously in this section.

In accordance with the RFP requirements, bus boarding platforms will be incorporated at 11 locations along Route 7 and at a 12th location on Baron Cameron Avenue at Hunter Gate Way. Each of these bus loading platforms will be designed in accordance with the Road Design Manual and U.S. Access Board Guidelines. Consistent with the U.S. Access Board Guidelines, each bus boarding platforms will be 5' wide (measured along the roadway) and 8' long (measured perpendicular to the roadway). Based on the typical section of the shared use paths and buffer space, these bus boarding platforms will be located within the buffer space between the face of curb and the front edge of the shared use path, essentially providing a concrete pad extending from the back of curb to the front edge of the shared use path. In areas

where the buffer space has been reduced to be 5' wide as allowed by the RFP, horizontal flares will be introduced in the shared use path so an 8' boarding platform is accommodated. The slope of each of these platforms will not exceed 2% in accordance with guidelines.

Retaining Walls - Retaining walls are shown and labeled in our Volume II - Revised Design Concept and have been located to limit ROW and easement impacts on adjacent properties. Based on the proposed grading and adjacent ground elevations, we expect to utilize standard RW-3 walls and combination noise barrier/retaining walls along Route 7. Table 4 provides the expected type and location of each retaining wall:

Table 4 - Retaining Wall Location and Type

Retaining Wall Location	Type of Wall
WB Route 7 Station 206+50.00 to 207+80.00	Combination retaining wall/noise barrier
EB Route 7 Station 228+80.00 to 230+05.00	Combination retaining wall/noise barrier
WB Route 7 Station 247+60.00 to 248+85.00	Combination retaining wall/noise barrier
WB Route 7 Station 301+60.00 to 302+25.00	Combination retaining wall/noise barrier
WB Route 7 Station 314+11.00 to 318+80.00	Combination retaining wall/noise barrier
WB Route 7 Station 321+05.00 to 323+65.00	Combination retaining wall/noise barrier
WB Route 7 Station 329+83.00 to 333+35.00	Combination retaining wall/noise barrier
WB Route 7 Station 336+66.00 to 338+36.00	Combination retaining wall/noise barrier
WB Route 7 Station 339+20.00 to 341+80.00	RW-3
EB Route 7 Station 356+00.00 to 365+05.00	RW-3
WB Route 7 Station 362+60.00 to 364+75.00	RW-3
WB Route 7 Station 367+88.00 to 369+90.00	RW-3
EB Route 7 Station 371+12.00 to 372+65.00	RW-3
EB Route 7 Station 372+65.00 to 373+50.00	Combination retaining wall/noise barrier
WB Route 7 Station 373+00.00 to 373+77.00	Combination retaining wall/noise barrier
EB Route 7 Station 375+45.00 to 389+35.00	Combination retaining wall/noise barrier
WB Route 7 Station 378+70.00 to 381+08.00	Combination retaining wall/noise barrier
EB Route 7 Station 390+50.00 to 394+20.00	Combination retaining wall/noise barrier
WB Route 7 Station 408+00.00 to 413+25.00	RW-3
EB Route 7 Station 430+55.00 to 433+60.00	RW-3
WB Route 7 Station 449+10.00 to 451+70.00	Combination retaining wall/noise barrier
WB Route 7 Station 111+22.00 to 113+65.00	RW-3
WB Route 7 Station 503+90.00 to 505+70.00	RW-3

All exposed faces of these noise barriers and retaining walls, whether on the roadway side or the residential side, will incorporate architectural treatment in accordance with Section 2.3.13 and the RFP Special Provisions. At Difficult Run, retaining walls are considered to be part of the bridges and are therefore described in detail in Sections 4.3.2.

Bridge Structures - One bridges will be constructed as part of the improvements. B610 will carry EB and WB Route 7 over Difficult Run and replace the existing bridge. In addition to accommodating three EB and three WB lanes, the bridge incorporates barrier separated SUPs on both sides of the bridge. Based on our hydraulic analysis, we have been able to reduce the bridge length by approximately 60' to a length of 270'. Additional information and details of this bridge are included in Section 4.3.2.

Pedestrian Underpass - At Station 345+88, a single span pedestrian tunnel, similar to that shown in Figure 4.3.1.4, will be constructed to provide grade separated access from the FCPA property south of Route 7 to the Colvin Mill facility on the north side of Route 7. As shown in the RFP Conceptual Plans, this structure will consist of vertical faces and an arched top providing a clear opening width of 20' and a minimum vertical clearance of 10'. Architectural treatment will be provided on the exterior face of wingwalls, and lighting will be provided within the structure.

Stream Relocation Diversion Channel - Approaching the Difficult Run bridge from the west, the widening and realignment of Route 7 will require the relocation of the stream channel extending from just west of Carpers Farm Way to Difficult Run. Based on our analysis of the 10-year storm, this channel will consist of a 14' to 19' varying width channel bottom and side slopes ranging from 1:1 to 2:1. Slopes steeper than 2:1 are feasible since they are protected with articulated blocks in accordance with the approved environmental document and 4(f) requirements. The average depth of the channel is expected to be approximately 6', and the channel will be located immediately adjacent to the retaining wall supporting the EB lanes of Route 7 approaching the bridge over Difficult Run. The primary challenge to the design and construction of this channel is its proximity to the existing 54" Fairfax Water transmission main. As described previously, the varying width of the channel combined with the shifted alignment of Route 7 has allowed us to avoid relocation of the 54" water main. This enhancement represents a major cost savings to the Project as well as a reduction of impacts on the Fairfax County Park Authority property, ensuring the easement impacts to the property are reduced and avoiding clearing associated with relocation of the water main.

(e) Conceptual Hydraulic and Stormwater Management Design

Storm Drainage

Due to the curb & gutter section on Route 7, closed system drainage facilities incorporating drop inlets and storm sewer pipes will be utilized to convey flow from the roadway to adequate outfalls, receiving channels, and stormwater management facilities. West of Station 478+00 where the design speed is 60mph, drop inlets on-grade will be analyzed for the 10-year storm while those located in sag conditions will be designed to accommodate the 50-year event. Storm sewers within these limits will be designed to convey the 25-year flow. East of Station 478+00 where the design speed is reduced to 45mph, drop inlets will be designed for a 4"/hour intensity and storm sewers will be designed to convey the 10-year flow. Outside of the roadway, drainage ditches will be used to convey flow from storm sewer outfalls to receiving channels or stormwater management facilities. Roadside ditches will also be used to ensure off-site water is kept separate from the impervious on-site runoff in an effort to minimize stormwater management facility sizes.

Recognizing that the closed system drainage layout could have a major impact on the locations and limits of utility relocations, our Team completed an extensive analysis of the drainage systems in an effort to consolidate roadway crossings and minimize utility conflicts. As shown on our Volume II - Design Concept, different inlet types (DI-2 series and DI-3 series) were used to ensure adequate clearance is maintained to existing utilities in order to avoid their relocation. Most importantly, storm sewer routing has been developed to match our proposed construction sequence, avoid utility conflicts, and match locations of existing crossings of Route 7. This coordinated design effort has avoided all 32 conflict points shown in the RFP with the Verizon ductbank either by eliminating the crossing and extending parallel trunk lines, or placing the crossing pipe where the existing ductbank currently passes over or under an existing storm sewer or culvert location.

Following Notice to Proceed (NTP), our Team will complete a comprehensive analysis and video documentation of all existing culverts which could possibly be utilized in the proposed storm sewer configuration. Should the existing pipes be feasible for reuse, we will discuss our findings with VDOT and adjust inlet placement and storm sewer configurations accordingly. Preliminary design and field surveys will also include collection of updated topographic data, surveys of major channel sections, and a comprehensive review of overall hydrologic and hydraulic patterns and facilities, flood hazards, environmental constraints, permit requirements, local conditions, and construction and maintenance needs. This data collection ensures the final drainage design adequately accounts for both on-site and off-site runoff and maintains or improves drainage patterns within and immediately adjacent to the Project.

Major Hydraulic Crossings

There are four major hydraulic crossings within the Project limits at the following locations:

- 6' x 4' box culvert conveying Dog Run;
- Double 10' x 8' box culvert conveying Piney Run (FEMA Zone A);
- Triple 10' x 8' box culvert conveying Colvin Run under Carpers Farm Way (FEMA Zone A); and
- Bridge spanning Difficult Run (FEMA Zone AE).

Each of these locations will require a Hydrologic and Hydraulic Analysis (H&HA) and a scour analysis will also be required for Difficult Run. As part of our Team's conceptual design we have already completed preliminary analysis of each of these crossings and have determined the following, all of which will be finalized and verified as part of final design efforts:

- ***Dog Run -*** The crossing of Dog Run was studied to ensure that the correct hydrology and hydraulics was utilized since it is not located in a FEMA floodplain. A HEC-RAS model verified that a 6' x 4' box culvert is the appropriate replacement size to convey Dog Run. Analysis confirms that 18" of freeboard is provided for the 25-year storm and that upstream impacts are minimized.
- ***Piney Run -*** The crossing of Piney Run is located in a Zone A, FEMA floodplain which allows for a water surface increase of up to 1'. A HEC-RAS model was developed to assess the existing and proposed conditions. The existing double 10' x 8' box conveying Piney Run is in good condition and will be extended on the downstream ends. Extension of the upstream end of the box has been avoided due to the horizontal alignment of Route 7 developed by our Team. By avoiding this extension, we have eliminated the need to impact and relocate both the 54" and 30" water mains. The extension of the downstream end of the box will accommodate the new SUP and noise barrier and replace the existing pedestrian footbridge over the stream. Based on the preliminary model, the proposed design provides over 8' of freeboard for the 25-year design storm.
- ***Colvin Run –*** Colvin Run is located in a Zone A FEMA floodplain, and the existing condition consists of a double box culvert and two relief CMP culverts. Due to the realignment and widening of Route 7, these structures will be removed and replaced. The challenge associated with the analysis of Colvin Run is that its hydraulics are controlled by Difficult Run's backwater conditions. Recognizing this, we developed a model which more accurately represents the watershed and controlling information from Difficult Run. As the channel relocation and sizing of the box culverts under Carpers Farm Way represent the primary potential impact to the 54" water main, we investigated a wide range of possible culvert and channel configurations. As shown on our Volume II - Design Concept, we propose to install a triple 8'x 8' box culvert to convey the 10-year storm under Carpers Farm Way. Freeboard requirements for Carpers Farm Way are achieved for the 10-year storm with this configuration. This box will outfall into a realigned and reconstructed trapezoidal channel with an articulated concrete block lining, consistent with the requirements of the environmental document and 4(f) commitments. Based on our detailed analysis, we have been able to modify the channel relocation cross section to avoid impacts to the 54" waterline.
- ***Difficult Run -*** Difficult Run is a Zone AE FEMA floodplain, and therefore proposed conditions (including the bridge and approach roadway embankment) must not introduce a rise in the 100-year water surface elevation. Difficult Run has overtopped Route 7 and Carpers Farm Way numerous times, including over-toppings of more than 1' in 1953 and 1956 and a most recent overtopping in 2011. Our Team studied the events and hydraulic conditions at this crossing and reviewed the downstream USGS gage 01646000 data to more accurately reflect flooding conditions and discharges. Based on our analysis, we have determined that a three-span bridge with a total length of 270' will adequately pass the design year storm and not introduce a rise in the 100-year floodplain. In addition to reducing the bridge length, we are able to provide more than 2' of freeboard at the bridge for the design storm

and approximately 17" of freeboard to the lowest point along the hinge line of Route 7 west of the bridge. This represents a significant improvement from the RFP concept which required approval of a Design Waiver since the 18" freeboard requirement wasn't met. Finally, our concept provides a larger hydraulic opening as compared to the existing structure by removing the fill material beneath the proposed bridge while avoiding any in-stream excavation. This excavation will accommodate the required vertical clearance at the proposed pedestrian and equestrian trails.

Stormwater Management

In accordance with the RFP requirements, stormwater management will be designed in accordance with Virginia Department of Environmental Quality (DEQ) II-C Criteria. Our concept provides numerous enhancements as outlined in Figure 4.3.1.5, and has been developed to address the following project requirements:

- ***Water Quality*** **-** Our proposed stormwater management design eliminates the acquisition of 1.37 acres of proposed fee simple ROW associated with the stormwater management ponds and reduces maintenance needs by eliminating two of the stormwater facilities identified in the RFP Conceptual Plans. Elimination of these facilities was achieved by optimizing the BMP types and locations to maximize pollutant removal efficiency. As opposed to the nine facilities identified in the RFP Conceptual Plans, our proposed design utilizes seven BMPs including six extended-enhanced detention facilities and one retention facility. While the RFP Conceptual Plans incorporated retaining walls to minimize impacts to adjacent properties, we have developed conceptual grading for the facilities which avoids the use of retaining walls within the limits of the BMP footprint. By eliminating these retaining walls we have reduced the future maintenance costs and any potential seepage or piping of water through the structures.

Figure 4.3.1.5 - Stormwater Management Enhancements

- ***Water Quantity*** **-** There are approximately 43 locations where concentrated flow will leave the Project site and will need to be analyzed per MS-19 criteria. The stormwater management facilities proposed will be utilized to address erosion and capacity concerns and requirements at several of these outfalls, and will also be used to manage the amount of runoff being directed to the existing off-site BMP facilities.

(f) Proposed Right of Way Limits

In accordance with RFP requirements, our Team's concept has been developed to ensure that the proposed improvements can be constructed within the limits of existing ROW, proposed ROW and proposed permanent and temporary easements identified on the RFP Conceptual Plans, except as allowed by the RFRP to avoid utility conflicts. Recognizing that reductions to these ROW and easement impacts may avoid utility relocations and associated easement acquisition, as well as to help reduce schedule impacts associated with property acquisition, our Team made adjustments to the horizontal alignment and drainage configurations as previously described. By incorporating these alignment and drainage enhancements, our

Team is able to avoid the following impacts:

- Eliminated all fee simple ROW acquisition needed for SWM on the Nike Park property;
- Eliminated fee simple ROW acquisition from Parcel 250, a single family residence on EB Route 7 directly across from Utterback Store Road;
- Eliminated fee simple ROW acquisition on Parcels 050 and 051 through elimination of a proposed stormwater management basin;
- Reduced or eliminated ROW acquisition on Parcels 059, 060, 062, 063, 064, and 065 due to the horizontal alignment adjustment at the Baron Cameron Avenue Intersection;
- Reduced ROW acquisition on Parcel 083 due to an optimized configuration of the proposed stormwater management basin;
- Reduced ROW acquisition on Fairfax County Park Authority Parcels 116, 120, 121, and 126 and Parcels 127 and 128 due to the horizontal alignment adjustment at the Difficult Run bridge; and
- Reduced ROW acquisition on Parcels 213, 215, 258, 216, 217 and 220 due to an optimized typical section and alignment adjustment for the WB auxiliary lane from Lewinsville Road.

Ultimately, our alignment, drainage and stormwater management enhancements have resulted in the reduction of fee simple ROW acquisition area by 3.52 acres. During final design, we believe additional reductions in permanent and temporary easements may be possible as well; however, those adjustments can't be finalized until final profiles, grading limits, and erosion & sediment control plans are finalized. Additionally, as discussed at our Team's Proprietary Meeting, we have developed an alternate configuration for the Lewinsville Road area which maintains all public commitments to date but would eliminate the need to acquire the residence on Parcel 220 and relocate the owner or tenant. Following NTP, we will discuss the feasibility of incorporating this modification with VDOT.

(g) Proposed Utility Impacts

Our Team recognizes that utility relocations have the potential to impact the schedule and cost of any project, and those impacts can be critical on a major corridor such as Route 7 where utility relocations and construction must be completed on an aggressive and compressed timeline. This consideration is exactly why our Team has spent so much time and effort developing roadway alignments and drainage designs which will avoid many of the major utility relocations. Utility relocations which can't be avoided are identified in Table 7 in Section 4.4.2. Our Volume II - Design Concept Plans also identify these conflicts with the Utility ID # shown in Table 7. Due to the modifications permitted by the RFRP, our Team incorporated additional enhancements which further avoids impacts to an additional 4,000 LF of 54" water main, and also minimizes impacts to the Williams Gas crossings. We have already coordinated our revised concept with Williams, and received concurrence that our design avoids relocation of the lines, extension of the casings, and all easement impacts associated with adjustments to those facilities.

(h) Noise Barrier Locations

Based on the preliminary noise analysis and information provided with the RFP documents, 581,406 sf of exposed noise barriers are anticipated to be required. In order to reduce impacts to the adjacent properties, several of these noise barriers also act as a combination noise/retaining wall as outlined in Table 4 earlier in this section. Following completion of updated aerial mapping and project surveys, our Team will initiate the updated noise analysis modeling by updating the existing conditions model. As soon as profiles and roadway surfaces are finalized, the proposed condition model will be updated to determine which noise barriers are warranted, feasible, and reasonable. Recognizing that the elimination of the EB Route 7 underpass at Baron Cameron Avenue may modify the noise modeling for the corridor, we will work closely with VDOT to determine what additional public outreach efforts may be necessary, and update the existing and proposed models to determine if additional noise barriers are warranted due to the at-grade

intersection configuration. We will also incorporate the "turned back" alignments of the noise barrier over the Williams Gas crossings in order to avoid impacts to those facilities. Alignments for noise barriers will consider the possibility of incorporating gaps and overlaps in the barrier in lieu of doors in order to improve access for maintenance activities. However, based on the locations of existing utilities, the limits of existing and proposed ROW and easements, and adjacent grade conditions behind the noise barriers, we believe the ability to incorporate gaps and overlaps will be limited to only a handful of locations. These locations will be discussed and coordinated with VDOT maintenance staff. The Noise Abatement Design Report (NADR) will be developed by our Team and submitted to VDOT for concurrence as required by VDOT and Federal requirements. Following approval, letters will be distributed to the public so that public input is incorporated. In the event not enough responses are received from the first mailing, a second mailing will be completed. Following the voting process and approval by VDOT, noise barrier plan and profile sheets will be finalized and incorporated into the construction plans. All noise barriers will incorporate architectural treatment as described in RFP Part 2, Section 2.3.13 and outlined in the RFP Special Provisions.

(i) Other Key Project Features

While the information provided above and in Sections 4.3.2 and 4.3.3 describe the major construction elements, there are other components of the Project that provide some of the greatest benefit. These elements include the following items.

1. ***Landscaping –*** This element will have the greatest visual impact for both motorists and adjacent property owners. Following development of final grading and drainage plans, our Team will complete a comprehensive field survey to identify all specimen and major trees (6" caliper and larger) which will be removed to accommodate the roadway improvements. Following completion of this survey, a landscaping plan will be developed to identify locations where reforestation can be completed and where street trees and screening landscaping can be incorporated. By providing a comprehensive landscaping plan consisting of native species; a wide range of tree, plant, and shrub species; and low-maintenance species, we can ensure that the completed Project not only provides the capacity improvements desired but also result in an aesthetically pleasing final product.
2. ***Traffic Signals –*** On high volume, high speed roadways with multiple intersections, traffic signals play a critical role for ensuring efficient traffic operations, and facilitating safe turning and crossing movements for both vehicles and pedestrians. The Shirley Team anticipates a total of nine complete signal replacements and two signal modifications (Reston Avenue and Jarrett Valley Drive). For the nine replacements, all new poles will be utilized, and all pedestrian pushbuttons will be separated by at least 10' in order to meet MUTCD recommendations for Accessible Pedestrian Signals (APS). As a safety enhancement, all proposed mast arm poles will be located behind the SUPs, decreasing the likelihood of an errant vehicle hitting a signal pole. In addition to the permanent signals, yellow retro-reflective backplates will be installed on all temporary signals heads, providing increased visibility during construction.
3. ***ITS –*** In today's age of smart technology and connected devices, it is essential to provide real-time information related to congestion, incidents, and road conditions. Given this importance, the Shirley Team anticipates stand-alone and signal-mounted CCTV cameras in order to provide continuous corridor monitoring. The CCTV cameras will be placed at strategic locations to maximize visibility, and will be located so that lane closures are not required for future inspection and maintenance. These cameras will be connected by a continuous 48 fiber optic cable within a 4" conduit.

4.3.2 Conceptual Structural Plan - Route 7 Bridge over Difficult Run

As shown on our Conceptual Structural Plans included in Volume II – Design Concept, our bridge configuration is in full compliance with the RFP requirements and features a number of enhancements which reduce the initial construction and long-term maintenance costs, reduce schedule impacts and increase safety. These include the enhancements shown in Table 5:

Table 5 - Proposed Enhancements and Benefits

Feature	Enhancement	Project Benefit
Bridge	▪ Reduced length of bridge from 330' to 270' ***(reduction of 60'/6,920 sf or 18%).***	▪ Design meets project requirement of designing for 25 year storm and not increasing the 100 year water surface elevation. ▪ Reduces initial cost. ▪ Reduces long-term maintenance costs.
Girder Lines	▪ Reduced number of girder lines from 14 shown in the RFP to 12.	▪ Reduces initial construction cost. ▪ Reduces long-term maintenance costs. ▪ Reduces time to perform safety inspections.
Piers	▪ Utilizing multi-column piers rather than continuous wall piers which were shown in RFP Concept Plans.	▪ Allows us to locate pier columns so the Verizon ductbank can remain in place and functioning until it can be relocated onto the bridge, thus eliminating schedule impact of relocation before construction begins. ▪ Multiple columns vs. solid wall pier provides "safer feel" for users of the equestrian and pedestrian shared use trail.
Drilled Shafts	▪ Utilizing drilled shafts (one per column) to support piers allows the smallest footprint possible for foundation.	▪ Maximizes flexibility in construction schedule by allowing existing Verizon ductbank to remain in place during initial construction until relocation. ▪ Eliminates potential impact of vibration from driven piles to Potomac Interceptor Sewer located under Span A.
Drilled Piles	▪ Utilizing drilled piles rather than driven piles at Abutment A.	▪ Eliminates potential vibration impact to Potomac Interceptor Sewer.

Superstructure

We anticipate utilizing either VDOT Standard Prestressed Concrete Bulb-T beams or Grade 50 weathering steel girders for this bridge. Our bridge width, lane configuration, SUP widths, median width, longitudinal joint and barrier type (~~BR-27C~~ CPSR) all match the requirements of the RFRP and the RFP Concept plans. Incorporation of the CPSR series barrier will be included in the final design. With the reduction in the bridge length and revised span configuration, our concept reduces the number of girder lines from the 14 shown in the RFP Concept Plans to 12 while maintaining a shallow structure depth, thus reducing construction cost and increasing the freeboard between the design storm and the low chord elevation. With the exception of the longitudinal joint in the median (which matches the RFP Concept), the bridge will be designed and detailed utilizing VDOT's jointless bridge criteria and details.

Architectural Treatment will match the requirements of the RFP and the Special Provision for Concrete Form Liners and Color Stain Coating and will consist of an ashlar stone formliner with up to a 2" deep relief on each face of the bridge railing. The VDOT standard railing with architectural treatment requires the barrier width to be increased by 2" on each side that an architectural treatment is used; therefore, we have adjusted the bridge width from that shown in the RFP Concept plans to accommodate the additional width of the four barriers on the bridge. ***This results in a 16" wider bridge than that shown in the RFP Concept Plans. As required by the RFRP, the introduction of the CPSR barrier will add another 8" of bridge deck width for a total increase of 24" as compared to the RFP Conceptual Plans.***

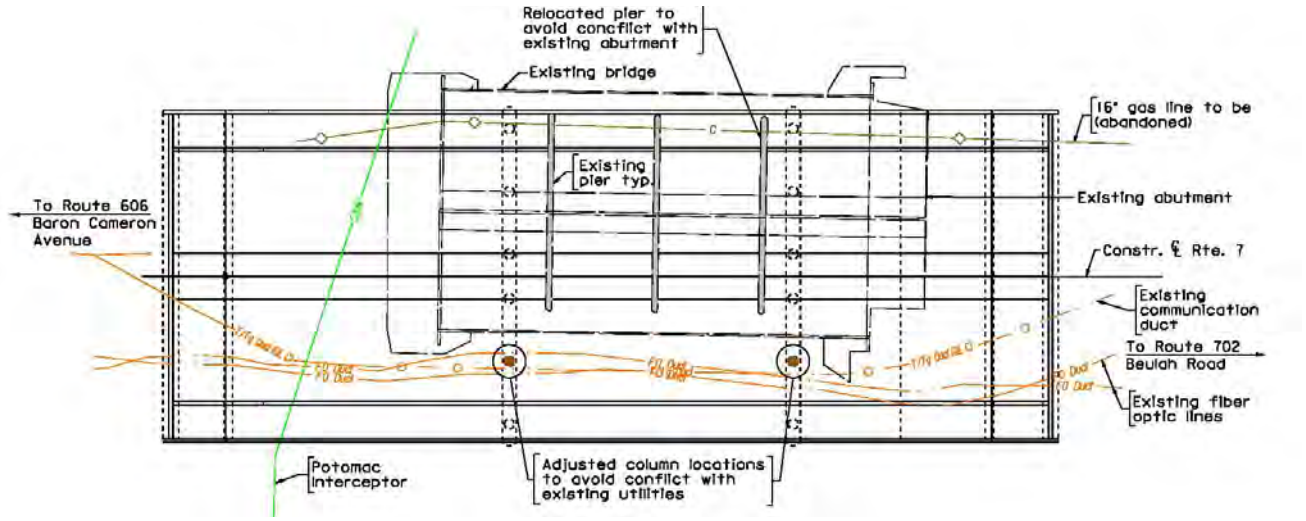
Substructure

We have performed a preliminary scour analysis of the bridge to determine the impact scour has on the substructure type and foundations. Our analysis indicates the potential for significant scour at both the abutments and piers. This concern has affected the bottom of footing elevation of the abutments, the number and depth of the piles at the abutments and the depth of the drilled shafts at the piers. Due to the bottom of footing elevations required to meet scour requirements, we anticipate utilizing semi-integral abutments on two rows of piles. This abutment type is in full compliance with the requirements and the selection algorithm in Chapter 17 of the *VDOT Manual of the Structure and Bridge Division.*

With the proximity of Abutment A to the Potomac Interceptor and the potential that vibrations from driven piles could negatively impact the existing pipeline, our concept is to pre-drill the piles to the required tip elevations, place them into the hole and fill the annulus around the pile with concrete. This may require the use of a steel casing if further analysis indicates the potential for the pre-drilled hole to collapse before the pile is installed.

As shown in Figure 4.3.2.1, we have optimized the location of the proposed piers to avoid the existing piers and abutments, thus eliminating the conflict between new Pier 2 and existing Abutment B shown in the RFP Concept Plans.

Figure 4.3.2.1 - Pier Location Optimization and Location of Potomac Interceptor



The piers are anticipated to be multi-column piers supported on a single drilled shaft under each column. The use of drilled shafts eliminates the potential negative impact to the Potomac Interceptor of vibrations from driven piles for the construction of Pier 1. An added benefit to the drilled shaft foundation is that it has the smallest footprint of any foundation type. This allows us flexibility to locate pier columns such that the existing Verizon ductbank can be avoided during Phase 1 bridge construction.

Material Selection, Methods and Functionality

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 and inspection. The VDOT requirement to utilize low permeability concrete and corrosion resistant reinforcing steel greatly reduces maintenance for the proposed bridge. Reducing bridge area, reducing the number of girder lines, and providing a jointless structure reduces inspection costs and provides VDOT with a virtually maintenance-free bridge.

Geotechnical Considerations

A critical element for maintenance, inspection and functionality of not just the bridge, but the approaches to the bridge, is the anticipated post-construction settlement. The new fill at the abutments will be placed over the existing streambed of Colvin Run. A review of the geotechnical information provided as part of the RFP Information Package shows that highly plastic alluvial fine grained soils are encountered in much of the area. Settlements of these fine-grained soils are anticipated to occur over an extended period of time. It is anticipated that significant settlement will occur at and under the new abutments, potentially impacting the construction schedule. Recognizing this, our design geotechnical investigation and testing program will ensure that enough samples and the right laboratory tests are conducted to identify the settlement potential. We anticipate, based on the preliminary geotechnical information provided, that surcharging the approaches behind the proposed abutments for a period of time will ensure that the magnitude of the post-construction settlement (less than 1" within 100' of the bridge and 2" beyond that) can be achieved.

The other impact to the bridge of anticipated settlement is the potential downdrag loads on the abutment piles. If not recognized and accounted for in the design, the pile foundation will not have the required capacity, which could result in settlement at the abutments (since the piles are friction piles) and maintenance issues for the service life of the bridge. We will calculate the downdrag loading on the piles using the computer program APile and the methods outlined in AASHTO LRFD Bridge Design Specifications 2014 to ensure the piles properly account for downdrag impacts.

Fully understanding the geotechnical conditions and tailoring the design to allow sufficient time in the construction schedule to address them ensures that the post-construction issues (such as settlement) are avoided. This reduces inspection and maintenance costs (and inconvenience to the public) that unaddressed geotechnical issues would require.

Potomac Interceptor

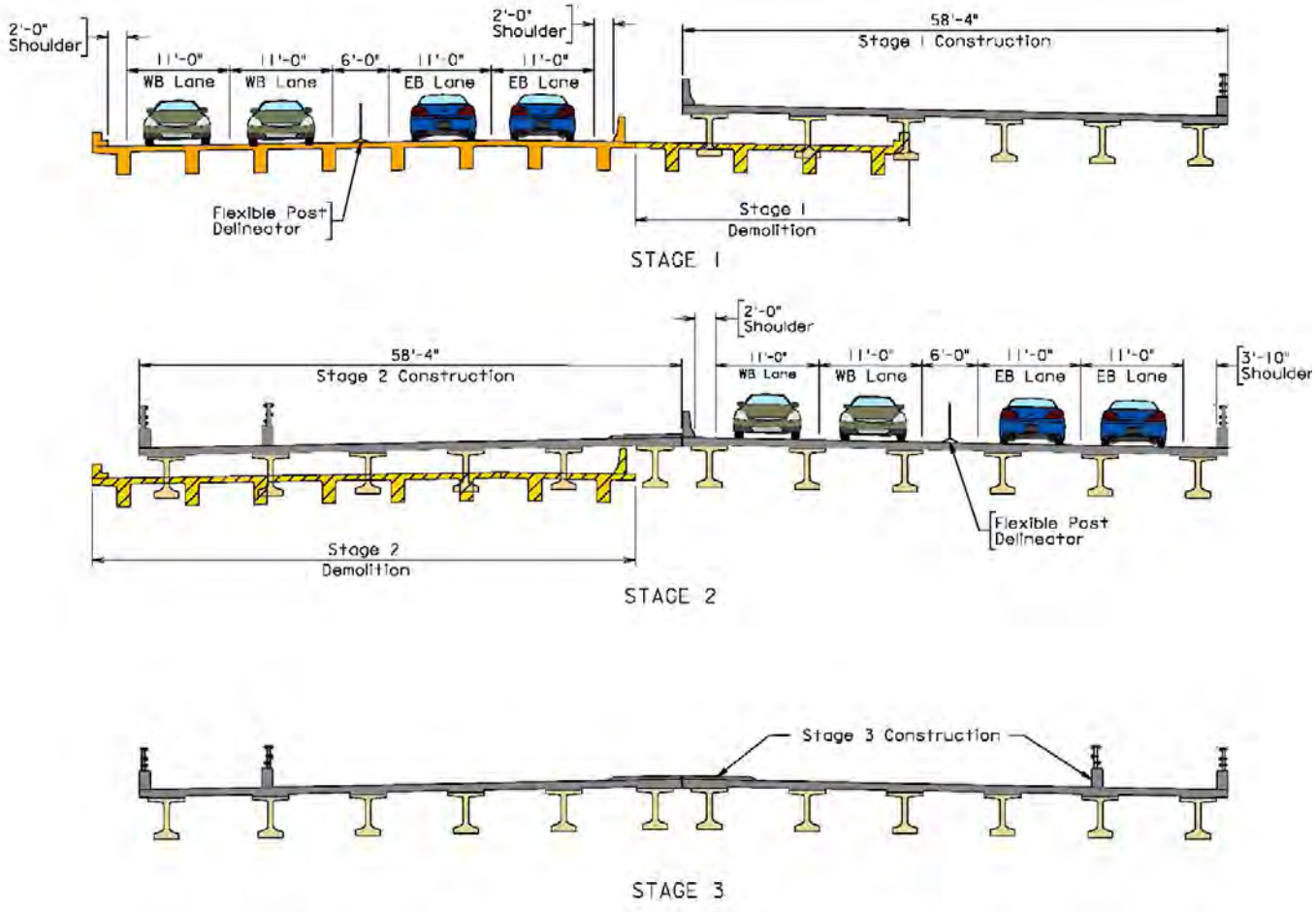
As discussed above, the proximity of the Potomac Interceptor Sewer to Abutment A and Pier 1 and the requirements of the DCWASA Standards for Construction – Potomac Interceptor influenced the foundation type and the construction method for these substructure units. In order to meet the requirement of no pile driving above the invert within 50' of the pipeline, our strategy is to pre-drill the abutment piles and to utilize drilled shafts for the pier. This will eliminate the risk of potential damage to the existing 55-year old sewer line due to vibrations associated with driven piles.

Construction Sequence

Figure 4.3.2.2 details our planned construction sequence. To accomplish this, the type of superstructure of the existing bridge, cast-in-place concrete t-beams, has to be considered when determining where the Stage 1 demolition line is located. We anticipate removal of approximately 21'-8" of the existing bridge in order to allow construction of the first half of the proposed bridge. The existing superstructure demolition line will occur at the center of the span between two existing girders. We will evaluate the remaining bridge girders and slab for this temporary condition and provide temporary support for the resulting overhang if required. The removal of this portion of the existing bridge coupled with the removal of the existing raised median will provide the necessary width to move both directions of traffic on to the remaining portion of the existing bridge. We will then be able to construct half of the proposed bridge in Stage 1. Stage 2 will relocate both directions of traffic to the new bridge, demolish the remaining portion of the existing bridge, and construct the rest of the new bridge. The raised median and the barrier that were not constructed in Stage 1 will be constructed in Stage 3 before placing traffic in the final configuration. Our concept minimizes the number of traffic switches, thus reducing the confusion generated by frequent traffic pattern changes and increasing safety for the traveling public. The ability to construct the new

bridge in fewer stages also results in a reduced construction schedule. Finally, analyzing the existing bridge and identifying any issues during the design phase eliminates impacts to the construction schedule and impacts to the public that could result from not considering and addressing potential deficiencies (either existing or caused by the construction sequence) to the existing structure.

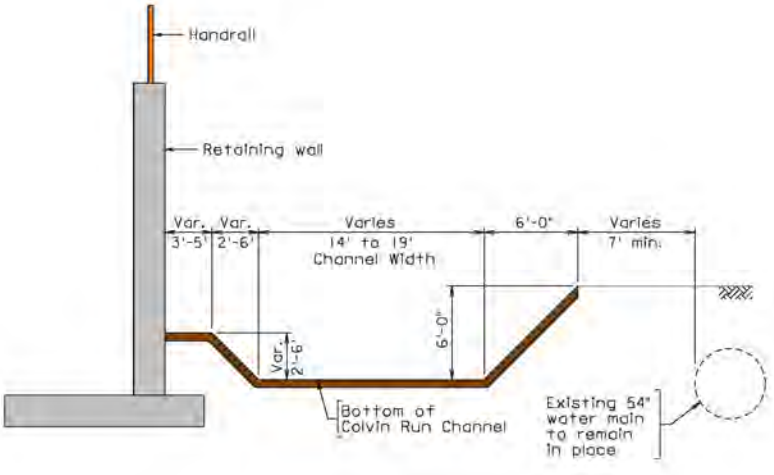
Figure 4.3.2.2 – Bridge Construction Sequence



Retaining Walls

The relocation of Colvin Run into a drainage channel will require the construction of a cast-in-place concrete cantilever retaining wall. This wall will extend from approximate Station 356+00 to the end of the south wingwall at Abutment A. After reviewing the information provided in the geotechnical report included in the RFP Information Package, we anticipate that this wall will be supported on spread footings (see Figure 4.3.2.3). Due to the soft soils present at the anticipated bottom of footing elevations in order to achieve the foundation bearing pressure needed for the

Figure 4.3.2.3 - Colvin Run Channel and Retaining Wall



wall, we expect that it will be necessary to undercut the existing soft soils and replace them with lean concrete or an open graded stone wrapped in geotechnical fabric.

Major Drainage Structures

The bridge over Difficult Run itself represents a major drainage structure. As previously described, Difficult Run is a FEMA Zone AE floodplain and the bridge has been designed to accommodate the 25-year storm and not introduce a rise in the 100-year floodplain elevation. Our Team's concept has adjusted the vertical profile of Route 7 to increase the freeboard to more than 2' at the bridge and approximately 17" at the low point in the roadway west of the bridge, an increase at both locations as compared to the RFP Conceptual Plans while not adversely impacting the 100-year floodplain elevations. The profile of the bridge and the depths of the girders have been designed to ensure the required vertical clearance over the pedestrian and equestrian facilities is provided. Additionally, scour has been analyzed to avoid adverse impacts associated with both the 100-year and 500-year storm events. Finally, as shown in the RFP, embankment material adjacent to the existing bridge abutments will be removed during construction to facilitate passing design flows while also ensuring adequate cover is provided over the existing 42" sanitary sewer.

4.3.3 Conceptual Intersection Plan – Route 7 & Baron Cameron Avenue/ Springvale Road At-Grade Intersection

As outlined in the RFRP, our Team has developed an at-grade configuration for the improvements at the Baron Cameron Avenue/Springvale Road intersection with Route 7. Our revised design concept extends from approximate Station 254+46 (intersection with Riva Ridge Drive) to approximate Station 305+95 (approximately 680' west of intersection with Delta Glen Court). To implement the at-grade intersection configuration, the following elements have been incorporated:

- Single right turn lane from EB Route 7 to SB Baron Cameron Avenue, including access to the existing service road in the SW quadrant via a single access point. The free-flow right turn at this location has been eliminated to accommodate the WB triple-left turns to SB Baron Cameron Avenue;
- Single left turn lane from EB Route 7 to NB Springvale Road;
- Continuous auxiliary lane on EB Route 7, beginning from the free-flow right turn lane on NB Baron Cameron Avenue and extending to the intersection with Delta Glen Court;
- 2,000' long triple left turn lanes (including tapers) from WB Route 7 to SB Baron Cameron Avenue;
- Single right turn lane from WB Route 7 to NB Springvale Drive
- Intersection geometry and lane configurations on Baron Cameron Avenue and Springvale Road have been developed to match the original RFP lane configuration, allowing for operation of concurrent left turn lanes from Baron Cameron Avenue and Springvale Road to Route 7. The free-flow right turn lane from NB Baron Cameron Avenue to EB Route 7 incorporates a radius of 120', which allows for free-flow operational speeds of approximately 20 mph. This avoids impacts to the existing 54"water main by ensuring all work is located within the limits of the existing casing beneath Baron Cameron Avenue.

After considering multiple geometric alignments for Route 7 through the intersection, our Team developed our unique design concept providing the following benefits:

- The intersection alignment and phasing is designed to allow for early construction and implementation of a temporary third left turn lane from WB Route 7 to SB Baron Cameron Avenue. These three turn lanes will be maintained through all stages, providing congestion relief during construction;

- Avoids approximately 1,200 LF of 54" water main relocation which was required for the grade separated configuration;
- Eliminates extension of Williams Gas casings;
- Avoids 900 LF of 24" water main relocation east of the intersection, including the existing crossing of Route 7;
- Reduces approximately 270 LF of 12" water relocation along WB Route 7 east of the intersection;
- Avoids approximately 1,000 LF of 30" water main relocation along EB Route 7 west of the intersection;
- Avoids impacts to the Verizon ductbank;
- Reduces fee-simple right-of-way acquisition on Parcel 059 and 060 by 0.23 acres and 0.12 acres respectively, and by 0.09 acres on Parcel 062;
- Eliminates fee-simple right-of-way acquisition from Parcels 063, 064, 065, and 076; and
- Avoids the need to shift overhead utilities from the south side to the north side of Route 7 by maintaining the existing service road in the southwest quadrant of the intersection.

Our Team's concept is shown in our Volume II - Revised Technical Concept, including the proposed traffic signal layout. We have evaluated the operation of the intersection to verify that traffic conditions will be improved by the proposed configuration as compared to the existing condition. Our concept follows VDOT's direction to provide concurrent left turn movements from Baron Cameron Avenue and Springvale Road to Route 7. This allows maximum green-time to be allocated to the thru-movements on Route 7, reducing delays and queues at the traffic signal. Turning movements at the intersection are designed to accommodate the design vehicles, including adjacent operation of a passenger vehicle, SU truck, and WB-62 in the triple left turns. Increased receiving width on SB Baron Cameron Avenue south of the intersection is provided towards the median, eliminating the need for additional utility relocations in the southwest quadrant. Signalized pedestrian movements have been accounted for and included in our design consistent with the original RFP crossing locations, ensuring access to each of the four quadrants is maintained.

Finally, ***a substantial advantage of our Team's design concept is that it allows implementation of triple left turns from WB Route 7 to SB Baron Cameron Avenue by August 29, 2019 - 1 year after NTP and 5 years prior to the RFRP completion date.*** Our commitment to this Unique Milestone #3 will provide immediate benefits to the public prior to the start of major construction activities. This enhancement is described in more detail in Section 4.5, including the Unique Milestone identified in Section 4.5.2 and identified in our schedule in Section 4.6.1.

4.4 - Project Approach

4.4 Project Approach

4.4.1 Environmental Management Approach

Comprehensive environmental management during design and construction is crucial to the success of the Project and is a primary component of our Team's approach. Ensuring environmental success requires constant coordination with the environmental permitting staff from each discipline lead and Key Personnel. Similar to each of our successful design-build projects, this coordination and communication has already begun and has led us to incorporate some of the modifications described in Section 4.3. Not only have these preliminary efforts ensured that project constraints have been identified, it also allows us to confirm:

- Environmental constraints are identified and impacts are avoided or minimized;
- Utility relocations are accounted for in permit documents;
- All necessary permits and their submission requirements are developed at the appropriate stages;
- Permit submission and approval timelines are accounted for in the schedule; and
- Construction is completed in accordance with the Contract, permits, National Environmental Policy Act (NEPA) commitments, and Project specifications.

The integrated process which our Team has successfully used on each of our projects is best illustrated by Figure 4.4.1.1 and ensures environmental schedule and cost risks are minimized during both design and construction phases of the Project:

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 Revised 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.

The Project has the potential to impact numerous historic and cultural resources, as well as impact multiple Park properties. Our Team recognizes these challenges and constraints and has already implemented the following enhancements in an effort to further minimize or avoid environmental impacts:

- Eliminated the stormwater management facility from the Nike Park property;
- Shifted the horizontal alignment over Difficult Run to reduce fee-simple ROW acquisition from the Fairfax County Park Authority (FCPA) properties; and

- Realigned the Colvin Run stream diversion, avoiding the relocation of the 54" water line on FCPA property.

These enhancements were identified in-part due to the close coordination between our Team members and the early documentation developed by our environmental staff. As part of our efforts to develop our Conceptual Plans, our environmental staff created an Environmental Constraints Map (ECM) to identify each of the critical project areas and how they relate to proposed improvements. The ECM is developed as a MicroStation file which overlays with the other design files to ensure each of the environmental areas and constraints can be reflected in each of the proposed design files. Layers and lines included in the ECM include:

- NEPA Project limits;
- Wetland and Waters of the US;
- Cultural and historic resource boundaries;
- Limits of Park properties and areas cleared through 4(f) documentation;
- Contaminated soil locations and limits of completed Environmental Site Assessments; and
- Noise impact areas based on preliminary noise studies and models.

Following NTP and as additional field investigations are completed, the ECM is updated and used to continually track the development of plans to ensure updated constraints are accounted for and design details are developed in a way which continues the required minimization and avoidance efforts. This continual coordination ensures that when plans and permits are ready for submission, there are no last-minute "surprises" which could result in schedule impacts associated with plan changes and delayed submissions. In addition to the use of the ECM, our Team utilizes the following efforts during design to ensure the minimization and avoidance of impacts to environmental resources:

Bi-Weekly Coordination Meetings – These formal meetings between design, environmental, ROW, utility, and construction staff ensure plans are being developed in a way which accounts for the needs of each discipline, and ensures that environmental constraints are being considered and addressed. Technical input, recommendations, and ideas related to the permit requirements, project constraints and commitments are offered in order to remain in compliance, avoid future conflicts between design and construction, and look for ways to streamline or provide further avoidance and minimization opportunities while maintaining constructability.

Over the Shoulder Reviews – These informal meetings occur during daily interaction between environmental staff and design engineers to ensure environmental constraints are being accounted for in a "real-time" manner, eliminating rework during later stages of design and ensuring discussions at the formal coordination meetings are properly implemented.

Formal Pre-Application Reviews – These reviews occur prior to formal plan submissions and environmental permit applications, and ensure that comments made and coordination efforts completed during over-the-shoulder reviews have been properly addressed and implemented. Draft permits and impact limits are also communicated to construction staff at this time to ensure construction means and methods have been accounted for. Examples include identifying adequate temporary impact limits for temporary stream crossings and crane access, as well as adequate limits of impacts for installation of both temporary and permanent erosion control measures. Similar to constructability reviews being completed on construction plan submissions, construction staff review of environmental permit packages ensures nothing is overlooked prior to submission of permits to the appropriate agencies.

Our Team has summarized in Table 6 the environmental resources which need to be carefully accounted for during design and construction. In some cases, enhancements have already been incorporated which will improve the permitting process and ensure the necessary permits can be obtained within the required timelines.

Table 6 - Additional Coordination And Methods To Limit Risks

Environmental Resources	Requirements	Method to Limit Risk
Park Properties including Great Falls Nike Missile Park, Colvin Run Mill Park, and Difficult Run Stream Valley Park	▪ Impacts to 4(f) resources shall be limited to 0.76 acres (Great Falls Nike Missile Park), 2.30 acres (Colvin Run Mill Park), and 5.69 acres (Difficult Run Stream Valley Park). ▪ Up front, early, and sustained coordination with Fairfax County Park Authority.	▪ ***Stormwater management facility has been eliminated from the Nike Park property,*** reducing the impacts below the 4(f) threshold. ▪ ***Horizontal alignment has been shifted through the Difficult Run Stream Valley Park, reducing fee-simple acquisition from Park Property by approximately 0.39 acres and avoiding relocation of the 54" water main.*** ▪ Improving the Colvin Run stream diversion typical section and alignment, reducing impacts to Park Property. ▪ At the outset of design, we will setup a coordination meeting with Park Property staff to discuss the Project scope, schedule, and proposed enhancements, ensuring that commitments are properly understood prior to final design development.
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 and Time-of-Year Restriction (TOYR) as required.	▪ Perform bat inventory prior to bridge demolition. ▪ Conduct surveys for Yellow Lance Mussel and account for TOYR (5/15-7/31) based on survey results. ▪ Complete Wood Turtle surveys and provide detailed construction staging designs at Difficult Run to ensure impact avoidance. Wood Turtle identification training will be completed with all construction staff prior to initial construction staging occurring at Difficult Run.
Noise Impacts	▪ Complete Final Noise Analysis based on final design. ▪ Receive approval from VDOT Chief Engineer and FHWA ▪ Mail citizen survey letters to benefited receptors to determine if noise barriers are desired. ▪ Comply with Section 107.16 (b)(2) of VDOT Road and Bridge Specifications. ▪ Incorporate aesthetic treatments in accordance with RFP requirements.	▪ Review prior noise model and run preliminary model of concept design to determine compliance. ▪ Avoid significant changes in horizontal alignment or vertical profiles which could change the results of the Preliminary Noise Analysis. ▪ Inform public of survey process, results, and timelines during "Pardon Our Dust" meetings.

Environmental Resources	Requirements	Method to Limit Risk
Cultural Resource Constraint Commitments	▪ Remain within the ROW limits noted in the RFP to avoid additional property impacts. ▪ Allow VDHR and consulting parties to review and comment on the Difficult Run bridge plans.	▪ Use ECM overlay of cultural resource study limits to avoid need for additional surveys. ▪ Ensure grading & utilities do not encroach outside ROW. ▪ Establish an initial coordination meeting to ensure requirements have been properly accounted for prior to developing final design details.
Wetlands/ Streams/ Water Quality Permitting	▪ Conduct wetland delineation and obtain Corps Jurisdictional Determination (JD) and Obtain Water Quality permits. ▪ Continue to Evaluate and document possible avoidance and minimization alternatives. ▪ Provide mitigation for unavoidable wetland and waters impacts.	▪ Begin wetland delineation at NTP. ▪ Document avoidance/minimization efforts for rapid permit issuance. ▪ Conduct early coordination during JD to address questions/concerns early and facilitate permitting.

One critical aspect of the environmental process is ensuring that permits are submitted at the appropriate times. Our Team knows that environmental permits can't be finalized until utility relocations are developed and limits of utility disturbance are known. It is for this reason that our Team does not submit water quality permits and land disturbance permits to the appropriate agencies until after 60% plans have been developed and both construction and utility relocation limits are finalized. This ensures that permit applications are complete when they are submitted the first time, avoiding back-and-forth reviews and multiple submissions prior to approval. This also ensures adequate limits of work are identified, avoiding the need for permit modifications prior to later stages of utility relocations or construction.

Approach During Construction

Involvement of the environmental staff and management of the environmental process doesn't end upon approval of the environmental permits. In some respects, the real environmental work is just beginning once permits and construction plans are approved. This recognition and understanding is what has allowed our environmental staff to achieve great relationships with the permitting agency staff, as they recognize that we have the best interests of the environment and the agencies in mind throughout construction. In addition to coordinating closely with permitting agency staff, our environmental team works closely with field staff before and during construction to ensure permit requirements are adhered to, monitoring is completed as required and necessary, and documentation is kept up-to-date at all times. Having successfully completed multiple design-build projects with involvement from all possible permitting agencies, we have developed the following approach during construction to ensure environmental compliance is maintained at all times:

Pre-Construction Coordination – Following plan approval and prior to any construction activities being initiated, environmental staff will return to the field and reflag all wetland and water locations to ensure limits are easily identified by construction staff and can be properly protected with silt fence and/or temporary construction fence to ensure avoidance of impacts to non-permitted areas. Permit plates which were submitted and approved as part of the permit applications will be shared with construction staff so that allowable limits of work are identified. A pre-construction constraints and commitment training meeting will be led by environmental staff and attended by construction and inspection staff to discuss permit requirements and environmental constraints which must be adhered to during construction.

Bi-Weekly Construction Visits – Previously completed on a monthly basis, our Team recognizes that additional scrutiny is being placed on environmental protection. Accordingly, ***our Team commits to conducting bi-weekly construction visits*** to ensure permit requirements are being adhered to, erosion control measures are properly installed and functioning appropriately, and to identify areas which may require additional attention before they become a deficiency on a formal log or C-107 review. These visits will also provide an opportunity for environmental staff to review upcoming field activities and discuss sensitive or critical areas which will be within the work area in the upcoming construction activities. This process has proven very effective on recent projects, and has given additional assurances to agency staff that our Team is taking an aggressive approach to environmental and permit compliance.

C-107 Compliance Checks – Completed on a twice-weekly basis, these field inspections will be completed by QA, QC and construction staff to identify deficiencies in erosion control measures and areas where additional attention is necessary. These C-107 reviews will be combined with the bi-weekly construction visits as necessary so that specific details related to environmental requirements can be discussed directly with environmental staff involved in the initial permitting process.

On-Call Assistance – During construction, we recognize that conditions will arise that require immediate attention. Our environmental staff will remain available at all times during construction to meet on-site to address specific concerns or provide specific recommendations for enhancements to address challenging areas. Our approach is to use the same environmental staff during both design and construction, so that feedback provided properly accounts for commitments and restrictions identified during design without resulting in additional impacts or further complicating critical areas.

Regular Permit Reporting – As necessary for permit compliance, our environmental staff will complete the monthly and/or quarterly reporting to document construction progress and timing of impacts for all permitted areas. Reports will be submitted simultaneously to each permitting agency, VDOT, QA/QC, and construction staff.

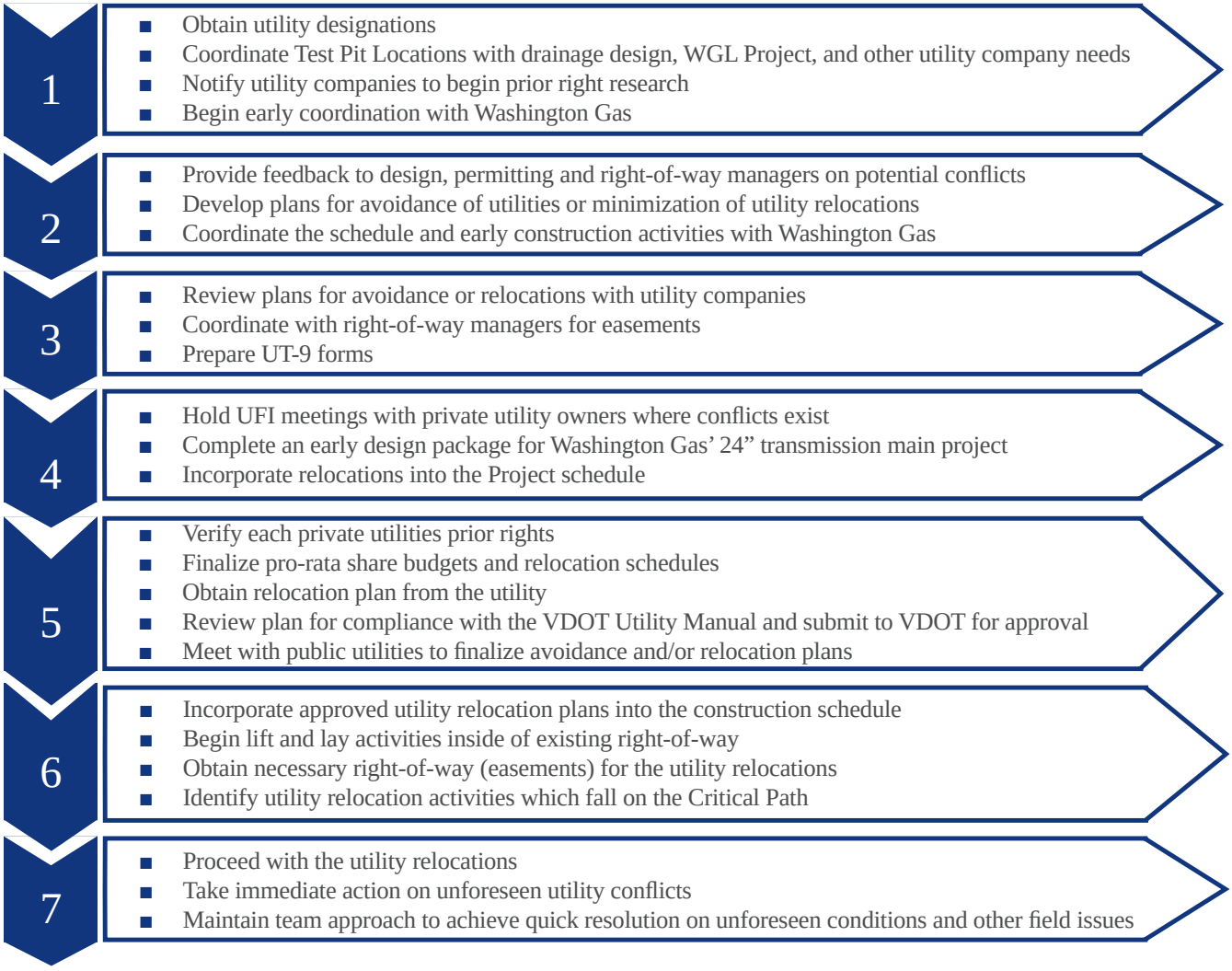
Compliance Reporting – Despite best efforts by environmental permitting and construction staff, we recognize that undesired impacts may occur during construction. Examples include excessive rain events which result in non-permitted downstream impacts, or construction sequencing changing as compared to the expectations during permit document development. In these situations, the most effective way to address the problem is by being up-front with the permitting agencies, providing timely reporting, and quickly identifying and implementing appropriate corrective measures. While our Team constantly aims to avoid non-compliance issues, should they arise, we will be proactive with reporting the event to the agency as well as identifying remediation efforts which will be quickly implemented in the field.

4.4.2 Utilities

Approach To Utility Coordination, Adjustments, and Relocations

Our Team began early coordination during the RFP phase with each utility company present throughout the corridor. We will keep them involved early in the design phase, and throughout all phases of the Project. It is critical to the success of the Project that the utility companies understand the ROW coordination, schedule for completion, sequence of work, and design. Having the utility companies involved early will also help our Team coordinate their crew availability, anticipated production, and areas of concern into our overall schedule and design. Once the Project is underway, Figure 4.4.2.1 generally outlines steps and activities we will perform to manage the utility process and coordinate with each utility owner:

Figure 4.4.2.1 - Approach to Utility Coordination

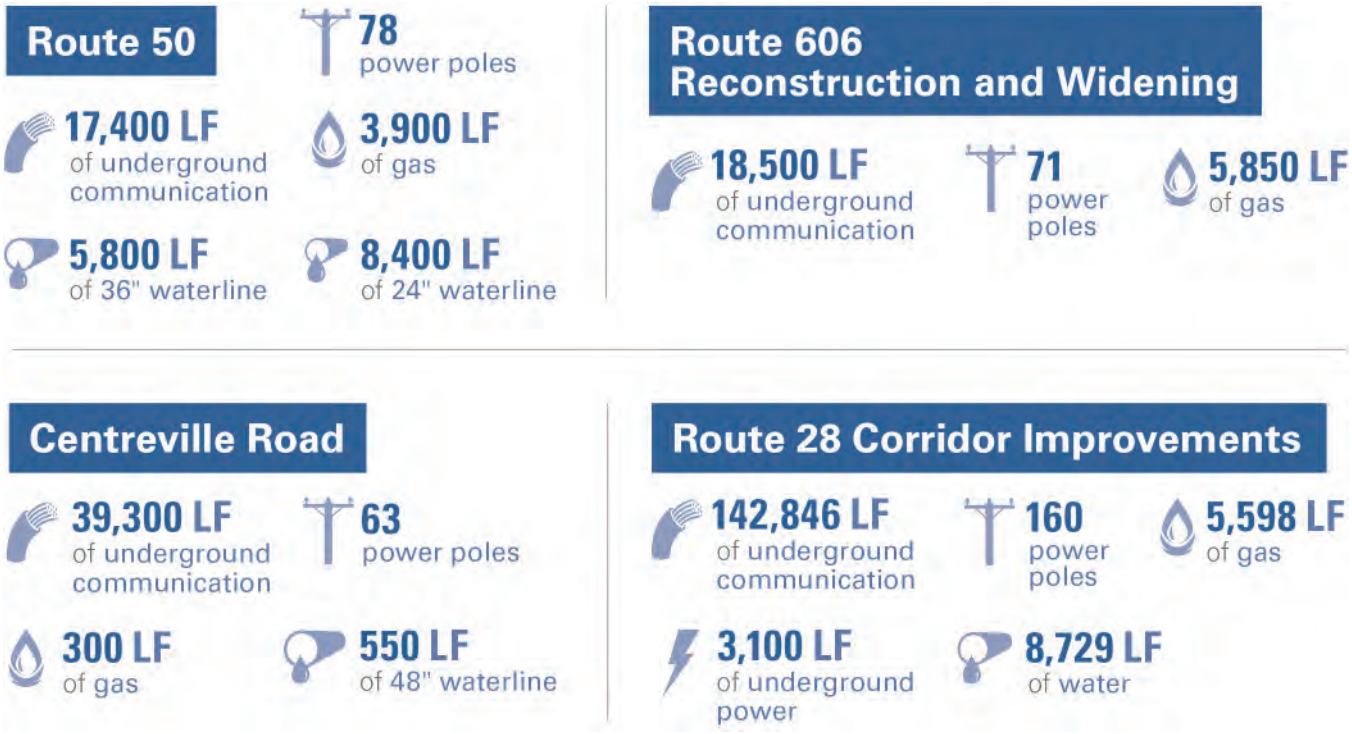


Team Experience

Our Team has successfully managed utility relocations on all of our VDOT design-build projects for over 16 years. Our in-house personnel are fully integrated into the design-build process and coordinate conflict resolution with the utility companies, ROW acquisition process, design, and all other disciplines. This Project will benefit from our Team's experience working on complex design-build project's such as the Route 50 Widening, Centreville Road Widening, Route 28 Corridor Improvements, and Route 606 Reconstruction and Widening. Figure 4.4.2.2 highlights our experience relocating utilities on these projects.

As we prepared this Revised Technical Proposal, we focused our efforts on avoiding and minimizing conflicts with numerous utilities located in the corridor. These include Fairfax Water's 54" waterline, Washington Gas's 16" steel transmission line, Williams Gas transmission lines, double circuit Dominion Energy poles, and Verizon's 15-way ductbank that includes Verizon, AT&T Long Distance, MCI, and Zayo. Our Team's experience working with each of these utility owners on multiple projects will facilitate resolving potential conflicts.

Figure 4.4.2.2 - Utility Experience



Utility Conflicts and Solutions

At this stage, the Shirley Team has identified multiple conflicts with the proposed widening. Table 7 is a summary of the known utility conflicts and our relocation plans. The Utility ID # corresponds to our Volume II - Design Concept Plans.

Table 7 - Utility Conflicts and Relocation Strategy

Utility Description	Utility ID #	Potential Conflict	Relocation Plan
		POWER	
Dominion Energy Single Circuit Pole	400	Conflict with proposed trail	Relocate in-kind behind proposed trail
Dominion Energy Single Circuit Pole	401, 412	Conflict with noise barrier and widening	Relocated in-kind behind proposed noise barrier
Dominion Energy Single Circuit Pole	402, 403, 407, 408, 409, 410	Conflict with noise barrier	Relocated in-kind behind proposed noise barrier *Conflict reduced by noise barrier alignment change
Dominion Energy 3 Phase UG	404	Conflict with noise barrier	Relocate in-kind and reattach to relocated pole
Dominion Energy Single Circuit Pole	405	Conflict with noise barrier and widening	Relocated in-kind behind proposed noise barrier
Dominion Energy Single Phase Underground	406	Conflict with noise barrier	Lift and lay to avoid splicing
Dominion Energy Double Circuit Pole	411	Conflict with proposed trail	Relocate in-kind
Dominion Energy Single Circuit Pole	413	Conflict with proposed widening	Relocated in-kind behind proposed widening

Utility Description	Utility ID #	Potential Conflict	Relocation Plan
COMMUNICATION			
Verizon Overhead Copper & Fiber	500, 506, 509, 516, 537, 541, 541, 544	Conflict with noise barrier	Re-attach to Dominion Energy Poles
Level 3 8-Way Duct Bank	501	Conflict with storm sewer	Relocate to proposed trail on the south side of Route 7
Cox Communications Underground Fiber	502	Conflict with storm sewer	Relocate behind proposed trail on the south side of Route 7
Cox Communications Underground Coax	503, 504	Conflict with noise barrier and storm sewer	Relocate in-kind under the trail on the south side of Route 7
Verizon Virginia Overhead Copper	505	Conflict with noise barrier	Relocate in-kind behind noise barrier
Cox Communications Overhead Coax	507, 510, 538, 542, 545, 546	Conflict with noise barrier and widening	Re-attach to Dominion Energy Poles
Verizon Virginia Underground Fiber	508	Conflict with noise barrier	Relocate in-kind behind noise barrier
Level 3 8-Way Duct Bank	511	Conflict with noise barrier	Lift and lay to avoid splicing
Level 3 8-Way Duct Bank	512	Conflict with storm sewer, noise barrier, and Difficult Run bridge	Relocate in-kind behind the noise barrier on the south side of Route 7
Verizon Business (MCI) Underground Fiber	513	Conflict with storm sewer and Baron Cameron Avenue bridge	Relocate in-kind behind the noise barrier on the south side of Route 7
Zayo Underground Fiber	514	Conflict with Baron Cameron Avenue	Relocate in-kind behind the noise barrier on the south side of Route 7
Verizon Virginia Overhead Copper	515, 517, 527, 536	Conflict with widening	Relocate in-kind outside of proposed widening
Verizon Business (MCI) Underground Fiber	518, 523	Conflict with storm sewer	Lift and lay to avoid splicing
Verizon Business (MCI) Underground Fiber	520	Conflict with Difficult Run Bridge	Place on new Difficult Run bridge
Verizon Virginia 15-Way Duct Bank	521	Conflict with Difficult Run Bridge	Place on new Difficult Run bridge
Verizon Virginia Overhead Copper	522	Conflict with trail and noise barrier	Relocate in-kind behind the noise barrier
Level 3 8-Way Duct Bank	524	Conflict with widening and storm sewer	Relocate in-kind under the trail on the south side of Route 7
Verizon Virginia Overhead Copper	528	Conflict with widening	Relocate in-kind outside of road widening
Fiberlight 8-Way Duct Bank	529,530	Conflict with storm sewer	Lift and lay to avoid splicing
Level 3 8-Way Duct Bank	531	Conflict with widening and storm sewer	Relocate in-kind under the trail on the south side of Route 7
Fiberlight 8-Way Duct Bank	533	Conflict with storm sewer	Relocate in-kind behind proposed storm sewer
Verizon Virginia Underground Copper	534	Conflict with storm sewer	Relocate in-kind behind proposed storm sewer
Verizon Virginia Overhead Copper & Fiber	539	Conflict with proposed widening	Relocate in-kind outside of road widening
Cox Communications Overhead Coax	540	Conflict with proposed widening	Relocate in-kind outside of road widening

Utility Description	Utility ID #	Potential Conflict	Relocation Plan
Verizon Virginia Overhead Copper & Fiber	543	Conflict with noise barrier and trail	Relocate in-kind behind noise barrier
Cox Communications Underground Coax	547	Conflict with ditch	Relocated in-kind behind ditch
Cox Communications Underground Coax	548	Conflict with storm sewer	Relocate in-kind behind storm sewer
Verizon Business (MCI) Underground Fiber	549	Conflict with storm sewer	Relocate in-kind behind storm sewer
Level 3 8-Way Duct Bank	550	Conflict with storm sewer	Lift and lay to avoid splicing
WATER			
Fairfax Water 12” Water	201, 209, 215, 217, 218, 220, 221, 224	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Fairfax Water 30” Water	202	Conflict with noise barrier	In-kind offset to eliminate conflict with noise barrier
Fairfax Water 30” Water	203	Conflict with noise barrier	Conflict eliminated by shifting noise barrier
Fairfax Water 12” Water	204, 210	Conflict with storm sewer and noise barrier	In-kind offset to eliminate conflict with storm sewer and noise barrier
Fairfax Water 30” Water	205	Conflict with storm sewer	Conflict eliminated by alignment shift
Fairfax Water 30” Water	206	Conflict with storm sewer and cut for spur ramp	In-kind offset to eliminate conflict with cut reduced by alignment
Fairfax Water 54” Water	207, 219	Conflict with noise barrier	Conflict eliminated by noise barrier alignment
Fairfax Water 24” Water	208	Conflict with excavation at Baron Cameron Avenue	Conflict eliminated by removing Baron Cameron Interchange
Fairfax Water 54” Water	211, 222	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Fairfax Water 8” Water	213, 223	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Fairfax Water 16” Water	214	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Fairfax Water 54” Water	216	Conflict with noise barrier and cut	Conflict eliminated by introduction of retaining wall
SANITARY SEWER			
Fairfax Sewer 33” Gravity	300	Conflict with widening	Relocate in-kind
GAS			
Washington Gas 6” Plastic	100	Conflict with noise barrier	In-kind offset to eliminate conflict with noise barrier
Washington Gas 6” Plastic	101	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Washington Gas 24” Steel	102	Conflict with ditch	In-kind offset to eliminate conflict with ditch
Washington Gas 8” Plastic	103	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer

Utility Description	Utility ID #	Potential Conflict	Relocation Plan
Washington Gas 24" Steel	104	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Washington Gas 2" Plastic	105, 112	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Washington Gas 6" Plastic	106, 107	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Regulator Station	108	Conflict with noise barrier	In-kind offset to eliminate conflict with noise barrier
Washington Gas 12" Plastic	109	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Washington Gas 4" Plastic	110	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Regulator Station	111	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Washington Gas 6" Plastic	113, 114, 115, 116	Conflict with storm sewer	In-kind offset to eliminate conflict with storm sewer
Williams Gas	117	Conflict with Road Alignment	Conflict eliminated with roadway alignment

Mitigation Strategies

Our design concept presented with this Revised Technical Proposal has been developed after an extensive process of reviewing the existing facilities and proposed work with each utility owner. Through this coordination, we have confirmed that our design meets their standards, established the relocation needs for each utility owner, and determined the impacts our concept will have on their systems.

As a result of these discussions, our Team has developed a design concept that has ***avoided and mitigated multiple utility impacts*** throughout the corridor. Those design concepts include:

Modified Drainage Design - Our strategy optimizes the drainage design as described in Section 4.3 to minimize conflicts. We have also developed a sequence of work that constructs drainage without the need for early phase utility relocations. Conflicts mitigated include:

- ***Minimized conflicts with the 16" Washington Gas transmission line:*** Limiting these conflicts allows our Team to build the early phases of storm sewer without needing Washington Gas to add temporary cut overs prior to construction of their 24" upgrade project.
- ***Avoidance of 54" and 30" Fairfax Water line in multiple locations:*** By avoiding the culvert extension at Piney Branch we avoided a direct conflict between the culvert and the 54" Waterline, and reduced the fill to meet Fairfax Water standards. Between Baron Cameron Avenue and Difficult Run, and at the east end of the Project, our Team adjusted the storm to provide the minimum horizontal offset required by Fairfax Water, which eliminated conflicts with the 54" waterline.
- ***Eliminated drainage crossings with the 15-way Verizon ductbank:*** The RFP Conceptual Plans showed new storm sewer crossing the Verizon ductbank 32 times, causing the majority of the ductbank to be relocated, and making it challenging to establish positive drainage early in the schedule. Our Team has optimized the drainage design to eliminate **all** perpendicular storm sewer crossing conflicts with the Verizon ductbank, reducing impacts to Verizon, AT&T Long Distance, MCI, and Zayo. This reduction eliminates a lengthy relocation that would need to be performed in a linear fashion since there are multiple utility owners in the ductbank.

Modified Noise Barrier Alignment - The extensive quantities of noise barriers impact several utilities throughout the corridor. Our Team's noise barrier design has been modified to avoid and minimize conflicts where possible including:

- Our Team's revised roadway, noise barrier and SUP alignments minimize conflicts with the 30" waterline and avoid an additional 4,000 LF of 54" waterline relocation. Reducing the waterline relocation in these areas avoids lengthy relocations, which have time of year restrictions. Avoiding these restrictions allows us to phase the construction of the noise barrier more efficiently, and avoid risk of delay.
- Throughout the Project, we adjusted the noise barrier alignment to minimize conflicts with communication facilities including Verizon, Level 3, and Cox.

Horizontal Alignment Adjustment - As described in Section 4.3, our Team has adjusted the horizontal alignment to minimize impacts to facilities where possible including:

- West of Baron Cameron Avenue, our Team adjusted the horizontal alignment to minimize the impact to Williams Gas, eliminating the casing extension. Our Team's revised alignment has been reviewed with Williams Gas, who confirmed that the pavement width and proposed grading is acceptable. Avoiding the casing extension on each side of Route 7 will also eliminate Dominion Energy overhead, and the 30" and 54" waterline relocations.

- Our revised horizontal alignment and reduced the buffer between the curb and SUP in the area of St. Athanasius Church eliminates the conflict with the 54" waterline.

Colvin Run Stream Relocation - Our Team has modified the alignment of the stream relocation and is utilizing a variable width stream design minimizing the conflicts with the 54" Waterline:

- Phasing of the stream diversion and 54" waterline are critical to the Difficult Run bridge construction, since both the stream and waterline have TOYR. Eliminating the 54" waterline relocation will allow our Team to begin the stream diversion one construction season earlier than the RFP design. Eliminating the 54" relocation will also reduce the ROW impact to the FCPA property by reducing the area of utility easements needed.

Alignment Shift through Baron Cameron Avenue- Our Team's design shifted the alignment of Route 7, through Baron Cameron Avenue, to the south:

- This shift in alignment avoids the 15-way Verizon ductbank, reducing impacts to Verizon, AT&T Long Distance, MCI, and Zayo. A relocation of this ductbank would be a schedule risk due to each utility company needing to relocate their facilities in a linear fashion. This alignment allows our Team to keep the NB to EB free flow right turn lane above the limits of the existing 54" waterline casing, allowing us to avoid any relocation of the 54" waterline in this area.

Eliminate SWM Pond from Nike Park Property - Our Team has eliminated the SWM pond from the Nike Park property reducing the impact to several utilities in the area:

- Impacts to Washington Gas, Fairfax Water, Dominion Energy, and Verizon are eliminated, reducing cost and the amount of utility easements needed on Park property.

Schedule Integration

During the RFP phase, our Team began to coordinate with each discipline to develop phasing for each utility relocation. This advanced schedule coordination was the result of multiple discussions with each

utility owner, and historical data developed from our past experience with each owner on multiple design-build projects. Using that experience, and information we have received from our coordination with the utility companies, we developed the following utility relocation phasing:

1. Early phase utility relocations will include Verizon, Level 3, Fiberlight, and MCI preforming lift and lay activities inside of existing ROW. This allows our Team to begin utility relocations early, reduce the risk of ROW delays, and eliminate conflicts with road widening and storm drainage without needing ROW for utility relocations. Our Team has scheduled this early phase of utility relocations to be concurrent with our early MOT phases and work in the median. Once these utility relocations are complete, our Team will construct the outside widening and storm sewer.
2. The second phase of utility relocations will be utilities that are in conflict with the proposed road widening or storm sewer, cannot be adjusted in place, and require a relocation outside of VDOT ROW. These relocations have been coordinated with our construction and ROW schedule to identify which properties will be a priority. During this phase of relocations, our road construction will be a combination of median widening and outside storm sewer construction.
3. The final stage of utility relocations will address utility conflicts with the noise barrier, which require utility easements. These relocations are phased to be completed during our outside widening and storm sewer construction.

Strategy for Utilities Exceeding Timeframes

As we prepared this Revised Technical Proposal, our Team coordinated extensively with each discipline to develop a schedule and sequence of work for each utility relocation, as detailed in Section 4.6. This advanced schedule coordination has been developed through multiple discussions with each utility owner, and historical data developed from our past experience with each owner on multiple design-build projects. Since our Team's concept is able to avoid the need for many utility relocations, and sequence the work such that utilities are relocated in advance of the start of construction, we are able to schedule the Project without any utilities on the Critical Path. This allows our Team to phase construction efficiently, maximize the use of float and reduce the risk of delays to construction.

During construction, our Team keeps a detailed schedule for each utility relocation to determine if relocations are behind schedule, or shift to or near the Critical Path. To avoid any delays due to utility relocations exceeding timeframes, our Team has implemented several methods on past projects that have successfully kept utilities on schedule. These include:

- ***Performing In-Place Relocations -*** A key component to minimizing risk of delay, reducing the cost, and reducing the impact to the utility company will be performing in-place relocations. In areas where the existing conduit and cable has slack, we will perform a "lift and lay" relocation to avoid the time and cost of placing new conduit, cable and splicing. During our preconstruction meetings, we confirmed that MCI, Level 3, and Fiberlight all believe that they have slack in their cables and will be able to lift and lay in multiple areas throughout the Project. This will be a benefit in areas where we can adjust the facilities that are in conflict with the storm sewer and noise barrier, instead of performing a total relocation.
- ***Utilizing Spare Conduit in Verizon Duct Bank -*** Verizon's 15-way ductbank system contains fiber for AT&T Long Distance, MCI, Verizon, and Zayo. Each of these fibers will have to be relocated to existing splice points in areas where they are impacted by the Project. During our coordination with Verizon, our Team confirmed that we will be able to utilize spare conduit in the existing system. This will limit the amount of conduit and manholes that will need to be replaced and will still allow the utility companies to replace their fiber back to existing splice point.

- ***Difficult Run Bridge Construction Around Existing Verizon Duct Bank -*** Verizon's 15-way ductbank is currently on the south side of Route 7 and is in conflict with Phase 1 bridge construction of the Difficult Run Bridge. As discussed in Section 4.3.2, our Team has developed an abutment and pier design that allows the bridge to be built with the Verizon facility remaining in place. This phasing removes the Verizon relocation in this area from the bridge construction Critical Path.

Discovery of Unidentified/Non-Located Utilities

Discovering utilities during construction that are not shown in the RFP or located during design can delay the Project schedule and add cost. Mitigation of this risk begins in the RFP phase and continues during the design phase. During preparation of this Proposal, our Team met with each utility owner, reviewed as-built records, and thoroughly reviewed the facilities visible in the field. As we move through the design phase, we will confirm the presence of utilities by completing detailed records research, field designations, and test pitting. This information will be integrated with the design to address any new utilities that are found. Concurrently, our coordination with the utility companies will continue in earnest and include updating them on design progress, and conversely providing the design team updates from the utility companies themselves. These efforts will result in avoidance and minimization through design, or a detailed utility relocation plan. The Team will also develop a Project-specific "Utility Strike Prevention Plan" that outlines the procedures to be followed during construction to establish clear lines of communication and authority, train workers about safety policies when working around utilities, describe plans for utility strike avoidance, and address steps to be taken should a strike occur.

Once construction begins, field markings by Miss Utility will be compared to known utilities identified during the design phase and included in the plans. Additional investigations will be completed as necessary to resolve any discrepancies. Prior to the start of any field construction activities, crews will perform additional test pitting in their work area to verify that there are no unforeseen conflicts with the proposed work. If, during construction, an unforeseen utility is encountered, the crew will immediately cease work, notify the Utility Coordination Manager, CM and DBPM, and stabilize the work area. The Utility Coordination Manager will attempt to determine the owner of the facility and contact their field representative to investigate whether the utility is still active or abandoned. Concurrently, after an initial assessment is made, the CM will determine whether to move the crew to a different location/activity, direct the crew to remain to assist the utility performing the relocation, repair, or to provide general support. Once the parties have determined what efforts are required to address the unforeseen utility, the Team will update the Project CPM and evaluate for delays. If delays are expected, there are several steps that can be taken to mitigate these delays. On previous projects, our Team has successfully handled unforeseen utilities during construction by revising the design, adjusting the utility in place, assisting the utility with the relocation, performing a temporary relocation, and/or re-sequencing the work.

4.4.3 Washington Gas Transmission Line

Our Team has worked with Washington Gas to both move and maintain in place their 16" and 24" transmission gas line on previous projects, and we have developed a good working relationship with them. For example, on the Route 7/River Creek Parkway Interchange, and the Route 7/Loudoun County Parkway Interchange, our Team coordinated with Washington Gas to relocate approximately 3,200 lf of 24" transmission gas line. We also coordinated our design on the Route 7/Ashburn Village Interchange Project to avoid the same 16" transmission line. It is precisely our Team's experience working with Washington Gas on these projects that allow our Team to understand and minimize the risk associated with working around a transmission gas line.

During our preliminary meetings with Washington Gas to review their Project to upsize the existing 16” transmission gas line to a 24” line, we discussed their anticipated production and crew availability. This information is built into our Proposal Schedule as outlined in Section 4.6. Their work is phased to coincide with our construction schedule and substantially reduces the number of temporary cut overs needed.

Coordination of Design

During the preparation of our Revised Technical Proposal we studied the portion of Strip 1 and Strip 2 that Washington Gas has already designed, and we coordinated our design to avoid conflicts in those areas. By utilizing Washington Gas’ current design from their Drainesville Gate Station to Baron Cameron Avenue, Washington Gas will be able to construct that portion of their gas main while we coordinate the next phase of their 24” transmission main construction.

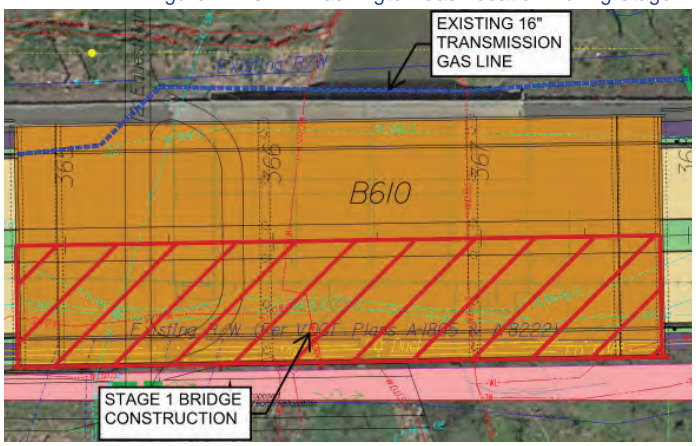
Early coordination during design will be critical to keeping Washington Gas on schedule. Our Team will begin immediate coordination with them to confirm that their early phases of construction will not conflict with our design. During our preliminary meetings with Washington Gas, we confirmed that they will co-locate a Washington Gas engineer in our office through the duration of design. This allows Washington Gas to advance their design as we receive test holes, set horizontal and vertical alignments, and complete our drainage design.
We also confirmed that Washington Gas will submit an early design package for the 24” main at approximately at the same time as our first submission roadway plans. The advanced design will allow Washington Gas to continue work inside of existing VDOT ROW while we are finalizing our design.

Mitigation Strategies

As previously discussed, our Team has developed our design concept to minimize the areas of the Project that are in conflict with Washington Gas’ existing 16” transmission line thus reducing the risk of the WGL Project delaying our Project. These mitigation strategies include:

- ***Phasing of the Difficult Run Bridge*** - Our Team’s sequence of work constructs the EB bridge first, as shown in Figure 4.4.3.1. This removes Washington Gas from the Critical Path in this area of the Project, giving them the maximum amount of time to complete their project.

Figure 4.4.3.1 - Washington Gas Location During Stage 1



- ***Modified Drainage Design*** - Our design optimized the drainage design to minimize conflicts with the 16” Washington Gas transmission line, allowing us to construct the majority of the storm sewer without needing the 16” transmission line relocated.

- ***Assisting with Site Preparation*** - During our coordination meetings, Washington Gas indicated that they are willing to coordinate site preparation with the design-builder. Through an agreement, Washington Gas would contract with our Team to handle rock, contaminated materials, or relocation of existing utilities in order to expedite the installation of the new 24” transmission line. This concept will be explored further once the Project has been Awarded.

Schedule Integration

During the RFP phase, as our Team developed our schedule, we integrated Washington Gas' 24" transmission construction into our sequence of work, as detailed in Section 4.6. This advanced schedule coordination has been developed through multiple discussions with Washington Gas, and continuing to coordinate any changes throughout design and construction will be critical to avoiding any delays.

Washington Gas will begin construction on Strip 1 from the Drainesville Gate Station to Great Passage Boulevard during the design phase of our Project, and anticipate being complete with that portion by Spring 2019. During discussions with Washington Gas, they have identified the number of crews that will be available for both transmission and distribution construction, and using that information, our Team developed the following sequence of construction for the WGL Project:

Phase #1: Washington Gas will construct Strip 2 and the portion of Strip 1 that is currently designed, from the Drainesville Gate Station to Great Passage Boulevard. Our Team's concept has been developed to avoid impacts to their design for their new 24" in this area. This work will be constructed concurrent with the design phase of our Project, and our Team will be coordinating with Washington Gas as they design the remainder of their 24" transmission main during this phase.

Phase #2: Washington Gas will continue the Strip 1 construction from Great Passage Boulevard to east of Baron Cameron Avenue (Station 237+00 to 318+00). During Stage 1, Washington Gas will utilize and additional gas crew to begin working from Station 469+00 to 523+00 to eliminate the conflicts between the existing 16" transmission line and the storm drainage in our second phase of construction. This Phase of Washington Gas' construction will begin during engineering and will extend to stage 1B, as reflected in our Project Schedule.

Phase #3: From Station 318+00 to 372+00 the existing 16" transmission line is along the outside of the WB lanes, and is in conflict with the Final Stage of the Difficult Run bridge construction. This phase of Washington Gas' construction will follow their Phase 2 construction, and will be performed simultaneously with our Stage 2 construction in this area. We have phased the Difficult Run bridge to construct the EB lanes first, eliminating early conflicts with the existing 16" transmission line.

Phase #4: From Station 372+00 to 469+00 our Team's concept has adjusted the horizontal alignment, and modified the drainage design to eliminate the majority of the conflicts with the existing 16" transmission line. This allows our Team to construct Stage 1, Stage 2, and portions of Stage 3 of roadway construction without working near the existing 16" transmission line while Washington Gas completes their relocation.

Each temporary connection required to phase Washington Gas' work will require multiple crews for up to a month to test the line, prepare the connection pits, and complete the connection. Tying up multiple crews to complete temporary connections can extend the schedule, so our Team has phased the Project in the order described above to allow our Team to reduce the number of temporary connections. Reducing the temporary connections will reduce the cost to Washington Gas, minimize disruptions to Washington Gas' system, and will reduce the overall duration of their Project.

4.4.4 Stakeholder Communication

Major Stakeholders and Communication Approach

Few design-build projects in Northern Virginia have ever directly impacted as many individual stakeholders as the Route 7 Corridor Improvements Project. Given VDOT's extensive public engagement during Project development, the Shirley Team is keenly aware of the importance that stakeholder communications will

have on the Project's success. To focus on and manage this crucial scope element, we will establish a Communications and Outreach Program led by our Public Relations Specialist, Leslie Pereira. She will act as the liaison with the VDOT NOVA Communications staff, will report directly to the DBPM, will be an integral part of the design-build team, and will regularly attend design and construction meetings.

The primary objective of the Program will be to establish open lines of communication with all major stakeholders, including:

- The Route 7 Working Group;
- Fairfax and Loudoun Counties;
- HOA's/Citizens Associations;
- Local residences, businesses and commuters;
- Churches, including McLean Bible Church;
- Tysons Partnership;
- Police, Fire and Rescue including Fairfax County and the Virginia State Police;
- MWAA;
- Fairfax Connector and WMATA bus services;
- Wolftrap Center for the Performing Arts;
- Fairfax County Park Authority (FCPA);
- Fairfax County Public Schools;
- News media; and
- Adjacent projects.

The stakeholders impacted are highly educated, well informed and savvy, and the goal of our Team will be to engage and keep them focused on the benefits to come, the means and methods of the design and construction processes, our progress, to mitigate concerns, and build trust and support.

To start the Project off in a positive direction, our Team will plan and host an ***Open House*** within 120 days of Award. We envision this as a great opportunity for us, in partnership with VDOT, to introduce our Team to the stakeholders in an informal setting over a BBQ lunch, provide an overview of the Project and the design-build process, outline and address public safety, and begin to establish lines of communication.

Communications Plan for Design and Construction

Within 45 days of the Project's Date of Commencement, our Public Relations Specialist will develop a comprehensive ***Communications Plan*** and present it at a face-to-face meeting with VDOT staff for comments and suggestions. Once finalized, it will be published to all members of the Team. The Communications Plan will be inclusive of all Project phases, including design and construction, and will remain a dynamic document that will be continually adapted to evolving conditions and interested stakeholders. In general, it will include, but not be limited to, the plan elements described below:

- Identify specific outreach goals and strategies for engaging stakeholders and increasing public awareness;
- Define Project communications so all parties understand and are comfortable with reporting requirements, roles, and responsibilities to ensure cohesive and coordinated messaging to the public;
- Define processes and policies for issuing information, including review and approval by VDOT's Public Relations staff;
- Identify Project stakeholders and outline specific areas of concern for each;
- Develop information mailing and email distribution lists that include stakeholders, the media, and individuals who wish to self-register via the Project website (www.connectroute7.org);

- Generate content for VDOT's social media account use, including Twitter and Facebook;
- Provide for regular update meetings with key stakeholders, such as the Route 7 Working Group, local governments, HOA's, and others;
- Seek opportunities to present information regarding the Project to stakeholders;
- Identify and participate in community events where interest is likely to be particularly high, such as the Sterling, McLean, and Herndon Festivals; and
- Define means and methods for sharing information within the Project Team, and externally with other relevant agencies such as Fairfax and Loudoun County's Departments of Transportation, Fairfax County Park Authority, the Tysons Partnership, and others.

The Communications Plan will define key messages to relate to the Project's stakeholders, such as:

- Emphasize the benefits the Project will bring to the community, the travelers and businesses that rely on the Route 7 corridor;
- Honestly address the impacts that will come with construction and establish realistic community expectations;
- Explain the efforts and mitigation methods the Team will employ to lessen those impacts wherever possible;
- Build trust in our capabilities by "introducing" our Team, its leadership and staff, and emphasizing our years of experience and success designing and building similar road projects;
- Explain our safety practices and underscore that public safety is a shared responsibility and a core value of the Team; and
- Demonstrate that we are committed to delivering the Project on schedule, within budget and with the highest standards of quality.

Keeping Stakeholders Informed

Over our Team's 16 year history of successfully performing design-build projects for VDOT, we have developed numerous effective strategies for communicating with stakeholders. These include:

1. **General Project Information:**
   - Enhance the www.connectroute7.org website with up-to-date information. The website will be continually maintained as the first and most convenient way to access information, and will include the Interactive GIS Map, progress photos, schedule, budget, and other relevant details;
   - Capitalize on opportunities to provide presentations to interested parties, including, at a minimum, four ***Public Information Meetings*** during the design phase, and ***Pardon Our Dust Meetings*** before the start of each major construction phase;
   - Develop a schedule for specific stakeholder information meetings to, for example, the Route 7 Working Group, HOA's and church groups;
   - Milestone achievements will be identified and celebrated, including planning and hosting a ***Groundbreaking Ceremony*** and ***Ribbon-Cutting Ceremony***;
   - Work with County Supervisors' transportation staff to identify transportation committee or other meetings where project updates can be provided; and
   - Participate in relevant local festivals and events such as the McLean Festival, Herndon Festival and SterlingFest.

2. **Maintenance of Traffic Activities:**
   - Weekly lane closure notifications will be uploaded to VDOT's LCAMS system and distributed through the email distribution list;
   - Daily reminders of nighttime construction activities will be distributed via email and coordinated with VDOT for release via social media;

- Portable Changeable Message Signs (PCMS) will be posted in a timely manner and at appropriate locations to advise motorists of planned construction activities, detours, new traffic patterns, and lane closures;
- Notifications describing significant construction events such as major traffic shifts and detours will be distributed via email and coordinated with VDOT Public Relations staff for release to the media, posting to the Project website and social media;
- When necessary, our outreach staff will distribute information door-to-door regarding upcoming activities that may impact specific neighborhoods or businesses, or to respond to questions or complaints if it is determined that in-person contact would be the most effective means of providing information or resolving conflicts; and
- Implementing an Emergency Access Plan that is communicated with all first responders. Plan will establish a 24/7 emergency contact list, delineate work area access points, and identify changes to the local road network during construction phasing.

3. Dedicated Construction Hotline:

- The Outreach staff will establish a dedicated Construction Hotline where stakeholders will be able to ask questions, express concerns or make comments at any time day or night. Our Team will hire a 24/7 professional answering service that will email inquiries to the Team within an hour of receipt. When calls come in outside of "normal" business hours, the service will have a "call-down" contact list that will ensure a Team member is notified by phone. That Team member will decide whether the call requires an immediate response, or whether it can be returned during normal business hours. In any event, first contact with the caller will occur within 48 hours of receipt. The Outreach office will maintain a database of all inquiries and how each issue or concern was addressed.

4. Project Website (www.connectroute7.org)

- The website will act as an information outlet for progress and will be interactive, providing access to an up-to-date interactive GIS Map of the design details. This map will allow users to explore the design through layering pulldowns that can be toggled on/off for ease of viewing.
- We will coordinate with VDOT's staff to provide status updates of design and construction, including progress photographs, schedule and budget updates, and release of appropriate design documents and studies, such as the final noise analysis.
- The website will provide viewers with the opportunity to sign up to receive Project information by email. These emails, along with all other stakeholder emails, will be compiled into a comprehensive email distribution list and utilized to distribute notices and information as outlined above; and
- To foster local hiring and DBE participation, the website will contain a link to our company website that will provide guidance for those who may be seeking employment, businesses that may be interested in subcontracting opportunities, and information specific to Disadvantaged Business Enterprise (DBE) participation.

5. Complaint Resolution

- The Communications Plan will outline the process for resolving specific complaints or addressing community concerns and questions. Each stakeholder inquiry will be logged into a database outlining the date and time of the inquiry, the stakeholders name and contact information, the question or concern raised, and the response. Should the response generate continued dialog, the additional comments and responses will be similarly recorded. All responses to the public will be coordinated with VDOT; and
- Outreach staff will participate in the orientation process for field personnel by providing guidelines for how to manage on-site questions or complaints that may come from the media or members of the community.

6. Emergency Communications and Media Plan

- The Communications Plan will provide a section on managing public distribution of information in the event of an emergency situation. It will address the roles and responsibilities of all parties and specifically detail the procedures to be followed should such a situation occur; and
- While the plan will focus on the Project specific communications, we will expect to work with VDOT's Communications staff to ensure that the plan will conform with and integrate into all general VDOT procedures already in place, including the *VDOT Policy Manual for Public Participation in Transportation Projects*.

Contribution to Successful Delivery

Residents, businesses, and commuters will all benefit from the improvements to Route 7 that will come at the conclusion of the Project, but it can be very difficult to remember the rewards when caught in a traffic jam or attempting to leave a church parking lot at the end of services. The Outreach Team's efforts will be focused on engaging the public and stakeholders, raising Project awareness, providing interesting and helpful information as the Project progresses, and paying personal attention to problem solving and building good will. The benefits of a successful stakeholder communication program are numerous and immeasurable, but include:

- Maximizing public safety by increasing awareness of changes to expected routines,
- Minimizing delays to the public and construction inefficiencies by providing advance notice of MOT operations and options for alternate routes,
- Generating and maintaining public and governmental support,
- Avoiding issues that cause public anger and frustration,
- Improving opportunities for mutual cooperation between the Project and stakeholders,
- Advanced identification and resolution of Project issues and concerns,
- Reducing risk of schedule delays and cost increases arising out of public challenges to planned scope, and
- General building of public support for VDOT's overall design-build program.

4.4.5 Right-of-Way Management

Management Approach

The right-of-way (ROW) acquisition process is always a key element to the success of a Project and is a critical component for this Project due to the large quantity of property acquisitions, substantial amount of utility easements required prior to commencement of relocations and the Project's schedule.

To address these risks, our ROW acquisition Team includes two VDOT prequalified ROW firms, Bowman Consulting and Diversified Property Services, Inc., two Title firms, Key Title and Carteret Title, LLC, and our in-house ROW Manager, Ryan Marrah. Having the resources of multiple firms enables our Team to adapt and adjust to changing priorities, finalize a large amount of acquisitions simultaneously and dedicate independent resources to priority areas throughout the Project. In addition, all firms have committed to providing supplementary resources and personnel as necessary to maintain the schedule.

Our ROW process is summarized in Figure 4.4.5.1. It begins with early communication and coordination with affected landowners and is essential to facilitating the ROW acquisition process. Our Team will send notification letters to property owners at the beginning of the design phase of the Project. This letter will notify the landowners of the Project, impacts to their property and the Project's schedule. This early engagement provides the landowner with an opportunity to ask questions, discuss their concerns and provide any unique unknown characteristics associated with their property. This coordination allows

Figure: 4.4.5.1 - Right-of-Way Process

our Team to develop a relationship with the landowner that may produce early access to the property with a right-of-entry agreement or an expedited voluntary agreement. A willingness to coordinate with and accommodate landowner's requests also helps to generate and sustain public support for the Project.

As design gets underway, our Team will hold a coordination meeting to be attended by the Project's Key Personnel, our ROW Manager, representatives from Bowman Consulting and Diversified Property Services, and VDOT ROW acquisition staff. The objective of the meeting will be to present our ROW Acquisition Procedures and Plan and to focus on ways to streamline all aspects of the process to expedite approvals. The parties will discuss the staffing requirements necessary to complete the acquisition of approximately 240 parcels on an expedited schedule and ensure workloads are met. This meeting will serve to foster a better understanding of the ROW acquisition schedule and create buy-in by our Team and VDOT ROW staff. In addition to the initial coordination meeting and prior to commencement of the appraisal process, our Team will provide VDOT ROW Appraisal Review Staff with a four week Look-Ahead schedule that includes the expected timing of appraisal submittals to VDOT. Our Team will provide the schedule on a bi-weekly basis and additional updates as necessary. This schedule is intended to inform VDOT of the timing and amount of appraisals to be submitted. During the negotiation process, our Team will provide a bi-weekly schedule to the VDOT ROW staff detailing the expected timing and amount of Acceptance packages and Certificate of Take package submittals. The objective of this schedule is to provide VDOT with the expected workload during the duration of this segment of the process, and are intended to provide a continuous line of communication between our Team and the VDOT ROW staff to ensure workloads are met and the ROW acquisition process is completed within the Project's Schedule.

A key focus during the design phase is on developing accurate plans in an effort to minimize VDOT review durations and expedite ROW plan approval in order to commence ROW Acquisitions. Our ROW Manager will coordinate closely with our Utility Coordination Manager to confirm utility easements. Communication with utility owners and review of Title Reports will determine if the easement will be acquired in the name of the utility owner or as a VDOT Utility easement. The ROW Manager and Utility Coordination Manager will perform a constructability review of the plans prior to formal submission to VDOT. The ROW Manager will confirm property ownership by reviewing the latest Title update, verify all existing easements are shown on the plans, and confirm limits of proposed easements are correct. The Utility Coordination Manager will review each utility relocation with each utility company to confirm

that the location, easement width and name of the utility company are correctly shown on the plans. This review process ensures the accuracy of the plans and expedites VDOT review and approval durations.

The appraisal process will start after second submission roadway plan comments have been addressed. Each firm will be assigned separate priority areas to maximize use of resources. Offer packages will be prepared and once the appraisal has been approved by VDOT, our negotiators will contact landowners to schedule a meeting. The negotiators will present the offer package documents and review the Project's impact to the property. Our ROW Manager will address the landowner's concerns, provide answers to the landowner's questions and meet with the landowner as requested. Negotiations will continue until a voluntary acceptance is obtained or there is an impasse. Acceptance or Certificate of Take (COT) packages will be prepared and submitted to VDOT for review and approval. Our negotiators will continue to remain in contact with the landowner, in an effort to obtain an acceptance, until the COT has been filed. For voluntary acceptances, VDOT sends the closing documents and the compensation check to our settlement companies. Our settlement company coordinates with the landowner and lenders to finalize settlement and redecoration of a Deed or Agreement. Throughout the process the status of each acquisition will be continually entered into the RUMS database.

Minimizing Impacts to Fairfax County Park Authority Parkland During Design and Construction

Our Team has developed several design concepts to minimize and reduce proposed ROW impacts to the FCPA Parkland properties as well as decrease the amount of disturbance to these areas. These include:

1. Our design has eliminated the proposed SWM pond on parcel 021 (FCPA Park ID – Great Falls Nike Park). This removal enables the proposed ROW area to be reduced and decreases the amount of disturbance in this area.
2. The horizontal alignment of Route 7 was shifted to the north to reduce impacts to the Parkland properties at Difficult Run and Colvin Mill.
3. Our Team modified the alignment of the Difficult Run Stream to allow the majority of the existing 54" water main to remain in place. This design modification eliminates the need to acquire a Fairfax County Water Authority easement and reduces the amount of construction and disturbance within the Parkland property.
4. Our design includes placing all existing communication lines on the new bridge crossing Difficult Run. This eliminates relocation of these lines and the need to acquire a VDOT Utility easement from FCPA.

Schedule Integration

Beginning in the procurement phase, and continuing throughout the Project's duration, the ROW acquisition process must be well coordinated with the design, utility and construction disciplines. During the RFP phase and preparation of our Proposal Schedule shown in Section 4.6, our Team focused intently on the ROW planning and prioritizing the acquisition process. This factored heavily into our Sequence of Work strategy of separating the Project into four Areas, the development of the Stages within these Areas, and the dedication of multiple ROW and Title firms to our Team. Once the Project is Awarded, our ROW and Utility Teams continually review all aspects of the design and utility relocations to minimize impacts to properties. In addition, we are focused on creating solutions to eliminate and avoid impacts to properties where practical. Once impacts are finalized, the Schedule is updated and modified as needed to reflect the acquisition priorities and confirm that resources are adequate.

Throughout the process, our Team will implement several strategies that are proven to reduce the risk of schedule delays. These include:

- Early, continuous and open communication with property owners;
- Integration with design to ensure accuracy;
- Multiple constructability reviews;
- Confirming property ownership with multiple Title Report updates during design and the appraisal process;
- Detailed coordination with utility relocation and construction;
- Prioritizing acquisitions requiring special negotiations such as churches, FCPA and Fairfax County Board of Supervisors;
- Early commencement of the appraisal process for parcels that do not contain a proposed utility easement, or are a total take (if any).

As detailed in our Proposal Schedule, our Team has prioritized the acquisition of properties to coincide with the planned utility and construction phasing. Table 8 outlines these acquisition priorities.

Table 8 - Property Acquisitions and Number of Parcels

Number of Parcels			
Priority	**Stage**	**Diversified Property Services, Inc.**	**Bowman Consulting, Inc.**
1	Segment 2A - WB	23	
	Segment 2A - EB		30
	Segment 3A - EB	10	
	Segment 4A - WB		10
	Segment 4B - WB	19	
	Subtotal	**52**	**40**
2	Segment 4C - WB		20
	Segment 4D - WB	1	
	Segment 4C - EB		14
	Segment 4D - EB	8	
	Segment 4B - EB		13
	Subtotal	**9**	**47**
3	Segment 4A - EB	24	
	Segment 3A - WB		3
	Segment 1D - EB	9	
	Segment 1C - EB		20
	Segment 1B - EB	6	
	Subtotal	**39**	**23**
4	Segment 1A - EB		2
	Segment 1D - WB	1	
	Segment 1C - WB		6
	Segment 1B - WB	6	
	Segment 1A - WB		7
	Subtotal:	**7**	**15**
	Totals:	**107**	**125**

Approach to Addressing Recognized Areas of Concern

The legal nature of the ROW acquisition process dictates the required procedures, steps, and their order of completion, that must be adhered to. As we have gained experience over the last 16 years implementing the acquisition process in a design-build format, we have learned that it is critically important to identify and plan for numerous areas of concern that can adversely affect a project's schedule if not managed properly. These include:

Schedule Maintenance and Monitoring - Throughout the Project, our ROW Team will conduct weekly progress meetings. The objective of these meetings is to monitor the progress of each aspect of the ROW process, ensure workloads are being met by those responsible, provide updates, assess the current status of our progress as it relates to the schedule, re-prioritize and adjust resources if necessary, and develop a two-week Look-Ahead Schedule. In addition, our Team will be in continuous communication with the VDOT ROW staff by providing the Look-Ahead Schedule and Status Report updates.

Landowner Communication - Early and continuous communication and coordination with landowners facilitate the acquisition process. Managed by our ROW Manager, the landowner's concerns and questions will be addressed early in the process to avoid delays in negotiations.

Design Accuracy - The accuracy of the plans can have a significant effect on the schedule should corrections be required. Our ROW Team is well integrated into the design process and coordinates closely with all disciplines. In addition, multiple constructability and plan check reviews are performed to ensure accuracy of the plans and to expedite the review and approval process by VDOT.

Ownership Confirmation - Our Team will order Title Reports at the beginning of the design phase and is committed to ordering Title updates throughout the design and appraisal process. This process will identify any changes in ownership and minimize Plan revisions and delays due to sale of properties, divorce or death of an owner.

Knowledge of Landowner's Development Status - As we work through acquisitions, landowners may be in various stages of planning developments on their property. Our Team will coordinate with Fairfax County to research development applications and site plan submittal status. Early awareness of planned developments will enable our Team to coordinate the design with the landowner and avoid revisions to plans and appraisals that may delay negotiations and settlements.

Acquisitions of Public Entities and Churches - The durations of these negotiations may extend longer than other acquisitions. Prioritizing acquisitions of FCPA, Fairfax County Board of Supervisors and churches will ensure access to these parcels is obtained on time.

Duration of ROW Acquisition Process - We anticipate that approximately 230 properties may need to be acquired within a condensed timeframe. To address this concern, our Team includes two VDOT pre-qualified ROW firms - Diversified Property Services and Bowman Consulting, Inc., and two Title firms – Key Title and Carteret Title, LLC. These resources will enable our Team to meet the priorities outlined above.

Advance ROW Acquisition without Utility Easements - Based on our Team's design and utility coordination, approximately 100 parcels do not contain a proposed utility easement. Accordingly, our Team will begin the appraisal process on these parcels as an early priority. This advanced commencement of appraisals will save considerable time and alleviate concern about the duration of the Project's overall ROW acquisition process.

4.5 - Construction of the Project

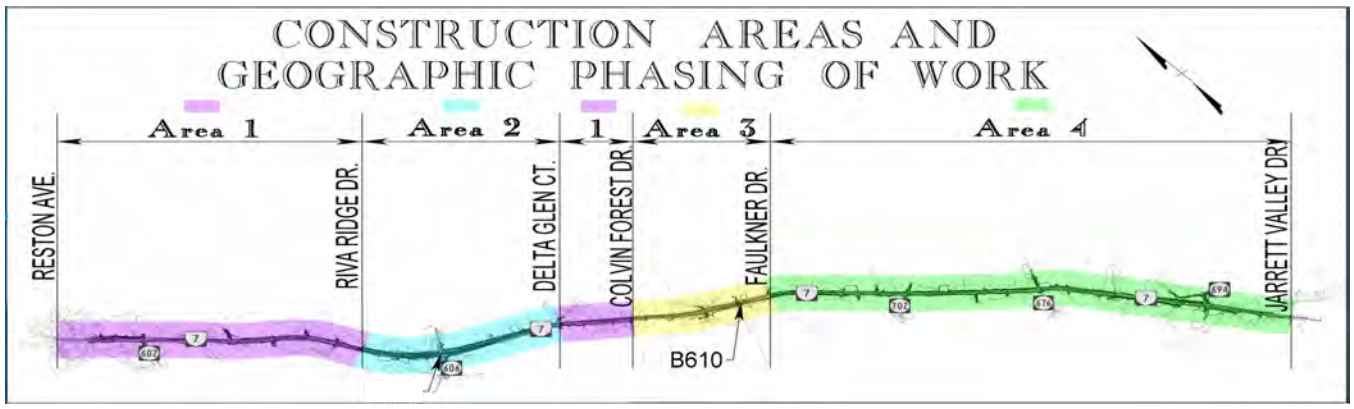
4.5 Construction of the Project

4.5.1 Sequence of Construction

Our sequence of construction divides the corridor into four unique construction Areas based on four unique geometric conditions. The limits of these areas are shown in Figure 4.5.1.1.

- **Area 1** corresponds to the portion of the Project west of Colvin Forest Drive excluding the intersection at Baron Cameron Avenue. This portion of the corridor has a wide median which affords the opportunity to construct more permanent asphalt in earlier Stages.
- **Area 2** is defined as the intersection at Baron Cameron Avenue.
- **Area 3** is defined as the portion of the roadway between Colvin Forest Drive and Faulkner Drive including the Route 7 bridges over Difficult Run and associated stream relocation.
- **Area 4** corresponds to the portion of the Project east of Faulkner Drive. This portion of the corridor has a narrower median which restricts construction of permanent asphalt with later construction Stages.

Figure 4.5.1.1 - Construction Areas and Geographic Phasing of Work



The sequencing of these four Areas allows our Team to maximize construction efforts while reducing impacts to the traveling public. The amount of permanent pavement construction in each Stage is maximized to limit the number of traffic shifts required for construction. A reduction in traffic shifts minimizes the potential for schedule delay and reduces confusion and other impacts for the traveling public.

Within each Area, our sequence of construction utilizes three Stages of roadway construction that corresponds to our Team's Transportation Management Plan (TMP). Each Stage relates to a major traffic control sequence as construction activities progress.

Mitigating Delays

Due to the magnitude of the scope, utility relocations and ROW acquisitions pose the biggest risk to the schedule. Our sequence of construction was developed to mitigate the ROW and utility relocation risk by maximizing the scope of construction in early Stages within existing ROW and without impacting existing utilities.

In general, the first construction Stage focuses on permanent construction in the existing median and requires no ROW acquisition and minimal utility relocations. This allows for permanent pavement construction to start in Summer of 2019 and permits five construction seasons to complete roadway construction. In the second Stage, permanent pavement construction takes place on the side of the road

with the least complex utility relocation sequence. This allows significant construction work to proceed while the utility relocation process is completed. In the third Stage, permanent pavement construction takes place on the side of the road with the most complex utility relocation sequence. This staging allows utilities approximately one year to complete less complex utility relocations in the advance of Stage 2, and two years to perform more complex utility relocations for Stage 3, thereby greatly reducing risk of schedule delay.

Our Team plans to mitigate schedule risk by keeping utility relocations off the critical path as much as possible. In addition to avoiding existing utilities with the construction sequencing, our Team has also identified opportunities to work around existing utilities. Stage 1 takes place on top of the existing Verizon communications ductbank on the west end of the Project. Existing manhole structures will be reconstructed to support traffic loading where required. Our sequence has been developed to relocate the Verizon ductbank at the bridge over Difficult Run in the first Phase of the bridge to mitigate schedule risk. Once the EB bridge is complete, the facilities in the ductbank will be installed beneath this new EB bridge while construction of the westbound (WB) bridge is underway.

The upgrade of the Washington Gas Transmission main has been identified by our Team as a potential source of delay risk to the schedule. To address this risk, our Team has reached out to Washington Gas to coordinate the sequence of their relocation and to maximize float. In addition, there has been coordination with Washington Gas to provide additional crews to accelerate the completion of relocation activities. Our Team has identified and communicated to them the areas where the existing facility conflicts with proposed construction and prioritized their relocation in these Areas. The result is that the WGL Project stays off the Project Critical Path, and this construction sequence does not increase the number of tie-ins to the existing system. Upon Award, our Team plans to implement the following actions to coordinate with Washington Gas:

- Resume discussions and schedule coordination with Washington Gas;
- Discuss addition of resources to accelerate work;
- Identify multiple work areas to provide flexibility; and
- Prioritize the WGL Project within the Project Schedule;

The first two priority segments of the Washington Gas Transmission main to be relocated will resolve conflicts with the installation of storm sewer during Stage 2 of roadway construction. One segment begins in the west at Great Passage Boulevard and continues to a point east of Baron Cameron Avenue. The other section begins at Station 470+00 and continues to the east end of the Project. Once the tie-ins on these two sections are complete, work will move to a segment that conflicts with construction at Difficult Run during Stage 3. The last segment planned for relocation does not conflict with any Stages of project construction. Details of the WGL Project schedule are identified in each Area's sequence of work later in this section.

The following narrative provide a detailed description of our sequence of construction in each Area of the Project.

Area 1 - Western Terminus to Colvin Forest Drive

(Excluding Baron Cameron Avenue Intersection)

Area 1, Stage 1A – Strengthen Outside WB Shoulder and Wedge Overlay

In Area 1, all work in Stage 1A and 1B is contained within the existing ROW. Therefore, construction will commence upon approval of the Advance TTC Plan set while ROW acquisition and utility relocations are ongoing, mitigating the potential for schedule delays due to issues with ROW acquisition and utility relocation.

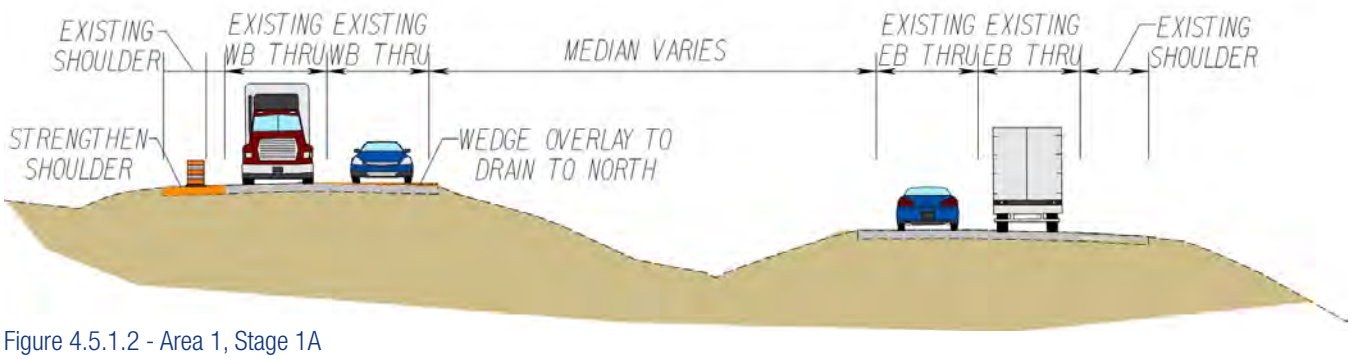


Figure 4.5.1.2 - Area 1, Stage 1A

Stage 1A work will consist of two components: strengthening the outside WB shoulder and installing an asphalt wedge in the left WB lane to facilitate positive drainage during construction. Shoulder strengthening enables our Team to shift the two WB lanes to the north and maximize the width of the permanent pavement section constructed in Stage 1B, allowing the WB pavement to be constructed in two Stages.

Prior to shoulder strengthening, temporary signals will be installed at each signalized intersection and the existing signals will be taken out of service. During shoulder strengthening, the existing WB variable depth asphalt shoulder will be removed and replaced with temporary base and intermediate asphalt. This operation will be performed during off-peak lane closures. At the same time, temporary right turn lanes will be constructed in the WB direction. Following the shoulder strengthening, an asphalt wedge will be milled and overlaid onto the portion of the existing left WB lane that is utilized for traffic movement to provide positive drainage during construction.

Area 1, Stage 1B – Construction of Permanent and Temporary Pavement in Existing Median

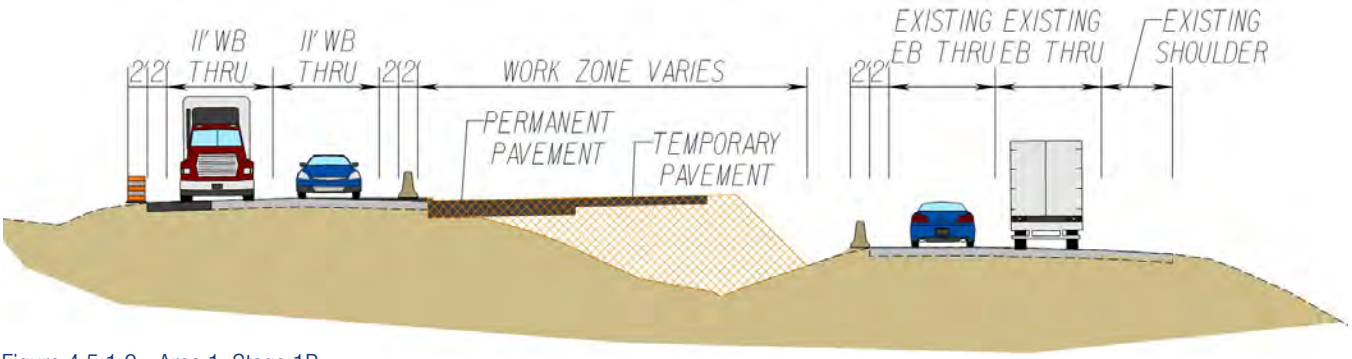


Figure 4.5.1.3 - Area 1, Stage 1B

At the beginning of Stage 1B, the two WB lanes will be shifted onto the strengthened shoulder. Barrier will be placed along the outside edge of the relocated WB left lane to protect the work area. Temporary signals will be adjusted to this configuration.

Stage 1B focuses on constructing a portion of the permanent WB pavement section in the existing median as well as additional temporary pavement that will be utilized in the following Stages of construction. The permanent pavement will be constructed adjacent to the barrier service. Additional barrier will be placed on the left shoulder of the existing EB lanes to protect the Stage 1B median work zone.

The width of the permanent and temporary pavement constructed in Stage 1B will vary depending on whether a left turn lane is required in the WB direction. The total median pavement width will be constructed to accommodate two lanes of EB traffic in Stage 2.

Roadway work in this area will involve stripping topsoil from the median and removing any unsuitable soils. Structural fill will be brought in from other areas in the project or imported from off site. Once the proposed subgrade is established, it will be cement stabilized and CTA will be placed. The first lift of base asphalt will be placed on top of the CTA. Grading and placement of subbase stone for the future temporary asphalt will then take place. The temporary base asphalt will be placed concurrently with the second lift of base asphalt on the permanent pavement section. A lift of intermediate asphalt will then be placed across both the permanent and temporary pavement sections.

Where a WB turn lane is required, permanent pavement for the turn lane will be constructed while traffic is maintained on existing pavement. Once the turn lane pavement is complete, turning traffic will be shifted to the new pavement and the existing pavement will be removed and replaced.

Reconstruction in intersections to build permanent pavement for the future WB lanes will take place using off peak lane closures. Some of the existing intersections, such as Reston Parkway, have significant bifurcation where WB lanes are at a higher elevation than the EB lanes. Asphalt wedging at intersections with a significant bifurcation will be required to transition traffic from the proposed grade in the WB lanes to the existing grade in the EB lanes.

During Stage 1B, any permanent longitudinal storm sewer in the future median will be installed prior to permanent pavement construction. In addition, the first Stage of transverse storm sewer crossings under Route 7 will be installed using conventional methods. Most of the work will take place over the existing Verizon ductbank that will remain in place at completion. Existing manholes will be reconstructed to match the proposed pavement grades.

Area 1, Stage 2 – Construction of Permanent EB Lanes

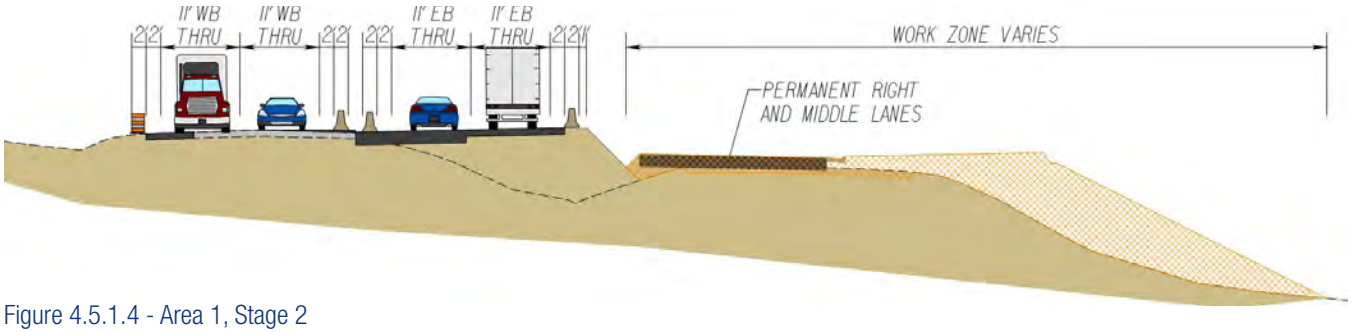


Figure 4.5.1.4 - Area 1, Stage 2

After completion of Stage 1B, the two existing EB lanes will shift onto the permanent and temporary asphalt constructed in Stage 1B. The position of the two WB lanes will not change in this Stage. EB and WB traffic will be separated by barrier. Temporary signals will be adjusted for this new configuration.

In Stage 2, three lanes of permanent pavement will be constructed in areas where no left turn lanes must be maintained. Where left turn lanes must be maintained, a minimum of two lanes of permanent pavement will be constructed. The existing pavement will be milled and removed where it is not being reused. Cut to fill activities will then take place concurrent with the installation of proposed drainage facilities.

Once the storm drainage is installed and the subgrade is established, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section through intermediate asphalt will be constructed. Where three lanes of permanent pavement are constructed, both the outer CG-7 and the inner CG-3 will be placed. In areas where the full width of pavement cannot be constructed,

at least 26' of asphalt will be built. If the full pavement width is not constructed, one or both curbs may be omitted for this phase. Once the intermediate asphalt is placed, temporary pavement markings and barrier service will be placed to facilitate two EB lanes in Stage 3.

Area 1, Stage 3A – Completion of Permanent WB Lanes

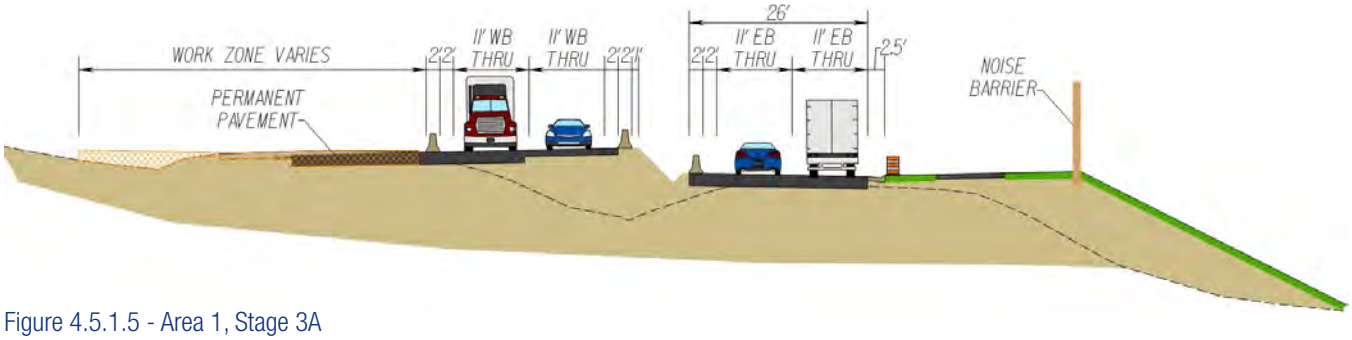


Figure 4.5.1.5 - Area 1, Stage 3A

At the beginning of Stage 3, the two EB lanes will be shifted onto the permanent EB pavement constructed in Stage 2. This will be the second and final shift for the two EB lanes in Area 1. The two WB lanes will be shifted on to the permanent and temporary pavement constructed in the existing median in Stage 1B. EB and WB traffic will be separated by barrier. Temporary signals will be adjusted for this new configuration. In Stage 3A, the remainder of the permanent WB pavement will be constructed. The existing asphalt, including the outside shoulder strengthened in Stage 1A, will be milled and removed where it is not being reused. Cut to fill activities will then take place concurrent with the installation of proposed drainage facilities.

All drainage work will be completed during Stage 3A. Once earthwork and drainage are complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section through intermediate asphalt will be constructed including the outer CG-7 curb. After curb placement, the final lift of base asphalt and the intermediate asphalt will be placed. Temporary pavement markings will then be placed to facilitate two WB lanes in Stage 3B.

EB Noise Barrier and Multi-Use Trail

While Stage 3A roadway construction is underway on the future WB lanes, noise barrier construction will take place adjacent to the EB lanes. Constructing the noise barriers in a later Stage than the adjacent roadway construction in Area 1 allows more time for right-of-way acquisition and utility relocation. Where the work area for noise barrier installation is not outside of the clear zone for the EB lanes, barrier will be installed to protect the work area. Once the noise barriers are complete, conduit for the proposed ITS and lighting systems will be installed and the EB multi-use trail will be constructed.

Area 1, Stage 3B – Completion of Permanent EB Lanes, Median, and Left Turn Lanes

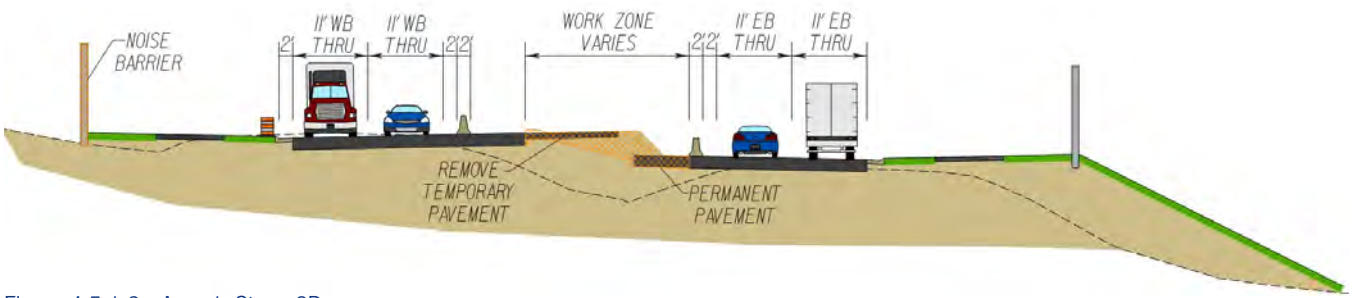


Figure 4.5.1.6 - Area 1, Stage 3B

At the beginning of Stage 3B, the two WB lanes will be shifted onto permanent pavement constructed in Stages 1B and 3. The position of the two EB lanes will not change in this Stage. At this point, the two right-most EB and WB lanes will be operational in their final location. The final adjustment to the temporary signals will take place.

Temporary asphalt placed in the median during Stage 1B will be removed. Cut to fill activities will take place to establish the final grade of the remaining EB permanent pavement and permanent EB left turn lane pavement.

Once earthwork is complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section will be constructed through intermediate asphalt. The inner CG-3 curb will be placed along the WB lanes, the left turn lanes, and any place along the EB lanes where it was not installed in Stage 2.

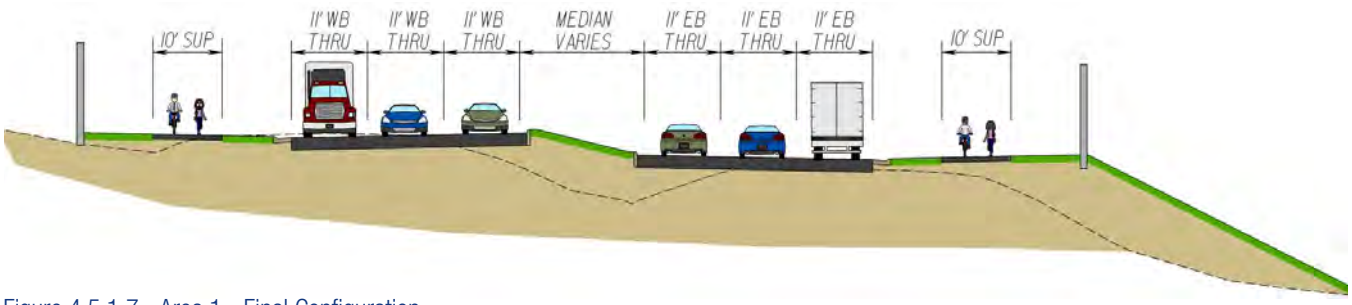


Figure 4.5.1.7 - Area 1 - Final Configuration

Unique Milestone #1

In Stage 3B, construction of all permanent pavement in Area 1 will be completed. Once permanent pavement construction through intermediate asphalt is completed west of Riva Ridge Drive, the third EB and WB lanes will be opened to the west end of the Project. This will occur no later than October 25, 2022 and represents our Team's Unique Milestone #1. ***This provides benefits to the public by opening 3-lanes in each direction at the western limits 19 months before the Final Completion Date.***

Surface asphalt will be placed and permanent traffic control devices, including signs and signals, will be installed after the Unique Milestone is achieved. In addition, the Unique Milestone is exclusive of trail and noise barrier construction. Upon completion of these activities the roadway will be in its final configuration as shown in Figure 4.5.1.7.

WB Noise Barrier and Multi-Use Trail

While Stage 3B roadway construction is underway on the future left EB lane and left turn lanes, noise barrier construction will take place adjacent to the WB lanes. Constructing the noise barriers in a later Stage than the adjacent roadway construction in Area 1 allows more time for right-of-way acquisition and utility relocation. Where the work area for noise barrier installation is not outside of the clear zone for the WB lanes, barrier will be installed to protect the work area. Once the noise barriers are complete, conduit for the proposed ITS and lighting systems will be installed and the westbound multi-use trail will be constructed.

Area 1 – Washington Gas Sequencing

The first relocations of the Washington Gas Transmission line take place in Area 1. Washington Gas is planning to relocate two sections of transmission line in Area 1 starting in Fall of 2018. The relocations of

these two lines start just east of Utterback Store Road and continue east to Great Passage Boulevard. These relocations are planned for completion in Spring 2019. The next relocation will start at Great Passage Boulevard and continue to a point east of the intersection with Baron Cameron Avenue. The section that is relocated in 2019 will be tied over to the existing pipeline in Summer of 2020. Once this relocation is complete, Stage 3 work in Area 1 can move forward. The last section of transmission line relocation in Area 1 starts in Spring of 2020 and will finish in Spring of 2022. This relocation spans from a point just east of Baron Cameron Avenue to east of Difficult Run. The existing line in this section is not in conflict with construction activities so all construction Stages can proceed without this relocation.

Area 2 - Baron Cameron Avenue Intersection

Area 2, Stage 1 – Construction of Temporary Pavement in Existing Median

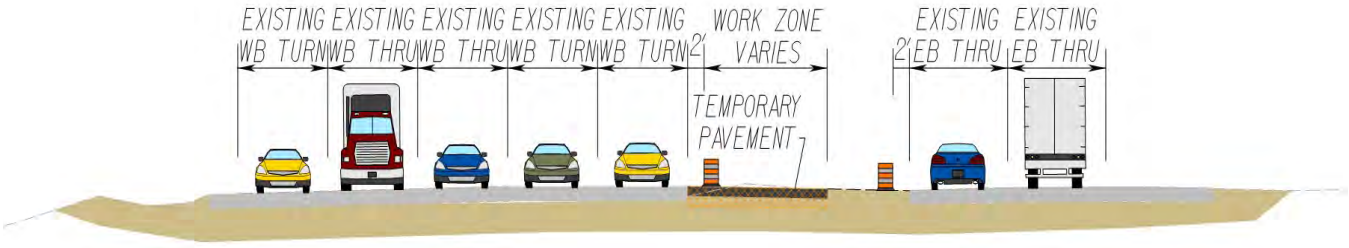


Figure 4.5.1.8 - Area 2, Stage 1

As shown in Figure 4.5.1.8, in Area 2, all work in Stage 1 is contained within the existing ROW. Therefore, construction will commence upon approval of the Advance TTC Plan set while ROW acquisition and utility relocations are ongoing. This mitigates the potential for schedule delays due to issues with ROW acquisition and utility relocation.

Stage 1 consists of temporary pavement construction in the existing median to facilitate the opening of a third westbound left turn lane from Route 7 to Baron Cameron Avenue by August 29, 2019, before the anticipated start of the Fairfax County school year **(Unique Milestone #3)**. In addition, the temporary pavement will be used for maintenance of traffic in later stages. Barrier will be installed along the left edge of the existing eastbound and westbound lanes to protect the Stage 1 work area. A temporary signal will be installed at Baron Cameron Avenue during Stage 1 and impacted existing signal equipment will be taken out of service.

Our Team's sequence of work in this area mitigates schedule risk from ROW and utility delays in this critical area. Stage 1 only requires the temporary relocation of a single Dominion Energy power pole before work can begin. No right-of-way is needed before this stage. In addition, ***our Team's sequence delivers the benefit of a third WB turn lane one year after NTP and five years prior to the RFRP completion date.***

At the end of Stage 1, all WB lanes will shift to the south onto the newly constructed temporary pavement. In addition, a third WB left turn lane will open at Baron Cameron Avenue. The EB lanes will stay in their original configuration. The temporary traffic signal will be adjusted to this configuration.

Area 2, Stage 2A – Construction of North Portion of Permanant WB Lanes and Temporary Pavement

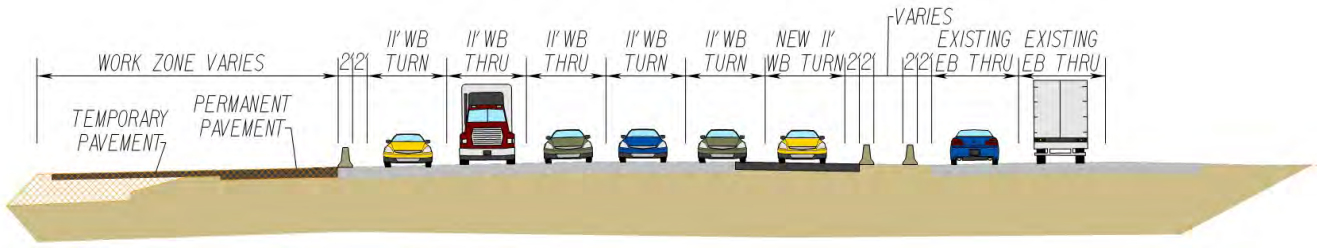


Figure 4.5.1.9 - Area 2, Stage 2A

At the beginning of Stage 2A, traffic will remain in the configuration established at the end of Stage 1. Barrier will be set on the right edge of the shifted WB lanes to protect the work area which is located along the existing WB shoulder as shown in Figure 4.5.1.9. Once ROW is acquired, work will commence to relocate utilities in conflict with Stage 2A roadway construction. Upon the completion of utility relocation, including the relocation of the 24" Washington Gas Transmission main, roadway work will commence.

In Stage 2A, installation of the WB storm sewer trunk line will take place. Two lanes of temporary pavement will be constructed to the north of the shifted WB lanes to facilitate the maintenance of traffic in future Stages. In addition, construction of permanent pavement for the future right turn lanes at Riva Ridge Drive and Springvale Road through intermediate asphalt will take place. Reconstruction of the Springvale Road approach will take place during this Stage as well.

Area 2, Stage 2B – Construction of Middle Portion of Permanent WB Lanes

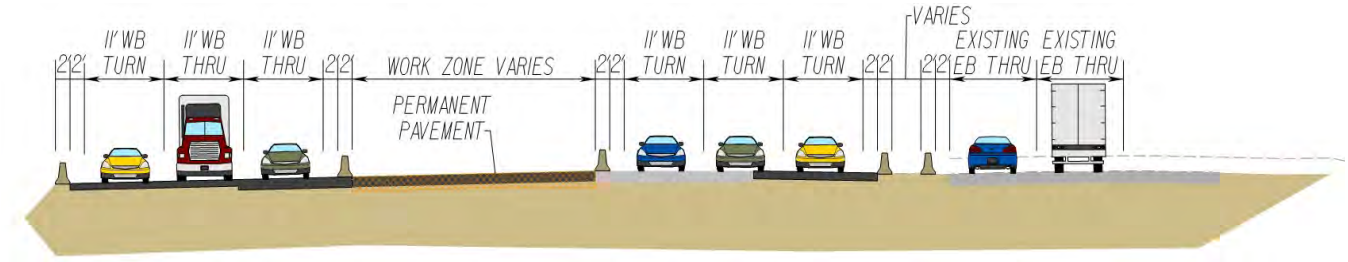


Figure 4.5.1.10 - Area 2, Stage 2B

At the beginning of Stage 2B, the two WB through lanes and WB right turn lanes will be shifted north on to temporary and permanent pavement constructed in Stage 2A as shown in Figure 4.5.1.10. The triple WB left turn lanes to Baron Cameron Avenue will stay in the same configuration set at the end of Stage 1, and the EB lanes will stay in their original configuration. The temporary traffic signal will be adjusted to this configuration. Barrier will be placed on the left edge of the shifted WB lanes and the right edge of the triple left turn lanes to protect the work area.

In Stage 2B, existing pavement will be removed as necessary. Three lanes of permanent westbound pavement will be constructed through intermediate asphalt. Reconstruction of the pavement through the Baron Cameron Avenue and Springvale Road intersection will be staged to minimize disruptions to traffic.

Area 2, Stage 2C – Construction of South Portion of Perm. WB Lanes and Median

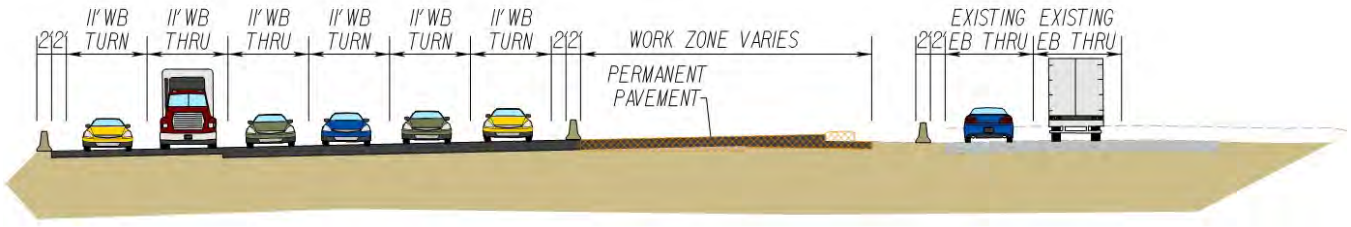


Figure 4.5.1.11 - Area 2, Stage 2C

At the beginning of Stage 2C, the triple WB left turn lanes to Baron Cameron Avenue will be shifted to the north onto the permanent pavement constructed in Stage 2B so that they are adjacent to the westbound through lanes as shown in Figure 4.5.1.11. The WB through lanes will stay in the same configuration as Stage 2B, and the EB lanes will remain in their original configuration. The temporary traffic signal will be adjusted to this configuration. Barrier will be placed on the left edge of the shifted WB triple left turn lanes to protect the work area.

In Stage 2C, existing pavement will be removed as necessary including the temporary pavement constructed in Stage 1. Permanent pavement for the three WB left turn lanes to Baron Cameron Avenue will be constructed through intermediate asphalt.

Area 2, Stage 3A – Construction of Permanent Eastbound Lanes

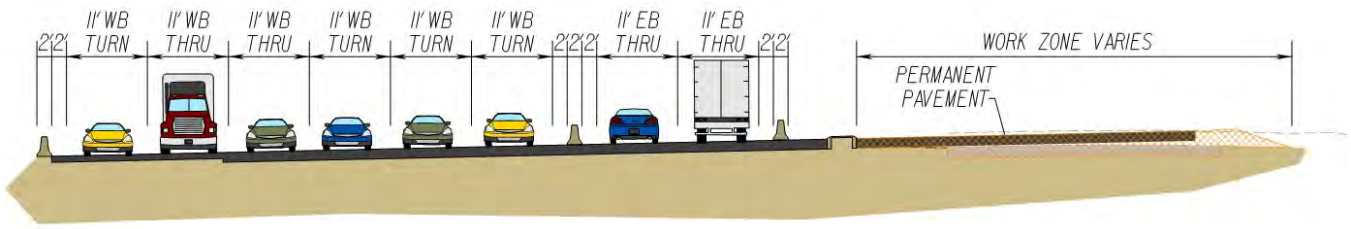


Figure 4.5.1.12 - Area 2, Stage 3A

At the beginning of Stage 3A, the two EB lanes will be shifted to the north onto the permanent pavement constructed in Stages 2B and 2C. A barrier will be installed to separate EB and WB traffic. The WB lanes will remain in the same configuration as Stage 2C. The temporary traffic signal will be adjusted to this configuration. Barrier will be placed on the right edge of the shifted EB lanes to protect the work area which will be the existing EB lanes as shown in Figure 4.5.12.

In Stage 3A, the existing pavement for the eastbound lanes will be removed as necessary. Installation of the EB storm sewer system will take place. Permanent pavement for the EB lanes will be constructed through intermediate asphalt. The CG-7 outer curb will be installed on the future EB lanes during this Stage. Reconstruction of the Baron Cameron Avenue intersection approach will take place during this stage as well.

EB Noise Barrier and Multi-Use Trail

Our Team will take advantage of the large work area within Stage 3A to construct the noise barriers simultaneously with adjacent EB roadway construction. Once the noise barriers are complete, conduit for the proposed ITS system will be installed and the EB multi-use trail will be constructed.

Area 2, Stage 3B – Remove Temporary Pavement and Install WB Curb

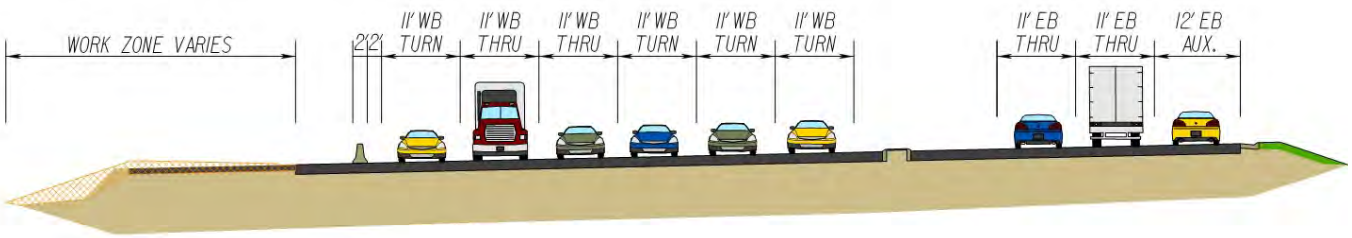


Figure 4.5.1.13 - Area 2, Stage 3B

At the beginning of Stage 3B, the EB lanes will be shifted to the south and the EB auxillary lane from NB Baron Cameron Avenue will be open on the permanent pavement constructed in Stage 3A as shown in Figure 4.5.1.13. The WB lanes will be shifted to the south onto the permanent pavement constructed in Stages 2A, 2B, and 2C. Final adjustment to the temporary traffic signal will be made for this configuration. In Stage 3B, the temporary pavement to the north of the WB lanes constructed in Stage 2A will be removed. Once this is complete, the CG-7 outer curb will be installed.

At the completion of Stage 3B, construction of all permanent pavement in Area 2 will be complete. Two lanes of traffic will be maintained in each direction while surface asphalt is placed, and permanent traffic control devices, including signs and signals, are installed. The third travel lane in each direction will open as the surface asphalt and accompanying pavement markings are completed.

WB Noise Barrier and Multi-Use Trail

The temporary pavement constructed in Stage 2A will encroach on the location of the future WB noise barriers in Area 2. As a result, noise barrier construction will be deferred until temporary pavement is removed in Stage 3B. Once the temporary pavement is removed, the WB noise barriers will be constructed. Where the work area for noise barrier installation is inside the clear zone for the WB lanes, barrier will be installed to protect the work area. Once the noise barriers are complete, conduit for the proposed ITS system will be installed and the WB multi-use trail will be constructed.

Unique Milestone #3

The change from a partial interchange to an at-grade intersection at Baron Cameron Avenue and Springvale Road affords the opportunity to provide some of the functionality of the upgraded intersection to the public early in the Project. Major construction at the Baron Cameron Avenue and Springvale Road intersection will not commence until 2021 due to right-of-way acquisition and utility relocations. To provide benefits of the intersection upgrades earlier, a third WB left turn lane to Baron Cameron Avenue will be opened to traffic on temporary pavement by August 29, 2019, before the anticipated start of the Fairfax County school year. ***The early opening of this turn lane will provide an immediate congestion relief benefit for WB traffic turning onto Baron Cameron Avenue as well as EB through traffic.*** Our Team is committing to maintaining this third lane throughout the remaining stages of construction.

Area 2 – Washington Gas Sequencing

The first relocation of the Washington Gas Transmission line in Area 2 begins in the Summer of 2019. This relocation will start in Area 1 at Great Passage Boulevard and continue to a point east of the intersection with Baron Cameron Avenue. Once this relocation is complete, Stage 2 work in Area 2 can proceed. The last section of transmission line relocation in Area 2 starts in Spring of 2020 and will finish in Spring of 2022. This relocation spans from a point just east of Baron Cameron Avenue to east of Difficult Run. The existing line in this section is not in conflict with construction activities so all construction Stages can proceed without this relocation.

Area 3 - Colvin Forest Drive to Faulkner Drive

Area 3, Stage 1 – Strengthen Outside WB Shoulder and Install Temporary Pavement in Median

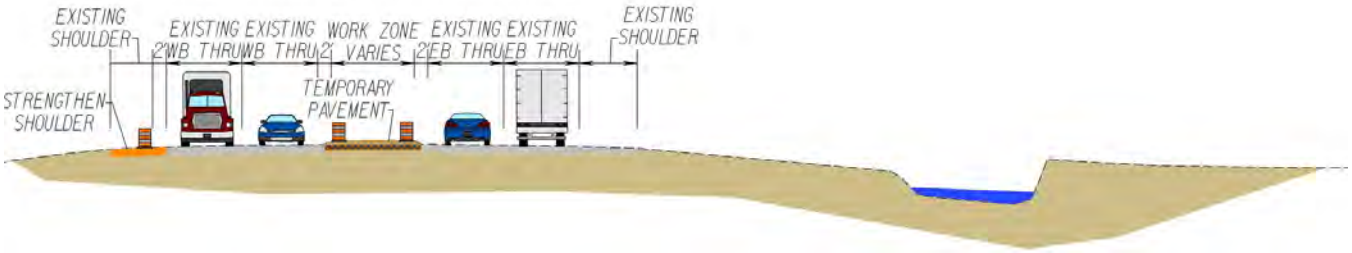


Figure 4.5.1.14 - Area 3, Stage 1

In Area 3, all roadway work in Stage 1 is contained within the existing roadway footprint and existing ROW. Therefore, construction will commence upon approval of the Advance TTC Plan set while ROW acquisition and utility relocation are ongoing. This mitigates the potential for schedule delays due to issues with ROW acquisition and utility relocation.

The right-of-way required for construction of the Route 7 bridges over Difficult Run must be acquired from the Fairfax County Park Authority. Once ROW is acquired, there are TOYR for working in close proximity to Difficult Run which may delay the start of construction outside of the existing roadway footprint. Working within the existing roadway footprint for Stage 1 mitigates some of these risks.

Stage 1 work will consist of strengthening the outside WB shoulder and constructing temporary pavement in the existing median. The shoulder strengthening will facilitate the movement of WB traffic in Stage 2. The median pavement will facilitate the movement of EB traffic in Stage 2.

Prior to shoulder strengthening, temporary signals will be installed at Colvin Forest Drive and the existing signals will be taken out of service. During shoulder strengthening and widening, the existing variable depth asphalt shoulder will be removed by milling and replaced with temporary base and intermediate asphalt. This operation will be performed during off-peak lane closures.

Temporary median pavement construction will span the full width of the existing median. In addition, the raised median on the existing Difficult Run bridge will be removed. Lane closures will be used to facilitate median work adjacent to the existing travel lanes.

Area 3, Stage 2 – Construction of Permanent EB Lanes

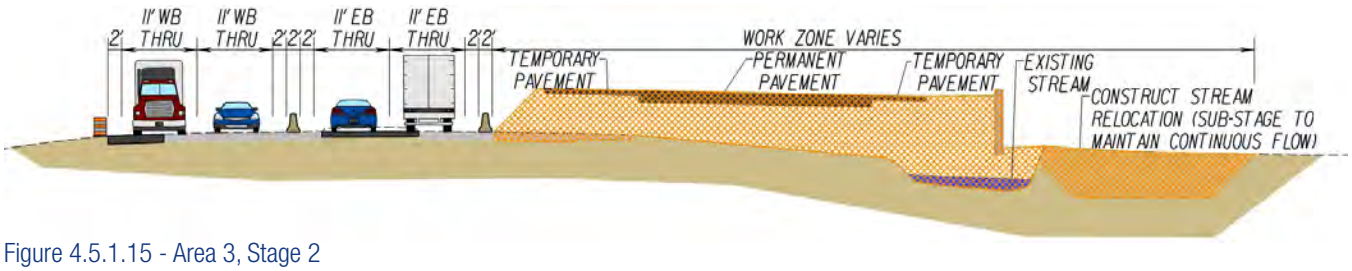


Figure 4.5.1.15 - Area 3, Stage 2

At the beginning of Stage 2, the two WB lanes will be shifted to the north utilizing the temporary pavement constructed in Stage 1. The position of the two EB lanes will not change in this Stage. A row of temporary barrier will be placed along the outside right edge of the relocated EB lanes to protect the Stage 2 work area. This barrier will be bolted down on the Difficult Run bridge.

In Stage 2, the existing EB pavement will be milled and removed. Structural fill will be placed in the Difficult Run valley to raise the subgrade of the future roadway. Drainage systems will be installed while the structural fill is being placed. Once the subgrade is established, surcharge will be placed for a four-month period. Once the surcharge period has ended, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section through intermediate asphalt will be constructed. At this point, additional temporary pavement will be constructed on the right edge of the future EB lanes to maintain traffic in Stage 3. The CG-3 median curb will be placed on the left edge of the future EB lanes. After placement of intermediate asphalt, temporary striping will be installed to facilitate traffic in the next Stage.

Colvin Run Stream Relocation and EB Retaining Wall

In Stage 2, Colvin Run just west of Difficult Run will be relocated to the south so the future EB lanes can be constructed. Once ROW is acquired and environmental permits are obtained, clearing and grubbing will take place and topsoil will be removed for offsite disposal. Excavation for the new stream diversion channel will start and channel lining will be installed as work progresses. Once the lining is completely in place, flow will be diverted to the new channel.

Construction of the wall to retain the future EB lanes of Route 7 will occur simultaneously with the construction of the stream relocation. When the stream relocation channel is being excavated, the foundation for the wall will be undercut and the footing formed and poured. A cast-in-place concrete wall will be constructed on top of the footing and will be completed before the final channel lining is completed.

Carpers Farm Way Box Culvert

As stream relocation work is taking place on Colvin Run, the south approach to the Carpers Farm Way intersection will be reconstructed in two substages. One half of the new box culvert that will convey relocated Colvin Run will be constructed in each substage.

EB Difficult Run Bridge

At the beginning of Stage 2, structure work will start with the removal of the south side of the existing Difficult Run Bridge as shown in Figure 4.5.1.16. Once the portions of the old bridge in conflict with the new structure are removed, piles will be installed at the abutments and drilled shafts will be installed at the piers. Structural crews will follow foundation construction operations to construct Pier 2, Abutment B, Pier 1, and Abutment A in that order. Superstructure construction will follow with construction of the deck and the outer barriers. The barrier between the future multi-use trail and future EB travels lanes and median will be omitted. Rebar inserts will be cast into the deck so the barrier can be installed in a later Stage.

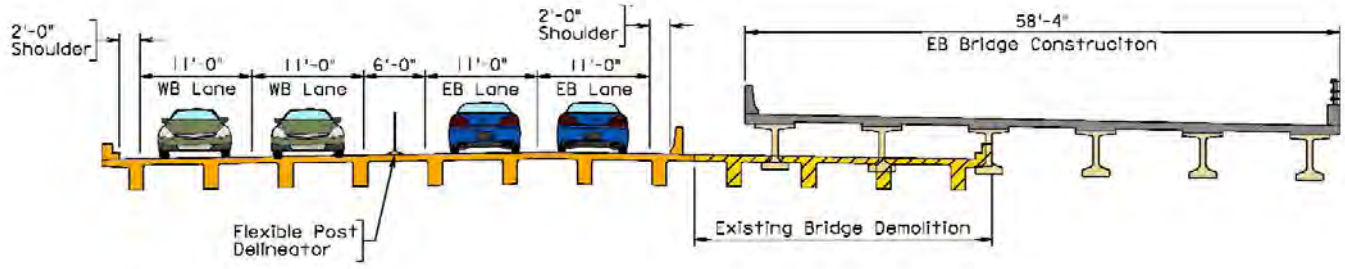


Figure 4.5.1.16 - Eastbound Bridge Construction

EB Noise Barrier

Our Team will take advantage of large work area in Stage 2 to construct the noise barriers simultaneously with adjacent EB roadway construction.

Area 3, Stage 3A – Construction of Permanent WB Lanes

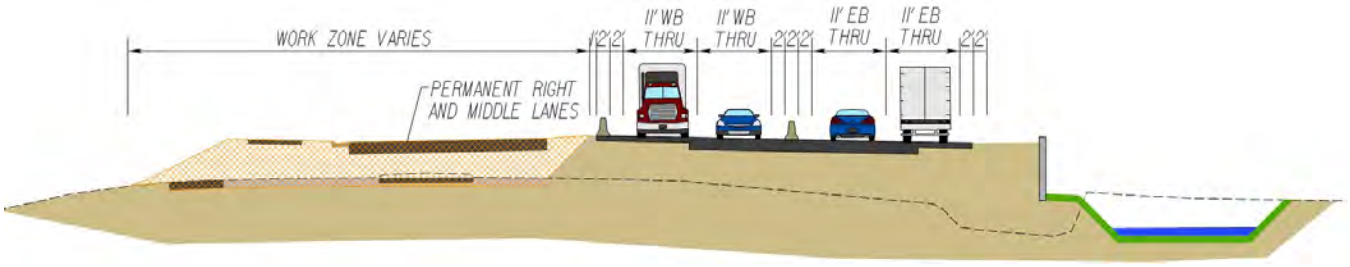


Figure 4.5.1.17 - Area 3, Stage 3A

After the completion of Stage 2, both the EB and WB lanes will be shifted to the new EB bridge over Difficult Run and the permanent and temporary pavement at the approaches constructed in Stage 2. A row of barrier will be placed along the outside right edge of the WB lanes to protect the Stage 3A work area.

In Stage 3A, the original WB pavement will be removed. Structural fill will be placed to raise the subgrade of the future roadway. Drainage systems will be installed while the structural fill is being placed. Once the subgrade is established it will be cement stabilized and CTA will be placed. Following CTA placement, underdrain will be installed and the first lift of base asphalt will be placed. Following the first lift of base asphalt, curb stone will be placed and the CG-3 median curb and CG-7 outer curb and gutter will be placed. After curb placement, the final lift of base asphalt and the intermediate asphalt will be placed. Once intermediate asphalt is placed, temporary pavement markings will be placed to facilitate WB traffic in the next Stage.

WB Difficult Run Bridge

Structure work in Stage 3A will start with the removal of the remainder of the existing Difficult Run bridge as shown in Figure 4.5.1.18. Once the old bridge is removed, piles will be installed at the abutments and drilled shafts will be installed at the piers. Structural crews will follow foundation construction operations to construct Pier 2, Abutment B, Pier 1, and Abutment A in that order. Superstructure construction will follow with construction of the deck and barriers.

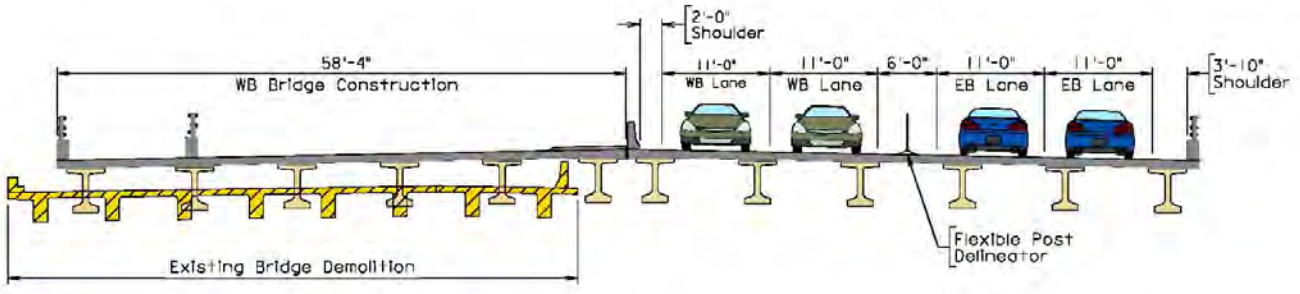


Figure 4.5.1.18 - Westbound Bridge Construction

WB Noise Barrier

Our Team will take advantage of large work area in Stage 3 to construct the noise barriers simultaneously with adjacent WB roadway construction. Once the noise barriers are complete, conduit for the proposed ITS and lighting systems will be installed and the EB multi-use trail will be constructed. The multi-use trail will be finished after the CG-7 outside curb and gutter is installed during roadway construction.

Area 3, Stage 3B – Completion of EB Lanes

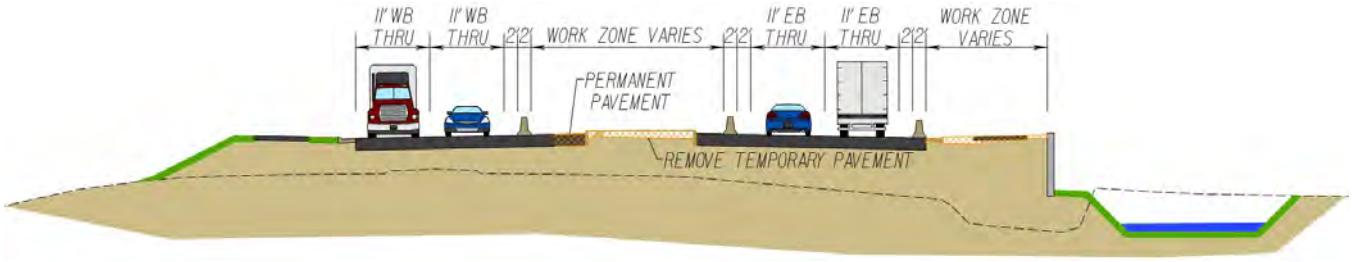


Figure 4.5.1.19 - Area 3, Stage 3B

At the beginning of Stage 3B, WB traffic will be moved to the permanent asphalt constructed in Stage 3A. EB traffic will be shifted to the north end of the permanent asphalt constructed in Stage 2. Barrier will be installed on the outside right edge of the EB lanes to protect the work area. The final adjustment will be made to the temporary signal.

In Stage 3B, the temporary asphalt adjacent to the EB lanes in Stage 2 will be milled and removed. The outer CG-7 curb and gutter and multi-use trail will be constructed in its place. The barrier on the Difficult Run bridge that separates the travel lanes from the multi-use path will be constructed using the rebar inserts installed in Stage 2.

At the completion of Stage 3B, construction of all permanent pavement in Area 3 will be complete. Two lanes of traffic will be maintained in each direction while surface asphalt is placed, and permanent traffic control devices, including signs and signals, are installed. The third travel lane in each direction will open as the surface asphalt and accompanying pavement markings are completed.

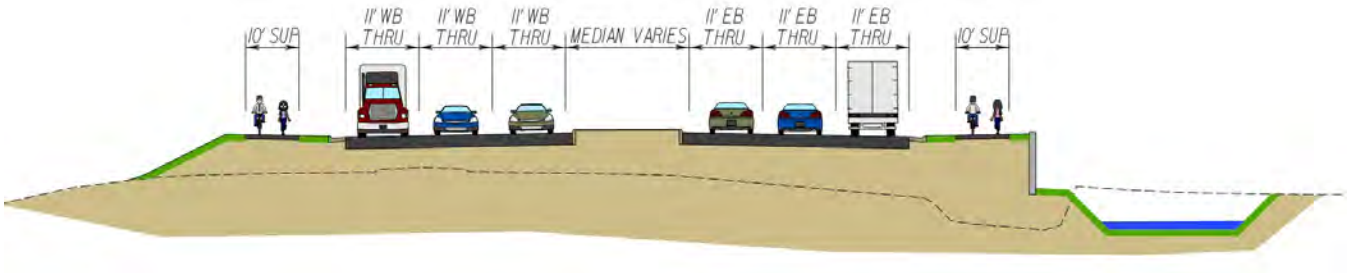


Figure 4.5.1.20 - Area 3 - Final Configuration

EB Multi-Use Trail

Once the temporary WB pavement constructed in Stage 2 is removed and the outer CG-7 curb is constructed, conduit for the proposed ITS and lighting systems will be installed and the EB multi-use trail will be built.

Area 3 – Washington Gas Sequencing

The first relocation of the Washington Gas Transmission line in Area 3 begins in Spring of 2020 and will finish in Spring of 2022. This relocation spans from a point just east of Baron Cameron Avenue in Area 1 and ends just east of Difficult Run at the eastern limit of Area 3. This relocation must be completed before bridge work in Stage 3 can take place.

Area 4 - Faulkner Drive to Eastern Terminus

Area 4, Stage 1 – Strengthen Outside EB Shoulder, Wedge Overlay, and Install Temporary Pavement in Median

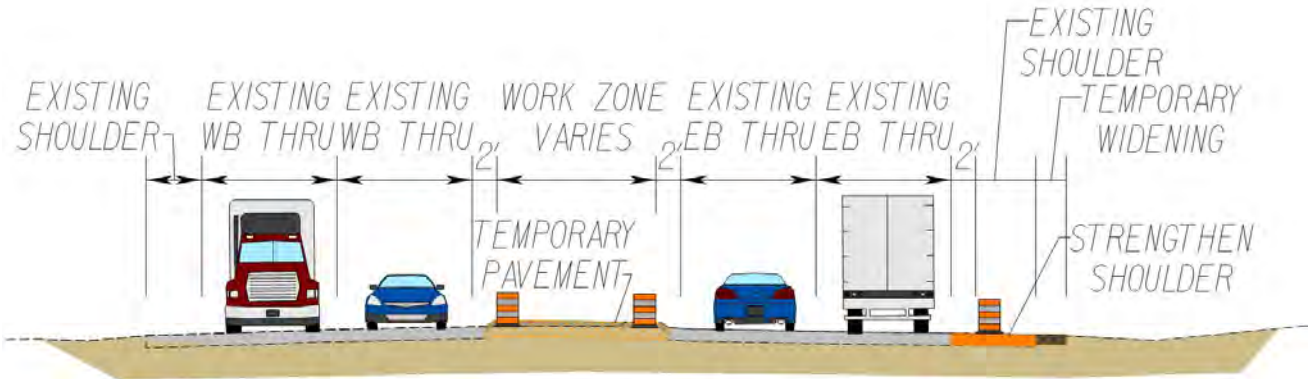


Figure 4.5.1.21- Area 4, Stage 1

In Area 4, all work in Stage 1 is contained within existing ROW and extends slightly outside of the existing roadway footprint. Therefore, construction will commence on approval of the Advance TTC Plan set while ROW acquisition and utility relocations are ongoing. This mitigates the potential for schedule delays due to issues with ROW acquisition and utility relocation.

Stage 1 work will consist of three components: strengthening and widening the outside EB shoulder, installing an asphalt wedge in the left EB lane east of Towlston Road to facilitate positive drainage during construction, and constructing temporary pavement in existing median. The asphalt wedge will not be necessary west of Towlston Road as the EB lanes are already suited for positive drainage during construction. Shoulder strengthening and widening will facilitate the maintenance of traffic in future Stages. The shoulder widening will avoid existing utilities and will not require additional ROW.

Prior to shoulder strengthening, temporary signals will be installed at each signalized intersection and the existing signals will be taken out of service. During shoulder strengthening and widening, the existing EB variable depth asphalt shoulder will be removed and replaced with temporary base and intermediate asphalt. Additional stone subbase will be placed on the outer edge of the existing shoulder to support the wider shoulder pavement. This operation will be performed during off-peak lane closures. In the same timeframe that the shoulder strengthening operation is taking place, temporary right turn lanes will be constructed in the EB direction.

Unlike Area 1, the existing median in Area 4 is too narrow to construct any permanent asphalt in this Stage. Temporary pavement construction will span the full width of the existing median. Lane closures will be utilized to facilitate Stage 1 work adjacent to the existing travel lanes.

Area 4, Stage 2 – Construction of Permanent and Temporary WB Lanes

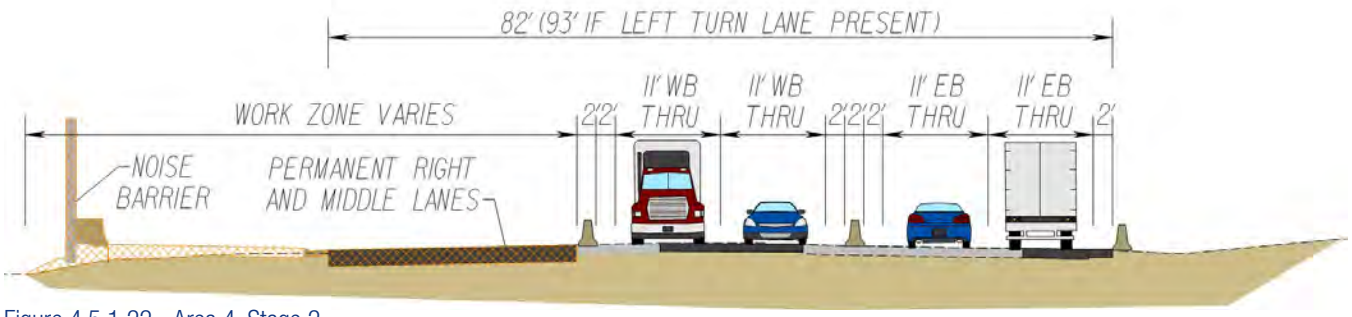


Figure 4.5.1.22 - Area 4, Stage 2

At the beginning of Stage 2, the two EB lanes will be shifted to the south onto the shoulder strengthened in Stage 1. WB traffic will be shifted to the south onto the temporary pavement constructed in the median during Stage 1. Barrier service will be placed on the right edge of the relocated WB lanes to protect the Stage 2 work zone. EB and WB traffic will be separated by barrier service. Temporary signals will be adjusted to this new configuration.

In Stage 2, 2-lanes of permanent and temporary WB pavement will be constructed to the north of the relocated WB lanes. In addition, the permanent pavement for the relocated Lewinsville Road intersection and displaced left will be constructed in this stage. The existing pavement will be removed where it is not used. Cut to fill activities will take place concurrent with the installation of proposed drainage facilities.

Once earthwork and drainage are complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section will be constructed through intermediate asphalt. In addition, temporary pavement will be constructed along the north side of the future WB lanes to accommodate traffic in future Stages. A total of 26' of pavement width will be provided. Once intermediate asphalt is placed, temporary pavement markings and barrier service will be placed to facilitate two WB lanes in Stage 3A.

Unique Milestone #2

The relocated Lewinsville Road intersection and displaced left will be constructed in conjunction with the permanent WB pavement constructed in Stage 2. At the conclusion of intermediate asphalt placement in Stage 2, the relocated intersection can be opened to traffic. The opening of the relocated Lewinsville Road intersection and displaced left to traffic will take place no later than October 25, 2022 and represents our Team's Unique Milestone #2. ***This will provide early relief to motorists from traffic congestion at the existing Lewinsville Road intersection.*** Placement of surface asphalt and the construction of adjacent trails will occur after achieving this milestone. Trail construction will take place in conjunction with construction of the WB trail in adjacent areas. Surface asphalt placement will occur in Stage 3B.

WB Noise Barrier

Due to the narrower ROW in Area 4, noise barriers will be closer to the proposed travel lanes. This requires WB noise barrier construction to take place simultaneously with adjacent WB roadway construction. Noise barrier construction will commence once the mass grading for the roadway is complete. Once the noise barriers are complete, barrier will be placed on the right outside edge of the temporary pavement constructed in this Stage. This will protect the barriers until the WB lanes are shifted away from the noise barrier in their final configuration.

Area 4, Stage 3A – Construction of Permanent EB Lanes

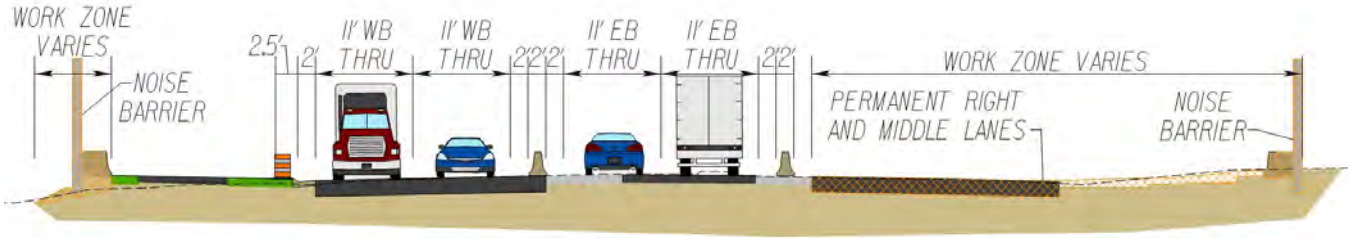


Figure 4.5.1.23 - Area 4, Stage 3A

At the beginning of Stage 3A, the two WB lanes will be shifted onto the new permanent and temporary pavement constructed in Stage 2. The two EB lanes will be shifted to the north and separated from the WB lanes by barrier. Left turn lanes will be provided where required. Barrier will be placed on the outside

right edge of the relocated EB lanes to protect the Stage 3A work area. Temporary signals will be adjusted to this new configuration.

In Stage 3A, permanent pavement for the EB lanes will be constructed. At least 26' of pavement width will be built in this Stage. The existing asphalt, including the outside shoulder strengthened in Stage 1 will be milled and removed where it is not being reused. Cut to fill activities will then take place concurrent with the installation of drainage facilities.

Once earthwork and drainage are complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section will be constructed through intermediate asphalt. This includes the CG-7 outer curb. Once intermediate asphalt is placed, temporary pavement markings and barrier service will be placed to protect the two EB lanes in the Stage 3B.

EB Noise Barrier

Due to the narrower ROW in Area 4, noise barriers will be closer to the proposed travel lanes. This requires EB noise barrier construction to take place simultaneously with adjacent EB roadway construction. Noise barrier construction will commence once the mass grading for the roadway is complete. Once the noise barriers are complete, conduit for the proposed ITS and lighting systems will be installed and the EB multi-use trail will be constructed. The multi-use trail will be finished after the CG-7 outside curb and gutter is installed during roadway construction.

Area 4, Stage 3B – Completion of the Interior EB, Interior WB, and Turn Lanes

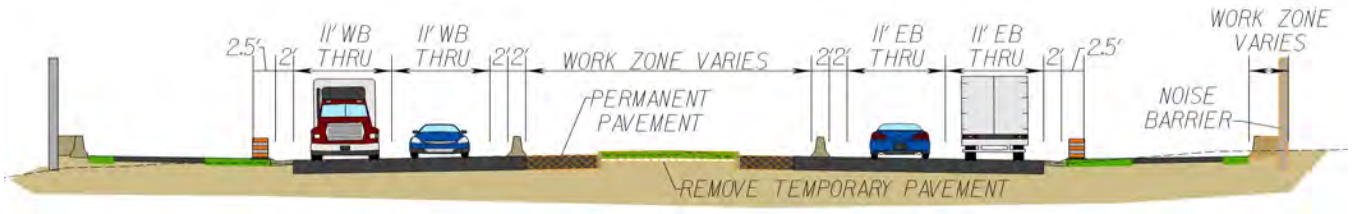


Figure 4.5.1.24 - Area 4, Stage 3B

At the beginning of Stage 3B, the two EB lanes will be shifted onto permanent pavement constructed in Stage 3A. The position of the two WB lanes will not change at the beginning of this Stage. At this point, the right-most EB lanes will be operational in their final location. An adjustment to the temporary signals will take place.

In Stage 3B, permanent pavement will be constructed for the interior EB, interior WB, and left turn lanes. Temporary asphalt placed in the median during Stage 1 will be milled and removed as well as any remaining original pavement not slated for reuse. Cut to fill activities will take place to establish the final roadway grade.

Once earthwork is complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section will be constructed through intermediate asphalt. This includes the CG-3 median curb. After placement of intermediate asphalt, WB traffic will be shifted to the south completely onto permanent pavement. The temporary asphalt placed in Stage 2 to maintain WB traffic will be removed and the outer CG-7 curb will be placed. The position of the two EB lanes will not change at this point.

In Stage 3B, construction of all permanent pavement in Area 4 will be completed. Two lanes of traffic will be maintained in each direction while surface asphalt is placed and permanent traffic control devices,

including signs and signals, are installed. The third travel lane in each direction will open as the surface asphalt and accompanying pavement markings are completed as shown in Figure 4.5.1.25.

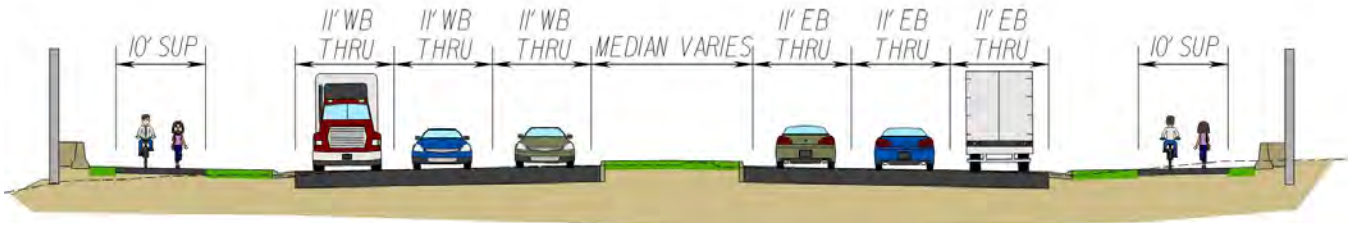


Figure 4.5.1.25 - Area 4 - Final Configuration

WB Multi-Use Trail

Once the temporary WB pavement constructed in Stage 2 is removed and the outer CG-7 curb is constructed, conduit for the proposed ITS and lighting systems will be installed and the WB multi-use trail will be built. Lane closures will be utilized as needed to protect the work area.

Area 4 – Washington Gas Sequencing

The first relocation of the Washington Gas Transmission line in Area 4 begins in Spring of 2019 and will finish in the Spring of 2021. This relocation spans from the east end of the project to Station 470+00. This relocation must be completed before Stage 2 construction in Area 4 can proceed. The last relocation in Area 4 will span from Station 470+00 to just east of Difficult Run at the west edge of Area 4. This relocation will start in the Winter of 2022 and will be completed in the Spring of 2023. The existing line is not in conflict with any construction activities in Area 4.

Intersection Re-Construction

Construction of permanent pavement at side road approaches to intersections will take place in the same Stage as the construction of adjacent permanent mainline pavement. Our Team has identified three general options to construct permanent pavement at side road approaches to intersections: new build, full closure, and Staged reconstruction.

The new build option will be used at Utterback Store Road and Lewinsville Road. At these two intersections, the permanent pavement will be built in its entirety. Traffic will be switched to the new pavement and the old pavement will be removed. The preferred option at the other intersections is to perform a short-term closure. Many of the side roads throughout the Project have low traffic volume and one or more detour

Table 9 - Proposed Method of Intersection Re-Construction

Intersection	Method
Shain Court	Closure
Meadows Farms/Reston Parkway	Two SubStage
Utterback Store Road	New Build
Driveway/Bishopsgate Way	Two SubStage
Great Passage Boulevard	Closure
Amanda Dr./Markell Court	Closure
Riva Ridge Drive	Closure
Springvale Road/Baron Cameron Avenue	Two SubStage
Downey Drive	Two SubStage
Colvin Run Road/Delta Glen Drive	Closure
Colvin Forest Drive	Closure
Colvin Run Road/Carpers Farm Way	Closure
Faulkner Drive/Serenity Woods Drive	Closure
Middleton Ridge Road	Two SubStage
Newcombs Farm Road	Two SubStage
Trotting Horse Lane	Two SubStage
Forestville Drive/Beulah Road	Two SubStage
Driveway/Atwood Road	Closure
Lyons Street/Driveway	Closure
Stokely Way	Closure
Towlston Road	Two SubStage
Trap Road	Closure
Dreamweaver Court	Two SubStage
Lucky Estates Drive/Royal Estates Drive	Two SubStage
West Church Entrance	Two SubStage
Lewinsville Road/East Church Entrance	New Build
Laurel Hill Road	Closure
Old Ash Grove	Two SubStage

routes available. However, at major intersections or intersections with no detour route, closures are not an option. At these locations, side road approaches will need to be constructed using two or more substages. The proposed method of intersection re-construction is summarized in Table 9.

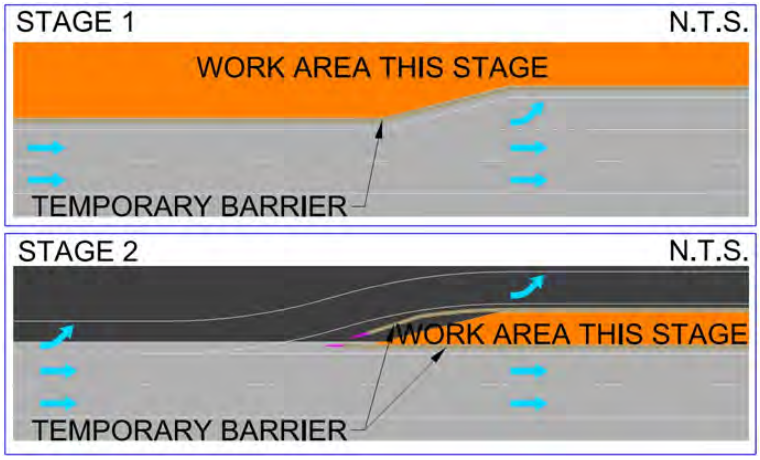
Staged Turn Lane Construction

Temporary pavement will be built to maintain right turn lanes in areas that receive shoulder strengthening.

Construction of permanent turn lane pavement will take place concurrently with construction of permanent pavement in the adjacent through lanes. This turn lane construction will take place in two substages while drainage and earthwork activities are ongoing throughout the rest of the work area. Scheduling this Staged turn lane construction during other long duration activities reduces schedule risk.

At the beginning of a Stage, the turn lanes slated for reconstruction will be maintained at an offset to the travel lanes as shown in Figure 4.5.1.26. Construction of permanent pavement and required drainage facilities will take place in the orange shaded area. Once the permanent pavement is complete, turn lane traffic will be shifted to the newly constructed pavement. The pavement previously used to maintain turning traffic will be removed and new pavement constructed in conjunction with the rest of the permanent pavement construction in that stage.

Figure 4.5.1.26 - Staged Turn Lane Construction



4.5.2 TRANSPORTATION MANAGEMENT PLAN

Our Team is dedicated to developing all aspects of our Transportation Management Plan (TMP) and the Temporary Traffic Control (TTC) Plans with a focus on maximizing safety for the traveling public and construction personnel while minimizing travel delays and access impacts throughout all Stages of construction. To accomplish these safety and mobility goals, we have committed to numerous safety and mobility enhancement strategies that include:

- Commitment to Unique Milestones that offer congestion relief;
- Well planned MOT for the Baron Cameron Avenue/Springvale Road thru traffic during construction;
- Adjusted horizontal alignment and vertical profile to minimize the need for lane closures;
- Temporary pavement wedges designed to reduce stagnant water on travel lanes;
- Analyzing safety concerns and mitigating them prior to construction;
- Utilizing enhanced safety devices;
- Concrete barrier separation of EB and WB traffic during construction;
- Strengthening existing shoulders for temporary traffic loading;
- Liberal use of PCMS devices; and
- Designing all lane shifts for full desirable criteria (twice as long as minimum criteria).

TMP Philosophy

Our TMP and construction program is focused on reducing impacts to the traveling public and maximizing safety for all stakeholders. Above all, our Team values vehicular, pedestrian, and construction personnel safety as our highest priority in every facet of design and construction. Our TMP will place a heavy focus

on eliminating the need for temporary lane closures to the extent possible, as we thoroughly understand the impact lane closures can have on heavily congested Route 7.

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 (PTOE) and a certified VDOT Work Zone Traffic Control Training Instructor. Jerry has previously led the design of nine different projects along the Route 7, allowing him to understand the unique safety and mobility considerations of this corridor. As an additional benefit of our Team, 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. Additionally, we commit to holding a project-specific First Responders Kick-Off meeting prior to commencement of major construction activities.

Maintaining Traffic Through all Phases

As introduced in Section 4.5.1, the Project will be segmented into four Areas that are created based on their unique construction and TTC features. We carefully studied numerous options for the construction staging, with the result being the development of a sequence of construction that maximizes public safety, minimizes the need for temporary lane closures, and allows the continuous construction of Critical Path elements. This up-front planning gives our Team the confidence that the Project will be delivered on-time, in a safe manner, and with limited public impacts.

For each of the four Areas, we developed Area-Specific TTC strategies as highlighted on Exhibits 4.5.2.1 thru 4.5.2.4. The exhibits contain a typical section for each Stage of construction, and explain the specific features, challenges, and solutions of each Area. Further details (such as the maintenance and turn lanes and driveways) are provided in subsequent sections of 4.5.2. The four Areas are defined as follows:

- **Area 1** - Western Terminus to Colvin Forest Drive, excluding the Baron Cameron Avenue Intersection– Exhibit 4.5.2.1
- **Area 2** - Baron Cameron Avenue Intersection– Exhibit 4.5.2.2
- **Area 3** - Colvin Forest Drive to Faulkner Drive – Exhibit 4.5.2.3
- **Area 4** - Faulkner Drive to Eastern Terminus – Exhibit 4.5.2.4

Traffic Control Details

As explained in the previous paragraph and shown on Exhibits 4.5.2.1 through 4.5.2.4, our Team has developed a temporary traffic control strategy that minimizes impacts to the traveling public. Upon Award, we will begin the design of the Type C, Category V TMP and will develop site-specific TTC plans that will detail specific elements required during construction. These plans will be developed for each Stage of work to identify barrier and channelization locations, detours, 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 much as possible. We also thoroughly understand the importance of avoiding "abrupt" lane shifts meeting only minimum lengths on high speed/high volume freeways such as Route 7. In addition, PCMS device locations and messages will be included in the plans. The design of device locations will meet sight distance requirements, and concise, comprehensible message design will ensure that these beneficial devices are utilized to the maximum benefit without providing confusing or incomplete information.

EXHIBIT 4.5.2.1-AREA 1

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	

SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

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

EXISTING FEATURES
WIDE MEDIAN

EXISTING FEATURES
BIFURCATED PROFILES WITH WB LANES GENERALLY SEVERAL FEET HIGHER THAN EB LANES

EXISTING FEATURES
LIMITED INTERSECTIONS AND DRIVEWAYS

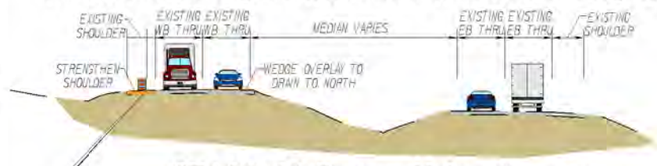
SEQUENCING SOLUTIONS
STRENGTHEN EXISTING SHOULDER TO SHIFT TRAFFIC AWAY FROM MEDIAN WORK MAXIMIZING MEDIAN WORK AREA WHILE STAYING WITHIN EXISTING RIGHT-OF-WAY

SEQUENCING SOLUTIONS
INSTALLATION OF TEMPORARY PAVEMENT IN MEDIAN TO ALLOW COMPLETE PAVEMENT RECONSTRUCTION OF THE EB LANES IN STAGE 2

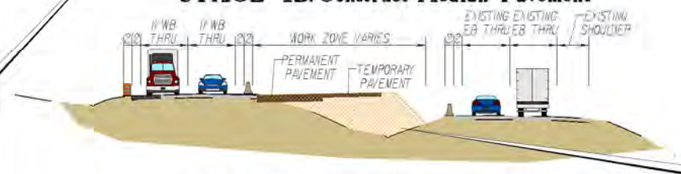
SEQUENCING SOLUTIONS
AVOIDANCE OF TEMPORARY PAVEMENT IN PERMANENT OUTSIDE BENCH AND SHARED-USE PATH ALLOWS UTILITY AND NOISE BARRIER CONSTRUCTION TO OCCUR SIMULTANEOUSLY WITH ROADWAY RECONSTRUCTION AND WIDENING

ROUTE 7 WEST OF DIFFICULT RUN

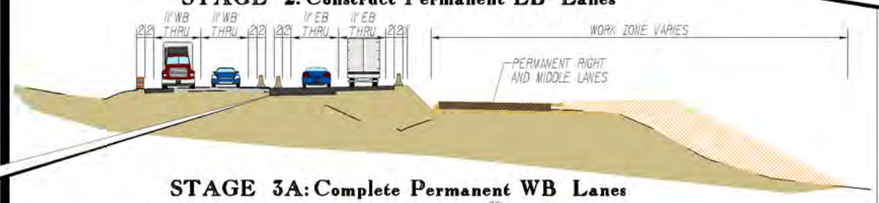
STAGE 1A: Strengthen WB Outside Shoulder and Wedge Overlay



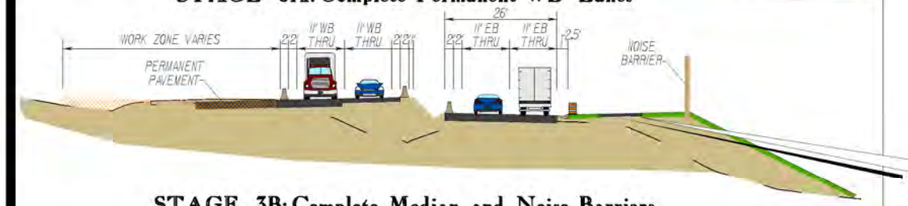
STAGE 1B: Construct Median Pavement



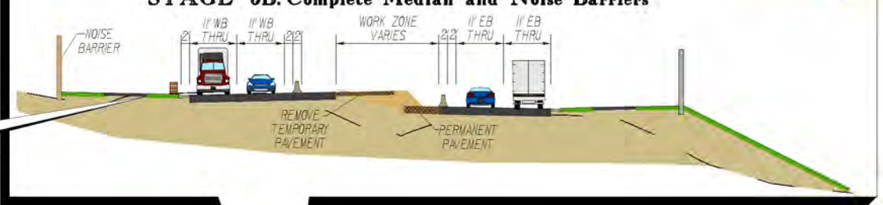
STAGE 2: Construct Permanent EB Lanes



STAGE 3A: Complete Permanent WB Lanes



STAGE 3B: Complete Median and Noise Barriers



DESIGN CHALLENGES
- ELIMINATE TEMPORARY DETOUR AND ASSOCIATED EASEMENTS WHILE ROW ACQUISITION AND UTILITY RELOCATIONS ARE ONGOING ALONG OUTSIDE SHOULDERS
- EXISTING BIFURCATION BETWEEN EB AND WB LANES COMPLICATES MEDIAN WIDENING

SEQUENCING SOLUTIONS
DEVELOPMENT OF A ROADWAY PROFILE THAT ALLOWS THE NEW WB LANES TO CLOSELY FOLLOW THE EXISTING WB PROFILE, PROVIDING A LEVEL PLANE FOR THE MAINTENANCE OF WB LANES, EB LANES, AND TURN LANES IN STAGE 2 (THE STAGE WHEN EB AND WB LANES ARE TIGHTEST TO EACH OTHER)

SEQUENCING SOLUTIONS
AVOIDANCE OF TEMPORARY PAVEMENT IN PERMANENT OUTSIDE BENCH AND SHARED-USE PATH ALLOWS UTILITY AND NOISE BARRIER CONSTRUCTION TO OCCUR SIMULTANEOUSLY WITH ROADWAY RECONSTRUCTION AND WIDENING

SCALE
0 600' 1200'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	

EXHIBIT 4.5.2.2 - AREA 2

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	

SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

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

SEQUENCING SOLUTIONS

PRIORITIZE CONSTRUCTION OF THE UTILITY RELOCATION AND WIDENING OF THE WB LANES

EXISTING FEATURES

HEAVY VOLUME SIGNALIZED INTERSECTION

EXISTING FEATURES

NEED TO MAINTAIN CONTINUOUS DRIVEWAY ACCESS

EXISTING FEATURES

LENGTHY LEFT TURN AND THRU QUEUES ON WB ROUTE 7 APPROACHING BARON CAMERON AVE.

SEQUENCING SOLUTIONS

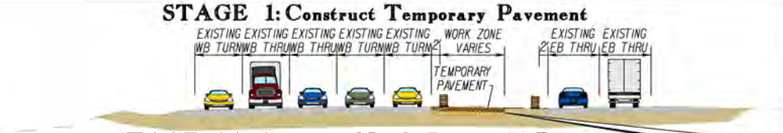
CONSTRUCTING TEMPORARY PAVEMENT IN THE PERMANENT WB SHARED USE PATH AREA TO MAINTAIN 6 WB LANES THROUGHOUT CONSTRUCTION

DESIGN CHALLENGES

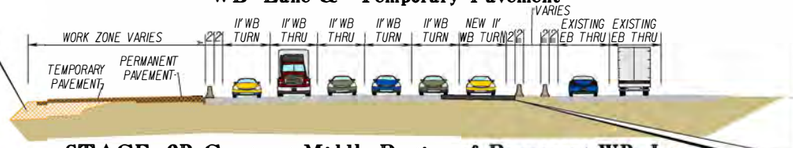
– MAINTAINING ROUTE 7, BARON CAMERON AVE, AND SPRINGVALE ROAD THRU LANES, TURN LANES, AND TURN MOVEMENTS, WHICH ARE IN CONFLICT WITH PAVEMENT RECONSTRUCTION

ROUTE 7 AT BARON CAMERON AVE.

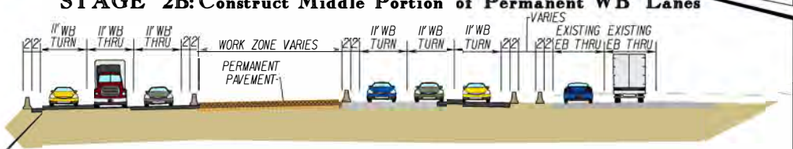
STAGE 1: Construct Temporary Pavement



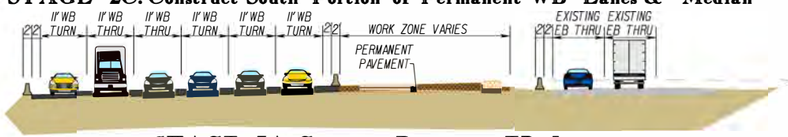
STAGE 2A: Construct North Portion of Permanent WB Lane & Temporary Pavement



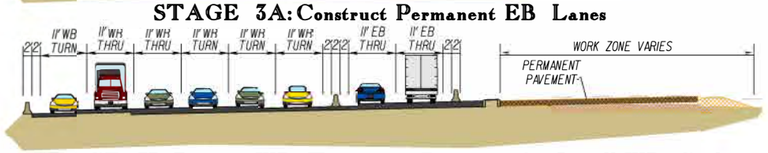
STAGE 2B: Construct Middle Portion of Permanent WB Lanes



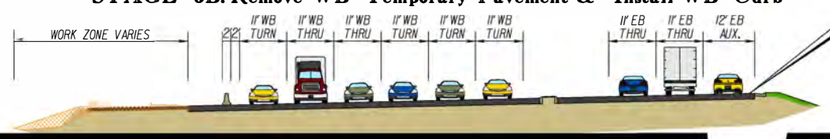
STAGE 2C: Construct South Portion of Permanent WB Lanes & Median



STAGE 3A: Construct Permanent EB Lanes



STAGE 3B: Remove WB Temporary Pavement & Install WB Curb



SEQUENCING SOLUTIONS

STAGE 1 CONSTRUCTION WITHIN EXISTING ROW TO ADVANCE START DATE

SEQUENCING SOLUTIONS

OPENING OF THIRD WB LEFT TURN LANE BY AUGUST 29, 2019 (5 YEARS EARLIER THAN REQUIRED) TO PROVIDE IMMEDIATE RELIEF TO TRAVELING PUBLIC

SEQUENCING SOLUTIONS

EARLY IMPLEMENTATION OF ACCELERATION LANE FROM NB BARON CAMERON AVE TO EB ROUTE 7

SCALE
0 600' 1200'

PROJECT	SHEET NO
0007-029-225 0007-029-942	

EXHIBIT 4.5.2.2-AREA 2

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

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

SEQUENCING SOLUTIONS
PRIORITIZE CONSTRUCTION OF THE UTILITY RELOCATION AND WIDENING OF THE WB LANES AND EB "LOCAL" SERVICE ROAD/RAMP

EXISTING FEATURES
PARTIAL INTERCHANGE CONSTRUCTION REQUIRING DEPRESSION OF THE EB LANES

EXISTING FEATURES
NEED TO MAINTAIN CONTINUOUS DRIVEWAY ACCESS

EXISTING FEATURES
HEAVY VOLUME SIGNALIZED INTERSECTION

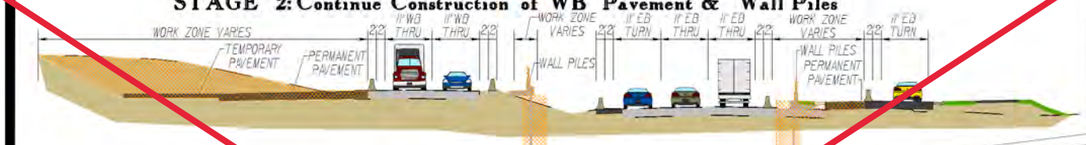
SEQUENCING SOLUTIONS
CONSTRUCTING TEMPORARY PAVEMENT IN THE PERMANENT WB SHARED USE PATH AREA TO MOVE TRAFFIC OUT OF THE EXCAVATION AREA

DESIGN CHALLENGES
- MAINTAINING ROUTE 7, BARON CAMERON AVE, AND SPRINGVALE ROAD THRU LANES, TURN LANES, AND TURN MOVEMENTS, WHICH ARE IN CONFLICT WITH THE NEW DEPRESSED EB LANES AND BRIDGE

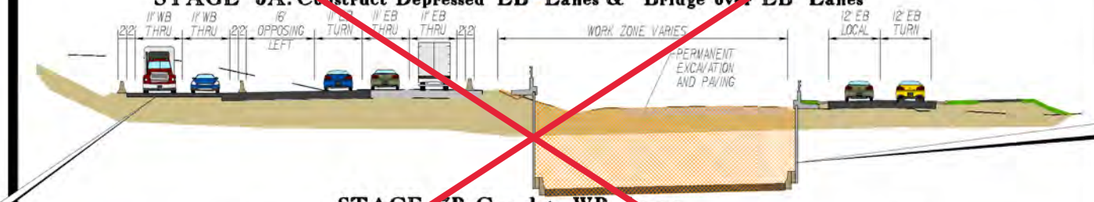
ROUTE 7 AT BARON CAMERON AVE.

STAGE 1: Construct WB Pavement, EB Service Rd., & Median Wall Piles

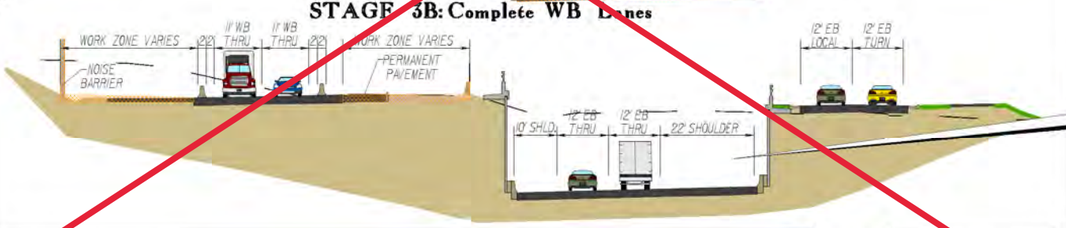
STAGE 2: Continue Construction of WB Pavement & Wall Piles



STAGE 3A: Construct Depressed EB Lanes & Bridge over EB Lanes



STAGE 3B: Complete WB Lanes



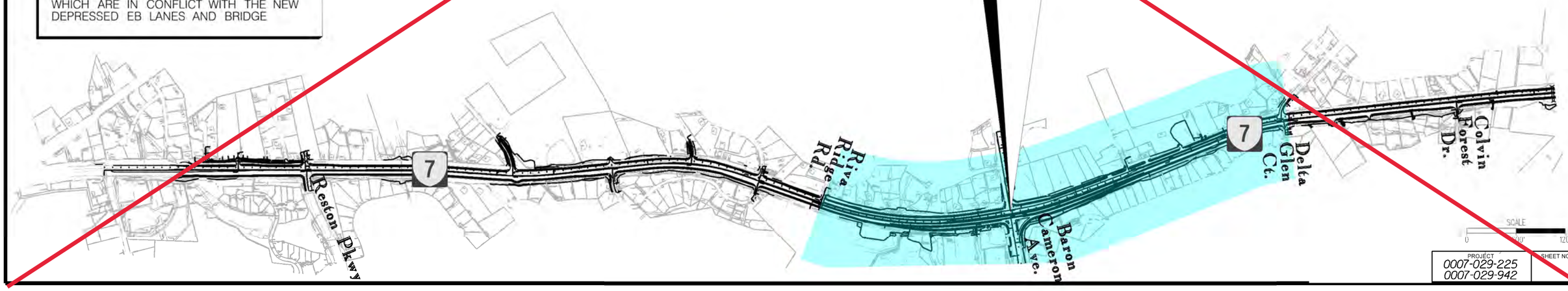
SEQUENCING SOLUTIONS
PRIORITIZE CONSTRUCTION OF THE UTILITY RELOCATION AND WIDENING OF THE WB LANES AND EB "LOCAL" SERVICE ROAD/RAMP

SEQUENCING SOLUTIONS
DRIVING PILES FOR DEPRESSED EB LANE WALLS AS AN EARLY START ITEM, BY LOCATING WALLS OUTSIDE OF THE EXISTING ROUTE 7 LANES

SEQUENCING SOLUTIONS
DRIVING PILES FOR DEPRESSED EB LANE WALLS AS AN EARLY START ITEM, BY LOCATING WALLS OUTSIDE OF THE EXISTING ROUTE 7 LANES

SEQUENCING SOLUTIONS
SEQUENCING THE BRIDGE CONSTRUCTION AND BRIDGE JOINTS IN A MANNER THAT ALLOWS CONTINUOUS MAINTENANCE OF THRU LANES FROM SPRINGVALE ROAD TO/FROM BARON CAMERON AVENUE

SEQUENCING SOLUTIONS
DEVELOPING A BRIDGE AND ROADWAY DESIGN THAT ALLOWS TURN MOVEMENTS TO BE MAINTAINED (WITHOUT A DETOUR) DURING BRIDGE CONSTRUCTION AND DEPRESSED LANE CONSTRUCTION



PROJECT	SHEET NO.
0007-029-225 0007-029-942	

EXHIBIT 4.5.2.3-AREA 3

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	

SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

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

EXISTING FEATURES

SIGNIFICANT GRADE CHANGE REQUIRED FOR NEW BRIDGE AND ROADWAY APPROACHES

SEQUENCING SOLUTIONS

CONSTRUCTING TEMPORARY PAVEMENT IN THE EXISTING MEDIAN TO MOVE ALL LANES NORTH ON THE EXISTING BRIDGE, AWAY FROM THE STAGE 1B BRIDGE WORK

SEQUENCING SOLUTIONS

UTILIZING TEMPORARY WIRE WALLS TO CONSTRUCT GRADE CHANGE WHILE MAINTAINING EXISTING LANES

EXISTING FEATURES

NEED TO MAINTAIN MAJOR DRAINAGE CHANNELS

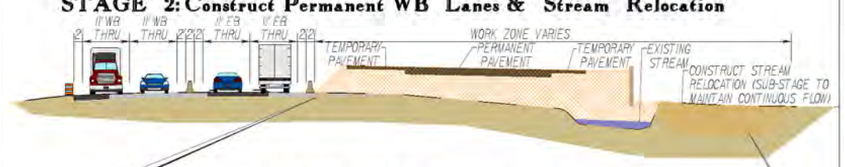
DESIGN CHALLENGES

- RAISING GRADE OF ROUTE 7 AND REPLACING BRIDGE WHILE MAINTAINING CONTINUOUS TRAFFIC OPERATIONS

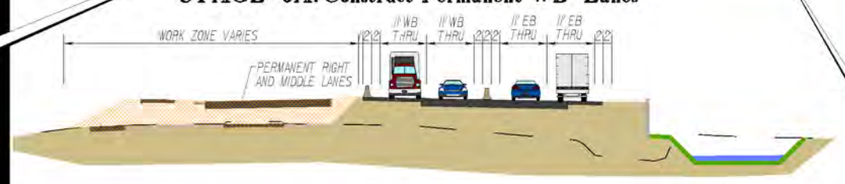
ROUTE 7 AT DIFFICULT RUN

STAGE 1A: Strengthen WB Outside Shoulder & Construct Temporary Pavement

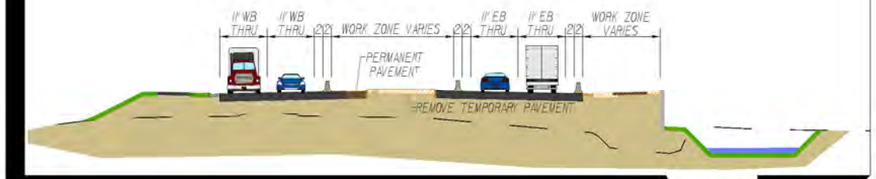
STAGE 2: Construct Permanent WB Lanes & Stream Relocation



STAGE 3A: Construct Permanent WB Lanes



STAGE 3C: Complete Pavement & Median



SEQUENCING SOLUTIONS

UTILIZING FLEXIBLE POST DELINEATOR SEPARATION OF EB AND WB TRAFFIC, FOR SAFE SEPARATION WITHOUT THE NEED TO BOLT BARRIER ANCHORS THRU THE EXISTING AND NEW BRIDGE DECKS

SEQUENCING SOLUTIONS

CONSTRUCTING NEW DRAINAGE CHANNEL (ALONG EB ROUTE 7) PRIOR TO IMPACTING THE EXISTING DRAINAGE CHANNEL

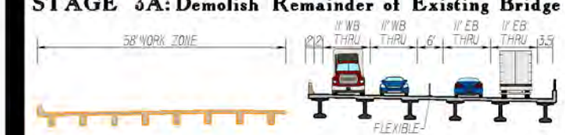
DIFFICULT RUN BRIDGE

STAGE 1A: Demolish Existing Median

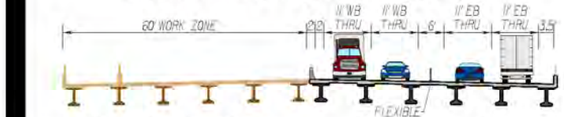
STAGE 1B: Partially Demolish Existing Bridge

STAGE 2: Construct Permanent EB Bridge

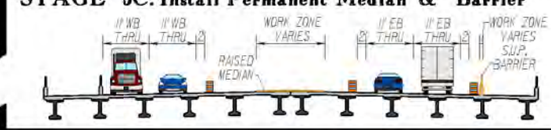
STAGE 3A: Demolish Remainder of Existing Bridge

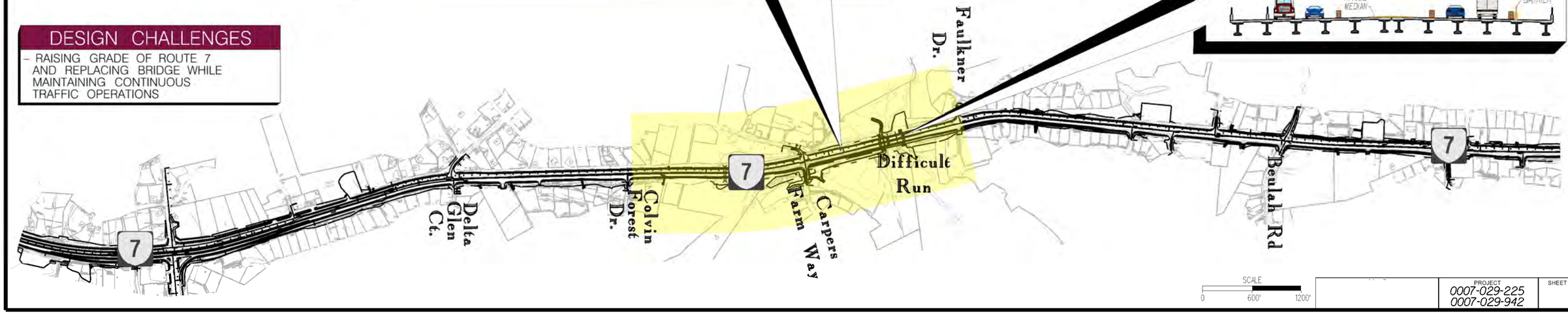


STAGE 3B: Complete New Bridge



STAGE 3C: Install Permanent Median & Barrier





SCALE 0 600' 1200'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	

EXHIBIT 4.5.2.4-AREA 4

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	

SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

EXISTING FEATURES
NARROW MEDIAN

EXISTING FEATURES
GENERALLY NO BIFURCATION

EXISTING FEATURES
FREQUENT INTERSECTIONS AND DRIVEWAYS

SEQUENCING SOLUTIONS
PAVE EXISTING MEDIAN AND STRENGTHEN EXISTING SHOULDER TO SHIFT AWAY FROM STAGE 1B MEDIAN WORK, MAXIMIZING MEDIAN WORK AREA

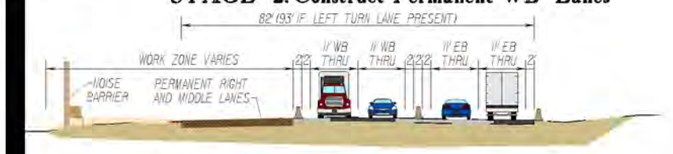
SEQUENCING SOLUTIONS
AVOIDANCE OF TEMPORARY PAVEMENT IN PERMANENT OUTSIDE BENCH AND SHARED-USE PATH ALLOWS UTILITY AND NOISE BARRIER CONSTRUCTION TO OCCUR SIMULTANEOUSLY WITH ROADWAY RECONSTRUCTION AND WIDENING

SEQUENCING SOLUTIONS
DEVELOPMENT OF A ROADWAY PROFILE THAT CLOSELY FOLLOWS THE EXISTING PROFILE, PROVIDING A LEVEL PLANE WHEN TRAFFIC IS PARTIALLY ON EXISTING PAVEMENT AND PARTIALLY ON NEW PAVEMENT

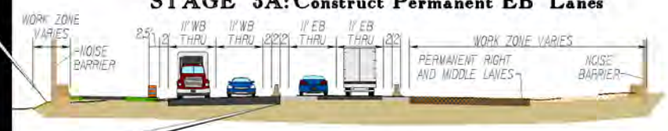
ROUTE 7 EAST OF DIFFICULT RUN

STAGE 1A: Construct Temporary Pavement

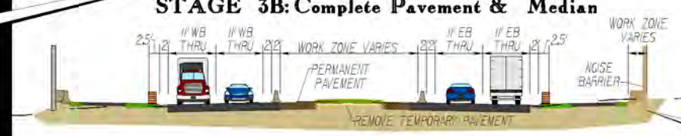
STAGE 2: Construct Permanent WB Lanes



STAGE 3A: Construct Permanent EB Lanes



STAGE 3B: Complete Pavement & Median



SEQUENCING SOLUTIONS
INSTALL TEMPORARY WIDENING ALONG EB OUTSIDE SHOULDER, WHILE STAYING WITHIN EXISTING RIGHT-OF-WAY AND AVOIDING EXISTING UTILITIES, IN ORDER TO MAXIMIZE WORK AREA ALONG WB LANES IN STAGE 1B

SEQUENCING SOLUTIONS
AVOIDANCE OF TEMPORARY PAVEMENT IN PERMANENT OUTSIDE BENCH AND SHARED-USE PATH ALLOWS UTILITY AND NOISE BARRIER CONSTRUCTION TO OCCUR SIMULTANEOUSLY WITH ROADWAY RECONSTRUCTION AND WIDENING

DESIGN CHALLENGES
- NARROW MEDIAN RESULTS IN TIGHTER EXISTING ROADWAY FOOTPRINT, MAKING EXISTING CONSTRUCTION OF TWO NEW LANES IN STAGE 1B DIFFICULT WHILE MAINTAINING ALL EXISTING LANES

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

PROJECT 0007-029-225 0007-029-942

SHEET NO.

Lane and Ramp Closures, Detours, Restrictions, Flagging, and Lane Widths

Descriptions of our TMP and TTC plans are as follows:

Route 7

- No proposed long-term lane closures or temporary road closures with detours;
- Turn lane closures to facilitate safe construction will utilize detours as detailed in Section 4.5.1;
- Time-of-day restrictions will follow Part 2, Section 2.11.2 of the RFP.
- Temporary 20 minute maximum full stoppages on Route 7 will only be implemented for safety;
- No flagging operations are anticipated;
- Minimum 11' wide lanes will be maintained; and
- Temporary lane shifts will meet full posted speed limit, and will be double the minimum length required ***providing a substantial safety benefit to the traveling public.***

Connecting Roadways

- No proposed long-term lane closures or temporary road closures with detours for 4-lane cross roads (such as Reston Parkway, Baron Cameron Avenue, and Towlston Road);
- For neighborhoods that have multiple entrances, one or more connections may be closed and detoured per the provisions of Part 2, Section 2.11.2 of the RFP to facilitate safe construction, as detailed in Section 4.5.1;
- Time-of-day restrictions will follow Part 2, Section 2.11.2 of the RFP.
- Temporary 20 minute maximum full stoppages will only be implemented for safety;
- Flagging operations are only anticipated on two-lane roadways; and
- Minimum 11' wide lanes will be maintained.

Work Zone Speed Reductions

As we prepared this proposal we already completed an analysis utilizing VDOT's TE-350 to determine the appropriate posted speed limit during construction. Based on the results, we recommend reducing the existing Route 7 posted speed limit of 55 mph to 45 mph. This recommendation will be fully reviewed with VDOT's Traffic Engineering staff and the final determination will be made in coordination with the District Traffic Engineer post Award. The results of our analysis include the following concerns:

- The geometry of the existing roadway in some areas does not meet 55 mph criteria;
- Route 7 within the Project limits experiences a high rate of crashes including 324 injury crashes and two fatalities in recent years;
- The need for work zone traffic control devices such as barrier and Group II channelizing devices are anticipated to reduce vehicle speeds; and
- The combination of the existing speed limit and the numerous intersections, driveways, and short turn lanes presents a safety concern.

Approach to Public Safety and Measures to Limit Disruptions

Specific consideration and attention has been given to the unique challenges of the Project, with focus on mitigation and communication strategies that maximize public safety, minimize impacts to the traveling public, and minimize schedule risk. By carefully studying the Project and its construction challenges, our Team has determined which elements mandate special consideration, and will implement the following measures to mitigate impacts to the public:

1. Work Zone Communications & Outreach

The high traffic volumes combined with the numerous residential communities, businesses, and churches highlight the need for enhanced public communications during construction. For through traffic, notification

of work zone traffic conditions (including lane restrictions and new travel patterns) is critical to maximize safety. For local traffic utilizing intersecting streets and driveways, thorough advance communication for access and lane shifts or changes to access points is essential. Building on the stakeholder communication strategies detailed in Section 4.4.4, our Team commits to the following work zone public communication strategies:

- Use of PCMS's in each direction of Route 7 for posting of work zone notifications ***throughout the duration of construction, exceeding the RFP requirements*** of only using PCMS signs prior to major traffic pattern changes and road closures;
- In coordination with our Outreach Staff, hold "Pardon Our Dust" public meetings at least on a semi-annual basis with the Route 7 Working Group and the general public, instead of only prior to major phases on construction; and
- Meeting with First Responders prior to traffic switches, ensuring that response times for emergency personnel are not inhibited.

2. Intersection Sight Distance

The use of barrier at turn movements has the potential to affect intersection sight lines. To minimize these impacts, our Team will utilize the following strategies to ensure the safety of the traveling public:

- During design, perform intersection sight line assessments for applicable turn movements along the corridor;
- Where sight distances are found to be inadequate, flare barriers away from the roadway, or replace a section of barrier with channelizing devices in order to eliminate the sight distance restriction; and
- Install oversize intersection warning signs (such as "Watch for Turning Vehicle" signs) in advance of unsignalized intersections.

3. Pedestrian Safety

With the Project focusing heavily on vehicular traffic, it is critical to also keep focus on pedestrian and bicycle traffic utilizing the existing pathways along Route 7 and connecting roadways. Our Team is committed to maintaining existing pedestrian and bicycle pathways by multi-staging the replacement of existing trails wherever possible. Where paths must be temporarily closed for short durations for safety, well-marked detours will be established and communicated. In addition, where paths are adjacent to work areas or travel lanes, they will be physically separated from the potential hazards for increased safety. Also, full pedestrian signalization will be maintained at temporary signals during construction, including actuation pushbuttons, pedestrian guidance signs, and pedestrian signal heads.

Of particular importance is the pedestrian crossing of Route 7 at Baron Cameron Avenue, which connects the residential development on the north side of Route 7 to the businesses, farm market, Reston Zoo, and Lake Fairfax Park on the south side. As detailed in Section 4.3.2, our Team has incorporated the maintenance of this pedestrian connection into the sequence of construction, providing an important community enhancement during construction.

4. Turn Bay and Intersection Considerations

Maintenance of all existing turn lane and intersecting streets at all times is challenging, as many require full depth pavement reconstruction, and in several locations there is no existing ROW available to shift traffic and construct in stages. Where neighborhoods have multiple entrances, we anticipate that one or more connections will need to be closed and detoured to safely construct the proposed improvements. Where closures are proposed, detours will be established and will be fully analyzed with traffic engineering software such as Synchro to ensure that acceptable operations will be maintained along the detour route. Temporary improvements, such as modifications to signal timings or lengthening of existing turn bays, will

be implemented by our Team in order to minimize the impacts of the detours on the traveling public. As detailed in Section 4.5.1, we developed a matrix that details the treatment of each of the existing intersections. Each of the possible conditions, and mitigation strategy for each condition is detailed below, with a snapshot of our intersecting street analysis shown in Figure 4.5.2.1.

Figure 4.5.2.1 - Treatment of Intersecting Streets

Intersections With Single Access Points

- **Treatment.** Entrance will remain open.
- **Mitigation:**
  - Existing intersection and left turn lanes will remain open, or left turn lanes will be detoured to an adjacent signalized intersection where a safe u-turn can be provided without sight distance restrictions;
  - Enhanced warning signs will be provided to alert traffic; and
  - Temporary wedge overlay pavement will be installed to maintain access where constructing grade adjustments.

Intersections With Multiple Access Points

- **Treatment.** One entrance at a time will be temporarily closed and detoured.
- **Mitigation:**
  - Detour will be fully analyzed and signed with detour signing;
  - Sequence of work will be scheduled to smallest feasible duration;
  - Temporary improvements, such as signal timing and turn bay lengthening will be made prior to implementation;
  - Enhanced warning signs will be provided to alert traffic;
  - One-on-one coordination will be established with affected parties prior to detour implementation;
  - Emergency services will be coordinated with prior to access changes.

5. Baron Cameron Avenue Intersection

As explained in Section 4.5.1 and above, our Team has focused on providing a construction sequence that minimizes impacts to the public at the Baron Cameron Avenue intersection.

A primary focus of our Team is to not only minimize impacts, but to improve operations during construction by prioritizing the delivery of congestion relief for the traveling public. We are committing to ***exceed the RFRP requirements by constructing a third WB left turn lane as an early works item, and opening it prior to the anticipated start of the 2019 Fairfax County school year, a full five years earlier than required.*** As seen in Figure 4.5.2.2 the existing double left turn lanes are currently completely full in the afternoon peak, resulting in substantial delays and left turn queues affecting the thru lanes of WB Route 7. Providing the early delivery of this third turn lane, and

Figure 4.5.2.2 - View (Looking East) of Completely Full Existing WB Route 7 Double Left Turn Lanes Approaching Baron Cameron Avenue in Afternoon Peak (June, 2018). The Early Implemetation Of the Third Left Turn Lane Will Alleviate These Delays and Queues Throughout the Duration of Construction.

maintaining it throughout all stages of construction, provides immediate congestion relief for the public at this chronically congested intersection. With this enhancement, preliminary Synchro analyses performed by the Shirley Team indicate intersection Level of Service (LOS) and delay will be markedly improved for the overall intersection, as well as for the major conflicting movements (the EB thru movements and the WB left turn movement). For example, in the morning peak hour, the heavy EB thru movement is anticipated to improve from LOS F to LOS E, while also reducing delay for the WB left turn movement by approximately 10 seconds per vehicle. In the afternoon peak hour the EB thru movement is anticipated to improve from LOS D to LOS C, and the heavy WB left turn movement is anticipated to improve from LOS E to LOS D. For these two movements alone, this enhancement will save commuters more than eight cumulative hours a day in congestion, just in the two peak hours. ***Over the five years between the early opening the triple left turn lane and project completion, this equates to over 2,000 hours of travel time savings.***

6. Commitment to Unique Milestones

A. Early Opening of Third Thru Lane

As detailed in Section 4.5.1, our Team commits to opening the new third lane EB and WB from Riva Ridge Road to the western terminus by October 25, 2022, ***19 months before the Final Completion Date.***

This commitment to open these critical sections early expedites the capacity improvements for the traveling public.

B. Opening the Displaced Left Turn Movement at Lewinsville Road

As detailed in Section 4.5.1, our Team commits to opening the new displaced left turn movement at Lewinsville Road by October 25, 2022, ***19 months before the Final Completion Date.***

This commitment to open this critical turn movement early should relieve traffic congestion for the traveling public.

C. Open a WB Third Left Turn Lane to SB Baron Cameron Avenue

As detailed in Section 4.5.1, our Team commits to opening a third left turn lane at Baron Cameron Avenue by August 29, 2019, ***Five Years Prior to Project Completion.*** This commitment to open this additional turn lane early will provide immediate relief of traffic congestion for the traveling public.

7. Existing Shoulder Strength

As shown on Exhibits 4.5.2.1 through 4.5.2.4, traffic will need to be shifted onto one or both existing shoulders during construction in order to facilitate the construction of the proposed improvements. In order to accommodate traffic loading, we will strengthen the existing shallow-depth shoulders prior to shifting traffic onto them. Although the RFP requires a 6" minimum depth asphalt section, we will provide a minimum ***7" depth of asphalt section*** (or 6" depth plus 4" of stone) to avoid risk of pavement deterioration and rutting during construction. ***This commitment by our Team exceeds the RFP requirements and avoids traffic impacts required to repair temporary pavement during construction.***

8. Positive Drainage During Construction

A major challenge with the Project is the need to reconstruct or substantially overlay all existing pavement while also adjusting the profile. This results in the placement of traffic immediately adjacent to areas with a different pavement elevation, potentially causing a standing water hazard within the travel lanes. To overcome this challenge, Our Team's first solution is to provide a buffer area between the existing lanes and the work

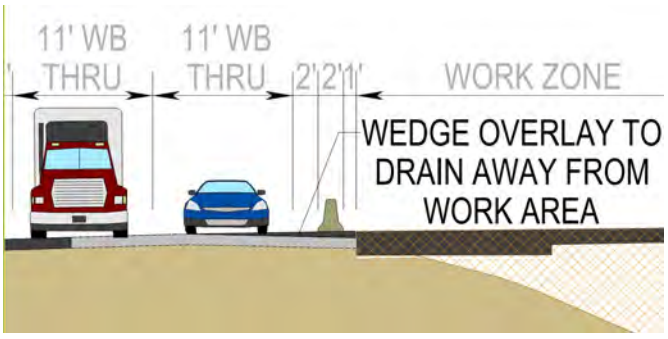


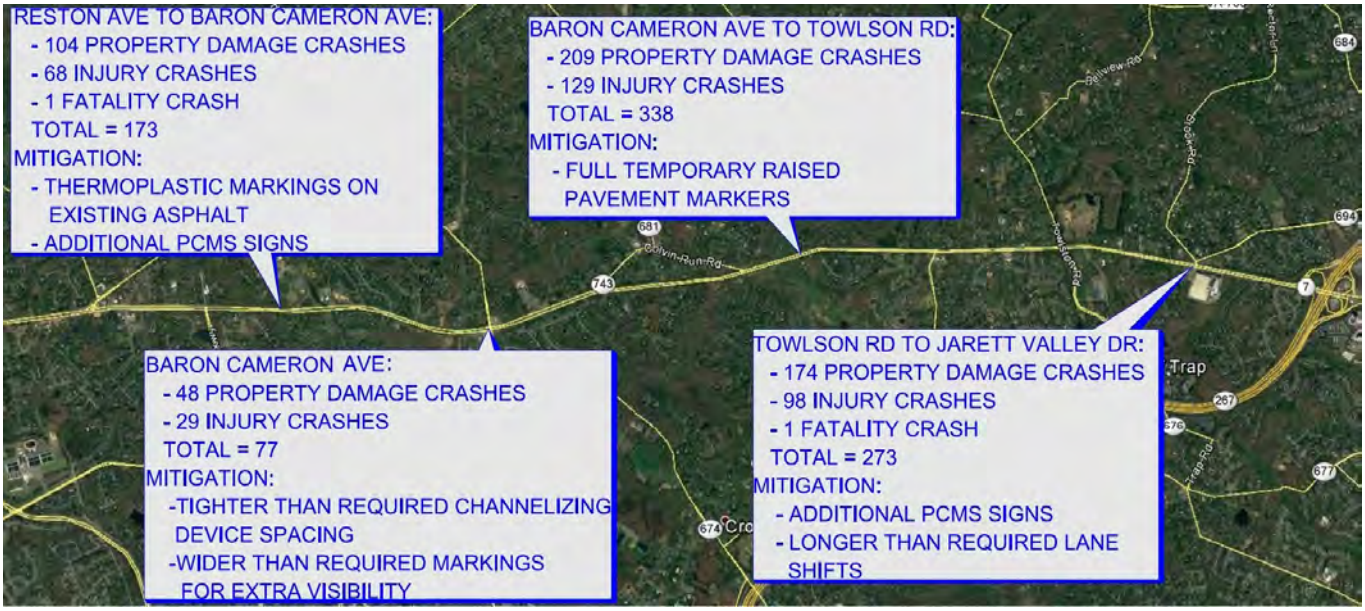
Figure 4.5.2.3 - Wedge Overly to Provide Positive Drainage

zone, where a temporary ditch can be maintained and outfalled without water ponding on the roadway. In some areas, as depicted in Figure 4.5.2.3, the geometric constraints do not allow for such an offset. In these conditions, we will install an overlay wedge on the existing pavement to allow the entire roadway to drain to the outside away from the work area, avoiding the potential for ponding on the roadway.

9. Investigation and Mitigation of Existing Safety Issues

- Our Team has performed an investigation of existing crash statistics and safety concerns along Route 7 and have 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 4.5.2.4, the traffic volumes, congestion, and numerous driveways and intersections have contributed to a high amount of recent crashes. Many of our proposed safety enhancements 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 final design phase.

Figure 4.5.2.3 - Results Of Our Corridor Safety And Crash Analysis With Proposed Enhancement Measures.



In addition, the following safety enhancements will be utilized:

- Installation of ***thermoplastic pavement markings instead of paint*** on existing asphalt, which significantly improves marking visibility and eliminates the need for temporary lane closures that would be required to refresh markings;
- 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;
- The use ***of full continuous temporary raised pavement markers,*** with installation of all temporary markings, as shown in Figure 4.5.2.5 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);
- ***Monitoring of traffic and safety conditions during construction by our traffic engineers.*** In addition to our weekly Work Zone Safety Inspections by our QA and QC Team, we commit to

Figure 4.5.2.5- Raised Pavement Markers

additional reviews by our engineering staff. These reviews will be completed by our traffic engineers that designed the TTC plans at the implementation of any new traffic pattern, to ensure that the controls have been implemented correctly, and to provide suggestions and recommendations for enhancements; and

- Use of ***lane shifts a full 2X longer than the required minimum shift length on Route 7***, to avoid "abrupt" shifts for the high volume traffic. Use of this "forgiving geometry" is expected to reduce potential side-swipe and run-off-road crashes.

10. Lane Closure Optimization

As construction begins, lane closure impact minimization will be critical when working along Route 7. As described throughout Section 4.5, our TTC strategy places an emphasis on eliminating the need for temporary lane closures to the greatest extent possible.

When temporary lane closures are necessary, we will take additional steps to ensure we achieve the goals of maximizing safety and minimizing travel delays. First, we will collect updated 24-hour volume information along Route 7 as an initial design activity. We recognize that the lane closure restriction times listed in Section 2.11.2 of the RFP are to be followed, but we also recognize the impact that lane closures can have on the already congested Route 7, and that changing traffic volumes may be different than previously collected volumes. Once collected, we will ensure that the temporary lane closure hours specified in Section 2.11.2 of the RFP are in line with the hours of lowest volume along Route 7. This will be used to validate the lane closure schedule in RFP Section 2.11.2 to ensure unintended delays will not occur due to possible recent changes in traffic patterns. Seasonal variations will also be considered, such as the impact of summer travel. Furthermore, our Team commits to ***recounting traffic mid-way through construction*** to validate lane closure hours to ensure mobility impacts are minimized, providing a benefit that ***exceeds the RFP requirements.***

4.6 - Proposal Schedule

4.6 Proposal Schedule

4.6.1 Proposal Schedule

The Shirley Team's Proposal Schedule is provided following Section 4.6.2.

4.6.2 Proposal Schedule Narrative

Our Team has reviewed the Project and schedule requirements of the Request for Revised Proposals (RFRP) in detail and developed a Proposal Schedule outlining our plan to successfully manage all phases of the Project. This schedule has been optimized to deliver the Project in the shortest time possible while meeting RFRP requirements, minimizing impacts to stakeholders, protecting the environment, and ensuring the safety of motorists and workers. Our Team plans to execute and deliver this Project by July 31, 2024, one (1) month earlier than the RFRP Final Completion Date. As added benefits, we commit to **Unique Milestone #1** to open the third lane in both the EB and WB directions from approximately Riva Ridge Road to the west end of the project by October 25, 2022, **Unique Milestone #2** to open the displaced left intersection at Lewinsville Road by October 25, 2022, and **Unique Milestone #3** to open a third left turn lane from WB Route 7 to SB Baron Cameron Avenue by August 29, 2019. Each of these milestones will provide the public with substantial congestion relief earlier than the Final Completion Date.

A summary of the Contract and Schedule Milestones are Shown in Table 10.

Table 10 - Contract and Schedule Milestones

Contract and Schedule Milestones	Date
Notice of Intent to Award	July 2, 2018
CTB Award/Notice of Award	July 18, 2018
Design-Build Contract Execution	August 13, 2018
Notice to Proceed (NTP)	August 20, 2018
Unique Milestone #3	August 29, 2019
Unique Milestone #1	October 25, 2022
Unique Milestone #2	October 25, 2022
Final Completion	July 31, 2024

Work Breakdown Structure

Our Team has developed a detailed Proposal Schedule in accordance with the RFRP requirements. The schedule is organized into a hierarchal Work Breakdown Structure (WBS) to demonstrate the relationships and activity durations amongst the milestones, Scope Validation Period, design, public involvement/public relations, environmental permitting, ROW acquisitions, utility relocations, construction, and project management disciplines. All elements of the design-build process captured under the Level I tasks and are described below:

A. ***Schedule Milestones:*** Area reserved for easy review on the Project status. The Scope Validation Period is also included in this section.

B. ***Design Phase:*** Includes preliminary engineering services, geotechnical work, plan development, design QA/QC reviews, submittal milestones, and VDOT reviews and approvals. This section of the schedule includes a second level WBS structure to group design activities by type of design submission including advanced MOT, roadway, and bridge.

C. Public Involvement/Public Relations: This section of the schedule includes milestones for developing the planned public involvement process including the Communications Plan and public information meetings.

D. Environmental Permitting: Includes wetland and stream delineations, jurisdictional determinations, permit management and preparation, mitigation, permit submission, and reviews from authorities having jurisdiction.

E. Right-of-Way/Easement Acquisition: This section of the schedule is used to outline and monitor the acquisition of ROW and easements including title searches, appraisals and reviews, offers, negotiations, and settlements. To prioritize groups of properties by order of need, we have included a second level WBS structure that includes separate ROW acquisition activities for 20 different segments of the Project. Dividing the ROW activities into groups will enable the Team to prioritize and assign responsibility to our acquisition firms, focus our efforts on the most schedule critical acquisitions, and track these acquisitions to ensure on-time completion.

F. Utility Relocations: This section is broken into a second level WBS structure based on the utility owner, and a third level WBS structure that represents individual relocations or groups of individual relocations. This section includes activities for UFI meetings, completion of relocation designs, approval of relocation designs, and construction of the utility relocations.

G. Construction: This section includes all components of roadway, bridge, retaining wall, noise barrier, and drainage construction. The construction section of the schedule is segmented by additional levels of WBS structure to divide the construction activities into Areas, Segments, and groups of work packages that can be easily managed and tracked to ensure on-time completion of the Project.

A complete outline of the WBS Structure for the Project is shown below:

Table 11 - WBS Structure

WBS Path	WBS Name
RT7RT	**Route 7 Corridor Improvements - Reston Avenue to Jarret Valley Drive**
RT7RT.A	**PROJECT MILESTONES**
RT7RT.A.2	Scope Validation
RT7RT.A.3	Schedule Submissions
RT7RT.B	**DESIGN**
RT7RT.B.1	Geotechnical Investigation and Reports
RT7RT.B.1.1	Roadway & SWM
RT7RT.B.1.3	Route 7 over Difficult Run
RT7RT.B.2	Noise Barrier Plans
RT7RT.B.3	Advanced MOT Plans
RT7RT.B.4	Roadway / Retaining Walls / ROW
RT7RT.B.5	Bridge Plans
RT7RT.C	PUBLIC INVOLVEMENT/PUBLIC RELATIONS
RT7RT.D	**ENVIRONMENTAL PERMITTING**
RT7RT.D.1	**Joint Permit Application (Eastern Section)**
RT7RT.D.2	Joint Permit Application (Middle Section)
RT7RT.D.3	Joint Permit Application (Western Section)
RT7RT.D.4	SWPPP / LD-445

WBS Path	WBS Name
RT7RT.E	**RIGHT OF WAY / EASEMENT ACQUISITIONS**
RT7RT.E.1	Segment 1A East Bound (2 Properties)
RT7RT.E.2	Segment 1A West Bound (7 Properties)
RT7RT.E.3	Segment 1B East Bound (6 Properties)
RT7RT.E.4	Segment 1B West Bound (6 Properties)
RT7RT.E.5	Segment 1C East Bound (20 Properties)
RT7RT.E.6	Segment 1C West Bound (6 Properties)
RT7RT.E.7	Segment 1D East Bound (9 Properties)
RT7RT.E.8	Segment 1D West Bound (1 Property)
RT7RT.E.9	Segment 2A East Bound (30 Properties)
RT7RT.E.10	Segment 2A West Bound (23 Properties)
RT7RT.E.11	Segment 3A East Bound (10 Properties)
RT7RT.E.12	Segment 3A West Bound (3 Properties)
RT7RT.E.13	Segment 4A East Bound (24 Properties)
RT7RT.E.14	Segment 4A West Bound (10 Properties)
RT7RT.E.15	Segment 4B East Bound (13 Properties)
RT7RT.E.16	Segment 4B West Bound (19 Properties)
RT7RT.E.17	Segment 4C East Bound (14 Properties)
RT7RT.E.18	Segment 4C West Bound (20 Properties)
RT7RT.E.19	Segment 4D East Bound (8 Properties)
RT7RT.E.20	Segment 4D West Bound (1 Property)
RT7RT.F	**UTILITY RELOCATIONS**
RT7RT.F.1	Cox
RT7RT.F.1.1	Relocate Underground Fiberoptic Cable from Station 176+50 to Station 185+00 (Segment 1A)
RT7RT.F.1.2	Relocate Underground Coaxial Cable from Station 178+00 to Station 183+00 (Segment 1A)
RT7RT.F.1.3	Relocate Underground Coaxial Cable from Station 185+50 to Station 188+00 (Segment 1A)
RT7RT.F.1.4	Relocate Overhead Coaxial Cable from Station 190+00 to Station 203+00 (Segment 1B)
RT7RT.F.1.5	Relocate Overhead Coaxial Cable from Station 213+00 to Station 239+00 (Segment 1C)
RT7RT.F.1.6	Reconnect Underground Coaxial Cable at Station 247+00 (Segment 1C)
RT7RT.F.1.7	Relocate Overhead Coaxial Cable from Station 279+50 to Station 314+00 (Segment 2A)
RT7RT.F.1.8	Relocate Underground Coaxial Cable from Station 334+00 to 338+50 (Segment 3A)
RT7RT.F.1.9	Relocate Overhead Coaxial Cable from Station 360+00 to Station 404+00 (Segments 3A & 4A)
RT7RT.F.1.10	Relocate Underground Coaxial Cable from Station 391+00 to 395+50 (Segment 4A)
RT7RT.F.1.11	Relocate OH Coaxial and Fiber Cables from Station 404+00 to Station 423+00(Segments 4A & 4B)

WBS Path	WBS Name
RT7RT.F.1.12	Relocate Overhead Coaxial Cable from Station 423+00 to Station 442+00 (Segment 4B)
RT7RT.F.1.13	Relocate Overhead Coaxial Cable from Station 442+00 to Station 454+00 (Segment 4B)
RT7RT.F.1.14	Relocate Underground Coaxial Cable on Towlston Road (Segment 4C)
RT7RT.F.1.15	Relocate Overhead Coaxial Cable from Station 459+00 to Station 494+00 (Segment 4C)
RT7RT.F.2	Fiberlight
RT7RT.F.2.1	Segment 4A Relocations
RT7RT.F.2.2	Segment 4B Relocations
RT7RT.F.2.3	Segment 4C Relocations
RT7RT.F.2.4	Segment 4D Relocations
RT7RT.F.3	Level 3
RT7RT.F.3.1	Segment 1A Relocations
RT7RT.F.3.2	Segment 1B Relocations
RT7RT.F.3.3	Segment 1C Relocations
RT7RT.F.3.4	Segment 1D Relocations
RT7RT.F.3.5	Segment 2A Relocations
RT7RT.F.3.6	Segment 3A Relocations
RT7RT.F.3.7	Segment 4A Relocations
RT7RT.F.3.8	Segment 4B Relocations
RT7RT.F.3.9	Segment 4C Relocations
RT7RT.F.4	MCI
RT7RT.F.4.1	Segment 1D Relocations
RT7RT.F.4.2	Segment 2A Relocations
RT7RT.F.4.3	Segment 3A Relocations
RT7RT.F.4.4	Segment 4A Relocations
RT7RT.F.4.5	Segment 4B Relocations
RT7RT.F.4.6	Segment 4C Relocations
RT7RT.F.5	Verizon
RT7RT.F.5.1	Relocate OH Copper and Fiber Lines from Station 174+50 to Station 187+00 (Segment 1A)
RT7RT.F.5.2	Relocate Underground Copper Line from Station 179+75 to Station 182+00 (Segment 1A)
RT7RT.F.5.3	Relocate OH Copper and Fiber Lines from Station 190+00 to Station 203+00 (Segment 1B)
RT7RT.F.5.4	Relocate Underground Fiber Line from Station 192+00 to Station 196+00 (Segment 1B)
RT7RT.F.5.5	Relocate Underground Fiber Line from Station 195+00 to Station 197+00 (Segment 1B)
RT7RT.F.5.6	Relocate OH Copper and Fiber Lines from Station 213+00 to Station 239+00 (Segment 1C)
RT7RT.F.5.7	Relocate Overhead Copper Line from Station 238+50 to Station 250+00 (Segment 1C)
RT7RT.F.5.8	Connect Underground Copper Line at Station 255+00 (Segment 2A)

WBS Path	WBS Name
RT7RT.F.5.9	Relocate Overhead Copper Line from Station 278+50 to Station 291+50 (Segment 2A)
RT7RT.F.5.10	Relocate Overhead Copper Line from Station 293+50 to Station 311+50 (Segment 2A)
RT7RT.F.5.11	Relcoate Underground Copper Line from Station 356+00 to Station 360+00 (Segment 3A)
RT7RT.F.5.12	Relocate 16-Way Duct Bank from Station 360+00 to Station 377+50 (Segment 3A)
RT7RT.F.5.13	Relocate Overhead Copper Line from Station 360+00 to Station 404+00 (Segments 3A & 4A)
RT7RT.F.5.14	Relocate Overhead Copper Line from Station 360+00 to Station 404+00 (Segments 3A & 4A)
RT7RT.F.5.15	Relocate Overhead Copper Line from Station 360+00 to Station 404+00 (Segments 3A & 4A)
RT7RT.F.5.16	Relocate Overhead Copper Line from Station 409+00 to Station 414+00 (Segment 4A)
RT7RT.F.5.17	Relocate Underground Copper Line at Station 414+00 (Segment 4A)
RT7RT.F.5.18	Relocate Overhead Copper Line from Station 423+00 to Station 442+00 (Segment 4B)
RT7RT.F.5.19	Relocate Underground Copper Line from Station 423+00 to Station 424+00 (Segment 4B)
RT7RT.F.5.20	Relocate Overhead Copper Line from Station 442+00 to Station 454+00 (Segment 4B)
RT7RT.F.5.21	Relocate Underground Copper Line from Station 451+00 to Station 453+00 (Segment 4B)
RT7RT.F.5.22	Relocate 16-Way Duct Bank from Station 451+00 to Station 466+00 (Segments 4B & 4C)
RT7RT.F.5.23	Relocate Overhead Copper Line on Towlston Road (Segment 4C)
RT7RT.F.5.24	Relocate OH Copper and Fiber Lines from Station 459+00 to Station 462+00 (Segment 4C)
RT7RT.F.5.25	Relocate OH Copper and Fiber Lines from Station 459+00 to Station 462+00 (Segment 4C)
RT7RT.F.5.26	Relocate Overhead Copper Line from Station 462+00 to Station 490+00 (Segment 4C)
RT7RT.F.5.27	Relocate Underground Copper Line at Station 503+00 (Section 4D)
RT7RT.F.5.28	Relocate Underground Copper Line at Station 511+00 (Section 4D)
RT7RT.F.6	Zayo
RT7RT.F.6.1	Relocate Duct Bank from Station 278+00 to Station 286+00 (Segment 2A)
RT7RT.F.7	Washington Gas Distribution
RT7RT.F.7.1	Segment 1A Relocations
RT7RT.F.7.2	Segment 1C Relocations
RT7RT.F.7.3	Segment 3A Relocations
RT7RT.F.7.4	Segment 4A Relocations
RT7RT.F.7.5	Segment 4B Relocations
RT7RT.F.7.6	Segment 4C Relocations
RT7RT.F.7.7	Segment 4D Relocations

WBS Path	WBS Name
RT7RT.F.8	WGL Project (by others)
RT7RT.F.8.1	Strip 2
T7RT.F.8.1.1	Dranesville Gate Station to Great Passage Blvd. (Segment 1C)
RT7RT.F.8.2	Strip 1
T7RT.F.8.2.1	Dranesville Gate Station to Great Passage Blvd. (Segnment 1C)
T7RT.F.8.2.2	Install 24” Gas Main from Station 237+00 to Station 318+00 (Segments 1C & 2A)
T7RT.F.8.2.3	Install 24 Gas Main from Station 318+00 to Station 372+00 (Segments 1D
T7RT.F.8.2.4	Install 24” Gas Main from Station 372+00 to Station 422+00 (Segments 4A & 4B)
T7RT.F.8.2.5	Install 24” Gas Main from Station 422+00 to Station 470+00 (Segments 4B & 4C)
RT7RT.F.8.2.6	Install 24” Gas Main from Station 470+00 to Station 523+00 (Segments 4C & 4D)
RT7RT.F.10	Dominion Energy
RT7RT.F.10.1	Relocate Overhead Electric Circuit from Station 174+50 to Station 190+00 (Segment 1A)
RT7RT.F.10.2	Relocate Overhead Electric Circuit from Station 190+00 to Station 203+00 (Segment 1B)
RT7RT.F.10.3	Relocate Overhead Electric Circuit from Station 213+00 to Station 239+00 (Segment 1C)
RT7RT.F.10.4	Relocate Overhead Electric Circuit from Station 238+00 to Station 279+00 (Segments 1C & 2A)
RT7RT.F.10.5	Temporary Relocation of Electric Pole at Station 278+50 (Segment 2A)
RT7RT.F.10.6	Relocate Overhead Electric Circuit at Springvale Road (Segment 2A)
RT7RT.F.10.7	Relocate Overhead Electric Circuit from Station 279+50 to Station 314+00 (Segment 2A)
RT7RT.F.10.8	Relocate Underground Electric Circuit from Station 333+50 to Station 339+00 (Segment 3A)
RT7RT.F.10.9	Relocate Overhead Electric Circuit at Carpers Farm Way (Segment 3A)
RT7RT.F.10.10	Relocate Overhead Electric Circuit from Station 360+00 to Station 404+00 (Segments 3A & 4A)
RT7RT.F.10.11	Relocate Overhead Electric Circuit from Station 404+00 to Station 423+00 (Segments 4A & 4B)
RT7RT.F.10.12	Relocate Overhead Electric Circuit from Station 423+50 to Station 442+00 (Segment 4B)
RT7RT.F.10.13	Relocate Overhead Electric Circuit from Station 442+00 to Station 454+00 (Segment 4B)
RT7RT.F.10.14	Relocate Overhead Electric Circuit on Towlston Road (Segment 4C)
RT7RT.F.10.15	Relocate Overhead Electric Circuit from Station 459+00 to Station 494+00 (Segment 4C)
RT7RT.F.10.16	Relocate Overhead Electric Circuit from Station 459+00 to Station 494+00 (Segment 4C)
RT7RT.F.10.17	Relocate Overhead Electric Circuit from Station 494+00 to Station 516+00 (Segments 4C & 4D)

WBS Path	WBS Name
RT7RT.F.10.18	Relocate Overhead Electric Circuit from Station 163+00 to Station 165+00 (Segment 1A)
RT7RT.F.11	Fairfax DPW
RT7RT.F.11.1	Relocate 33" Sanitary from Station 349+00 to Station 354+00 (Area 6)
RT7RT.F.12	Fairfax Water Distribution
RT7RT.F.12.1	Relocate 12" Water Main from Station 178+00 to Station 185+00 (Segment 1A)
RT7RT.F.12.2	Relocate 12" Water Main from Station 181+00 to Station 182+50 (Segment 1A)
RT7RT.F.12.3	Relocate 8" and 12" Water Mains at Station 182+40 (Segment 1A)
RT7RT.F.12.4	Relocate 8" Water Main at Station 184+00 (Segment 1A)
RT7RT.F.12.5	Relocate 12" Water Main from Station 225+00 to Station 227+00 (Segment 1C)
RT7RT.F.12.6	Relocate 12" Water Main at Station 227+00 (Segment 1C)
RT7RT.F.12.7	Relocate 30" Water Main from Station 228+00 to Station 231+00 (Segment 1C)
RT7RT.F.12.8	Relocate 12" Water Main at Station 229+00 (Segment 1C)
RT7RT.F.12.9	Relocate 30" Water Main from Station 242+75 to Station 247+00 (Segment 1C)
RT7RT.F.12.10	Relocate 12" Water Main from Station 253+00 to Station 254+00 (Segment 1C)
RT7RT.F.12.11	Relocate 30" Water Main from Station 265+00 to Station 272+00 (Segment 2A)
RT7RT.F.12.12	Relocate 30" Water Main on Baron Cameron Avenue (Segment 2A)
RT7RT.F.12.14	Relocate 12" Water Main from Station 281+00 to Station 285+50 (Segment 2A)
RT7RT.F.12.15	Relocate 12" Water Main from Station 299+50 to Station 303+00 (Segment 2A)
RT7RT.F.12.16	Relocate 12" Water Main at Station 311+50 (Segment 1D)
RT7RT.F.12.17	Relocate 8" Water Main at Station 355+50 (Segment 3A)
RT7RT.F.12.18	Relocate 8" Water Main at Station 375+00 (Segment 4A)
RT7RT.F.12.19	Relocate 8" Water Main at Station 380+00 (Segment 4A)
RT7RT.F.12.20	Adjust Hydrant at Station 384+50 (Segment 4A)
RT7RT.F.12.21	Relocate Hydrant at Station 385+00 (Segment 4A)
RT7RT.F.12.22	Relocate 16" Water Main from Station 396+00 to Station 397+00 (Segment 4A)
RT7RT.F.12.23	Relocate Hydrant at Station 397+00 (Segment 4A)
RT7RT.F.12.24	Relocate 16" Water Main from Station 404+50 to 406+00 (Segment 4A)
RT7RT.F.12.25	Relocate 12" Water Main from Station 406+00 to Station 407+50 (Segment 4A)
RT7RT.F.12.26	Relocate Hydrant at Station 410+75 (Segment 4A)
RT7RT.F.12.27	Relocate 12" Water Main at Station 412+00 (Segment 4A)
RT7RT.F.12.28	Relocate 8" Water Main at Station 414+50 (Segment 4A)
RT7RT.F.12.29	Relocate 12" Water Main from Station 420+50 to Station 421+00 (Segment 4B)

WBS Path	WBS Name
RT7RT.F.12.30	Relocate 12" Water Main from Station 428+00 to Station 434+00 (Segment 4B)
RT7RT.F.12.31	Relocate 12" Water Main at Station 435+00 (Segment 4B)
RT7RT.F.12.32	Relocate 12" Water Main from Station 436+00 to Station 448+50 (Segment 4B)
RT7RT.F.12.33	Relocate 12" Water Main on Towlston Road (Segment 4C)
RT7RT.F.12.34	Relocate 12" Water Main from Station 454+00 to Station 455+00 (Segment 4C)
RT7RT.F.12.35	Relocate 12" Water Main from Station 460+50 to Station 466+00 (Segment 4C)
RT7RT.F.12.36	Relocate 12" Water Main at Station 465+50 (Segment 4C)
RT7RT.F.12.37	Relocate 12" Water Main at Station 473+00 (Segment 4C)
RT7RT.F.12.38	Install Hydrant at Station 474+25 (Section 4C)
RT7RT.F.12.39	Relocate 12" Water Main from Station 479+00 to Station 493+00 (Segment 4C)
RT7RT.F.12.40	Relocate 12" Water Main at Station 480+50 (Segment 4C)
RT7RT.F.12.41	Relocate 12" Water Main at Station 481+00 (Segment 4C)
RT7RT.F.12.42	Relocate 6" Water Main at Station 486+00 (Segment 4C)
RT7RT.F.12.43	Relocate 8" Water Main at Station 493+00 (Segment 4C)
RT7RT.F.12.44	Relocate 12" Water Main at Station 494+00 (Segment 4C)
RT7RT.F.12.45	Relocate 8" and 12" Water Main at Station 499+50 (Segment 4C)
RT7RT.F.12.46	Relocate 8" and 12" Water Mains at Lewinsville Road (Segment 4C)
RT7RT.F.12.47	Install Hydrant at Station 504+50 (Segment 4D)
RT7RT.F.12.48	Relocate 12" Water Main from Station 506+00 to Station 509+50 (Segment 4D)
RT7RT.F.13	Fairfax Water Transmission
RT7RT.F.13.1	Relocate 54" Water Main from Station 278+50 to Station 290+00 (Segment 2A)
RT7RT.F.13.2	Relocate 54" Water Main from Station 337+00 to Station 347+00 (Segment 1D)
RT7RT.F.13.4	Relocate 54" Water Main from Station 488+50 to Station 490+00 (Segment 4C)
RT7RT.F.13.5	Relocate 54" Water Main from Station 506+00 to Station 508+75 (Segment 4D)
RT7RT.G	**CONSTRUCTION**
RT7RT.G.1	Area 1 - West of Difficult Run
RT7RT.G.1.A	Segment 1A - West End to Reston Avenue (Station 166+75 to 190+75)
RT7RT.G.1.A.1	**Stage 1A**
RT7RT.G.1.A.2	Stage 1B
RT7RT.G.1.A.3	Stage 2
RT7RT.G.1.A.4	Stage 3A
RT7RT.G.1.A.4.1	Soundwall
RT7RT.G.1.A.5	Stage 3B
RT7RT.G.1.B	Segment 1B - Reston Avenue to Utterback Store Road (Station 190+75 to 215+75)

WBS Path	WBS Name
RT7RT.G.1.B.1	Stage 1A
RT7RT.G.1.B.2	Stage 1B
RT7RT.G.1.B.3	Stage 2
RT7RT.G.1.B.3.1	Soundwall
RT7RT.G.1.B.4	Stage 3A
RT7RT.G.1.B.4.1	Soundwall
RT7RT.G.1.B.5	Stage 3B
RT7RT.G.1.C	Segment 1C - Utterback Store Road to Riva Ridge Drive (Station 215+75 to 254+00)
RT7RT.G.1.C.1	Stage 1A
RT7RT.G.1.C.2	Stage 1B
RT7RT.G.1.C.3	Stage 2
RT7RT.G.1.C.3.1	Soundwall
RT7RT.G.1.C.4	Stage 3A
RT7RT.G.1.C.4.1	Soundwall
RT7RT.G.1.C.5	Stage 3B
RT7RT.G.1.D	Segment 1D - Delta Glen Court to Colvin Forest Drive (Station 313+00 to 334+25)
RT7RT.G.1.D.1	Stage 1A
RT7RT.G.1.D.2	Stage 1B
RT7RT.G.1.D.3	Stage 2
RT7RT.G.1.D.3.1	Soundwall
RT7RT.G.1.D.4	Stage 3A
RT7RT.G.1.D.4.1	Soundwall
RT7RT.G.1.D.5	Stage 3B
RT7RT.G.2	Area 2 - Baron Cameron Avenue Intersection
RT7RT.G.2.A	Segment 2A - Riva Ridge Drive to Delta Glen Court (Station 254+00 to 313+00)
RT7RT.G.2.A.1	Stage 1
RT7RT.G.2.A.2	Stage 2A
RT7RT.G.2.A.3	Stage 2B
RT7RT.G.2.A.5	Stage 3A
RT7RT.G.2.A.5.1	Soundwall
RT7RT.G.2.A.6	Stage 3B
RT7RT.G.2.A.6.1	Soundwall
RT7RT.G.2.A.4	Stage 2C
RT7RT.G.3	Area 3 - Difficult Run Bridge
RT7RT.G.3.A	Segment 3A - Colvin Forest Drive to Faulkner Drive (Station 334+25 to 375+00)
RT7RT.G.3.A.1	Stage 1
RT7RT.G.3.A.2	Stage 2
RT7RT.G.3.A.2.1	Stage 2 Roadway
RT7RT.G.3.A.2.1.1	Stream Relocation
RT7RT.G.3.A.2.1.2	Soundwall
RT7RT.G.3.A.2.2	Stage 2 Structures

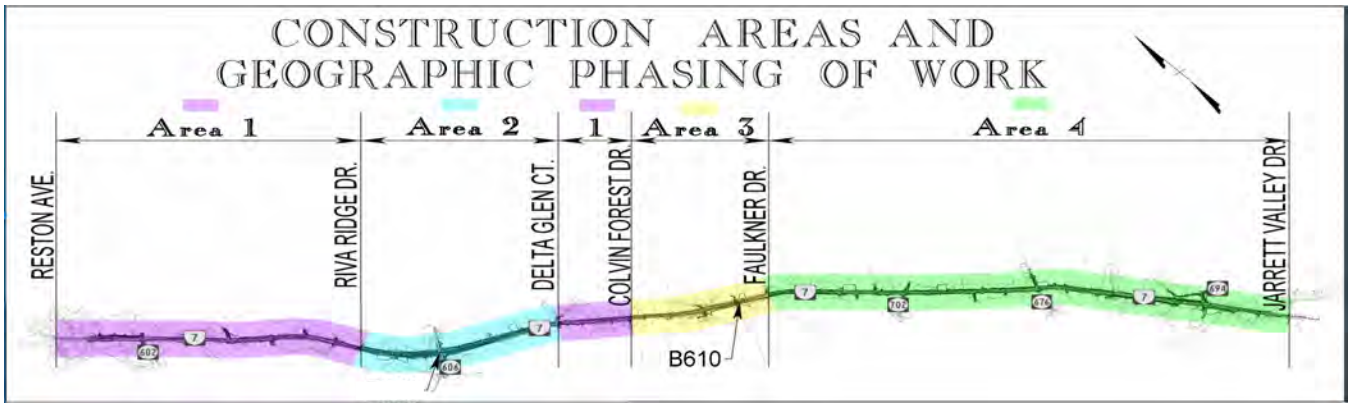
WBS Path	WBS Name
RT7RT.G.3.A.2.2.1	B610 - Route 7 EB over Difficult Run
RT7RT.G.3.A.2.2.1.1	Existing Bridge
RT7RT.G.3.A.2.2.1.2	Substructure
RT7RT.G.3.A.2.2.1.2.1	Abutment A
RT7RT.G.3.A.2.2.1.2.2	Pier 1
RT7RT.G.3.A.2.2.1.2.3	Pier 2
RT7RT.G.3.A.2.2.1.2.4	Abutment B
RT7RT.G.3.A.2.2.1.3	Superstructure
RT7RT.G.3.A.2.2.2	B606 - Pedestrian Tunnel Under Route 7 EB
RT7RT.G.3.A.2.2.3	Retaining Wall
RT7RT.G.3.A.2.2.4	D608 - Carpers Farm Way over Colvin Run (Triple Box)
RT7RT.G.3.A.3	Stage 3A
RT7RT.G.3.A.3.1	Stage 3A Roadway
RT7RT.G.3.A.3.1.1	Soundwall
RT7RT.G.3.A.3.2	Stage 3A Structures
RT7RT.G.3.A.3.2.1	B610 - Route 7 WB over Difficult Run
RT7RT.G.3.A.3.2.1.1	Existing Bridge
RT7RT.G.3.A.3.2.1.2	Substructure
RT7RT.G.3.A.3.2.1.2.1	Abutment A
RT7RT.G.3.A.3.2.1.2.2	Pier 1
RT7RT.G.3.A.3.2.1.2.3	Pier 2
RT7RT.G.3.A.3.2.1.2.4	Abutment B
RT7RT.G.3.A.3.2.1.3	Superstructure
RT7RT.G.3.A.3.2.2	B606 - Pedestrian Tunnel Under Route 7 WB
RT7RT.G.3.A.4	Stage 3B
RT7RT.G.3.A.4.1	Stage 3B Roadway
RT7RT.G.3.A.4.2	Stage 3B Structures
RT7RT.G.3.A.4.2.1	B610 - Route 7 over Difficult Run
RT7RT.G.4	Area 4 - East of Difficult Run
RT7RT.G.4.A	Segment 4A - Faulkner Drive to Beulah Road (Station 375+00 to 414+75)
RT7RT.G.4.A.1	Stage 1
RT7RT.G.4.A.2	Stage 2
RT7RT.G.4.A.2.1	Soundwall
RT7RT.G.4.A.3	Stage 3A
RT7RT.G.4.A.3.1	Soundwall
RT7RT.G.4.A.4	Stage 3B
RT7RT.G.4.B	Segment 4B - Beulah Road to Towlston Road (Station 414+75 to 453+00)
RT7RT.G.4.B.1	Stage 1
RT7RT.G.4.B.2	Stage 2
RT7RT.G.4.B.2.1	Soundwall
RT7RT.G.4.B.3	Stage 3A
RT7RT.G.4.B.3.1	Soundwall
RT7RT.G.4.B.4	Stage 3B
RT7RT.G.4.C	Segment 4C - Towlston Road to Lewinsville Road (Station 453+00 to 501+50)
RT7RT.G.4.C.1	Stage 1

WBS Path	WBS Name
RT7RT.G.4.C.2	Stage 2
RT7RT.G.4.C.3	Stage 3A
RT7RT.G.4.C.3.1	Soundwall
RT7RT.G.4.C.4	Stage 3B
RT7RT.G.4.D	Segment 4D - Lewinsville Road to East End (Station 501+50 to 526+26)
RT7RT.G.4.D.1	Stage 1
RT7RT.G.4.D.2	Stage 2
RT7RT.G.4.D.3	Stage 3A
RT7RT.G.4.D.4	Stage 3B

Geography and Construction Staging

Our Team plans to construct the Project in four geographic Areas during three Stages of construction. The four Areas are based on the geometric conditions of the existing roadway which influences the work that can take place in each Stage. The Areas are shown in Figure 4.6.1.1.

Figure 4.6.1.1 - Construction Areas and Geographic Phasing of Work



These four geographic Areas are defined as:

- **Area 1** - Western Terminus to Colvin Forest Drive, excluding the Baron Cameron Avenue Intersection
- **Area 2** - Baron Cameron Avenue Intersection
- **Area 3** - Colvin Forest Drive to Faulkner Drive
- **Area 4** - Faulkner Drive to Eastern Terminus

The three Stages of work within each Area are generally described as follows:

AREA 1

Stage 1A – Strengthen Westbound Outside Shoulder and Wedge Overlay
Stage 1B – Construct Temporary Pavement
Stage 2 – Construct Permanent Eastbound Lanes
Stage 3A – Construct Permanent Westbound Lanes
Stage 3B – Construct Remaining Permanent Pavement and Median

AREA 2

Stage 1 – Construct Temporary Pavement in Existing Median
Stage 2A – Construct Partial Westbound Pavement
Stage 2B – Construct Permanent Westbound Lanes
Stage 2C – Construct Permanent Westbound Turn Lanes at Baron Cameron Avenue
Stage 3A – Construct Permanent Eastbound Lanes
Stage 3B – Construct Remaining Permanent Westbound Lanes

AREA 3

Stage 1 – Construct Temporary Pavement
Stage 2 – Construct Permanent Eastbound Lanes and Eastbound Difficult Run Bridge
Stage 3A – Construct Permanent Westbound Lanes and Westbound Difficult Run Bridge
Stage 3B – Construct Eastbound Multi-Use Path

AREA 4

Stage 1 – Strengthen Outside Shoulder and Construct Temporary Pavement
Stage 2 – Construct Permanent Westbound Lanes
Stage 3A – Construct Permanent Eastbound Lanes
Stage 3B – Construct Remaining Permanent Pavement and Median

For the purposes of the Project Schedule, Team divided each Area into smaller Segments. These Segments start and end at major intersections and allow for a more detailed management and monitoring of the construction phase.

These Segments are defined as follows:

AREA 1

Segment A – Station 166+75 to Station 190+75
Segment B – Station 190+75 to Station 215+75
Segment C – Station 215+75 to Station 254+00
Segment D – Station 313+00 to Station 334+25

AREA 2

Segment A – Station 254+00 to Station 313+00

AREA 3

Segment A – Station 334+25 to Station 375+00

AREA 4

Segment A – Station 375+00 to Station 414+75
Segment B – Station 414+75 to Station 453+00
Segment C – Station 453+00 to Station 501+50
Segment D – Station 501+50 to Station 526+62

Schedule Calendars

The following is a description of the calendars used for the Project Schedule:

Global Calendar - All calendars are based on 8 hour workdays and include the following holidays:

- New Years Day
- Memorial Day
- Independence Day

CALENDAR 1

5 Day Workweek with Holidays

This calendar is based on five working days per week with the holidays marked as non-working days. This calendar is used for design, public involvement, environmental permitting, utility relocations, and the majority of construction activities.

JAN 1 – MAR 15

CALENDAR 2

5 Day Workweek, Winter Restricted

This calendar reduces the number of working days per week to four days for specific construction activities, including installation of MOT devices, stripping topsoil, excavation, fine grading, cement stabilization, and CTA installation, from the beginning of January until mid-March.

DEC 24 – MAR 15

CALENDAR 3

5 Day Workweek, Winter Shutdown

This calendar is assigned to activities that are unable to be performed from the last week in December through mid-March due to cold weather. Activities such as concrete deck pours, asphalt paving, and cement-treated aggregate have been assigned this calendar.

CALENDAR 4

7 Day Workweek

This calendar is assigned to activities that have durations based on calendar days as opposed to working days. Activities such as VDOT's 21-calendar day submittal review and Right-of-Way acquisition are included in this calendar.

APR 15 – OCT 15

CALENDAR 5

Water Main Tie-In

This calendar restricts work from mid-April until mid-October for all water transmission main tie-in activities.

OCT 15 – APR 15

CALENDAR 6

Gas Main Tie-In

This calendar restricts work from mid-October until mid-April for all gas transmission main line tie-in activities.

JUNE – JULY

CALENDAR 7

Clearing

This calendar restricts all clearing activities in the months of June and July to account for potential bat and bird Time-of-Year (TOY) restrictions.

OCT – MAR

CALENDAR 8

Instream Work

This calendar restricts all work with 150 feet of Difficult Run from October through March to account for TOY restrictions.

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, and construction. The activity sequence was developed to most efficiently utilize available resources and to complete the Project in the minimum amount of time. The sequencing was developed by considering the construction phasing of operations and determining the longest path to completion with all factors examined including manpower, subcontractors, materials, design, environmental constraints, and most importantly public safety of safety of the workforce. The sequence was also developed with the WGL Project sequence of work.

Design

This section of the schedule includes the activities required for preliminary design including geotechnical work, noise barrier design, Advance TTC Plans, roadway and retaining wall design, and bridge design. Time for design QA / QC reviews has been accounted for within this section of the schedule, and, per the RFP, a 21-calendar day activity for VDOT review of each submission is included. The design phase also includes non-critical activities for the completion of surveys, test pits, floodplain studies, and geotechnical investigations which include a 90-day calendar 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, and multiple teams will be working concurrently to complete all design elements as expeditiously as possible. The Proposal Schedule reflects final approval of bridge plans by August 29, 2019, final approval of roadway plans by October 14, 2019, and final approval of noise barrier plans by February 3, 2020. In order to begin work early in the 2019 construction season, the Team will submit Advanced TTC Plans within four months of Contract execution with final approval by May 9, 2019.

Public Involvement/Public Relations

This schedule includes submission of the Communications Plan within 45 days of Notice to Proceed, performing monthly updates for Public Affairs, holding a meeting with the Route 7 Working Group and stakeholder HOAs, holding two public information meetings during design, and holding multiple "Pardon Our Dust" meetings prior to each stage of construction.

Environmental Permitting

This section of the schedule breaks the Joint Permit Application process into three sections: the eastern section which includes Segments 4A, 4B, 4C and 4D; the middle section which includes Segment 3A or the Difficult Run stream; and the western section which includes Segments 1A, 1B, 1C, 1D and 2A. These sections have been broken out based on anticipated permit types and durations for approval. There is also a section in the schedule for the SWPPP / LD-445 process.

Each of the Joint Permit Application sections begins at NTP with the identification of threatened and endangered species followed by wetland delineations. The schedule shows the Joint Permit Application for each of the sections being submitted at the same time as the first submission of roadway plans. For the eastern and western sections, 90-working days each are provided for agency review, and for the middle section, 270-working days are provided for individual permit reviews and approval including USACE, DEQ and VMRC. Approval of the Joint Permit Applications allows for clearing operations to begin in the specified sections as listed above.

The Team will complete the LD-445 and Stormwater Pollution Prevention Plans (SWPPP) to be included on the SWPPP General Information sheets.

Right-of-Way Acquisition

The acquisition of properties is required to obtain permanent ROW as well as permanent and temporary easements. The preparation of title reports begins with the VDOT approval of the ROW plans which is concurrent with the VDOT review and comment of the second submission of roadway plans.

As there are over 230 property acquisitions anticipated, our Team has committed multiple firms to expedite the acquisition of ROW. We have prioritized acquisitions based on utility relocations and Stage of roadway work. ROW for roadway activities is not required until Stage 2 because of our sequence of work which allows Stage 1 to proceed within existing ROW limits.

Utility Relocations

Table 7 in Section 4.4.2 lists the anticipated utilities impacted by the Project. The Team created a WBS that arranges the utility relocation activities by owner and then by individual relocation within the Area and Stage of work. For each utility owner, activities were created for holding the Utility Field Investigation (UFI) meeting, preparation of relocation plans by the utility owner, and approval of the relocation design. One or more activities were created to represent each utility relocation area. For fiber optic facilities where multiple utility owners maintain facilities in a single duct bank, one activity was created to represent construction of a new duct bank and additional activities were created to represent the relocation of each owner's facilities to a new duct bank. For water main relocations, separate activities were created to represent the installation of new pipe, testing, and tie-ins. The same set of activities were created for the WGL Project. For the Fairfax Water transmission main, and the WGL Project, special calendars were applied to the tie-in activity to account for the respective time of year restrictions on service disruptions for each utility.

The utility relocation schedule starts with formal UFI meetings following completion of all utility test pits and progression of design plans to the 60% threshold. 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. Coordination with utility owners continues through the remainder of the design phase to ensure that ROW and roadway plans are coordinated with the utility relocation plans.

Utility relocations that take place within existing ROW are the first to begin. This allows work to start as soon as utility relocation plans are approved. Sometimes small-scale clearing must take place before larger scale clearing and grubbing is performed for roadway construction. Where this is required, an activity was included to represent that work and assigned the calendar for clearing and grubbing that takes time-of-year restrictions into account.

The next relocations are those that require ROW/easements and must take place to facilitate roadway construction. These account for most of the relocations required by the Project. These relocations are prioritized so that those required for Stage 2 construction are completed before those required for Stage 3 construction.

The final relocations are those that require ROW/easements and must take place to facilitate noise barrier construction.

Construction

The following narrative provides a detailed description of our sequence of construction in each Area of the Project:

Area 1 - Western Terminus to Colvin Forest Drive

(Excluding Baron Cameron Avenue Intersection)

Area 1, Stage 1A – Strengthen Outside WB Shoulder and Wedge Overlay

In Area 1, all work in Stage 1A and 1B is contained within the existing ROW. Therefore, construction will commence upon approval of the Advance TTC Plan set while ROW acquisition and utility relocations are ongoing, mitigating the potential for schedule delays due to issues with ROW acquisition and utility relocation.

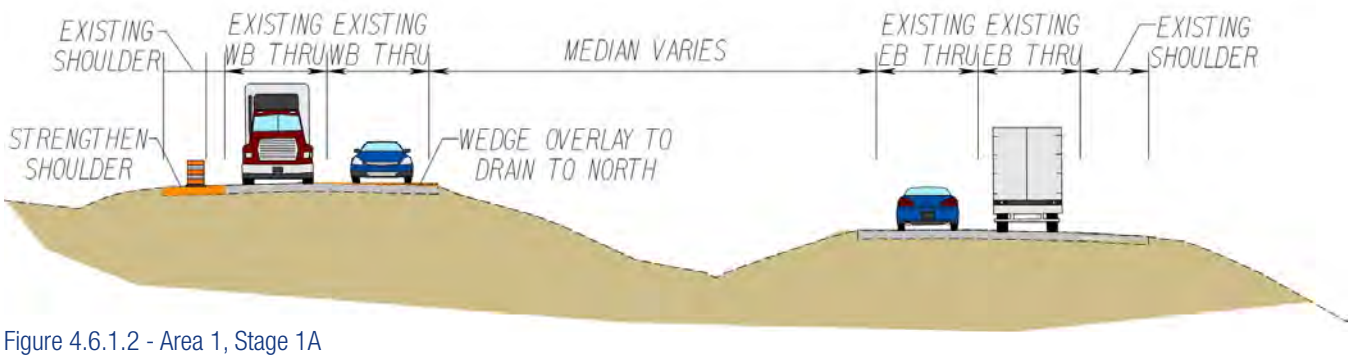


Figure 4.6.1.2 - Area 1, Stage 1A

Stage 1A work will consist of two components: strengthening the outside WB shoulder and installing an asphalt wedge in the left WB lane to facilitate positive drainage during construction. Shoulder strengthening enables our Team to shift the two WB lanes to the north and maximize the width of the permanent pavement section constructed in Stage 1B, allowing the WB pavement to be constructed in two Stages.

Prior to shoulder strengthening, temporary signals will be installed at each signalized intersection and the existing signals will be taken out of service. During shoulder strengthening, the existing WB variable depth asphalt shoulder will be removed and replaced with temporary base and intermediate asphalt. This operation will be performed during off-peak lane closures. At the same time, temporary right turn lanes will be constructed in the WB direction. Following the shoulder strengthening, an asphalt wedge will be milled and overlaid onto the portion of the existing left WB lane that is utilized for traffic movement to provide positive drainage during construction.

Area 1, Stage 1B – Construction of Permanent and Temporary Pavement in Existing Median

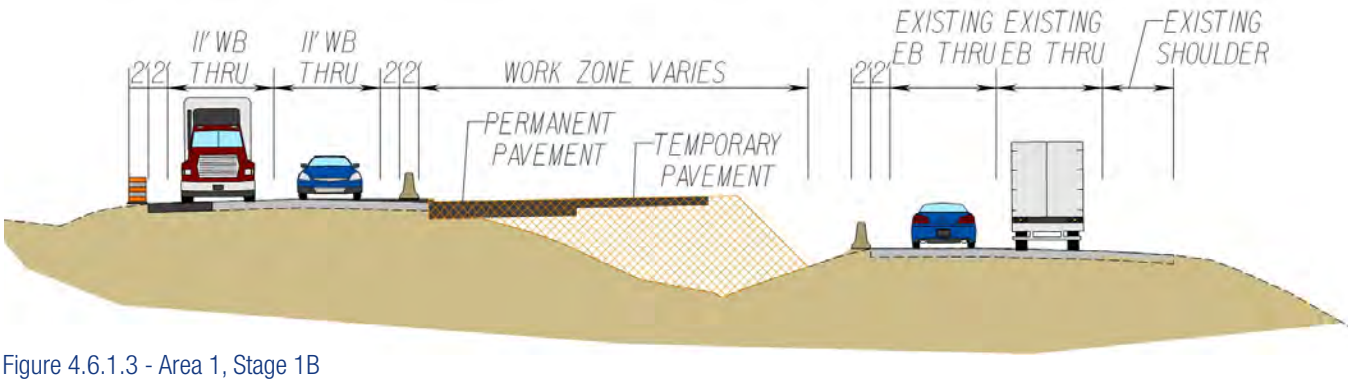


Figure 4.6.1.3 - Area 1, Stage 1B

At the beginning of Stage 1B, the two WB lanes will be shifted onto the strengthened shoulder. Barrier will be placed along the outside edge of the relocated WB left lane to protect the work area. Temporary signals will be adjusted to this configuration.

Stage 1B focuses on constructing a portion of the permanent WB pavement section in the existing median as well as additional temporary pavement that will be utilized in the following Stages of construction. The permanent pavement will be constructed adjacent to the barrier service. Additional barrier will be placed on the left shoulder of the existing EB lanes to protect the Stage 1B median work zone.

The width of the permanent and temporary pavement constructed in Stage 1B will vary depending on whether a left turn lane is required in the WB direction. The total median pavement width will be constructed to accommodate two lanes of EB traffic in Stage 2.

Roadway work in this area will involve stripping topsoil from the median and removing any unsuitable soils. Structural fill will be brought in from other areas in the project or imported from off site. Once the proposed subgrade is established, it will be cement stabilized and CTA will be placed. The first lift of base asphalt will be placed on top of the CTA. Grading and placement of subbase stone for the future temporary asphalt will then take place. The temporary base asphalt will be placed concurrently with the second lift of base asphalt on the permanent pavement section. A lift of intermediate asphalt will then be placed across both the permanent and temporary pavement sections.

Where a WB turn lane is required, permanent pavement for the turn lane will be constructed while traffic is maintained on existing pavement. Once the turn lane pavement is complete, turning traffic will be shifted to the new pavement and the existing pavement will be removed and replaced.

Reconstruction in intersections to build permanent pavement for the future WB lanes will take place using off peak lane closures. Some of the existing intersections, such as Reston Parkway, have significant bifurcation where WB lanes are at a higher elevation than the EB lanes. Asphalt wedging at intersections with a significant bifurcation will be required to transition traffic from the proposed grade in the WB lanes to the existing grade in the EB lanes.

During Stage 1B, any permanent longitudinal storm sewer in the future median will be installed prior to permanent pavement construction. In addition, the first Stage of transverse storm sewer crossings under Route 7 will be installed using conventional methods. Most of the work will take place over the existing Verizon ductbank that will remain in place at completion. Existing manholes will be reconstructed to match the proposed pavement grades.

Area 1, Stage 2 – Construction of Permanent EB Lanes

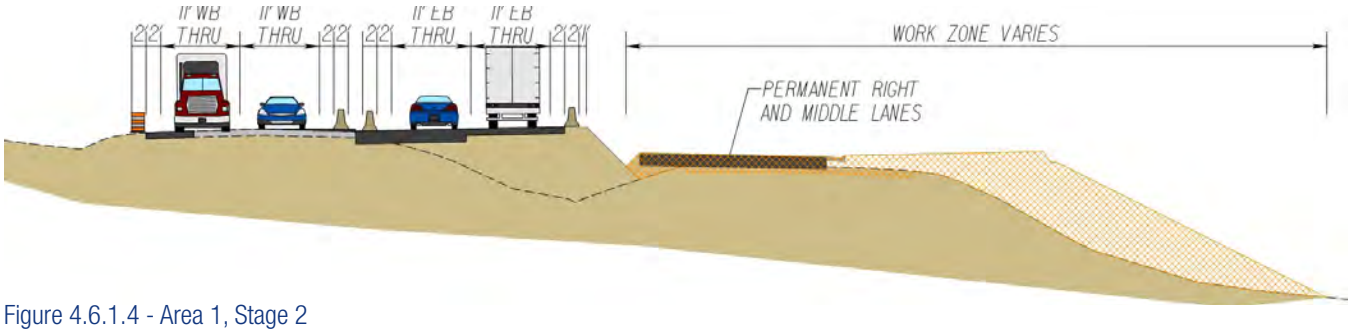


Figure 4.6.1.4 - Area 1, Stage 2

After completion of Stage 1B, the two existing EB lanes will shift onto the permanent and temporary asphalt constructed in Stage 1B. The position of the two WB lanes will not change in this Stage. EB and WB traffic will be separated by barrier. Temporary signals will be adjusted for this new configuration.

In Stage 2, three lanes of permanent pavement will be constructed in areas where no left turn lanes must be maintained. Where left turn lanes must be maintained, a minimum of two lanes of permanent pavement will be constructed. The existing pavement will be milled and removed where it is not being reused. Cut to fill activities will then take place concurrent with the installation of proposed drainage facilities.

Once the storm drainage is installed and the subgrade is established, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section through intermediate asphalt will be constructed. Where three lanes of permanent pavement are constructed, both the outer CG-7 and the inner CG-3 will be placed. In areas where the full width of pavement cannot be constructed, at least 26' of asphalt will be built. If the full pavement width is not constructed, one or both curbs may be

omitted for this phase. Once the intermediate asphalt is placed, temporary pavement markings and barrier service will be placed to facilitate two EB lanes in Stage 3.

Area 1, Stage 3A – Completion of Permanent WB Lanes

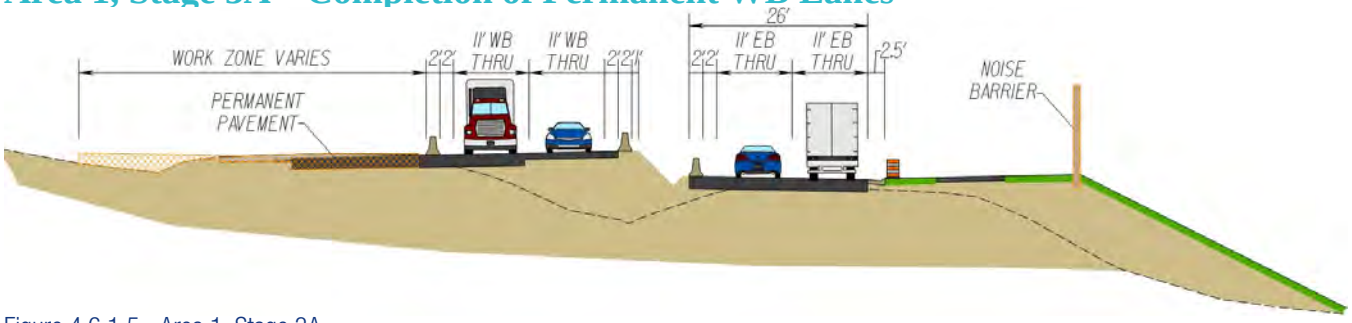


Figure 4.6.1.5 - Area 1, Stage 3A

At the beginning of Stage 3, the two EB lanes will be shifted onto the permanent EB pavement constructed in Stage 2. This will be the second and final shift for the two EB lanes in Area 1. The two WB lanes will be shifted on to the permanent and temporary pavement constructed in the existing median in Stage 1B. EB and WB traffic will be separated by barrier. Temporary signals will be adjusted for this new configuration. In Stage 3A, the remainder of the permanent WB pavement will be constructed. The existing asphalt, including the outside shoulder strengthened in Stage 1A, will be milled and removed where it is not being reused. Cut to fill activities will then take place concurrent with the installation of proposed drainage facilities.

All drainage work will be completed during Stage 3A. Once earthwork and drainage are complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section through intermediate asphalt will be constructed including the outer CG-7 curb. After curb placement, the final lift of base asphalt and the intermediate asphalt will be placed. Temporary pavement markings will then be placed to facilitate two WB lanes in Stage 3B.

EB Noise Barrier and Multi-Use Trail

While Stage 3A roadway construction is underway on the future WB lanes, noise barrier construction will take place adjacent to the EB lanes. Constructing the noise barriers in a later Stage than the adjacent roadway construction in Area 1 allows more time for right-of-way acquisition and utility relocation. Where the work area for noise barrier installation is not outside of the clear zone for the EB lanes, barrier will be installed to protect the work area. Once the noise barriers are complete, conduit for the proposed ITS and lighting systems will be installed and the EB multi-use trail will be constructed.

Area 1, Stage 3B – Completion of Permanent EB Lanes, Median, and Left Turn Lanes

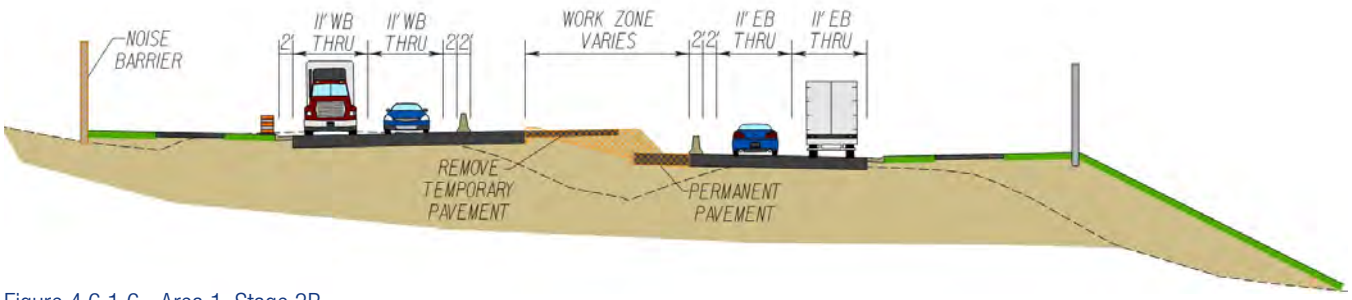


Figure 4.6.1.6 - Area 1, Stage 3B

At the beginning of Stage 3B, the two WB lanes will be shifted onto permanent pavement constructed in Stages 1B and 3. The position of the two EB lanes will not change in this Stage. At this point, the two right-most EB and WB lanes will be operational in their final location. The final adjustment to the temporary signals will take place.

Temporary asphalt placed in the median during Stage 1B will be removed. Cut to fill activities will take place to establish the final grade of the remaining EB permanent pavement and permanent EB left turn lane pavement.

Once earthwork is complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section will be constructed through intermediate asphalt. The inner CG-3 curb will be placed along the WB lanes, the left turn lanes, and any place along the EB lanes where it was not installed in Stage 2.

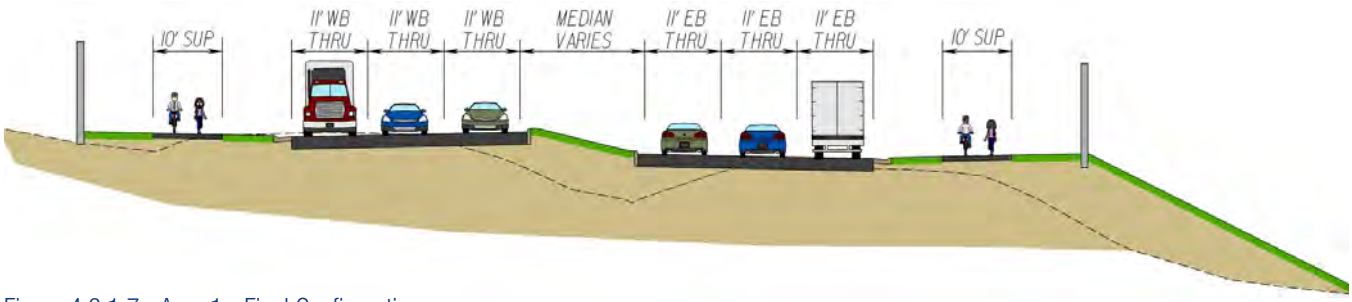


Figure 4.6.1.7 - Area 1 - Final Configuration

Unique Milestone #1

In Stage 3B, construction of all permanent pavement in Area 1 will be completed. Once permanent pavement construction through intermediate asphalt is completed west of Riva Ridge Drive, the third EB and WB lanes will be opened to the west end of the Project. This will occur no later than October 25, 2022 and represents our Team's Unique Milestone #1. ***This provides benefits to the public by opening 3-lanes in each direction at the western limits 19 months before the Final Completion Date.***

Surface asphalt will be placed and permanent traffic control devices, including signs and signals, will be installed after the Unique Milestone is achieved. In addition, the Unique Milestone is exclusive of trail and noise barrier construction. Upon completion of these activities the roadway will be in its final configuration as shown in Figure 4.5.1.7.

WB Noise Barrier and Multi-Use Trail

While Stage 3B roadway construction is underway on the future left EB lane and left turn lanes, noise barrier construction will take place adjacent to the WB lanes. Constructing the noise barriers in a later Stage than the adjacent roadway construction in Area 1 allows more time for right-of-way acquisition and utility relocation. Where the work area for noise barrier installation is not outside of the clear zone for the WB lanes, barrier will be installed to protect the work area. Once the noise barriers are complete, conduit for the proposed ITS and lighting systems will be installed and the westbound multi-use trail will be constructed.

Area 1 – Washington Gas Sequencing

The first relocations of the Washington Gas Transmission line take place in Area 1. Washington Gas is planning to relocate two sections of transmission line in Area 1 starting in Fall of 2018. The relocations of these two lines start just east of Utterback Store Road and continue east to Great Passage Boulevard. These

relocations are planned for completion in Spring 2019. The next relocation will start at Great Passage Boulevard and continue to a point east of the intersection with Baron Cameron Avenue. The section that is relocated in 2019 will be tied over to the existing pipeline in ~~Spring~~ Summer of 2020. Once this relocation is complete, Stage 3 work in Area 1 can move forward. The last section of transmission line relocation in Area 1 starts in Spring of 2020 and will finish in Spring of 2022. This relocation spans from a point just east of Baron Cameron Avenue to east of Difficult Run. The existing line in this section is not in conflict with construction activities so all construction Stages can proceed without this relocation.

Area 2 - Baron Cameron Avenue Intersection

Area 2, Stage 1 – Construction of Temporary Pavement in Existing Median

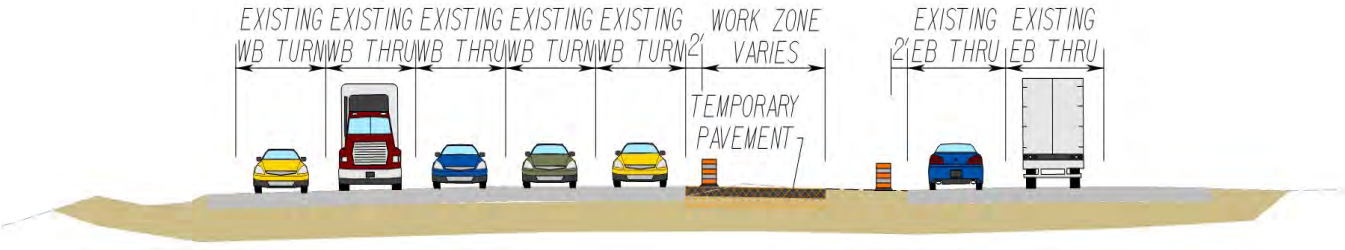


Figure 4.6.1.8 - Area 2, Stage 1

As shown in Figure 4.6.1.8, in Area 2, all work in Stage 1 is contained within the existing ROW. Therefore, construction will commence upon approval of the Advance TTC Plan set while ROW acquisition and utility relocations are ongoing. This mitigates the potential for schedule delays due to issues with ROW acquisition and utility relocation.

Stage 1 consists of temporary pavement construction in the existing median to facilitate the opening of a third westbound left turn lane from Route 7 to Baron Cameron Avenue by August 29, 2019, before the anticipated start of the Fairfax County school year **(Unique Milestone #3)**. In addition, the temporary pavement will be used for maintenance of traffic in later stages. Barrier will be installed along the left edge of the existing eastbound and westbound lanes to protect the Stage 1 work area. A temporary signal will be installed at Baron Cameron Avenue during Stage 1 and impacted existing signal equipment will be taken out of service.

Our Team's sequence of work in this area mitigates schedule risk from ROW and utility delays in this critical area. Stage 1 only requires the temporary relocation of a single Dominion Energy power pole before work can begin. No right-of-way is needed before this stage. In addition, ***our Team's sequence delivers the benefit of a third WB turn lane one year after NTP and five years prior to the RFRP completion date.***

At the end of Stage 1, all WB lanes will shift to the south onto the newly constructed temporary pavement. In addition, a third WB left turn lane will open at Baron Cameron Avenue. The EB lanes will stay in their original configuration. The temporary traffic signal will be adjusted to this configuration.

Area 2, Stage 2A – Construction of North Portion of Permanant WB Lanes and Temporary Pavement

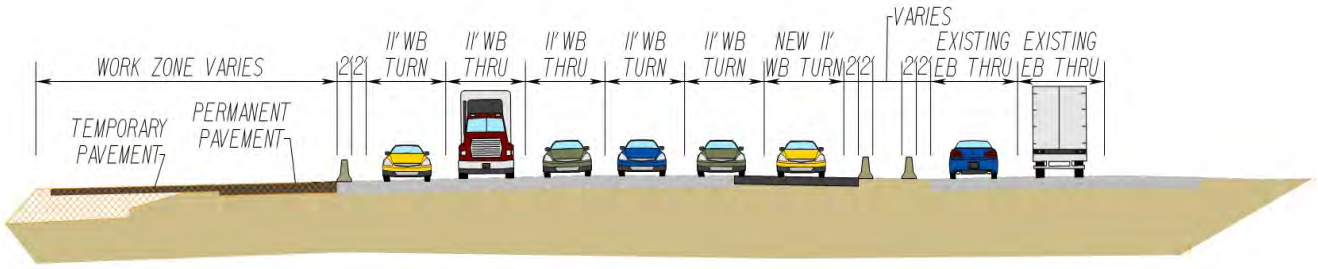


Figure 4.6.1.9 - Area 2, Stage 2A

At the beginning of Stage 2A, traffic will remain in the configuration established at the end of Stage 1. Barrier will be set on the right edge of the shifted WB lanes to protect the work area which is located along the existing WB shoulder as shown in Figure 4.6.1.9. Once ROW is acquired, work will commence to relocate utilities in conflict with Stage 2A roadway construction. Upon the completion of utility relocation, including the relocation of the 24" Washington Gas Transmission main, roadway work will commence.

In Stage 2A, installation of the WB storm sewer trunk line will take place. Two lanes of temporary pavement will be constructed to the north of the shifted WB lanes to facilitate the maintenance of traffic in future Stages. In addition, construction of permanent pavement for the future right turn lanes at Riva Ridge Drive and Springvale Road through intermediate asphalt will take place. Reconstruction of the Springvale Road approach will take place during this Stage as well.

Area 2, Stage 2B – Construction of Middle Portion of Permanent WB Lanes

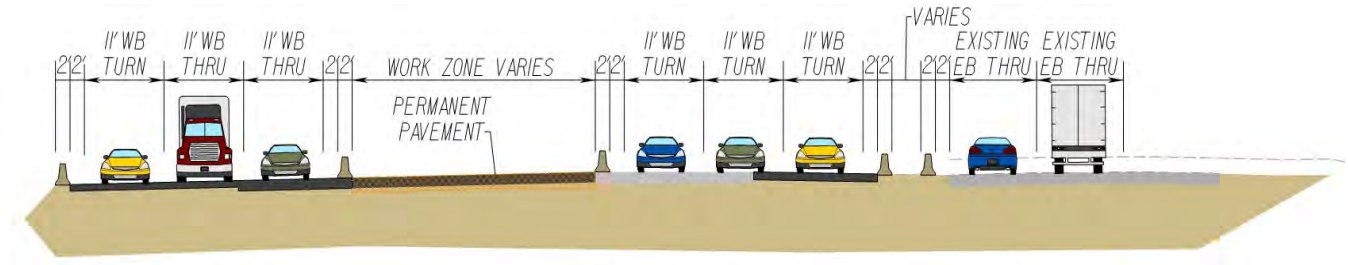


Figure 4.6.1.10 - Area 2, Stage 2B

At the beginning of Stage 2B, the two WB through lanes and WB right turn lanes will be shifted north on to temporary and permanent pavement constructed in Stage 2A as shown in Figure 4.6.1.10. The triple WB left turn lanes to Baron Cameron Avenue will stay in the same configuration set at the end of Stage 1, and the EB lanes will stay in their original configuration. The temporary traffic signal will be adjusted to this configuration. Barrier will be placed on the left edge of the shifted WB lanes and the right edge of the triple left turn lanes to protect the work area.

In Stage 2B, existing pavement will be removed as necessary. Three lanes of permanent westbound pavement will be constructed through intermediate asphalt. Reconstruction of the pavement through the Baron Cameron Avenue and Springvale Road intersection will be staged to minimize disruptions to traffic.

Area 2, Stage 2C – Construction of South Portion of Perm. WB Lanes and Median

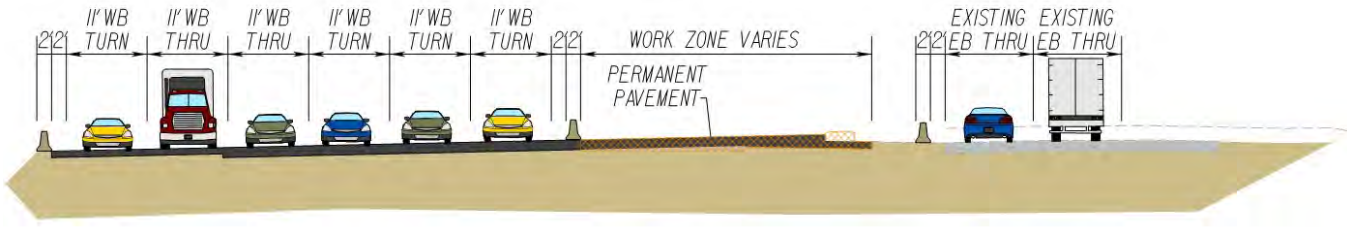


Figure 4.6.1.11 - Area 2, Stage 2C

At the beginning of Stage 2C, the triple WB left turn lanes to Baron Cameron Avenue will be shifted to the north onto the permanent pavement constructed in Stage 2B so that they are adjacent to the westbound through lanes as shown in Figure 4.6.1.11. The WB through lanes will stay in the same configuration as Stage 2B, and the EB lanes will remain in their original configuration. The temporary traffic signal will be adjusted to this configuration. Barrier will be placed on the left edge of the shifted WB triple left turn lanes to protect the work area.

In Stage 2C, existing pavement will be removed as necessary including the temporary pavement constructed in Stage 1. Permanent pavement for the three WB left turn lanes to Baron Cameron Avenue will be constructed through intermediate asphalt.

Area 2, Stage 3A – Construction of Permanent Eastbound Lanes

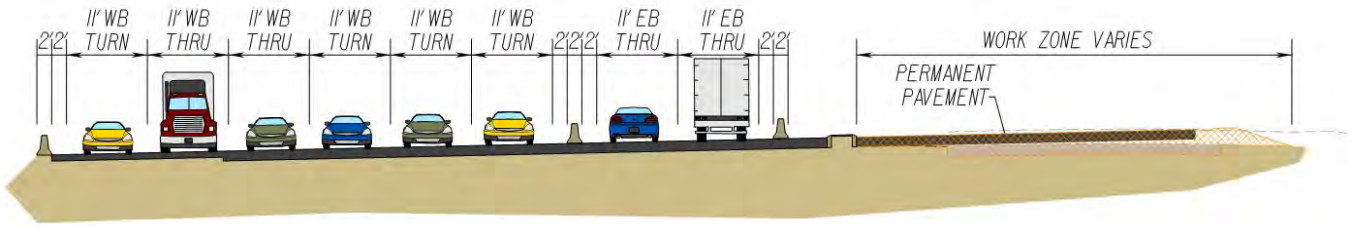


Figure 4.6.1.12 - Area 2, Stage 3A

At the beginning of Stage 3A, the two EB lanes will be shifted to the north onto the permanent pavement constructed in Stages 2B and 2C. A barrier will be installed to separate eastbound and WB traffic. The WB lanes will remain in the same configuration as Stage 2C. The temporary traffic signal will be adjusted to this configuration. Barrier will be placed on the right edge of the shifted EB lanes to protect the work area which will be the existing EB lanes as shown in Figure 4.6.1.12.

In Stage 3A, the existing pavement for the eastbound lanes will be removed as necessary. Installation of the EB storm sewer system will take place. Permanent pavement for the EB lanes will be constructed through intermediate asphalt. The CG-7 outer curb will be installed on the future EB lanes during this Stage. Reconstruction of the Baron Cameron Avenue intersection approach will take place during this stage as well.

EB Noise Barrier and Multi-Use Trail

Our Team will take advantage of the large work area within Stage 3A to construct the noise barriers simultaneously with adjacent EB roadway construction. Once the noise barriers are complete, conduit for the proposed ITS system will be installed and the EB multi-use trail will be constructed.

Area 2, Stage 3B – Remove Temporary Pavement and Install WB Curb

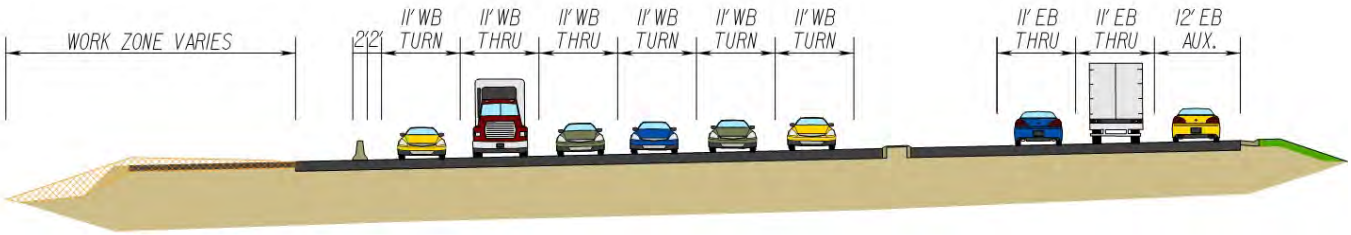


Figure 4.6.1.13 - Area 2, Stage 3B

At the beginning of Stage 3B, the EB lanes will be shifted to the south as shown in Figure 4.6.1.13 and the EB auxillary lane from NB Baron Cameron Avenue will be open on the permanent pavement constructed in Stage 3A. The WB lanes will be shifted to the south onto the permanent pavement constructed in Stages 2A, 2B, and 2C. Final adjustment to the temporary traffic signal will be made for this configuration.

In Stage 3B, the temporary pavement to the north of the WB lanes constructed in Stage 2A will be removed. Once this is complete, the CG-7 outer curb will be installed.

At the completion of Stage 3B, construction of all permanent pavement in Area 2 will be complete. Two lanes of traffic will be maintained in each direction while surface asphalt is placed, and permanent traffic control devices, including signs and signals, are installed. The third travel lane in each direction will open as the surface asphalt and accompanying pavement markings are completed.

WB Noise Barrier and Multi-Use Trail

The temporary pavement constructed in Stage 2A will encroach on the location of the future WB noise barriers in Area 2. As a result, noise barrier construction will be deferred until temporary pavement is removed in Stage 3B. Once the temporary pavement is removed, the WB noise barriers will be constructed. Where the work area for noise barrier installation is inside the clear zone for the WB lanes, barrier will be installed to protect the work area. Once the noise barriers are complete, conduit for the proposed ITS system will be installed and the WB multi-use trail will be constructed.

Unique Milestone #3

The change from a partial interchange to an at-grade intersection at Baron Cameron Avenue and Springvale Road affords the opportunity to provide some of the functionality of the upgraded intersection to the public early in the Project. Major construction at the Baron Cameron Avenue and Springvale Road intersection will not commence until 2021 due to right-of-way acquisition and utility relocations. To provide benefits of the intersection upgrades earlier, a third WB left turn lane to Baron Cameron Avenue will be opened to traffic on temporary pavement by August 29, 2019, before the anticipated start of the Fairfax County school year. ***The early opening of this turn lane will provide an immediate congestion relief benefit for WB traffic turning onto Baron Cameron Avenue as well as EB through traffic.*** Our Team is committing to maintaining this third lane throughout the remaining stages of construction.

Area 2 – Washington Gas Sequencing

The first relocation of the Washington Gas Transmission line in Area 2 begins in the Summer of 2019. This relocation will start in Area 1 at Great Passage Boulevard and continue to a point east of the intersection with Baron Cameron Avenue. Once this relocation is complete, Stage 2 work in Area 2 can proceed. The last section of transmission line relocation in Area 2 starts in Spring of 2020 and will finish in Spring of 2022. This relocation spans from a point just east of Baron Cameron Avenue to east of Difficult Run. The existing line in this section is not in conflict with construction activities so all construction Stages can proceed without this relocation.

Area 3 - Colvin Forest Drive to Faulkner Drive

Area 3, Stage 1 – Strengthen Outside WB Shoulder and Install Temporary Pavement in Median

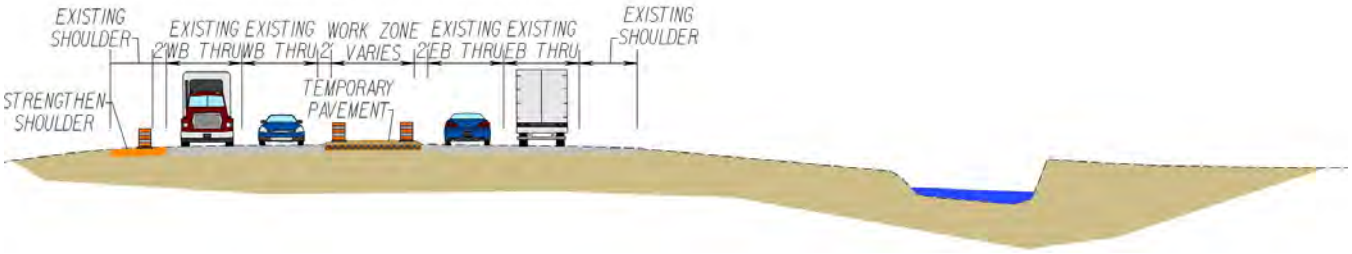


Figure 4.6.1.14 - Area 3, Stage 1

In Area 3, all roadway work in Stage 1 is contained within the existing roadway footprint and existing ROW. Therefore, construction will commence upon approval of the Advance TTC Plan set while ROW acquisition and utility relocation are ongoing. This mitigates the potential for schedule delays due to issues with ROW acquisition and utility relocation.

The right-of-way required for construction of the Route 7 bridges over Difficult Run must be acquired from the Fairfax County Park Authority. Once ROW is acquired, there are TOYR for working in close proximity to Difficult Run which may delay the start of construction outside of the existing roadway footprint. Working within the existing roadway footprint for Stage 1 mitigates some of these risks.

Stage 1 work will consist of strengthening the outside WB shoulder and constructing temporary pavement in the existing median. The shoulder strengthening will facilitate the movement of WB traffic in Stage 2. The median pavement will facilitate the movement of EB traffic in Stage 2.

Prior to shoulder strengthening, temporary signals will be installed at Colvin Forest Drive and the existing signals will be taken out of service. During shoulder strengthening and widening, the existing variable depth asphalt shoulder will be removed by milling and replaced with temporary base and intermediate asphalt. This operation will be performed during off-peak lane closures.

Temporary median pavement construction will span the full width of the existing median. In addition, the raised median on the existing Difficult Run bridge will be removed. Lane closures will be used to facilitate median work adjacent to the existing travel lanes.

Area 3, Stage 2 – Construction of Permanent EB Lanes

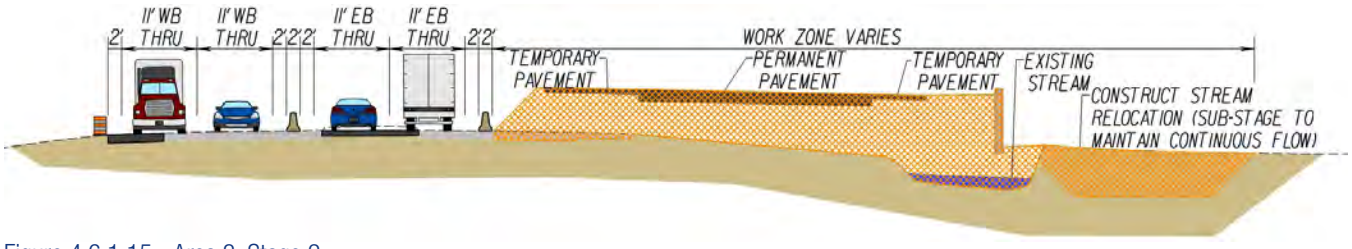


Figure 4.6.1.15 - Area 3, Stage 2

At the beginning of Stage 2, the two WB lanes will be shifted to the north utilizing the temporary pavement constructed in Stage 1. The position of the two EB lanes will not change in this Stage. A row of temporary barrier will be placed along the outside right edge of the relocated EB lanes to protect the Stage 2 work area. This barrier will be bolted down on the Difficult Run bridge.

In Stage 2, the existing EB pavement will be milled and removed. Structural fill will be placed in the Difficult Run valley to raise the subgrade of the future roadway. Drainage systems will be installed while the structural fill is being placed. Once the subgrade is established, surcharge will be placed for a four-month period. Once the surcharge period has ended, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section through intermediate asphalt will be constructed. At this point, additional temporary pavement will be constructed on the right edge of the future EB lanes to maintain traffic in Stage 3. The CG-3 median curb will be placed on the left edge of the future EB lanes. After placement of intermediate asphalt, temporary striping will be installed to facilitate traffic in the next Stage.

Colvin Run Stream Relocation and EB Retaining Wall

In Stage 2, Colvin Run just west of Difficult Run will be relocated to the south so the future EB lanes can be constructed. Once ROW is acquired and environmental permits are obtained, clearing and grubbing will take place and topsoil will be removed for offsite disposal. Excavation for the new stream diversion channel will start and channel lining will be installed as work progresses. Once the lining is completely in place, flow will be diverted to the new channel.

Construction of the wall to retain the future EB lanes of Route 7 will occur simultaneously with the construction of the stream relocation. When the stream relocation channel is being excavated, the foundation for the wall will be undercut and the footing formed and poured. A cast-in-place concrete wall will be constructed on top of the footing and will be completed before the final channel lining is completed.

Carpers Farm Way Box Culvert

As stream relocation work is taking place on Colvin Run, the south approach to the Carpers Farm Way intersection will be reconstructed in two substages. One half of the new box culvert that will convey relocated Colvin Run will be constructed in each substage.

EB Difficult Run Bridge

At the beginning of Stage 2, structure work will start with the removal of the south side of the existing Difficult Run Bridge as shown in Figure 4.6.1.16. Once the portions of the old bridge in conflict with the new structure are removed, piles will be installed at the abutments and drilled shafts will be installed at the piers. Structural crews will follow foundation construction operations to construct Pier 2, Abutment B, Pier 1, and Abutment A in that order. Superstructure construction will follow with construction of the deck and the outer barriers. The barrier between the future multi-use trail and future EB travels lanes and median will be omitted. Rebar inserts will be cast into the deck so the barrier can be installed in a later Stage.

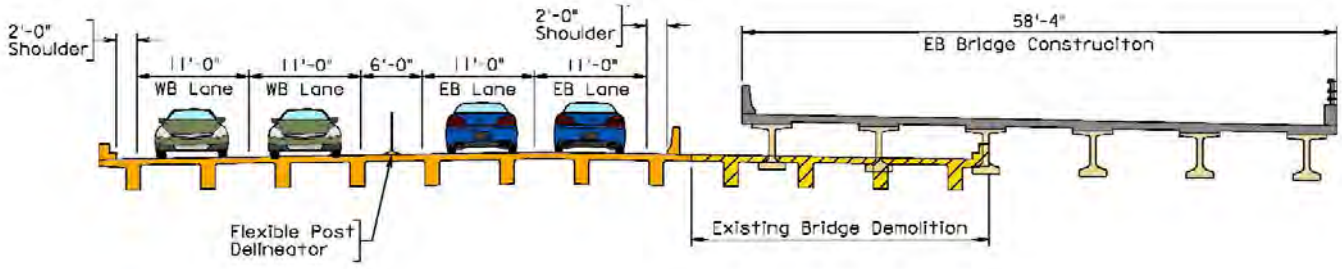


Figure 4.6.1.16 - Eastbound Bridge Construction

EB Noise Barrier

Our Team will take advantage of large work area in Stage 2 to construct the noise barriers simultaneously with adjacent EB roadway construction.

Area 3, Stage 3A – Construction of Permanent WB Lanes

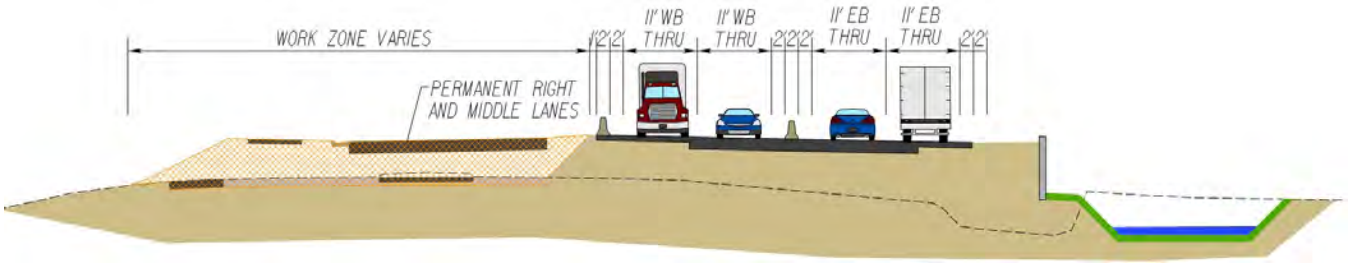


Figure 4.6.1.17 - Area 3, Stage 3A

After the completion of Stage 2, both the EB and WB lanes will be shifted to the new EB bridge over Difficult Run and the permanent and temporary pavement at the approaches constructed in Stage 2. A row of barrier will be placed along the outside right edge of the WB lanes to protect the Stage 3A work area.

In Stage 3A, the original WB pavement will be removed. Structural fill will be placed to raise the subgrade of the future roadway. Drainage systems will be installed while the structural fill is being placed. Once the subgrade is established it will be cement stabilized and CTA will be placed. Following CTA placement, underdrain will be installed and the first lift of base asphalt will be placed. Following the first lift of base asphalt, curb stone will be placed and the CG-3 median curb and CG-7 outer curb and gutter will be placed. After curb placement, the final lift of base asphalt and the intermediate asphalt will be placed. Once intermediate asphalt is placed, temporary pavement markings will be placed to facilitate WB traffic in the next Stage.

WB Difficult Run Bridge

Structure work in Stage 3A will start with the removal of the remainder of the existing Difficult Run bridge as shown in Figure 4.6.1.18. Once the old bridge is removed, piles will be installed at the abutments and drilled shafts will be installed at the piers. Structural crews will follow foundation construction operations to construct Pier 2, Abutment B, Pier 1, and Abutment A in that order. Superstructure construction will follow with construction of the deck and barriers.

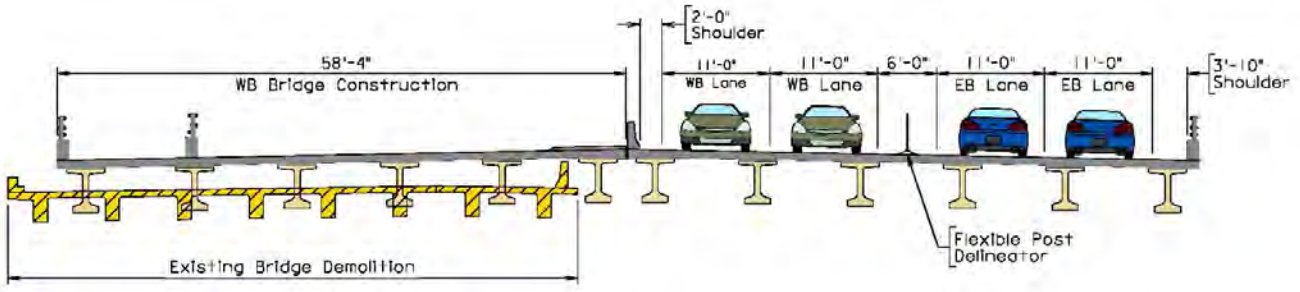


Figure 4.6.1.18 - Westbound Bridge Construction

WB Noise Barrier

Our Team will take advantage of large work area in Stage 3 to construct the noise barriers simultaneously with adjacent WB roadway construction. Once the noise barriers are complete, conduit for the proposed ITS and lighting systems will be installed and the EB multi-use trail will be constructed. The multi-use trail will be finished after the CG-7 outside curb and gutter is installed during roadway construction.

Area 3, Stage 3B – Completion of EB Lanes

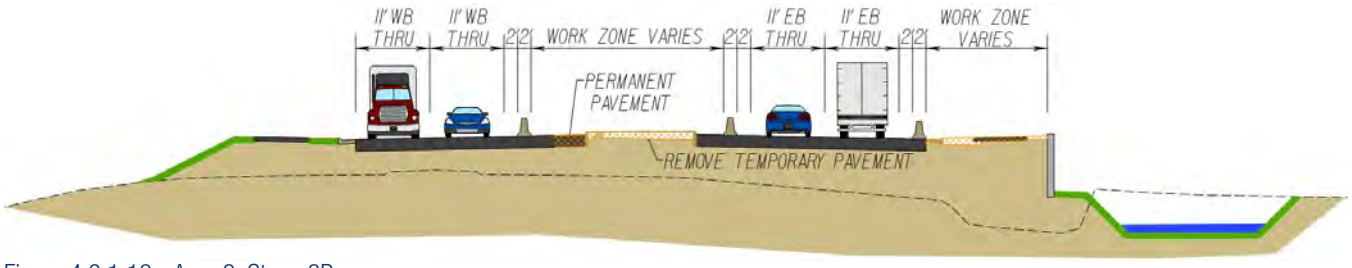


Figure 4.6.1.19 - Area 3, Stage 3B

At the beginning of Stage 3B, WB traffic will be moved to the permanent asphalt constructed in Stage 3A. EB traffic will be shifted to the north end of the permanent asphalt constructed in Stage 2. Barrier will be installed on the outside right edge of the EB lanes to protect the work area. The final adjustment will be made to the temporary signal.

In Stage 3B, the temporary asphalt adjacent to the EB lanes in Stage 2 will be milled and removed. The outer CG-7 curb and gutter and multi-use trail will be constructed in its place. The barrier on the Difficult Run bridge that separates the travel lanes from the multi-use path will be constructed using the rebar inserts installed in Stage 2.

At the completion of Stage 3B, construction of all permanent pavement in Area 3 will be complete. Two lanes of traffic will be maintained in each direction while surface asphalt is placed, and permanent traffic control devices, including signs and signals, are installed. The third travel lane in each direction will open as the surface asphalt and accompanying pavement markings are completed.

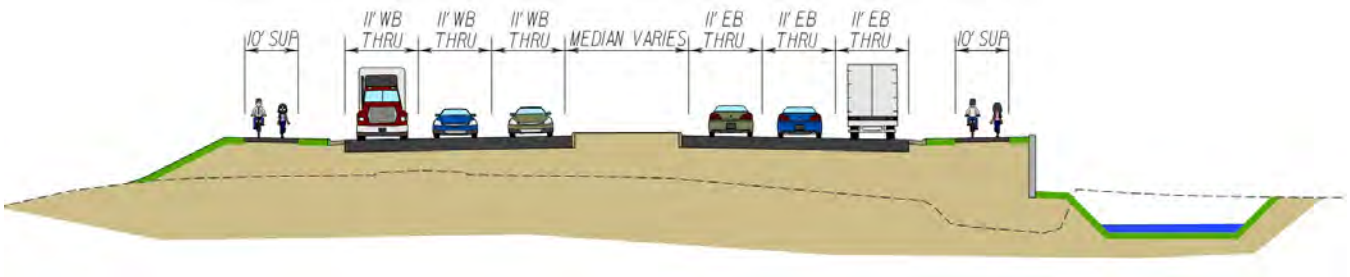


Figure 4.6.1.20 - Area 3 - Final Configuration

EB Multi-Use Trail

Once the temporary WB pavement constructed in Stage 2 is removed and the outer CG-7 curb is constructed, conduit for the proposed ITS and lighting systems will be installed and the EB multi-use trail will be built.

Area 3 – Washington Gas Sequencing

The first relocation of the Washington Gas Transmission line in Area 3 begins in Spring of 2020 and will finish in Spring of 2022. This relocation spans from a point just east of Baron Cameron Avenue in Area 1 and ends just east of Difficult Run at the eastern limit of Area 3. This relocation must be completed before bridge work in Stage 3 can take place.

Area 4 - Faulkner Drive to Eastern Terminus

Area 4, Stage 1 – Strengthen Outside EB Shoulder, Wedge Overlay, and Install Temporary Pavement in Median

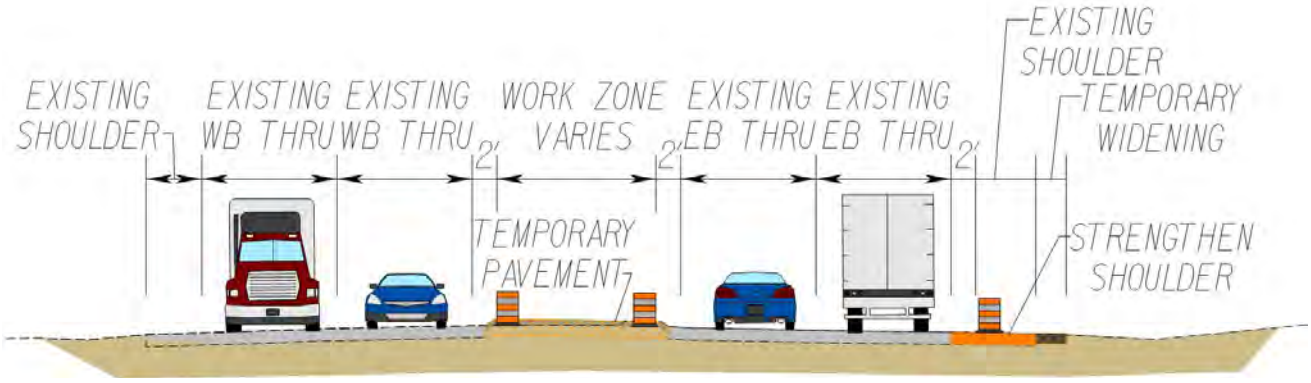


Figure 4.6.1.21 - Area 4, Stage 1

In Area 4, all work in Stage 1 is contained within existing ROW and extends slightly outside of the existing roadway footprint. Therefore, construction will commence on approval of the Advance TTC Plan set while ROW acquisition and utility relocations are ongoing. This mitigates the potential for schedule delays due to issues with ROW acquisition and utility relocation.

Stage 1 work will consist of three components: strengthening and widening the outside EB shoulder, installing an asphalt wedge in the left EB lane east of Towlston Road to facilitate positive drainage during construction, and constructing temporary pavement in existing median. The asphalt wedge will not be necessary west of Towlston Road as the EB lanes are already suited for positive drainage during construction. Shoulder strengthening and widening will facilitate the maintenance of traffic in future Stages. The shoulder widening will avoid existing utilities and will not require additional ROW.

Prior to shoulder strengthening, temporary signals will be installed at each signalized intersection and the existing signals will be taken out of service. During shoulder strengthening and widening, the existing EB variable depth asphalt shoulder will be removed and replaced with temporary base and intermediate asphalt. Additional stone subbase will be placed on the outer edge of the existing shoulder to support the wider shoulder pavement. This operation will be performed during off-peak lane closures. In the same timeframe that the shoulder strengthening operation is taking place, temporary right turn lanes will be constructed in the EB direction.

Unlike Area 1, the existing median in Area 4 is too narrow to construct any permanent asphalt in this Stage. Temporary pavement construction will span the full width of the existing median. Lane closures will be utilized to facilitate Stage 1 work adjacent to the existing travel lanes.

Area 4, Stage 2 – Construction of Permanent and Temporary WB Lanes

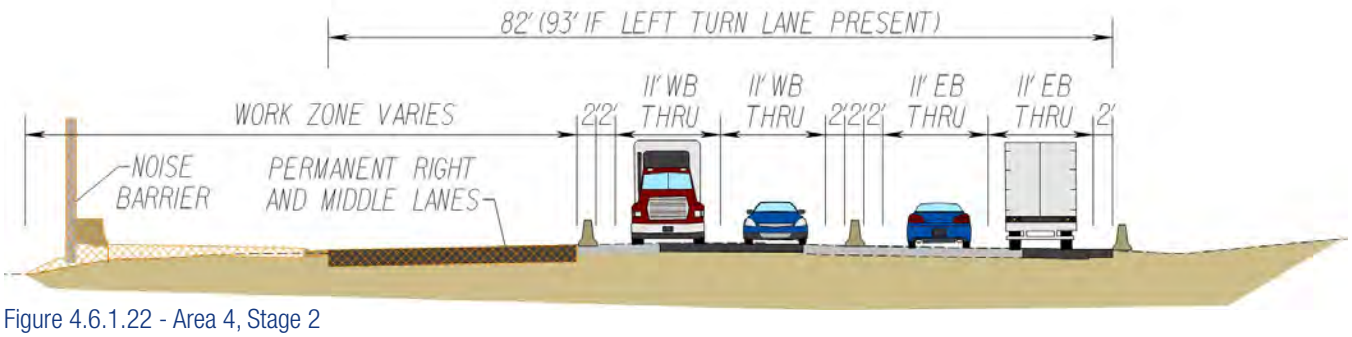


Figure 4.6.1.22 - Area 4, Stage 2

At the beginning of Stage 2, the two EB lanes will be shifted to the south onto the shoulder strengthened in Stage 1. WB traffic will be shifted to the south onto the temporary pavement constructed in the median during Stage 1. Barrier service will be placed on the right edge of the relocated WB lanes to protect the Stage 2 work zone. EB and WB traffic will be separated by barrier service. Temporary signals will be adjusted to this new configuration.

In Stage 2, 2-lanes of permanent and temporary WB pavement will be constructed to the north of the relocated WB lanes. In addition, the permanent pavement for the relocated Lewinsville Road intersection and displaced left will be constructed in this stage. The existing pavement will be removed where it is not used. Cut to fill activities will take place concurrent with the installation of proposed drainage facilities.

Once earthwork and drainage are complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section will be constructed through intermediate asphalt. In addition, temporary pavement will be constructed along the north side of the future WB lanes to accommodate traffic in future Stages. A total of 26' of pavement width will be provided. Once intermediate asphalt is placed, temporary pavement markings and barrier service will be placed to facilitate two WB lanes in Stage 3A.

Unique Milestone #2

The relocated Lewinsville Road intersection and displaced left will be constructed in conjunction with the permanent WB pavement constructed in Stage 2. At the conclusion of intermediate asphalt placement in Stage 2, the relocated intersection can be opened to traffic. The opening of the relocated Lewinsville Road intersection and displaced left to traffic will take place no later than October 25, 2022 and represents our Team's Unique Milestone #2. ***This will provide early relief to motorists from traffic congestion at the existing Lewinsville Road intersection.*** Placement of surface asphalt and the construction of adjacent trails will occur after achieving this milestone. Trail construction will take place in conjunction with construction of the WB trail in adjacent areas. Surface asphalt placement will occur in Stage 3B.

WB Noise Barrier

Due to the narrower ROW in Area 4, noise barriers will be closer to the proposed travel lanes. This requires WB noise barrier construction to take place simultaneously with adjacent WB roadway construction. Noise barrier construction will commence once the mass grading for the roadway is complete. Once the noise barriers are complete, barrier will be placed on the right outside edge of the temporary pavement constructed in this Stage. This will protect the barriers until the WB lanes are shifted away from the noise barrier in their final configuration.

Area 4, Stage 3A – Construction of Permanent EB Lanes

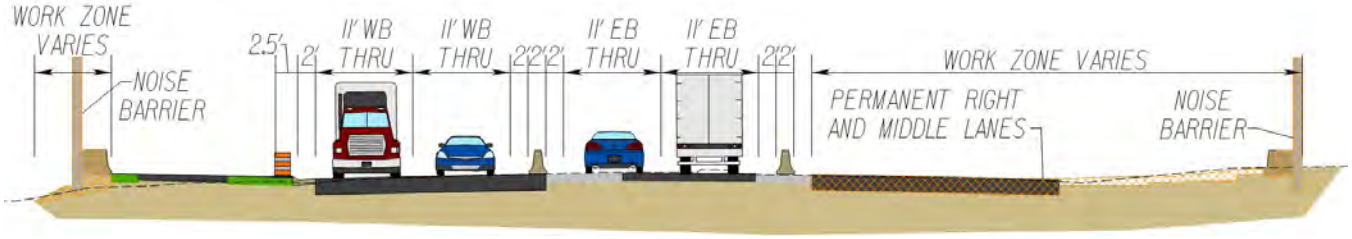


Figure 4.6.1.23 - Area 4, Stage 3A

At the beginning of Stage 3A, the two WB lanes will be shifted onto the new permanent and temporary pavement constructed in Stage 2. The two EB lanes will be shifted to the north and separated from the WB lanes by barrier. Left turn lanes will be provided where required. Barrier will be placed on the outside right edge of the relocated EB lanes to protect the Stage 3A work area. Temporary signals will be adjusted to this new configuration.

In Stage 3A, permanent pavement for the EB lanes will be constructed. At least 26' of pavement width will be built in this Stage. The existing asphalt, including the outside shoulder strengthened in Stage 1 will be milled and removed where it is not being reused. Cut to fill activities will then take place concurrent with the installation of drainage facilities.

Once earthwork and drainage are complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section will be constructed through intermediate asphalt. This includes the CG-7 outer curb. Once intermediate asphalt is placed, temporary pavement markings and barrier service will be placed to protect the two EB lanes in the Stage 3B.

EB Noise Barrier

Due to the narrower ROW in Area 4, noise barriers will be closer to the proposed travel lanes. This requires EB noise barrier construction to take place simultaneously with adjacent EB roadway construction. Noise barrier construction will commence once the mass grading for the roadway is complete. Once the noise barriers are complete, conduit for the proposed ITS and lighting systems will be installed and the EB multi-use trail will be constructed. The multi-use trail will be finished after the CG-7 outside curb and gutter is installed during roadway construction.

Area 4, Stage 3B – Completion of the Interior EB, Interior WB, and Turn Lanes

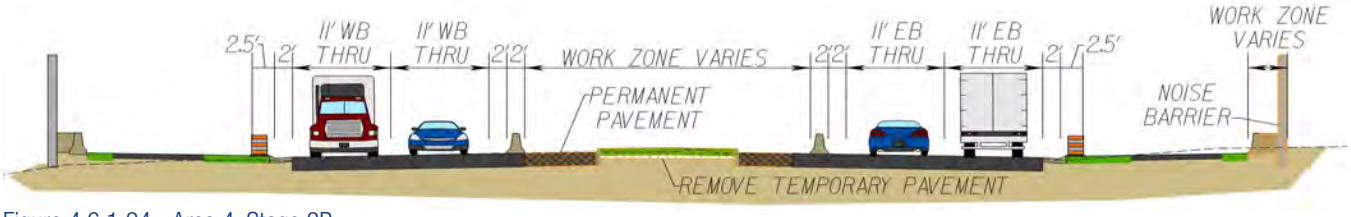


Figure 4.6.1.24 - Area 4, Stage 3B

At the beginning of Stage 3B, the two EB lanes will be shifted onto permanent pavement constructed in Stage 3A. The position of the two WB lanes will not change at the beginning of this Stage. At this point, the right-most EB lanes will be operational in their final location. An adjustment to the temporary signals will take place.

In Stage 3B, permanent pavement will be constructed for the interior EB, interior WB, and left turn lanes. Temporary asphalt placed in the median during Stage 1 will be milled and removed as well as any remaining original pavement not slated for reuse. Cut to fill activities will take place to establish the final roadway grade.

Once earthwork is complete, the subgrade will be cement stabilized and CTA will be placed. Following CTA placement, the permanent pavement section will be constructed through intermediate asphalt. This includes the CG-3 median curb. After placement of intermediate asphalt, WB traffic will be shifted to the south completely onto permanent pavement. The temporary asphalt placed in Stage 2 to maintain WB traffic will be removed and the outer CG-7 curb will be placed. The position of the two EB lanes will not change at this point.

In Stage 3B, construction of all permanent pavement in Area 4 will be completed. Two lanes of traffic will be maintained in each direction while surface asphalt is placed and permanent traffic control devices, including signs and signals, are installed. The third travel lane in each direction will open as the surface asphalt and accompanying pavement markings are completed as shown in Figure 4.6.1.24.

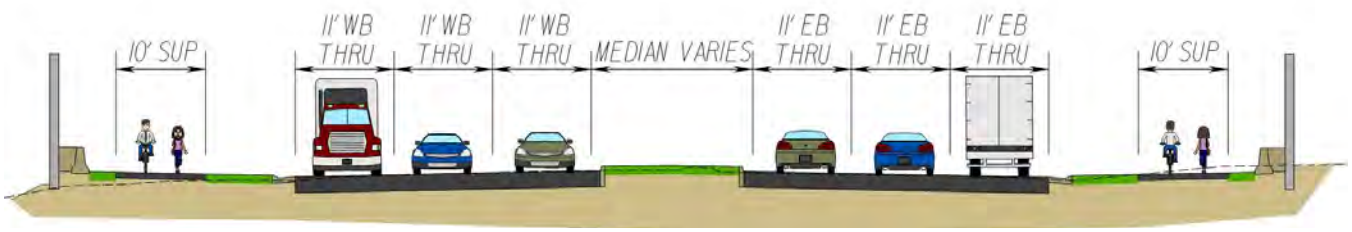


Figure 4.6.1.25 - Area 4 - Final Configuration

WB Multi-Use Trail

Once the temporary WB pavement constructed in Stage 2 is removed and the outer CG-7 curb is constructed, conduit for the proposed ITS and lighting systems will be installed and the WB multi-use trail will be built. Lane closures will be utilized as needed to protect the work area.

Area 4 – Washington Gas Sequencing

The first relocation of the Washington Gas Transmission line in Area 4 begins in Spring of 2019 and will finish in the Spring of 2021. This relocation spans from the east end of the project to Station 470+00. This relocation must be completed before Stage 2 construction in Area 4 can proceed. The last relocation in Area 4 will span from Station 470+00 to just east of Difficult Run at the west edge of Area 4. This relocation will start in the Winter of 2022 and will be completed in the Spring of 2023. The existing line is not in conflict with any construction activities in Area 4.

Critical Path

The description of the Critical Path as depicted in the Revised Proposal Schedule is listed below.

RT7RT Route 7 Corridor Improvements - Reston Avenue to Jarrett Valley Drive

RT7RT.A PROJECT MILESTONES

Notice of Intent to Award
CTB Approval / Notice of Award
DB Contract Execution
Notice to Proceed
Punchlist and Final Close-Out
Final Completion

RT7RT.B DESIGN

RT7RT.B.4 Roadway / Retaining Walls / ROW

Prepare Roadway / RW / ROW Plans (1st Submission)
DB Constructability Review (1st Submission)
Design QA / QC Review (1st Submission)
Submit 1st Submission Roadway / RW / ROW Plans
VDOT Review / Comment (1st Submission)
Prepare Roadway / RW / ROW Plans (2nd Submission)
DB Constructability Review (2nd Submission)
Design QA / QC Review (2nd Submission)
Submit 2nd Submission Roadway / RW / ROW Plans
VDOT Review / Comment (2nd Submission)
VDOT Review / Approve ROW Plans

RT7RT.E RIGHT OF WAY / EASEMENT ACQUISITIONS

RT7RT.E.11 Segment 3A East Bound (10 Properties)

Prepare Title Reports (Company A & B)

Prepare Appraisals (Company A & B)
Independent Appraisal Review (Company A & B)
VDOT Appraisal Review / Approval (Company A & B)
Prepare / Deliver Offers (Company A & B)
Negotiations (Company A & B)
Prepare Acceptance or Certificate (Company A & B)
Settlements or Record Certificate (Company A & B)

RT7RT.F UTILITY RELOCATIONS
RT7RT.F.3 Level 3
RT7RT.F.3.6 Segment 3A Relocations
Relocate Duct Bank from Station 334+25 to Station 375+00

RT7RT.G CONSTRUCTION
RT7RT.G.2 Area 2 - Baron Cameron Avenue Intersection
RT7RT.G.2.A Segment 2A - Riva Ridge Drive to Delta Glen Court (Station 254+00 to 313+00)
RT7RT.G.2.A.5 Stage 3A
Stage 3A - Fine Grade Trail
Stage 3A - Pave Trail
Stage 3A - Respread Topsoil and Seed
RT7RT.G.2.A.6 Stage 3B
Stage 3B - Fine Grade Trail
Stage 3B - Pave Westbound Trail
Stage 3B - Respead Topsoil and Seed
Stage 3B - Place Surface Asphalt on Westbound Lanes
RT7RT.G.3 Area 3 - Difficult Run Bridge
RT7RT.G.3.A Segment 3A - Colvin Forest Drive to Faulkner Drive (Station 334+25 to 375+00)
RT7RT.G.3.A.2 Stage 2
RT7RT.G.3.A.2.1 Stage 2 Roadway
Stage 2 - Flag Limits for Clearing
Stage 2 - Install E&S Perimeter Controls
Stage 2 - Clear and Grub
Stage 2 - Cut to Fill for East Half of Carpers Farm Way
Stage 2 - Fine Grade for East Half of Carpers Farm Way
Stage 2 - Install Base Aggregate for East Half of Carpers Farm Way
Stage 2 - Install Underdrain for East Half of Carpers Farm Way
Stage 2 - Install Base Asphalt for East Half of Carpers Farm Way
Stage 2 - Install Intermediate Asphalt for East Half of Carpers Farm Way
Stage 2 - Switch Traffic on Carpers Farm Way
Stage 2 - Mill and Remove Existing Asphalt on West Half of Carpers Farm Way
Stage 2 - Install Guardrail
RT7RT.G.3.A.2.1.1 Stream Relocation
Install Concrete Lining for Stream Relocation
Redirect Colvin Run Flow to Stream Relocation
RT7RT.G.3.A.2.2 Stage 2 Structures
RT7RT.G.3.A.2.2.1 B610 - Route 7 EB over Difficult Run
RT7RT.G.3.A.2.2.1.2 Substructure
RT7RT.G.3.A.2.2.1.2.2 Pier 1
Excavate Pier 1 Footing
Install Pier 1 Drillled Shafts
FPS Pier 1 Footing

FPS Pier 1 Columns
FPS Pier 1 Cap
Install Pier 1 Bearing Pads

RT7RT.G.3.A.2.2.1.2.3 Pier 2

FPS Pier 2 Footing
FPS Pier 2 Columns

RT7RT.G.3.A.2.2.1.2.4 Abutment B

Excavate for Abutment B
Install Abutment B Drilled Shafts
FPS Abutment B
Install Bearing Pads

RT7RT.G.3.A.2.2.1.3 Superstructure

Set Girders for Span A
Set Girders for Span B
Set Girders for Span C
Install SIP Forms
Install Overhang
Install Side Forms and Screed Rail
Pour and Cure Bridge Decks
Pour Approach Slabs
Pour Bridge Rail

RT7RT.G.3.A.2.2.3 Retaining Wall

Excavate for Eastbound Retaining Wall
FPS Footing for Eastbound Retaining Wall
FPS Eastbound Retaining Wall

RT7RT.G.3.A.2.2.4 D608 - Carpers Farm Way over Colvin Run (Triple Box)

Construct East Half of Triple Box
Construct West Half of Triple Box

RT7RT.G.3.A.3 Stage 3A

RT7RT.G.3.A.3.1 Stage 3A Roadway

Stage 3A - Switch Traffic for Stage 3
Stage 3A - Adjust Temporary Signal at Colvin Run Drive
Stage 3A - Cut to Fill West of Difficult Run
Stage 3A - Install Storm Sewer from Station 334+18 to Station 364+50
Stage 3A - Fine Grade
Stage 3A - Cement Stabilize Subgrade
Stage 3A - Place CTA
Stage 3A - Install Underdrain
Stage 3A - Place First Lift of Base Asphalt
Stage 3A - Place Curb Stone
Stage 3A - Place CG-3 and CG-7
Stage 3A - Backfill Curb and Rough Grade Trail
Stage 3A - Place Final Lift of Base Asphalt
Stage 3A - Place Intermediate Asphalt
Stage 3A - Install Guardrail

RT7RT.G.3.A.3.2 Stage 3A Structures

RT7RT.G.3.A.3.2.1 B610 - Route 7 WB over Difficult Run

RT7RT.G.3.A.3.2.1.1 Existing Bridge

Remove Remainder of Existing Difficult Run Bridge

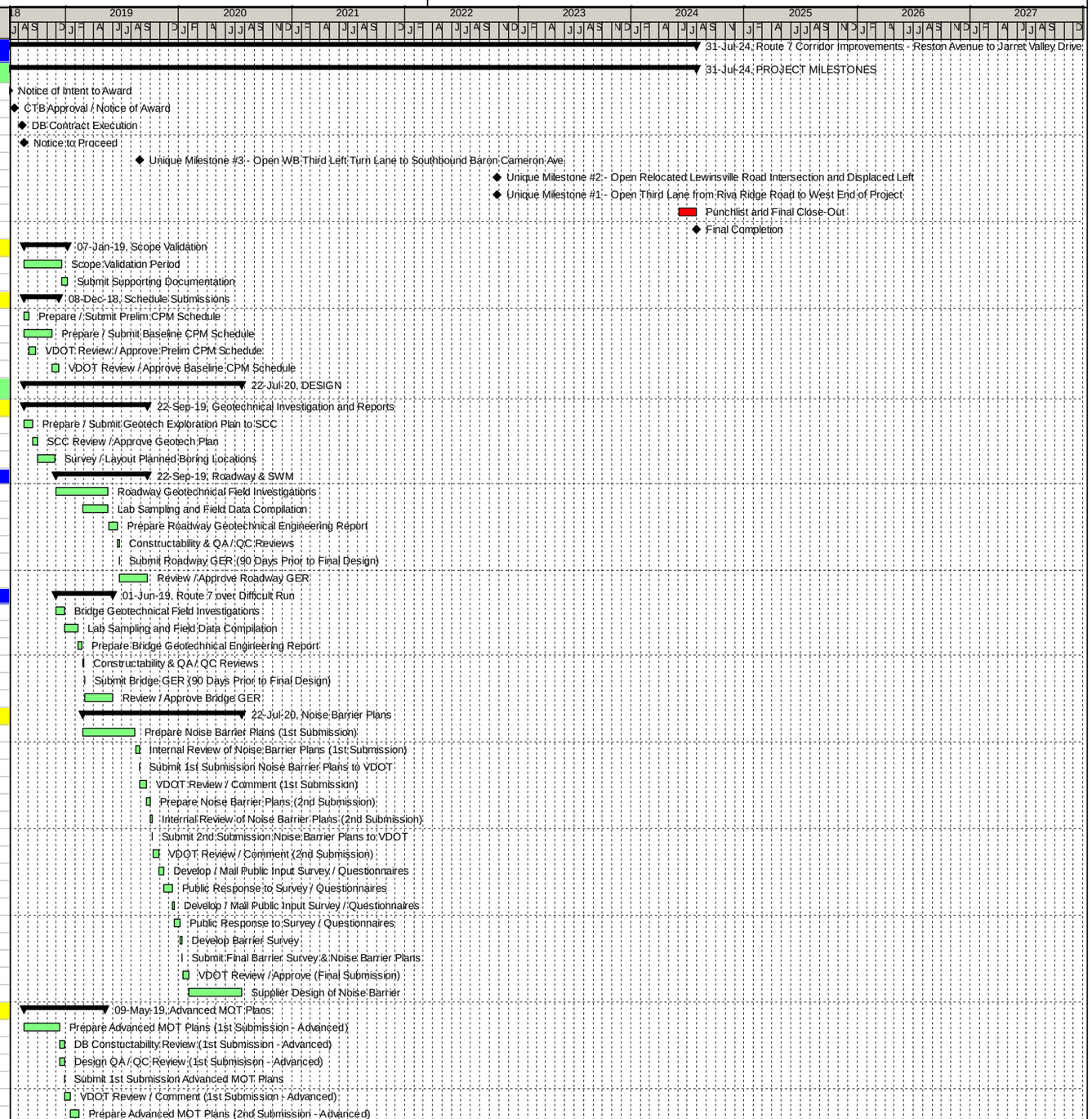
RT7RT.G.3.A.3.2.1.2 Substructure
RT7RT.G.3.A.3.2.1.2.1 Abutment A
Excavate for Abutment A
Install Abutment A Drilled Shafts
RT7RT.G.3.A.3.2.1.2.2 Pier 1
Excavate Pier 1 Footing
Install Pier 1 Drilled Shafts
FPS Pier 1 Footing
FPS Pier 1 Columns
RT7RT.G.3.A.3.2.1.2.4 Abutment B
Install Abutment B Drilled Shafts
FPS Abutment B
RT7RT.G.3.A.4 Stage 3B
RT7RT.G.3.A.4.1 Stage 3B Roadway
Stage 3B - Switch Traffic for Stage 3B
Stage 3B - Adjust Temporary Signal at Colvin Run Drive
Stage 3B - Mill and Remove Temporary Pavement
Stage 3B - Place Curb Stone
Stage 3B - Place CG-7
Stage 3B - Backfill Curb and Rough Grade Trail
Stage 3B - Fine Grade Trail for EB Lanes
Stage 3B - Install EB Electric/ITS Conduit
Stage 3B - Place Surface Asphalt for WB Lanes
Stage 3B - Pave EB Trail
Stage 3B - Respread Topsoil and Seed
RT7RT.G.4 Area 4 - East of Difficult Run
RT7RT.G.4.A Segment 4A - Faulkner Drive to Beulah Road (Station 375+00 to 414+75)
RT7RT.G.4.A.4 Stage 3B
Stage 3B - Fine Grade WB Trail
Stage 3B - Pave WB Trail
Stage 3B - Respread Topsoil and Seed Behind WB Curb
Stage 3B - Place Surface Asphalt on WB Lanes
RT7RT.G.4.B Segment 4B - Beulah Road to Towlston Road (Station 414+75 to 453+00)
RT7RT.G.4.B.4 Stage 3B
Stage 3B - Fine Grade WB Trail
Stage 3B - Pave WB Trail
Stage 3B - Respread Topsoil and Seed Behind WB Curb
Stage 3B - Place Surface Asphalt on WB Lanes
RT7RT.G.4.C Segment 4C - Towlston Road to Lewinsville Road (Station 453+00 to 501+50)
RT7RT.G.4.C.3 Stage 3A
Stage 3A - Fine Grade Trail
Stage 3A - Pave Trail
Stage 3A - Respread Topsoil and Seed
RT7RT.G.4.C.4 Stage 3B
Stage 3B - Place Surface Asphalt on WB Lanes

Key Scheduling Assumptions

- Environmental permitting agencies will accept VDOT's RFP avoidance and minimization efforts taken in the RFP phase as sufficient to process permits without delay.

- VDOT will accept concepts in an early work package.
- VDOT will supply adequate resources to meet the ROW schedule.
- Utility companies will coordinate their relocations in accordance with the Project Schedule.
- Utility companies will complete their work in a timely manner.
- WGL performs their Project in a timely manner and in a sequence that meets the Project Schedule.
- Crew leveling has been developed through crew-flow relationships between similar activities.
- Crews are based on an 8-hour work day and 5-day per work week calendar.
- No clearing will take place between June 1 and July 30 due to anticipated bat restrictions as shown in the Clearing Calendar.
- 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.
- Generally, finish-to-start relationships are primarily used as much as possible to create logical flow of work in one particular area. There is some overlap between different types of activity in any one area. For example, the cut-to-fill activity in one area may be running concurrent with storm sewer installation. In this type of scenario, both will conclude with a "fine grade" activity and then the pavement section activities will begin.

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
Route 7 Corridor Improvements - Reston Avenue to Jarret Valley Drive (Revised RFP)		1545	0	02-Jul-18	31-Jul-24
PROJECT MILESTONES		1545	0	02-Jul-18	31-Jul-24
MS10000	Notice of Intent to Award	0	0	02-Jul-18*	
MS10010	CTB Approval / Notice of Award	0	0	18-Jul-18*	
MS10020	DB Contract Execution	0	0	13-Aug-18*	
MS10030	Notice to Proceed	0	0	20-Aug-18*	
MS10060	Unique Milestone #3 - Open WB Third Left Turn Lane to Southbound Baron Cameron Ave.	0	0		29-Aug-19*
MS10050	Unique Milestone #2 - Open Relocated Lewinsville Road Intersection and Displaced Left	0	0		25-Oct-22*
MS10040	Unique Milestone #1 - Open Third Lane from Riva Ridge Road to West End of Project	0	0		25-Oct-22*
MS10070	Punchlist and Final Close-Out	40	0	05-Jun-24	31-Jul-24
MS10080	Final Completion	0	0		31-Jul-24*
Scope Validation		141	65	20-Aug-18	07-Jan-19
MS20000	Scope Validation Period	120	65	20-Aug-18	17-Dec-18
MS20020	Submit Supporting Documentation	21	65	18-Dec-18	07-Jan-19
Schedule Submissions		111	291	20-Aug-18	08-Dec-18
MS30000	Prepare / Submit Prelim CPM Schedule	15	291	20-Aug-18	03-Sep-18
MS30020	Prepare / Submit Baseline CPM Schedule	90	291	20-Aug-18	17-Nov-18
MS30010	VDOT Review / Approve Prelim CPM Schedule	21	366	04-Sep-18	24-Sep-18
MS30030	VDOT Review / Approve Baseline CPM Schedule	21	291	18-Nov-18	08-Dec-18
DESIGN		489	228	20-Aug-18	22-Jul-20
Geotechnical Investigation and Reports		277	422	20-Aug-18	22-Sep-19
GT10240	Prepare / Submit Geotech Exploration Plan to SCC	20	40	20-Aug-18	17-Sep-18
GT10250	SCC Review / Approve Geotech Plan	10	40	18-Sep-18	01-Oct-18
GT10260	Survey / Layout Planned Boring Locations	40	40	02-Oct-18	28-Nov-18
Roadway & SWM		207	41	29-Nov-18	22-Sep-19
GT10000	Roadway Geotechnical Field Investigations	120	40	29-Nov-18	17-May-19
GT10010	Lab Sampling and Field Data Compilation	60	40	25-Feb-19	17-May-19
GT10020	Prepare Roadway Geotechnical Engineering Report	20	40	20-May-19	17-Jun-19
GT10030	Constructability & QA / QC Reviews	5	40	18-Jun-19	24-Jun-19
GT10040	Submit Roadway GER (90 Days Prior to Final Design)	0	40	25-Jun-19	25-Jun-19
GT10050	Review / Approve Roadway GER	90	57	25-Jun-19	22-Sep-19
Route 7 over Difficult Run		129	500	29-Nov-18	01-Jun-19
GT10120	Bridge Geotechnical Field Investigations	20	465	29-Nov-18	27-Dec-18
GT10130	Lab Sampling and Field Data Compilation	30	465	28-Dec-18	08-Feb-19
GT10140	Prepare Bridge Geotechnical Engineering Report	10	465	11-Feb-19	22-Feb-19
GT10150	Constructability & QA / QC Reviews	5	465	25-Feb-19	01-Mar-19
GT10160	Submit Bridge GER (90 Days Prior to Final Design)	0	465	04-Mar-19	04-Mar-19
GT10170	Review / Approve Bridge GER	90	718	04-Mar-19	01-Jun-19
Noise Barrier Plans		359	228	25-Feb-19	22-Jul-20
NA10000	Prepare Noise Barrier Plans (1st Submission)	120	229	25-Feb-19	13-Aug-19
NA10010	Internal Review of Noise Barrier Plans (1st Submission)	10	229	14-Aug-19	27-Aug-19
NA10020	Submit 1st Submission Noise Barrier Plans to VDOT	0	229	28-Aug-19	28-Aug-19
NA10030	VDOT Review / Comment (1st Submission)	21	330	28-Aug-19	17-Sep-19
NA10040	Prepare Noise Barrier Plans (2nd Submission)	10	230	17-Sep-19	01-Oct-19
NA10050	Internal Review of Noise Barrier Plans (2nd Submission)	5	230	01-Oct-19	08-Oct-19
NA10060	Submit 2nd Submission Noise Barrier Plans to VDOT	0	230	08-Oct-19	08-Oct-19
NA10070	VDOT Review / Comment (2nd Submission)	21	330	09-Oct-19	29-Oct-19
NA10080	Develop / Mail Public Input Survey / Questionnaires	10	229	29-Oct-19	12-Nov-19
NA10090	Public Response to Survey / Questionnaires	20	229	12-Nov-19	12-Dec-19
NA10100	Develop / Mail Public Input Survey / Questionnaires	5	229	12-Dec-19	19-Dec-19
NA10110	Public Response to Survey / Questionnaires	10	229	19-Dec-19	06-Jan-20
NA10120	Develop Barrier Survey	5	229	06-Jan-20	13-Jan-20
NA10130	Submit Final Barrier Survey & Noise Barrier Plans	0	229	13-Jan-20	13-Jan-20
NA10140	VDOT Review / Approve (Final Submission)	21	328	14-Jan-20	03-Feb-20
NA10150	Supplier Design of Noise Barrier	120	228	03-Feb-20	22-Jul-20
Advanced MOT Plans		184	19	20-Aug-18	09-May-19
DES10000	Prepare Advanced MOT Plans (1st Submission - Advanced)	80	19	20-Aug-18	12-Dec-18
DES10010	DB Constuctability Review (1st Submission - Advanced)	10	19	13-Dec-18	27-Dec-18
DES10020	Design QA / QC Review (1st Submisison - Advanced)	10	19	13-Dec-18	27-Dec-18
DES10030	Submit 1st Submission Advanced MOT Plans	0	19	28-Dec-18	28-Dec-18
DES10040	VDOT Review / Comment (1st Submission - Advanced)	21	28	28-Dec-18	17-Jan-19
DES10050	Prepare Advanced MOT Plans (2nd Submission - Advanced)	20	20	17-Jan-19	14-Feb-19



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
DES10060	DB Constuctability Review (2nd Submission - Advanced)	5	20	14-Feb-19	21-Feb-19
DES10070	Design QA / QC Review (2nd Submission - Advanced)	5	20	21-Feb-19	28-Feb-19
DES10080	Submit 2nd Submission Advanced MOT Plans	0	20	28-Feb-19	28-Feb-19
DES10090	VDOT Review / Comment (2nd Submission - Advanced)	21	28	01-Mar-19	21-Mar-19
DES10100	Prepare MOT Plans (Final Submission - Advanced)	10	20	21-Mar-19	04-Apr-19
DES10110	DB Constructability Review (Final Submission - Advanced)	5	20	04-Apr-19	11-Apr-19
DES10120	Design QA / QC Review (Final Submission - Advanced)	5	20	11-Apr-19	18-Apr-19
DES10130	Submit Cover Sheet (Final Submission - Advanced)	0	20	18-Apr-19	18-Apr-19
DES10140	VDOT Signs Cover Sheet (Final Submission - Advanced)	21	28	19-Apr-19	09-May-19
DES10150	Advanced MOT Plans Approved	0	19	09-May-19	09-May-19
Roadway / Retaining Walls / ROW		292	39	20-Aug-18	14-Oct-19
DES20000	Prepare Roadway / RW / ROW Plans (1st Submission)	120	13	20-Aug-18	08-Feb-19
DES20010	Aerial Survey and Mapping	40	33	20-Aug-18	15-Oct-18
DES20020	Utility Designations	60	33	16-Oct-18	11-Jan-19
DES20030	DB Constructability Review (1st Submission)	10	13	11-Feb-19	22-Feb-19
DES20040	Design QA / QC Review (1st Submission)	10	13	11-Feb-19	22-Feb-19
DES20050	Submit 1st Submission Roadway / RW / ROW Plans	0	13	25-Feb-19	25-Feb-19
DES20060	VDOT Review / Comment (1st Submission)	21	17	25-Feb-19	17-Mar-19
DES20070	Test Pits	60	108	25-Feb-19	17-May-19
DES20080	Prepare Roadway / RW / ROW Plans (2nd Submission)	20	13	18-Mar-19	12-Apr-19
DES20090	DB Constructability Review (2nd Submission)	10	13	15-Apr-19	26-Apr-19
DES20100	Design QA / QC Review (2nd Submission)	10	13	29-Apr-19	10-May-19
DES20110	Submit 2nd Submission Roadway / RW / ROW Plans	0	13	13-May-19	13-May-19
DES20120	VDOT Review / Comment (2nd Submission)	21	18	13-May-19	02-Jun-19
DES20130	VDOT Review / Approve ROW Plans	21	18	13-May-19	02-Jun-19
DES20140	Prepare Roadway / RW / ROW Plans (Final Submission)	10	99	03-Jun-19	14-Jun-19
DES20150	DB Constructability Review (Final Submission)	5	99	17-Jun-19	21-Jun-19
DES20160	Design QA / QC Review (Final Submission)	5	99	24-Jun-19	28-Jun-19
DES20170	Submit Final Submission Roadway / RW / ROW Plans	0	41	23-Sep-19	23-Sep-19
DES20180	VDOT Review / Approve (Final Submission)	21	57	23-Sep-19	13-Oct-19
DES20190	Roadway / RW / ROW Plans Approved	0	39	14-Oct-19	14-Oct-19
Bridge Plans		262	443	20-Aug-18	29-Aug-19
DES32040	Floodplain Studies (Difficult Run)	100	441	20-Aug-18	11-Jan-19
DES32050	Prepare Stage 1 Prelim Plan / TS&L (Difficult Run)	40	441	02-Oct-18	28-Nov-18
DES32060	DB Review Stage 1 Prelim Plan / TS&L (Difficult Run)	10	441	29-Nov-18	12-Dec-18
DES32070	QA / QC Review Stage 1 Prelim Plan / TS&L (Difficult Run)	10	441	29-Nov-18	12-Dec-18
DES32080	Submit Stage 1 Prelim Plan / TS&L (Difficult Run)	0	441	13-Dec-18	13-Dec-18
DES32090	VDOT Review Stage 1 Prelim Plan / TS&L (Difficult Run)	21	634	13-Dec-18	02-Jan-19
DES32100	Prepare Stage 2 Bridge Plan (Difficult Run)	80	442	02-Jan-19	24-Apr-19
DES32110	DB Review Stage 2 Bridge Plan (Difficult Run)	10	442	24-Apr-19	08-May-19
DES32120	QA / QC Review Stage 2 Bridge Plan (Difficult Run)	10	442	08-May-19	22-May-19
DES32130	Submit Stage 2 Bridge Plan (Difficult Run)	0	442	22-May-19	22-May-19
DES32140	VDOT Review Stage 2 Bridge Plan (Difficult Run)	21	638	23-May-19	12-Jun-19
DES32160	Prepare Final Bridge Plan (Difficult Run)	20	443	12-Jun-19	11-Jul-19
DES32170	DB Review Final Bridge Plan (Difficult Run)	10	443	11-Jul-19	25-Jul-19
DES32180	QA / QC Review Final Bridge Plan (Difficult Run)	10	443	25-Jul-19	08-Aug-19
DES32190	Submit Final Bridge Plan (Difficult Run)	0	443	08-Aug-19	08-Aug-19
DES32200	VDOT Review Final Bridge Plan (Difficult Run)	21	637	09-Aug-19	29-Aug-19
DES32210	VDOT Plan Approval (Difficult Run)	0	443	29-Aug-19	29-Aug-19
PUBLIC INVOLVMENT/PUBLIC RELATIONS		1300	171	20-Aug-18	02-Oct-23
PI10000	Prepare/Submit Communications Plan	45	959	20-Aug-18	03-Oct-18
PI10020	Perform Monthly Update for Public Affairs	1300	171	20-Aug-18	02-Oct-23
PI10010	VDOT Review Communications Plan	21	959	04-Oct-18	24-Oct-18
PI10030	Hold Working Group & HOA Meeting	2	568	18-Mar-19	19-Mar-19
PI10100	Hold Two Public Information Meetings	5	568	20-Mar-19	26-Mar-19
PI10040	Pardon Our Dust Meeting - Prior to Construction	1	191	18-Sep-20	18-Sep-20
PI10070	Pardon Our Dust Meetings - Prior to Major Stages	750	191	21-Sep-20	01-Sep-23
ENVIRONMENTAL PERMITTING		341	46	20-Aug-18	23-Dec-19
Joint Permit Application (Middle Section)		341	46	20-Aug-18	23-Dec-19
ENV20010	T&E Species ID and Impacts Coordination	30	50	20-Aug-18	01-Oct-18
ENV20020	Wetlands Delineation (Survey & Flagging)	20	50	02-Oct-18	29-Oct-18
ENV20030	COE Jurisdictional Determination	20	50	30-Oct-18	28-Nov-18

Actual Work
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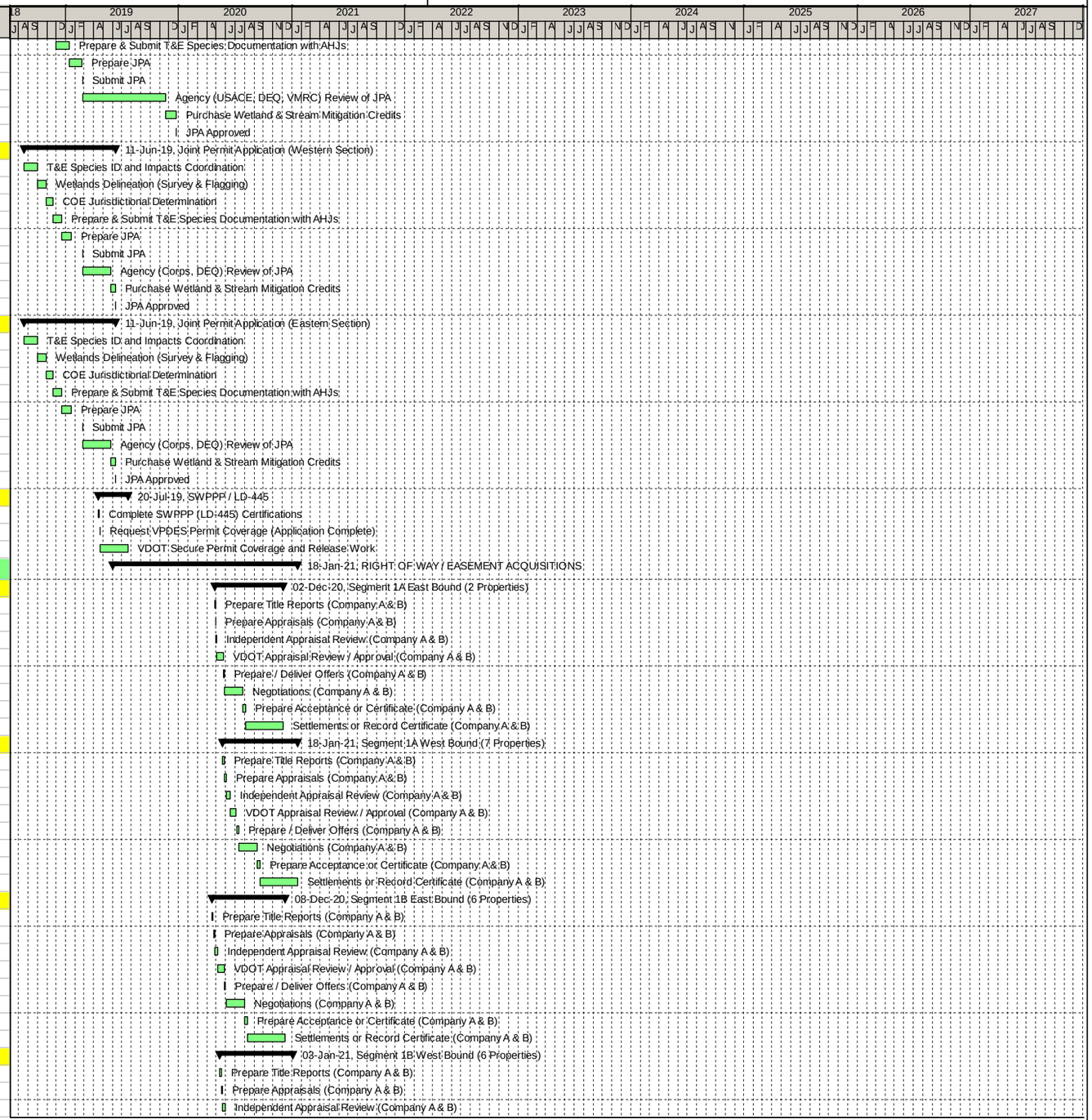
SHIRLEY CONTRACTING COMPANY, LLC

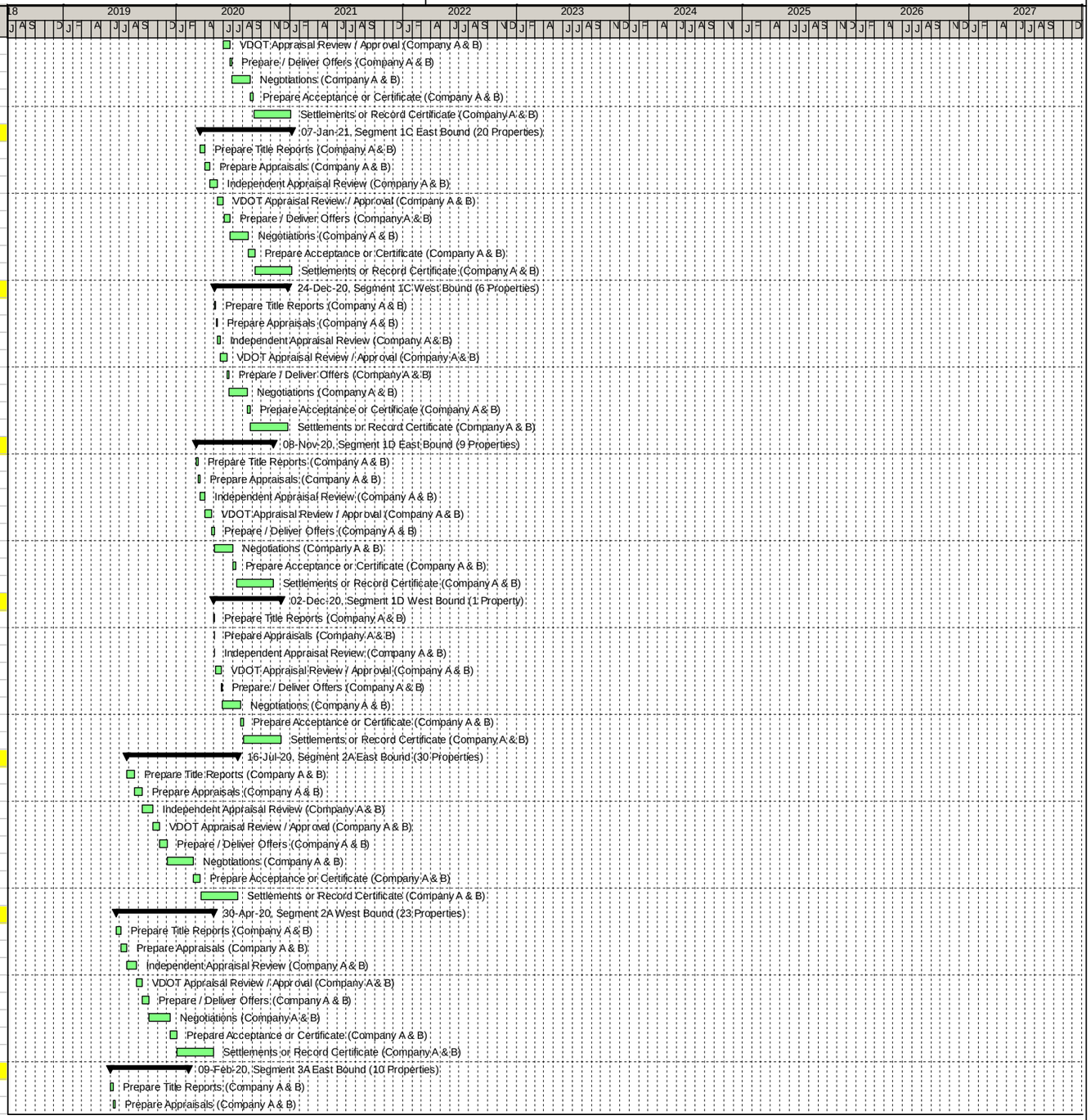
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
ENV20040	Prepare & Submit T&E Species Documentation with AHJs	30	50	29-Nov-18	11-Jan-19
ENV20050	Prepare JPA	30	50	14-Jan-19	22-Feb-19
ENV20060	Submit JPA	0	50	25-Feb-19	25-Feb-19
ENV20070	Agency (USACE, DEQ, VMRC) Review of JPA	270	70	25-Feb-19	21-Nov-19
ENV20080	Purchase Wetland & Stream Mitigation Credits	20	46	21-Nov-19	23-Dec-19
ENV20090	JPA Approved	0	46	23-Dec-19	23-Dec-19
Joint Permit Application (Western Section)		205	139	20-Aug-18	11-Jun-19
ENV30000	T&E Species ID and Impacts Coordination	30	167	20-Aug-18	01-Oct-18
ENV30010	Wetlands Delineation (Survey & Flagging)	20	167	02-Oct-18	29-Oct-18
ENV30020	COE Jurisdictional Determination	15	167	30-Oct-18	19-Nov-18
ENV30030	Prepare & Submit T&E Species Documentation with AHJs	20	167	20-Nov-18	19-Dec-18
ENV30040	Prepare JPA	20	167	20-Dec-18	18-Jan-19
ENV30050	Submit JPA	0	142	25-Feb-19	25-Feb-19
ENV30060	Agency (Corps, DEQ) Review of JPA	90	201	25-Feb-19	25-May-19
ENV30070	Purchase Wetland & Stream Mitigation Credits	10	139	28-May-19	10-Jun-19
ENV30080	JPA Approved	0	139	11-Jun-19	11-Jun-19
Joint Permit Application (Eastern Section)		205	139	20-Aug-18	11-Jun-19
ENV10000	T&E Species ID and Impacts Coordination	30	167	20-Aug-18	01-Oct-18
ENV10010	Wetlands Delineation (Survey & Flagging)	20	167	02-Oct-18	29-Oct-18
ENV10020	COE Jurisdictional Determination	15	167	30-Oct-18	19-Nov-18
ENV10030	Prepare & Submit T&E Species Documentation with AHJs	20	167	20-Nov-18	19-Dec-18
ENV10040	Prepare JPA	20	167	20-Dec-18	18-Jan-19
ENV10050	Submit JPA	0	142	25-Feb-19	25-Feb-19
ENV10060	Agency (Corps, DEQ) Review of JPA	90	201	25-Feb-19	25-May-19
ENV10070	Purchase Wetland & Stream Mitigation Credits	10	139	28-May-19	10-Jun-19
ENV10080	JPA Approved	0	139	11-Jun-19	11-Jun-19
SWPPP / LD-445		68	39	15-Apr-19	20-Jul-19
ENV40000	Complete SWPPP (LD-445) Certifications	5	40	15-Apr-19	19-Apr-19
ENV40010	Request VPDES Permit Coverage (Application Complete)	0	40	22-Apr-19	22-Apr-19
ENV40020	VDOT Secure Permit Coverage and Release Work	90	57	22-Apr-19	20-Jul-19
RIGHT OF WAY / EASEMENT ACQUISITIONS		596	233	03-Jun-19	18-Jan-21
Segment 1A East Bound (2 Properties)		220	117	27-Apr-20	02-Dec-20
ROW1A1000	Prepare Title Reports (Company A & B)	2	108	27-Apr-20	28-Apr-20
ROW1A1010	Prepare Appraisals (Company A & B)	2	108	29-Apr-20	30-Apr-20
ROW1A1020	Independent Appraisal Review (Company A & B)	3	117	01-May-20	03-May-20
ROW1A1030	VDOT Appraisal Review / Approval (Company A & B)	21	117	04-May-20	24-May-20
ROW1A1040	Prepare / Deliver Offers (Company A & B)	2	117	25-May-20	26-May-20
ROW1A1050	Negotiations (Company A & B)	60	117	27-May-20	25-Jul-20
ROW1A1060	Prepare Acceptance or Certificate (Company A & B)	10	117	26-Jul-20	04-Aug-20
ROW1A1070	Settlements or Record Certificate (Company A & B)	120	117	05-Aug-20	02-Dec-20
Segment 1A West Bound (7 Properties)		241	112	23-May-20	18-Jan-21
ROW1A2000	Prepare Title Reports (Company A & B)	6	112	23-May-20	28-May-20
ROW1A2010	Prepare Appraisals (Company A & B)	6	112	29-May-20	03-Jun-20
ROW1A2020	Independent Appraisal Review (Company A & B)	11	112	04-Jun-20	14-Jun-20
ROW1A2030	VDOT Appraisal Review / Approval (Company A & B)	21	112	15-Jun-20	05-Jul-20
ROW1A2040	Prepare / Deliver Offers (Company A & B)	7	112	06-Jul-20	12-Jul-20
ROW1A2050	Negotiations (Company A & B)	60	112	13-Jul-20	10-Sep-20
ROW1A2060	Prepare Acceptance or Certificate (Company A & B)	10	112	11-Sep-20	20-Sep-20
ROW1A2070	Settlements or Record Certificate (Company A & B)	120	112	21-Sep-20	18-Jan-21
Segment 1B East Bound (6 Properties)		236	76	17-Apr-20	08-Dec-20
ROW1B1000	Prepare Title Reports (Company A & B)	5	76	17-Apr-20	21-Apr-20
ROW1B1010	Prepare Appraisals (Company A & B)	5	76	22-Apr-20	26-Apr-20
ROW1B1020	Independent Appraisal Review (Company A & B)	9	76	27-Apr-20	05-May-20
ROW1B1030	VDOT Appraisal Review / Approval (Company A & B)	21	76	06-May-20	26-May-20
ROW1B1040	Prepare / Deliver Offers (Company A & B)	6	76	27-May-20	01-Jun-20
ROW1B1050	Negotiations (Company A & B)	60	76	02-Jun-20	31-Jul-20
ROW1B1060	Prepare Acceptance or Certificate (Company A & B)	10	76	01-Aug-20	10-Aug-20
ROW1B1070	Settlements or Record Certificate (Company A & B)	120	76	11-Aug-20	08-Dec-20
Segment 1B West Bound (6 Properties)		236	113	13-May-20	03-Jan-21
ROW1B2000	Prepare Title Reports (Company A & B)	5	112	13-May-20	17-May-20
ROW1B2010	Prepare Appraisals (Company A & B)	5	112	18-May-20	22-May-20
ROW1B2020	Independent Appraisal Review (Company A & B)	9	113	23-May-20	31-May-20



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
ROW1B2030	VDOT Appraisal Review / Approval (Company A & B)	21	113	01-Jun-20	21-Jun-20
ROW1B2040	Prepare / Deliver Offers (Company A & B)	6	113	22-Jun-20	27-Jun-20
ROW1B2050	Negotiations (Company A & B)	60	113	28-Jun-20	26-Aug-20
ROW1B2060	Prepare Acceptance or Certificate (Company A & B)	10	113	27-Aug-20	05-Sep-20
ROW1B2070	Settlements or Record Certificate (Company A & B)	120	113	06-Sep-20	03-Jan-21
Segment 1C East Bound (20 Properties)		296	31	18-Mar-20	07-Jan-21
ROW1C1000	Prepare Title Reports (Company A & B)	15	31	18-Mar-20	01-Apr-20
ROW1C1010	Prepare Appraisals (Company A & B)	15	31	02-Apr-20	16-Apr-20
ROW1C1020	Independent Appraisal Review (Company A & B)	25	31	17-Apr-20	11-May-20
ROW1C1030	VDOT Appraisal Review / Approval (Company A & B)	21	31	12-May-20	01-Jun-20
ROW1C1040	Prepare / Deliver Offers (Company A & B)	20	31	02-Jun-20	21-Jun-20
ROW1C1050	Negotiations (Company A & B)	60	31	22-Jun-20	20-Aug-20
ROW1C1060	Prepare Acceptance or Certificate (Company A & B)	20	31	21-Aug-20	09-Sep-20
ROW1C1070	Settlements or Record Certificate (Company A & B)	120	31	10-Sep-20	07-Jan-21
Segment 1C West Bound (6 Properties)		236	108	03-May-20	24-Dec-20
ROW1C2000	Prepare Title Reports (Company A & B)	5	108	03-May-20	07-May-20
ROW1C2010	Prepare Appraisals (Company A & B)	5	108	08-May-20	12-May-20
ROW1C2020	Independent Appraisal Review (Company A & B)	9	108	13-May-20	21-May-20
ROW1C2030	VDOT Appraisal Review / Approval (Company A & B)	21	108	22-May-20	11-Jun-20
ROW1C2040	Prepare / Deliver Offers (Company A & B)	6	108	12-Jun-20	17-Jun-20
ROW1C2050	Negotiations (Company A & B)	60	108	18-Jun-20	16-Aug-20
ROW1C2060	Prepare Acceptance or Certificate (Company A & B)	10	108	17-Aug-20	26-Aug-20
ROW1C2070	Settlements or Record Certificate (Company A & B)	120	108	27-Aug-20	24-Dec-20
Segment 1D East Bound (9 Properties)		250	38	04-Mar-20	08-Nov-20
ROW1D1000	Prepare Title Reports (Company A & B)	7	31	04-Mar-20	10-Mar-20
ROW1D1010	Prepare Appraisals (Company A & B)	7	31	11-Mar-20	17-Mar-20
ROW1D1020	Independent Appraisal Review (Company A & B)	15	38	18-Mar-20	01-Apr-20
ROW1D1030	VDOT Appraisal Review / Approval (Company A & B)	21	38	02-Apr-20	22-Apr-20
ROW1D1040	Prepare / Deliver Offers (Company A & B)	10	38	23-Apr-20	02-May-20
ROW1D1050	Negotiations (Company A & B)	60	38	03-May-20	01-Jul-20
ROW1D1060	Prepare Acceptance or Certificate (Company A & B)	10	38	02-Jul-20	11-Jul-20
ROW1D1070	Settlements or Record Certificate (Company A & B)	120	38	12-Jul-20	08-Nov-20
Segment 1D West Bound (1 Property)		216	236	01-May-20	02-Dec-20
ROW1D2000	Prepare Title Reports (Company A & B)	1	108	01-May-20	01-May-20
ROW1D2010	Prepare Appraisals (Company A & B)	1	108	02-May-20	02-May-20
ROW1D2020	Independent Appraisal Review (Company A & B)	2	236	03-May-20	04-May-20
ROW1D2030	VDOT Appraisal Review / Approval (Company A & B)	21	236	05-May-20	25-May-20
ROW1D2040	Prepare / Deliver Offers (Company A & B)	1	236	26-May-20	26-May-20
ROW1D2050	Negotiations (Company A & B)	60	236	27-May-20	25-Jul-20
ROW1D2060	Prepare Acceptance or Certificate (Company A & B)	10	236	26-Jul-20	04-Aug-20
ROW1D2070	Settlements or Record Certificate (Company A & B)	120	236	05-Aug-20	02-Dec-20
Segment 2A East Bound (30 Properties)		358	19	25-Jul-19	16-Jul-20
ROW2A1000	Prepare Title Reports (Company A & B)	26	19	25-Jul-19	19-Aug-19
ROW2A1010	Prepare Appraisals (Company A & B)	23	19	20-Aug-19	11-Sep-19
ROW2A1020	Independent Appraisal Review (Company A & B)	36	19	12-Sep-19	17-Oct-19
ROW2A1030	VDOT Appraisal Review / Approval (Company A & B)	21	19	18-Oct-19	07-Nov-19
ROW2A1040	Prepare / Deliver Offers (Company A & B)	24	19	08-Nov-19	01-Dec-19
ROW2A1050	Negotiations (Company A & B)	84	19	02-Dec-19	23-Feb-20
ROW2A1060	Prepare Acceptance or Certificate (Company A & B)	24	19	24-Feb-20	18-Mar-20
ROW2A1070	Settlements or Record Certificate (Company A & B)	120	19	19-Mar-20	16-Jul-20
Segment 2A West Bound (23 Properties)		317	19	19-Jun-19	30-Apr-20
ROW2A2000	Prepare Title Reports (Company A & B)	18	19	19-Jun-19	06-Jul-19
ROW2A2010	Prepare Appraisals (Company A & B)	18	19	07-Jul-19	24-Jul-19
ROW2A2020	Independent Appraisal Review (Company A & B)	30	19	25-Jul-19	23-Aug-19
ROW2A2030	VDOT Appraisal Review / Approval (Company A & B)	21	19	24-Aug-19	13-Sep-19
ROW2A2040	Prepare / Deliver Offers (Company A & B)	20	19	14-Sep-19	03-Oct-19
ROW2A2050	Negotiations (Company A & B)	70	19	04-Oct-19	12-Dec-19
ROW2A2060	Prepare Acceptance or Certificate (Company A & B)	20	19	13-Dec-19	01-Jan-20
ROW2A2070	Settlements or Record Certificate (Company A & B)	120	19	02-Jan-20	30-Apr-20
Segment 3A East Bound (10 Properties)		252	18	03-Jun-19	09-Feb-20
ROW3A1000	Prepare Title Reports (Company A & B)	8	18	03-Jun-19	10-Jun-19
ROW3A1010	Prepare Appraisals (Company A & B)	8	18	11-Jun-19	18-Jun-19



Actual Work
Remaining Work
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Milestone
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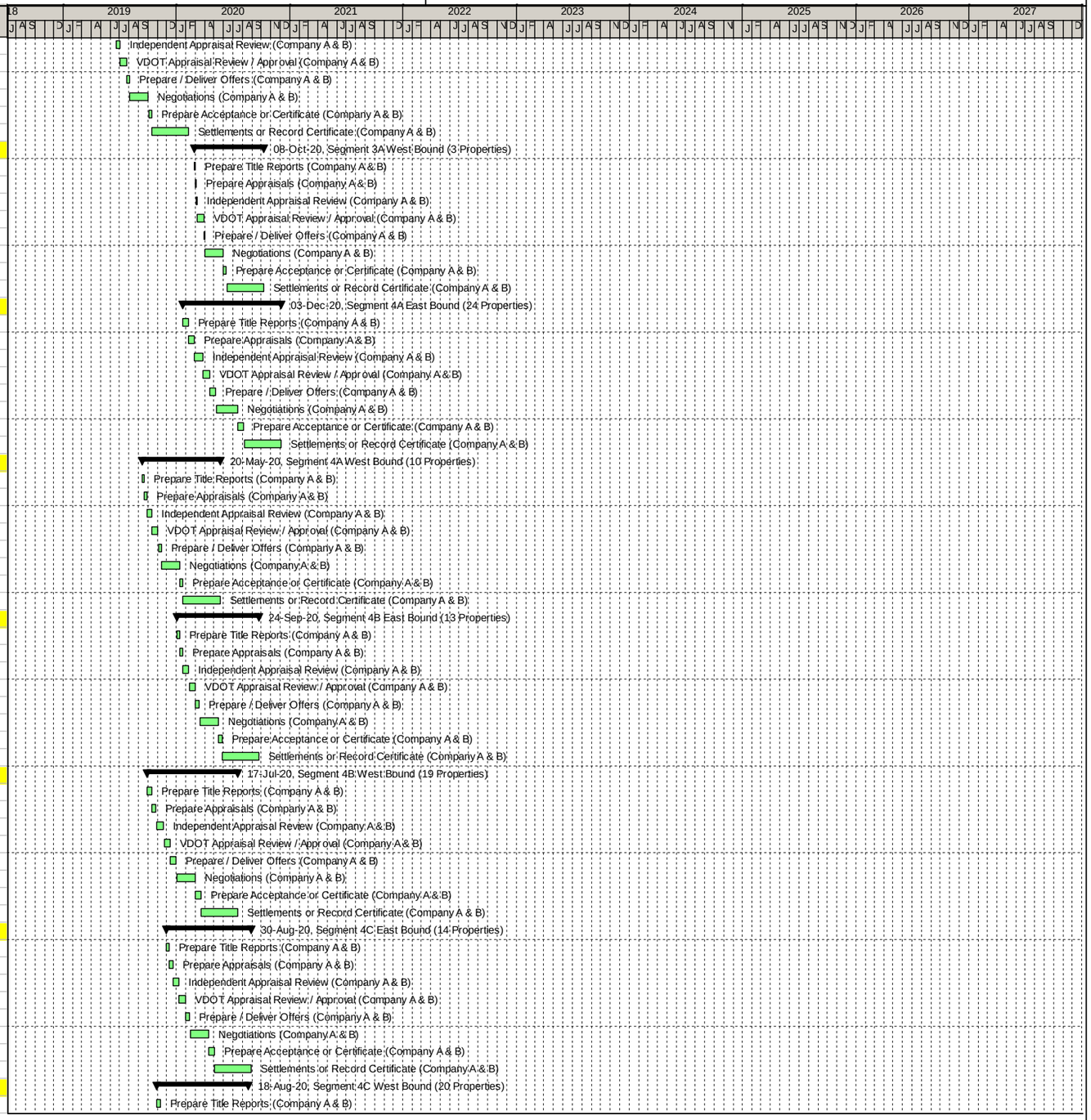
SHIRLEY CONTRACTING COMPANY, LLC

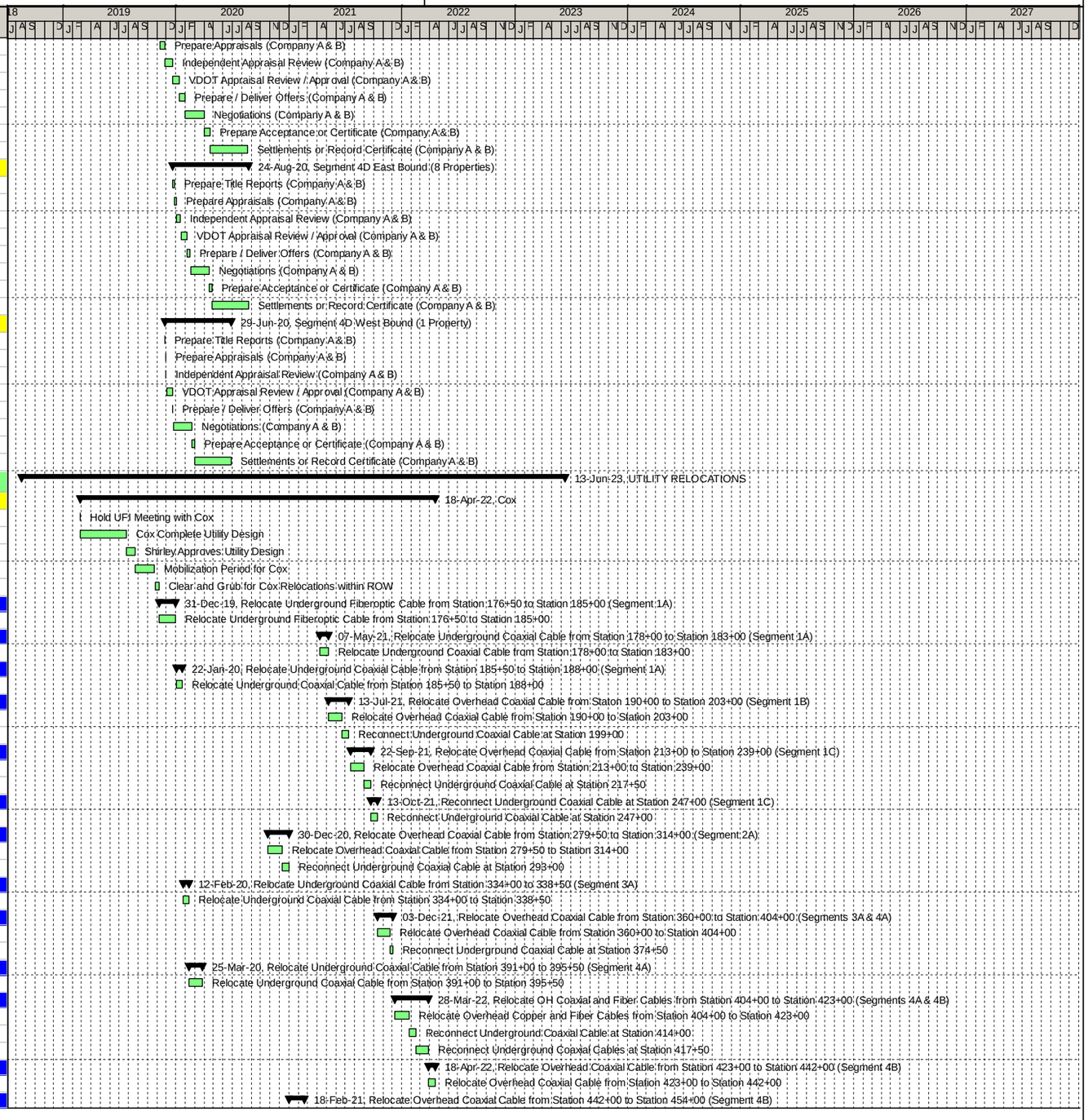
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
ROW3A1020	Independent Appraisal Review (Company A & B)	15	18	19-Jun-19	03-Jul-19
ROW3A1030	VDOT Appraisal Review / Approval (Company A & B)	21	18	04-Jul-19	24-Jul-19
ROW3A1040	Prepare / Deliver Offers (Company A & B)	10	18	25-Jul-19	03-Aug-19
ROW3A1050	Negotiations (Company A & B)	60	18	04-Aug-19	02-Oct-19
ROW3A1060	Prepare Acceptance or Certificate (Company A & B)	10	18	03-Oct-19	12-Oct-19
ROW3A1070	Settlements or Record Certificate (Company A & B)	120	18	13-Oct-19	09-Feb-20
Segment 3A West Bound (3 Properties)		225	335	27-Feb-20	08-Oct-20
ROW3A2000	Prepare Title Reports (Company A & B)	3	31	27-Feb-20	29-Feb-20
ROW3A2010	Prepare Appraisals (Company A & B)	3	31	01-Mar-20	03-Mar-20
ROW3A2020	Independent Appraisal Review (Company A & B)	5	335	04-Mar-20	08-Mar-20
ROW3A2030	VDOT Appraisal Review / Approval (Company A & B)	21	335	09-Mar-20	29-Mar-20
ROW3A2040	Prepare / Deliver Offers (Company A & B)	3	335	30-Mar-20	01-Apr-20
ROW3A2050	Negotiations (Company A & B)	60	335	02-Apr-20	31-May-20
ROW3A2060	Prepare Acceptance or Certificate (Company A & B)	10	335	01-Jun-20	10-Jun-20
ROW3A2070	Settlements or Record Certificate (Company A & B)	120	335	11-Jun-20	08-Oct-20
Segment 4A East Bound (24 Properties)		317	52	22-Jan-20	03-Dec-20
ROW4A1000	Prepare Title Reports (Company A & B)	18	31	22-Jan-20	08-Feb-20
ROW4A1010	Prepare Appraisals (Company A & B)	18	31	09-Feb-20	26-Feb-20
ROW4A1020	Independent Appraisal Review (Company A & B)	30	52	27-Feb-20	27-Mar-20
ROW4A1030	VDOT Appraisal Review / Approval (Company A & B)	21	52	28-Mar-20	17-Apr-20
ROW4A1040	Prepare / Deliver Offers (Company A & B)	20	52	18-Apr-20	07-May-20
ROW4A1050	Negotiations (Company A & B)	70	52	08-May-20	16-Jul-20
ROW4A1060	Prepare Acceptance or Certificate (Company A & B)	20	52	17-Jul-20	05-Aug-20
ROW4A1070	Settlements or Record Certificate (Company A & B)	120	52	06-Aug-20	03-Dec-20
Segment 4A West Bound (10 Properties)		252	81	12-Sep-19	20-May-20
ROW4A2000	Prepare Title Reports (Company A & B)	8	31	12-Sep-19	19-Sep-19
ROW4A2010	Prepare Appraisals (Company A & B)	8	31	20-Sep-19	27-Sep-19
ROW4A2020	Independent Appraisal Review (Company A & B)	15	81	28-Sep-19	12-Oct-19
ROW4A2030	VDOT Appraisal Review / Approval (Company A & B)	21	81	13-Oct-19	02-Nov-19
ROW4A2040	Prepare / Deliver Offers (Company A & B)	10	81	03-Nov-19	12-Nov-19
ROW4A2050	Negotiations (Company A & B)	60	81	13-Nov-19	11-Jan-20
ROW4A2060	Prepare Acceptance or Certificate (Company A & B)	10	81	12-Jan-20	21-Jan-20
ROW4A2070	Settlements or Record Certificate (Company A & B)	120	81	22-Jan-20	20-May-20
Segment 4B East Bound (13 Properties)		267	108	02-Jan-20	24-Sep-20
ROW4B1000	Prepare Title Reports (Company A & B)	10	31	02-Jan-20	11-Jan-20
ROW4B1010	Prepare Appraisals (Company A & B)	10	31	12-Jan-20	21-Jan-20
ROW4B1020	Independent Appraisal Review (Company A & B)	20	108	22-Jan-20	10-Feb-20
ROW4B1030	VDOT Appraisal Review / Approval (Company A & B)	21	108	11-Feb-20	02-Mar-20
ROW4B1040	Prepare / Deliver Offers (Company A & B)	13	108	03-Mar-20	15-Mar-20
ROW4B1050	Negotiations (Company A & B)	60	108	16-Mar-20	14-May-20
ROW4B1060	Prepare Acceptance or Certificate (Company A & B)	13	108	15-May-20	27-May-20
ROW4B1070	Settlements or Record Certificate (Company A & B)	120	108	28-May-20	24-Sep-20
Segment 4B West Bound (19 Properties)		294	52	28-Sep-19	17-Jul-20
ROW4B2000	Prepare Title Reports (Company A & B)	15	31	28-Sep-19	12-Oct-19
ROW4B2010	Prepare Appraisals (Company A & B)	15	31	13-Oct-19	27-Oct-19
ROW4B2020	Independent Appraisal Review (Company A & B)	25	52	28-Oct-19	21-Nov-19
ROW4B2030	VDOT Appraisal Review / Approval (Company A & B)	21	52	22-Nov-19	12-Dec-19
ROW4B2040	Prepare / Deliver Offers (Company A & B)	19	52	13-Dec-19	31-Dec-19
ROW4B2050	Negotiations (Company A & B)	60	52	01-Jan-20	29-Feb-20
ROW4B2060	Prepare Acceptance or Certificate (Company A & B)	19	52	01-Mar-20	19-Mar-20
ROW4B2070	Settlements or Record Certificate (Company A & B)	120	52	20-Mar-20	17-Jul-20
Segment 4C East Bound (14 Properties)		276	78	29-Nov-19	30-Aug-20
ROW4C1000	Prepare Title Reports (Company A & B)	11	31	29-Nov-19	09-Dec-19
ROW4C1010	Prepare Appraisals (Company A & B)	11	31	10-Dec-19	20-Dec-19
ROW4C1020	Independent Appraisal Review (Company A & B)	20	78	21-Dec-19	09-Jan-20
ROW4C1030	VDOT Appraisal Review / Approval (Company A & B)	21	78	10-Jan-20	30-Jan-20
ROW4C1040	Prepare / Deliver Offers (Company A & B)	14	78	31-Jan-20	13-Feb-20
ROW4C1050	Negotiations (Company A & B)	60	78	14-Feb-20	13-Apr-20
ROW4C1060	Prepare Acceptance or Certificate (Company A & B)	19	78	14-Apr-20	02-May-20
ROW4C1070	Settlements or Record Certificate (Company A & B)	120	78	03-May-20	30-Aug-20
Segment 4C West Bound (20 Properties)		296	49	28-Oct-19	18-Aug-20
ROW4C2000	Prepare Title Reports (Company A & B)	15	31	28-Oct-19	11-Nov-19



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

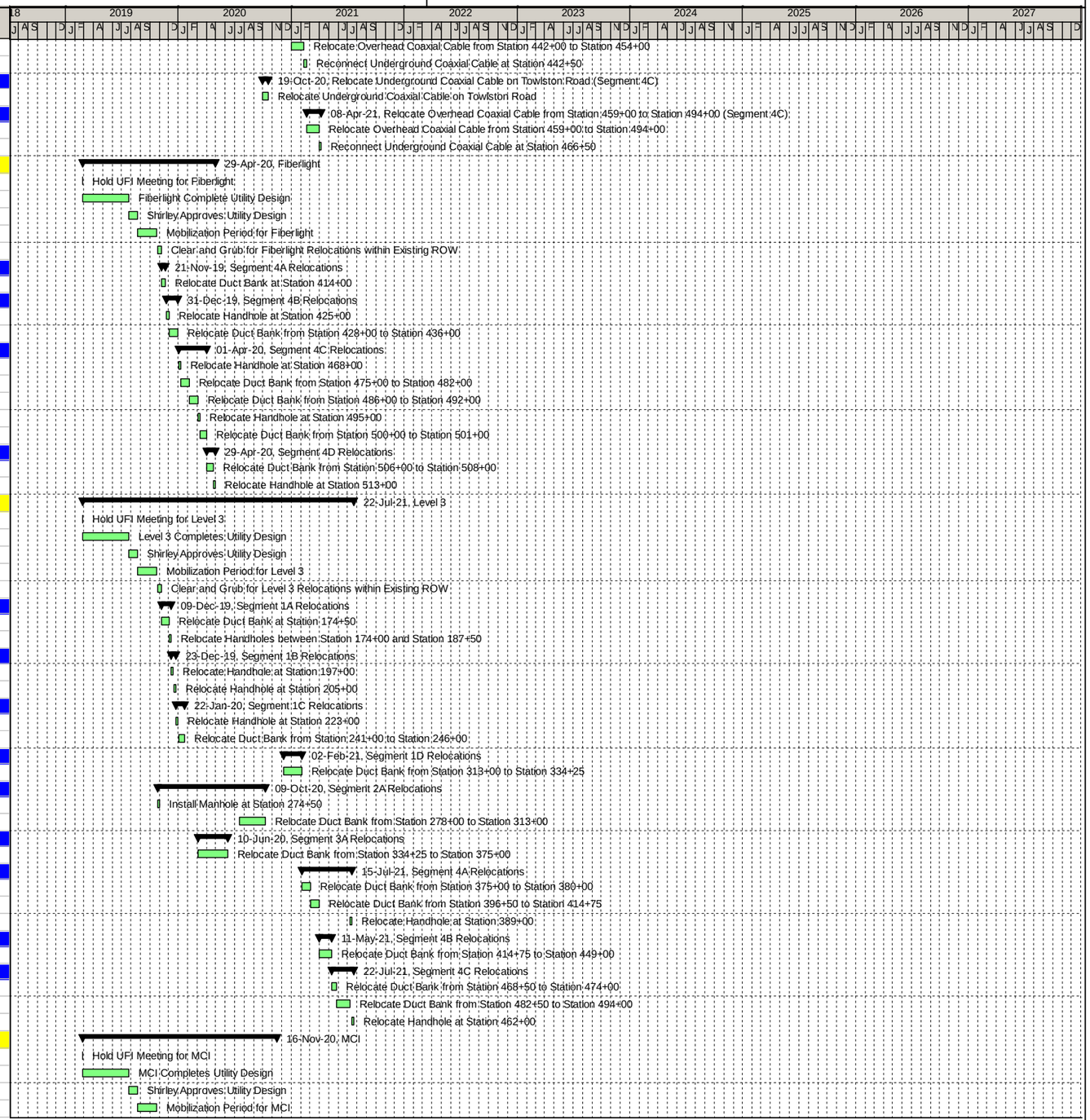
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
ROW4C2010	Prepare Appraisals (Company A & B)	15	31	12-Nov-19	26-Nov-19
ROW4C2020	Independent Appraisal Review (Company A & B)	25	49	27-Nov-19	21-Dec-19
ROW4C2030	VDOT Appraisal Review / Approval (Company A & B)	21	49	22-Dec-19	11-Jan-20
ROW4C2040	Prepare / Deliver Offers (Company A & B)	20	49	12-Jan-20	31-Jan-20
ROW4C2050	Negotiations (Company A & B)	60	49	01-Feb-20	31-Mar-20
ROW4C2060	Prepare Acceptance or Certificate (Company A & B)	20	49	01-Apr-20	20-Apr-20
ROW4C2070	Settlements or Record Certificate (Company A & B)	120	49	21-Apr-20	18-Aug-20
Segment 4D East Bound (8 Properties)		248	72	21-Dec-19	24-Aug-20
ROW4D1000	Prepare Title Reports (Company A & B)	6	31	21-Dec-19	26-Dec-19
ROW4D1010	Prepare Appraisals (Company A & B)	6	31	27-Dec-19	01-Jan-20
ROW4D1020	Independent Appraisal Review (Company A & B)	15	72	02-Jan-20	16-Jan-20
ROW4D1030	VDOT Appraisal Review / Approval (Company A & B)	21	72	17-Jan-20	06-Feb-20
ROW4D1040	Prepare / Deliver Offers (Company A & B)	10	72	07-Feb-20	16-Feb-20
ROW4D1050	Negotiations (Company A & B)	60	72	17-Feb-20	16-Apr-20
ROW4D1060	Prepare Acceptance or Certificate (Company A & B)	10	72	17-Apr-20	26-Apr-20
ROW4D1070	Settlements or Record Certificate (Company A & B)	120	72	27-Apr-20	24-Aug-20
Segment 4D West Bound (1 Property)		216	56	27-Nov-19	29-Jun-20
ROW4D2000	Prepare Title Reports (Company A & B)	1	31	27-Nov-19	27-Nov-19
ROW4D2010	Prepare Appraisals (Company A & B)	1	31	28-Nov-19	28-Nov-19
ROW4D2020	Independent Appraisal Review (Company A & B)	2	56	29-Nov-19	30-Nov-19
ROW4D2030	VDOT Appraisal Review / Approval (Company A & B)	21	56	01-Dec-19	21-Dec-19
ROW4D2040	Prepare / Deliver Offers (Company A & B)	1	56	22-Dec-19	22-Dec-19
ROW4D2050	Negotiations (Company A & B)	60	56	23-Dec-19	20-Feb-20
ROW4D2060	Prepare Acceptance or Certificate (Company A & B)	10	56	21-Feb-20	01-Mar-20
ROW4D2070	Settlements or Record Certificate (Company A & B)	120	56	02-Mar-20	29-Jun-20
UTILITY RELOCATIONS		1223	248	20-Aug-18	13-Jun-23
Cox		800	228	25-Feb-19	18-Apr-22
CX10000	Hold UFI Meeting with Cox	1	214	25-Feb-19	25-Feb-19
CX10010	Cox Complete Utility Design	105	214	26-Feb-19	24-Jul-19
CX10020	Shirley Approves Utility Design	20	214	25-Jul-19	21-Aug-19
CX10030	Mobilization Period for Cox	45	214	22-Aug-19	24-Oct-19
CX10040	Clear and Grub for Cox Relocations within ROW	10	170	25-Oct-19	07-Nov-19
Relocate Underground Fiberoptic Cable from Station 176+50 to Station 185+00 (Segment 1A)		35	214	08-Nov-19	31-Dec-19
CX11000	Relocate Underground Fiberoptic Cable from Station 176+50 to Station 185+00	35	214	08-Nov-19	31-Dec-19
Relocate Underground Coaxial Cable from Station 178+00 to Station 183+00 (Segment 1A)		20	79	09-Apr-21	07-May-21
CX12000	Relocate Underground Coaxial Cable from Station 178+00 to Station 183+00	20	79	09-Apr-21	07-May-21
Relocate Underground Coaxial Cable from Station 185+50 to Station 188+00 (Segment 1A)		15	214	02-Jan-20	22-Jan-20
CX13000	Relocate Underground Coaxial Cable from Station 185+50 to Station 188+00	15	214	02-Jan-20	22-Jan-20
Relocate Overhead Coaxial Cable from Staton 190+00 to Station 203+00 (Segment 1B)		45	79	07-May-21	13-Jul-21
CX14000	Relocate Overhead Coaxial Cable from Station 190+00 to Station 203+00	30	79	07-May-21	21-Jun-21
CX14010	Reconnect Underground Coaxial Cable at Station 199+00	15	79	21-Jun-21	13-Jul-21
Relocate Overhead Coaxial Cable from Station 213+00 to Station 239+00 (Segment 1C)		45	74	20-Jul-21	22-Sep-21
CX15000	Relocate Overhead Coaxial Cable from Station 213+00 to Station 239+00	30	74	20-Jul-21	31-Aug-21
CX15010	Reconnect Underground Coaxial Cable at Station 217+50	15	74	31-Aug-21	22-Sep-21
Reconnect Underground Coaxial Cable at Station 247+00 (Segment 1C)		15	74	22-Sep-21	13-Oct-21
CX16000	Reconnect Underground Coaxial Cable at Station 247+00	15	74	22-Sep-21	13-Oct-21
Relocate Overhead Coaxial Cable from Station 279+50 to Station 314+00 (Segment 2A)		45	80	23-Oct-20	30-Dec-20
CX17000	Relocate Overhead Coaxial Cable from Station 279+50 to Station 314+00	30	80	23-Oct-20	08-Dec-20
CX17010	Reconnect Underground Coaxial Cable at Station 293+00	15	80	08-Dec-20	30-Dec-20
Relocate Underground Coaxial Cable from Station 334+00 to 338+50 (Segment 3A)		15	214	23-Jan-20	12-Feb-20
CX18000	Relocate Underground Coaxial Cable from Station 334+00 to Station 338+50	15	214	23-Jan-20	12-Feb-20
Relocate Overhead Coaxial Cable from Station 360+00 to Station 404+00 (Segments 3A & 4A)		35	123	13-Oct-21	03-Dec-21
CX19000	Relocate Overhead Coaxial Cable from Station 360+00 to Station 404+00	30	123	13-Oct-21	24-Nov-21
CX19010	Reconnect Underground Coaxial Cable at Station 374+50	5	123	24-Nov-21	03-Dec-21
Relocate Underground Coaxial Cable from Station 391+00 to 395+50 (Segment 4A)		30	214	13-Feb-20	25-Mar-20
CX20000	Relocate Underground Coaxial Cable from Station 391+00 to Station 395+50	30	214	13-Feb-20	25-Mar-20
Relocate OH Coaxial and Fiber Cables from Station 404+00 to Station 423+00 (Segments 4A & 4B)		75	228	09-Dec-21	28-Mar-22
CX21000	Relocate Overhead Copper and Fiber Cables from Station 404+00 to Station 423+00	30	228	09-Dec-21	24-Jan-22
CX21010	Reconnect Underground Coaxial Cable at Station 414+00	15	228	24-Jan-22	14-Feb-22
CX21020	Reconnect Underground Coaxial Cables at Station 417+50	30	228	14-Feb-22	28-Mar-22
Relocate Overhead Coaxial Cable from Station 423+00 to Station 442+00 (Segment 4B)		15	228	28-Mar-22	18-Apr-22
CX22000	Relocate Overhead Coaxial Cable from Station 423+00 to Station 442+00	15	228	28-Mar-22	18-Apr-22
Relocate Overhead Coaxial Cable from Station 442+00 to Station 454+00 (Segment 4B)		35	80	30-Dec-20	18-Feb-21



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

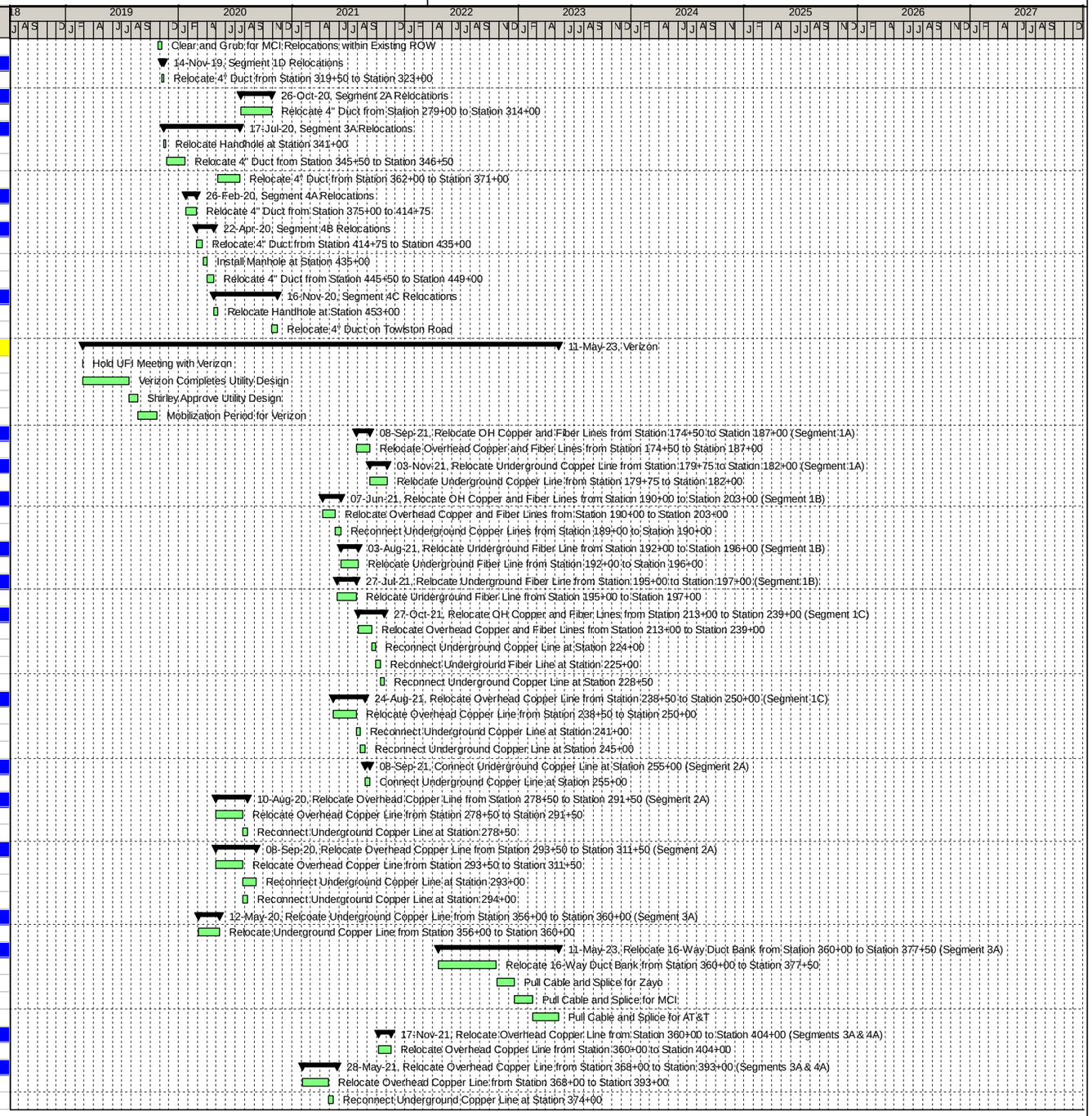
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
CX23000	Relocate Overhead Coaxial Cable from Station 442+00 to Station 454+00	30	80	30-Dec-20	11-Feb-21
CX23010	Reconnect Underground Coaxial Cable at Station 442+50	5	80	11-Feb-21	18-Feb-21
Relocate Underground Coaxial Cable on Towlston Road (Segment 4C)		15	84	28-Sep-20	19-Oct-20
CX24000	Relocate Underground Coaxial Cable on Towlston Road	15	84	28-Sep-20	19-Oct-20
Relocate Overhead Coaxial Cable from Station 459+00 to Station 494+00 (Segment 4C)		35	80	18-Feb-21	08-Apr-21
CX25000	Relocate Overhead Coaxial Cable from Station 459+00 to Station 494+00	30	80	18-Feb-21	01-Apr-21
CX25010	Reconnect Underground Coaxial Cable at Station 466+50	5	80	01-Apr-21	08-Apr-21
Fiberlight		301	329	25-Feb-19	29-Apr-20
FL10000	Hold UFI Meeting for Fiberlight	1	295	25-Feb-19	25-Feb-19
FL10010	Fiberlight Complete Utility Design	105	295	26-Feb-19	24-Jul-19
FL10020	Shirley Approves Utility Design	20	295	25-Jul-19	21-Aug-19
FL10030	Mobilization Period for Fiberlight	45	295	22-Aug-19	24-Oct-19
FL10040	Clear and Grub for Fiberlight Relocations within Existing ROW	10	251	25-Oct-19	07-Nov-19
Segment 4A Relocations		10	295	08-Nov-19	21-Nov-19
FL11000	Relocate Duct Bank at Station 414+00	10	295	08-Nov-19	21-Nov-19
Segment 4B Relocations		25	295	22-Nov-19	31-Dec-19
FL12000	Relocate Handhole at Station 425+00	5	295	22-Nov-19	02-Dec-19
FL13000	Relocate Duct Bank from Station 428+00 to Station 436+00	20	295	03-Dec-19	31-Dec-19
Segment 4C Relocations		65	299	02-Jan-20	01-Apr-20
FL14000	Relocate Handhole at Station 468+00	5	299	02-Jan-20	08-Jan-20
FL15000	Relocate Duct Bank from Station 475+00 to Station 482+00	20	299	09-Jan-20	05-Feb-20
FL16000	Relocate Duct Bank from Station 486+00 to Station 492+00	20	299	06-Feb-20	04-Mar-20
FL17000	Relocate Handhole at Station 495+00	5	299	05-Mar-20	11-Mar-20
FL18000	Relocate Duct Bank from Station 500+00 to Station 501+00	15	299	12-Mar-20	01-Apr-20
Segment 4D Relocations		20	329	02-Apr-20	29-Apr-20
FL19000	Relocate Duct Bank from Station 506+00 to Station 508+00	15	329	02-Apr-20	22-Apr-20
FL20000	Relocate Handhole at Station 513+00	5	329	23-Apr-20	29-Apr-20
Level 3		613	546	25-Feb-19	22-Jul-21
LT10000	Hold UFI Meeting for Level 3	1	43	25-Feb-19	25-Feb-19
LT10010	Level 3 Completes Utility Design	105	43	26-Feb-19	24-Jul-19
LT10020	Shirley Approves Utility Design	20	43	25-Jul-19	21-Aug-19
LT10030	Mobilization Period for Level 3	45	43	22-Aug-19	24-Oct-19
LT10040	Clear and Grub for Level 3 Relocations within Existing ROW	10	43	25-Oct-19	07-Nov-19
Segment 1A Relocations		20	43	08-Nov-19	09-Dec-19
LT11000	Relocate Duct Bank at Station 174+50	15	43	08-Nov-19	02-Dec-19
LT11010	Relocate Handholes between Station 174+00 and Station 187+50	5	43	03-Dec-19	09-Dec-19
Segment 1B Relocations		10	43	10-Dec-19	23-Dec-19
LT12000	Relocate Handhole at Station 197+00	5	43	10-Dec-19	16-Dec-19
LT12010	Relocate Handhole at Station 205+00	5	43	17-Dec-19	23-Dec-19
Segment 1C Relocations		20	43	24-Dec-19	22-Jan-20
LT13000	Relocate Handhole at Station 223+00	5	43	24-Dec-19	31-Dec-19
LT13010	Relocate Duct Bank from Station 241+00 to Station 246+00	15	43	02-Jan-20	22-Jan-20
Segment 1D Relocations		40	69	07-Dec-20	02-Feb-21
LT14000	Relocate Duct Bank from Station 313+00 to Station 334+25	40	69	07-Dec-20	02-Feb-21
Segment 2A Relocations		244	107	25-Oct-19	09-Oct-20
LT15000	Install Manhole at Station 274+50	5	48	25-Oct-19	31-Oct-19
LT15010	Relocate Duct Bank from Station 278+00 to Station 313+00	60	107	16-Jul-20	09-Oct-20
Segment 3A Relocations		70	14	04-Mar-20	10-Jun-20
LT16000	Relocate Duct Bank from Station 334+25 to Station 375+00	70	14	04-Mar-20	10-Jun-20
Segment 4A Relocations		115	408	03-Feb-21	15-Jul-21
LT17000	Relocate Duct Bank from Station 375+00 to Station 380+00	20	306	03-Feb-21	02-Mar-21
LT17010	Relocate Duct Bank from Station 396+50 to Station 414+75	20	306	03-Mar-21	30-Mar-21
LT17020	Relocate Handhole at Station 389+00	5	408	09-Jul-21	15-Jul-21
Segment 4B Relocations		30	306	31-Mar-21	11-May-21
LT18000	Relocate Duct Bank from Station 414+75 to Station 449+00	30	306	31-Mar-21	11-May-21
Segment 4C Relocations		50	546	12-May-21	22-Jul-21
LT19000	Relocate Duct Bank from Station 468+50 to Station 474+00	10	306	12-May-21	25-May-21
LT19010	Relocate Duct Bank from Station 482+50 to Station 494+00	30	306	26-May-21	08-Jul-21
LT19020	Relocate Handhole at Station 462+00	5	546	16-Jul-21	22-Jul-21
MCI		441	139	25-Feb-19	16-Nov-20
MCI10000	Hold UFI Meeting for MCI	1	139	25-Feb-19	25-Feb-19
MCI10010	MCI Completes Utility Design	105	139	26-Feb-19	24-Jul-19
MCI10020	Shirley Approves Utility Design	20	139	25-Jul-19	21-Aug-19
MCI10030	Mobilization Period for MCI	45	139	22-Aug-19	24-Oct-19



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

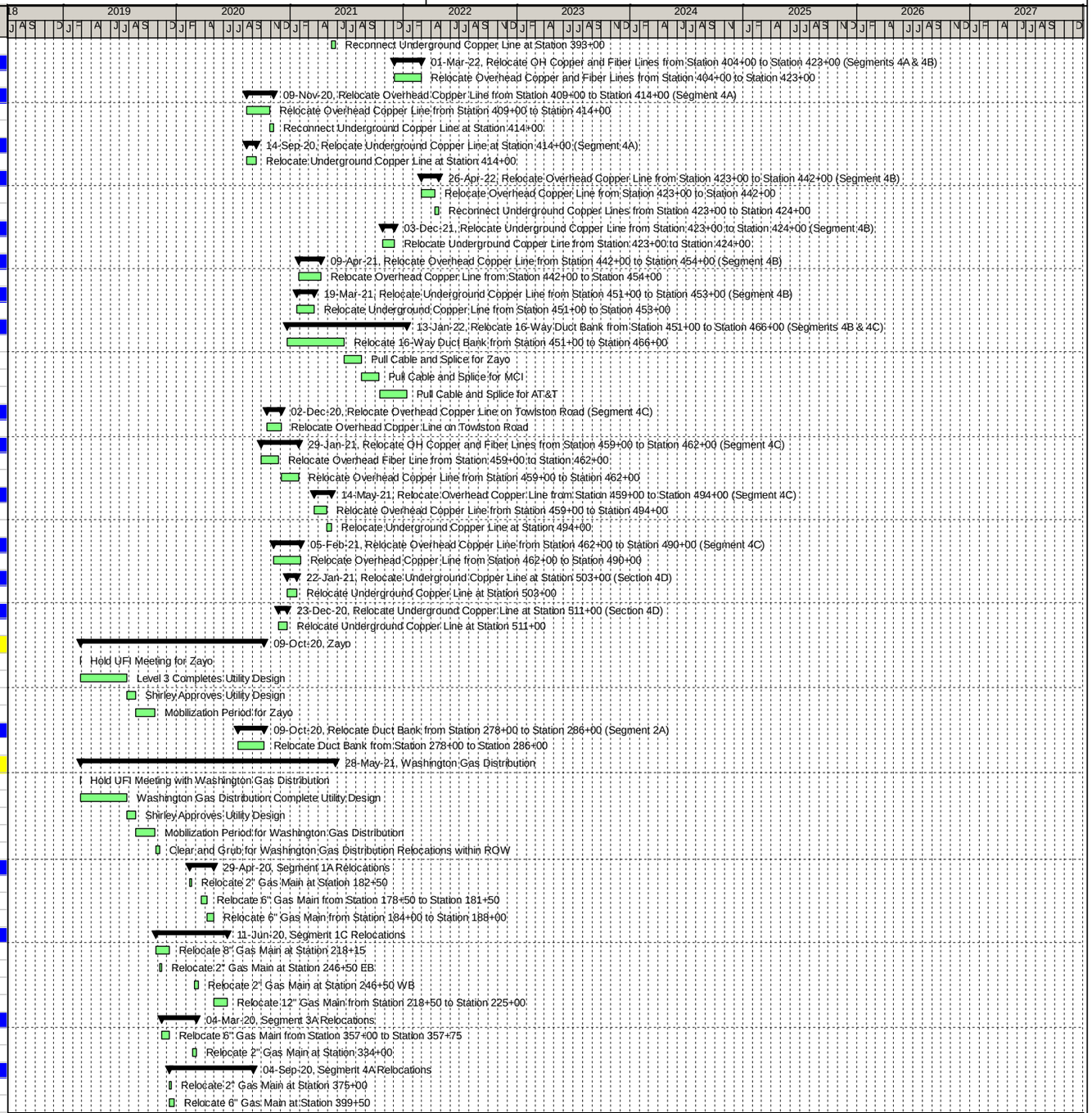
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
MCI10040	Clear and Grub for MCI Relocations within Existing ROW	10	139	25-Oct-19	07-Nov-19
Segment 1D Relocations		5	139	08-Nov-19	14-Nov-19
MCI11000	Relocate 4" Duct from Station 319+50 to Station 323+00	5	139	08-Nov-19	14-Nov-19
Segment 2A Relocations		70	139	20-Jul-20	26-Oct-20
MCI12000	Relocate 4" Duct from Station 279+00 to Station 314+00	70	139	20-Jul-20	26-Oct-20
Segment 3A Relocations		170	139	15-Nov-19	17-Jul-20
MCI13000	Relocate Handhole at Station 341+00	5	139	15-Nov-19	21-Nov-19
MCI13010	Relocate 4" Duct from Station 345+50 to Station 346+50	40	139	22-Nov-19	22-Jan-20
MCI13020	Relocate 4" Duct from Station 362+00 to Station 371+00	50	139	07-May-20	17-Jul-20
Segment 4A Relocations		25	139	23-Jan-20	26-Feb-20
MCI14000	Relocate 4" Duct from Station 375+00 to 414+75	25	139	23-Jan-20	26-Feb-20
Segment 4B Relocations		40	139	27-Feb-20	22-Apr-20
MCI15000	Relocate 4" Duct from Station 414+75 to Station 435+00	15	139	27-Feb-20	18-Mar-20
MCI15010	Install Manhole at Station 435+00	10	139	19-Mar-20	01-Apr-20
MCI15020	Relocate 4" Duct from Station 445+50 to Station 449+00	15	139	02-Apr-20	22-Apr-20
Segment 4C Relocations		145	139	23-Apr-20	16-Nov-20
MCI16000	Relocate Handhole at Station 453+00	10	139	23-Apr-20	06-May-20
MCI16010	Relocate 4" Duct on Towlston Road	15	139	27-Oct-20	16-Nov-20
Verizon		1071	270	25-Feb-19	11-May-23
VZ10000	Hold UFI Meeting with Verizon	1	188	25-Feb-19	25-Feb-19
VZ10010	Verizon Completes Utility Design	105	188	26-Feb-19	24-Jul-19
VZ10020	Shirley Approve Utility Design	20	188	25-Jul-19	21-Aug-19
VZ10030	Mobilization Period for Verizon	45	188	22-Aug-19	24-Oct-19
Relocate OH Copper and Fiber Lines from Station 174+50 to Station 187+00 (Segment 1A)		30	102	27-Jul-21	08-Sep-21
VZ11000	Relocate Overhead Copper and Fiber Lines from Station 174+50 to Station 187+00	30	102	27-Jul-21	08-Sep-21
Relocate Underground Copper Line from Station 179+75 to Station 182+00 (Segment 1A)		40	102	08-Sep-21	03-Nov-21
VZ12000	Relocate Underground Copper Line from Station 179+75 to Station 182+00	40	102	08-Sep-21	03-Nov-21
Relocate OH Copper and Fiber Lines from Station 190+00 to Station 203+00 (Segment 1B)		40	64	09-Apr-21	07-Jun-21
VZ13000	Relocate Overhead Copper and Fiber Lines from Station 190+00 to Station 203+00	30	64	09-Apr-21	21-May-21
VZ13010	Reconnect Underground Copper Lines from Station 189+00 to Station 190+00	10	64	21-May-21	07-Jun-21
Relocate Underground Fiber Line from Station 192+00 to Station 196+00 (Segment 1B)		40	64	07-Jun-21	03-Aug-21
VZ14000	Relocate Underground Fiber Line from Station 192+00 to Station 196+00	40	64	07-Jun-21	03-Aug-21
Relocate Underground Fiber Line from Station 195+00 to Station 197+00 (Segment 1B)		40	70	28-May-21	27-Jul-21
VZ15000	Relocate Underground Fiber Line from Station 195+00 to Station 197+00	40	70	28-May-21	27-Jul-21
Relocate OH Copper and Fiber Lines from Station 213+00 to Station 239+00 (Segment 1C)		60	64	03-Aug-21	27-Oct-21
VZ16000	Relocate Overhead Copper and Fiber Lines from Station 213+00 to Station 239+00	30	64	03-Aug-21	15-Sep-21
VZ16010	Reconnect Underground Copper Line at Station 224+00	10	64	15-Sep-21	29-Sep-21
VZ16020	Reconnect Underground Fiber Line at Station 225+00	10	64	29-Sep-21	13-Oct-21
VZ16030	Reconnect Underground Copper Line at Station 228+50	10	64	13-Oct-21	27-Oct-21
Relocate Overhead Copper Line from Station 238+50 to Station 250+00 (Segment 1C)		70	43	14-May-21	24-Aug-21
VZ17000	Relocate Overhead Copper Line from Station 238+50 to Station 250+00	50	43	14-May-21	27-Jul-21
VZ17010	Reconnect Underground Copper Line at Station 241+00	10	43	27-Jul-21	10-Aug-21
VZ17020	Reconnect Underground Copper Line at Station 245+00	10	43	10-Aug-21	24-Aug-21
Connect Underground Copper Line at Station 255+00 (Segment 2A)		10	43	24-Aug-21	08-Sep-21
VZ18000	Connect Underground Copper Line at Station 255+00	10	43	24-Aug-21	08-Sep-21
Relocate Overhead Copper Line from Station 278+50 to Station 291+50 (Segment 2A)		70	93	30-Apr-20	10-Aug-20
VZ19000	Relocate Overhead Copper Line from Station 278+50 to Station 291+50	60	93	30-Apr-20	27-Jul-20
VZ19010	Reconnect Underground Copper Line at Station 278+50	10	93	27-Jul-20	10-Aug-20
Relocate Overhead Copper Line from Station 293+50 to Station 311+50 (Segment 2A)		90	57	30-Apr-20	08-Sep-20
VZ20000	Relocate Overhead Copper Line from Station 293+50 to Station 311+50	60	57	30-Apr-20	27-Jul-20
VZ20010	Reconnect Underground Copper Line at Station 293+00	30	57	27-Jul-20	08-Sep-20
VZ20020	Reconnect Underground Copper Line at Station 294+00	10	77	27-Jul-20	10-Aug-20
Relocate Underground Copper Line from Station 356+00 to Station 360+00 (Segment 3A)		50	122	04-Mar-20	12-May-20
VZ21000	Relocate Underground Copper Line from Station 356+00 to Station 360+00	50	122	04-Mar-20	12-May-20
Relocate 16-Way Duct Bank from Station 360+00 to Station 377+50 (Segment 3A)		270	270	20-Apr-22	11-May-23
VZ22000	Relocate 16-Way Duct Bank from Station 360+00 to Station 377+50	130	270	20-Apr-22	21-Oct-22
VZ22010	Pull Cable and Splice for Zayo	40	270	24-Oct-22	20-Dec-22
VZ22020	Pull Cable and Splice for MCI	40	270	21-Dec-22	16-Feb-23
VZ22030	Pull Cable and Splice for AT&T	60	270	17-Feb-23	11-May-23
Relocate Overhead Copper Line from Station 360+00 to Station 404+00 (Segments 3A & 4A)		30	23	06-Oct-21	17-Nov-21
VZ23000	Relocate Overhead Copper Line from Station 360+00 to Station 404+00	30	23	06-Oct-21	17-Nov-21
Relocate Overhead Copper Line from Station 368+00 to Station 393+00 (Segments 3A & 4A)		80	70	05-Feb-21	28-May-21
VZ24000	Relocate Overhead Copper Line from Station 368+00 to Station 393+00	60	70	05-Feb-21	30-Apr-21
VZ24010	Reconnect Underground Copper Line at Station 374+00	10	70	30-Apr-21	14-May-21



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

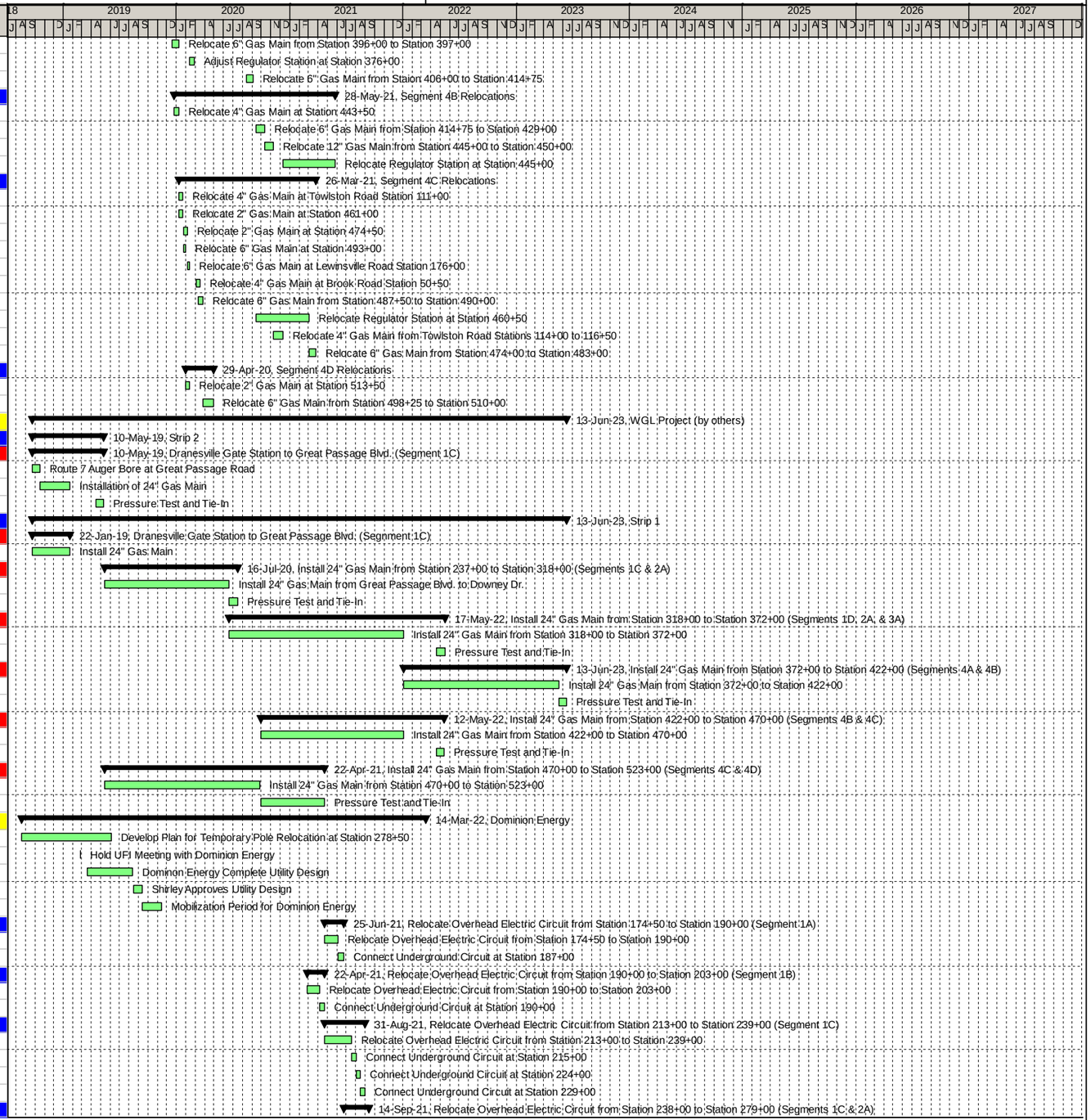
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
VZ24020	Reconnect Underground Copper Line at Station 393+00	10	70	14-May-21	28-May-21
Relocate OH Copper and Fiber Lines from Station 404+00 to Station 423+00 (Segments 4A & 4B)		60	222	03-Dec-21	01-Mar-22
VZ25000	Relocate Overhead Copper and Fiber Lines from Station 404+00 to Station 423+00	60	222	03-Dec-21	01-Mar-22
Relocate Overhead Copper Line from Station 409+00 to Station 414+00 (Segment 4A)		60	56	14-Aug-20	09-Nov-20
VZ26000	Relocate Overhead Copper Line from Station 409+00 to Station 414+00	50	56	14-Aug-20	26-Oct-20
VZ26010	Reconnect Underground Copper Line at Station 414+00	10	56	26-Oct-20	09-Nov-20
Relocate Underground Copper Line at Station 414+00 (Segment 4A)		20	89	14-Aug-20	14-Sep-20
VZ27000	Relocate Underground Copper Line at Station 414+00	20	89	14-Aug-20	14-Sep-20
Relocate Overhead Copper Line from Station 423+00 to Station 442+00 (Segment 4B)		40	222	01-Mar-22	26-Apr-22
VZ28000	Relocate Overhead Copper Line from Station 423+00 to Station 442+00	30	222	01-Mar-22	12-Apr-22
VZ28010	Reconnect Underground Copper Lines from Station 423+00 to Station 424+00	10	222	12-Apr-22	26-Apr-22
Relocate Underground Copper Line from Station 423+00 to Station 424+00 (Segment 4B)		25	222	27-Oct-21	03-Dec-21
VZ29000	Relocate Underground Copper Line from Station 423+00 to Station 424+00	25	222	27-Oct-21	03-Dec-21
Relocate Overhead Copper Line from Station 442+00 to Station 454+00 (Segment 4B)		50	64	29-Jan-21	09-Apr-21
VZ30000	Relocate Overhead Copper Line from Station 442+00 to Station 454+00	50	64	29-Jan-21	09-Apr-21
Relocate Underground Copper Line from Station 451+00 to Station 453+00 (Segment 4B)		40	43	22-Jan-21	19-Mar-21
VZ31000	Relocate Underground Copper Line from Station 451+00 to Station 453+00	40	43	22-Jan-21	19-Mar-21
Relocate 16-Way Duct Bank from Station 451+00 to Station 466+00 (Segments 4B & 4C)		270	138	21-Dec-20	13-Jan-22
VZ32000	Relocate 16-Way Duct Bank from Station 451+00 to Station 466+00	130	138	21-Dec-20	23-Jun-21
VZ32010	Pull Cable and Splice for Zayo	40	138	24-Jun-21	19-Aug-21
VZ32020	Pull Cable and Splice for MCI	40	138	20-Aug-21	15-Oct-21
VZ32030	Pull Cable and Splice for AT&T	60	138	18-Oct-21	13-Jan-22
Relocate Overhead Copper Line on Towlston Road (Segment 4C)		30	64	19-Oct-20	02-Dec-20
VZ33000	Relocate Overhead Copper Line on Towlston Road	30	64	19-Oct-20	02-Dec-20
Relocate OH Copper and Fiber Lines from Station 459+00 to Station 462+00 (Segment 4C)		85	64	28-Sep-20	29-Jan-21
VZ34000	Relocate Overhead Fiber Line from Station 459+00 to Station 462+00	40	43	28-Sep-20	23-Nov-20
VZ34010	Relocate Overhead Copper Line from Station 459+00 to Station 462+00	40	64	02-Dec-20	29-Jan-21
Relocate Overhead Copper Line from Station 459+00 to Station 494+00 (Segment 4C)		40	43	19-Mar-21	14-May-21
VZ35000	Relocate Overhead Copper Line from Station 459+00 to Station 494+00	30	43	19-Mar-21	30-Apr-21
VZ35010	Relocate Underground Copper Line at Station 494+00	10	43	30-Apr-21	14-May-21
Relocate Overhead Copper Line from Station 462+00 to Station 490+00 (Segment 4C)		60	56	09-Nov-20	05-Feb-21
VZ36000	Relocate Overhead Copper Line from Station 462+00 to Station 490+00	60	56	09-Nov-20	05-Feb-21
Relocate Underground Copper Line at Station 503+00 (Section 4D)		20	43	23-Dec-20	22-Jan-21
VZ37000	Relocate Underground Copper Line at Station 503+00	20	43	23-Dec-20	22-Jan-21
Relocate Underground Copper Line at Station 511+00 (Section 4D)		20	43	23-Nov-20	23-Dec-20
VZ38000	Relocate Underground Copper Line at Station 511+00	20	43	23-Nov-20	23-Dec-20
Zayo		415	652	25-Feb-19	09-Oct-20
ZA10000	Hold UFI Meeting for Zayo	1	836	25-Feb-19	25-Feb-19
ZA10010	Level 3 Completes Utility Design	105	836	26-Feb-19	24-Jul-19
ZA10020	Shirley Approves Utility Design	20	836	25-Jul-19	21-Aug-19
ZA10030	Mobilization Period for Zayo	45	836	22-Aug-19	24-Oct-19
Relocate Duct Bank from Station 278+00 to Station 286+00 (Segment 2A)		60	652	16-Jul-20	09-Oct-20
ZA11000	Relocate Duct Bank from Station 278+00 to Station 286+00	60	652	16-Jul-20	09-Oct-20
Washington Gas Distribution		576	583	25-Feb-19	28-May-21
WGD10000	Hold UFI Meeting with Washington Gas Distribution	1	91	25-Feb-19	25-Feb-19
WGD10010	Washington Gas Distribution Complete Utility Design	105	91	26-Feb-19	24-Jul-19
WGD10020	Shirley Approves Utility Design	20	91	25-Jul-19	21-Aug-19
WGD10030	Mobilization Period for Washington Gas Distribution	45	91	22-Aug-19	24-Oct-19
WGD10040	Clear and Grub for Washington Gas Distribution Relocations within ROW	10	111	25-Oct-19	07-Nov-19
Segment 1A Relocations		55	91	13-Feb-20	29-Apr-20
WGD11000	Relocate 2" Gas Main at Station 182+50	5	91	13-Feb-20	19-Feb-20
WGD12000	Relocate 6" Gas Main from Station 178+50 to Station 181+50	15	91	19-Mar-20	08-Apr-20
WGD13000	Relocate 6" Gas Main from Station 184+00 to Station 188+00	15	91	09-Apr-20	29-Apr-20
Segment 1C Relocations		160	129	25-Oct-19	11-Jun-20
WGD14000	Relocate 8" Gas Main at Station 218+15	30	91	25-Oct-19	09-Dec-19
WGD15000	Relocate 2" Gas Main at Station 246+50 EB	5	129	08-Nov-19	14-Nov-19
WGD16000	Relocate 2" Gas Main at Station 246+50 WB	10	129	27-Feb-20	11-Mar-20
WGD17000	Relocate 12" Gas Main from Station 218+50 to Station 225+00	30	129	30-Apr-20	11-Jun-20
Segment 3A Relocations		75	91	15-Nov-19	04-Mar-20
WGD18000	Relocate 6" Gas Main from Station 357+00 to Station 357+75	15	129	15-Nov-19	09-Dec-19
WGD19000	Relocate 2" Gas Main at Station 334+00	10	91	20-Feb-20	04-Mar-20
Segment 4A Relocations		190	16	10-Dec-19	04-Sep-20
WGD21000	Relocate 2" Gas Main at Station 375+00	5	129	10-Dec-19	16-Dec-19
WGD20000	Relocate 6" Gas Main at Station 399+50	10	91	10-Dec-19	23-Dec-19



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

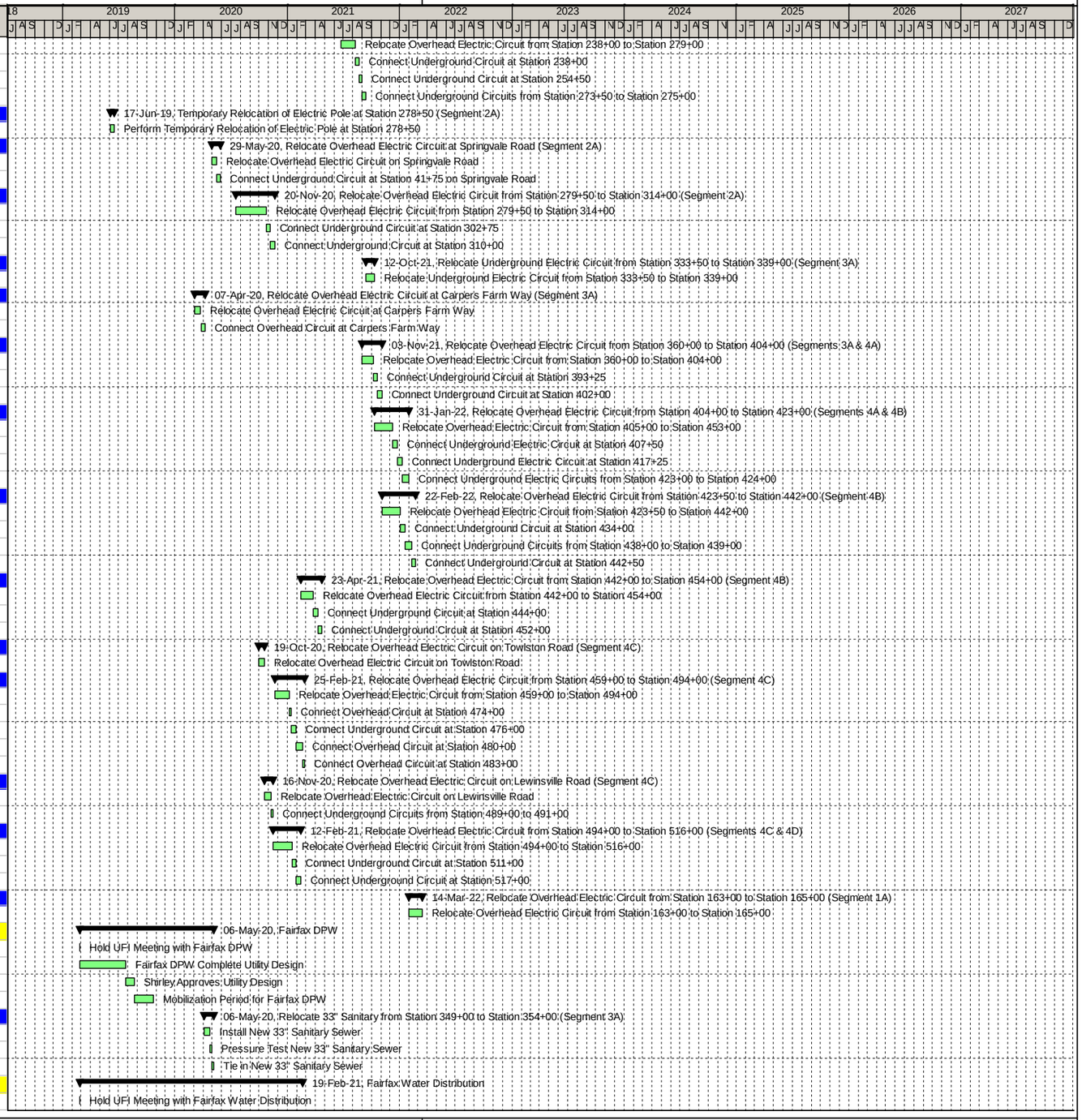
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
WGD22000	Relocate 6" Gas Main from Station 396+00 to Station 397+00	15	129	17-Dec-19	08-Jan-20
WGD23000	Adjust Regulator Station at Station 376+00	10	129	13-Feb-20	26-Feb-20
WGD24000	Relocate 6" Gas Main from Staion 406+00 to Station 414+75	15	16	14-Aug-20	04-Sep-20
Segment 4B Relocations		365	11	24-Dec-19	28-May-21
WGD25000	Relocate 4" Gas Main at Station 443+50	10	91	24-Dec-19	08-Jan-20
WGD26000	Relocate 6" Gas Main from Station 414+75 to Station 429+00	20	11	14-Sep-20	12-Oct-20
WGD27000	Relocate 12" Gas Main from Station 445+00 to Station 450+00	20	11	12-Oct-20	09-Nov-20
WGD28000	Relocate Regulator Station at Station 445+00	120	11	09-Dec-20	28-May-21
Segment 4C Relocations		310	628	09-Jan-20	26-Mar-21
WGD30000	Relocate 4" Gas Main at Towlston Road Station 111+00	10	129	09-Jan-20	22-Jan-20
WGD29000	Relocate 2" Gas Main at Station 461+00	10	91	09-Jan-20	22-Jan-20
WGD32000	Relocate 2" Gas Main at Station 474+50	10	129	23-Jan-20	05-Feb-20
WGD31000	Relocate 6" Gas Main at Station 493+00	5	91	23-Jan-20	29-Jan-20
WGD33000	Relocate 6" Gas Main at Lewinsville Road Station 176+00	5	129	06-Feb-20	12-Feb-20
WGD34000	Relocate 4" Gas Main at Brook Road Station 50+50	10	91	05-Mar-20	18-Mar-20
WGD35000	Relocate 6" Gas Main from Station 487+50 to Station 490+00	10	129	12-Mar-20	25-Mar-20
WGD36000	Relocate Regulator Station at Station 460+50	120	64	14-Sep-20	05-Mar-21
WGD37000	Relocate 4" Gas Main from Towlston Road Stations 114+00 to 116+50	20	11	09-Nov-20	09-Dec-20
WGD38000	Relocate 6" Gas Main from Station 474+00 to Station 483+00	15	628	05-Mar-21	26-Mar-21
Segment 4D Relocations		65	129	30-Jan-20	29-Apr-20
WGD39000	Relocate 2" Gas Main at Station 513+50	10	91	30-Jan-20	12-Feb-20
WGD40000	Relocate 6" Gas Main from Station 498+25 to Station 510+00	25	129	26-Mar-20	29-Apr-20
WGL Project (by others)		1199	70	21-Sep-18	13-Jun-23
Strip 2		161	70	21-Sep-18	10-May-19
Dranesville Gate Station to Great Passage Blvd. (Segment 1C)		161	70	21-Sep-18	10-May-19
WGT21000	Route 7 Auger Bore at Great Passage Road	19	129	21-Sep-18	18-Oct-18
WGT21010	Installation of 24" Gas Main	64	129	18-Oct-18	22-Jan-19
WGT21020	Pressure Test and Tie-In	19	70	16-Apr-19	10-May-19
Strip 1		1199	70	21-Sep-18	13-Jun-23
Dranesville Gate Station to Great Passage Blvd. (Segnment 1C)		83	148	21-Sep-18	22-Jan-19
WGT11000	Install 24" Gas Main	83	148	21-Sep-18	22-Jan-19
Install 24" Gas Main from Station 237+00 to Station 318+00 (Segments 1C & 2A)		300	265	13-May-19	16-Jul-20
WGT12000	Install 24" Gas Main from Great Passage Blvd. to Downey Dr.	280	80	13-May-19	17-Jun-20
WGT12020	Pressure Test and Tie-In	20	139	18-Jun-20	16-Jul-20
Install 24" Gas Main from Station 318+00 to Station 372+00 (Segments 1D, 2A, & 3A)		486	6	18-Jun-20	17-May-22
WGT13000	Install 24" Gas Main from Station 318+00 to Station 372+00	390	80	18-Jun-20	03-Jan-22
WGT13010	Pressure Test and Tie-In	22	6	18-Apr-22	17-May-22
Install 24" Gas Main from Station 372+00 to Station 422+00 (Segments 4A & 4B)		368	70	04-Jan-22	13-Jun-23
WGT14000	Install 24" Gas Main from Station 372+00 to Station 422+00	350	70	04-Jan-22	17-May-23
WGT14010	Pressure Test and Tie-In	18	70	18-May-23	13-Jun-23
Install 24" Gas Main from Station 422+00 to Station 470+00 (Segments 4B & 4C)		413	288	28-Sep-20	12-May-22
WGT15000	Install 24" Gas Main from Station 422+00 to Station 470+00	320	70	28-Sep-20	03-Jan-22
WGT15010	Pressure Test and Tie-In	19	162	18-Apr-22	12-May-22
Install 24" Gas Main from Station 470+00 to Station 523+00 (Segments 4C & 4D)		495	30	13-May-19	22-Apr-21
WGT16000	Install 24" Gas Main from Station 470+00 to Station 523+00	350	70	13-May-19	25-Sep-20
WGT16010	Pressure Test and Tie-In	19	30	28-Sep-20	22-Apr-21
Dominion Energy		905	253	20-Aug-18	14-Mar-22
DE10040	Develop Plan for Temporary Pole Relocation at Station 278+50	200	37	20-Aug-18	03-Jun-19
DE10000	Hold UFI Meeting with Dominion Energy	1	177	25-Feb-19	25-Feb-19
DE10010	Dominon Energy Complete Utility Design	105	163	18-Mar-19	13-Aug-19
DE10020	Shirley Approves Utility Design	20	163	14-Aug-19	11-Sep-19
DE10030	Mobilization Period for Dominion Energy	45	163	12-Sep-19	13-Nov-19
Relocate Overhead Electric Circuit from Station 174+50 to Station 190+00 (Segment 1A)		45	13	22-Apr-21	25-Jun-21
DE11000	Relocate Overhead Electric Circuit from Station 174+50 to Station 190+00	30	13	22-Apr-21	04-Jun-21
DE11010	Connect Underground Circuit at Station 187+00	15	13	04-Jun-21	25-Jun-21
Relocate Overhead Electric Circuit from Station 190+00 to Station 203+00 (Segment 1B)		40	13	25-Feb-21	22-Apr-21
DE12000	Relocate Overhead Electric Circuit from Station 190+00 to Station 203+00	30	13	25-Feb-21	08-Apr-21
DE12010	Connect Underground Circuit at Station 190+00	10	13	08-Apr-21	22-Apr-21
Relocate Overhead Electric Circuit from Station 213+00 to Station 239+00 (Segment 1C)		90	23	23-Apr-21	31-Aug-21
DE13000	Relocate Overhead Electric Circuit from Station 213+00 to Station 239+00	60	23	23-Apr-21	20-Jul-21
DE13010	Connect Underground Circuit at Station 215+00	10	23	20-Jul-21	03-Aug-21
DE13020	Connect Underground Circuit at Station 224+00	10	23	03-Aug-21	17-Aug-21
DE13030	Connect Underground Circuit at Station 229+00	10	23	17-Aug-21	31-Aug-21
Relocate Overhead Electric Circuit from Station 238+00 to Station 279+00 (Segments 1C & 2A)		55	13	25-Jun-21	14-Sep-21



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

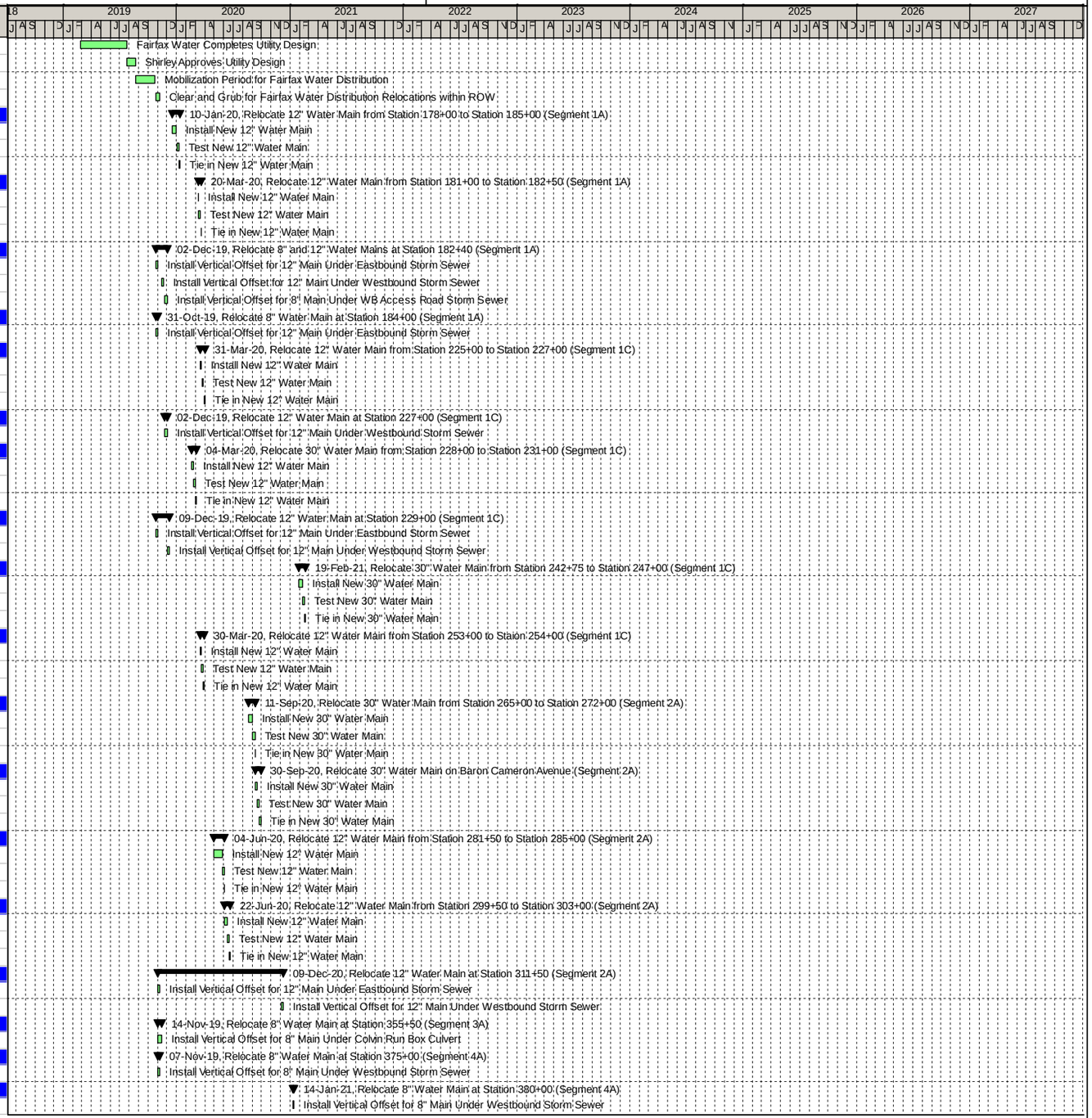
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
DE14000	Relocate Overhead Electric Circuit from Station 238+00 to Station 279+00	30	13	25-Jun-21	09-Aug-21
DE14010	Connect Underground Circuit at Station 238+00	10	13	09-Aug-21	23-Aug-21
DE14020	Connect Underground Circuit at Station 254+50	5	13	23-Aug-21	30-Aug-21
DE14030	Connect Underground Circuits from Station 273+50 to Station 275+00	10	13	30-Aug-21	14-Sep-21
Temporary Relocation of Electric Pole at Station 278+50 (Segment 2A)		10	37	04-Jun-19	17-Jun-19
DE15000	Perform Temporary Relocation of Electric Pole at Station 278+50	10	37	04-Jun-19	17-Jun-19
Relocate Overhead Electric Circuit at Springvale Road (Segment 2A)		20	46	30-Apr-20	29-May-20
DE16000	Relocate Overhead Electric Circuit on Springvale Road	10	46	30-Apr-20	14-May-20
DE16010	Connect Underground Circuit at Station 41+75 on Springvale Road	10	46	14-May-20	29-May-20
Relocate Overhead Electric Circuit from Station 279+50 to Station 314+00 (Segment 2A)		90	13	16-Jul-20	20-Nov-20
DE17000	Relocate Overhead Electric Circuit from Station 279+50 to Station 314+00	70	13	16-Jul-20	23-Oct-20
DE17010	Connect Underground Circuit at Station 302+75	10	13	23-Oct-20	06-Nov-20
DE17020	Connect Underground Circuit at Station 310+00	10	13	06-Nov-20	20-Nov-20
Relocate Underground Electric Circuit from Station 333+50 to Station 339+00 (Segment 3A)		20	13	14-Sep-21	12-Oct-21
DE18000	Relocate Underground Electric Circuit from Station 333+50 to Station 339+00	20	13	14-Sep-21	12-Oct-21
Relocate Overhead Electric Circuit at Carpers Farm Way (Segment 3A)		25	144	04-Mar-20	07-Apr-20
DE19000	Relocate Overhead Electric Circuit at Carpers Farm Way	15	103	04-Mar-20	24-Mar-20
DE19010	Connect Overhead Circuit at Carpers Farm Way	10	144	25-Mar-20	07-Apr-20
Relocate Overhead Electric Circuit from Station 360+00 to Station 404+00 (Segments 3A & 4A)		45	43	31-Aug-21	03-Nov-21
DE20000	Relocate Overhead Electric Circuit from Station 360+00 to Station 404+00	25	23	31-Aug-21	06-Oct-21
DE20010	Connect Underground Circuit at Station 393+25	10	43	06-Oct-21	20-Oct-21
DE20020	Connect Underground Circuit at Station 402+00	10	43	20-Oct-21	03-Nov-21
Relocate Overhead Electric Circuit from Station 404+00 to Station 423+00 (Segments 4A & 4B)		75	13	12-Oct-21	31-Jan-22
DE21000	Relocate Overhead Electric Circuit from Station 405+00 to Station 453+00	40	13	12-Oct-21	09-Dec-21
DE21010	Connect Underground Electric Circuit at Station 407+50	10	13	09-Dec-21	23-Dec-21
DE21020	Connect Underground Electric Circuit at Station 417+25	10	13	23-Dec-21	10-Jan-22
DE21030	Connect Underground Electric Circuits from Station 423+00 to Station 424+00	15	13	10-Jan-22	31-Jan-22
Relocate Overhead Electric Circuit from Station 423+50 to Station 442+00 (Segment 4B)		75	267	03-Nov-21	22-Feb-22
DE22000	Relocate Overhead Electric Circuit from Station 423+50 to Station 442+00	40	267	03-Nov-21	04-Jan-22
DE22010	Connect Underground Circuit at Station 434+00	10	267	04-Jan-22	18-Jan-22
DE22020	Connect Underground Circuits from Station 438+00 to Station 439+00	15	267	18-Jan-22	08-Feb-22
DE22030	Connect Underground Circuit at Station 442+50	10	267	08-Feb-22	22-Feb-22
Relocate Overhead Electric Circuit from Station 442+00 to Station 454+00 (Segment 4B)		50	23	12-Feb-21	23-Apr-21
DE23000	Relocate Overhead Electric Circuit from Station 442+00 to Station 454+00	30	23	12-Feb-21	26-Mar-21
DE23010	Connect Underground Circuit at Station 444+00	10	23	26-Mar-21	09-Apr-21
DE23020	Connect Underground Circuit at Station 452+00	10	23	09-Apr-21	23-Apr-21
Relocate Overhead Electric Circuit on Towlston Road (Segment 4C)		15	23	28-Sep-20	19-Oct-20
DE24000	Relocate Overhead Electric Circuit on Towlston Road	15	23	28-Sep-20	19-Oct-20
Relocate Overhead Electric Circuit from Station 459+00 to Station 494+00 (Segment 4C)		65	13	20-Nov-20	25-Feb-21
DE25000	Relocate Overhead Electric Circuit from Station 459+00 to Station 494+00	30	13	20-Nov-20	07-Jan-21
DE25010	Connect Overhead Circuit at Station 474+00	5	13	07-Jan-21	14-Jan-21
DE25020	Connect Underground Circuit at Station 476+00	10	13	14-Jan-21	28-Jan-21
DE25030	Connect Overhead Circuit at Station 480+00	15	13	28-Jan-21	18-Feb-21
DE25040	Connect Overhead Circuit at Station 483+00	5	13	18-Feb-21	25-Feb-21
Relocate Overhead Electric Circuit on Lewinsville Road (Segment 4C)		20	23	19-Oct-20	16-Nov-20
DE26000	Relocate Overhead Electric Circuit on Lewinsville Road	15	23	19-Oct-20	09-Nov-20
DE26010	Connect Underground Circuits from Station 489+00 to 491+00	5	23	09-Nov-20	16-Nov-20
Relocate Overhead Electric Circuit from Station 494+00 to Station 516+00 (Segments 4C & 4D)		60	23	16-Nov-20	12-Feb-21
DE27000	Relocate Overhead Electric Circuit from Station 494+00 to Station 516+00	40	23	16-Nov-20	15-Jan-21
DE27010	Connect Underground Circuit at Station 511+00	10	23	15-Jan-21	29-Jan-21
DE27020	Connect Underground Circuit at Station 517+00	10	23	29-Jan-21	12-Feb-21
Relocate Overhead Electric Circuit from Station 163+00 to Station 165+00 (Segment 1A)		30	13	31-Jan-22	14-Mar-22
DE28000	Relocate Overhead Electric Circuit from Station 163+00 to Station 165+00	30	13	31-Jan-22	14-Mar-22
Fairfax DPW		306	379	25-Feb-19	06-May-20
FS10000	Hold UFI Meeting with Fairfax DPW	1	491	25-Feb-19	25-Feb-19
FS10010	Fairfax DPW Complete Utility Design	105	491	26-Feb-19	24-Jul-19
FS10020	Shirley Approves Utility Design	20	491	25-Jul-19	21-Aug-19
FS10030	Mobilization Period for Fairfax DPW	45	491	22-Aug-19	24-Oct-19
Relocate 33" Sanitary from Station 349+00 to Station 354+00 (Segment 3A)		23	379	06-Apr-20	06-May-20
FS11000	Install New 33" Sanitary Sewer	13	379	06-Apr-20	22-Apr-20
FS11010	Pressure Test New 33" Sanitary Sewer	5	379	23-Apr-20	29-Apr-20
FS11020	Tie in New 33" Sanitary Sewer	5	379	30-Apr-20	06-May-20
Fairfax Water Distribution		506	378	25-Feb-19	19-Feb-21
FWD10000	Hold UFI Meeting with Fairfax Water Distribution	1	124	25-Feb-19	25-Feb-19



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

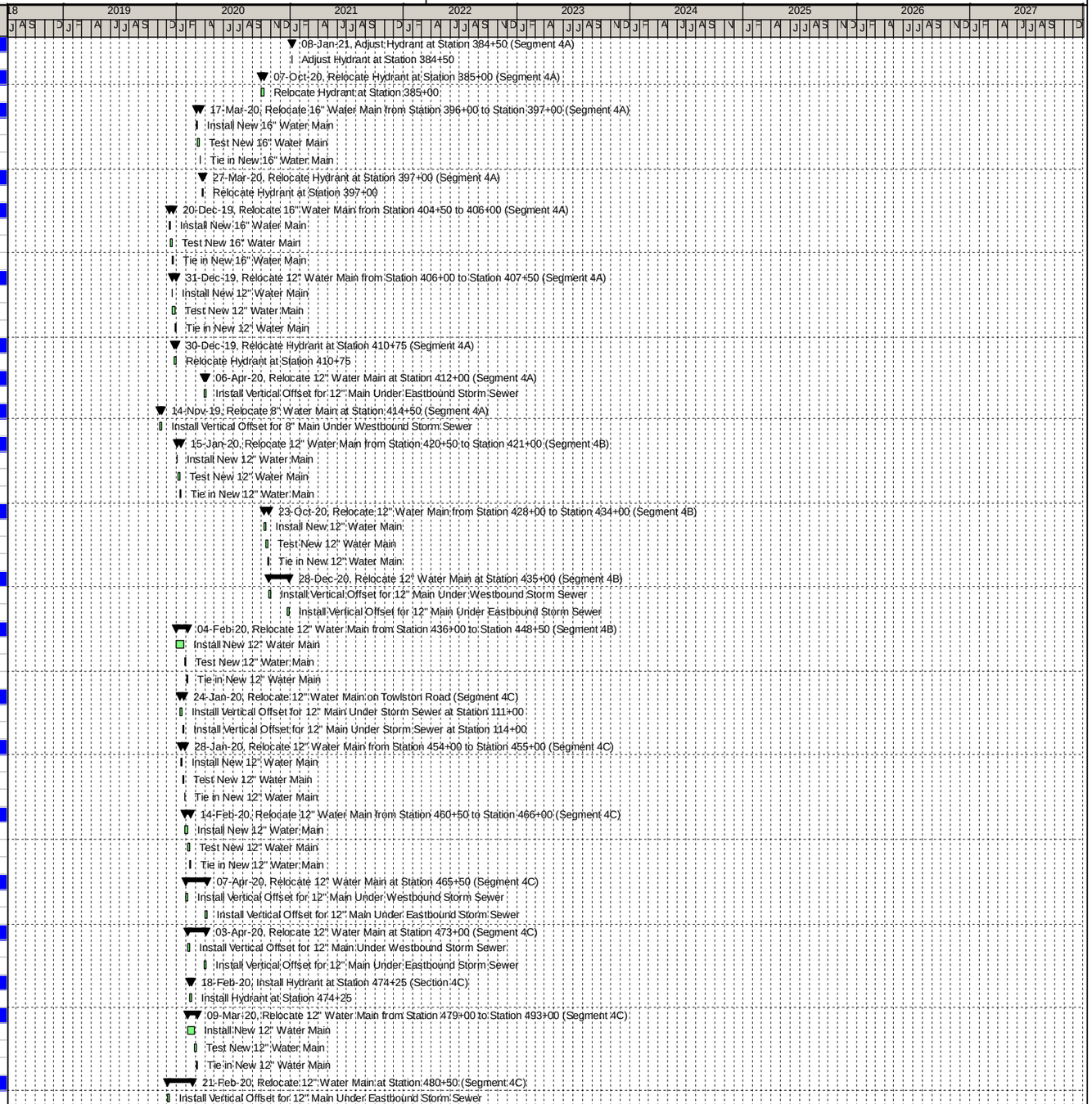
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
FWD10010	Fairfax Water Completes Utility Design	105	124	26-Feb-19	24-Jul-19
FWD10020	Shirley Approves Utility Design	20	124	25-Jul-19	21-Aug-19
FWD10030	Mobilization Period for Fairfax Water Distribution	45	124	22-Aug-19	24-Oct-19
FWD10040	Clear and Grub for Fairfax Water Distribution Relocations within ROW	10	141	25-Oct-19	07-Nov-19
Relocate 12" Water Main from Station 178+00 to Station 185+00 (Segment 1A)		17	124	17-Dec-19	10-Jan-20
FWD11000	Install New 12" Water Main	10	124	17-Dec-19	31-Dec-19
FWD11010	Test New 12" Water Main	5	124	02-Jan-20	08-Jan-20
FWD11020	Tie in New 12" Water Main	2	124	09-Jan-20	10-Jan-20
Relocate 12" Water Main from Station 181+00 to Station 182+50 (Segment 1A)		9	379	10-Mar-20	20-Mar-20
FWD12000	Install New 12" Water Main	2	379	10-Mar-20	11-Mar-20
FWD12010	Test New 12" Water Main	5	379	12-Mar-20	18-Mar-20
FWD12020	Tie in New 12" Water Main	2	379	19-Mar-20	20-Mar-20
Relocate 8" and 12" Water Mains at Station 182+40 (Segment 1A)		25	285	25-Oct-19	02-Dec-19
FWD13000	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	124	25-Oct-19	31-Oct-19
FWD13010	Install Vertical Offset for 12" Main Under Westbound Storm Sewer	5	285	15-Nov-19	21-Nov-19
FWD13020	Install Vertical Offset for 8" Main Under WB Access Road Storm Sewer	5	285	22-Nov-19	02-Dec-19
Relocate 8" Water Main at Station 184+00 (Segment 1A)		5	271	25-Oct-19	31-Oct-19
FWD14000	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	271	25-Oct-19	31-Oct-19
Relocate 12" Water Main from Station 225+00 to Station 227+00 (Segment 1C)		10	124	18-Mar-20	31-Mar-20
FWD15000	Install New 12" Water Main	3	124	18-Mar-20	20-Mar-20
FWD15010	Test New 12" Water Main	5	124	23-Mar-20	27-Mar-20
FWD15020	Tie in New 12" Water Main	2	124	30-Mar-20	31-Mar-20
Relocate 12" Water Main at Station 227+00 (Segment 1C)		5	271	22-Nov-19	02-Dec-19
FWD16000	Install Vertical Offset for 12" Main Under Westbound Storm Sewer	5	271	22-Nov-19	02-Dec-19
Relocate 30" Water Main from Station 228+00 to Station 231+00 (Segment 1C)		11	467	19-Feb-20	04-Mar-20
FWD17000	Install New 12" Water Main	4	467	19-Feb-20	24-Feb-20
FWD17010	Test New 12" Water Main	5	467	25-Feb-20	02-Mar-20
FWD17020	Tie in New 12" Water Main	2	467	03-Mar-20	04-Mar-20
Relocate 12" Water Main at Station 229+00 (Segment 1C)		30	271	25-Oct-19	09-Dec-19
FWD18000	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	285	25-Oct-19	31-Oct-19
FWD18010	Install Vertical Offset for 12" Main Under Westbound Storm Sewer	5	271	03-Dec-19	09-Dec-19
Relocate 30" Water Main from Station 242+75 to Station 247+00 (Segment 1C)		15	239	29-Jan-21	19-Feb-21
FWD19000	Install New 30" Water Main	7	239	29-Jan-21	09-Feb-21
FWD19010	Test New 30" Water Main	5	239	09-Feb-21	16-Feb-21
FWD19020	Tie in New 30" Water Main	3	239	16-Feb-21	19-Feb-21
Relocate 12" Water Main from Station 253+00 to Staion 254+00 (Segment 1C)		9	467	18-Mar-20	30-Mar-20
FWD20000	Install New 12" Water Main	2	467	18-Mar-20	19-Mar-20
FWD20010	Test New 12" Water Main	5	467	20-Mar-20	26-Mar-20
FWD20020	Tie in New 12" Water Main	2	467	27-Mar-20	30-Mar-20
Relocate 30" Water Main from Station 265+00 to Station 272+00 (Segment 2A)		14	64	21-Aug-20	11-Sep-20
FWD21000	Install New 30" Water Main	7	64	21-Aug-20	01-Sep-20
FWD21010	Test New 30" Water Main	5	64	01-Sep-20	09-Sep-20
FWD21020	Tie in New 30" Water Main	2	64	09-Sep-20	11-Sep-20
Relocate 30" Water Main on Baron Cameron Avenue (Segment 2A)		13	64	11-Sep-20	30-Sep-20
FWD22000	Install New 30" Water Main	3	64	11-Sep-20	16-Sep-20
FWD22010	Test New 30" Water Main	5	64	16-Sep-20	23-Sep-20
FWD22020	Tie in New 30" Water Main	5	64	23-Sep-20	30-Sep-20
Relocate 12" Water Main from Station 281+50 to Station 285+00 (Segment 2A)		24	107	30-Apr-20	04-Jun-20
FWD24000	Install New 12" Water Main	17	107	30-Apr-20	26-May-20
FWD24010	Test New 12" Water Main	5	107	26-May-20	02-Jun-20
FWD24020	Tie in New 12" Water Main	2	107	02-Jun-20	04-Jun-20
Relocate 12" Water Main from Station 299+50 to Station 303+00 (Segment 2A)		12	107	04-Jun-20	22-Jun-20
FWD25000	Install New 12" Water Main	5	107	04-Jun-20	11-Jun-20
FWD25010	Test New 12" Water Main	5	107	11-Jun-20	18-Jun-20
FWD25020	Tie in New 12" Water Main	2	107	18-Jun-20	22-Jun-20
Relocate 12" Water Main at Station 311+50 (Segment 2A)		280	164	01-Nov-19	09-Dec-20
FWD26000	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	124	01-Nov-19	07-Nov-19
FWD26010	Install Vertical Offset for 12" Main Under Westbound Storm Sewer	5	164	02-Dec-20	09-Dec-20
Relocate 8" Water Main at Station 355+50 (Segment 3A)		10	271	01-Nov-19	14-Nov-19
FWD27000	Install Vertical Offset for 8" Main Under Colvin Run Box Culvert	10	271	01-Nov-19	14-Nov-19
Relocate 8" Water Main at Station 375+00 (Segment 4A)		5	285	01-Nov-19	07-Nov-19
FWD28000	Install Vertical Offset for 8" Main Under Westbound Storm Sewer	5	285	01-Nov-19	07-Nov-19
Relocate 8" Water Main at Station 380+00 (Segment 4A)		4	232	11-Jan-21	14-Jan-21
FWD29000	Install Vertical Offset for 8" Main Under Westbound Storm Sewer	4	232	11-Jan-21	14-Jan-21



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
Adjust Hydrant at Station 384+50 (Segment 4A)		3	232	06-Jan-21	08-Jan-21
FWD30000	Adjust Hydrant at Station 384+50	3	232	06-Jan-21	08-Jan-21
Relocate Hydrant at Station 385+00 (Segment 4A)		5	64	30-Sep-20	07-Oct-20
FWD31000	Relocate Hydrant at Station 385+00	5	64	30-Sep-20	07-Oct-20
Relocate 16" Water Main from Station 396+00 to Station 397+00 (Segment 4A)		9	467	05-Mar-20	17-Mar-20
FWD32000	Install New 16" Water Main	2	467	05-Mar-20	06-Mar-20
FWD32010	Test New 16" Water Main	5	467	09-Mar-20	13-Mar-20
FWD32020	Tie in New 16" Water Main	2	467	16-Mar-20	17-Mar-20
Relocate Hydrant at Station 397+00 (Segment 4A)		5	379	23-Mar-20	27-Mar-20
FWD33000	Relocate Hydrant at Station 397+00	5	379	23-Mar-20	27-Mar-20
Relocate 16" Water Main from Station 404+50 to 406+00 (Segment 4A)		9	271	10-Dec-19	20-Dec-19
FWD34000	Install New 16" Water Main	2	271	10-Dec-19	11-Dec-19
FWD34010	Test New 16" Water Main	5	271	12-Dec-19	18-Dec-19
FWD34020	Tie in New 16" Water Main	2	271	19-Dec-19	20-Dec-19
Relocate 12" Water Main from Station 406+00 to Station 407+50 (Segment 4A)		10	285	17-Dec-19	31-Dec-19
FWD35000	Install New 12" Water Main	2	285	17-Dec-19	18-Dec-19
FWD35010	Test New 12" Water Main	5	285	19-Dec-19	26-Dec-19
FWD35020	Tie in New 12" Water Main	3	285	27-Dec-19	31-Dec-19
Relocate Hydrant at Station 410+75 (Segment 4A)		5	271	23-Dec-19	30-Dec-19
FWD36000	Relocate Hydrant at Station 410+75	5	271	23-Dec-19	30-Dec-19
Relocate 12" Water Main at Station 412+00 (Segment 4A)		5	600	31-Mar-20	06-Apr-20
FWD37000	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	600	31-Mar-20	06-Apr-20
Relocate 8" Water Main at Station 414+50 (Segment 4A)		5	124	08-Nov-19	14-Nov-19
FWD38000	Install Vertical Offset for 8" Main Under Westbound Storm Sewer	5	124	08-Nov-19	14-Nov-19
Relocate 12" Water Main from Station 420+50 to Station 421+00 (Segment 4B)		10	285	02-Jan-20	15-Jan-20
FWD39000	Install New 12" Water Main	2	285	02-Jan-20	03-Jan-20
FWD39010	Test New 12" Water Main	5	285	06-Jan-20	10-Jan-20
FWD39020	Tie in New 12" Water Main	3	285	13-Jan-20	15-Jan-20
Relocate 12" Water Main from Station 428+00 to Station 434+00 (Segment 4B)		12	64	07-Oct-20	23-Oct-20
FWD40000	Install New 12" Water Main	5	64	07-Oct-20	14-Oct-20
FWD40010	Test New 12" Water Main	5	64	14-Oct-20	21-Oct-20
FWD40020	Tie in New 12" Water Main	2	64	21-Oct-20	23-Oct-20
Relocate 12" Water Main at Station 435+00 (Segment 4B)		43	237	23-Oct-20	28-Dec-20
FWD41000	Install Vertical Offset for 12" Main Under Westbound Storm Sewer	5	134	23-Oct-20	30-Oct-20
FWD41010	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	237	21-Dec-20	28-Dec-20
Relocate 12" Water Main from Station 436+00 to Station 448+50 (Segment 4B)		25	271	31-Dec-19	04-Feb-20
FWD42000	Install New 12" Water Main	18	271	31-Dec-19	24-Jan-20
FWD42010	Test New 12" Water Main	5	271	27-Jan-20	31-Jan-20
FWD42020	Tie in New 12" Water Main	2	271	03-Feb-20	04-Feb-20
Relocate 12" Water Main on Towlston Road (Segment 4C)		10	124	13-Jan-20	24-Jan-20
FWD43000	Install Vertical Offset for 12" Main Under Storm Sewer at Station 111+00	5	124	13-Jan-20	17-Jan-20
FWD43010	Install Vertical Offset for 12" Main Under Storm Sewer at Station 114+00	5	124	20-Jan-20	24-Jan-20
Relocate 12" Water Main from Station 454+00 to Station 455+00 (Segment 4C)		9	330	16-Jan-20	28-Jan-20
FWD44000	Install New 12" Water Main	2	330	16-Jan-20	17-Jan-20
FWD44010	Test New 12" Water Main	5	330	20-Jan-20	24-Jan-20
FWD44020	Tie in New 12" Water Main	2	330	27-Jan-20	28-Jan-20
Relocate 12" Water Main from Station 460+50 to Station 466+00 (Segment 4C)		15	124	27-Jan-20	14-Feb-20
FWD45000	Install New 12" Water Main	8	124	27-Jan-20	05-Feb-20
FWD45010	Test New 12" Water Main	5	124	06-Feb-20	12-Feb-20
FWD45020	Tie in New 12" Water Main	2	124	13-Feb-20	14-Feb-20
Relocate 12" Water Main at Station 465+50 (Segment 4C)		50	285	29-Jan-20	07-Apr-20
FWD46000	Install Vertical Offset for 12" Main Under Westbound Storm Sewer	5	330	29-Jan-20	04-Feb-20
FWD46010	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	124	01-Apr-20	07-Apr-20
Relocate 12" Water Main at Station 473+00 (Segment 4C)		43	379	05-Feb-20	03-Apr-20
FWD47000	Install Vertical Offset for 12" Main Under Westbound Storm Sewer	5	330	05-Feb-20	11-Feb-20
FWD47010	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	379	30-Mar-20	03-Apr-20
Install Hydrant at Station 474+25 (Section 4C)		5	330	12-Feb-20	18-Feb-20
FWD48000	Install Hydrant at Station 474+25	5	330	12-Feb-20	18-Feb-20
Relocate 12" Water Main from Station 479+00 to Station 493+00 (Segment 4C)		24	316	05-Feb-20	09-Mar-20
FWD49000	Install New 12" Water Main	17	316	05-Feb-20	27-Feb-20
FWD49010	Test New 12" Water Main	5	316	28-Feb-20	05-Mar-20
FWD49020	Tie in New 12" Water Main	2	316	06-Mar-20	09-Mar-20
Relocate 12" Water Main at Station 480+50 (Segment 4C)		57	124	03-Dec-19	21-Feb-20
FWD50000	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	124	03-Dec-19	09-Dec-19



Actual Work
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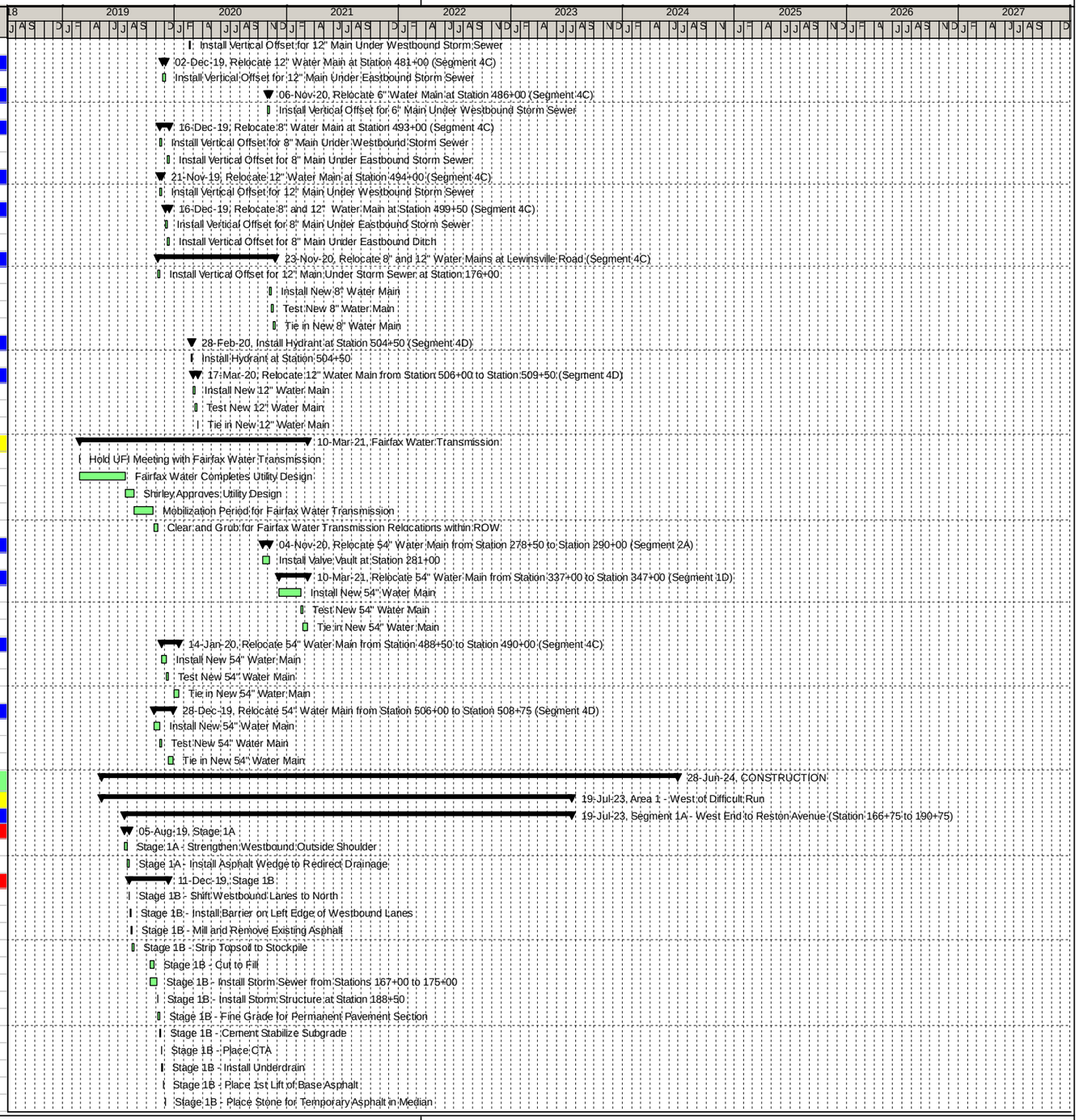
SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
FWD50010	Install Vertical Offset for 12" Main Under Westbound Storm Sewer	5	124	17-Feb-20	21-Feb-20
Relocate 12" Water Main at Station 481+00 (Segment 4C)		5	124	22-Nov-19	02-Dec-19
FWD51000	Install Vertical Offset for 12" Main Under Eastbound Storm Sewer	5	124	22-Nov-19	02-Dec-19
Relocate 6" Water Main at Station 486+00 (Segment 4C)		5	134	30-Oct-20	06-Nov-20
FWD52000	Install Vertical Offset for 6" Main Under Westbound Storm Sewer	5	134	30-Oct-20	06-Nov-20
Relocate 8" Water Main at Station 493+00 (Segment 4C)		20	124	15-Nov-19	16-Dec-19
FWD53000	Install Vertical Offset for 8" Main Under Westbound Storm Sewer	5	124	15-Nov-19	21-Nov-19
FWD53010	Install Vertical Offset for 8" Main Under Eastbound Storm Sewer	5	124	10-Dec-19	16-Dec-19
Relocate 12" Water Main at Station 494+00 (Segment 4C)		5	271	15-Nov-19	21-Nov-19
FWD54000	Install Vertical Offset for 12" Main Under Westbound Storm Sewer	5	271	15-Nov-19	21-Nov-19
Relocate 8" and 12" Water Main at Station 499+50 (Segment 4C)		10	285	03-Dec-19	16-Dec-19
FWD55000	Install Vertical Offset for 8" Main Under Eastbound Storm Sewer	5	285	03-Dec-19	09-Dec-19
FWD55010	Install Vertical Offset for 8" Main Under Eastbound Ditch	5	285	10-Dec-19	16-Dec-19
Relocate 8" and 12" Water Mains at Lewinsville Road (Segment 4C)		265	134	08-Nov-19	23-Nov-20
FWD56000	Install Vertical Offset for 12" Main Under Storm Sewer at Station 176+00	5	285	08-Nov-19	14-Nov-19
FWD56010	Install New 8" Water Main	4	134	06-Nov-20	12-Nov-20
FWD56020	Test New 8" Water Main	5	134	12-Nov-20	19-Nov-20
FWD56030	Tie in New 8" Water Main	2	134	19-Nov-20	23-Nov-20
Install Hydrant at Station 504+50 (Segment 4D)		5	124	24-Feb-20	28-Feb-20
FWD57000	Install Hydrant at Station 504+50	5	124	24-Feb-20	28-Feb-20
Relocate 12" Water Main from Station 506+00 to Station 509+50 (Segment 4D)		12	124	02-Mar-20	17-Mar-20
FWD58000	Install New 12" Water Main	5	124	02-Mar-20	06-Mar-20
FWD58010	Test New 12" Water Main	5	124	09-Mar-20	13-Mar-20
FWD58020	Tie in New 12" Water Main	2	124	16-Mar-20	17-Mar-20
Fairfax Water Transmission		519	26	25-Feb-19	10-Mar-21
FWT10000	Hold UFI Meeting with Fairfax Water Transmission	1	295	25-Feb-19	25-Feb-19
FWT10010	Fairfax Water Completes Utility Design	105	295	26-Feb-19	24-Jul-19
FWT10020	Shirley Approves Utility Design	20	295	25-Jul-19	21-Aug-19
FWT10030	Mobilization Period for Fairfax Water Transmission	45	295	22-Aug-19	24-Oct-19
FWT10040	Clear and Grub for Fairfax Water Transmission Relocations within ROW	10	260	25-Oct-19	07-Nov-19
Relocate 54" Water Main from Station 278+50 to Station 290+00 (Segment 2A)		20	139	16-Oct-20	04-Nov-20
FWT11010	Install Valve Vault at Station 281+00	20	139	16-Oct-20	04-Nov-20
Relocate 54" Water Main from Station 337+00 to Station 347+00 (Segment 1D)		66	26	07-Dec-20	10-Mar-21
FWT12000	Install New 54" Water Main	50	26	07-Dec-20	16-Feb-21
FWT12010	Test New 54" Water Main	5	26	17-Feb-21	23-Feb-21
FWT12020	Tie in New 54" Water Main	15	36	24-Feb-21	10-Mar-21
Relocate 54" Water Main from Station 488+50 to Station 490+00 (Segment 4C)		35	295	21-Nov-19	14-Jan-20
FWT14000	Install New 54" Water Main	8	295	21-Nov-19	04-Dec-19
FWT14010	Test New 54" Water Main	5	295	05-Dec-19	11-Dec-19
FWT14020	Tie in New 54" Water Main	15	231	29-Dec-19	14-Jan-20
Relocate 54" Water Main from Station 506+00 to Station 508+75 (Segment 4D)		43	295	25-Oct-19	28-Dec-19
FWT15000	Install New 54" Water Main	14	295	25-Oct-19	13-Nov-19
FWT15010	Test New 54" Water Main	5	295	14-Nov-19	20-Nov-19
FWT15020	Tie in New 54" Water Main	15	231	12-Dec-19	28-Dec-19
CONSTRUCTION		1305	22	09-May-19	28-Jun-24
Area 1 - West of Difficult Run		1064	93	09-May-19	19-Jul-23
Segment 1A - West End to Reston Avenue (Station 166+75 to 190+75)		1015	93	22-Jul-19	19-Jul-23
Stage 1A		11	39	22-Jul-19	05-Aug-19
C1A1000	Stage 1A - Strengthen Westbound Outside Shoulder	8	39	22-Jul-19	31-Jul-19
C1A1010	Stage 1A - Install Asphalt Wedge to Redirect Drainage	3	39	01-Aug-19	05-Aug-19
Stage 1B		89	263	06-Aug-19	11-Dec-19
C1A1500	Stage 1B - Shift Westbound Lanes to North	2	195	06-Aug-19	07-Aug-19
C1A1510	Stage 1B - Install Barrier on Left Edge of Westbound Lanes	3	195	08-Aug-19	12-Aug-19
C1A1520	Stage 1B - Mill and Remove Existing Asphalt	3	195	13-Aug-19	15-Aug-19
C1A1530	Stage 1B - Strip Topsoil to Stockpile	5	195	16-Aug-19	22-Aug-19
C1A1540	Stage 1B - Cut to Fill	10	160	14-Oct-19	25-Oct-19
C1A1550	Stage 1B - Install Storm Sewer from Stations 167+00 to 175+00	17	160	14-Oct-19	05-Nov-19
C1A1560	Stage 1B - Install Storm Structure at Station 188+50	1	160	06-Nov-19	06-Nov-19
C1A1570	Stage 1B - Fine Grade for Permanent Pavement Section	5	160	07-Nov-19	13-Nov-19
C1A1580	Stage 1B - Cement Stabilize Subgrade	3	115	14-Nov-19	18-Nov-19
C1A1590	Stage 1B - Place CTA	2	115	19-Nov-19	20-Nov-19
C1A1600	Stage 1B - Install Underdrain	2	160	21-Nov-19	22-Nov-19
C1A1610	Stage 1B - Place 1st Lift of Base Asphalt	3	115	25-Nov-19	27-Nov-19
C1A1620	Stage 1B - Place Stone for Temporary Asphalt in Median	2	160	02-Dec-19	03-Dec-19



Actual Work
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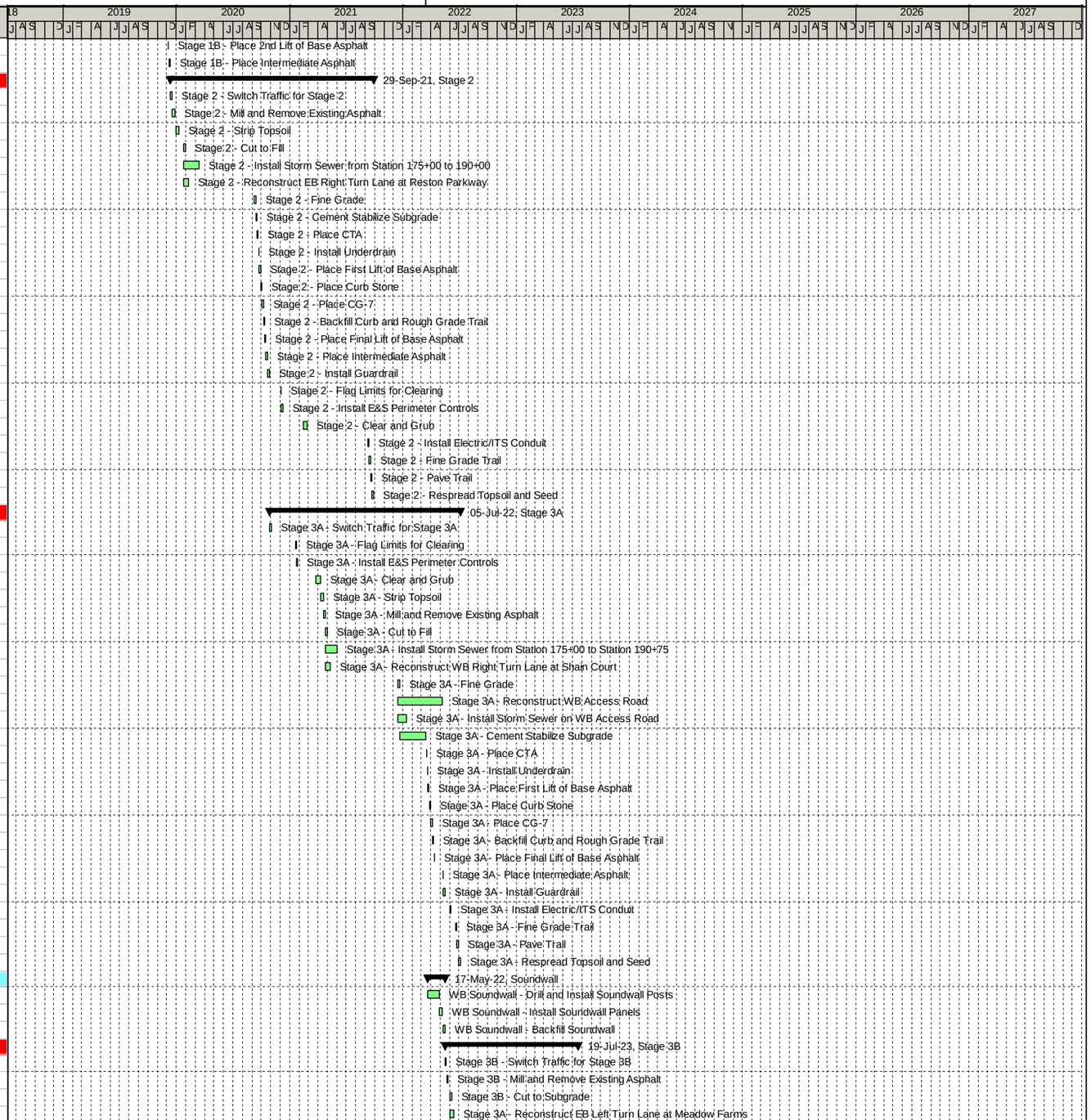
SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C1A1630	Stage 1B - Place 2nd Lift of Base Asphalt	3	206	04-Dec-19	06-Dec-19
C1A1640	Stage 1B - Place Intermediate Asphalt	3	206	09-Dec-19	11-Dec-19
Stage 2		458	247	12-Dec-19	29-Sep-21
C1A2000	Stage 2 - Switch Traffic for Stage 2	5	258	12-Dec-19	18-Dec-19
C1A2010	Stage 2 - Mill and Remove Existing Asphalt	5	258	19-Dec-19	27-Dec-19
C1A2020	Stage 2 - Strip Topsoil	6	258	30-Dec-19	09-Jan-20
C1A2030	Stage 2 - Cut to Fill	5	251	23-Jan-20	30-Jan-20
C1A2040	Stage 2 - Install Storm Sewer from Station 175+00 to 190+00	30	251	23-Jan-20	13-Mar-20
C1A2050	Stage 2 - Reconstruct EB Right Turn Lane at Reston Parkway	10	407	23-Jan-20	07-Feb-20
C1A2060	Stage 2 - Fine Grade	5	264	08-Sep-20	14-Sep-20
C1A2070	Stage 2 - Cement Stabilize Subgrade	3	219	15-Sep-20	17-Sep-20
C1A2080	Stage 2 - Place CTA	2	219	18-Sep-20	21-Sep-20
C1A2090	Stage 2 - Install Underdrain	2	264	22-Sep-20	23-Sep-20
C1A2100	Stage 2 - Place First Lift of Base Asphalt	3	219	24-Sep-20	28-Sep-20
C1A2110	Stage 2 - Place Curb Stone	3	264	29-Sep-20	01-Oct-20
C1A2120	Stage 2 - Place CG-7	4	219	02-Oct-20	07-Oct-20
C1A2130	Stage 2 - Backfill Curb and Rough Grade Trail	3	264	08-Oct-20	12-Oct-20
C1A2140	Stage 2 - Place Final Lift of Base Asphalt	3	219	13-Oct-20	15-Oct-20
C1A2150	Stage 2 - Place Intermediate Asphalt	3	219	16-Oct-20	20-Oct-20
C1A2160	Stage 2 - Install Guardrail	4	264	21-Oct-20	26-Oct-20
C1A2170	Stage 2 - Flag Limits for Clearing	2	70	02-Dec-20	04-Dec-20
C1A2180	Stage 2 - Install E&S Perimeter Controls	3	81	04-Dec-20	09-Dec-20
C1A2190	Stage 2 - Clear and Grub	10	36	12-Feb-21	26-Feb-21
C1A2220	Stage 2 - Install Electric/ITS Conduit	4	236	08-Sep-21	14-Sep-21
C1A2200	Stage 2 - Fine Grade Trail	4	236	14-Sep-21	20-Sep-21
C1A2210	Stage 2 - Pave Trail	3	191	20-Sep-21	23-Sep-21
C1A2230	Stage 2 - Respread Topsoil and Seed	4	236	23-Sep-21	29-Sep-21
Stage 3A		428	182	27-Oct-20	05-Jul-22
C1A3000	Stage 3A - Switch Traffic for Stage 3A	5	264	27-Oct-20	02-Nov-20
C1A3010	Stage 3A - Flag Limits for Clearing	2	72	18-Jan-21	21-Jan-21
C1A3020	Stage 3A - Install E&S Perimeter Controls	3	79	21-Jan-21	26-Jan-21
C1A3030	Stage 3A - Clear and Grub	10	36	26-Mar-21	09-Apr-21
C1A3040	Stage 3A - Strip Topsoil	6	165	09-Apr-21	19-Apr-21
C1A3050	Stage 3A - Mill and Remove Existing Asphalt	5	165	19-Apr-21	26-Apr-21
C1A3060	Stage 3A - Cut to Fill	5	165	26-Apr-21	03-May-21
C1A3070	Stage 3A - Install Storm Sewer from Station 175+00 to Station 190+75	25	195	26-Apr-21	01-Jun-21
C1A3080	Stage 3A - Reconstruct WB Right Turn Lane at Shain Court	10	165	26-Apr-21	10-May-21
C1A3090	Stage 3A - Fine Grade	5	59	15-Dec-21	21-Dec-21
C1A3100	Stage 3A - Reconstruct WB Access Road	45	29	15-Dec-21	06-May-22
C1A3110	Stage 3A - Install Storm Sewer on WB Access Road	17	102	15-Dec-21	13-Jan-22
C1A3120	Stage 3A - Cement Stabilize Subgrade	3	46	22-Dec-21	16-Mar-22
C1A3130	Stage 3A - Place CTA	2	46	17-Mar-22	18-Mar-22
C1A3140	Stage 3A - Install Underdrain	2	46	21-Mar-22	22-Mar-22
C1A3150	Stage 3A - Place First Lift of Base Asphalt	3	46	23-Mar-22	25-Mar-22
C1A3160	Stage 3A - Place Curb Stone	3	46	28-Mar-22	30-Mar-22
C1A3170	Stage 3A - Place CG-7	4	46	31-Mar-22	05-Apr-22
C1A3180	Stage 3A - Backfill Curb and Rough Grade Trail	3	46	06-Apr-22	08-Apr-22
C1A3190	Stage 3A - Place Final Lift of Base Asphalt	3	46	11-Apr-22	13-Apr-22
C1A3200	Stage 3A - Place Intermediate Asphalt	3	29	09-May-22	11-May-22
C1A3210	Stage 3A - Install Guardrail	4	29	12-May-22	17-May-22
C1A3240	Stage 3A - Install Electric/ITS Conduit	4	136	31-May-22	03-Jun-22
C1A3220	Stage 3A - Fine Grade Trail	4	126	20-Jun-22	23-Jun-22
C1A3230	Stage 3A - Pave Trail	3	126	24-Jun-22	28-Jun-22
C1A3250	Stage 3A - Respread Topsoil and Seed	4	170	29-Jun-22	05-Jul-22
Soundwall		41	8	22-Mar-22	17-May-22
C1A3260	WB Soundwall - Drill and Install Soundwall Posts	27	8	22-Mar-22	27-Apr-22
C1A3270	WB Soundwall - Install Soundwall Panels	7	8	28-Apr-22	06-May-22
C1A3280	WB Soundwall - Backfill Soundwall	7	8	09-May-22	17-May-22
Stage 3B		297	93	18-May-22	19-Jul-23
C1A3500	Stage 3B - Switch Traffic for Stage 3B	3	29	18-May-22	20-May-22
C1A3510	Stage 3B - Mill and Remove Existing Asphalt	5	29	23-May-22	27-May-22
C1A3520	Stage 3B - Cut to Subgrade	5	29	31-May-22	06-Jun-22
C1A3530	Stage 3A - Reconstruct EB Left Turn Lane at Meadow Farms	10	29	31-May-22	13-Jun-22



Actual Work
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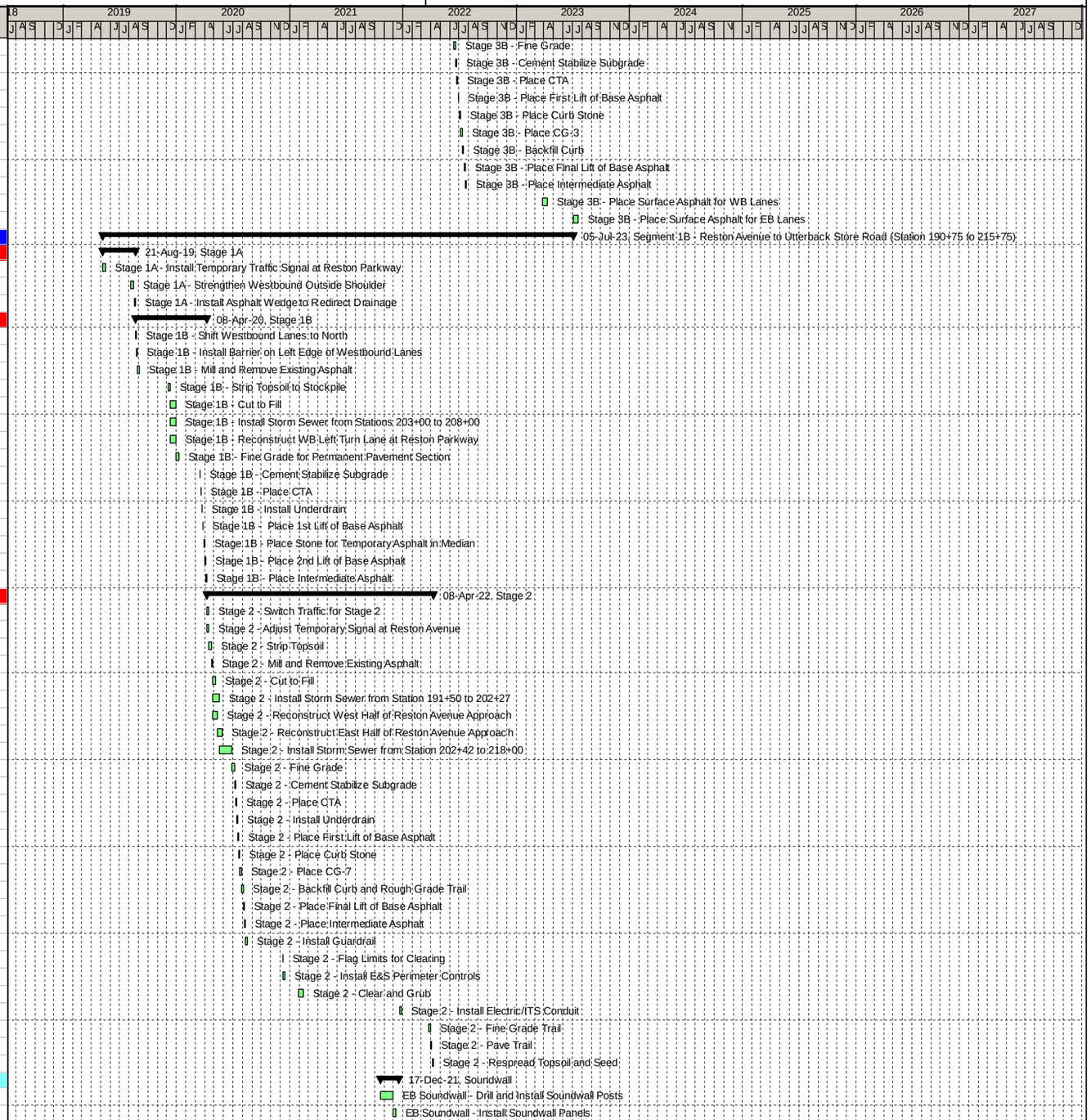
SHIRLEY CONTRACTING COMPANY, LLC

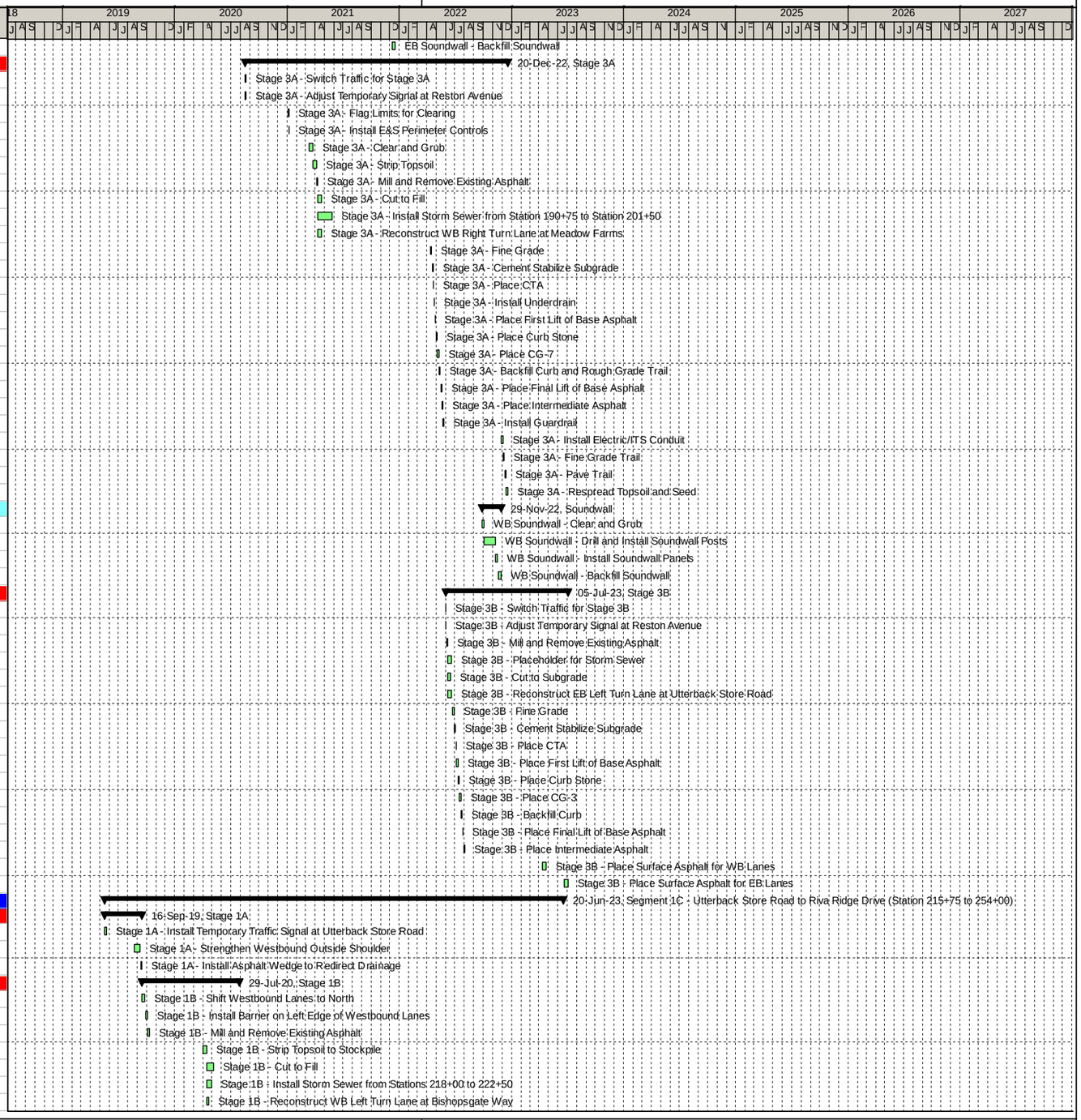
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C1A3540	Stage 3B - Fine Grade	5	29	14-Jun-22	20-Jun-22
C1A3550	Stage 3B - Cement Stabilize Subgrade	3	29	21-Jun-22	23-Jun-22
C1A3560	Stage 3B - Place CTA	2	29	24-Jun-22	27-Jun-22
C1A3570	Stage 3B - Place First Lift of Base Asphalt	3	29	28-Jun-22	30-Jun-22
C1A3580	Stage 3B - Place Curb Stone	3	29	01-Jul-22	06-Jul-22
C1A3590	Stage 3B - Place CG-3	4	29	07-Jul-22	12-Jul-22
C1A3600	Stage 3B - Backfill Curb	3	29	13-Jul-22	15-Jul-22
C1A3610	Stage 3B - Place Final Lift of Base Asphalt	3	64	18-Jul-22	20-Jul-22
C1A3620	Stage 3B - Place Intermediate Asphalt	3	64	21-Jul-22	25-Jul-22
C1A3630	Stage 3B - Place Surface Asphalt for WB Lanes	10	93	28-Mar-23	10-Apr-23
C1A3640	Stage 3B - Place Surface Asphalt for EB Lanes	10	93	06-Jul-23	19-Jul-23
Segment 1B - Reston Avenue to Utterback Store Road (Station 190+75 to 215+75)		1054	93	09-May-19	05-Jul-23
Stage 1A		72	39	09-May-19	21-Aug-19
C1B1000	Stage 1A - Install Temporary Traffic Signal at Reston Parkway	5	19	09-May-19	16-May-19
C1B1010	Stage 1A - Strengthen Westbound Outside Shoulder	9	39	06-Aug-19	16-Aug-19
C1B1020	Stage 1A - Install Asphalt Wedge to Redirect Drainage	3	39	19-Aug-19	21-Aug-19
Stage 1B		160	241	22-Aug-19	08-Apr-20
C1B1500	Stage 1B - Shift Westbound Lanes to North	2	223	22-Aug-19	23-Aug-19
C1B1510	Stage 1B - Install Barrier on Left Edge of Westbound Lanes	3	223	26-Aug-19	28-Aug-19
C1B1520	Stage 1B - Mill and Remove Existing Asphalt	3	223	29-Aug-19	03-Sep-19
C1B1530	Stage 1B - Strip Topsoil to Stockpile	7	160	04-Dec-19	12-Dec-19
C1B1540	Stage 1B - Cut to Fill	10	160	13-Dec-19	30-Dec-19
C1B1550	Stage 1B - Install Storm Sewer from Stations 203+00 to 208+00	10	160	13-Dec-19	30-Dec-19
C1B1560	Stage 1B - Reconstruct WB Left Turn Lane at Reston Parkway	10	160	13-Dec-19	30-Dec-19
C1B1570	Stage 1B - Fine Grade for Permanent Pavement Section	5	160	31-Dec-19	09-Jan-20
C1B1580	Stage 1B - Cement Stabilize Subgrade	3	123	16-Mar-20	18-Mar-20
C1B1590	Stage 1B - Place CTA	2	123	19-Mar-20	20-Mar-20
C1B1600	Stage 1B - Install Underdrain	2	123	23-Mar-20	24-Mar-20
C1B1610	Stage 1B - Place 1st Lift of Base Asphalt	3	123	25-Mar-20	27-Mar-20
C1B1620	Stage 1B - Place Stone for Temporary Asphalt in Median	2	123	30-Mar-20	31-Mar-20
C1B1630	Stage 1B - Place 2nd Lift of Base Asphalt	3	185	01-Apr-20	03-Apr-20
C1B1640	Stage 1B - Place Intermediate Asphalt	3	185	06-Apr-20	08-Apr-20
Stage 2		508	145	09-Apr-20	08-Apr-22
C1B2000	Stage 2 - Switch Traffic for Stage 2	3	230	09-Apr-20	13-Apr-20
C1B2010	Stage 2 - Adjust Temporary Signal at Reston Avenue	3	230	09-Apr-20	13-Apr-20
C1B2020	Stage 2 - Strip Topsoil	7	230	14-Apr-20	22-Apr-20
C1B2030	Stage 2 - Mill and Remove Existing Asphalt	3	230	23-Apr-20	27-Apr-20
C1B2040	Stage 2 - Cut to Fill	8	230	28-Apr-20	07-May-20
C1B2050	Stage 2 - Install Storm Sewer from Station 191+50 to 202+27	15	328	28-Apr-20	18-May-20
C1B2070	Stage 2 - Reconstruct West Half of Reston Avenue Approach	10	306	28-Apr-20	11-May-20
C1B2080	Stage 2 - Reconstruct East Half of Reston Avenue Approach	10	306	12-May-20	26-May-20
C1B2060	Stage 2 - Install Storm Sewer from Station 202+42 to 218+00	28	328	19-May-20	26-Jun-20
C1B2090	Stage 2 - Fine Grade	5	328	29-Jun-20	06-Jul-20
C1B2100	Stage 2 - Cement Stabilize Subgrade	3	315	07-Jul-20	09-Jul-20
C1B2110	Stage 2 - Place CTA	2	315	10-Jul-20	13-Jul-20
C1B2120	Stage 2 - Install Underdrain	2	405	14-Jul-20	15-Jul-20
C1B2130	Stage 2 - Place First Lift of Base Asphalt	3	315	16-Jul-20	20-Jul-20
C1B2140	Stage 2 - Place Curb Stone	3	405	21-Jul-20	23-Jul-20
C1B2150	Stage 2 - Place CG-7	4	315	24-Jul-20	29-Jul-20
C1B2160	Stage 2 - Backfill Curb and Rough Grade Trail	3	405	30-Jul-20	03-Aug-20
C1B2170	Stage 2 - Place Final Lift of Base Asphalt	3	315	04-Aug-20	06-Aug-20
C1B2180	Stage 2 - Place Intermediate Asphalt	3	315	07-Aug-20	11-Aug-20
C1B2190	Stage 2 - Install Guardrail	4	405	12-Aug-20	17-Aug-20
C1B2200	Stage 2 - Flag Limits for Clearing	2	44	08-Dec-20	10-Dec-20
C1B2210	Stage 2 - Install E&S Perimeter Controls	3	53	10-Dec-20	15-Dec-20
C1B2220	Stage 2 - Clear and Grub	10	22	29-Jan-21	12-Feb-21
C1B2250	Stage 2 - Install Electric/ITS Conduit	4	195	22-Dec-21	28-Dec-21
C1B2230	Stage 2 - Fine Grade Trail	4	145	25-Mar-22	30-Mar-22
C1B2240	Stage 2 - Pave Trail	3	145	31-Mar-22	04-Apr-22
C1B2260	Stage 2 - Respread Topsoil and Seed	4	145	05-Apr-22	08-Apr-22
Soundwall		41	11	19-Oct-21	17-Dec-21
C1B2270	EB Soundwall - Drill and Install Soundwall Posts	27	11	19-Oct-21	29-Nov-21
C1B2280	EB Soundwall - Install Soundwall Panels	7	11	29-Nov-21	08-Dec-21



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

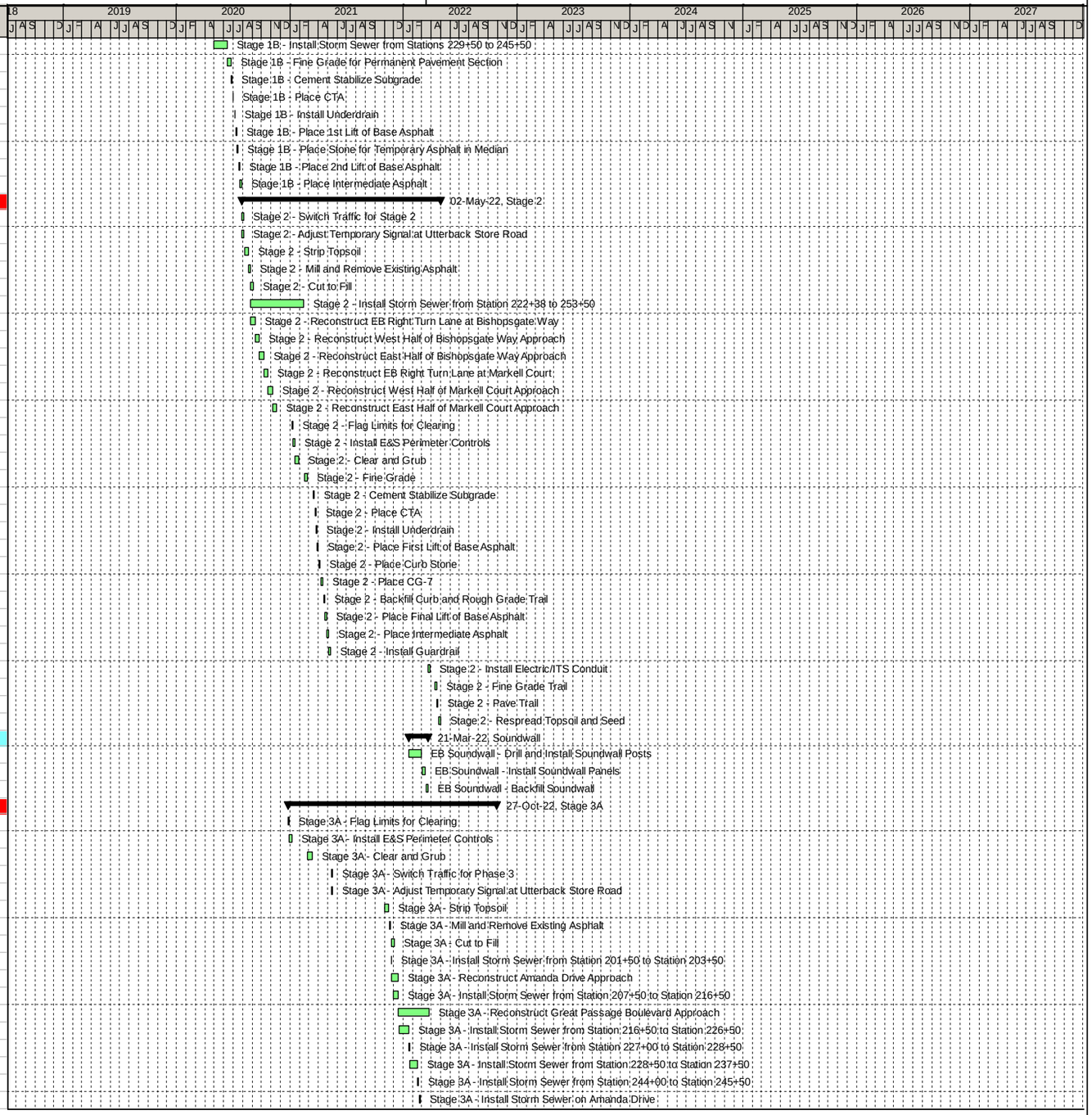
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C1B2290	EB Soundwall - Backfill Soundwall	7	11	08-Dec-21	17-Dec-21
Stage 3A		594	92	18-Aug-20	20-Dec-22
C1B3000	Stage 3A - Switch Traffic for Stage 3A	3	405	18-Aug-20	20-Aug-20
C1B3010	Stage 3A - Adjust Temporary Signal at Reston Avenue	3	405	18-Aug-20	20-Aug-20
C1B3020	Stage 3A - Flag Limits for Clearing	2	71	04-Jan-21	05-Jan-21
C1B3030	Stage 3A - Install E&S Perimeter Controls	3	81	06-Jan-21	08-Jan-21
C1B3040	Stage 3A - Clear and Grub	10	36	12-Mar-21	26-Mar-21
C1B3050	Stage 3A - Strip Topsoil	7	265	26-Mar-21	06-Apr-21
C1B3060	Stage 3A - Mill and Remove Existing Asphalt	3	265	06-Apr-21	09-Apr-21
C1B3070	Stage 3A - Cut to Fill	8	265	09-Apr-21	21-Apr-21
C1B3080	Stage 3A - Install Storm Sewer from Station 190+75 to Station 201+50	35	265	09-Apr-21	28-May-21
C1B3090	Stage 3A - Reconstruct WB Right Turn Lane at Meadow Farms	10	245	09-Apr-21	23-Apr-21
C1B3100	Stage 3A - Fine Grade	5	58	11-Apr-22	15-Apr-22
C1B3110	Stage 3A - Cement Stabilize Subgrade	3	58	18-Apr-22	20-Apr-22
C1B3120	Stage 3A - Place CTA	2	58	21-Apr-22	22-Apr-22
C1B3130	Stage 3A - Install Underdrain	2	58	25-Apr-22	26-Apr-22
C1B3140	Stage 3A - Place First Lift of Base Asphalt	3	58	27-Apr-22	29-Apr-22
C1B3150	Stage 3A - Place Curb Stone	3	58	02-May-22	04-May-22
C1B3160	Stage 3A - Place CG-7	4	58	05-May-22	10-May-22
C1B3170	Stage 3A - Backfill Curb and Rough Grade Trail	3	58	11-May-22	13-May-22
C1B3180	Stage 3A - Place Final Lift of Base Asphalt	3	58	16-May-22	18-May-22
C1B3190	Stage 3A - Place Intermediate Asphalt	3	58	19-May-22	23-May-22
C1B3200	Stage 3A - Install Guardrail	4	58	24-May-22	27-May-22
C1B3230	Stage 3A - Install Electric/ITS Conduit	4	80	30-Nov-22	05-Dec-22
C1B3210	Stage 3A - Fine Grade Trail	4	80	06-Dec-22	09-Dec-22
C1B3220	Stage 3A - Pave Trail	3	36	12-Dec-22	14-Dec-22
C1B3240	Stage 3A - Respread Topsoil and Seed	4	80	15-Dec-22	20-Dec-22
Soundwall		43	11	28-Sep-22	29-Nov-22
C1B3250	WB Soundwall - Clear and Grub	5	11	28-Sep-22	04-Oct-22
C1B3260	WB Soundwall - Drill and Install Soundwall Posts	26	11	05-Oct-22	09-Nov-22
C1B3270	WB Soundwall - Install Soundwall Panels	6	11	10-Nov-22	17-Nov-22
C1B3280	WB Soundwall - Backfill Soundwall	6	11	18-Nov-22	29-Nov-22
Stage 3B		279	93	31-May-22	05-Jul-23
C1B3500	Stage 3B - Switch Traffic for Stage 3B	3	58	31-May-22	02-Jun-22
C1B3510	Stage 3B - Adjust Temporary Signal at Reston Avenue	3	58	31-May-22	02-Jun-22
C1B3520	Stage 3B - Mill and Remove Existing Asphalt	3	58	03-Jun-22	07-Jun-22
C1B3540	Stage 3B - Placeholder for Storm Sewer	10	58	08-Jun-22	21-Jun-22
C1B3530	Stage 3B - Cut to Subgrade	8	58	08-Jun-22	17-Jun-22
C1B3550	Stage 3B - Reconstruct EB Left Turn Lane at Utterback Store Road	10	58	08-Jun-22	21-Jun-22
C1B3560	Stage 3B - Fine Grade	5	58	22-Jun-22	28-Jun-22
C1B3570	Stage 3B - Cement Stabilize Subgrade	3	58	29-Jun-22	01-Jul-22
C1B3580	Stage 3B - Place CTA	2	58	05-Jul-22	06-Jul-22
C1B3590	Stage 3B - Place First Lift of Base Asphalt	3	58	07-Jul-22	11-Jul-22
C1B3600	Stage 3B - Place Curb Stone	3	58	12-Jul-22	14-Jul-22
C1B3610	Stage 3B - Place CG-3	4	58	15-Jul-22	20-Jul-22
C1B3620	Stage 3B - Backfill Curb	3	58	21-Jul-22	25-Jul-22
C1B3630	Stage 3B - Place Final Lift of Base Asphalt	3	58	26-Jul-22	28-Jul-22
C1B3640	Stage 3B - Place Intermediate Asphalt	3	58	29-Jul-22	02-Aug-22
C1B3650	Stage 3B - Place Surface Asphalt for WB Lanes	10	93	11-Apr-23	24-Apr-23
C1B3660	Stage 3B - Place Surface Asphalt for EB Lanes	10	93	21-Jun-23	05-Jul-23
Segment 1C - Utterback Store Road to Riva Ridge Drive (Station 215+75 to 254+00)		1039	93	16-May-19	20-Jun-23
Stage 1A		84	39	16-May-19	16-Sep-19
C1C1000	Stage 1A - Install Temporary Traffic Signal at Utterback Store Road	5	19	16-May-19	23-May-19
C1C1010	Stage 1A - Strengthen Westbound Outside Shoulder	13	39	22-Aug-19	10-Sep-19
C1C1020	Stage 1A - Install Asphalt Wedge to Redirect Drainage	4	39	11-Sep-19	16-Sep-19
Stage 1B		221	179	17-Sep-19	29-Jul-20
C1C1500	Stage 1B - Shift Westbound Lanes to North	8	231	17-Sep-19	26-Sep-19
C1C1510	Stage 1B - Install Barrier on Left Edge of Westbound Lanes	5	231	27-Sep-19	03-Oct-19
C1C1520	Stage 1B - Mill and Remove Existing Asphalt	4	231	04-Oct-19	09-Oct-19
C1C1530	Stage 1B - Strip Topsoil to Stockpile	10	123	01-Apr-20	14-Apr-20
C1C1540	Stage 1B - Cut to Fill	16	123	15-Apr-20	06-May-20
C1C1550	Stage 1B - Install Storm Sewer from Stations 218+00 to 222+50	11	123	15-Apr-20	29-Apr-20
C1C1560	Stage 1B - Reconstruct WB Left Turn Lane at Bishopsgate Way	5	159	15-Apr-20	21-Apr-20



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

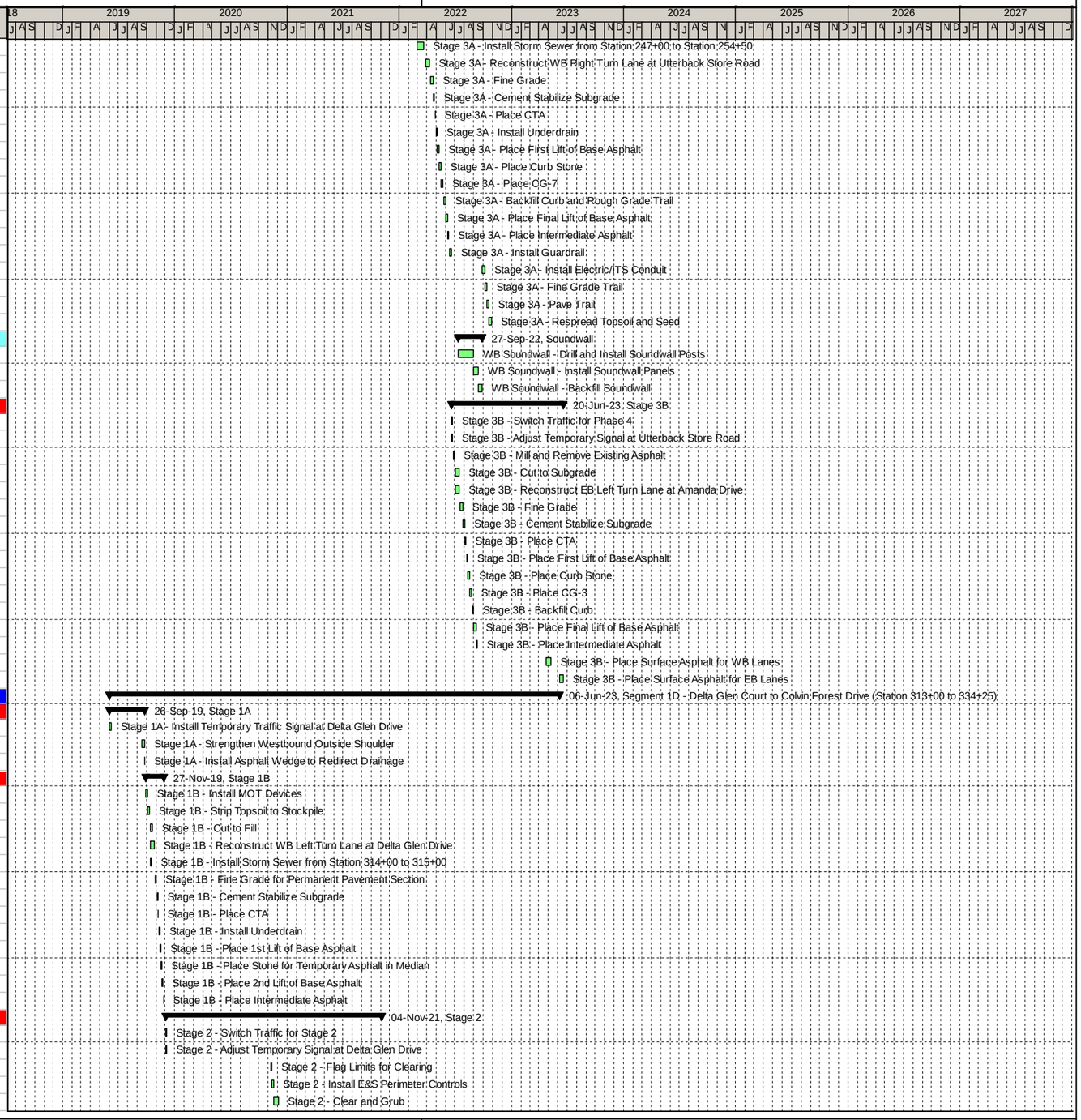
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C1C1570	Stage 1B - Install Storm Sewer from Stations 229+50 to 245+50	30	123	30-Apr-20	11-Jun-20
C1C1580	Stage 1B - Fine Grade for Permanent Pavement Section	8	123	12-Jun-20	23-Jun-20
C1C1590	Stage 1B - Cement Stabilize Subgrade	4	123	24-Jun-20	29-Jun-20
C1C1600	Stage 1B - Place CTA	3	123	30-Jun-20	02-Jul-20
C1C1610	Stage 1B - Install Underdrain	3	168	06-Jul-20	08-Jul-20
C1C1620	Stage 1B - Place 1st Lift of Base Asphalt	4	123	09-Jul-20	14-Jul-20
C1C1630	Stage 1B - Place Stone for Temporary Asphalt in Median	3	123	15-Jul-20	17-Jul-20
C1C1640	Stage 1B - Place 2nd Lift of Base Asphalt	4	123	20-Jul-20	23-Jul-20
C1C1650	Stage 1B - Place Intermediate Asphalt	4	123	24-Jul-20	29-Jul-20
Stage 2		446	145	30-Jul-20	02-May-22
C1C2000	Stage 2 - Switch Traffic for Stage 2	5	168	30-Jul-20	05-Aug-20
C1C2010	Stage 2 - Adjust Temporary Signal at Utterback Store Road	5	168	30-Jul-20	05-Aug-20
C1C2020	Stage 2 - Strip Topsoil	10	168	06-Aug-20	19-Aug-20
C1C2030	Stage 2 - Mill and Remove Existing Asphalt	4	168	20-Aug-20	25-Aug-20
C1C2040	Stage 2 - Cut to Fill	8	168	26-Aug-20	04-Sep-20
C1C2050	Stage 2 - Install Storm Sewer from Station 222+38 to 253+50	111	168	26-Aug-20	12-Feb-21
C1C2060	Stage 2 - Reconstruct EB Right Turn Lane at Bishopsgate Way	10	174	26-Aug-20	09-Sep-20
C1C2070	Stage 2 - Reconstruct West Half of Bishopsgate Way Approach	10	174	10-Sep-20	23-Sep-20
C1C2080	Stage 2 - Reconstruct East Half of Bishopsgate Way Approach	10	174	24-Sep-20	07-Oct-20
C1C2090	Stage 2 - Reconstruct EB Right Turn Lane at Markell Court	10	174	08-Oct-20	21-Oct-20
C1C2100	Stage 2 - Reconstruct West Half of Markell Court Approach	10	174	22-Oct-20	04-Nov-20
C1C2110	Stage 2 - Reconstruct East Half of Markell Court Approach	10	174	05-Nov-20	18-Nov-20
C1C2120	Stage 2 - Flag Limits for Clearing	2	17	07-Jan-21	11-Jan-21
C1C2130	Stage 2 - Install E&S Perimeter Controls	4	22	11-Jan-21	15-Jan-21
C1C2140	Stage 2 - Clear and Grub	10	22	15-Jan-21	29-Jan-21
C1C2150	Stage 2 - Fine Grade	8	168	15-Feb-21	26-Feb-21
C1C2160	Stage 2 - Cement Stabilize Subgrade	4	159	16-Mar-21	19-Mar-21
C1C2170	Stage 2 - Place CTA	3	159	22-Mar-21	24-Mar-21
C1C2180	Stage 2 - Install Underdrain	3	159	25-Mar-21	29-Mar-21
C1C2190	Stage 2 - Place First Lift of Base Asphalt	4	159	30-Mar-21	02-Apr-21
C1C2200	Stage 2 - Place Curb Stone	4	159	05-Apr-21	08-Apr-21
C1C2210	Stage 2 - Place CG-7	6	159	09-Apr-21	16-Apr-21
C1C2220	Stage 2 - Backfill Curb and Rough Grade Trail	4	159	19-Apr-21	22-Apr-21
C1C2230	Stage 2 - Place Final Lift of Base Asphalt	4	159	23-Apr-21	28-Apr-21
C1C2240	Stage 2 - Place Intermediate Asphalt	4	159	29-Apr-21	04-May-21
C1C2250	Stage 2 - Install Guardrail	6	159	05-May-21	12-May-21
C1C2280	Stage 2 - Install Electric/ITS Conduit	6	153	22-Mar-22	29-Mar-22
C1C2260	Stage 2 - Fine Grade Trail	6	145	11-Apr-22	18-Apr-22
C1C2270	Stage 2 - Pave Trail	4	145	19-Apr-22	22-Apr-22
C1C2290	Stage 2 - Respread Topsoil and Seed	6	145	25-Apr-22	02-May-22
Soundwall		37	8	18-Jan-22	21-Mar-22
C1C2300	EB Soundwall - Drill and Install Soundwall Posts	25	8	18-Jan-22	01-Mar-22
C1C2310	EB Soundwall - Install Soundwall Panels	6	8	03-Mar-22	11-Mar-22
C1C2320	EB Soundwall - Backfill Soundwall	6	8	14-Mar-22	21-Mar-22
Stage 3A		468	117	24-Dec-20	27-Oct-22
C1C3000	Stage 3A - Flag Limits for Clearing	2	74	24-Dec-20	29-Dec-20
C1C3010	Stage 3A - Install E&S Perimeter Controls	4	74	29-Dec-20	05-Jan-21
C1C3020	Stage 3A - Clear and Grub	10	36	26-Feb-21	12-Mar-21
C1C3030	Stage 3A - Switch Traffic for Phase 3	4	159	13-May-21	18-May-21
C1C3040	Stage 3A - Adjust Temporary Signal at Utterback Store Road	4	160	13-May-21	18-May-21
C1C3050	Stage 3A - Strip Topsoil	10	43	02-Nov-21	15-Nov-21
C1C3060	Stage 3A - Mill and Remove Existing Asphalt	4	43	16-Nov-21	19-Nov-21
C1C3070	Stage 3A - Cut to Fill	8	43	22-Nov-21	03-Dec-21
C1C3080	Stage 3A - Install Storm Sewer from Station 201+50 to Station 203+50	3	43	22-Nov-21	24-Nov-21
C1C3090	Stage 3A - Reconstruct Amanda Drive Approach	15	29	22-Nov-21	14-Dec-21
C1C3100	Stage 3A - Install Storm Sewer from Station 207+50 to Station 216+50	14	43	29-Nov-21	16-Dec-21
C1C3110	Stage 3A - Reconstruct Great Passage Boulevard Approach	15	29	15-Dec-21	25-Mar-22
C1C3120	Stage 3A - Install Storm Sewer from Station 216+50 to Station 226+50	17	43	17-Dec-21	17-Jan-22
C1C3140	Stage 3A - Install Storm Sewer from Station 227+00 to Station 228+50	2	43	18-Jan-22	20-Jan-22
C1C3150	Stage 3A - Install Storm Sewer from Station 228+50 to Station 237+50	14	43	21-Jan-22	14-Feb-22
C1C3160	Stage 3A - Install Storm Sewer from Station 244+00 to Station 245+50	3	43	15-Feb-22	18-Feb-22
C1C3170	Stage 3A - Install Storm Sewer on Amanda Drive	4	43	21-Feb-22	25-Feb-22



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C1C3180	Stage 3A - Install Storm Sewer from Station 247+00 to Station 254+50	14	43	28-Feb-22	21-Mar-22
C1C3130	Stage 3A - Reconstruct WB Right Turn Lane at Utterback Store Road	10	29	28-Mar-22	08-Apr-22
C1C3190	Stage 3A - Fine Grade	8	29	11-Apr-22	20-Apr-22
C1C3200	Stage 3A - Cement Stabilize Subgrade	4	29	21-Apr-22	26-Apr-22
C1C3210	Stage 3A - Place CTA	3	29	27-Apr-22	29-Apr-22
C1C3220	Stage 3A - Install Underdrain	3	29	02-May-22	04-May-22
C1C3230	Stage 3A - Place First Lift of Base Asphalt	4	29	05-May-22	10-May-22
C1C3240	Stage 3A - Place Curb Stone	4	29	11-May-22	16-May-22
C1C3250	Stage 3A - Place CG-7	6	29	17-May-22	24-May-22
C1C3260	Stage 3A - Backfill Curb and Rough Grade Trail	4	29	25-May-22	31-May-22
C1C3270	Stage 3A - Place Final Lift of Base Asphalt	4	29	01-Jun-22	06-Jun-22
C1C3280	Stage 3A - Place Intermediate Asphalt	4	29	07-Jun-22	10-Jun-22
C1C3290	Stage 3A - Install Guardrail	6	29	13-Jun-22	20-Jun-22
C1C3320	Stage 3A - Install Electric/ITS Conduit	6	105	28-Sep-22	05-Oct-22
C1C3300	Stage 3A - Fine Grade Trail	6	105	06-Oct-22	13-Oct-22
C1C3310	Stage 3A - Pave Trail	4	61	14-Oct-22	19-Oct-22
C1C3330	Stage 3A - Respread Topsoil and Seed	6	105	20-Oct-22	27-Oct-22
Soundwall		55	11	12-Jul-22	27-Sep-22
C1C3340	WB Soundwall - Drill and Install Soundwall Posts	37	11	12-Jul-22	31-Aug-22
C1C3350	WB Soundwall - Install Soundwall Panels	9	11	01-Sep-22	14-Sep-22
C1C3360	WB Soundwall - Backfill Soundwall	9	11	15-Sep-22	27-Sep-22
Stage 3B		254	93	21-Jun-22	20-Jun-23
C1C3500	Stage 3B - Switch Traffic for Phase 4	4	29	21-Jun-22	24-Jun-22
C1C3510	Stage 3B - Adjust Temporary Signal at Utterback Store Road	4	29	21-Jun-22	24-Jun-22
C1C3520	Stage 3B - Mill and Remove Existing Asphalt	4	29	27-Jun-22	30-Jun-22
C1C3530	Stage 3B - Cut to Subgrade	8	29	01-Jul-22	13-Jul-22
C1C3540	Stage 3B - Reconstruct EB Left Turn Lane at Amanda Drive	10	29	01-Jul-22	15-Jul-22
C1C3550	Stage 3B - Fine Grade	8	29	18-Jul-22	27-Jul-22
C1C3560	Stage 3B - Cement Stabilize Subgrade	4	29	28-Jul-22	02-Aug-22
C1C3570	Stage 3B - Place CTA	3	29	03-Aug-22	05-Aug-22
C1C3580	Stage 3B - Place First Lift of Base Asphalt	4	29	08-Aug-22	11-Aug-22
C1C3590	Stage 3B - Place Curb Stone	4	29	12-Aug-22	17-Aug-22
C1C3600	Stage 3B - Place CG-3	6	29	18-Aug-22	25-Aug-22
C1C3610	Stage 3B - Backfill Curb	4	29	26-Aug-22	31-Aug-22
C1C3620	Stage 3B - Place Final Lift of Base Asphalt	4	29	01-Sep-22	07-Sep-22
C1C3630	Stage 3B - Place Intermediate Asphalt	4	29	08-Sep-22	13-Sep-22
C1C3640	Stage 3B - Place Surface Asphalt for WB Lanes	10	93	25-Apr-23	08-May-23
C1C3650	Stage 3B - Place Surface Asphalt for EB Lanes	10	93	07-Jun-23	20-Jun-23
Segment 1D - Delta Glen Court to Colvin Forest Drive (Station 313+00 to 334+25)		1019	93	31-May-19	06-Jun-23
Stage 1A		82	39	31-May-19	26-Sep-19
C1D1000	Stage 1A - Install Temporary Traffic Signal at Delta Glen Drive	5	108	31-May-19	07-Jun-19
C1D1010	Stage 1A - Strengthen Westbound Outside Shoulder	5	39	17-Sep-19	23-Sep-19
C1D1020	Stage 1A - Install Asphalt Wedge to Redirect Drainage	3	39	24-Sep-19	26-Sep-19
Stage 1B		44	87	27-Sep-19	27-Nov-19
C1D1500	Stage 1B - Install MOT Devices	5	39	27-Sep-19	03-Oct-19
C1D1510	Stage 1B - Strip Topsoil to Stockpile	6	39	04-Oct-19	11-Oct-19
C1D1520	Stage 1B - Cut to Fill	5	39	14-Oct-19	18-Oct-19
C1D1540	Stage 1B - Reconstruct WB Left Turn Lane at Delta Glen Drive	10	39	14-Oct-19	25-Oct-19
C1D1530	Stage 1B - Install Storm Sewer from Station 314+00 to 315+00	4	81	14-Oct-19	17-Oct-19
C1D1550	Stage 1B - Fine Grade for Permanent Pavement Section	5	75	28-Oct-19	01-Nov-19
C1D1560	Stage 1B - Cement Stabilize Subgrade	3	75	04-Nov-19	06-Nov-19
C1D1570	Stage 1B - Place CTA	2	75	07-Nov-19	08-Nov-19
C1D1580	Stage 1B - Install Underdrain	2	75	11-Nov-19	12-Nov-19
C1D1590	Stage 1B - Place 1st Lift of Base Asphalt	3	30	13-Nov-19	15-Nov-19
C1D1600	Stage 1B - Place Stone for Temporary Asphalt in Median	2	30	18-Nov-19	19-Nov-19
C1D1610	Stage 1B - Place 2nd Lift of Base Asphalt	3	30	20-Nov-19	22-Nov-19
C1D1620	Stage 1B - Place Intermediate Asphalt	3	30	25-Nov-19	27-Nov-19
Stage 2		492	230	02-Dec-19	04-Nov-21
C1D2000	Stage 2 - Switch Traffic for Stage 2	3	332	02-Dec-19	04-Dec-19
C1D2010	Stage 2 - Adjust Temporary Signal at Delta Glen Drive	3	332	02-Dec-19	04-Dec-19
C1D2020	Stage 2 - Flag Limits for Clearing	2	26	09-Nov-20	10-Nov-20
C1D2030	Stage 2 - Install E&S Perimeter Controls	6	26	11-Nov-20	18-Nov-20
C1D2040	Stage 2 - Clear and Grub	10	26	19-Nov-20	04-Dec-20



Actual Work
Remaining Work
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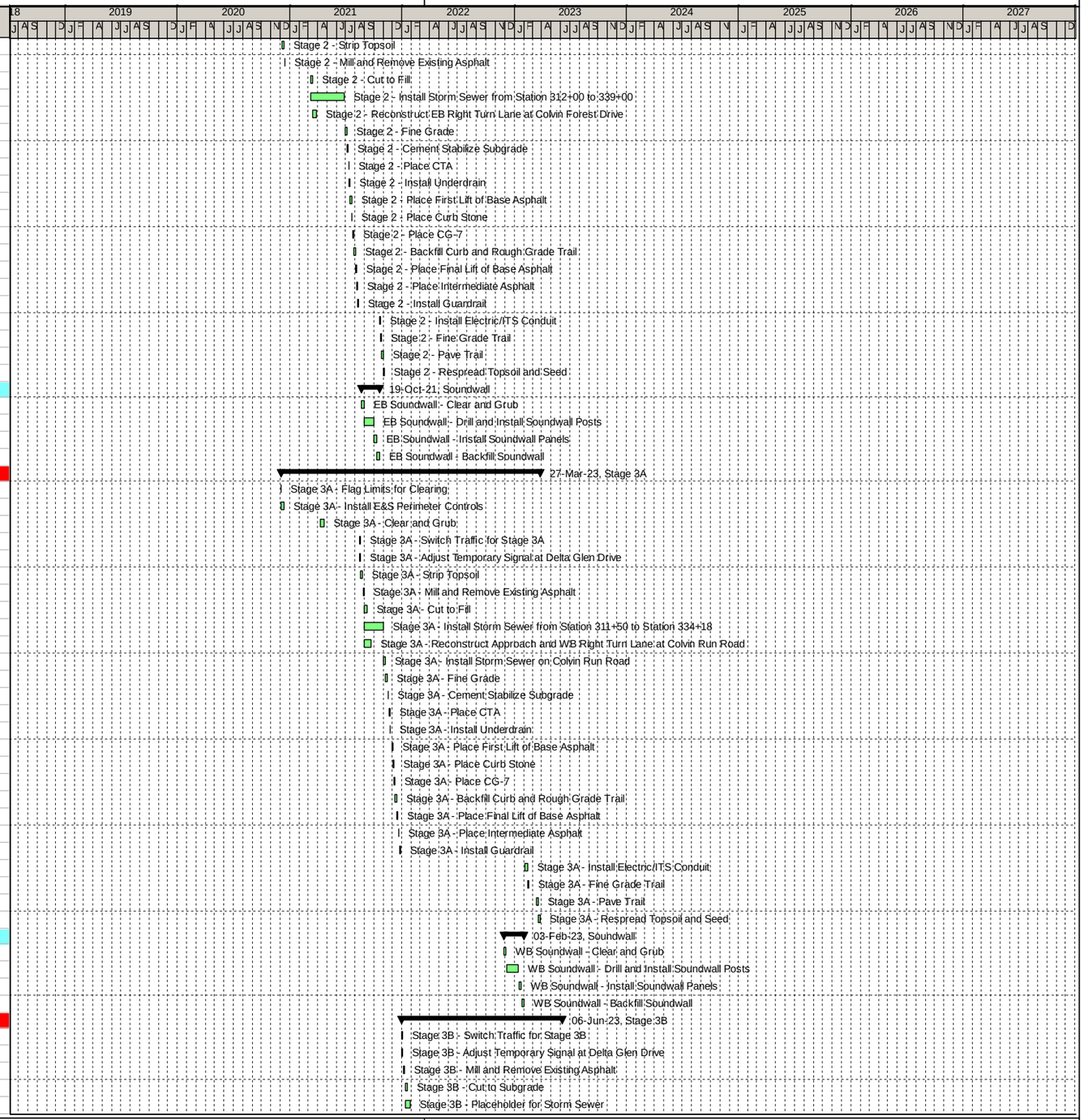
Summary

SHIRLEY CONTRACTING COMPANY, LLC

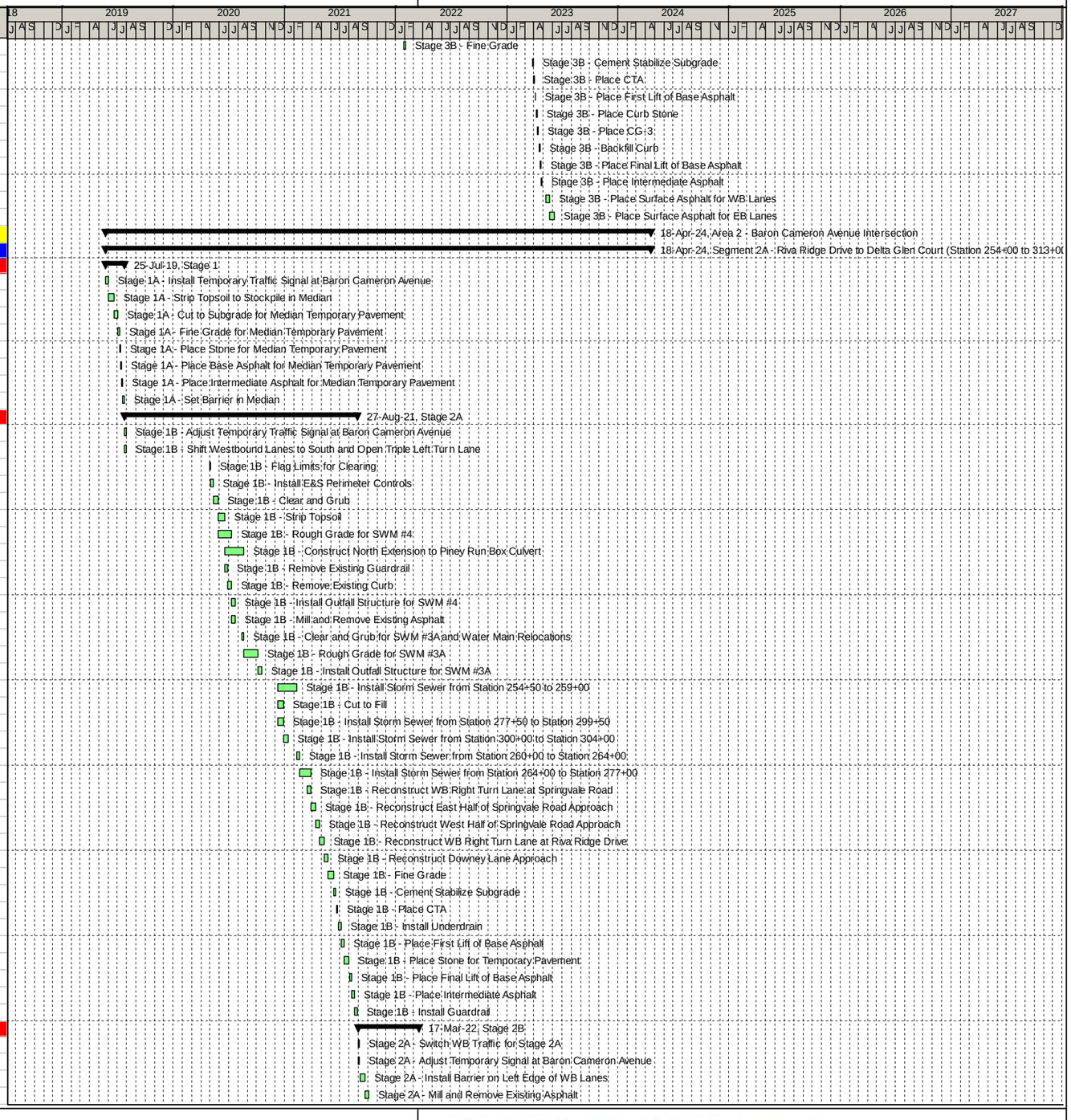
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C1D2050	Stage 2 - Strip Topsoil	6	89	07-Dec-20	14-Dec-20
C1D2060	Stage 2 - Mill and Remove Existing Asphalt	3	89	15-Dec-20	17-Dec-20
C1D2070	Stage 2 - Cut to Fill	5	43	11-Mar-21	17-Mar-21
C1D2080	Stage 2 - Install Storm Sewer from Station 312+00 to 339+00	77	43	11-Mar-21	28-Jun-21
C1D2090	Stage 2 - Reconstruct EB Right Turn Lane at Colvin Forest Drive	10	107	16-Mar-21	29-Mar-21
C1D2100	Stage 2 - Fine Grade	5	43	29-Jun-21	06-Jul-21
C1D2110	Stage 2 - Cement Stabilize Subgrade	3	43	07-Jul-21	09-Jul-21
C1D2120	Stage 2 - Place CTA	2	43	12-Jul-21	13-Jul-21
C1D2130	Stage 2 - Install Underdrain	2	43	14-Jul-21	15-Jul-21
C1D2140	Stage 2 - Place First Lift of Base Asphalt	3	43	16-Jul-21	20-Jul-21
C1D2150	Stage 2 - Place Curb Stone	3	43	21-Jul-21	23-Jul-21
C1D2160	Stage 2 - Place CG-7	3	43	26-Jul-21	28-Jul-21
C1D2170	Stage 2 - Backfill Curb and Rough Grade Trail	3	43	29-Jul-21	02-Aug-21
C1D2180	Stage 2 - Place Final Lift of Base Asphalt	3	43	03-Aug-21	05-Aug-21
C1D2190	Stage 2 - Place Intermediate Asphalt	3	43	06-Aug-21	10-Aug-21
C1D2200	Stage 2 - Install Guardrail	3	43	11-Aug-21	13-Aug-21
C1D2230	Stage 2 - Install Electric/ITS Conduit	3	219	19-Oct-21	22-Oct-21
C1D2210	Stage 2 - Fine Grade Trail	3	219	22-Oct-21	27-Oct-21
C1D2220	Stage 2 - Pave Trail	3	174	27-Oct-21	01-Nov-21
C1D2240	Stage 2 - Respread Topsoil and Seed	3	219	01-Nov-21	04-Nov-21
Soundwall		40	11	23-Aug-21	19-Oct-21
C1D2250	EB Soundwall - Clear and Grub	5	11	23-Aug-21	30-Aug-21
C1D2260	EB Soundwall - Drill and Install Soundwall Posts	23	11	30-Aug-21	01-Oct-21
C1D2270	EB Soundwall - Install Soundwall Panels	6	11	01-Oct-21	11-Oct-21
C1D2280	EB Soundwall - Backfill Soundwall	6	11	11-Oct-21	19-Oct-21
Stage 3A		587	79	02-Dec-20	27-Mar-23
C1D3000	Stage 3A - Flag Limits for Clearing	2	173	02-Dec-20	04-Dec-20
C1D3010	Stage 3A - Install E&S Perimeter Controls	6	141	04-Dec-20	14-Dec-20
C1D3020	Stage 3A - Clear and Grub	10	59	09-Apr-21	23-Apr-21
C1D3030	Stage 3A - Switch Traffic for Stage 3A	3	43	16-Aug-21	18-Aug-21
C1D3040	Stage 3A - Adjust Temporary Signal at Delta Glen Drive	3	43	16-Aug-21	18-Aug-21
C1D3050	Stage 3A - Strip Topsoil	6	43	19-Aug-21	26-Aug-21
C1D3060	Stage 3A - Mill and Remove Existing Asphalt	3	43	27-Aug-21	31-Aug-21
C1D3070	Stage 3A - Cut to Fill	5	43	01-Sep-21	08-Sep-21
C1D3080	Stage 3A - Install Storm Sewer from Station 311+50 to Station 334+18	43	43	01-Sep-21	01-Nov-21
C1D3090	Stage 3A - Reconstruct Approach and WB Right Turn Lane at Colvin Run Road	15	87	01-Sep-21	22-Sep-21
C1D3100	Stage 3A - Install Storm Sewer on Colvin Run Road	5	99	02-Nov-21	08-Nov-21
C1D3110	Stage 3A - Fine Grade	5	99	09-Nov-21	15-Nov-21
C1D3120	Stage 3A - Cement Stabilize Subgrade	3	54	16-Nov-21	18-Nov-21
C1D3130	Stage 3A - Place CTA	2	54	19-Nov-21	22-Nov-21
C1D3140	Stage 3A - Install Underdrain	2	99	23-Nov-21	24-Nov-21
C1D3150	Stage 3A - Place First Lift of Base Asphalt	3	54	29-Nov-21	01-Dec-21
C1D3160	Stage 3A - Place Curb Stone	3	99	02-Dec-21	06-Dec-21
C1D3170	Stage 3A - Place CG-7	3	54	07-Dec-21	09-Dec-21
C1D3180	Stage 3A - Backfill Curb and Rough Grade Trail	3	99	10-Dec-21	14-Dec-21
C1D3190	Stage 3A - Place Final Lift of Base Asphalt	3	235	15-Dec-21	17-Dec-21
C1D3200	Stage 3A - Place Intermediate Asphalt	3	235	20-Dec-21	22-Dec-21
C1D3210	Stage 3A - Install Guardrail	3	372	23-Dec-21	28-Dec-21
C1D3240	Stage 3A - Install Electric/ITS Conduit	5	50	06-Feb-23	13-Feb-23
C1D3220	Stage 3A - Fine Grade Trail	3	50	14-Feb-23	17-Feb-23
C1D3230	Stage 3A - Pave Trail	3	36	16-Mar-23	20-Mar-23
C1D3250	Stage 3A - Respread Topsoil and Seed	5	36	21-Mar-23	27-Mar-23
Soundwall		46	14	30-Nov-22	03-Feb-23
C1D3260	WB Soundwall - Clear and Grub	5	11	30-Nov-22	06-Dec-22
C1D3270	WB Soundwall - Drill and Install Soundwall Posts	23	11	07-Dec-22	13-Jan-23
C1D3280	WB Soundwall - Install Soundwall Panels	6	11	16-Jan-23	24-Jan-23
C1D3290	WB Soundwall - Backfill Soundwall	6	11	26-Jan-23	03-Feb-23
Stage 3B		365	93	30-Dec-21	06-Jun-23
C1D3500	Stage 3B - Switch Traffic for Stage 3B	3	372	30-Dec-21	04-Jan-22
C1D3510	Stage 3B - Adjust Temporary Signal at Delta Glen Drive	3	372	30-Dec-21	04-Jan-22
C1D3520	Stage 3B - Mill and Remove Existing Asphalt	3	372	06-Jan-22	10-Jan-22
C1D3530	Stage 3B - Cut to Subgrade	5	372	11-Jan-22	18-Jan-22
C1D3540	Stage 3B - Placeholder for Storm Sewer	10	372	11-Jan-22	27-Jan-22



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

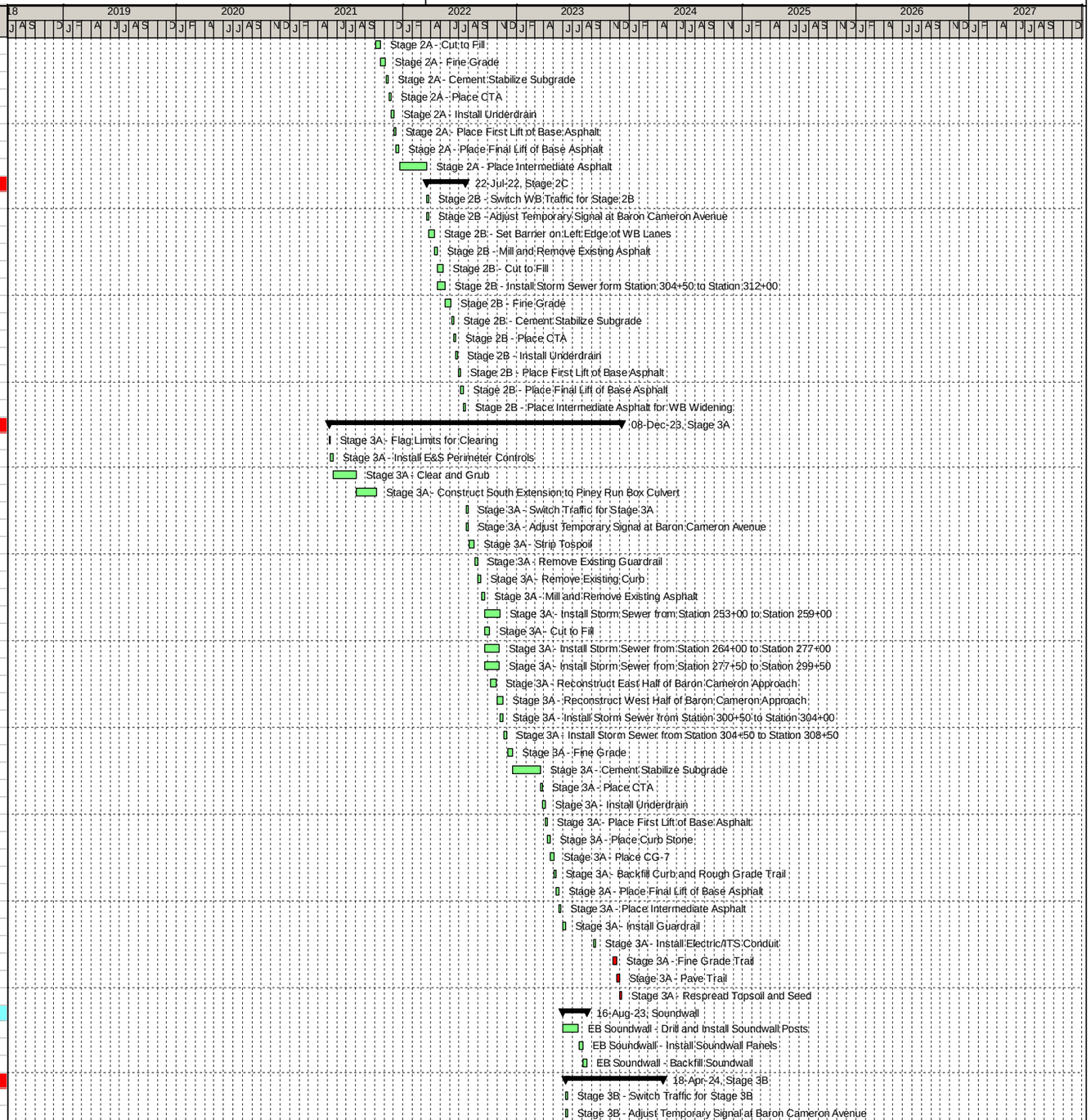
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C1D3550	Stage 3B - Fine Grade	5	372	28-Jan-22	04-Feb-22
C1D3560	Stage 3B - Cement Stabilize Subgrade	3	100	28-Mar-23	30-Mar-23
C1D3570	Stage 3B - Place CTA	2	100	31-Mar-23	03-Apr-23
C1D3580	Stage 3B - Place First Lift of Base Asphalt	3	100	04-Apr-23	06-Apr-23
C1D3590	Stage 3B - Place Curb Stone	3	100	07-Apr-23	11-Apr-23
C1D3600	Stage 3B - Place CG-3	3	100	12-Apr-23	14-Apr-23
C1D3610	Stage 3B - Backfill Curb	3	100	17-Apr-23	19-Apr-23
C1D3620	Stage 3B - Place Final Lift of Base Asphalt	3	100	20-Apr-23	24-Apr-23
C1D3630	Stage 3B - Place Intermediate Asphalt	3	100	25-Apr-23	27-Apr-23
C1D3640	Stage 3B - Place Surface Asphalt for WB Lanes	10	93	09-May-23	22-May-23
C1D3650	Stage 3B - Place Surface Asphalt for EB Lanes	10	93	23-May-23	06-Jun-23
Area 2 - Baron Cameron Avenue Intersection		1245	0	23-May-19	18-Apr-24
Segment 2A - Riva Ridge Drive to Delta Glen Court (Station 254+00 to 313+00)		1245	0	23-May-19	18-Apr-24
Stage 1		43	19	23-May-19	25-Jul-19
C2A1000	Stage 1A - Install Temporary Traffic Signal at Baron Cameron Avenue	5	19	23-May-19	31-May-19
C2A1010	Stage 1A - Strip Topsoil to Stockpile in Median	15	19	31-May-19	21-Jun-19
C2A1020	Stage 1A - Cut to Subgrade for Median Temporary Pavement	8	19	21-Jun-19	03-Jul-19
C2A1030	Stage 1A - Fine Grade for Median Temporary Pavement	4	19	03-Jul-19	10-Jul-19
C2A1040	Stage 1A - Place Stone for Median Temporary Pavement	2	19	10-Jul-19	12-Jul-19
C2A1050	Stage 1A - Place Base Asphalt for Median Temporary Pavement	2	19	12-Jul-19	16-Jul-19
C2A1060	Stage 1A - Place Intermediate Asphalt for Median Temporary Pavement	2	19	16-Jul-19	18-Jul-19
C2A1070	Stage 1A - Set Barrier in Median	5	19	18-Jul-19	25-Jul-19
Stage 2A		532	327	25-Jul-19	27-Aug-21
C2A1500	Stage 1B - Adjust Temporary Traffic Signal at Baron Cameron Avenue	5	203	25-Jul-19	01-Aug-19
C2A1510	Stage 1B - Shift Westbound Lanes to South and Open Triple Left Turn Lane	5	19	25-Jul-19	01-Aug-19
C2A1520	Stage 1B - Flag Limits for Clearing	2	13	30-Apr-20	04-May-20
C2A1530	Stage 1B - Install E&S Perimeter Controls	6	13	04-May-20	12-May-20
C2A1540	Stage 1B - Clear and Grub	10	13	12-May-20	27-May-20
C2A1550	Stage 1B - Strip Topsoil	15	250	27-May-20	17-Jun-20
C2A1560	Stage 1B - Rough Grade for SWM #4	30	219	27-May-20	09-Jul-20
C2A1570	Stage 1B - Construct North Extension to Piney Run Box Culvert	45	474	17-Jun-20	20-Aug-20
C2A1580	Stage 1B - Remove Existing Guardrail	8	261	17-Jun-20	29-Jun-20
C2A1590	Stage 1B - Remove Existing Curb	8	261	29-Jun-20	10-Jul-20
C2A1610	Stage 1B - Install Outfall Structure for SWM #4	10	219	09-Jul-20	23-Jul-20
C2A1600	Stage 1B - Mill and Remove Existing Asphalt	8	261	10-Jul-20	22-Jul-20
C2A1620	Stage 1B - Clear and Grub for SWM #3A and Water Main Relocations	5	64	14-Aug-20	21-Aug-20
C2A1630	Stage 1B - Rough Grade for SWM #3A	30	198	21-Aug-20	05-Oct-20
C2A1650	Stage 1B - Install Outfall Structure for SWM #3A	10	224	05-Oct-20	19-Oct-20
C2A1660	Stage 1B - Install Storm Sewer from Station 254+50 to 259+00	36	153	09-Dec-20	09-Feb-21
C2A1640	Stage 1B - Cut to Fill	12	153	09-Dec-20	28-Dec-20
C2A1730	Stage 1B - Install Storm Sewer from Station 277+50 to Station 299+50	12	196	09-Dec-20	28-Dec-20
C2A1750	Stage 1B - Install Storm Sewer from Station 300+00 to Station 304+00	9	197	28-Dec-20	14-Jan-21
C2A1700	Stage 1B - Install Storm Sewer from Station 260+00 to Station 264+00	6	153	09-Feb-21	19-Feb-21
C2A1720	Stage 1B - Install Storm Sewer from Station 264+00 to Station 277+00	23	153	19-Feb-21	29-Mar-21
C2A1670	Stage 1B - Reconstruct WB Right Turn Lane at Springvale Road	10	113	16-Mar-21	29-Mar-21
C2A1680	Stage 1B - Reconstruct East Half of Springvale Road Approach	10	113	30-Mar-21	12-Apr-21
C2A1690	Stage 1B - Reconstruct West Half of Springvale Road Approach	10	113	13-Apr-21	26-Apr-21
C2A1710	Stage 1B - Reconstruct WB Right Turn Lane at Riva Ridge Drive	10	113	27-Apr-21	10-May-21
C2A1740	Stage 1B - Reconstruct Downey Lane Approach	10	113	11-May-21	24-May-21
C2A1760	Stage 1B - Fine Grade	12	113	25-May-21	10-Jun-21
C2A1770	Stage 1B - Cement Stabilize Subgrade	6	113	11-Jun-21	18-Jun-21
C2A1780	Stage 1B - Place CTA	5	113	21-Jun-21	25-Jun-21
C2A1790	Stage 1B - Install Underdrain	6	113	28-Jun-21	06-Jul-21
C2A1800	Stage 1B - Place First Lift of Base Asphalt	6	113	07-Jul-21	14-Jul-21
C2A1810	Stage 1B - Place Stone for Temporary Pavement	12	152	15-Jul-21	30-Jul-21
C2A1820	Stage 1B - Place Final Lift of Base Asphalt	6	107	02-Aug-21	09-Aug-21
C2A1830	Stage 1B - Place Intermediate Asphalt	6	107	10-Aug-21	17-Aug-21
C2A1840	Stage 1B - Install Guardrail	8	152	18-Aug-21	27-Aug-21
Stage 2B		139	107	30-Aug-21	17-Mar-22
C2A2000	Stage 2A - Switch WB Traffic for Stage 2A	5	152	30-Aug-21	03-Sep-21
C2A2010	Stage 2A - Adjust Temporary Signal at Baron Cameron Avenue	5	152	30-Aug-21	03-Sep-21
C2A2020	Stage 2A - Install Barrier on Left Edge of WB Lanes	12	152	07-Sep-21	22-Sep-21
C2A2030	Stage 2A - Mill and Remove Existing Asphalt	8	152	23-Sep-21	04-Oct-21



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C2A2040	Stage 2A - Cut to Fill	12	152	05-Oct-21	20-Oct-21
C2A2050	Stage 2A - Fine Grade	12	152	21-Oct-21	05-Nov-21
C2A2060	Stage 2A - Cement Stabilize Subgrade	6	107	08-Nov-21	15-Nov-21
C2A2070	Stage 2A - Place CTA	5	107	16-Nov-21	22-Nov-21
C2A2080	Stage 2A - Install Underdrain	5	152	23-Nov-21	01-Dec-21
C2A2090	Stage 2A - Place First Lift of Base Asphalt	6	107	02-Dec-21	09-Dec-21
C2A2100	Stage 2A - Place Final Lift of Base Asphalt	6	107	10-Dec-21	17-Dec-21
C2A2110	Stage 2A - Place Intermediate Asphalt	6	107	20-Dec-21	17-Mar-22
Stage 2C		89	107	18-Mar-22	22-Jul-22
C2A2500	Stage 2B - Switch WB Traffic for Stage 2B	5	107	18-Mar-22	24-Mar-22
C2A2510	Stage 2B - Adjust Temporary Signal at Baron Cameron Avenue	5	107	18-Mar-22	24-Mar-22
C2A2520	Stage 2B - Set Barrier on Left Edge of WB Lanes	12	107	25-Mar-22	11-Apr-22
C2A2530	Stage 2B - Mill and Remove Existing Asphalt	8	107	12-Apr-22	21-Apr-22
C2A2540	Stage 2B - Cut to Fill	12	107	22-Apr-22	09-May-22
C2A2550	Stage 2B - Install Storm Sewer form Station 304+50 to Station 312+00	18	107	22-Apr-22	17-May-22
C2A2560	Stage 2B - Fine Grade	12	107	18-May-22	03-Jun-22
C2A2570	Stage 2B - Cement Stabilize Subgrade	6	107	06-Jun-22	13-Jun-22
C2A2580	Stage 2B - Place CTA	5	107	14-Jun-22	20-Jun-22
C2A2590	Stage 2B - Install Underdrain	5	107	21-Jun-22	27-Jun-22
C2A2600	Stage 2B - Place First Lift of Base Asphalt	6	107	28-Jun-22	06-Jul-22
C2A2610	Stage 2B - Place Final Lift of Base Asphalt	6	107	07-Jul-22	14-Jul-22
C2A2620	Stage 2B - Place Intermediate Asphalt for WB Widening	6	107	15-Jul-22	22-Jul-22
Stage 3A		656	0	07-May-21	08-Dec-23
C2A3000	Stage 3A - Flag Limits for Clearing	2	376	07-May-21	11-May-21
C2A3010	Stage 3A - Install E&S Perimeter Controls	6	302	11-May-21	19-May-21
C2A3020	Stage 3A - Clear and Grub	10	302	19-May-21	04-Aug-21
C2A3030	Stage 3A - Construct South Extension to Piney Run Box Culvert	45	288	04-Aug-21	07-Oct-21
C2A3040	Stage 3A - Switch Traffic for Stage 3A	5	146	25-Jul-22	29-Jul-22
C2A3050	Stage 3A - Adjust Temporary Signal at Baron Cameron Avenue	5	146	25-Jul-22	29-Jul-22
C2A3060	Stage 3A - Strip Tospoil	15	146	01-Aug-22	19-Aug-22
C2A3070	Stage 3A - Remove Existing Guardrail	6	158	22-Aug-22	29-Aug-22
C2A3080	Stage 3A - Remove Existing Curb	8	158	30-Aug-22	09-Sep-22
C2A3090	Stage 3A - Mill and Remove Existing Asphalt	8	146	12-Sep-22	21-Sep-22
C2A3110	Stage 3A - Install Storm Sewer from Station 253+00 to Station 259+00	36	160	22-Sep-22	10-Nov-22
C2A3100	Stage 3A - Cut to Fill	12	146	22-Sep-22	07-Oct-22
C2A3120	Stage 3A - Install Storm Sewer from Station 264+00 to Station 277+00	33	163	22-Sep-22	07-Nov-22
C2A3130	Stage 3A - Install Storm Sewer from Station 277+50 to Station 299+50	34	146	22-Sep-22	08-Nov-22
C2A3140	Stage 3A - Reconstruct East Half of Baron Cameron Approach	15	110	10-Oct-22	28-Oct-22
C2A3150	Stage 3A - Reconstruct West Half of Baron Cameron Approach	15	110	31-Oct-22	18-Nov-22
C2A3160	Stage 3A - Install Storm Sewer from Station 300+50 to Station 304+00	8	146	09-Nov-22	18-Nov-22
C2A3170	Stage 3A - Install Storm Sewer from Station 304+50 to Station 308+50	8	146	21-Nov-22	02-Dec-22
C2A3180	Stage 3A - Fine Grade	12	146	05-Dec-22	20-Dec-22
C2A3190	Stage 3A - Cement Stabilize Subgrade	6	102	21-Dec-22	20-Mar-23
C2A3200	Stage 3A - Place CTA	5	102	21-Mar-23	27-Mar-23
C2A3210	Stage 3A - Install Underdrain	6	102	28-Mar-23	04-Apr-23
C2A3220	Stage 3A - Place First Lift of Base Asphalt	6	102	05-Apr-23	12-Apr-23
C2A3230	Stage 3A - Place Curb Stone	6	102	13-Apr-23	20-Apr-23
C2A3240	Stage 3A - Place CG-7	8	102	21-Apr-23	02-May-23
C2A3250	Stage 3A - Backfill Curb and Rough Grade Trail	6	102	03-May-23	10-May-23
C2A3260	Stage 3A - Place Final Lift of Base Asphalt	6	102	11-May-23	18-May-23
C2A3280	Stage 3A - Place Intermediate Asphalt	6	102	19-May-23	26-May-23
C2A3300	Stage 3A - Install Guardrail	8	102	30-May-23	08-Jun-23
C2A3310	Stage 3A - Install Electric/ITS Conduit	6	39	08-Sep-23	15-Sep-23
C2A3270	Stage 3A - Fine Grade Trail	8	0	10-Nov-23	21-Nov-23
C2A3290	Stage 3A - Pave Trail	5	0	22-Nov-23	30-Nov-23
C2A3320	Stage 3A - Respread Topsoil and Seed	6	0	01-Dec-23	08-Dec-23
Soundwall		55	54	31-May-23	16-Aug-23
C2A3470	EB Soundwall - Drill and Install Soundwall Posts	37	54	31-May-23	21-Jul-23
C2A3480	EB Soundwall - Install Soundwall Panels	9	54	24-Jul-23	03-Aug-23
C2A3490	EB Soundwall - Backfill Soundwall	9	54	04-Aug-23	16-Aug-23
Stage 3B		219	0	09-Jun-23	18-Apr-24
C2A3500	Stage 3B - Switch Traffic for Stage 3B	5	102	09-Jun-23	15-Jun-23
C2A3510	Stage 3B - Adjust Temporary Signal at Baron Cameron Avenue	5	102	09-Jun-23	15-Jun-23



Actual Work
Remaining Work
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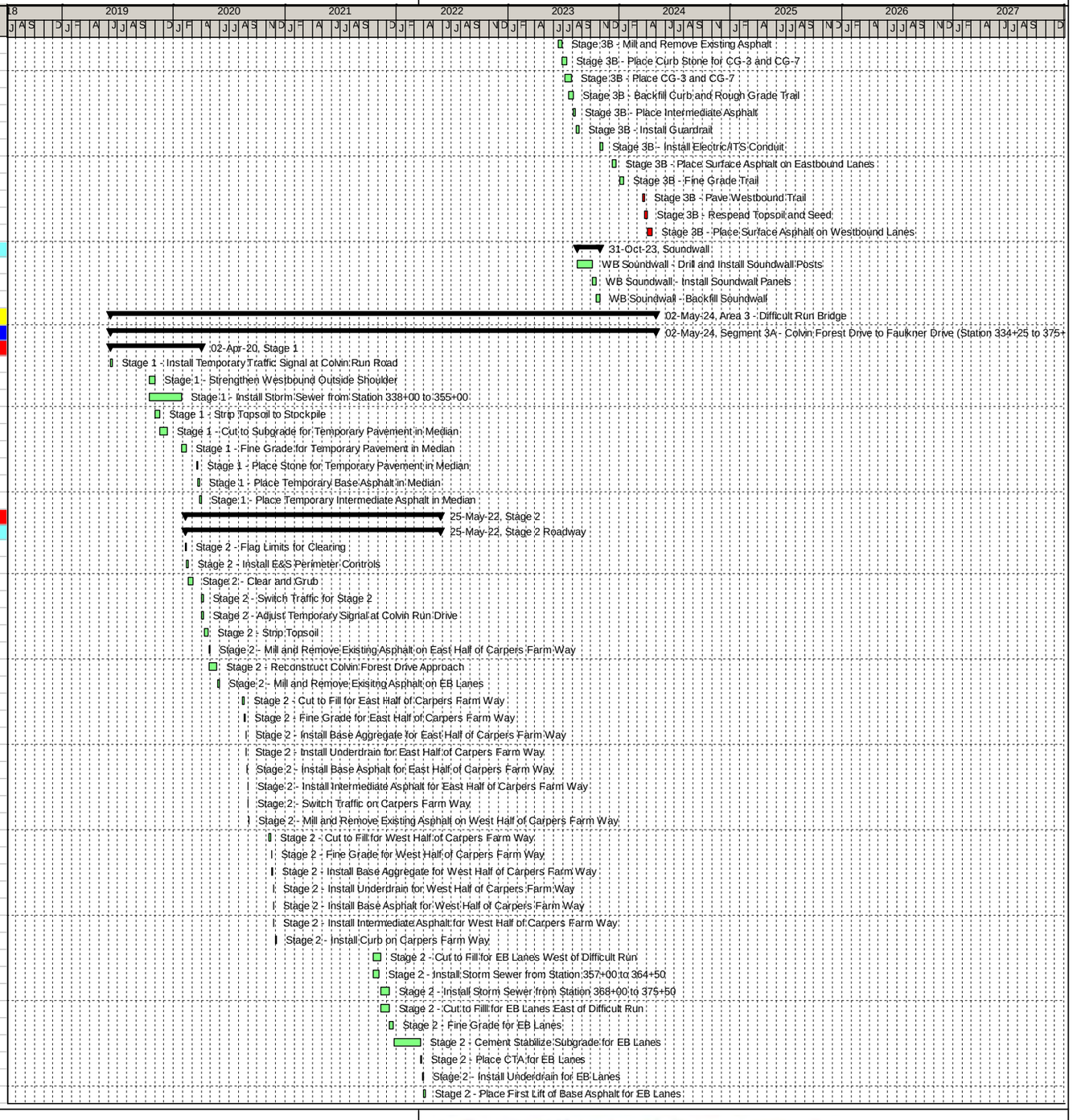
Summary

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C2A3520	Stage 3B - Mill and Remove Existing Asphalt	8	102	16-Jun-23	27-Jun-23
C2A3590	Stage 3B - Place Curb Stone for CG-3 and CG-7	12	102	28-Jun-23	14-Jul-23
C2A3600	Stage 3B - Place CG-3 and CG-7	16	102	07-Jul-23	28-Jul-23
C2A3610	Stage 3B - Backfill Curb and Rough Grade Trail	12	140	19-Jul-23	03-Aug-23
C2A3640	Stage 3B - Place Intermediate Asphalt	6	98	04-Aug-23	11-Aug-23
C2A3660	Stage 3B - Install Guardrail	8	156	14-Aug-23	23-Aug-23
C2A3630	Stage 3B - Install Electric/ITS Conduit	8	78	01-Nov-23	10-Nov-23
C2A3690	Stage 3B - Place Surface Asphalt on Eastbound Lanes	10	14	11-Dec-23	22-Dec-23
C2A3650	Stage 3B - Fine Grade Trail	8	44	04-Jan-24	15-Jan-24
C2A3670	Stage 3B - Pave Westbound Trail	6	0	18-Mar-24	25-Mar-24
C2A3680	Stage 3B - Respead Topsoil and Seed	8	0	26-Mar-24	04-Apr-24
C2A3700	Stage 3B - Place Surface Asphalt on Westbound Lanes	10	0	05-Apr-24	18-Apr-24
Soundwall		53	78	17-Aug-23	31-Oct-23
C2A3710	WB Soundwall - Drill and Install Soundwall Posts	35	78	17-Aug-23	05-Oct-23
C2A3720	WB Soundwall - Install Soundwall Panels	9	78	06-Oct-23	18-Oct-23
C2A3730	WB Soundwall - Backfill Soundwall	9	78	19-Oct-23	31-Oct-23
Area 3 - Difficult Run Bridge		1245	0	07-Jun-19	02-May-24
Segment 3A - Colvin Forest Drive to Faulkner Drive (Station 334+25 to 375+00)		1245	0	07-Jun-19	02-May-24
Stage 1		208	78	07-Jun-19	02-Apr-20
C3A1000	Stage 1 - Install Temporary Traffic Signal at Colvin Run Road	5	181	07-Jun-19	14-Jun-19
C3A1020	Stage 1 - Strengthen Westbound Outside Shoulder	14	76	14-Oct-19	31-Oct-19
C3A1010	Stage 1 - Install Storm Sewer from Station 338+00 to 355+00	67	96	14-Oct-19	27-Jan-20
C3A1030	Stage 1 - Strip Topsoil to Stockpile	11	121	01-Nov-19	15-Nov-19
C3A1040	Stage 1 - Cut to Subgrade for Temporary Pavement in Median	17	121	18-Nov-19	12-Dec-19
C3A1050	Stage 1 - Fine Grade for Temporary Pavement in Median	9	96	28-Jan-20	11-Feb-20
C3A1060	Stage 1 - Place Stone for Temporary Pavement in Median	4	78	16-Mar-20	19-Mar-20
C3A1070	Stage 1 - Place Temporary Base Asphalt in Median	5	78	20-Mar-20	26-Mar-20
C3A1080	Stage 1 - Place Temporary Intermediate Asphalt in Median	5	78	27-Mar-20	02-Apr-20
Stage 2		584	0	10-Feb-20	25-May-22
Stage 2 Roadway		584	0	10-Feb-20	25-May-22
C3A2000	Stage 2 - Flag Limits for Clearing	2	11	10-Feb-20	11-Feb-20
C3A2010	Stage 2 - Install E&S Perimeter Controls	5	14	12-Feb-20	18-Feb-20
C3A2020	Stage 2 - Clear and Grub	10	14	19-Feb-20	03-Mar-20
C3A2030	Stage 2 - Switch Traffic for Stage 2	5	78	03-Apr-20	09-Apr-20
C3A2040	Stage 2 - Adjust Temporary Signal at Colvin Run Drive	5	78	03-Apr-20	09-Apr-20
C3A2050	Stage 2 - Strip Topsoil	11	78	10-Apr-20	24-Apr-20
C3A2060	Stage 2 - Mill and Remove Existing Asphalt on East Half of Carpers Farm Way	2	78	27-Apr-20	28-Apr-20
C3A2070	Stage 2 - Reconstruct Colvin Forest Drive Approach	20	251	27-Apr-20	22-May-20
C3A2080	Stage 2 - Mill and Remove Exisitng Asphalt on EB Lanes	5	296	26-May-20	01-Jun-20
C3A2090	Stage 2 - Cut to Fill for East Half of Carpers Farm Way	5	48	14-Aug-20	20-Aug-20
C3A2100	Stage 2 - Fine Grade for East Half of Carpers Farm Way	2	48	21-Aug-20	24-Aug-20
C3A2110	Stage 2 - Install Base Aggregate for East Half of Carpers Farm Way	2	48	25-Aug-20	26-Aug-20
C3A2120	Stage 2 - Install Underdrain for East Half of Carpers Farm Way	1	48	27-Aug-20	27-Aug-20
C3A2130	Stage 2 - Install Base Asphalt for East Half of Carpers Farm Way	1	48	28-Aug-20	28-Aug-20
C3A2140	Stage 2 - Install Intermediate Asphalt for East Half of Carpers Farm Way	1	48	31-Aug-20	31-Aug-20
C3A2150	Stage 2 - Switch Traffic on Carpers Farm Way	2	48	01-Sep-20	02-Sep-20
C3A2160	Stage 2 - Mill and Remove Existing Asphalt on West Half of Carpers Farm Way	2	48	03-Sep-20	04-Sep-20
C3A2170	Stage 2 - Cut to Fill for West Half of Carpers Farm Way	5	254	10-Nov-20	16-Nov-20
C3A2180	Stage 2 - Fine Grade for West Half of Carpers Farm Way	2	254	17-Nov-20	18-Nov-20
C3A2190	Stage 2 - Install Base Aggregate for West Half of Carpers Farm Way	2	254	19-Nov-20	20-Nov-20
C3A2200	Stage 2 - Install Underdrain for West Half of Carpers Farm Way	1	254	23-Nov-20	23-Nov-20
C3A2210	Stage 2 - Install Base Asphalt for West Half of Carpers Farm Way	1	209	24-Nov-20	24-Nov-20
C3A2220	Stage 2 - Install Intermediate Asphalt for West Half of Carpers Farm Way	1	209	25-Nov-20	25-Nov-20
C3A2230	Stage 2 - Install Curb on Carpers Farm Way	5	209	30-Nov-20	04-Dec-20
C3A2240	Stage 2 - Cut to Fill for EB Lanes West of Difficult Run	20	12	18-Oct-21	12-Nov-21
C3A2250	Stage 2 - Install Storm Sewer from Station 357+00 to 364+50	14	12	18-Oct-21	04-Nov-21
C3A2260	Stage 2 - Install Storm Sewer from Station 368+00 to 375+50	19	8	11-Nov-21	09-Dec-21
C3A2270	Stage 2 - Cut to Filll for EB Lanes East of Difficult Run	20	8	11-Nov-21	10-Dec-21
C3A2280	Stage 2 - Fine Grade for EB Lanes	9	8	10-Dec-21	22-Dec-21
C3A2290	Stage 2 - Cement Stabilize Subgrade for EB Lanes	5	2	23-Dec-21	21-Mar-22
C3A2300	Stage 2 - Place CTA for EB Lanes	4	2	22-Mar-22	25-Mar-22
C3A2310	Stage 2 - Install Underdrain for EB Lanes	4	2	28-Mar-22	31-Mar-22
C3A2320	Stage 2 - Place First Lift of Base Asphalt for EB Lanes	5	2	01-Apr-22	07-Apr-22



Actual Work
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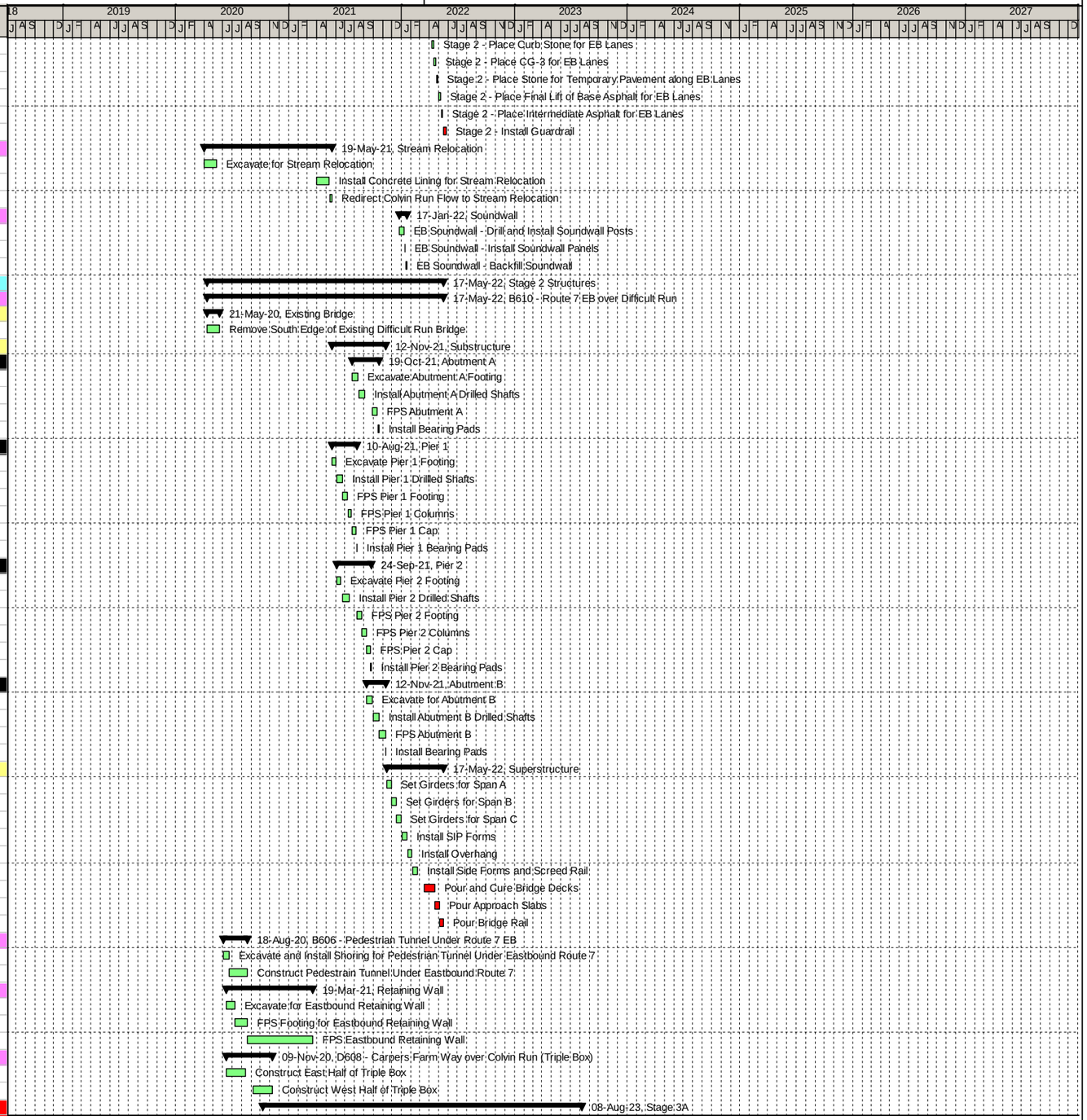
SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C3A2330	Stage 2 - Place Curb Stone for EB Lanes	5	2	08-Apr-22	14-Apr-22
C3A2340	Stage 2 - Place CG-3 for EB Lanes	6	2	15-Apr-22	22-Apr-22
C3A2350	Stage 2 - Place Stone for Temporary Pavement along EB Lanes	5	2	25-Apr-22	29-Apr-22
C3A2360	Stage 2 - Place Final Lift of Base Asphalt for EB Lanes	5	2	02-May-22	06-May-22
C3A2370	Stage 2 - Place Intermediate Asphalt for EB Lanes	5	2	09-May-22	13-May-22
C3A2380	Stage 2 - Install Guardrail	6	0	18-May-22	25-May-22
Stream Relocation		163	6	01-Apr-20	19-May-21
C3A2390	Excavate for Stream Relocation	30	104	01-Apr-20	12-May-20
C3A2400	Install Concrete Lining for Stream Relocation	30	6	01-Apr-21	12-May-21
C3A2410	Redirect Colvin Run Flow to Stream Relocation	5	6	13-May-21	19-May-21
Soundwall		13	8	23-Dec-21	17-Jan-22
C3A2420	EB Soundwall - Drill and Install Soundwall Posts	9	8	23-Dec-21	10-Jan-22
C3A2430	EB Soundwall - Install Soundwall Panels	2	8	11-Jan-22	13-Jan-22
C3A2440	EB Soundwall - Backfill Soundwall	2	8	14-Jan-22	17-Jan-22
Stage 2 Structures		534	0	10-Apr-20	17-May-22
B610 - Route 7 EB over Difficult Run		534	0	10-Apr-20	17-May-22
Existing Bridge		30	132	10-Apr-20	21-May-20
C3AB1000	Remove South Edge of Existing Difficult Run Bridge	30	132	10-Apr-20	21-May-20
Substructure		124	12	20-May-21	12-Nov-21
Abutment A		61	9	26-Jul-21	19-Oct-21
C2AB1100	Excavate Abutment A Footing	15	23	26-Jul-21	13-Aug-21
C2AB1110	Install Abutment A Drilled Shafts	15	23	16-Aug-21	03-Sep-21
C2AB1120	FPS Abutment A	15	9	27-Sep-21	15-Oct-21
C2AB1130	Install Bearing Pads	2	9	18-Oct-21	19-Oct-21
Pier 1		57	6	20-May-21	10-Aug-21
C3AB1200	Excavate Pier 1 Footing	10	6	20-May-21	03-Jun-21
C3AB1210	Install Pier 1 Drillled Shafts	15	6	04-Jun-21	24-Jun-21
C3AB1220	FPS Pier 1 Footing	10	6	25-Jun-21	09-Jul-21
C3AB1230	FPS Pier 1 Columns	10	6	12-Jul-21	23-Jul-21
C3AB1240	FPS Pier 1 Cap	10	6	26-Jul-21	06-Aug-21
C3AB1250	Install Pier 1 Bearing Pads	2	6	09-Aug-21	10-Aug-21
Pier 2		79	9	04-Jun-21	24-Sep-21
C3AB1300	Excavate Pier 2 Footing	10	28	04-Jun-21	17-Jun-21
C3AB1310	Install Pier 2 Drilled Shafts	15	23	25-Jun-21	16-Jul-21
C3AB1320	FPS Pier 2 Footing	10	6	11-Aug-21	24-Aug-21
C3AB1330	FPS Pier 2 Columns	10	6	25-Aug-21	08-Sep-21
C3AB1340	FPS Pier 2 Cap	10	6	09-Sep-21	22-Sep-21
C3AB1350	Install Pier 2 Bearing Pads	2	9	23-Sep-21	24-Sep-21
Abutment B		47	12	09-Sep-21	12-Nov-21
C3AB1400	Excavate for Abutment B	15	8	09-Sep-21	29-Sep-21
C3AB1410	Install Abutment B Drilled Shafts	15	8	30-Sep-21	20-Oct-21
C3AB1420	FPS Abutment B	15	8	21-Oct-21	10-Nov-21
C3AB1430	Install Bearing Pads	2	12	11-Nov-21	12-Nov-21
Superstructure		128	0	15-Nov-21	17-May-22
C3AB1500	Set Girders for Span A	10	12	15-Nov-21	30-Nov-21
C3AB1510	Set Girders for Span B	10	12	01-Dec-21	14-Dec-21
C3AB1520	Set Girders for Span C	10	12	15-Dec-21	30-Dec-21
C3AB1530	Install SIP Forms	10	12	03-Jan-22	18-Jan-22
C3AB1540	Install Overhang	10	12	20-Jan-22	04-Feb-22
C3AB1550	Install Side Forms and Screed Rail	10	12	07-Feb-22	22-Feb-22
C3AB1560	Pour and Cure Bridge Decks	25	0	16-Mar-22	19-Apr-22
C3AB1570	Pour Approach Slabs	10	0	20-Apr-22	03-May-22
C3AB1580	Pour Bridge Rail	10	0	04-May-22	17-May-22
B606 - Pedestrian Tunnel Under Route 7 EB		55	307	02-Jun-20	18-Aug-20
C3A2450	Excavate and Install Shoring for Pedestrian Tunnel Under Eastbound Route 7	15	296	02-Jun-20	22-Jun-20
C3A2460	Construct Pedestrain Tunnel Under Eastbound Route 7	40	251	23-Jun-20	18-Aug-20
Retaining Wall		196	14	11-Jun-20	19-Mar-21
C3A2470	Excavate for Eastbound Retaining Wall	20	14	11-Jun-20	09-Jul-20
C3A2480	FPS Footing for Eastbound Retaining Wall	30	14	10-Jul-20	20-Aug-20
C3A2490	FPS Eastbound Retaining Wall	90	14	21-Aug-20	19-Mar-21
D608 - Carpers Farm Way over Colvin Run (Triple Box)		106	48	11-Jun-20	09-Nov-20
C3A2500	Construct East Half of Triple Box	45	48	11-Jun-20	13-Aug-20
C3A2510	Construct West Half of Triple Box	45	48	08-Sep-20	09-Nov-20
Stage 3A		718	8	08-Oct-20	08-Aug-23



Actual Work
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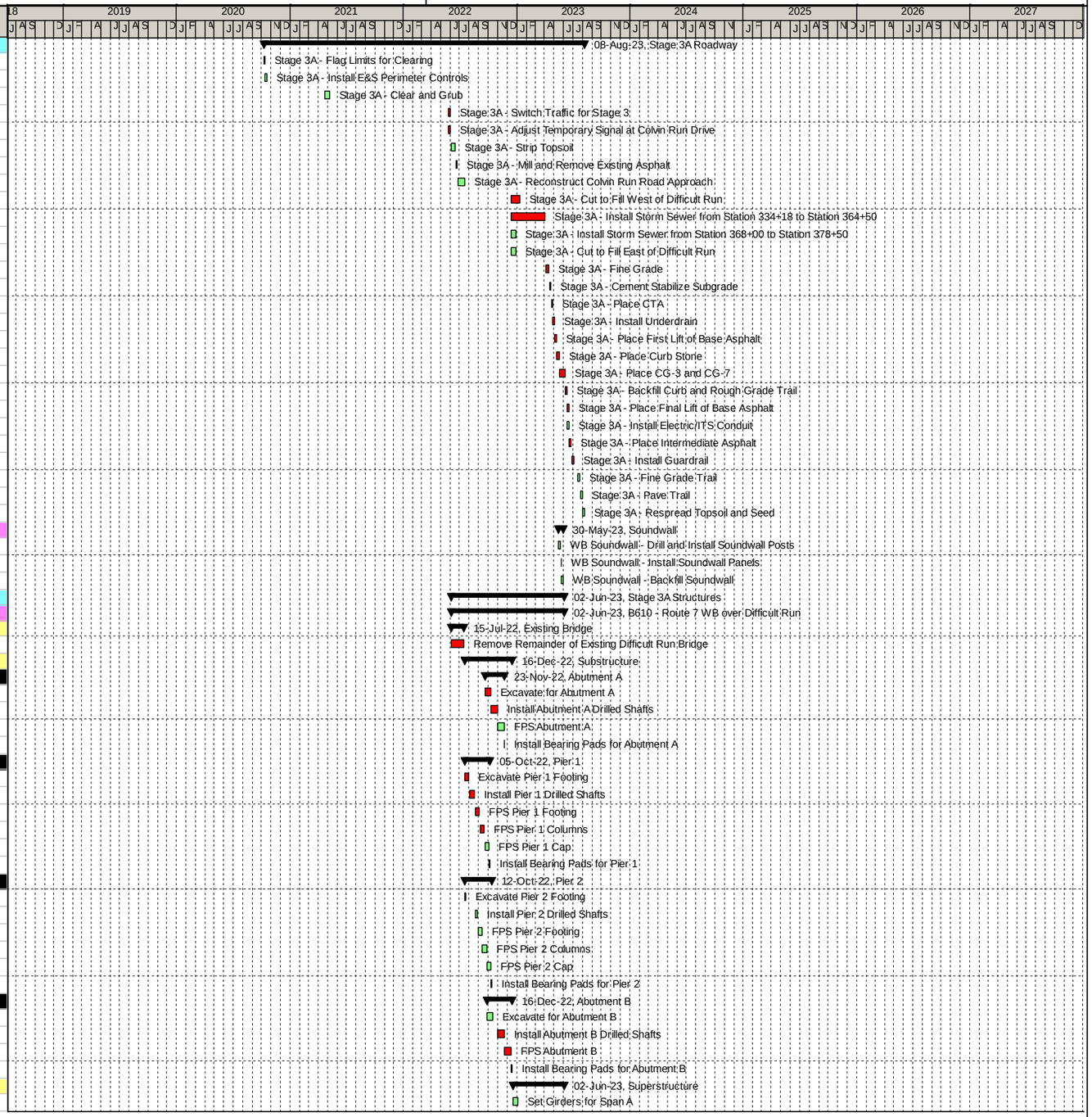
SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
Stage 3A Roadway		718	8	08-Oct-20	08-Aug-23
C3A3000	Stage 3A - Flag Limits for Clearing	2	221	08-Oct-20	12-Oct-20
C3A3010	Stage 3A - Install E&S Perimeter Controls	5	189	12-Oct-20	19-Oct-20
C3A3020	Stage 3A - Clear and Grub	10	59	23-Apr-21	07-May-21
C3A3030	Stage 3A - Switch Traffic for Stage 3	5	0	26-May-22	02-Jun-22
C3A3040	Stage 3A - Adjust Temporary Signal at Colvin Run Drive	5	0	26-May-22	02-Jun-22
C3A3050	Stage 3A - Strip Topsoil	11	64	03-Jun-22	17-Jun-22
C3A3060	Stage 3A - Mill and Remove Existing Asphalt	5	64	20-Jun-22	24-Jun-22
C3A3070	Stage 3A - Reconstruct Colvin Run Road Approach	15	124	27-Jun-22	18-Jul-22
C3A3080	Stage 3A - Cut to Fill West of Difficult Run	15	0	15-Dec-22	10-Jan-23
C3A3090	Stage 3A - Install Storm Sewer from Station 334+18 to Station 364+50	64	0	15-Dec-22	03-Apr-23
C3A3100	Stage 3A - Install Storm Sewer from Station 368+00 to Station 378+50	9	55	15-Dec-22	29-Dec-22
C3A3110	Stage 3A - Cut to Fill East of Difficult Run	10	54	15-Dec-22	30-Dec-22
C3A3120	Stage 3A - Fine Grade	9	0	04-Apr-23	14-Apr-23
C3A3130	Stage 3A - Cement Stabilize Subgrade	5	0	17-Apr-23	21-Apr-23
C3A3140	Stage 3A - Place CTA	4	0	24-Apr-23	27-Apr-23
C3A3150	Stage 3A - Install Underdrain	4	0	28-Apr-23	03-May-23
C3A3160	Stage 3A - Place First Lift of Base Asphalt	5	0	04-May-23	10-May-23
C3A3170	Stage 3A - Place Curb Stone	5	0	11-May-23	17-May-23
C3A3180	Stage 3A - Place CG-3 and CG-7	12	0	18-May-23	05-Jun-23
C3A3190	Stage 3A - Backfill Curb and Rough Grade Trail	5	0	06-Jun-23	12-Jun-23
C3A3200	Stage 3A - Place Final Lift of Base Asphalt	5	0	13-Jun-23	19-Jun-23
C3A3250	Stage 3A - Install Electric/ITS Conduit	6	25	13-Jun-23	20-Jun-23
C3A3210	Stage 3A - Place Intermediate Asphalt	5	0	20-Jun-23	26-Jun-23
C3A3220	Stage 3A - Install Guardrail	6	0	27-Jun-23	05-Jul-23
C3A3230	Stage 3A - Fine Grade Trail	6	8	17-Jul-23	24-Jul-23
C3A3240	Stage 3A - Pave Trail	5	8	25-Jul-23	31-Jul-23
C3A3260	Stage 3A - Respread Topsoil and Seed	6	8	01-Aug-23	08-Aug-23
Soundwall		10	34	16-May-23	30-May-23
C3A3270	WB Soundwall - Drill and Install Soundwall Posts	6	34	16-May-23	23-May-23
C3A3280	WB Soundwall - Install Soundwall Panels	2	34	24-May-23	25-May-23
C3A3290	WB Soundwall - Backfill Soundwall	2	34	26-May-23	30-May-23
Stage 3A Structures		254	16	03-Jun-22	02-Jun-23
B610 - Route 7 WB over Difficult Run		254	16	03-Jun-22	02-Jun-23
Existing Bridge		30	0	03-Jun-22	15-Jul-22
C3AB2000	Remove Remainder of Existing Difficult Run Bridge	30	0	03-Jun-22	15-Jul-22
Substructure		107	19	18-Jul-22	16-Dec-22
Abutment A		47	34	20-Sep-22	23-Nov-22
C3AB2100	Excavate for Abutment A	15	0	20-Sep-22	10-Oct-22
C3AB2110	Install Abutment A Drilled Shafts	15	0	11-Oct-22	31-Oct-22
C3AB2120	FPS Abutment A	15	15	01-Nov-22	21-Nov-22
C3AB2130	Install Bearing Pads for Abutment A	2	31	22-Nov-22	23-Nov-22
Pier 1		57	69	18-Jul-22	05-Oct-22
C3AB2200	Excavate Pier 1 Footing	10	0	18-Jul-22	29-Jul-22
C3AB2210	Install Pier 1 Drilled Shafts	15	0	01-Aug-22	19-Aug-22
C3AB2220	FPS Pier 1 Footing	10	0	22-Aug-22	02-Sep-22
C3AB2230	FPS Pier 1 Columns	10	0	06-Sep-22	19-Sep-22
C3AB2240	FPS Pier 1 Cap	10	66	20-Sep-22	03-Oct-22
C3AB2250	Install Bearing Pads for Pier 1	2	66	04-Oct-22	05-Oct-22
Pier 2		62	64	18-Jul-22	12-Oct-22
C3AB2300	Excavate Pier 2 Footing	5	24	18-Jul-22	22-Jul-22
C3AB2310	Install Pier 2 Drilled Shafts	5	4	22-Aug-22	26-Aug-22
C3AB2320	FPS Pier 2 Footing	10	4	29-Aug-22	12-Sep-22
C3AB2330	FPS Pier 2 Columns	10	4	13-Sep-22	26-Sep-22
C3AB2340	FPS Pier 2 Cap	10	15	27-Sep-22	10-Oct-22
C3AB2350	Install Bearing Pads for Pier 2	2	61	11-Oct-22	12-Oct-22
Abutment B		57	19	27-Sep-22	16-Dec-22
C3AB2400	Excavate for Abutment B	15	10	27-Sep-22	17-Oct-22
C3AB2410	Install Abutment B Drilled Shafts	15	0	01-Nov-22	21-Nov-22
C3AB2420	FPS Abutment B	15	0	22-Nov-22	14-Dec-22
C3AB2430	Install Bearing Pads for Abutment B	2	16	15-Dec-22	16-Dec-22
Superstructure		117	16	19-Dec-22	02-Jun-23
C3AB2500	Set Girders for Span A	10	16	19-Dec-22	05-Jan-23



Actual Work
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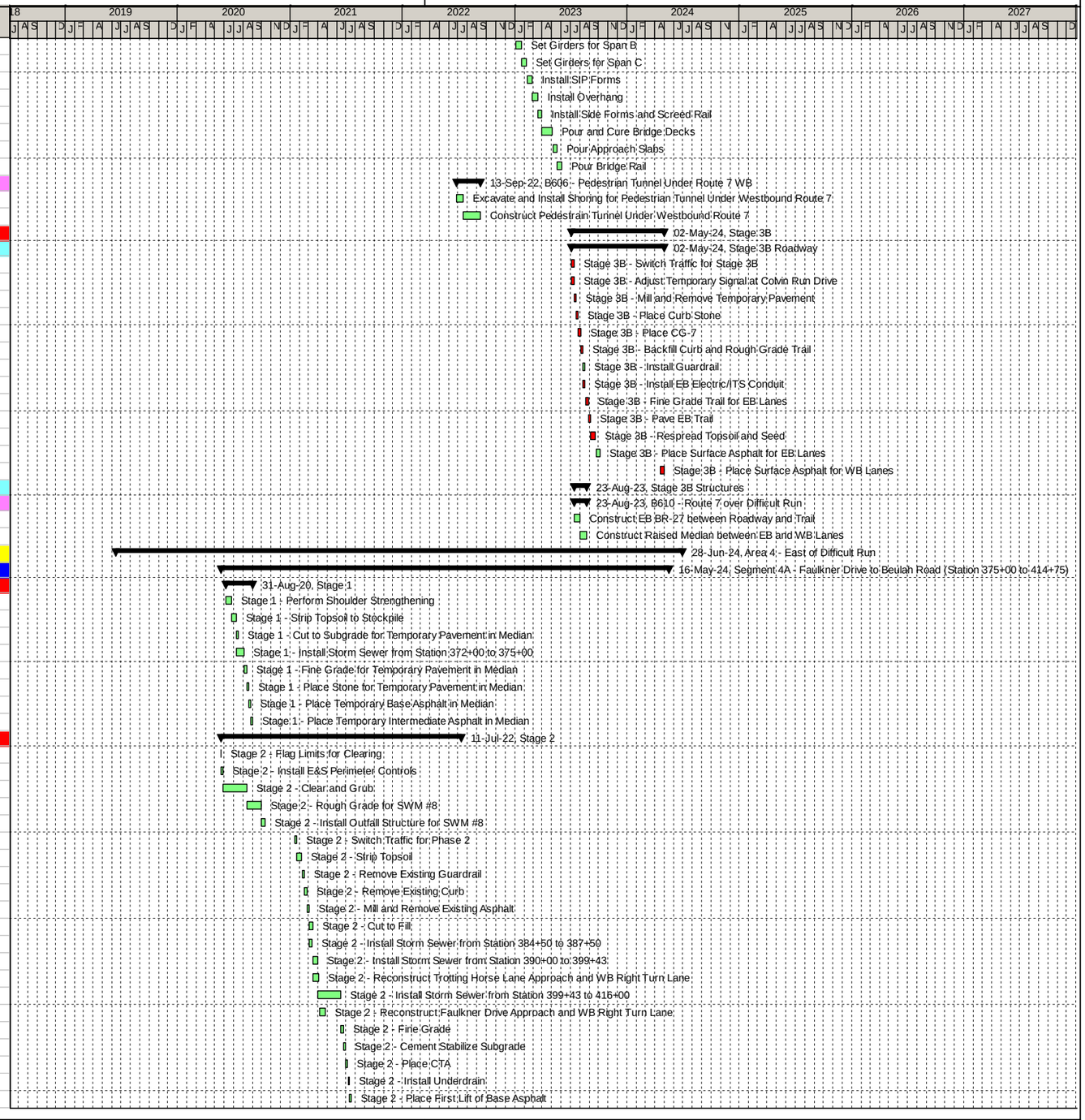
SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C3AB2510	Set Girders for Span B	10	16	06-Jan-23	23-Jan-23
C3AB2520	Set Girders for Span C	10	16	24-Jan-23	09-Feb-23
C3AB2530	Install SIP Forms	10	16	10-Feb-23	27-Feb-23
C3AB2540	Install Overhang	10	16	28-Feb-23	16-Mar-23
C3AB2550	Install Side Forms and Screed Rail	10	16	17-Mar-23	30-Mar-23
C3AB2560	Pour and Cure Bridge Decks	25	16	31-Mar-23	04-May-23
C3AB2570	Pour Approach Slabs	10	16	05-May-23	18-May-23
C3AB2580	Pour Bridge Rail	10	16	19-May-23	02-Jun-23
B606 - Pedestrian Tunnel Under Route 7 WB		55	64	27-Jun-22	13-Sep-22
C3A3300	Excavate and Install Shoring for Pedestrian Tunnel Under Westbound Route 7	15	64	27-Jun-22	18-Jul-22
C3A3310	Construct Pedestrain Tunnel Under Westbound Route 7	40	64	19-Jul-22	13-Sep-22
Stage 3B		211	0	06-Jul-23	02-May-24
Stage 3B Roadway		211	0	06-Jul-23	02-May-24
C3A3500	Stage 3B - Switch Traffic for Stage 3B	5	0	06-Jul-23	12-Jul-23
C3A3510	Stage 3B - Adjust Temporary Signal at Colvin Run Drive	5	0	06-Jul-23	12-Jul-23
C3A3520	Stage 3B - Mill and Remove Temporary Pavement	5	0	13-Jul-23	19-Jul-23
C3A3530	Stage 3B - Place Curb Stone	5	0	20-Jul-23	26-Jul-23
C3A3540	Stage 3B - Place CG-7	6	0	27-Jul-23	03-Aug-23
C3A3550	Stage 3B - Backfill Curb and Rough Grade Trail	5	0	04-Aug-23	10-Aug-23
C3A3570	Stage 3B - Install Guardrail	6	169	11-Aug-23	18-Aug-23
C3A3580	Stage 3B - Install EB Electric/ITS Conduit	6	0	11-Aug-23	18-Aug-23
C3A3560	Stage 3B - Fine Grade Trail for EB Lanes	6	0	21-Aug-23	28-Aug-23
C3A3600	Stage 3B - Pave EB Trail	5	0	29-Aug-23	05-Sep-23
C3A3610	Stage 3B - Respread Topsoil and Seed	12	0	06-Sep-23	21-Sep-23
C3A3620	Stage 3B - Place Surface Asphalt for EB Lanes	10	58	22-Sep-23	05-Oct-23
C3A3590	Stage 3B - Place Surface Asphalt for WB Lanes	10	0	19-Apr-24	02-May-24
Stage 3B Structures		30	108	13-Jul-23	23-Aug-23
B610 - Route 7 over Difficult Run		30	108	13-Jul-23	23-Aug-23
C3A3630	Construct EB BR-27 between Roadway and Trail	15	108	13-Jul-23	02-Aug-23
C3A3640	Construct Raised Median between EB and WB Lanes	15	108	03-Aug-23	23-Aug-23
Area 4 - East of Difficult Run		1280	22	14-Jun-19	28-Jun-24
Segment 4A - Faulkner Drive to Beulah Road (Station 375+00 to 414+75)		1013	0	20-May-20	16-May-24
Stage 1		61	57	05-Jun-20	31-Aug-20
C4A1000	Stage 1 - Perform Shoulder Strengthening	14	57	05-Jun-20	24-Jun-20
C4A1010	Stage 1 - Strip Topsoil to Stockpile	10	57	25-Jun-20	09-Jul-20
C4A1020	Stage 1 - Cut to Subgrade for Temporary Pavement in Median	4	57	10-Jul-20	15-Jul-20
C4A1030	Stage 1 - Install Storm Sewer from Station 372+00 to 375+00	17	57	10-Jul-20	03-Aug-20
C4A1040	Stage 1 - Fine Grade for Temporary Pavement in Median	8	57	04-Aug-20	13-Aug-20
C4A1050	Stage 1 - Place Stone for Temporary Pavement in Median	4	57	14-Aug-20	19-Aug-20
C4A1060	Stage 1 - Place Temporary Base Asphalt in Median	4	57	20-Aug-20	25-Aug-20
C4A1070	Stage 1 - Place Temporary Intermediate Asphalt in Median	4	57	26-Aug-20	31-Aug-20
Stage 2		542	8	20-May-20	11-Jul-22
C4A2000	Stage 2 - Flag Limits for Clearing	2	55	20-May-20	22-May-20
C4A2010	Stage 2 - Install E&S Perimeter Controls	4	11	22-May-20	29-May-20
C4A2020	Stage 2 - Clear and Grub	10	11	29-May-20	14-Aug-20
C4A2030	Stage 2 - Rough Grade for SWM #8	30	312	14-Aug-20	28-Sep-20
C4A2040	Stage 2 - Install Outfall Structure for SWM #8	10	312	28-Sep-20	12-Oct-20
C4A2050	Stage 2 - Switch Traffic for Phase 2	4	224	15-Jan-21	21-Jan-21
C4A2060	Stage 2 - Strip Topsoil	10	224	22-Jan-21	08-Feb-21
C4A2070	Stage 2 - Remove Existing Guardrail	6	231	09-Feb-21	16-Feb-21
C4A2080	Stage 2 - Remove Existing Curb	6	231	17-Feb-21	24-Feb-21
C4A2090	Stage 2 - Mill and Remove Existing Asphalt	4	231	25-Feb-21	02-Mar-21
C4A2100	Stage 2 - Cut to Fill	8	224	04-Mar-21	16-Mar-21
C4A2110	Stage 2 - Install Storm Sewer from Station 384+50 to 387+50	6	224	04-Mar-21	12-Mar-21
C4A2130	Stage 2 - Install Storm Sewer from Station 390+00 to 399+43	14	224	15-Mar-21	01-Apr-21
C4A2120	Stage 2 - Reconstruct Trotting Horse Lane Approach and WB Right Turn Lane	15	213	16-Mar-21	05-Apr-21
C4A2140	Stage 2 - Install Storm Sewer from Station 399+43 to 416+00	51	224	02-Apr-21	14-Jun-21
C4A2150	Stage 2 - Reconstruct Faulkner Drive Approach and WB Right Turn Lane	15	213	06-Apr-21	26-Apr-21
C4A2160	Stage 2 - Fine Grade	8	224	15-Jun-21	24-Jun-21
C4A2170	Stage 2 - Cement Stabilize Subgrade	4	182	25-Jun-21	30-Jun-21
C4A2180	Stage 2 - Place CTA	4	182	01-Jul-21	07-Jul-21
C4A2190	Stage 2 - Install Underdrain	4	227	08-Jul-21	13-Jul-21
C4A2200	Stage 2 - Place First Lift of Base Asphalt	4	182	14-Jul-21	19-Jul-21



Actual Work
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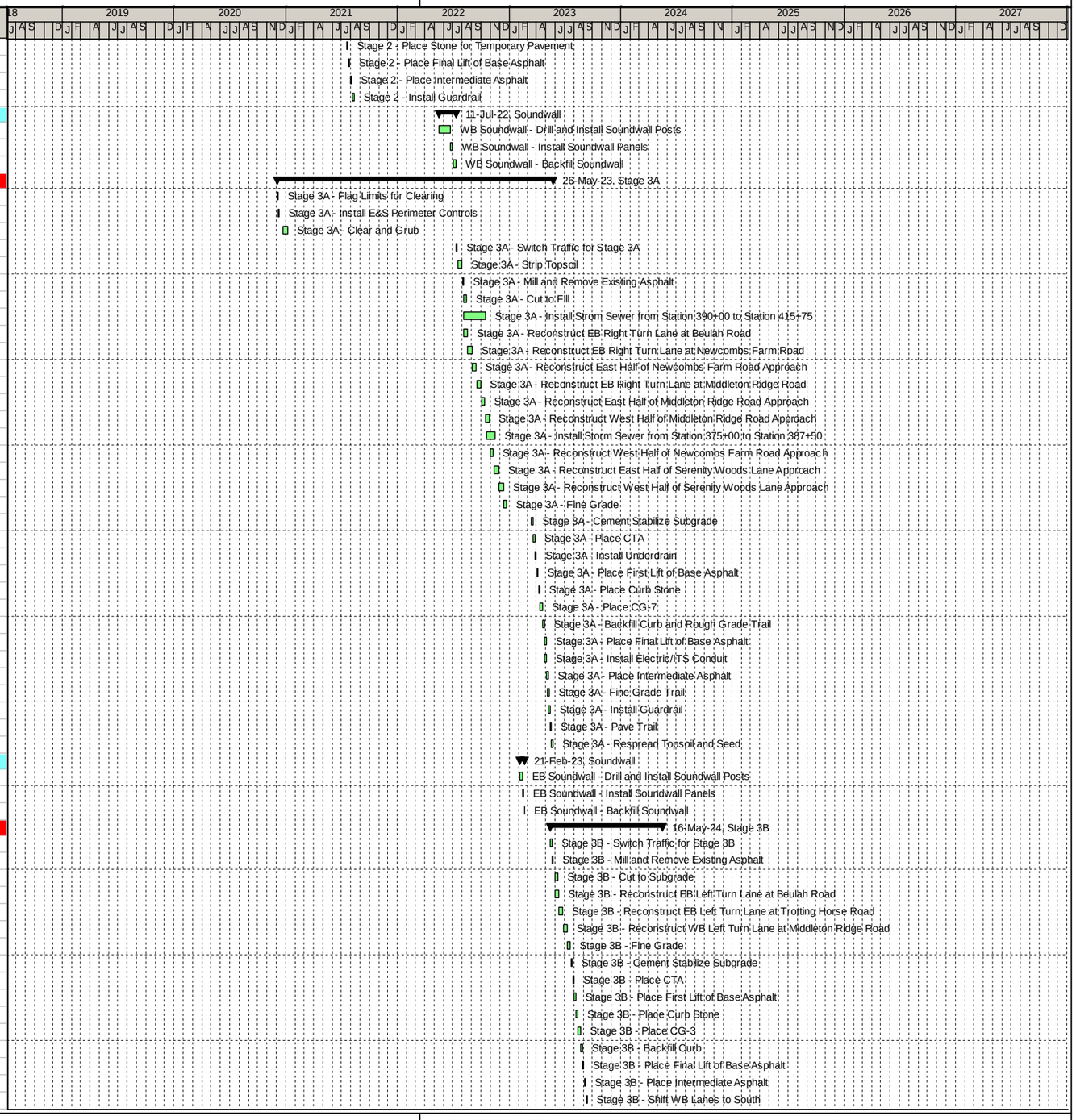
SHIRLEY CONTRACTING COMPANY, LLC

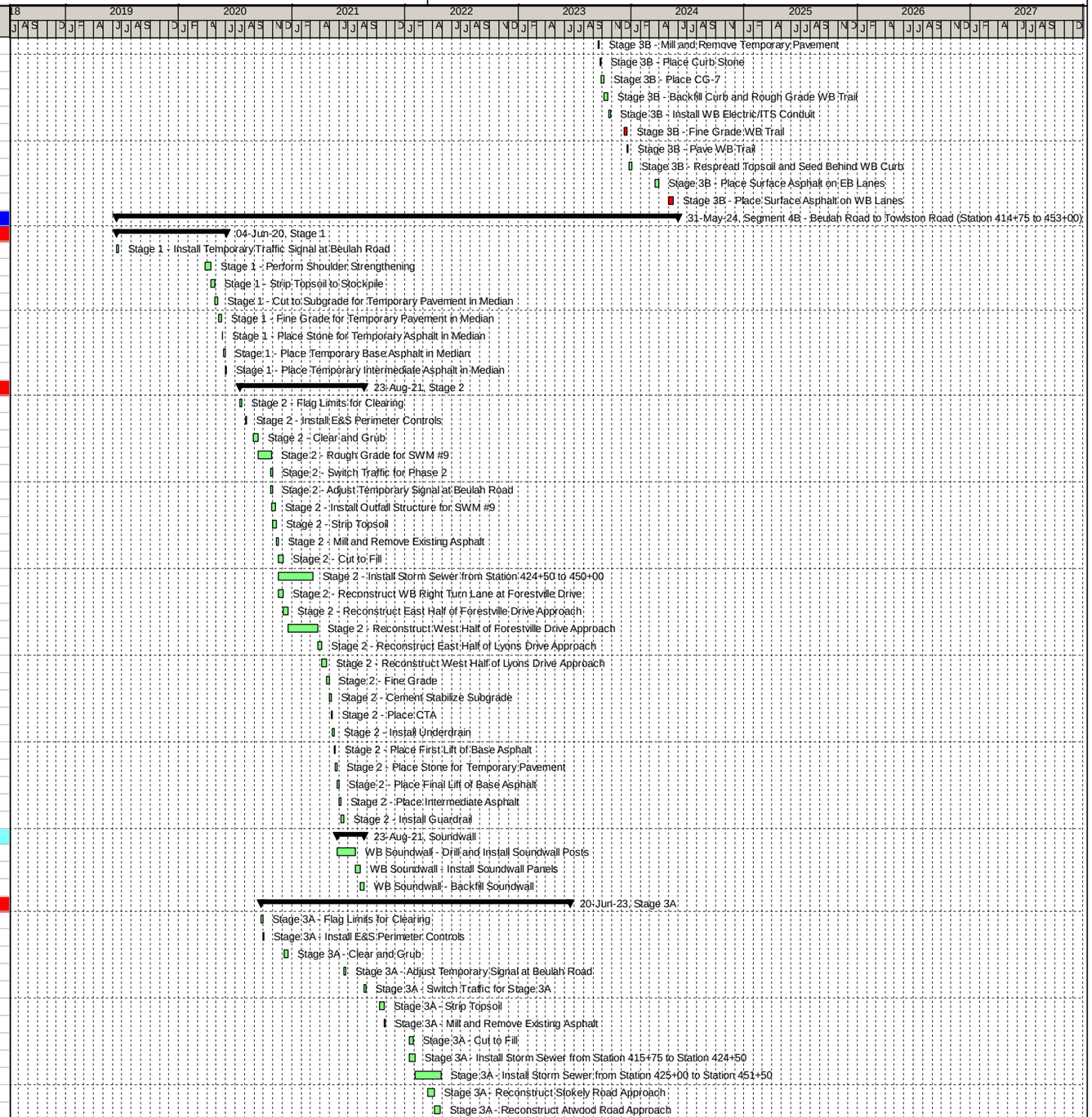
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C4A2210	Stage 2 - Place Stone for Temporary Pavement	4	227	20-Jul-21	23-Jul-21
C4A2220	Stage 2 - Place Final Lift of Base Asphalt	4	182	26-Jul-21	29-Jul-21
C4A2230	Stage 2 - Place Intermediate Asphalt	4	182	30-Jul-21	04-Aug-21
C4A2240	Stage 2 - Install Guardrail	6	227	05-Aug-21	12-Aug-21
Soundwall		37	8	18-May-22	11-Jul-22
C4A2250	WB Soundwall - Drill and Install Soundwall Posts	25	8	18-May-22	22-Jun-22
C4A2260	WB Soundwall - Install Soundwall Panels	6	8	23-Jun-22	30-Jun-22
C4A2270	WB Soundwall - Backfill Soundwall	6	8	01-Jul-22	11-Jul-22
Stage 3A		630	20	03-Dec-20	26-May-23
C4A3000	Stage 3A - Flag Limits for Clearing	2	30	03-Dec-20	07-Dec-20
C4A3010	Stage 3A - Install E&S Perimeter Controls	4	35	07-Dec-20	11-Dec-20
C4A3020	Stage 3A - Clear and Grub	10	30	21-Dec-20	05-Jan-21
C4A3030	Stage 3A - Switch Traffic for Stage 3A	4	8	12-Jul-22	15-Jul-22
C4A3040	Stage 3A - Strip Topsoil	10	8	18-Jul-22	29-Jul-22
C4A3050	Stage 3A - Mill and Remove Existing Asphalt	4	8	01-Aug-22	04-Aug-22
C4A3060	Stage 3A - Cut to Fill	8	8	05-Aug-22	16-Aug-22
C4A3070	Stage 3A - Install Strom Sewer from Station 390+00 to Station 415+75	51	51	05-Aug-22	17-Oct-22
C4A3080	Stage 3A - Reconstruct EB Right Turn Lane at Beulah Road	10	8	05-Aug-22	18-Aug-22
C4A3090	Stage 3A - Reconstruct EB Right Turn Lane at Newcombs Farm Road	10	8	19-Aug-22	01-Sep-22
C4A3100	Stage 3A - Reconstruct East Half of Newcombs Farm Road Approach	10	8	02-Sep-22	16-Sep-22
C4A3110	Stage 3A - Reconstruct EB Right Turn Lane at Middleton Ridge Road	10	8	19-Sep-22	30-Sep-22
C4A3130	Stage 3A - Reconstruct East Half of Middleton Ridge Road Approach	10	8	03-Oct-22	14-Oct-22
C4A3140	Stage 3A - Reconstruct West Half of Middleton Ridge Road Approach	10	8	17-Oct-22	28-Oct-22
C4A3120	Stage 3A - Install Storm Sewer from Station 375+00 to Station 387+50	21	51	18-Oct-22	15-Nov-22
C4A3150	Stage 3A - Reconstruct West Half of Newcombs Farm Road Approach	10	8	31-Oct-22	11-Nov-22
C4A3160	Stage 3A - Reconstruct East Half of Serenity Woods Lane Approach	10	8	14-Nov-22	29-Nov-22
C4A3170	Stage 3A - Reconstruct West Half of Serenity Woods Lane Approach	10	8	30-Nov-22	13-Dec-22
C4A3180	Stage 3A - Fine Grade	8	33	14-Dec-22	23-Dec-22
C4A3190	Stage 3A - Cement Stabilize Subgrade	4	8	16-Mar-23	21-Mar-23
C4A3200	Stage 3A - Place CTA	4	8	22-Mar-23	27-Mar-23
C4A3210	Stage 3A - Install Underdrain	4	8	28-Mar-23	31-Mar-23
C4A3220	Stage 3A - Place First Lift of Base Asphalt	4	8	03-Apr-23	06-Apr-23
C4A3230	Stage 3A - Place Curb Stone	4	8	07-Apr-23	12-Apr-23
C4A3240	Stage 3A - Place CG-7	6	8	13-Apr-23	20-Apr-23
C4A3250	Stage 3A - Backfill Curb and Rough Grade Trail	4	8	21-Apr-23	26-Apr-23
C4A3260	Stage 3A - Place Final Lift of Base Asphalt	4	28	27-Apr-23	02-May-23
C4A3310	Stage 3A - Install Electric/ITS Conduit	6	8	27-Apr-23	04-May-23
C4A3270	Stage 3A - Place Intermediate Asphalt	4	28	03-May-23	08-May-23
C4A3290	Stage 3A - Fine Grade Trail	6	8	05-May-23	12-May-23
C4A3280	Stage 3A - Install Guardrail	6	28	09-May-23	16-May-23
C4A3300	Stage 3A - Pave Trail	4	8	15-May-23	18-May-23
C4A3320	Stage 3A - Respread Topsoil and Seed	6	8	19-May-23	26-May-23
Soundwall		10	11	06-Feb-23	21-Feb-23
C4A3330	EB Soundwall - Drill and Install Soundwall Posts	6	11	06-Feb-23	14-Feb-23
C4A3340	EB Soundwall - Install Soundwall Panels	2	11	16-Feb-23	17-Feb-23
C4A3350	EB Soundwall - Backfill Soundwall	2	11	20-Feb-23	21-Feb-23
Stage 3B		255	0	17-May-23	16-May-24
C4A3500	Stage 3B - Switch Traffic for Stage 3B	4	28	17-May-23	22-May-23
C4A3510	Stage 3B - Mill and Remove Existing Asphalt	4	28	23-May-23	26-May-23
C4A3520	Stage 3B - Cut to Subgrade	8	28	30-May-23	08-Jun-23
C4A3530	Stage 3B - Reconstruct EB Left Turn Lane at Beulah Road	10	28	30-May-23	12-Jun-23
C4A3540	Stage 3B - Reconstruct EB Left Turn Lane at Trotting Horse Road	10	28	13-Jun-23	26-Jun-23
C4A3550	Stage 3B - Reconstruct WB Left Turn Lane at Middleton Ridge Road	10	28	27-Jun-23	11-Jul-23
C4A3560	Stage 3B - Fine Grade	8	28	12-Jul-23	21-Jul-23
C4A3570	Stage 3B - Cement Stabilize Subgrade	4	28	24-Jul-23	27-Jul-23
C4A3580	Stage 3B - Place CTA	4	28	28-Jul-23	02-Aug-23
C4A3590	Stage 3B - Place First Lift of Base Asphalt	4	28	03-Aug-23	08-Aug-23
C4A3600	Stage 3B - Place Curb Stone	4	28	09-Aug-23	14-Aug-23
C4A3610	Stage 3B - Place CG-3	6	28	15-Aug-23	22-Aug-23
C4A3620	Stage 3B - Backfill Curb	4	28	23-Aug-23	28-Aug-23
C4A3630	Stage 3B - Place Final Lift of Base Asphalt	4	28	29-Aug-23	01-Sep-23
C4A3640	Stage 3B - Place Intermediate Asphalt	4	28	05-Sep-23	08-Sep-23
C4A3650	Stage 3B - Shift WB Lanes to South	5	28	11-Sep-23	15-Sep-23



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

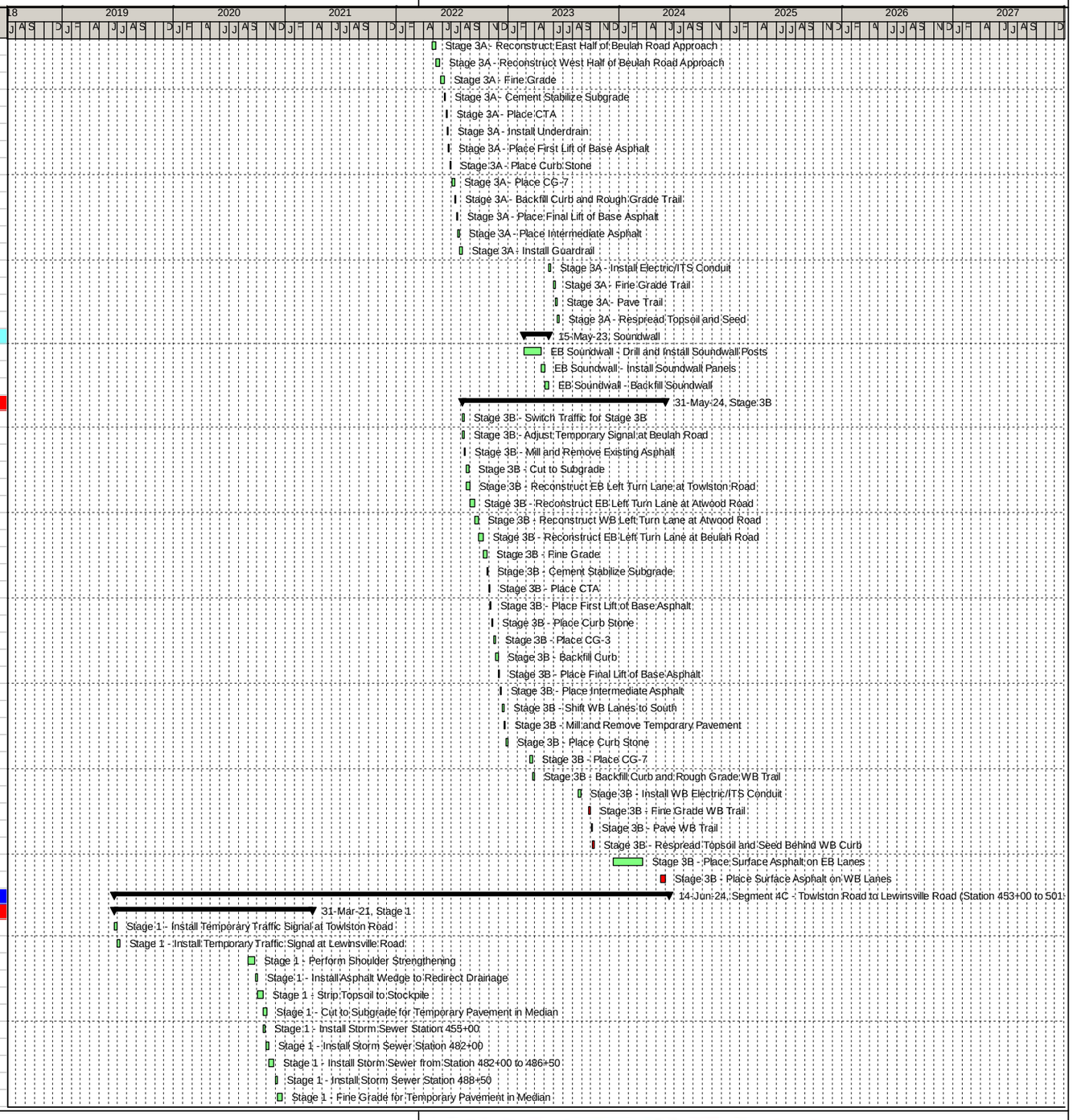
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C4A3660	Stage 3B - Mill and Remove Temporary Pavement	4	28	18-Sep-23	21-Sep-23
C4A3670	Stage 3B - Place Curb Stone	4	28	22-Sep-23	27-Sep-23
C4A3680	Stage 3B - Place CG-7	6	28	28-Sep-23	05-Oct-23
C4A3700	Stage 3B - Backfill Curb and Rough Grade WB Trail	10	28	06-Oct-23	19-Oct-23
C4A3730	Stage 3B - Install WB Electric/ITS Conduit	6	28	20-Oct-23	27-Oct-23
C4A3690	Stage 3B - Fine Grade WB Trail	6	0	11-Dec-23	18-Dec-23
C4A3710	Stage 3B - Pave WB Trail	4	0	19-Dec-23	22-Dec-23
C4A3740	Stage 3B - Respread Topsoil and Seed Behind WB Curb	6	44	26-Dec-23	03-Jan-24
C4A3720	Stage 3B - Place Surface Asphalt on EB Lanes	10	13	19-Mar-24	01-Apr-24
C4A3750	Stage 3B - Place Surface Asphalt on WB Lanes	10	0	03-May-24	16-May-24
Segment 4B - Beulah Road to Towlston Road (Station 414+75 to 453+00)		1260	0	14-Jun-19	31-May-24
Stage 1		247	57	14-Jun-19	04-Jun-20
C4B1000	Stage 1 - Install Temporary Traffic Signal at Beulah Road	5	181	14-Jun-19	21-Jun-19
C4B1010	Stage 1 - Perform Shoulder Strengthening	13	57	26-Mar-20	13-Apr-20
C4B1020	Stage 1 - Strip Topsoil to Stockpile	10	57	14-Apr-20	27-Apr-20
C4B1030	Stage 1 - Cut to Subgrade for Temporary Pavement in Median	8	57	28-Apr-20	07-May-20
C4B1040	Stage 1 - Fine Grade for Temporary Pavement in Median	8	57	08-May-20	19-May-20
C4B1050	Stage 1 - Place Stone for Temporary Asphalt in Median	3	57	20-May-20	22-May-20
C4B1060	Stage 1 - Place Temporary Base Asphalt in Median	4	57	26-May-20	29-May-20
C4B1070	Stage 1 - Place Temporary Intermediate Asphalt in Median	4	57	01-Jun-20	04-Jun-20
Stage 2		279	247	17-Jul-20	23-Aug-21
C4B2000	Stage 2 - Flag Limits for Clearing	2	35	17-Jul-20	21-Jul-20
C4B2010	Stage 2 - Install E&S Perimeter Controls	4	27	03-Aug-20	06-Aug-20
C4B2020	Stage 2 - Clear and Grub	10	11	28-Aug-20	14-Sep-20
C4B2030	Stage 2 - Rough Grade for SWM #9	30	66	14-Sep-20	26-Oct-20
C4B2050	Stage 2 - Switch Traffic for Phase 2	4	59	23-Oct-20	29-Oct-20
C4B2060	Stage 2 - Adjust Temporary Signal at Beulah Road	4	59	23-Oct-20	29-Oct-20
C4B2040	Stage 2 - Install Outfall Structure for SWM #9	10	66	26-Oct-20	09-Nov-20
C4B2070	Stage 2 - Strip Topsoil	10	59	29-Oct-20	12-Nov-20
C4B2080	Stage 2 - Mill and Remove Existing Asphalt	4	59	12-Nov-20	18-Nov-20
C4B2090	Stage 2 - Cut to Fill	8	59	18-Nov-20	02-Dec-20
C4B2100	Stage 2 - Install Storm Sewer from Station 424+50 to 450+00	66	59	18-Nov-20	11-Mar-21
C4B2110	Stage 2 - Reconstruct WB Right Turn Lane at Forestville Drive	10	30	18-Nov-20	04-Dec-20
C4B2120	Stage 2 - Reconstruct East Half of Forestville Drive Approach	10	30	04-Dec-20	18-Dec-20
C4B2130	Stage 2 - Reconstruct West Half of Forestville Drive Approach	10	30	18-Dec-20	24-Mar-21
C4B2140	Stage 2 - Reconstruct East Half of Lyons Drive Approach	10	30	24-Mar-21	07-Apr-21
C4B2150	Stage 2 - Reconstruct West Half of Lyons Drive Approach	10	30	07-Apr-21	21-Apr-21
C4B2160	Stage 2 - Fine Grade	8	30	21-Apr-21	03-May-21
C4B2170	Stage 2 - Cement Stabilize Subgrade	4	168	03-May-21	07-May-21
C4B2180	Stage 2 - Place CTA	3	168	07-May-21	12-May-21
C4B2190	Stage 2 - Install Underdrain	3	213	12-May-21	17-May-21
C4B2200	Stage 2 - Place First Lift of Base Asphalt	4	168	17-May-21	21-May-21
C4B2210	Stage 2 - Place Stone for Temporary Pavement	4	213	21-May-21	27-May-21
C4B2220	Stage 2 - Place Final Lift of Base Asphalt	4	237	27-May-21	03-Jun-21
C4B2230	Stage 2 - Place Intermediate Asphalt	4	237	03-Jun-21	09-Jun-21
C4B2240	Stage 2 - Install Guardrail	6	282	09-Jun-21	17-Jun-21
Soundwall		59	11	28-May-21	23-Aug-21
C4B2250	WB Soundwall - Drill and Install Soundwall Posts	39	11	28-May-21	26-Jul-21
C4B2260	WB Soundwall - Install Soundwall Panels	10	11	26-Jul-21	09-Aug-21
C4B2270	WB Soundwall - Backfill Soundwall	10	11	09-Aug-21	23-Aug-21
Stage 3A		694	8	24-Sep-20	20-Jun-23
C4B3000	Stage 3A - Flag Limits for Clearing	2	70	24-Sep-20	28-Sep-20
C4B3010	Stage 3A - Install E&S Perimeter Controls	4	73	28-Sep-20	02-Oct-20
C4B3020	Stage 3A - Clear and Grub	10	30	07-Dec-20	18-Dec-20
C4B3030	Stage 3A - Adjust Temporary Signal at Beulah Road	4	282	17-Jun-21	23-Jun-21
C4B3040	Stage 3A - Switch Traffic for Stage 3A	4	236	23-Aug-21	27-Aug-21
C4B3050	Stage 3A - Strip Topsoil	10	177	12-Oct-21	25-Oct-21
C4B3060	Stage 3A - Mill and Remove Existing Asphalt	4	177	26-Oct-21	29-Oct-21
C4B3070	Stage 3A - Cut to Fill	8	130	14-Jan-22	27-Jan-22
C4B3080	Stage 3A - Install Storm Sewer from Station 415+75 to Station 424+50	12	130	14-Jan-22	03-Feb-22
C4B3100	Stage 3A - Install Storm Sewer from Station 425+00 to Station 451+50	54	130	04-Feb-22	27-Apr-22
C4B3090	Stage 3A - Reconstruct Stokely Road Approach	15	111	16-Mar-22	05-Apr-22
C4B3110	Stage 3A - Reconstruct Atwood Road Approach	15	111	06-Apr-22	26-Apr-22



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

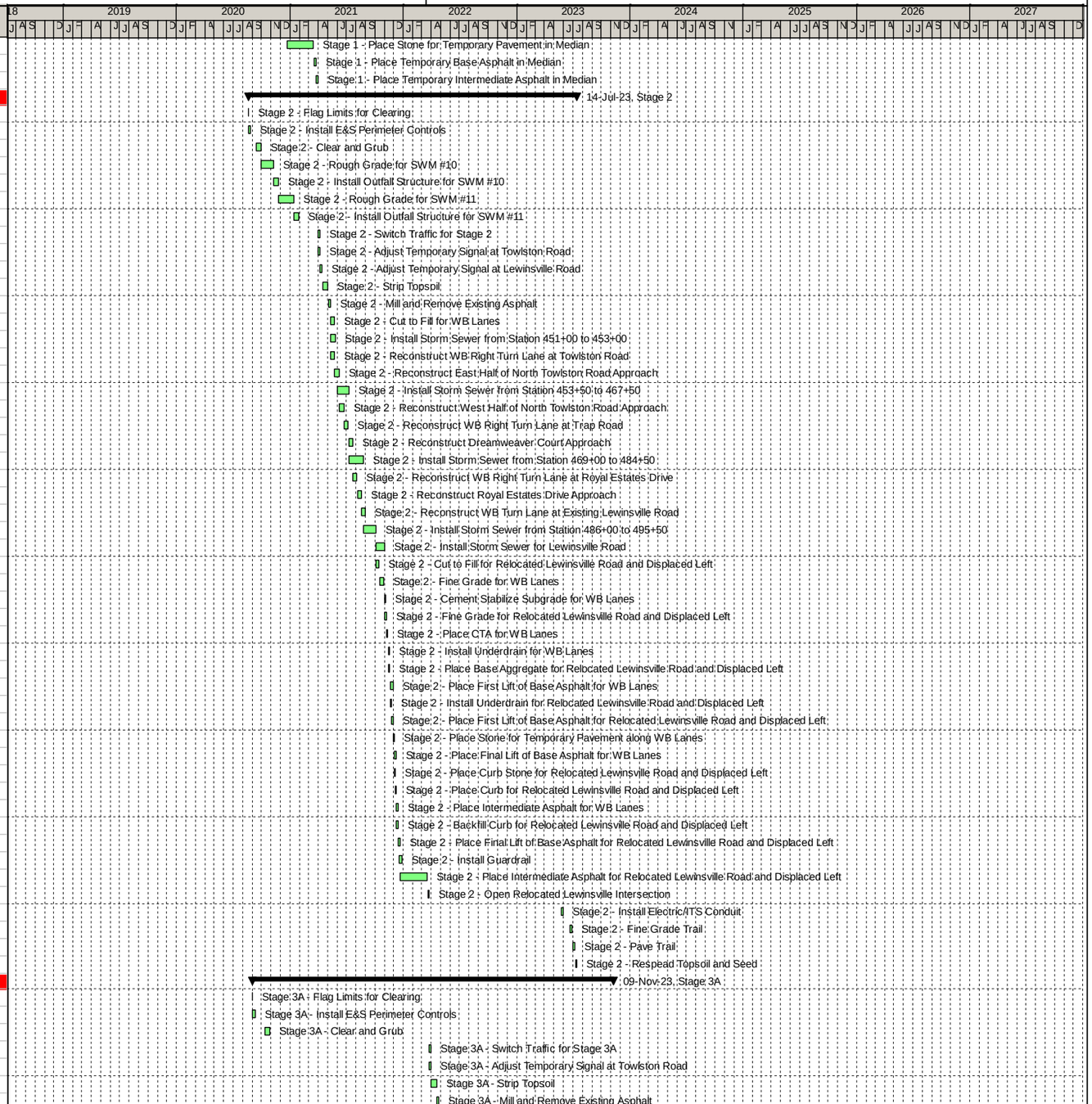
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C4B3120	Stage 3A - Reconstruct East Half of Beulah Road Approach	10	111	27-Apr-22	10-May-22
C4B3130	Stage 3A - Reconstruct West Half of Beulah Road Approach	10	111	11-May-22	24-May-22
C4B3140	Stage 3A - Fine Grade	8	111	25-May-22	06-Jun-22
C4B3150	Stage 3A - Cement Stabilize Subgrade	4	111	07-Jun-22	10-Jun-22
C4B3160	Stage 3A - Place CTA	3	111	13-Jun-22	15-Jun-22
C4B3170	Stage 3A - Install Underdrain	3	111	16-Jun-22	20-Jun-22
C4B3180	Stage 3A - Place First Lift of Base Asphalt	4	111	21-Jun-22	24-Jun-22
C4B3190	Stage 3A - Place Curb Stone	4	111	27-Jun-22	30-Jun-22
C4B3200	Stage 3A - Place CG-7	6	111	01-Jul-22	11-Jul-22
C4B3210	Stage 3A - Backfill Curb and Rough Grade Trail	4	111	12-Jul-22	15-Jul-22
C4B3220	Stage 3A - Place Final Lift of Base Asphalt	4	111	18-Jul-22	21-Jul-22
C4B3230	Stage 3A - Place Intermediate Asphalt	4	111	22-Jul-22	27-Jul-22
C4B3240	Stage 3A - Install Guardrail	6	155	28-Jul-22	04-Aug-22
C4B3270	Stage 3A - Install Electric/ITS Conduit	6	11	16-May-23	23-May-23
C4B3250	Stage 3A - Fine Grade Trail	6	8	30-May-23	06-Jun-23
C4B3260	Stage 3A - Pave Trail	4	8	07-Jun-23	12-Jun-23
C4B3280	Stage 3A - Respread Topsoil and Seed	6	8	13-Jun-23	20-Jun-23
Soundwall		55	11	23-Feb-23	15-May-23
C4B3290	EB Soundwall - Drill and Install Soundwall Posts	37	11	23-Feb-23	19-Apr-23
C4B3300	EB Soundwall - Install Soundwall Panels	9	11	20-Apr-23	02-May-23
C4B3310	EB Soundwall - Backfill Soundwall	9	11	03-May-23	15-May-23
Stage 3B		463	0	05-Aug-22	31-May-24
C4B3500	Stage 3B - Switch Traffic for Stage 3B	4	155	05-Aug-22	10-Aug-22
C4B3510	Stage 3B - Adjust Temporary Signal at Beulah Road	4	155	05-Aug-22	10-Aug-22
C4B3520	Stage 3B - Mill and Remove Existing Asphalt	4	155	11-Aug-22	16-Aug-22
C4B3530	Stage 3B - Cut to Subgrade	8	155	17-Aug-22	26-Aug-22
C4B3540	Stage 3B - Reconstruct EB Left Turn Lane at Towlston Road	10	111	17-Aug-22	30-Aug-22
C4B3550	Stage 3B - Reconstruct EB Left Turn Lane at Atwood Road	10	111	31-Aug-22	14-Sep-22
C4B3560	Stage 3B - Reconstruct WB Left Turn Lane at Atwood Road	10	111	15-Sep-22	28-Sep-22
C4B3570	Stage 3B - Reconstruct EB Left Turn Lane at Beulah Road	10	111	29-Sep-22	12-Oct-22
C4B3580	Stage 3B - Fine Grade	8	155	13-Oct-22	24-Oct-22
C4B3590	Stage 3B - Cement Stabilize Subgrade	4	111	25-Oct-22	28-Oct-22
C4B3600	Stage 3B - Place CTA	3	111	31-Oct-22	02-Nov-22
C4B3610	Stage 3B - Place First Lift of Base Asphalt	4	111	03-Nov-22	08-Nov-22
C4B3620	Stage 3B - Place Curb Stone	4	155	09-Nov-22	14-Nov-22
C4B3630	Stage 3B - Place CG-3	6	111	15-Nov-22	22-Nov-22
C4B3640	Stage 3B - Backfill Curb	4	155	23-Nov-22	30-Nov-22
C4B3650	Stage 3B - Place Final Lift of Base Asphalt	4	111	01-Dec-22	06-Dec-22
C4B3660	Stage 3B - Place Intermediate Asphalt	4	111	07-Dec-22	12-Dec-22
C4B3670	Stage 3B - Shift WB Lanes to South	5	155	13-Dec-22	19-Dec-22
C4B3680	Stage 3B - Mill and Remove Temporary Pavement	4	155	20-Dec-22	23-Dec-22
C4B3690	Stage 3B - Place Curb Stone	4	155	27-Dec-22	03-Jan-23
C4B3700	Stage 3B - Place CG-7	6	115	16-Mar-23	23-Mar-23
C4B3710	Stage 3B - Backfill Curb and Rough Grade WB Trail	6	115	24-Mar-23	31-Mar-23
C4B3740	Stage 3B - Install WB Electric/ITS Conduit	6	17	21-Aug-23	28-Aug-23
C4B3720	Stage 3B - Fine Grade WB Trail	6	0	22-Sep-23	29-Sep-23
C4B3730	Stage 3B - Pave WB Trail	4	0	02-Oct-23	05-Oct-23
C4B3760	Stage 3B - Respread Topsoil and Seed Behind WB Curb	6	0	06-Oct-23	13-Oct-23
C4B3750	Stage 3B - Place Surface Asphalt on EB Lanes	10	13	12-Dec-23	18-Mar-24
C4B3770	Stage 3B - Place Surface Asphalt on WB Lanes	10	0	17-May-24	31-May-24
Segment 4C - Towlston Road to Lewinsville Road (Station 453+00 to 501+50)		1265	0	21-Jun-19	14-Jun-24
Stage 1		450	18	21-Jun-19	31-Mar-21
C4C1000	Stage 1 - Install Temporary Traffic Signal at Towlston Road	5	181	21-Jun-19	28-Jun-19
C4C1010	Stage 1 - Install Temporary Traffic Signal at Lewinsville Road	5	188	28-Jun-19	08-Jul-19
C4C1020	Stage 1 - Perform Shoulder Strengthening	17	57	01-Sep-20	24-Sep-20
C4C1030	Stage 1 - Install Asphalt Wedge to Redirect Drainage	5	57	25-Sep-20	01-Oct-20
C4C1040	Stage 1 - Strip Topsoil to Stockpile	13	63	02-Oct-20	20-Oct-20
C4C1050	Stage 1 - Cut to Subgrade for Temporary Pavement in Median	10	63	21-Oct-20	03-Nov-20
C4C1060	Stage 1 - Install Storm Sewer Station 455+00	6	63	21-Oct-20	28-Oct-20
C4C1070	Stage 1 - Install Storm Sewer Station 482+00	8	63	29-Oct-20	09-Nov-20
C4C1080	Stage 1 - Install Storm Sewer from Station 482+00 to 486+50	12	63	10-Nov-20	25-Nov-20
C4C1090	Stage 1 - Install Storm Sewer Station 488+50	6	63	30-Nov-20	07-Dec-20
C4C1100	Stage 1 - Fine Grade for Temporary Pavement in Median	10	63	08-Dec-20	21-Dec-20



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

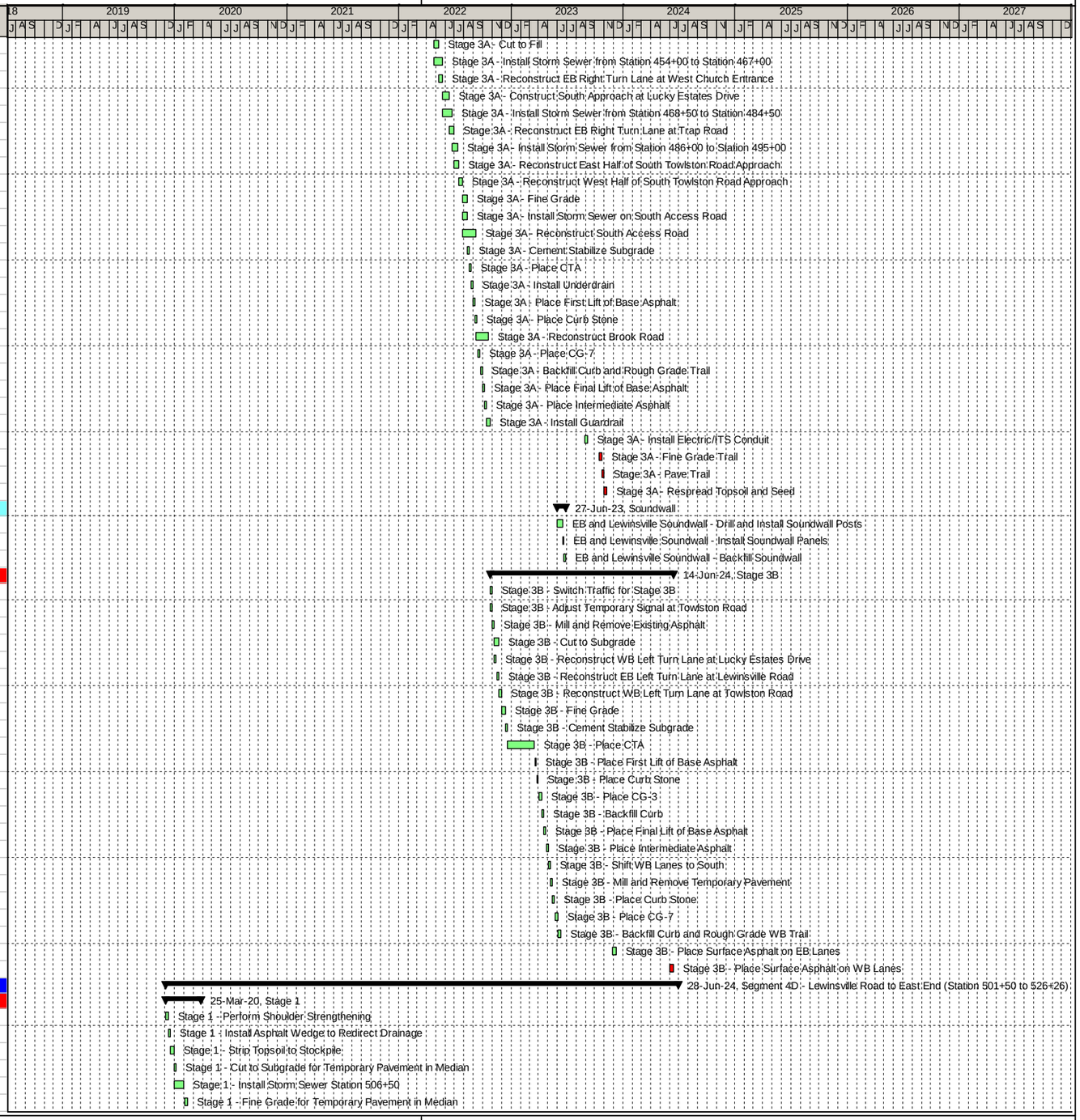
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C4C1110	Stage 1 - Place Stone for Temporary Pavement in Median	4	18	22-Dec-20	17-Mar-21
C4C1120	Stage 1 - Place Temporary Base Asphalt in Median	5	18	18-Mar-21	24-Mar-21
C4C1130	Stage 1 - Place Temporary Intermediate Asphalt in Median	5	18	25-Mar-21	31-Mar-21
Stage 2		737	8	18-Aug-20	14-Jul-23
C4C2000	Stage 2 - Flag Limits for Clearing	2	34	18-Aug-20	20-Aug-20
C4C2010	Stage 2 - Install E&S Perimeter Controls	5	34	20-Aug-20	27-Aug-20
C4C2020	Stage 2 - Clear and Grub	10	23	14-Sep-20	28-Sep-20
C4C2030	Stage 2 - Rough Grade for SWM #10	30	123	28-Sep-20	09-Nov-20
C4C2040	Stage 2 - Install Outfall Structure for SWM #10	10	123	09-Nov-20	23-Nov-20
C4C2050	Stage 2 - Rough Grade for SWM #11	30	157	23-Nov-20	12-Jan-21
C4C2080	Stage 2 - Install Outfall Structure for SWM #11	10	157	12-Jan-21	29-Jan-21
C4C2060	Stage 2 - Switch Traffic for Stage 2	5	23	01-Apr-21	07-Apr-21
C4C2070	Stage 2 - Adjust Temporary Signal at Towlston Road	5	18	01-Apr-21	07-Apr-21
C4C2090	Stage 2 - Adjust Temporary Signal at Lewinsville Road	5	18	08-Apr-21	14-Apr-21
C4C2100	Stage 2 - Strip Topsoil	13	18	15-Apr-21	03-May-21
C4C2110	Stage 2 - Mill and Remove Existing Asphalt	5	18	04-May-21	10-May-21
C4C2120	Stage 2 - Cut to Fill for WB Lanes	10	18	11-May-21	24-May-21
C4C2130	Stage 2 - Install Storm Sewer from Station 451+00 to 453+00	14	18	11-May-21	28-May-21
C4C2150	Stage 2 - Reconstruct WB Right Turn Lane at Towlston Road	10	60	11-May-21	24-May-21
C4C2170	Stage 2 - Reconstruct East Half of North Towlston Road Approach	10	60	25-May-21	08-Jun-21
C4C2140	Stage 2 - Install Storm Sewer from Station 453+50 to 467+50	27	18	01-Jun-21	08-Jul-21
C4C2180	Stage 2 - Reconstruct West Half of North Towlston Road Approach	10	60	09-Jun-21	22-Jun-21
C4C2190	Stage 2 - Reconstruct WB Right Turn Lane at Trap Road	10	60	23-Jun-21	07-Jul-21
C4C2210	Stage 2 - Reconstruct Dreamweaver Court Approach	10	60	08-Jul-21	21-Jul-21
C4C2160	Stage 2 - Install Storm Sewer from Station 469+00 to 484+50	33	18	09-Jul-21	24-Aug-21
C4C2220	Stage 2 - Reconstruct WB Right Turn Lane at Royal Estates Drive	10	60	22-Jul-21	04-Aug-21
C4C2230	Stage 2 - Reconstruct Royal Estates Drive Approach	10	60	05-Aug-21	18-Aug-21
C4C2260	Stage 2 - Reconstruct WB Turn Lane at Existing Lewinsville Road	10	60	19-Aug-21	01-Sep-21
C4C2200	Stage 2 - Install Storm Sewer from Station 486+00 to 495+50	29	18	25-Aug-21	05-Oct-21
C4C2240	Stage 2 - Install Storm Sewer for Lewinsville Road	20	18	06-Oct-21	02-Nov-21
C4C2250	Stage 2 - Cut to Fill for Relocated Lewinsville Road and Displaced Left	8	19	06-Oct-21	15-Oct-21
C4C2270	Stage 2 - Fine Grade for WB Lanes	10	19	18-Oct-21	29-Oct-21
C4C2280	Stage 2 - Cement Stabilize Subgrade for WB Lanes	5	19	01-Nov-21	05-Nov-21
C4C2290	Stage 2 - Fine Grade for Relocated Lewinsville Road and Displaced Left	4	18	03-Nov-21	08-Nov-21
C4C2300	Stage 2 - Place CTA for WB Lanes	4	18	09-Nov-21	12-Nov-21
C4C2310	Stage 2 - Install Underdrain for WB Lanes	4	18	15-Nov-21	18-Nov-21
C4C2320	Stage 2 - Place Base Aggregate for Relocated Lewinsville Road and Displaced Left	2	20	15-Nov-21	16-Nov-21
C4C2330	Stage 2 - Place First Lift of Base Asphalt for WB Lanes	5	18	19-Nov-21	29-Nov-21
C4C2340	Stage 2 - Install Underdrain for Relocated Lewinsville Road and Displaced Left	3	18	19-Nov-21	23-Nov-21
C4C2350	Stage 2 - Place First Lift of Base Asphalt for Relocated Lewinsville Road and Displaced Left	2	18	24-Nov-21	29-Nov-21
C4C2360	Stage 2 - Place Stone for Temporary Pavement along WB Lanes	3	59	30-Nov-21	02-Dec-21
C4C2370	Stage 2 - Place Final Lift of Base Asphalt for WB Lanes	5	108	03-Dec-21	09-Dec-21
C4C2380	Stage 2 - Place Curb Stone for Relocated Lewinsville Road and Displaced Left	2	59	03-Dec-21	06-Dec-21
C4C2390	Stage 2 - Place Curb for Relocated Lewinsville Road and Displaced Left	3	14	07-Dec-21	09-Dec-21
C4C2400	Stage 2 - Place Intermediate Asphalt for WB Lanes	5	108	10-Dec-21	16-Dec-21
C4C2410	Stage 2 - Backfill Curb for Relocated Lewinsville Road and Displaced Left	3	59	10-Dec-21	14-Dec-21
C4C2420	Stage 2 - Place Final Lift of Base Asphalt for Relocated Lewinsville Road and Displaced Left	5	104	15-Dec-21	21-Dec-21
C4C2430	Stage 2 - Install Guardrail	7	153	17-Dec-21	28-Dec-21
C4C2440	Stage 2 - Place Intermediate Asphalt for Relocated Lewinsville Road and Displaced Left	5	104	22-Dec-21	18-Mar-22
C4C2450	Stage 2 - Open Relocated Lewinsville Intersection	3	104	21-Mar-22	23-Mar-22
C4C2480	Stage 2 - Install Electric/ITS Conduit	5	22	24-May-23	31-May-23
C4C2460	Stage 2 - Fine Grade Trail	7	8	21-Jun-23	29-Jun-23
C4C2470	Stage 2 - Pave Trail	5	8	30-Jun-23	07-Jul-23
C4C2490	Stage 2 - Respead Topsoil and Seed	5	8	10-Jul-23	14-Jul-23
Stage 3A		812	0	31-Aug-20	09-Nov-23
C4C3000	Stage 3A - Flag Limits for Clearing	2	55	31-Aug-20	01-Sep-20
C4C3010	Stage 3A - Install E&S Perimeter Controls	5	55	02-Sep-20	09-Sep-20
C4C3020	Stage 3A - Clear and Grub	10	32	12-Oct-20	26-Oct-20
C4C3030	Stage 3A - Switch Traffic for Stage 3A	5	104	24-Mar-22	30-Mar-22
C4C3040	Stage 3A - Adjust Temporary Signal at Towlston Road	5	104	24-Mar-22	30-Mar-22
C4C3050	Stage 3A - Strip Topsoil	13	104	31-Mar-22	18-Apr-22
C4C3060	Stage 3A - Mill and Remove Existing Asphalt	5	104	19-Apr-22	25-Apr-22



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

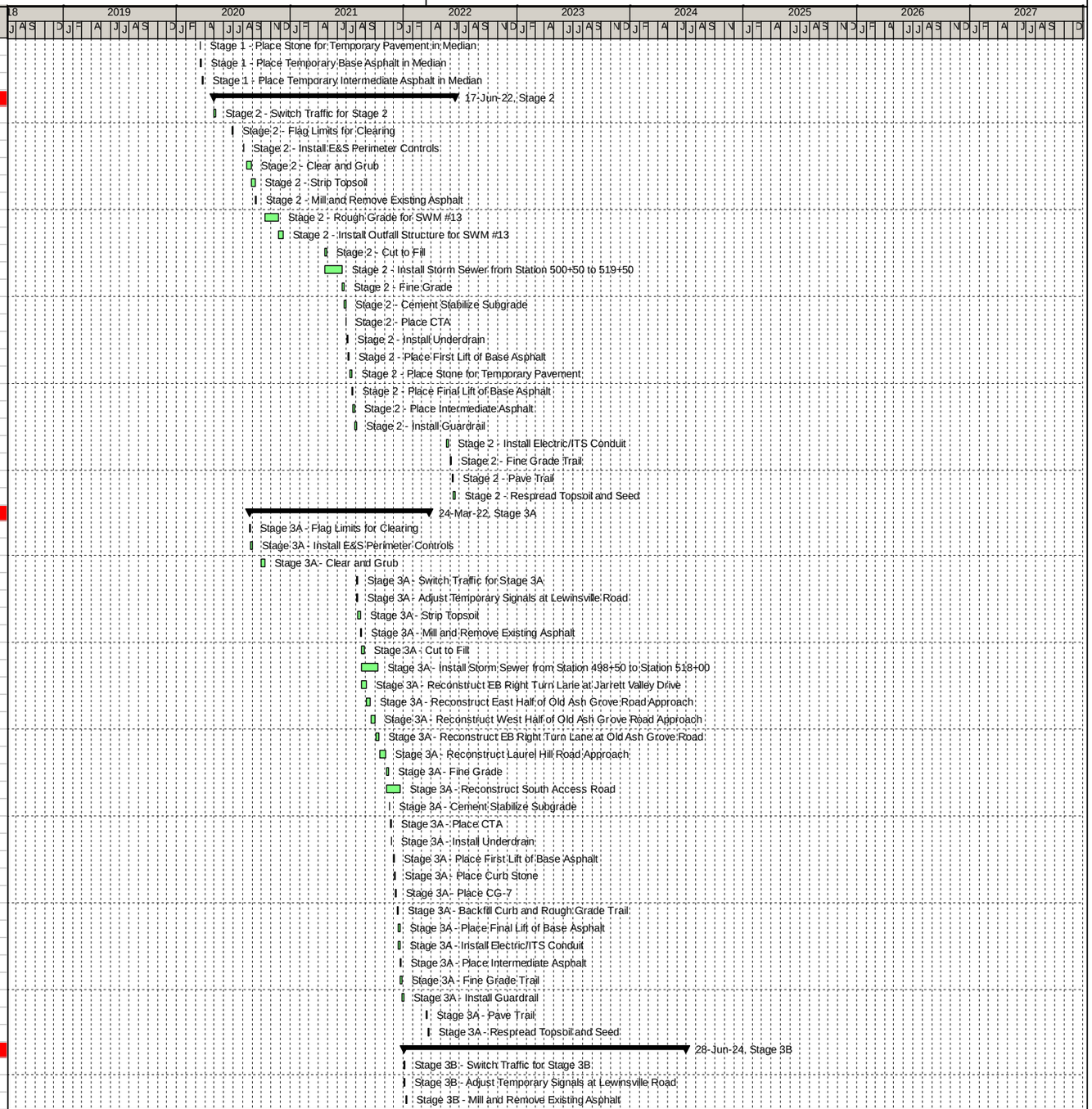
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C4C3070	Stage 3A - Cut to Fill	10	104	26-Apr-22	09-May-22
C4C3080	Stage 3A - Install Storm Sewer from Station 454+00 to Station 467+00	20	159	26-Apr-22	23-May-22
C4C3090	Stage 3A - Reconstruct EB Right Turn Lane at West Church Entrance	10	104	10-May-22	23-May-22
C4C3100	Stage 3A - Construct South Approach at Lucky Estates Drive	15	104	24-May-22	14-Jun-22
C4C3110	Stage 3A - Install Storm Sewer from Station 468+50 to Station 484+50	22	159	24-May-22	23-Jun-22
C4C3120	Stage 3A - Reconstruct EB Right Turn Lane at Trap Road	10	104	15-Jun-22	28-Jun-22
C4C3130	Stage 3A - Install Storm Sewer from Station 486+00 to Station 495+00	11	159	24-Jun-22	11-Jul-22
C4C3140	Stage 3A - Reconstruct East Half of South Towlston Road Approach	10	104	29-Jun-22	13-Jul-22
C4C3150	Stage 3A - Reconstruct West Half of South Towlston Road Approach	10	104	14-Jul-22	27-Jul-22
C4C3160	Stage 3A - Fine Grade	10	147	28-Jul-22	10-Aug-22
C4C3170	Stage 3A - Install Storm Sewer on South Access Road	11	198	28-Jul-22	11-Aug-22
C4C3180	Stage 3A - Reconstruct South Access Road	30	105	28-Jul-22	08-Sep-22
C4C3190	Stage 3A - Cement Stabilize Subgrade	5	103	11-Aug-22	17-Aug-22
C4C3200	Stage 3A - Place CTA	4	103	18-Aug-22	23-Aug-22
C4C3210	Stage 3A - Install Underdrain	4	147	24-Aug-22	29-Aug-22
C4C3220	Stage 3A - Place First Lift of Base Asphalt	5	103	30-Aug-22	06-Sep-22
C4C3230	Stage 3A - Place Curb Stone	5	147	07-Sep-22	13-Sep-22
C4C3240	Stage 3A - Reconstruct Brook Road	30	105	09-Sep-22	20-Oct-22
C4C3250	Stage 3A - Place CG-7	7	103	14-Sep-22	22-Sep-22
C4C3260	Stage 3A - Backfill Curb and Rough Grade Trail	5	147	23-Sep-22	29-Sep-22
C4C3270	Stage 3A - Place Final Lift of Base Asphalt	5	103	30-Sep-22	06-Oct-22
C4C3280	Stage 3A - Place Intermediate Asphalt	5	103	07-Oct-22	13-Oct-22
C4C3290	Stage 3A - Install Guardrail	7	147	14-Oct-22	24-Oct-22
C4C3320	Stage 3A - Install Electric/ITS Conduit	7	26	29-Aug-23	07-Sep-23
C4C3300	Stage 3A - Fine Grade Trail	7	0	16-Oct-23	24-Oct-23
C4C3310	Stage 3A - Pave Trail	5	0	25-Oct-23	31-Oct-23
C4C3330	Stage 3A - Respread Topsoil and Seed	7	0	01-Nov-23	09-Nov-23
Soundwall		20	76	31-May-23	27-Jun-23
C4C3340	EB and Lewinsville Soundwall - Drill and Install Soundwall Posts	14	76	31-May-23	19-Jun-23
C4C3350	EB and Lewinsville Soundwall - Install Soundwall Panels	3	76	20-Jun-23	22-Jun-23
C4C3360	EB and Lewinsville Soundwall - Backfill Soundwall	3	76	23-Jun-23	27-Jun-23
Stage 3B		417	0	25-Oct-22	14-Jun-24
C4C3500	Stage 3B - Switch Traffic for Stage 3B	5	159	25-Oct-22	31-Oct-22
C4C3510	Stage 3B - Adjust Temporary Signal at Towlston Road	5	159	25-Oct-22	31-Oct-22
C4C3520	Stage 3B - Mill and Remove Existing Asphalt	5	159	01-Nov-22	07-Nov-22
C4C3530	Stage 3B - Cut to Subgrade	10	147	08-Nov-22	21-Nov-22
C4C3540	Stage 3B - Reconstruct WB Left Turn Lane at Lucky Estates Drive	5	103	08-Nov-22	14-Nov-22
C4C3550	Stage 3B - Reconstruct EB Left Turn Lane at Lewinsville Road	5	103	15-Nov-22	21-Nov-22
C4C3560	Stage 3B - Reconstruct WB Left Turn Lane at Towlston Road	5	103	22-Nov-22	30-Nov-22
C4C3570	Stage 3B - Fine Grade	10	147	01-Dec-22	14-Dec-22
C4C3580	Stage 3B - Cement Stabilize Subgrade	5	103	15-Dec-22	21-Dec-22
C4C3590	Stage 3B - Place CTA	4	103	22-Dec-22	17-Mar-23
C4C3600	Stage 3B - Place First Lift of Base Asphalt	5	103	20-Mar-23	24-Mar-23
C4C3610	Stage 3B - Place Curb Stone	5	103	27-Mar-23	31-Mar-23
C4C3620	Stage 3B - Place CG-3	7	103	03-Apr-23	11-Apr-23
C4C3630	Stage 3B - Backfill Curb	5	103	12-Apr-23	18-Apr-23
C4C3640	Stage 3B - Place Final Lift of Base Asphalt	5	103	19-Apr-23	25-Apr-23
C4C3650	Stage 3B - Place Intermediate Asphalt	5	103	26-Apr-23	02-May-23
C4C3660	Stage 3B - Shift WB Lanes to South	5	103	03-May-23	09-May-23
C4C3670	Stage 3B - Mill and Remove Temporary Pavement	5	246	10-May-23	16-May-23
C4C3680	Stage 3B - Place Curb Stone	5	246	17-May-23	23-May-23
C4C3690	Stage 3B - Place CG-7	7	188	24-May-23	02-Jun-23
C4C3710	Stage 3B - Backfill Curb and Rough Grade WB Trail	7	246	05-Jun-23	13-Jun-23
C4C3700	Stage 3B - Place Surface Asphalt on EB Lanes	10	13	28-Nov-23	11-Dec-23
C4C3720	Stage 3B - Place Surface Asphalt on WB Lanes	10	0	03-Jun-24	14-Jun-24
Segment 4D - Lewinsville Road to East End (Station 501+50 to 526+26)		1164	22	02-Dec-19	28-Jun-24
Stage 1		81	57	02-Dec-19	25-Mar-20
C4D1000	Stage 1 - Perform Shoulder Strengthening	9	30	02-Dec-19	12-Dec-19
C4D1010	Stage 1 - Install Asphalt Wedge to Redirect Drainage	3	30	13-Dec-19	17-Dec-19
C4D1020	Stage 1 - Strip Topsoil to Stockpile	7	75	18-Dec-19	30-Dec-19
C4D1030	Stage 1 - Cut to Subgrade for Temporary Pavement in Median	3	75	31-Dec-19	06-Jan-20
C4D1040	Stage 1 - Install Storm Sewer Station 506+50	18	75	31-Dec-19	31-Jan-20
C4D1050	Stage 1 - Fine Grade for Temporary Pavement in Median	6	75	03-Feb-20	11-Feb-20



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

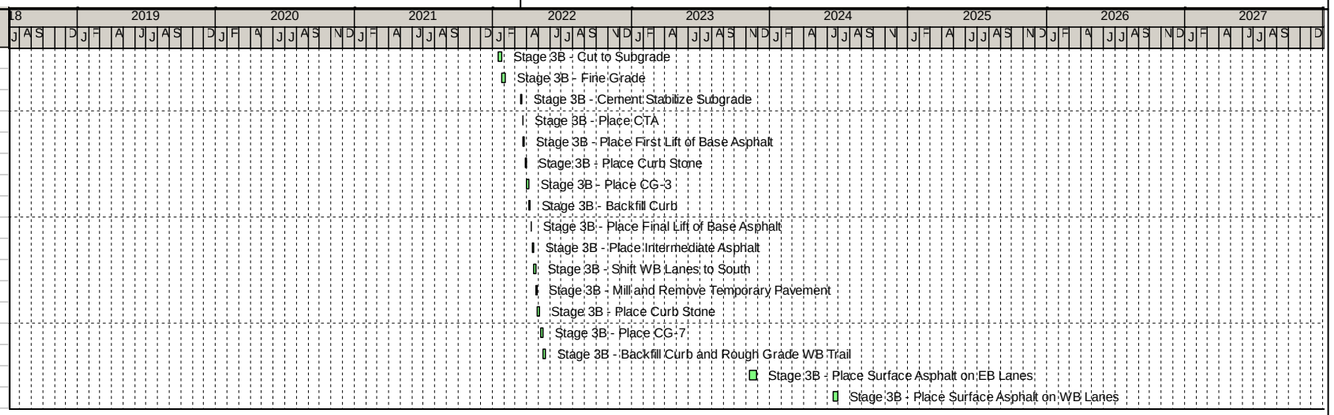
Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C4D1060	Stage 1 - Place Stone for Temporary Pavement in Median	2	57	16-Mar-20	17-Mar-20
C4D1070	Stage 1 - Place Temporary Base Asphalt in Median	3	57	18-Mar-20	20-Mar-20
C4D1080	Stage 1 - Place Temporary Intermediate Asphalt in Median	3	57	23-Mar-20	25-Mar-20
Stage 2		542	126	30-Apr-20	17-Jun-22
C4D2030	Stage 2 - Switch Traffic for Stage 2	5	318	30-Apr-20	06-May-20
C4D2000	Stage 2 - Flag Limits for Clearing	2	39	29-Jun-20	01-Jul-20
C4D2010	Stage 2 - Install E&S Perimeter Controls	3	18	03-Aug-20	05-Aug-20
C4D2020	Stage 2 - Clear and Grub	10	11	14-Aug-20	28-Aug-20
C4D2040	Stage 2 - Strip Topsoil	7	238	28-Aug-20	09-Sep-20
C4D2050	Stage 2 - Mill and Remove Existing Asphalt	3	238	09-Sep-20	14-Sep-20
C4D2070	Stage 2 - Rough Grade for SWM #13	30	178	12-Oct-20	23-Nov-20
C4D2080	Stage 2 - Install Outfall Structure for SWM #13	10	178	23-Nov-20	09-Dec-20
C4D2060	Stage 2 - Cut to Fill	6	95	23-Apr-21	30-Apr-21
C4D2090	Stage 2 - Install Storm Sewer from Station 500+50 to 519+50	38	95	23-Apr-21	16-Jun-21
C4D2100	Stage 2 - Fine Grade	6	104	17-Jun-21	24-Jun-21
C4D2110	Stage 2 - Cement Stabilize Subgrade	3	104	25-Jun-21	29-Jun-21
C4D2120	Stage 2 - Place CTA	2	104	30-Jun-21	01-Jul-21
C4D2130	Stage 2 - Install Underdrain	2	104	02-Jul-21	06-Jul-21
C4D2140	Stage 2 - Place First Lift of Base Asphalt	3	104	07-Jul-21	09-Jul-21
C4D2150	Stage 2 - Place Stone for Temporary Pavement	6	104	12-Jul-21	19-Jul-21
C4D2160	Stage 2 - Place Final Lift of Base Asphalt	3	104	20-Jul-21	22-Jul-21
C4D2170	Stage 2 - Place Intermediate Asphalt	3	104	23-Jul-21	27-Jul-21
C4D2180	Stage 2 - Install Guardrail	4	149	28-Jul-21	02-Aug-21
C4D2210	Stage 2 - Install Electric/ITS Conduit	6	126	20-May-22	27-May-22
C4D2190	Stage 2 - Fine Grade Trail	4	126	31-May-22	03-Jun-22
C4D2200	Stage 2 - Pave Trail	4	126	06-Jun-22	09-Jun-22
C4D2220	Stage 2 - Respread Topsoil and Seed	6	126	10-Jun-22	17-Jun-22
Stage 3A		401	145	24-Aug-20	24-Mar-22
C4D3000	Stage 3A - Flag Limits for Clearing	2	51	24-Aug-20	26-Aug-20
C4D3010	Stage 3A - Install E&S Perimeter Controls	3	51	26-Aug-20	31-Aug-20
C4D3020	Stage 3A - Clear and Grub	10	32	28-Sep-20	12-Oct-20
C4D3030	Stage 3A - Switch Traffic for Stage 3A	3	149	03-Aug-21	05-Aug-21
C4D3040	Stage 3A - Adjust Temporary Signals at Lewinsville Road	3	149	03-Aug-21	05-Aug-21
C4D3050	Stage 3A - Strip Topsoil	7	149	06-Aug-21	16-Aug-21
C4D3060	Stage 3A - Mill and Remove Existing Asphalt	3	149	17-Aug-21	19-Aug-21
C4D3070	Stage 3A - Cut to Fill	6	149	20-Aug-21	27-Aug-21
C4D3080	Stage 3A - Install Storm Sewer from Station 498+50 to Station 518+00	36	168	20-Aug-21	11-Oct-21
C4D3090	Stage 3A - Reconstruct EB Right Turn Lane at Jarrett Valley Drive	10	104	20-Aug-21	02-Sep-21
C4D3100	Stage 3A - Reconstruct East Half of Old Ash Grove Road Approach	10	104	03-Sep-21	17-Sep-21
C4D3110	Stage 3A - Reconstruct West Half of Old Ash Grove Road Approach	10	104	20-Sep-21	01-Oct-21
C4D3120	Stage 3A - Reconstruct EB Right Turn Lane at Old Ash Grove Road	10	104	04-Oct-21	15-Oct-21
C4D3130	Stage 3A - Reconstruct Laurel Hill Road Approach	15	104	18-Oct-21	05-Nov-21
C4D3140	Stage 3A - Fine Grade	6	149	08-Nov-21	15-Nov-21
C4D3150	Stage 3A - Reconstruct South Access Road	30	110	08-Nov-21	21-Dec-21
C4D3160	Stage 3A - Cement Stabilize Subgrade	3	104	16-Nov-21	18-Nov-21
C4D3170	Stage 3A - Place CTA	2	104	19-Nov-21	22-Nov-21
C4D3180	Stage 3A - Install Underdrain	2	149	23-Nov-21	24-Nov-21
C4D3190	Stage 3A - Place First Lift of Base Asphalt	3	104	29-Nov-21	01-Dec-21
C4D3200	Stage 3A - Place Curb Stone	3	149	02-Dec-21	06-Dec-21
C4D3210	Stage 3A - Place CG-7	4	104	07-Dec-21	10-Dec-21
C4D3220	Stage 3A - Backfill Curb and Rough Grade Trail	3	149	13-Dec-21	15-Dec-21
C4D3230	Stage 3A - Place Final Lift of Base Asphalt	3	104	16-Dec-21	20-Dec-21
C4D3280	Stage 3A - Install Electric/ITS Conduit	4	188	16-Dec-21	21-Dec-21
C4D3240	Stage 3A - Place Intermediate Asphalt	3	104	21-Dec-21	23-Dec-21
C4D3260	Stage 3A - Fine Grade Trail	4	188	22-Dec-21	28-Dec-21
C4D3250	Stage 3A - Install Guardrail	4	149	27-Dec-21	03-Jan-22
C4D3270	Stage 3A - Pave Trail	3	145	16-Mar-22	18-Mar-22
C4D3290	Stage 3A - Respread Topsoil and Seed	4	145	21-Mar-22	24-Mar-22
Stage 3B		634	22	04-Jan-22	28-Jun-24
C4D3500	Stage 3B - Switch Traffic for Stage 3B	3	149	04-Jan-22	07-Jan-22
C4D3510	Stage 3B - Adjust Temporary Signals at Lewinsville Road	3	149	04-Jan-22	07-Jan-22
C4D3520	Stage 3B - Mill and Remove Existing Asphalt	3	149	10-Jan-22	13-Jan-22



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

Activity ID	Activity Name	Original Duration	Total Float	Start	Finish
C4D3530	Stage 3B - Cut to Subgrade	6	149	14-Jan-22	24-Jan-22
C4D3540	Stage 3B - Fine Grade	6	149	25-Jan-22	03-Feb-22
C4D3550	Stage 3B - Cement Stabilize Subgrade	3	126	16-Mar-22	18-Mar-22
C4D3560	Stage 3B - Place CTA	2	126	21-Mar-22	22-Mar-22
C4D3570	Stage 3B - Place First Lift of Base Asphalt	3	126	23-Mar-22	25-Mar-22
C4D3580	Stage 3B - Place Curb Stone	3	126	28-Mar-22	30-Mar-22
C4D3590	Stage 3B - Place CG-3	4	126	31-Mar-22	05-Apr-22
C4D3600	Stage 3B - Backfill Curb	3	126	06-Apr-22	08-Apr-22
C4D3610	Stage 3B - Place Final Lift of Base Asphalt	3	126	11-Apr-22	13-Apr-22
C4D3620	Stage 3B - Place Intermediate Asphalt	3	126	14-Apr-22	18-Apr-22
C4D3630	Stage 3B - Shift WB Lanes to South	5	126	19-Apr-22	25-Apr-22
C4D3640	Stage 3B - Mill and Remove Temporary Pavement	3	126	26-Apr-22	28-Apr-22
C4D3650	Stage 3B - Place Curb Stone	5	126	29-Apr-22	05-May-22
C4D3660	Stage 3B - Place CG-7	5	126	06-May-22	12-May-22
C4D3670	Stage 3B - Backfill Curb and Rough Grade WB Trail	5	126	13-May-22	19-May-22
C4D3680	Stage 3B - Place Surface Asphalt on EB Lanes	10	13	10-Nov-23	27-Nov-23
C4D3690	Stage 3B - Place Surface Asphalt on WB Lanes	10	22	17-Jun-24	28-Jun-24



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

SHIRLEY CONTRACTING COMPANY, LLC

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 19th day of June, 2018, by and between the Virginia Department of Transportation ("VDOT"), and Shirley Contracting Company, LLC ("Offeror").

WITNESSETH:

WHEREAS, Offeror is one of the entities who submitted Statements of Qualifications ("SOQs") pursuant to VDOT's August 15, 2017 Request for Qualifications ("RFQ") and was invited to submit proposals in response to a Request for Proposals ("RFP") for the Route 7 Corridor Improvements, **Project Nos. 0007-029-942 and 0007-029-225** ("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 ~~Ninety~~ One Hundred Thirty Five **Thousand and 00/100 Dollars ($~~90~~135,000.00)** ("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: Michael E. Post

Title: President/CEO/Manager

Attachment 11.8.6(a)(b) - Debarment Forms

Attachment 11.8.6(a)(b) -
Debarment Forms

ATTACHMENT 11.8.6(a)
CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project Nos.: 0007-029-942 and 0007-029-225

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	3/12/18 Date	President/CEO/Manager Title

Shirley Contracting Company, LLC
Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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 2/28/18 Executive Vice President

Signature Date Title

Dewberry Engineers Inc.

Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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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	March 12, 2018	President
	Date	Title

Quinn Consulting Services, Inc.
Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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	February 28, 2018	VP of Business Development
Signature	Date	Title

DIW Group, Inc. t/a Specialized Engineeirng
Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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Signature	2/28/18 Date	Senior Principal Title

GeoConcepts Engineering, Inc.
Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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[signature]	03/01/2018	PROJECT MANAGER
Signature	Date	Title

SAM, LLC

Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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W. J. McKeague 3/1/2018 Vice President

Signature Date Title

Quantum Spatial, Inc.

Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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Paul H. Ryan 2/27/2018 SVP/ Deputy General Counsel

Signature Date Title

Clark Construction Group, LLC

Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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Patricia E. Dublock 2/27/18 President

Signature Date Title

Diversified Property Services, Inc.

Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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Signature 3/8/18 Date

Vice President/Assistant Secretary
Title

Bowman Consulting Group, Ltd.
Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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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 Runk 2-27-18 Vice President

Signature Date Title

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

Name of Firm

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

Project Nos.: 0007-029-942 and 0007-029-225

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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
	3/1/18	Sole Owner

Carteret Title, LLC
Name of Firm

Response to Request for Revised Proposals

ROUTE 7 CORRIDOR IMPROVEMENTS

Fairfax County, Virginia

State Project Nos.: 0007-029-942 and 0007-028-225
Federal Project Nos: STP-5A01(745) and STP-5A01(790)
Contract ID No.: C00099478DB98

VOLUME II: REVISED DESIGN CONCEPT

Submitted By:
SHIRLEY
CONTRACTING COMPANY, LLC

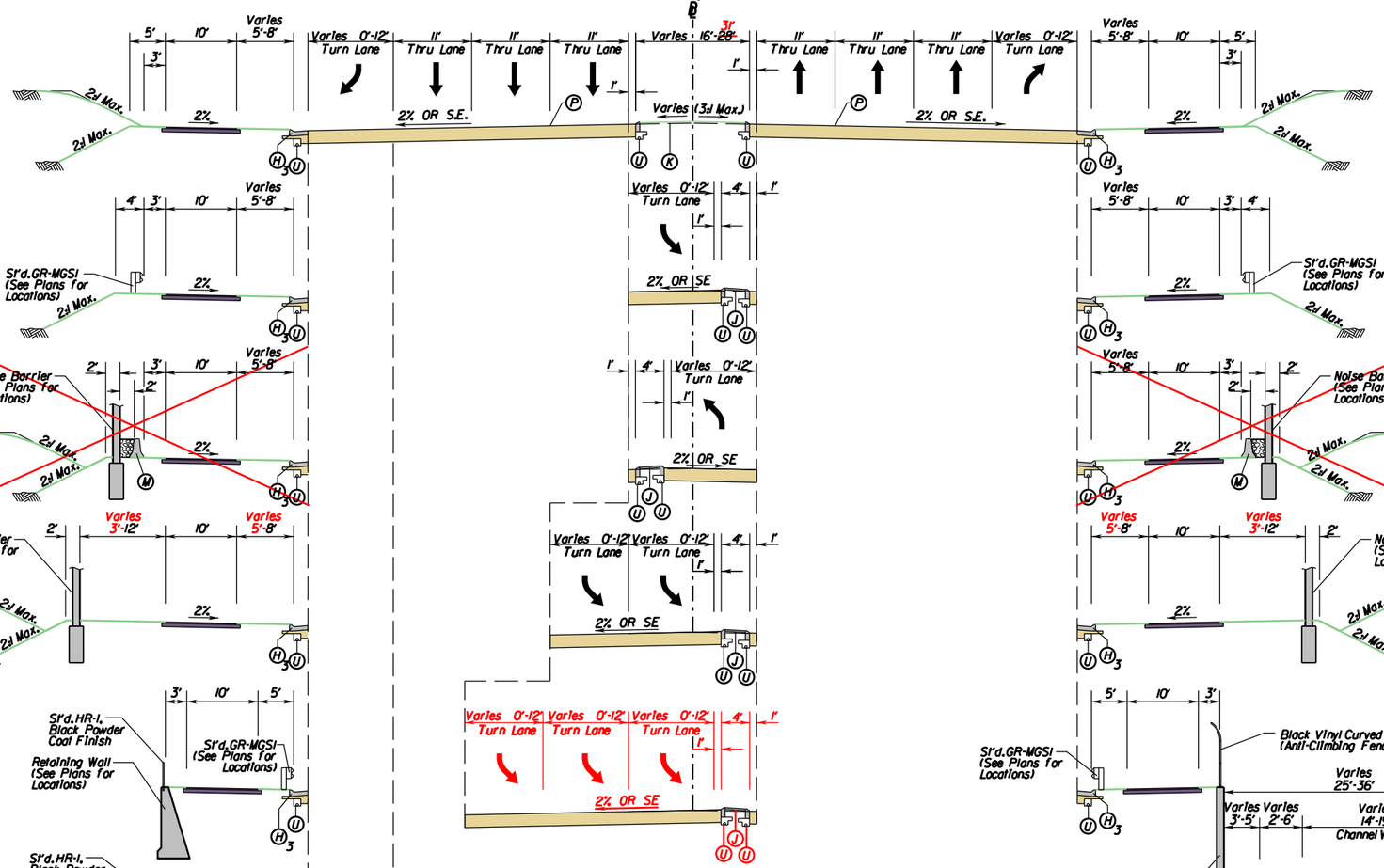
In Association With:
Dewberry®

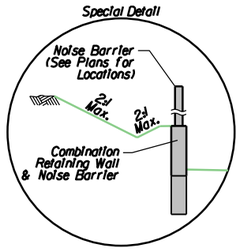
4.3.1 - Conceptual Roadway Plans

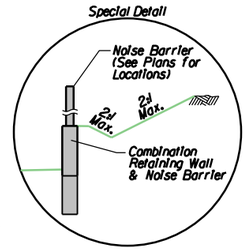
STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101,R201,C501 0007-029-942 P101,R201,C501	2A(1)

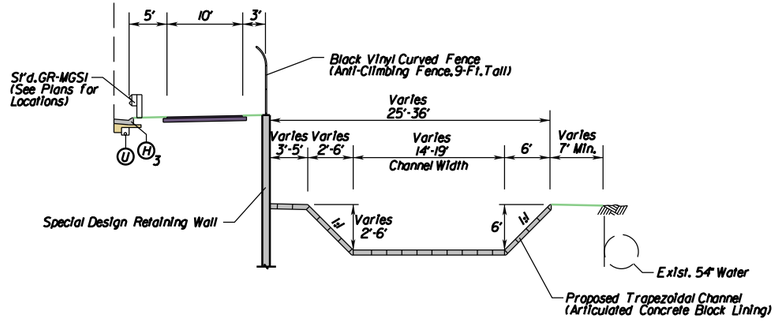
TYPICAL SECTIONS

Leesburg Pike (Rte.7)
Urban Other Principal Arterial (GS-5)









Alignment	Sta.	To	Sta.
Leesburg Pike (Rte.7)	174+75.00		~~254+46.12~~ 364+74.21
~~Leesburg Pike (Rte.7)~~	~~305+38.23~~		~~364+74.21~~
Leesburg Pike (Rte.7)	367+89.71		526+46.56

LEGEND

- (H) Curb, Std. CG-2 Req'd.
- (H_1) Curb & Gutter, Std. CG-6 Req'd.
- (H_2) Curb, Std. CG-3 Req'd.
- (H_3) Curb & Gutter, Std. CG-7 Req'd.
- (J) Raised Concrete Median Strip, Std. MS-1A Req'd.
- (K) Raised Grass Median Strip, Std. MS-2 Req'd.
- (L) Bridge Pier Protection System, BPPS-1 or BPPS-2
- (M) Concrete Median Barrier, Std. MB-7D Req'd.
- (N) Concrete Median Barrier, Std. MB-7F Req'd.
- (P) Profile Grade Line (PGL) / Point of Rotation
- (U) Underdrain, Std. UD-4 Req'd.

- Proposed Grass Median / Buffer / Planted Area
- Proposed Full Depth Pavement
- Proposed Shared-Use-Path
- Proposed Sidewalk

Note 1: Minimum pavement sections will match Part 2, Section 2.6.1 of the RFP

Note 2: All pavement build-up and widening will match Attachment 2.6.1 of the RFP

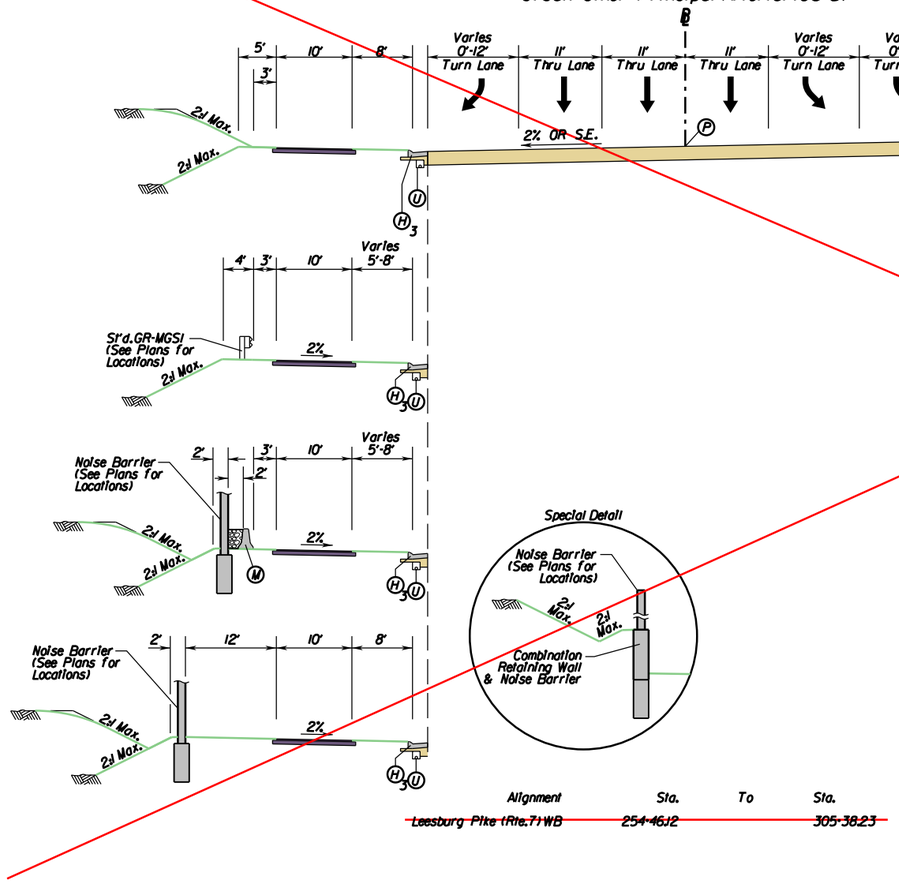
SCALE	PROJECT	SHEET NO.
0 10' 20'	0007-029-225 0007-029-942	2A(1)

TYPICAL SECTIONS

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101,R201,C501 0007-029-942 P101,R201,C501	2A(2)

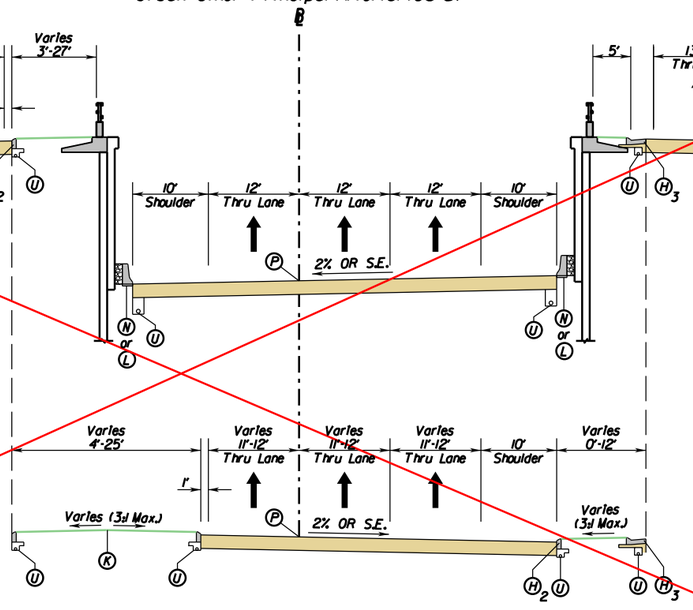
SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

Leesburg Pike (Rte.7) WB
Urban Other Principal Arterial (GS-5)



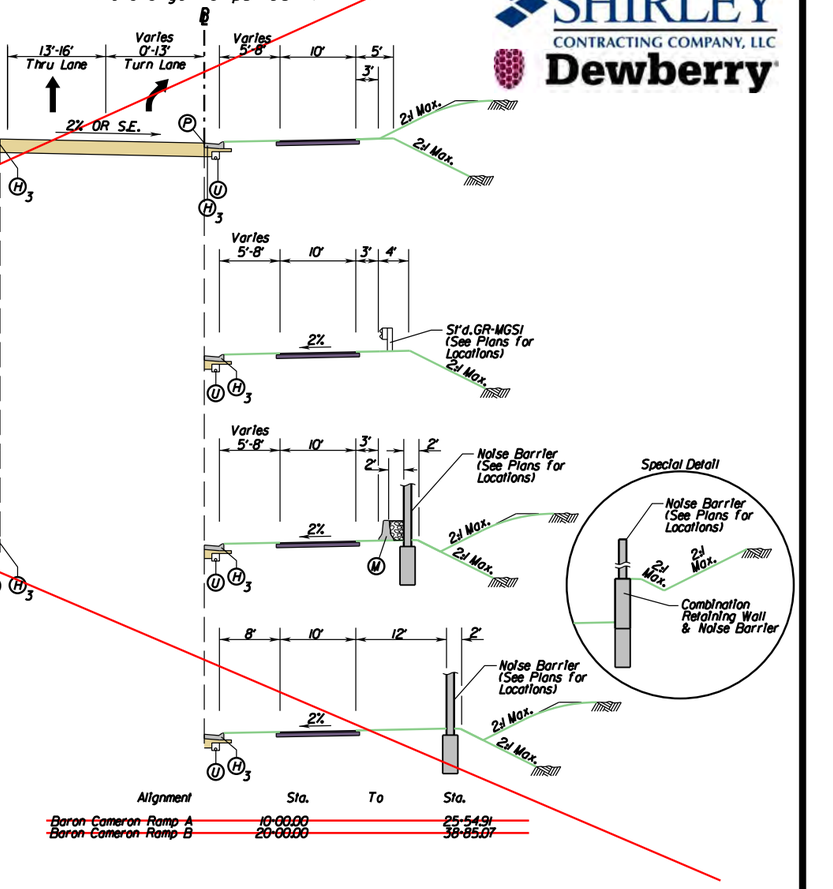
Alignment	Sta.	To	Sta.
Leesburg Pike (Rte.7) WB	254+46.12		305+38.23

Leesburg Pike (Rte.7) EB
Urban Other Principal Arterial (GS-5)



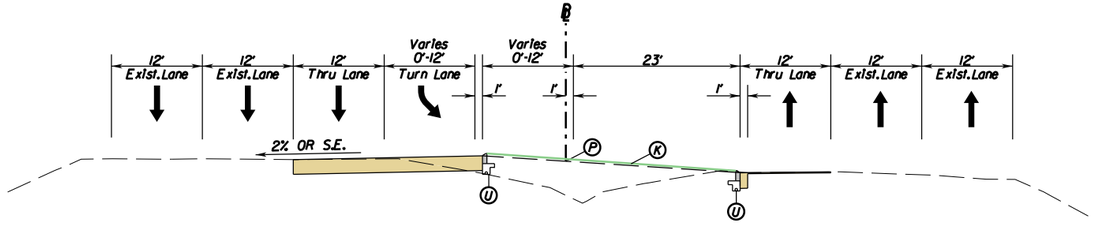
Alignment	Sta.	To	Sta.
Leesburg Pike (Rte.7) EB	253+16.20		314+25.00

Baron Cameron Ramp A / Ramp B
Interchange Ramps (GS-R)



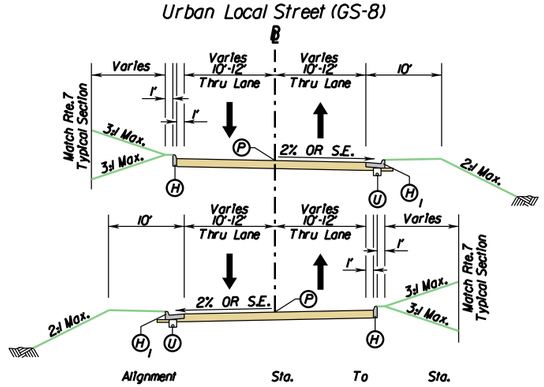
Alignment	Sta.	To	Sta.
Baron Cameron Ramp A	10+00.00		25+54.91
Baron Cameron Ramp B	20+00.00		38+85.07

Leesburg Pike (Rte.7)
Urban Other Principal Arterial (GS-5)



Alignment	Sta.	To	Sta.
Leesburg Pike (Rte.7)	166+75.00		174+75.00

Service Roads
Urban Local Street (GS-8)



Alignment	Sta.	To	Sta.
Service Rd. *1	10+85.00		23+19.12
Service Rd. *4	150+37.93		168+75.54
Service Rd. *5	10+65.00		18+21.46

LEGEND

- (H) Curb, Std. CG-2 Req'd.
- (H1) Curb & Gutter, Std. CG-6 Req'd.
- (H2) Curb, Std. CG-3 Req'd.
- (H3) Curb & Gutter, Std. CG-7 Req'd.
- (J) Raised Concrete Median Strip, Std. MS-1A Req'd.
- (K) Raised Grass Median Strip, Std. MS-2 Req'd.
- (L) Bridge Pier Protection System, BPPS-1 or BPPS-2
- (M) Concrete Median Barrier, Std. MB-7D Req'd.
- (N) Concrete Median Barrier, Std. MB-7F Req'd.
- (P) Profile Grade Line (PGL) / Point of Rotation
- (U) Underdrain, Std. UD-4 Req'd.

- Proposed Grass Median / Buffer / Planted Area
- Proposed Roadway Pavement
- Proposed Shared-Use-Path
- Proposed Sidewalk

Note 1: Minimum pavement sections will match Part 2, Section 2.6.1 of the RFP

Note 2: All pavement build-up and widening will match Attachment 2.6.1 of the RFP

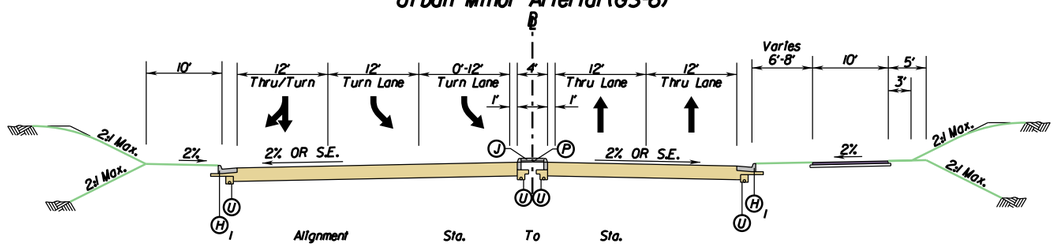
SCALE	PROJECT	SHEET NO.
0 10' 20'	0007-029-225 0007-029-942	2A(2)

TYPICAL SECTIONS

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101,R201,C501 0007-029-942 P101,R201,C501	2A(3)

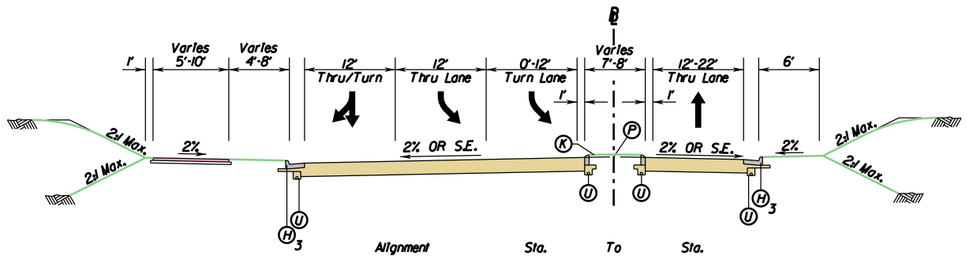
SHIRLEY CONTRACTING COMPANY, LLC
Dewberry

Reston Pkwy.(Rte.602)
Urban Minor Arterial (GS-6)



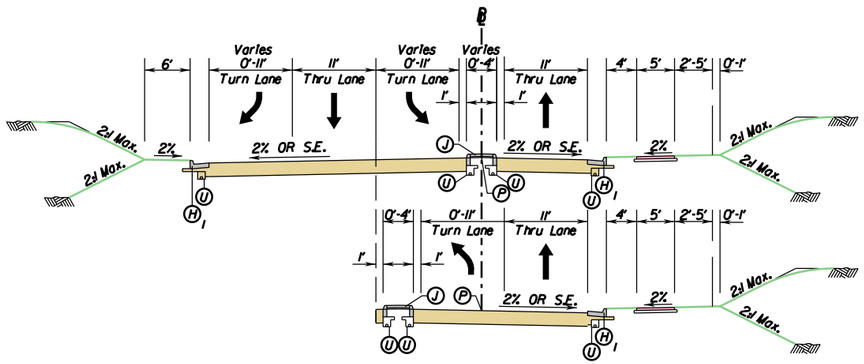
Alignment	Sta.	To	Sta.
Reston Pkwy.(Rte.602)	51+08.17		52+47.59

Springvale Rd.(Rte.674)
Urban Major Collector (GS-7)



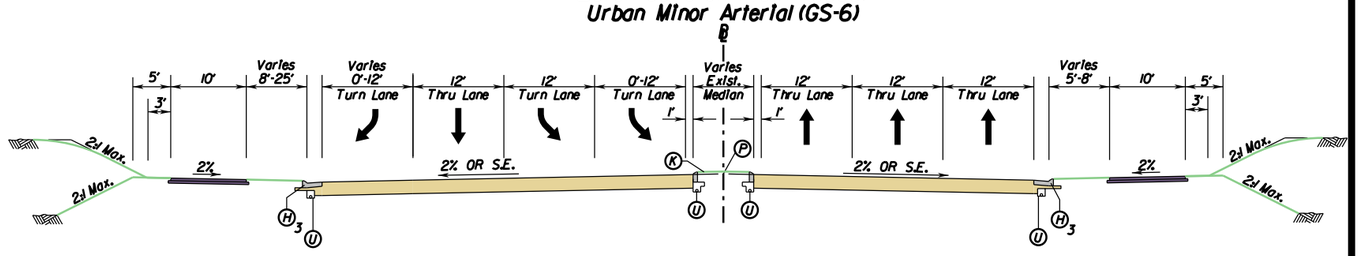
Alignment	Sta.	To	Sta.
Springvale Rd.(Rte.674)	40+91.44		44+00.00

Lewinsville Rd.(Rte.694)
Urban Minor Arterial (GS-6)



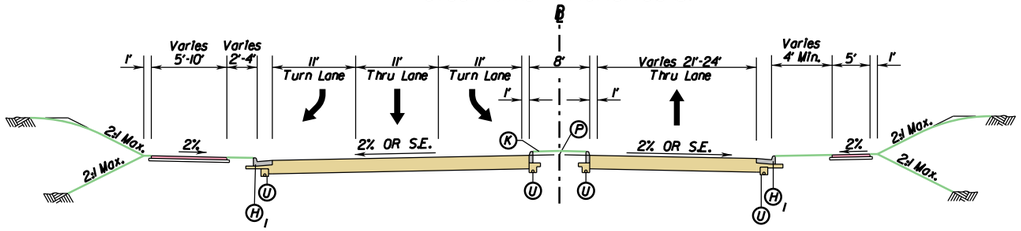
Alignment	Sta.	To	Sta.
Lewinsville Rd.(Rte.694)	170+91.29		180+10.93

Baron Cameron Ave.(Rte.606)
Urban Minor Arterial (GS-6)

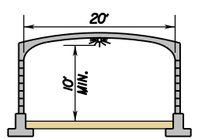


Alignment	Sta.	To	Sta.
Baron Cameron Ave.(Rte.606)	51+57.23		53+84.76

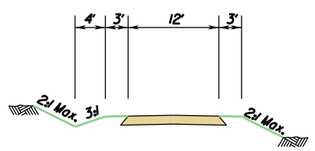
Towlston Rd.(South)
Urban Minor Arterial (GS-6)



Alignment	Sta.	To	Sta.
Towlston Rd.(South)	120+99.75		124+80.29

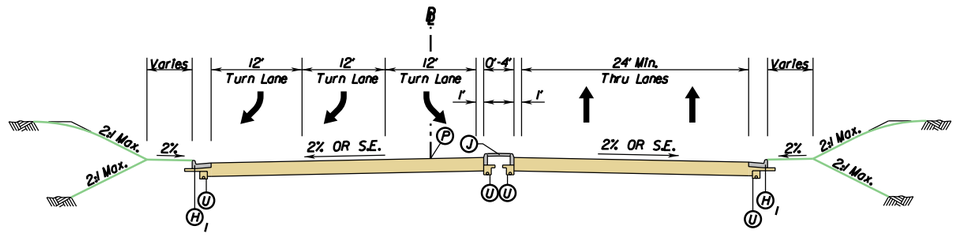


Pedestrian Underpass



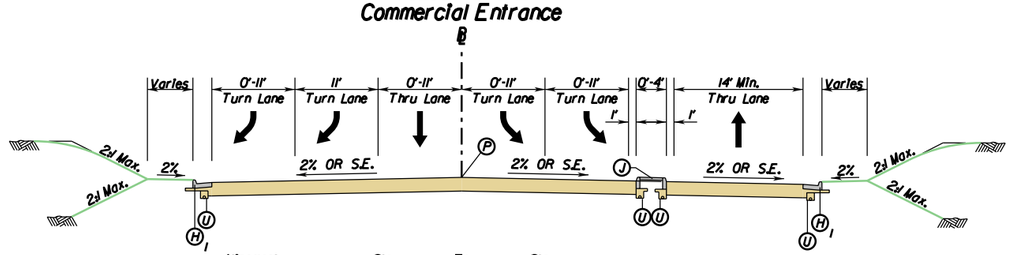
Cross County Trail

McLean Dr.#1
Commercial Entrance



Alignment	Sta.	To	Sta.
McLean Dr.#1	160+86.24		161+53.68

McLean Dr.#2
Commercial Entrance



Alignment	Sta.	To	Sta.
McLean Dr.#1	180+47.78		182+10.00

LEGEND

- (H) Curb, St'd. CG-2 Req'd.
- (H1) Curb & Gutter, St'd. CG-6 Req'd.
- (H2) Curb, St'd. CG-3 Req'd.
- (H3) Curb & Gutter, St'd. CG-7 Req'd.
- (J) Raised Concrete Median Strip, St'd. MS-1A Req'd.
- (K) Raised Grass Median Strip, St'd. MS-2 Req'd.
- (L) Bridge Pier Protection System, BPPS-1 or BPPS-2
- (M) Concrete Median Barrier, St'd. MB-7D Req'd.
- (N) Concrete Median Barrier, St'd. MB-7F Req'd.
- (P) Profile Grade Line (PGL) / Point of Rotation
- (U) Underdrain, St'd. UD-4 Req'd.

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Note 1: Minimum pavement sections will match Part 2, Section 2.6.1 of the RFP

Note 2: All pavement build-up and widening will match Attachment 2.6.1 of the RFP

SCALE	PROJECT	SHEET NO.
0 10' 20'	0007-029-225 0007-029-942	2A(3)

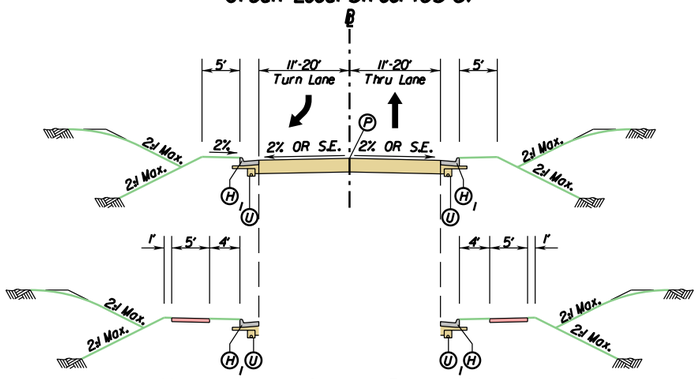
TYPICAL SECTIONS

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	2A(4)

SHIRLEY CONTRACTING COMPANY, LLC

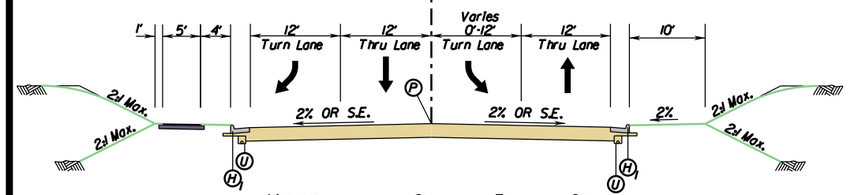
Dewberry

Multiple Alignments
Urban Local Street (GS-8)



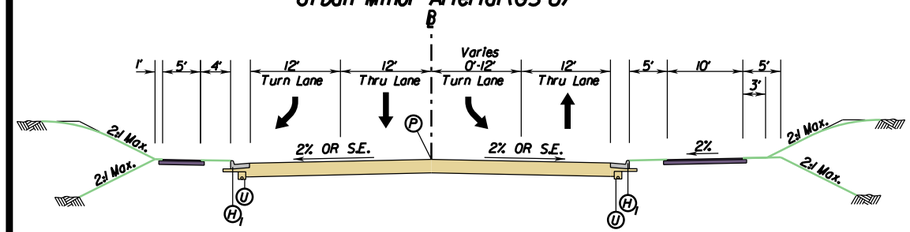
Alignment	Sta.	To	Sta.
Great Passage Blvd.	81+05.24		82+89.64
Amanda Dr.	91+04.92		91+53.81
Riva Ridge Dr.	20+86.66		21+03.97
Crippen Vale Ct.	30+00.00		30+75.00
Downey Dr.	50+23.00		50+39.62
Middleton Ridge Rd.	30+78.97		31+40.00
Atwood Rd.	80+97.49		83+78.11
Stakley Way	100+92.88		101+75.00
Wolftrap Run Rd.	10+45.90		10+75.00
Laurel Hill Rd.	191+14.31		191+81.00

Towlston Rd.(North) (Rte.676)
Urban Major Collector (GS-7)



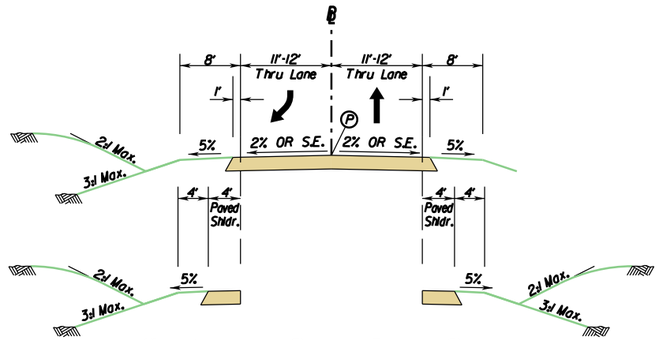
Alignment	Sta.	To	Sta.
Towlston Rd.(North) (Rte.676)	110+87.17		115+75.00

Beulah Rd.(Rte.702)
Urban Minor Arterial (GS-6)



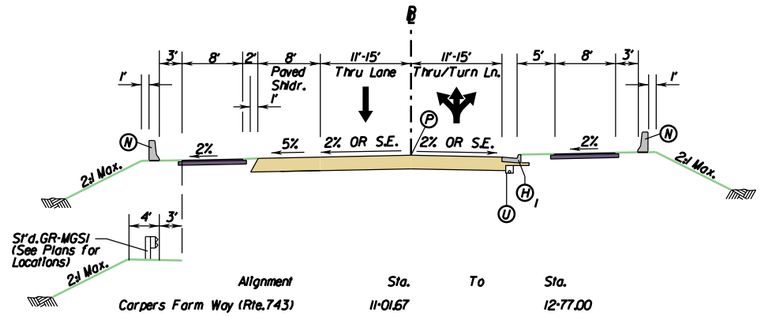
Alignment	Sta.	To	Sta.
Beulah Rd.(Rte.702)	170+76.08		171+59.69

Multiple Alignments
Urban Local Street (GS-8)



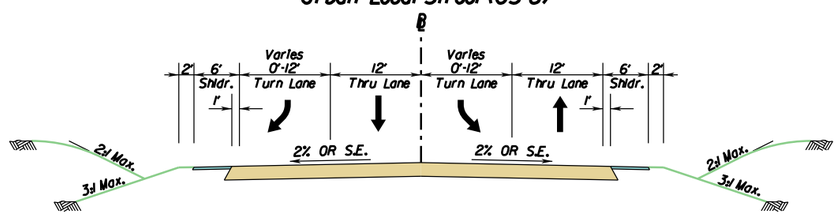
Alignment	Sta.	To	Sta.
Bishops Gate Way	71+02.85		71+67.06
Markell Ct.	10+94.00		11+81.66
Delta Glen Ct.	70+97.54		71+66.13
Colvin Forest Dr.	81+02.62		81+86.89
Faulkner Dr.	21+11.20		22+25.00
Newcombs Farm Rd.	40+83.21		42+36.85
Trotting Horse Ln.	51+04.00		52+29.00
Lyons St.	90+98.24		91+25.00
Trap Rd.	131+05.70		132+00.00
Lucky Estates Dr.	141+21.05		141+75.00
Royal Estates Dr.	150+81.19		151+13.82
Old Ash Grove Rd.	200+80.81		201+34.98

Carpers Farm Way (Rte.743)
Urban Local Street (GS-8)



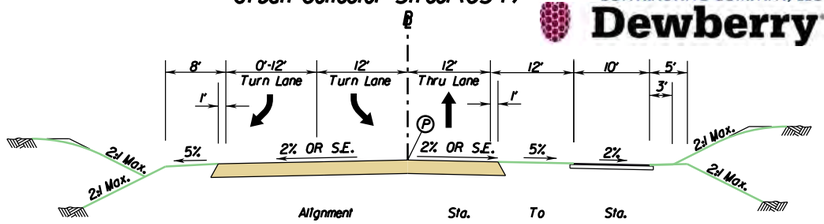
Alignment	Sta.	To	Sta.
Carpers Farm Way (Rte.743)	11+01.67		12+77.00

Forestville Dr.(Rte.702)
Urban Local Street (GS-8)



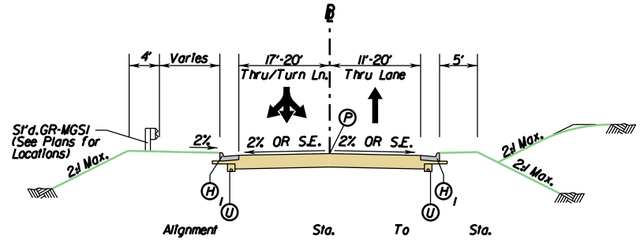
Alignment	Sta.	To	Sta.
Forestville Dr.(Rte.702)	60+76.09		64+12.00

Utterback Store Rd.(Rte.717)
Urban Collector Street (GS-7)



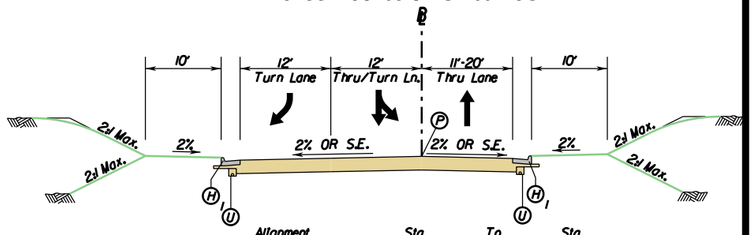
Alignment	Sta.	To	Sta.
Utterback Store Rd.(Rte.717)	61+06.97		64+45.77

Colvin Run Rd.(East Int.) (Rte.743)
Urban Collector Street (GS-7)



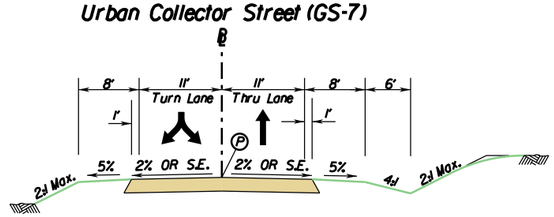
Alignment	Sta.	To	Sta.
Colvin Run Rd.(East Int.) (Rte.743)	90+88.77		91+21.63

Colvin Run Rd.(West Int.) (Rte.743)
Urban Collector Street (GS-7)



Alignment	Sta.	To	Sta.
Colvin Run Rd.(West Int.) (Rte.743)	60+82.22		63+23.65

Brook Rd.(Rte.760)
Urban Collector Street (GS-7)



Alignment	Sta.	To	Sta.
Brook Rd.(Rte.760)	10+60.21		21+00.00

LEGEND

- (H) Curb, St'd. CG-2 Req'd.
- (H1) Curb & Gutter, St'd. CG-6 Req'd.
- (H2) Curb, St'd. CG-3 Req'd.
- (H3) Curb & Gutter, St'd. CG-7 Req'd.
- (J) Raised Concrete Median Strip, St'd. MS-1A Req'd.
- (K) Raised Grass Median Strip, St'd. MS-2 Req'd.
- (L) Bridge Pier Protection System, BPPS-1 or BPPS-2
- (M) Concrete Median Barrier, St'd. MB-7D Req'd.
- (N) Concrete Median Barrier, St'd. MB-7F Req'd.
- (P) Profile Grade Line (PGL) / Point of Rotation
- (U) Underdrain, St'd. UD-4 Req'd.

- Proposed Grass Median / Buffer / Planted Area
- Proposed Roadway Pavement
- Proposed Shared-Use-Path
- Proposed Sidewalk

Note 1: Minimum pavement sections will match Part 2, Section 2.6.1 of the RFP

Note 2: All pavement build-up and widening will match Attachment 2.6.1 of the RFP

SCALE	PROJECT	SHEET NO.
0 10' 20'	0007-029-225 0007-029-942	2A(4)

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	3

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REVISED PROPOSAL DESIGN MODIFICATION

Eliminated concrete barrier protection and impact attenuator since barrier is more than 18' from the face of curb.

REVISED PROPOSAL DESIGN MODIFICATION

Adjusted noise barrier alignment to eliminate concrete barrier protection and impact attenuator and add guardrail behind existing drainage facilities

DESIGN ENHANCEMENT

Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

Proposed Noise Barrier B1

Proposed Noise Barrier B2

Existing R/W

Ex. R/W Per DB 11555 PG 1497

Proposed Noise Barrier B2

POT 20+00.00

POT 21+77.38

POT 21+02.04

Shain Ct.

N 39°48'39"E

N 41°24'06"E

S 48°35'54"E

→Service Rd.

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

POT 166+00.00

Existing R/W (Per DB 11012 PG 898)

Existing R/W (Per DB 19656 PG 1995)

Existing R/W (Per DB 18115 PG 2032)

Existing R/W (Per DB09408 PG1789)

Existing R/W (Per DB6957 PG130)

Reston Ave.

Existing R/W (Per DB 2128 PG 1021)

Match Line - Sta. 179+50 - See Sheet 4

001 002 003 237 008

Proposed Roadway Pavement	Proposed Fee Simple Right-of-Way per RFP
Proposed Shared Use Path	Proposed Permanent Esmt. per RFP and Offeror's Concept
Proposed Bridge	Proposed Temporary Esmt. per RFP and Offeror's Concept
Proposed Concrete Sidewalk, Median or Entrance Gutter	Offeror's Revised Proposed Fee Simple Right-of-Way
Proposed Gross Median/Buffer/Planted Area	Proposed Utility Relocations
Proposed Stormwater Management Facility	Existing Utility Designations per RFP
Area of Fee Simple Right-Of-Way Reduction	Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	3

STATE	STATE ROUTE	STATE PROJECT	SHEET NO
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	4

SHIRLEY CONTRACTING COMPANY, LLC
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Curve SERI-1
PI = 13+72.29
DELTA = 7° 57' 10.29" (LT)
D = 11° 15' 09"
T = 35.45'
L = 70.68'
R = 510.00'
PC = 13+36.84
PRC = 14+07.52
V = 25 MPH
SE = 2.9%

Curve SERI-2
PI = 14+42.07
DELTA = 7° 45' 06.5" (RT)
D = 11° 15' 09"
T = 34.55'
L = 68.89'
R = 510.00'
PRC = 14+07.52
PT = 14+76.41
V = 25 MPH
SE = 2.9%

Curve SERI-3
PI = 16+12.71
DELTA = 4° 35' 49.75" (RT)
D = 9° 33' 37"
T = 24.08'
L = 48.09'
R = 600.00'
PC = 15+88.63
PT = 16+36.71
V = 25 MPH
SE = 2.7%

Curve SERI-4
PI = 18+58.08
DELTA = 4° 16' 01.37" (LT)
D = 9° 33' 37"
T = 22.35'
L = 44.63'
R = 600.00'
PC = 18+35.73
PT = 18+80.36
V = 25 MPH
SE = 2.7%

Curve MFN-1
PI = 41+02.19
DELTA = 11° 01' 56.75" (LT)
D = 9° 03' 39"
T = 61.13'
L = 121.76'
R = 633.00'
PC = 40+41.06
PT = 41+62.82
V = N/A
SE = N/A

Curve RPKWY-1
PI = 51+34.86
DELTA = 11° 52' 06.12" (LT)
D = 4° 53' 40"
T = 121.72'
L = 242.49'
R = 1,171.00'
PC = 50+13.15
PT = 52+55.64
V = 40 MPH
SE = 2.8%

Curve RTE7-1
PI = 205+45.81
DELTA = 4° 00' 21.26" (RT)
D = 1° 07' 24"
T = 178.36'
L = 356.57'
R = 5,100.00'
PC = 203+67.45
PT = 207+24.02
V = 60 MPH
SE = 3.2%

Match Line - Sta. 179+50 - See Sheet 3

Match Line - Sta. 194+50 - See Above

Match Line - Sta. 194+50 - See Below

Match Line - Sta. 209+50 - See Sheet 5

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

Service Rd. #1

Reston Pkwy. (Rte.602)

Meadow Farms Nursery

Proposed Noise Barrier B2

Proposed Noise Barrier B3

Proposed Noise Barrier B4

Proposed Noise Barrier B5

Proposed Noise Barrier C1

Combination Retaining Wall & Noise Barrier

Existing R/W (Per DB 9408 PG 1789)

Existing R/W (Per DB6420 PG348)

Existing R/W (Per DB7108 PG0858)

Existing R/W (Per DB6129 PG0337)

Existing R/W (Per DB10748 PG0304)

Existing R/W (Per DB09744 PG0380)

Existing R/W (Per DB10308 PG0814)

DESIGN ENHANCEMENT
Shifted alignment up to 3' to the north to minimize impacts to existing utilities while remaining within right-of-way and easement limits

DESIGN ENHANCEMENT
Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

DESIGN ENHANCEMENT
Shifted alignment up to 8' to the north to minimize impacts to existing utilities while remaining within right-of-way and easement limits

REVISED PROPOSAL
DESIGN MODIFICATION
Revised noise barrier alignment to minimize grading impacts while locating it more than 18' from the face of curb, avoiding barrier protection

DESIGN ENHANCEMENT
Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esm't. per RFP and Offeror's Concept
- Proposed Temporary Esm't. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE 0 50' 100'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	4

STATE	STATE ROUTE	STATE PROJECT	SHEET NO
VA.	7	0007-029-225 P101,R201,C501 0007-029-942 P101,R201,C501	5

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REVISED PROPOSAL DESIGN MODIFICATION

Revised noise barrier alignment to minimize grading impacts while locating it more than 18' from the face of curb, avoiding barrier protection

DESIGN ENHANCEMENT

Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

DESIGN ENHANCEMENT

Eliminated Stormwater Management Facility reducing fee simple right-of-way acquistion, impacts to Fairfax County Park Authority property, and long term maintenance costs

DESIGN ENHANCEMENT

Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

DESIGN ENHANCEMENT

Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

DESIGN ENHANCEMENT

Shifted alignment up to 8' to the north to minimize impacts to existing utilities while remaining within right-of-way and easement limits

DESIGN ENHANCEMENT

Optimized U-turn location to avoid fee simple right-of-way impacts

DESIGN ENHANCEMENT

Shifted alignment up to 5' to the south to minimize impacts to existing utilities while remaining within right-of-way and easement limits

Curve UBST-1
PI = 62-34.48
DELTA = 46° 16' 17.62" (LT)
D = 10° 42' 18"
T = 229.02'
L = 432.24'
R = 536.00'
PC = 60-05.46
PT = 64-37.70
V = 35 MPH
SE = 3.8%

Curve RTE7-2
PI = 217-38.65
DELTA = 9° 57' 51.89" (LT)
D = 1° 25' 57"
T = 348.70'
L = 695.65'
R = 4,000.00'
PC = 213-89.94
PT = 220-85.59
V = 60 MPH
SE = 4.0%

Leesburg Pike (Rte.7) EB
Leesburg Pike (Rte.7) WB
Utterback Store Rd. (Rte.777)
Match Line - Sta. 209+00 - See Sheet 4
Match Line - Sta. 224+00 - See Sheet 6
Existing R/W (Per DB06129 PG0337)
Existing R/W (Per DB06176 PG0172)
Existing R/W (Per DB09652 PG0576)
Proposed Noise Barrier B5
Proposed Noise Barrier C1
Proposed Noise Barrier D1
PC60-35.43
POT60-00.00
PC213-89.94
PT220-85.59
PT65-34.48
PT64-42.58
UBST-1
RTE7-2
S 44° 39' 21" E
402,509,510

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk,Median or Entrance Gutter
- Proposed Gross Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esm't. per RFP and Offeror's Concept
- Proposed Temporary Esm't. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	5

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	6

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Match Line - Sta. 224+00 - See Sheet 5

Proposed Noise Barrier D1

Existing R/W (Per VDOT Plan# A-1865)

Existing R/W (Per DB05515 PG0672)

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

POT70-00.00

S 54°31'13" E

PC232+42.50

RTE7-3

Existing R/W Per VDOT Plan# A-8418

Proposed Noise Barrier C1

Proposed Noise Barrier C2

Combination Retaining Wall & Noise Barrier

PC71+89.14

PT73+00.10

Bishopsgate Way

BSHGW-1

Match Line - Sta. 236+50 - See Below

DESIGN ENHANCEMENT

Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

DESIGN ENHANCEMENT

Shifted alignment up to 5' to the south to minimize impacts to existing utilities while remaining within right-of-way and easement limits

Curve BSHGW-1
PI = 72+42.15
DELTA = 20°14'47.24" (LT)
D = 18°19'30"
T = 56.06'
L = 110.49'
R = 314.00'
PC = 71+86.08
PT = 72+96.57
V = 25 MPH
SE = 3.4%

Curve RTE7-3
PI = 238+39.73
DELTA = 25°24'03.75" (RT)
D = 2°09'44"
T = 597.23'
L = 1174.83'
R = 2650.00'
PC = 232+42.50
PT = 244+17.33
V = 60 MPH
SE = 5.5%

Great Passage Blvd.

Curve GRPBLVD1
PI = 82+19.75
DELTA = 31°58'58.15" (LT)
D = 15°44'49"
T = 125.62'
L = 241.27'
R = 365.00'
PC = 80+94.13
PT = 83+35.34
V = 25 MPH
SE = 3.3%

GRPBLD

DESIGN ENHANCEMENT

Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

REVISED PROPOSAL DESIGN MODIFICATION

Revised noise barrier alignment to minimize grading impacts while locating it more than 18' from the face of curb, avoiding barrier protection

Curve AMADR 1
PI = 91+27.42
DELTA = 15°30'31.04" (LT)
D = 13°40'27"
T = 57.19'
L = 113.41'
R = 420.00'
PC = 90+70.23
PT = 91+83.64
V = 25 MPH
SE = 3.1%

AMADR

Proposed Noise Barrier E1

Existing R/W (Per DB09319 PG0136)

Existing R/W (Per DB10785 PG0781)

PC80+94.13

Existing R/W Per VDOT Plan# A-8418

Existing R/W (Per DB06539 PG0026)

Existing R/W (Per DB05515 PG0643)

Existing R/W (Per VDOT Plan A-1865)

PT244+17.33

PC90+70.23

PT91+83.64

POT80-00.00

POT90-00.00

POT10-00.00

Proposed Noise Barrier C2

Proposed Noise Barrier C3

Proposed Noise Barrier E2

Combination Retaining Wall & Noise Barrier

Curve RTE7-3
PI = 238+39.73
DELTA = 25°24'03.75" (RT)
D = 2°09'44"
T = 597.23'
L = 1174.83'
R = 2650.00'
PC = 232+42.50
PT = 244+17.33
V = 60 MPH
SE = 5.5%

DESIGN ENHANCEMENT

Shifted alignment up to 4' to the south to minimize impacts to existing utilities while remaining within right-of-way and easement limits

REVISED PROPOSAL DESIGN MODIFICATION

Adjusted noise barrier alignment to avoid existing 30" water main and eliminate relocation

Markell Ct.

MARCT-1

Curve MARCT-1
PI = 11+99.44
DELTA = 26°44'22.32" (RT)
D = 31°49'52"
T = 42.78'
L = 84.00'
R = 180.00'
PC = 11+56.66
PT = 12+40.67
V = 25 MPH
SE = 4.0%

Match Line - Sta. 251+00 - See Sheet 7

Match Line - Sta. 236+50 - See Above

Proposed Roadway Pavement
Proposed Shared Use Path
Proposed Bridge
Proposed Concrete Sidewalk, Median or Entrance Gutter
Proposed Grass Median/Buffer/Planted Area
Proposed Stormwater Management Facility
Area of Fee Simple Right-Of-Way Reduction

Proposed Fee Simple Right-of-Way per RFP
Proposed Permanent Esmt. per RFP and Offeror's Concept
Proposed Temporary Esmt. per RFP and Offeror's Concept
Offeror's Revised Proposed Fee Simple Right-of-Way
Proposed Utility Relocations
Existing Utility Designations per RFP
Proposed Noise Barrier

SCALE 0 50' 100'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	6

STATE	STATE ROUTE	STATE PROJECT	SHEET NO
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	7R

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REVISED PROPOSAL MODIFICATION LIMIT

Red line represents the western limit of horizontal alignment modification to provide an at-grade intersection at Baron Cameron Avenue in lieu of the grade separated interchange

DESIGN ENHANCEMENT

Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

REVISED PROPOSAL DESIGN MODIFICATION

Shifted the noise barrier location based on the revised Route 7 horizontal alignment and located it more than 18' from the face of curb, eliminating the need for barrier protection

REVISED PROPOSAL DESIGN MODIFICATION

Developed horizontal alignment which reduces right-of-way impacts and avoids impacts to Williams Gas, Washington Gas, Verizon duct bank, and 54" and 30" water main facilities

REVISED PROPOSAL DESIGN MODIFICATION

Developed horizontal alignment to avoid extension of the upper end of the box culvert, avoiding impacts to 54" and 30" water mains and all associated relocations

Curve RTE7 BAF0-1
PI = 261+87.41
DELTA = 20° 59' 53.74" (LT)
D = 1° 25' 57"
T = 741.29'
L = 1,465.96'
R = 4,000.00'
PC = 254+46.12
PT = 269+12.08
V = 60 MPH
SE = 4.0%

Riva Ridge Dr.
POT 2+97.02
N 60° 46' 5" E
POT 20+98.51
POT 20+00.00
PC 254+46.12
POT 254+46.12
Leesburg Pike (Rte.7) WB
Leesburg Pike (Rte.7) EB
RTE7 BAF0-1
SWM #3A
Match Line - Sta. 251+00 - See Sheet 6
Match Line - Sta. 266+00 - See Sheet 8R
Existing R/W (Per DB04574 PG0065)
Existing R/W (Per DB07945 PG157(1))
Existing R/W (Per VDOT Plan A-1865)
Proposed Noise Barrier E2
Proposed Noise Barrier E3
Existing
119
042
043
044
045
046
047
049
050

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esm't. per RFP and Offeror's Concept
- Proposed Temporary Esm't. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	7R

STATE	STATE ROUTE	STATE PROJECT	SHEET NO
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	8R

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REVISED PROPOSAL MODIFICATION LIMITS

All design details depicted on this sheet have been revised to provide an at-grade, signalized intersection at Baron Cameron Avenue, consistent with the requirements of the Request for Revised Proposal

REVISED PROPOSAL DESIGN MODIFICATION

Noise barriers will be "turned back" along Williams Gas facilities, eliminating the need for gas main relocations. Noise analysis will be completed to determine limits of noise barrier walls to provide necessary noise reductions. Permanent easements will be added based on final noise barrier alignments and lengths.

REVISED PROPOSAL DESIGN MODIFICATION

Horizontal alignment of Route 7 was developed to avoid impacts to Verizon duct bank, Williams Gas lines, 54", 30" and 24" water mains

REVISED PROPOSAL DESIGN MODIFICATION

Route 7 horizontal alignment results in reduced right-of-way and utility impacts in the northeast quadrant of the Baron Cameron Intersection

REVISED PROPOSAL DESIGN MODIFICATION

Horizontal alignment developed for Route 7 locates all improvements within the limits of existing Williams Gas casings, avoiding the need for relocations or casing extensions

DESIGN ENHANCEMENT

Eliminated Stormwater Management Facility reducing fee simple right-of-way acquistion area and long term maintenance costs

REVISED PROPOSAL DESIGN MODIFICATION

Horizontal alignment avoids impacts to and reconstruction of the existing service road, providing a single entrance/exit to/from Route 7 within the limits of the eastbound right turn lane

REVISED PROPOSAL DESIGN MODIFICATION

Alignment of the free-flow right turn from northbound Baron Cameron Avenue to eastbound Route 7 and the adjacent shared use path avoids impacts to and relocation of the 54" water main. Right-of-way impacts have been reduced accordingly

Curve RTE7 BAFO-1
PI = 261+87.41
DELTA = 20°59'53.74" (LT)
D = 1°25'57"
T = 741.29'
L = 1,465.96'
R = 4,000.00'
PC = 254+46.12
PT = 269+12.08
V = 60 MPH
SE = 4.0%

Curve RTE7 BAFO-2
PI = 270+48.21
DELTA = 7°41'16.24" (LT)
D = 2°51'53"
T = 136.13'
L = 271.85'
R = 2,000.00'
PC = 269+12.08
PT = 271+83.92
V = 60 MPH
SE = 2.7%

Curve RTE7 BAFO-3
PI = 282+64.67
DELTA = 12°30'12.0" (LT)
D = 2°12'13"
T = 284.82
L = 567.38'
R = 2,600.00'
PC = 279+79.85
PT = 285+47.23
V = 60 MPH
SE = 3.6%

Springvale Rd. (Rte. 674)

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

Crippen Vale Ct.

Baron Cameron Ave. (Rte.606)

Match Line - Sta. 266+00 - See Sheet 7R

Match Line - Sta. 281+00 - See Sheet 9R

Proposed Noise Barrier E3

RTE7 BAFO-1

RTE7 BAFO-2

RTE7 BAFO-3

PC 269+12.08

PT 271+83.92

PC 279+79.85

PT 285+47.23

Existing R/W (Per DB09085 PG0031)

Existing R/W (Per DB09838 PG0045)

Existing R/W (Per DB09703 PG0185)

Existing R/W (Per DB09085 PG0077)

Existing R/W (Per DB03199 PG0055)

Existing R/W (Per DB12137 PG0631)

Existing R/W (Per DB09085 PG0031)

Existing R/W (Per VDOT Plan #1855A)

PC = PCC

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Gross Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esm't. per RFP and Offeror's Concept
- Proposed Temporary Esm't. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	8R

STATE	STATE ROUTE	STATE PROJECT	SHEET NO
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	9R

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REVISED PROPOSAL DESIGN MODIFICATION
Route 7 horizontal alignment eliminates fee simple right-of-way acquisition from Parcels 063, 064, 065 and 076 and reduces acquisition area on Parcels 060 and 062

REVISED PROPOSAL DESIGN MODIFICATION
Horizontal alignment of Route 7 avoids impacts to the 54" water main

Curve RTE7 BAF0-3
PI = 282+64.57
DELTA = 12°30'12.0" (LT)
D = 2°12'15"
T = 284.82'
L = 567.38'
R = 2600.00'
PC = 279+79.85
PT = 285+47.23
V = 60 MPH
SE = 3.6%

Match Line - Sta. 281+00 - See Sheet 8R

Match Line - Sta. 292+00 - See Below

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

Existing R/W (Per VDOT Plan A-1865)

Existing R/W (Per DB09856 PG1525)

Existing R/W (Per VDOT Plan A-8418)

Proposed Noise Barrier G1

INSET A

DESIGN ENHANCEMENT
Reduced the size of the Stormwater Management Facility reducing the fee simple right-of-way acquistion area and long term maintenance costs

SWM #4

Match Line - See Below

Match Line - See Inset A

REVISED PROPOSAL DESIGN MODIFICATION
Route 7 horizontal alignment eliminates fee simple right-of-way acquisition from Parcel 076

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment to avoid impacts to 12" water main and eliminate need for barrier protection

REVISED PROPOSAL DESIGN MODIFICATION
Horizontal alignment of Route 7 and the noise barrier alignment avoids impacts to the 54" water main

DESIGN ENHANCEMENT
Revised shared-use path alignment to avoid existing 54" Water Line testing station

REVISED PROPOSAL MODIFICATION LIMITS
Red line represents the eastern limit of horizontal alignment modification to provide an at-grade intersection at Baron Cameron Avenue in lieu of the grade separated interchange

Downey Dr.

Existing R/W (Per DB03284 PG0608)

Existing R/W (Per DB03721 PG0293)

Existing R/W (Per DB03566)

Combination Retaining Wall & Noise Barrier

Proposed Noise Barrier F1

Proposed Noise Barrier F2

Existing R/W (Per DB09212 PG01373)

Existing R/W (Per DB10625 PG0148)

Match Line - Sta. 292+00 - See Above

Match Line - Sta. 306+50 - See Sheet 10

Proposed Roadway Pavement
Proposed Shared Use Path
Proposed Bridge
Proposed Concrete Sidewalk, Median or Entrance Gutter
Proposed Gross Median/Buffer/Planted Area
Proposed Stormwater Management Facility
Area of Fee Simple Right-Of-Way Reduction

Proposed Fee Simple Right-of-Way per RFP
Proposed Permanent Esm't. per RFP and Offeror's Concept
Proposed Temporary Esm't. per RFP and Offeror's Concept
Offeror's Revised Proposed Fee Simple Right-of-Way
Proposed Utility Relocations
Existing Utility Designations per RFP
Proposed Noise Barrier

SCALE 0 50' 100'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	9R

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	10

SHIRLEY CONTRACTING COMPANY, LLC
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DESIGN ENHANCEMENT

Shifted alignment up to 7' to the north to avoid impacting the 54" water line while remaining within right-of-way and easement limits

Curve RTE7-4
PI = 309+46.24
DELTA = 16° 34' 52.22" (RT)
D = 2° 02' 47"
T = 408.01'
L = 810.31'
R = 2,800.00'
PC = 305+38.23
PT = 313+48.54
V = 60 MPH
SE = 5.3%

REVISED PROPOSAL DESIGN MODIFICATION

Adjusted noise barrier alignment based on revised Route 7 alignment, providing an offset greater than 18' from the face of curb to avoid barrier protection

Curve RTE7BCE-7
PI = 311+56.05
DELTA = 10° 12' 05.42" (RT)
D = 1° 53' 30"
T = 270.31'
L = 539.32'
R = 3,025.02'
PCC = 308+85.68
PT = 314+25.00
V = 60 MPH
SE = 5.0%

Curve RTE7BCE-6
PI = 307+45.94
DELTA = 5° 40' 23.64" (RT)
D = 2° 03' 50"
T = 139.93'
L = 279.12'
R = 2,776.00'
PC = 306+05.96
PCC = 308+85.68
V = 60 MPH
SE = 5.3%

REVISED PROPOSAL DESIGN MODIFICATION

Route 7 alignment modification eliminated the need for dual baselines, so geometry and curve labels associated with the eastbound Route 7 underpass has been eliminated

Curve COLVIN-1
PI = 61+32.62
DELTA = 50° 42' 47.59" (RT)
D = 26° 01' 56"
T = 105.21'
L = 194.81'
R = 222.00'
PC = 60+27.41
PT = 62+22.22
V = 35 MPH
SE = Match Exist.

Curve DELTAG-1
PI = 71+44.50
DELTA = 5° 13' 41.94" (RT)
D = 16° 19' 25"
T = 16.03'
L = 32.03'
R = 351.00'
PC = 71+28.47
PT = 71+60.50
V = 25 MPH
SE = 3.3%

Existing R/W (Per DB08992 PG0373)
Existing R/W (Per DB08992 PG0373)
Existing R/W (Per DB08865 PG0015)
Colvin Run Rd.(Rte.743)
Ex. R/W Per DB 5569 PG 1118
N 84° 25' 57" E
PC62+66.54
PT62+21.58
COLVIN-1
Proposed Noise Barrier F1
Ex. R/W Per VDOT Plan A-1865
Combination Retaining Wall & Noise Barrier
Proposed Noise Barrier F3
Existing R/W (Per DB06825 PG0615)
Combination Retaining Wall & Noise Barrier
RTE7-4
Proposed Noise Barrier F2
Existing R/W (Per DB09272 PG0373)
PC60+28.02
PT63+48.54
POT60+00.00
POT70+00.00
Leesburg Pike (Rte.7) WB
Leesburg Pike (Rte.7) EB
Match Line - Sta. 306+50 - See Sheet 9
Existing R/W (Per VDOT Plan A-8222)
Proposed Noise Barrier G1
RTE7BC E-6
RTE7BC E-7
DELTAG-1
Della Glen Ct.(Rte.743)
Existing R/W (Per VDOT Plan A-8222)
Proposed Noise Barrier G2
PC71+28.03
PT71+60.06
POT71+85.55
Existing R/W (Per
Proposed Noise Barrier G3
Match Line - Sta. 321+50 - See Sheet 11
086
087
088
089
090
091
096

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esm't. per RFP and Offeror's Concept
- Proposed Temporary Esm't. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	10

STATE	STATE ROUTE	STATE PROJECT	SHEET NO
VA.	7	0007-029-225 P101,R201,C501 0007-029-942 P101,R201,C501	11

SHIRLEY CONTRACTING COMPANY, LLC

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REVISED PROPOSAL DESIGN MODIFICATION
Revised noise barrier alignment to minimize grading impacts while loacting it more than 18' from the face of curb, avoiding barrier protection

DESIGN ENHANCEMENT
Shifted alignment up to 7' to the north to minimize impacts to existing utilities while remaining within right-of-way and easement limits

DESIGN ENHANCEMENT
Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

REVISED PROPOSAL DESIGN MODIFICATION
Revised noise barrier alignment to minimize grading impacts while loacting it more than 18' from the face of curb, avoiding barrier protection

DESIGN ENHANCEMENT
Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

REVISED PROPOSAL DESIGN MODIFICATION
Revised noise barrier alignment to minimize grading impacts while loacting it more than 18' from the face of curb, avoiding barrier protection

Match Line - Sta. 321+50 - See Sheet 10

Match Line - Sta. 335+00 - See Below

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

S 54° 39' 28" E

POT 80+00.00

PC 80+98.90

PT 82+08.79

S 35° 24' 30" W

Colvin Forest Dr.

COLVIN-1

Combination Retaining Wall & Noise Barrier

Proposed Noise Barrier F3

Proposed Noise Barrier G3

Proposed Noise Barrier G4

Proposed Noise Barrier G5

Proposed Noise Barrier G6

Existing R/W (Per DB06825 PG015)

Existing R/W (Per DB10412 PG444)

Existing R/W (Per DB07635 PG0304)

Existing R/W (Per VDOT Plan A-8222)

097 098 099 100 101 103 107 108 110

Curve COLVIN-1
PI = 81+53.89
DELTA = 6° 12' 55.67" (RT)
D = 5° 39' 22"
T = 55.00'
L = 109.89'
R = 1013.00'
PC = 80+98.90
PT = 82+08.79
V = 25 MPH
SE = 2.3%

Match Line - Sta. 335+00 - See Above

Match Line - Sta. 349+50 - See Sheet 12

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

PC 337+93.46

PRC 343+47.10

Pedestrian Underpass

Proposed Retaining Wall

Proposed Noise Barrier F3

Proposed Noise Barrier G6

Proposed Noise Barrier G7

Combination Retaining Wall & Noise Barrier

Existing R/W (Per DB10412 PG444)

Existing R/W (Per VDOT Plan A-1865)

Existing R/W (Per VDOT Plan A-8222)

Existing R/W (Per VDOT Plans A-1865 & A-8222)

RTE7-5

RTE7-6

111 116

Curve RTE7-5
PI = 340+70.34
DELTA = 2° 45' 30.06" (RT)
D = 0° 29' 54"
T = 276.87'
L = 553.64'
R = 11,500.00'
PC = 337+93.46
PRC = 343+47.10
V = 60 MPH
SE = NC

Curve RTE7-6
PI = 348+83.46
DELTA = 14° 15' 58.18" (LT)
D = 1° 20' 13"
T = 536.36'
L = 1,067.18'
R = 4,286.00'
PRC = 343+47.10
PT = 354+14.28
V = 60 MPH
SE = 3.7%

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk,Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esm't. per RFP and Offeror's Concept
- Proposed Temporary Esm't. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE 0 50' 100'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	11

STATE	ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	12

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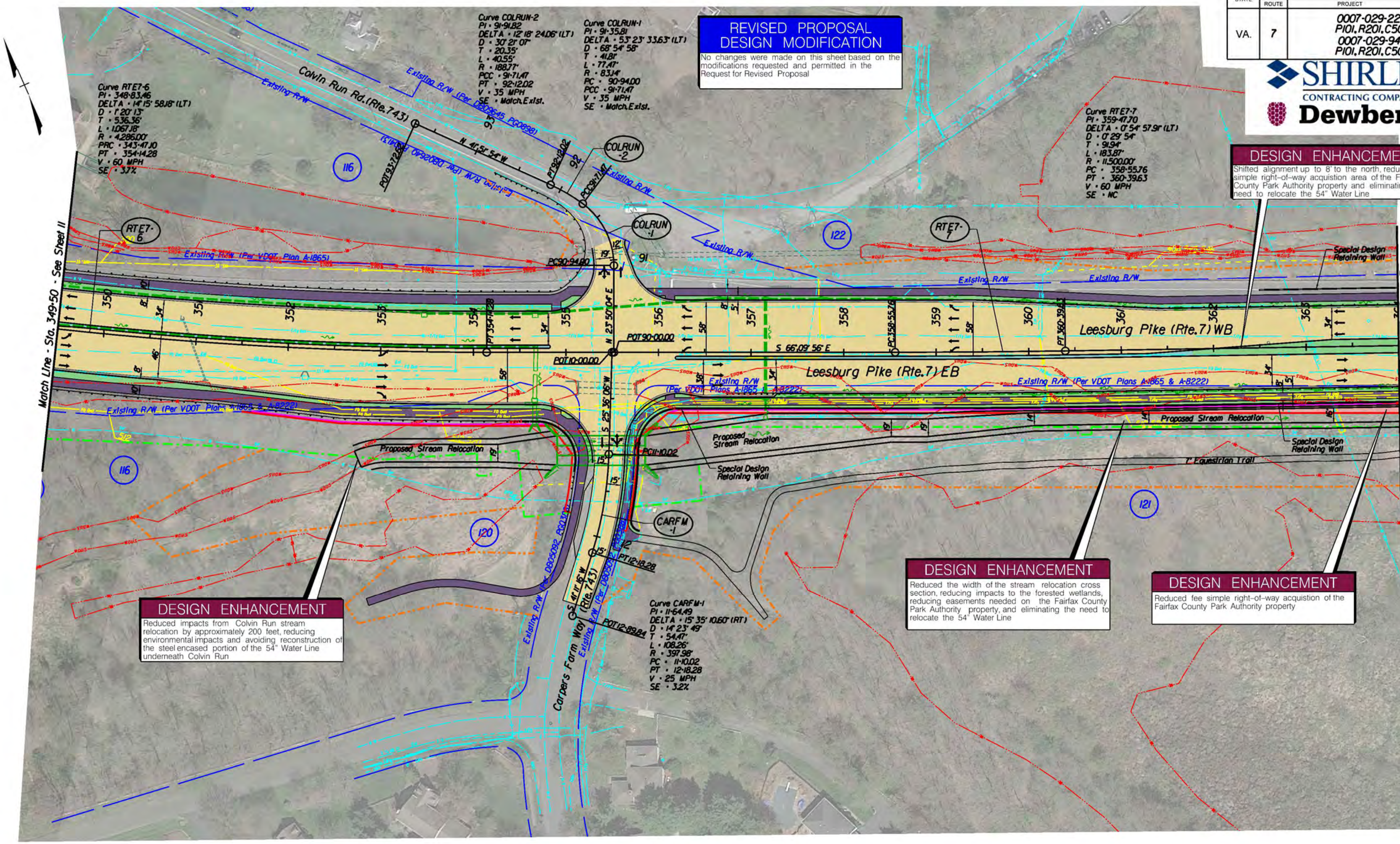

REVISED PROPOSAL DESIGN MODIFICATION
No changes were made on this sheet based on the modifications requested and permitted in the Request for Revised Proposal
DESIGN ENHANCEMENT
Shifted alignment up to 8' to the north, reducing fee simple right-of-way acquistion area of the Fairfax County Park Authority property and eliminating the need to relocate the 54" Water Line
DESIGN ENHANCEMENT
Reduced impacts from Colvin Run stream relocation by approximately 200 feet, reducing environmental impacts and avoiding reconstruction of the steel encased portion of the 54" Water Line underneath Colvin Run
DESIGN ENHANCEMENT
Reduced the width of the stream relocation cross section, reducing impacts to the forested wetlands, reducing easements needed on the Fairfax County Park Authority property, and eliminating the need to relocate the 54" Water Line
DESIGN ENHANCEMENT
Reduced fee simple right-of-way acquistion of the Fairfax County Park Authority property
Curve COLRUN-2
PI = 91-91.82
DELTA = 12° 18' 24.06" (LT)
D = 30° 21' 07"
T = 20.35'
L = 40.55'
R = 188.77'
PCC = 91-71.47
PT = 92-12.02
V = 35 MPH
SE = Match Exist.
Curve COLRUN-1
PI = 91-35.81
DELTA = 53° 23' 33.63" (LT)
D = 68° 54' 58"
T = 41.81'
L = 77.47'
R = 83.14'
PC = 90-94.00
PCC = 91-71.47
V = 35 MPH
SE = Match Exist.
Curve RTE7-6
PI = 348-83.46
DELTA = 14° 15' 58.18" (LT)
D = 1° 20' 13"
T = 536.36'
L = 1,067.18'
R = 4,286.00'
PRC = 343-47.10
PT = 354-14.28
V = 60 MPH
SE = 3.7%
Curve RTE7-7
PI = 359-47.70
DELTA = 0° 54' 57.91" (LT)
D = 0° 29' 54"
T = 91.94'
L = 183.87'
R = 11,500.00'
PC = 358-55.76
PT = 360-39.63
V = 60 MPH
SE = NC
Curve CARFM-1
PI = 11-64.49
DELTA = 15° 35' 10.60" (RT)
D = 14° 23' 49"
T = 54.47'
L = 108.26'
R = 397.98'
PC = 11-10.02
PT = 12-18.28
V = 25 MPH
SE = 3.2%
Colvin Run Rd. (Rte. 743)
Leesburg Pike (Rte. 7) WB
Leesburg Pike (Rte. 7) EB
Carpers Farm Way (Rte. 743)
Match Line - Sta. 349-50 - See Sheet 11
Match Line - Sta. 364-00 - See Sheet 13
Existing R/W
Existing R/W (Per VDOT Plan A-1865)
Existing R/W (Per VDOT Plans A-1865 & A-8222)
Proposed Stream Relocation
Special Design Retaining Wall
7' Equestrian Trail
S 66° 09' 56" E
POT 90-00.00
POT 10-00.00
116
120
121
122

Legend		Legend	
	Proposed Roadway Pavement		Proposed Fee Simple Right-of-Way per RFP
	Proposed Shared Use Path		Proposed Permanent Esmt. per RFP and Offeror's Concept
	Proposed Bridge		Proposed Temporary Esmt. per RFP and Offeror's Concept
	Proposed Concrete Sidewalk, Median or Entrance Gutter		Offeror's Revised Proposed Fee Simple Right-of-Way
	Proposed Grass Median/Buffer/Planted Area		Proposed Utility Relocations
	Proposed Stormwater Management Facility		Existing Utility Designations per RFP
	Area of Fee Simple Right-Of-Way Reduction		Proposed Noise Barrier

SCALE 0 50' 100'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	12

STATE	STATE ROUTE	STATE PROJECT	SHEET NO
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	13

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REVISED PROPOSAL DESIGN MODIFICATION

Parapets on the Route 7 bridge over Difficult Run will incorporate the CPSR details. These details will be reflected in the final design

DESIGN ENHANCEMENT

Shifted alignment up to 16' to the north, reducing fee simple right-of-way acquistion of the Fairfax County Park Authority property and eliminating the need to relocate the 54" Water Line

DESIGN ENHANCEMENT

Shifted alignment up to 14' to the north to allow two phase bridge construction

DESIGN ENHANCEMENT

Reduced the width of the stream relocation cross section, reducing impacts to the forested wetlands and eliminating the need to relocate the 54" Water Line

DESIGN ENHANCEMENT

Reduced fee simple right-of-way acquistion area of the Fairfax County Park Authority property

Match Line - Sta. 364+00 - See Sheet 12

Match Line - Sta. 378+50 - See Sheet 14

Locust Hill Dr.

Faulkner Dr.

12' Cross County Trail

7' Equestrian Trail

B610

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

Existing R/W

Existing R/W (Per DB06957 PG1233)

Existing R/W (Per VDOT Plan A4C221)

Special Design Retaining Wall

Proposed Noise Barrier F5

Proposed Noise Barrier F6

Proposed Noise Barrier G10

Proposed Noise Barrier G11

Combination Retaining Wall & Noise Barrier

Proposed Stream Relocation

Curve FAULK-1
PI = 21+81.72
DELTA = 26° 06' 12.93" (RT)
D = 21° 39' 45"
T = 61.32'
L = 120.50'
R = 264.49'
PC = 21+20.40
PT = 22+40.91
V = 25 MPH
SE = 3.6%

Curve RTE7-8
PI = 379+52.76
DELTA = 19° 22' 21.66" (RT)
D = 3° 25' 51"
T = 285.05'
L = 564.66'
R = 1670.00'
PC = 376+67.71
PT = 382+32.37
V = 60 MPH
SE = 7.4%

PC 22+50.00

PC 21+29.50

POT 20+00.00

PC 376+67.71

RTE7-2-5

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Gross Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esm't. per RFP and Offeror's Concept
- Proposed Temporary Esm't. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	13

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	14

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment and eliminated barrier protection and impact attenuators since barrier is more than 18' from the face of curb

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment and eliminated barrier protection and impact attenuators since barrier is more than 18' from the face of curb

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment and eliminated barrier protection and impact attenuator since barrier is more than 18' from the face of curb

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment and eliminated barrier protection and impact attenuator since barrier is more than 18' from the face of curb

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment and eliminated barrier protection and impact attenuators since barrier is more than 18' from the face of curb

Match Line - Sta. 378+50 - See Sheet 13

Match Line - Sta. 391+00 - See Above

Match Line - Sta. 391+00 - See Below

Match Line - Sta. 405+00 - See Sheet 15

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

S 41°42'32" E

Proposed Noise Barrier F7

Proposed Noise Barrier F8

Proposed Noise Barrier F9

Combination Retaining Wall & Noise Barrier F6

Combination Retaining Wall & Noise Barrier G11

Combination Retaining Wall & Noise Barrier G12

Proposed Noise Barrier G12

Proposed Noise Barrier G13

Existing R/W (Per VDOT Plan A-8222)

Existing R/W (Per VDOT Plan A-8222 & DB04306 PG0742)

Existing R/W (Per DB06957 PG2331)

Existing R/W (Per DB11399 PG1567)

RTE7-8

Curve RTE7-8
PI • 379+52.76
DELTA • 19°22'21.66" (RT)
D • 3°25'51"
T • 285.05'
L • 564.66'
R • 1670.00'
PC • 376+67.71
PT • 382+32.37
V • 60 MPH
SE • 7.4%

SWM #8

POT 30+00.00

POT 31+57.16

POT 40+00.00

PC 41+36.72

PT 42+70.16

NEWCO -1

Curve NEWCO-1
PI • 42+09.37
DELTA • 50°13'21.38" (LT)
D • 37°38'17"
T • 72.64'
L • 133.44'
R • 155.00'
PC • 41+36.72
PT • 42+70.16
V • 25 MPH
SE • 4.0%

Middleton Ridge Rd.

Newcomb's Farm Rd.

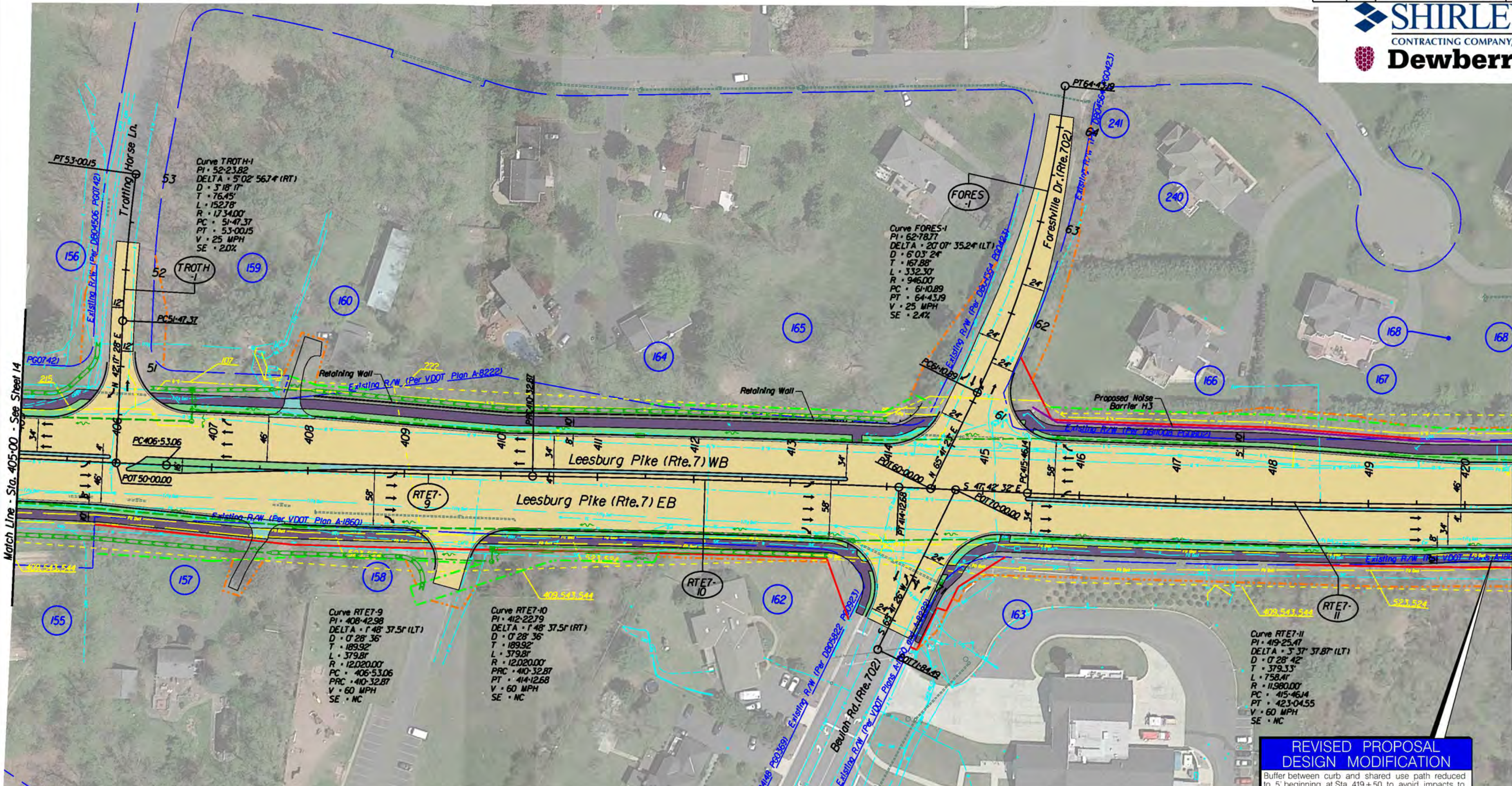
- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esmt. per RFP and Offeror's Concept
- Proposed Temporary Esmt. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	14

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101,R201,C501 0007-029-942 P101,R201,C501	15

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry



REVISED PROPOSAL DESIGN MODIFICATION

Buffer between curb and shared use path reduced to 5' beginning at Sta. 419+50 to avoid impacts to 54" water main. Design waiver will be developed for approval by VDOT

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esmt. per RFP and Offeror's Concept
- Proposed Temporary Esmt. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE 0 50' 100'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	15

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	16

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

Match Line - Sta. 420+50 - See Sheet 15

Match Line - Sta. 435+50 - See Sheet 17

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment and eliminated barrier protection and impact attenuators since barrier is more than 18' from the face of curb

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment and eliminated barrier protection and impact attenuators since barrier is more than 18' from the face of curb

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment and eliminated barrier protection and impact attenuators since barrier is more than 18' from the face of curb

REVISED PROPOSAL DESIGN MODIFICATION
Buffer between curb and shared use path reduced to 5' to accommodate installation of noise barrier between the shared use path and teh 54" water main without requiring relocation of the 54" water main. Reduced buffer width continues to approximately Sta. 430+60

REVISED PROPOSAL DESIGN MODIFICATION
Guardrail added at face of curb to provide protection of new retaining wall. Retaining wall added to allow for bifrucation of the shared use path to avoid excessive fill over 54" water main and avoid water main relocation

REVISED PROPOSAL DESIGN MODIFICATION
Adjusted noise barrier alignment to avoid conflicts with 54" water main, eliminating water main relocation

Leesburg Pike (Rte.7) EB

Leesburg Pike (Rte.7) WB

Anwood Rd. (Rte. 678)

SWM #9

Proposd Noise Barrier H3

Proposd Noise Barrier H4

Proposd Noise Barrier H5

Proposd Noise Barrier I1

Proposd Noise Barrier I2

Proposd Noise Barrier I3

Existing R/W (Per DB1008 PG082)

Ex. R/W Per VDOT Plan A-8222

Existing R/W (Per VDOT Plan A-8222)

Existing R/W (Per DB807 PG553)

PC426+90.50

PT431+27.18

PC81+32.53

PRC83+75.58

PT84+69.78

POT80+00.00

RTE7-12

Curve RTE7-12
PI = 429+08.85
DELTA = 1°00'00.00" (RT)
D = 0°13'44"
T = 218.35'
L = 436.68'
R = 25,020.00'
PC = 426+90.50
PT = 431+27.18
V = 60 MPH
SE = NC

Curve ATWOO-1
PI = 82+54.13
DELTA = 4°54'18.79" (LT)
D = 2°01'05"
T = 121.60'
L = 243.05'
R = 2,839.00'
PC = 81+32.53
PRC = 83+75.58
V = 25 MPH
SE = NC

Curve ATWOO-2
PI = 84+24.19
DELTA = 34°49'17.01" (RT)
D = 36°57'54"
T = 48.61'
L = 94.20'
R = 155.00'
PRC = 83+75.58
PT = 84+69.78
V = 25 MPH
SE = 4.0%

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esm't. per RFP and Offeror's Concept
- Proposed Temporary Esm't. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE 0 50' 100'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	16

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101,R201,C501 0007-029-942 P101,R201,C501	17

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

Match Line - Sta. 435+50 - See Sheet 16

Match Line - Sta. 450+50 - See Sheet 18

Lyons St.

Existing R/W (Per DB00979 PG0273)

Existing R/W (Per DB00979 PG0273)

Curve RTE7-13
PI = 445+22.89
DELTA = 3°16'35.26" (LT)
D = 0°28'36"
T = 343.78'
L = 687.36'
R = 12,020.00'
PC = 441+79.12
PT = 448+66.48
V = 60 MPH
SE = NC

RTE7-13

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

Existing R/W (Per VDOT Plan A-B222)

Existing R/W (Per VDOT Plan A-B222)

Existing R/W (Per VDOT Plan A-B222)

Ex. R/W Per VDOT Plan A-1860

Existing R/W (Per DB05322 PG0256)

Existing R/W (Per DB05691 PG0173)

Existing R/W (Per DB04854 PG0797)

Existing R/W (Per DB0624

Stokley Way

POT 91+63.54

POT 90+00.00

POT 100+00.00

POT 101+91.43

PI 438+33.78

PC 441+79.12

N 35° 39' 50" E

S 51° 20' 10" E

N 36° 55' 35" E

Proposed Noise Barrier H6

Proposed Noise Barrier H7

Proposed Noise Barrier H8

Proposed Noise Barrier H9

Proposed Noise Barrier H10

Proposed Noise Barrier H11

Combination Retaining Wall & Noise Barrier H11

Proposed Noise Barrier I3

Proposed Noise Barrier I4

Proposed Noise Barrier I5

Proposed Noise Barrier I6

Proposed Noise Barrier I6

Proposed Noise Barrier J1

178 179 180 181 182 183 184 185 186 187 188 189 190

410 541 542

539 540

524

215

102

101

91

REVISED PROPOSAL DESIGN MODIFICATION

Adjusted noise barrier alignment and eliminated barrier protection and impact attenuators since barrier is more than 18' from the face of curb

DESIGN ENHANCEMENT

Moved the noise barrier outside of the clear zone, avoiding the need for barrier protection

REVISED PROPOSAL DESIGN MODIFICATION

Adjusted noise barrier alignment to avoid conflicts with 54" water main, eliminating water main relocation

REVISED PROPOSAL DESIGN MODIFICATION

Adjusted noise barrier alignment and eliminated barrier protection and impact attenuator since barrier is more than 18' from the face of curb

REVISED PROPOSAL DESIGN MODIFICATION

Adjusted noise barrier alignment to avoid conflicts with 54" water main, eliminating water main relocation

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk,Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esm't. per RFP and Offeror's Concept
- Proposed Temporary Esm't. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	17

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	18R

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Match Line - Sta. 114+00 - See Inset A

REVISED PROPOSAL MODIFICATION LIMITS

Red line represents western limit of horizontal alignment change in front of St. Athanasius Church to avoid 54" water main conflict

REVISED PROPOSAL MODIFICATION LIMITS

Red line represents eastern limit of horizontal alignment change in front of St. Athanasius Church to avoid 54" water main conflict

REVISED PROPOSAL DESIGN MODIFICATION

Horizontal alignment adjustment results in additional 0.064 Acre fee-simple right-of-way acquisition from Parcel 193. RFP proposed right-of-way is shown as a red line while our Team's proposed right-of-way line is shown in pink. Additional fee-simple right-of-way area is completely contained within limits of RFP proposed permanent easement

Curve RTE7 BAF0-14
PI = 458+90.50
DELTA = 16°03'42.84" (RT)
D = 3°10'59"
T = 253.97'
L = 504.60'
R = 1800.00'
PC = 456+36.53
PT = 461+41.13
V = 60 MPH
SE = 7.1%

Towlston Rd. (Rte. 5020)
Trap Rd. (Rte. 676)
Leesburg Pike (Rte. 7) WB
Leesburg Pike (Rte. 7) EB
SWM #10
Retaining Wall
Combination Retaining Wall & Noise Barrier #11
Existing R/W (Per VDOT Plan A-8222)
Existing R/W (Per DB A-6 PG 217 & Per DB B7 PG 492)
POT 110+00.00
POT 120+00.00
PC 121+09.09
PT 124+91.43
PC 456+36.53
PT 461+41.13
Proposed Noise Barrier J1
Proposed Noise Barrier J2
Proposed Noise Barrier J3
Proposed Noise Barrier J4
Proposed Noise Barrier K1
TOWLSO-1
TRARD-1
RTE7 BAF0-14

REVISED PROPOSAL DESIGN MODIFICATION

Horizontal alignment adjustment allows for installation of the noise barrier behind the shared use path, more than 18' beyond the face of curb, and without conflicting with the 54" water main

REVISED PROPOSAL DESIGN MODIFICATION

Buffer width between the back of curb and shared use path has been reduced to 5' between St. Athanasius Church entrance and Trap Road. This modification, combined with the horizontal alignment adjustment, allows for installation of the noise barrier behind the shared use path (more than 18' away from the face of curb) and avoids conflicts with the 54" water main

Curve TOWLSO-1
PI = 123+11.05
DELTA = 45°38'20.59" (LT)
D = 11°56'12"
T = 201.97'
L = 382.34'
R = 480.00'
PC = 121+09.09
PT = 124+91.43
V = 30 MPH
SE = 3.5%

Curve TRARD-1
PI = 131+22.45
DELTA = 25°13'09.59" (LT)
D = 22°49'31"
T = 56.15'
L = 110.48'
R = 251.00'
PC = 130+66.30
PT = 131+76.78
V = 25 MPH
SE = 3.7%

REVISED PROPOSAL DESIGN MODIFICATION

Adjusted noise barrier alignment and eliminated barrier protection and impact attenuator since barrier is more than 18' from the face of curb

INSET A

Towlston Rd. (Rte. 676)
N 22°29'49" E
Match Line - Sta. 114+00 - See Above

Match Line - Sta. 450+50 - See Sheet 17

Match Line - Sta. 465+50 - See Sheet 19

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esmt. per RFP and Offeror's Concept
- Proposed Temporary Esmt. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	18R

STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	19

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

Match Line - Sta. 465+50 - See Sheet 18

Match Line - Sta. 477+50 - See Below

Match Line - Sta. 477+50 - See Above

Match Line - Sta. 490+50 - See Sheet 20

Existing R/W (Per VDOT Plan A-8222)

Existing R/W (Per VDOT Plan A-1860)

Existing R/W (Per DB11586 PG937)

Existing R/W (Per DB3915 PG338)

Existing R/W (Per DB10000 PG8970)

Existing R/W (Per DB12000 PG3568)

Ex. R/W Per DB-3915 PG. 338

Curve ROYAL-1
PI = 150+43.47
DELTA = 6°17' 22.90" (LT)
D = 11° 27' 33"
T = 27.47'
L = 54.89'
R = 500.00'
PC = 150+16.00
PT = 150+70.88
V = 25 MPH
SE = 2.9%

POT 151+30.25

ROYAL -1

PT 150+70.88

PC 150+16.00

POT 150+00.00

S 38° 33' 03" E

POT 140+00.00

PC 140+70.67

POT 150+00.00

Service Rd. #4

LUCKY -1

PT 141+32.95

POT 141+91.70

Curve LUCKY-1
PI = 141+01.85
DELTA = 7° 08' 12.44" (RT)
D = 11° 27' 33"
T = 31.18'
L = 62.28'
R = 500.00'
PC = 140+70.67
PT = 141+32.95
V = 25 MPH
SE = 2.9%

Lucky Estates Dr.

Royal Estates Dr.

Proposed Noise Barrier K1

Proposed Noise Barrier K2

Proposed Noise Barrier K3

4½" 5:3:7, 5:3:8

REVISED PROPOSAL DESIGN MODIFICATION

Adjusted noise barrier alignment and eliminated barrier protection and impact attenuator since barrier is more than 18' from the face of curb

Curve LWNRT-3
PI = 41+97.13
DELTA = 7° 58' 10.62" (RT)
D = 5° 43' 05"
T = 69.80'
L = 139.37'
R = 1002.00'
PC = 41+27.33
PT = 42+66.71
V = 50 MPH
SE = 7.6%

LWNRT -3

RTE7-15

SRVC4 -2

SRVC4 -3

Curve RTE7-15
PI = 488+38.97
DELTA = 1° 45' 49.48" (RT)
D = 0° 50' 56"
T = 103.90'
L = 207.79'
R = 6750.00'
PC = 487+35.07
PT = 489+42.86
V = 45 MPH
SE = NC

Curve SRVC4-2
PI = 164+84.19
DELTA = 5° 42' 12.90" (RT)
D = 3° 10' 59"
T = 89.67'
L = 179.18'
R = 1800.00'
PC = 163+94.52
PCC = 165+73.71
PT = 166+80.41
V = 25 MPH
SE = 2.0%

Curve SRVC4-3
PI = 166+27.12
DELTA = 6° 41' 34.62" (RT)
D = 6° 21' 58"
T = 53.41'
L = 106.70'
R = 900.00'
PCC = 165+73.71
PT = 166+80.41
V = 25 MPH
SE = 2.4%

SWM #11

PC 10+80.24

PT 11+19.89

Wolftrap Run Rd.

Proposed Roadway Pavement
Proposed Shared Use Path
Proposed Bridge
Proposed Concrete Sidewalk, Median or Entrance Gutter
Proposed Grass Median/Buffer/Planted Area
Proposed Stormwater Management Facility
Area of Fee Simple Right-Of-Way Reduction

Proposed Fee Simple Right-of-Way per RFP
Proposed Permanent Esm't. per RFP and Offeror's Concept
Proposed Temporary Esm't. per RFP and Offeror's Concept
Offeror's Revised Proposed Fee Simple Right-of-Way
Proposed Utility Relocations
Existing Utility Designations per RFP
Proposed Noise Barrier

SCALE 0 50' 100'

PROJECT	SHEET NO.
0007-029-225 0007-029-942	19

STATE	STATE ROUTE	STATE PROJECT	SHEET NO
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	20

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

REVISED PROPOSAL DESIGN MODIFICATION

No changes were made on this sheet based on the modifications requested and permitted in the Request for Revised Proposal

DESIGN ENHANCEMENT

Shifted alignment up to 20' to the south to avoid the private developer pond on Parcel 217 and reducing fee simple right-of-way acquisition area

DESIGN ENHANCEMENT

Increased pavement width to accomodate turning vehicle wheel path

DESIGN ENHANCEMENT

Shifted alignment up to 14' to the north to minimize fee simple right-of-way acquisition area of Parcel 220 and avoid the existing detention pond on Parcel 217

INSET A

Brook Rd. (Rte.760)

Lewinsville Rd. (Rte.694)

Lewinsville Rd./Rte.7 WB Merge

Rte.7 Displaced Left Turn

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

Service Rd. #4

Service Rd. #5

McLean Dr. #1

McLean Dr. #2

SWM #13

Match Line - See Above

Match Line - Sta. 490+50 - See Sheet 19

Match Line - Sta. 504+50 - See Sheet 21

Curve LWNS-3
PI • 178+91.57
DELTA • 17° 58' 45.96" (LT)
D • 5° 11' 57"
T • 174.34'
L • 345.81'
R • 1,102.00'
PC • 177+17.24
PT • 180+63.05
V • 35 MPH
SE • 2.9%

Curve LWNS-2
PI • 175+45.09
DELTA • 91° 55' 44.59" (RT)
D • 35° 48' 36"
T • 165.48'
L • 256.71'
R • 160.00'
PC • 173+80.61
PT • 176+37.33
V • 25 MPH (Design Waiver)
SE • 4.0%

Curve LWNS-1
PI • 171+43.97
DELTA • 20° 06' 34.16" (LT)
D • 22° 55' 06"
T • 44.33'
L • 87.74'
R • 250.00'
PC • 170+99.64
PT • 171+87.39
V • 25 MPH (Design Waiver)
SE • 3.7%

Curve RTE7-17
PI • 503+65.44
DELTA • 1° 16' 22.91" (RT)
D • 0° 50' 56"
T • 74.99'
L • 149.98'
R • 6,750.00'
PC • 502+90.45
PT • 504+40.42
V • 45 MPH
SE • NC

Curve BROOK-2
PI • 17+38.33
DELTA • 64° 26' 36.60" (RT)
D • 22° 49' 37"
T • 158.20'
L • 282.31'
R • 251.00'
PC • 15+80.14
PT • 18+62.45
V • 30 MPH
SE • 4.0%

Curve BROOK-1
PI • 11+46.13
DELTA • 30° 25' 25.11" (LT)
D • 11° 27' 33"
T • 135.96'
L • 265.50'
R • 500.00'
PC • 10+10.18
PT • 12+75.67
V • 30 MPH
SE • 3.4%

Curve DISLT-1
PI • 20+30.26
DELTA • 18° 23' 07.21" (LT)
D • 30° 38' 22"
T • 30.26'
L • 60.01'
R • 187.00'
PC • 20+00.00
PRC • 20+60.01
V • 20 MPH
SE • 3.5%

Curve DISLT-2
PI • 21+15.24
DELTA • 38° 18' 42.51" (RT)
D • 36° 02' 06"
T • 55.23'
L • 106.32'
R • 159.00'
PRC • 20+60.01
PRC • 21+66.32
V • 20 MPH
SE • 3.6%

Curve DISLT-3
PI • 21+99.74
DELTA • 0° 34' 22.21" (LT)
D • 0° 51' 25"
T • 33.42'
L • 66.84'
R • 6,685.00'
PRC • 21+66.32
PT • 22+33.16
V • 20 MPH
SE • NC

Curve LWNRT-2
PI • 39+28.49
DELTA • 7° 11' 14.28" (LT)
D • 5° 45' 09"
T • 62.55'
L • 124.94'
R • 996.00'
PC • 38+65.93
PT • 39+90.87
V • 50 MPH
SE • 7.6%

Curve SRVC4-3
PI • 166+27.12
DELTA • 6° 47' 34.62" (RT)
D • 6° 29' 58"
T • 53.41'
L • 106.70'
R • 900.00'
PCC • 165+73.71
PT • 166+80.41
V • 25 MPH
SE • 2.4%

Curve RTE7-16
PI • 493+26.80
DELTA • 2° 32' 45.82" (LT)
D • 0° 50' 56"
T • 150.00'
L • 299.95'
R • 6,750.00'
PC • 491+76.80
PT • 494+76.75
V • 45 MPH
SE • NC

Curve SRVC4-4
PI • 168+06.72
DELTA • 12° 29' 47.52" (LT)
D • 27° 01' 35"
T • 23.21'
L • 46.24'
R • 212.00'
PC • 167+83.51
PT • 168+29.75
V • 25 MPH
SE • 3.9%

Curve SRVC5-1
PI • 12+05.26
DELTA • 8° 19' 58.57" (RT)
D • 11° 08' 49"
T • 37.44'
L • 74.75'
R • 514.00'
PC • 11+67.81
PT • 12+42.57
V • 25 MPH
SE • 2.9%

- Proposed Roadway Pavement
- Proposed Shared Use Path
- Proposed Bridge
- Proposed Concrete Sidewalk, Median or Entrance Gutter
- Proposed Grass Median/Buffer/Planted Area
- Proposed Stormwater Management Facility
- Area of Fee Simple Right-Of-Way Reduction
- Proposed Fee Simple Right-of-Way per RFP
- Proposed Permanent Esmt. per RFP and Offeror's Concept
- Proposed Temporary Esmt. per RFP and Offeror's Concept
- Offeror's Revised Proposed Fee Simple Right-of-Way
- Proposed Utility Relocations
- Existing Utility Designations per RFP
- Proposed Noise Barrier

SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	20

STATE	STATE ROUTE	STATE PROJECT	SHEET NO
VA.	7	0007-029-225 P101, R201, C501 0007-029-942 P101, R201, C501	21

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

REVISED PROPOSAL DESIGN MODIFICATION

No changes were made on this sheet based on the modifications requested and permitted in the Request for Revised Proposal

Curve RTE7-17
PI = 503+65.44
DELTA = 1° 16' 22.91" (RT)
D = 0° 50' 56"
T = 74.99'
L = 149.98'
R = 6750.00'
PC = 502+90.45
PT = 504+40.42
V = 45 MPH
SE = NC

Curve SRVC5-2
PI = 14+11.00
DELTA = 1° 52' 44.00" (LT)
D = 0° 52' 52"
T = 106.62'
L = 213.22'
R = 6,502.00'
PC = 13+04.38
PT = 15+17.60
V = 25 MPH
SE = NC

Curve LRLHL-1
PI = 190+85.43
DELTA = 25° 48' 05.95" (RT)
D = 15° 21' 39"
T = 85.43'
L = 167.97'
R = 373.00'
PC = 190+00.00
PT = 191+67.97
V = 30 MPH
SE = 3.8%

Curve OARGR-1
PI = 201+61.34
DELTA = 1° 35' 50.89" (RT)
D = 10° 41' 22"
T = 35.58'
L = 71.07'
R = 536.00'
PC = 201+25.75
PT = 201+96.83
V = 35 MPH
SE = 4.3%

Match Line - Sta. 504+50 - See Sheet 20

Match Line - Sta. 519+50 - See Below

Match Line - Sta. 519+50 - Above

Proposed Retaining Wall

Existing R/W (Per DB08479 PG0029)

Leesburg Pike (Rte.7) WB

Leesburg Pike (Rte.7) EB

Service Rd. 5

Laurel Hill Rd.

Old Ash Grove Rd.

Jarrett Valley Dr.

Proposed Noise Barrier N1

Proposed Noise Barrier N2

Proposed Noise Barrier N3

Additional Permanent Esm't Required

Existing R/W Per VDOT Plan A-7145

Existing R/W (Per DB01834 PG0635)

Existing R/W (Per DB01682 PG0341)

Existing R/W (Per DB01682 PG0068)

Existing R/W (Per DB05348 PG0069)

Existing R/W (Per DB03196 PG0138)

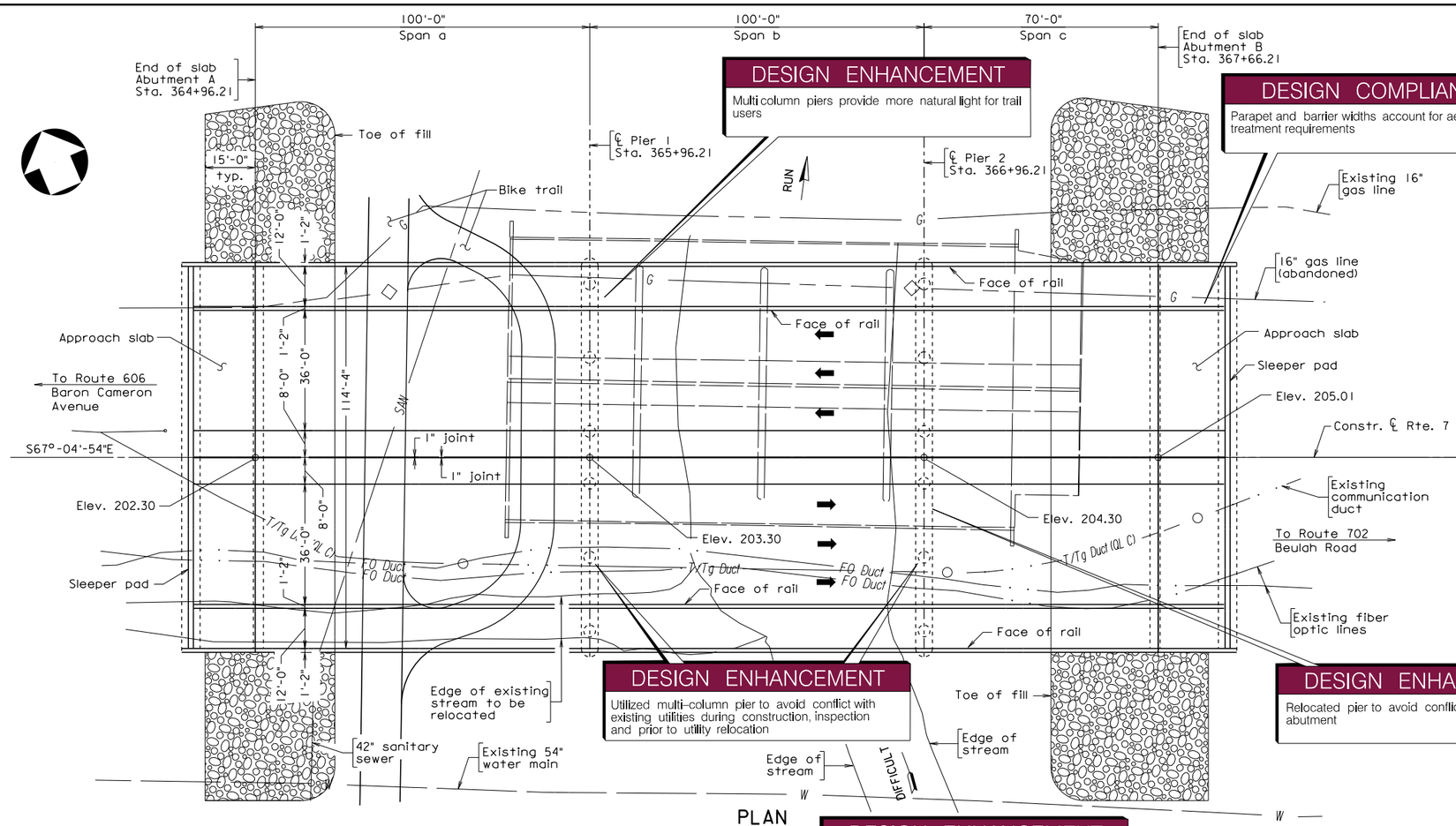
Proposed Roadway Pavement
Proposed Shared Use Path
Proposed Bridge
Proposed Concrete Sidewalk, Median or Entrance Gutter
Proposed Gross Median/Buffer/Planted Area
Proposed Stormwater Management Facility
Area of Fee Simple Right-Of-Way Reduction

Proposed Fee Simple Right-of-Way per RFP
Proposed Permanent Esm't. per RFP and Offeror's Concept
Proposed Temporary Esm't. per RFP and Offeror's Concept
Offeror's Revised Proposed Fee Simple Right-of-Way
Proposed Utility Relocations
Existing Utility Designations per RFP
Proposed Noise Barrier

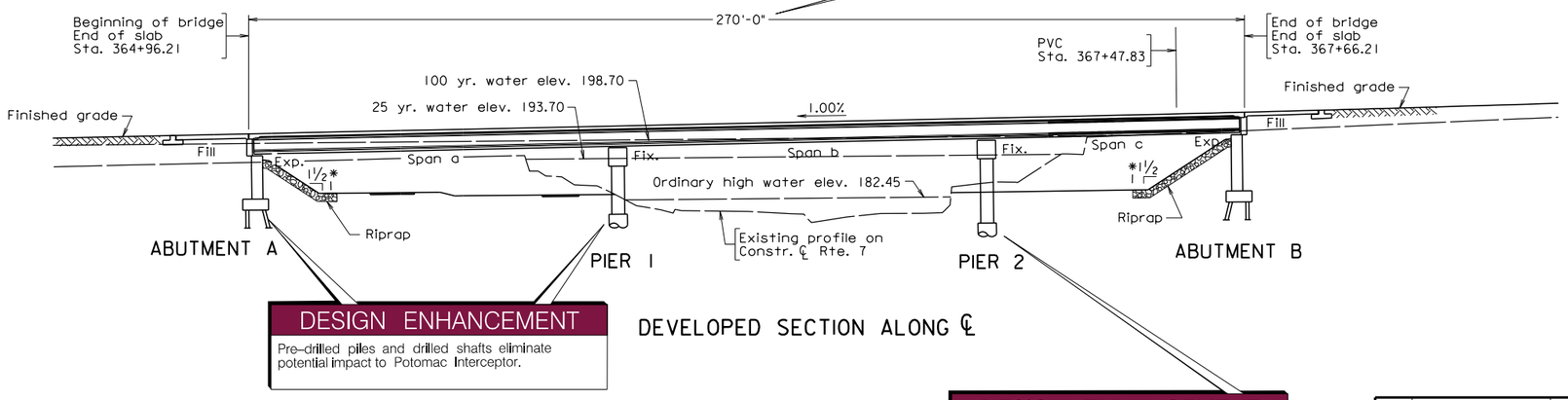
SCALE	PROJECT	SHEET NO.
0 50' 100'	0007-029-225 0007-029-942	21

4.3.2 - Conceptual Structural Plan - Route 7 Bridge over Difficult Run

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	STP-5A01(745)	7	0007-029-942, B610	1
NBIS Number: 000000000030828			UPC No. 99478		
Federal Oversight Code: FO			FHWA Construction and Scour Code: X071-SB		



DESIGN ENHANCEMENT
Shorter bridge reduces overall bridge construction, inspection and maintenance costs.



DESIGN ENHANCEMENT
Pre-drilled piles and drilled shafts eliminate potential impact to Potomac Interceptor.

DEVELOPED SECTION ALONG ℄

DESIGN ENHANCEMENT
Drilled shaft eliminates the need for coffer dams.

PRELIMINARY PLANS
THESE PLANS NOT TO BE USED FOR CONSTRUCTION

Scale: 1" = 20'

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Widths: 12'-0" shared use path, 36'-0" roadway, 16'-0" median 36'-0" roadway, 12'-0" shared use path. Overall width 114'-4" face-to-face of rails.

Span layout: 100'-0" - 100'-0" - 70'-0" spans.

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; including all current revisions.

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

Stations are shown along the Rte. 7 Constr. ℄.

For cross county trail and stream relocation details, see Roadway Plans.

Architectural treatment shall be in conformance with RFP and Special Provisions.

* Normal to abutment.

REVISED PROPOSAL DESIGN MODIFICATION
Per Part 2, Section 2.3.4, bridge will be adjusted by increasing width by 8" to accomodate CPSR Series barriers rather than BR-27 Series barriers shown

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED BRIDGE ON

RTE. 7 (LEESBURG PIKE) OVER DIFFICULT RUN
FAIRFAX CO. - 0.9 MI. W. RTE. 702 (BEULAH RD.)
PROJ. 0007-029-942, B610

No.	Description	Date

REVISIONS
For Table of Revisions, see Sheet 2.

Recommended for Approval: _____ (Designee / Developer) Date

Approved: _____ Chief Engineer Date

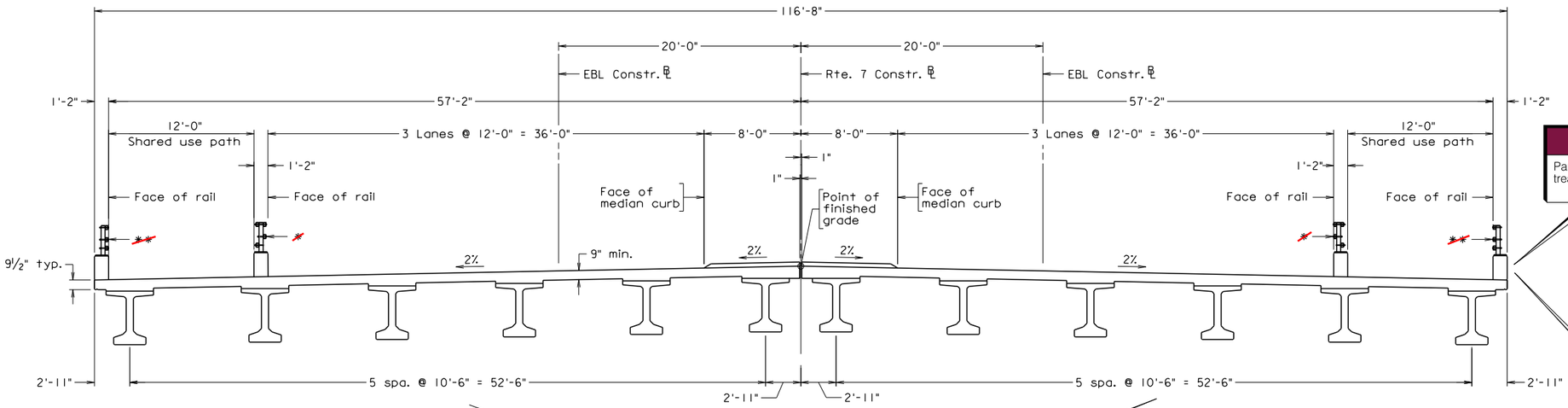
Date: _____

Difficult Run GP&E R.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		7	0007-029-942, B610	2

~~* 54"-BR27C Steel Railing, Std. BR27C-13 with simulated ashlar stone form liner on each barrier face.~~

~~** 54"-BR27C Steel Railing, Std. BR27C-14 with simulated ashlar stone form liner on each barrier face.~~



TRANSVERSE SECTION

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

DESIGN COMPLIANCE

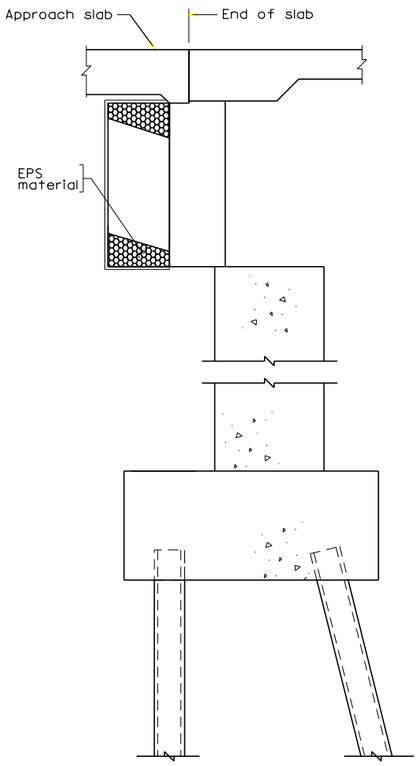
Parapet and barrier widths account for aesthetic treatment requirements.

DESIGN ENHANCEMENT

Reduced number of beams from 14 to 12 reduces maintenance, inspection and construction costs.

REVISED PROPOSAL DESIGN MODIFICATION

Per Part 2, Section 2.3.4, BR27C–13 barrier will be replaced by CPSR–2 barrier and BR27C–14 will be replaced by CPSR–1 barrier on both sides of the bridge. Bridge will be widened by 8" (2" per barrier) to 117'–4" to accomodate the wider barriers.



ABUTMENT SECTION

SHIRLEY CONTRACTING COMPANY, LLC

Dewberry

Not to scale unless otherwise shown

PRELIMINARY PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION

Designed:	Date	Plan No.	Sheet No.
Drawn:			
Checked:	Mar. 2018		2 of 2

Difficult Run Transverse Section R.dgn