

# Application Summary

We are pleased to present for your consideration the application for State of Good Repair for Federal Str. No. 5341. The following items are included in this application:

- SGR Pre-Scoping Report
- Existing Plans (only plan view and deck section shown due to CII-SII)
- Conceptual Plans (only plan view and deck section shown due to CII-SII)
  - Bridge Estimate
  - Project Cost Estimate Summary Workbook
    - PCES Workbook
    - Detailed Discipline Estimates
      - Schedule
    - GIS Mapping – Existing Utilities
  - Bridge Safety Inspection Report (not included due to CII-SII)

Structure and Bridge

# SGR PRE-SCOPING REPORT

**Facility Carried:**

<b>Project Name:</b> Rte. 746 (Enon Church Road) over Johnson Creek		<b>Submittal Date:</b> 2/22/2021
<b>District:</b> Richmond	<b>Fed Structure ID (Existing):</b> 000000000005341	
<b>Residency:</b> Chesterfield	<b>Maintenance Authority:</b> VDOT	
<b>County:</b> Chesterfield	<b>VA Struc. #:</b> 6007	



**Prepared for Virginia Department of Transportation  
Structure and Bridge State of Good Repair Program**

Role	Name	Title	Email	Phone
Central Office S&B POC	C. Todd Springer, PE	Program Manager, Bridge Maintenance and Management	Todd.springer@vdot.virginia.gov	804-786-7537

**Submitted by:** Richmond District Structure and Bridge Division

Role	Name	Title	Email	Phone
Assistant DBE	John W. Wright, PE	Assistant District Bridge Engineer, Preliminary Engineering	John.wright@vdot.virginia.gov	804-609-5414
DBE	Jeff C. Hill, PE	District Bridge Engineer	Jeff.hill@vdot.virginia.gov	804-609-5418

# SGR PRE-SCOPING REPORT

Rte. 746 (Enon Church Road) over Johnson Creek

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<b>Developed By:</b>	<b>Responsible Charge Consultant</b> Brandon Bowles, PE Whitman Requardt Associates, LLP	<b>Date:</b>	1/8/2021
	<b>Responsible Charge VDOT</b> Virginia J. Epperly, PE Richmond District S&B	<b>Date:</b>	1/10/2021
<b>Quality Control By:</b>	<b>Reviewer</b> John W. Wright, PE	<b>Date:</b>	1/12/2021
<b>Quality Assurance By:</b>	<b>Reviewer</b> CO Structure & Bridge Consultant	<b>Date:</b>	Varies
<b>District Bridge Engineer Review:</b>	<b>Reviewer</b> Jeff C. Hill, PE	<b>Date:</b>	
<b>Remarks:</b>			

<b>APPROVAL STATUS:</b> <input checked="" type="checkbox"/> Approved	
<b>District Structure and Bridge Engineer:</b>	Jeff C. Hill, PE
<b>Remarks:</b>	

<b>APPROVAL STATUS:</b> <input checked="" type="checkbox"/> Approved	
<b>District Location and Design Engineer:</b>	Jason C. Williams, PE
<b>Remarks:</b>	

<b>APPROVAL STATUS:</b> <input checked="" type="checkbox"/> Approved	
<b>District Project Development Engineer:</b>	Mark Riblett, PE
<b>Remarks:</b>	

# SGR PRE-SCOPING REPORT

Rte. 746 (Enon Church Road) over Johnson Creek

## Project Description

### Project Location

The Route 746 culvert at Johnson Creek is located 0.05 miles south of Route 10 and 0.2 miles north of the intersection with Route 726 in Chesterfield County and was built in 2003. The Virginia Structure No. is 20-6007 and the Federal Structure ID is 25431. This is a triple barrel, elliptical corrugated metal pipe arch culvert. The out-to-out width of the existing culvert is approximately 76'-0" along the skew and the structure is approximately 24 ft in length (along the baseline of Route 746). The functional classification of Route 746 is Minor Collector. No bicycle or pedestrian improvements are planned at this location.



*Location of VA. FED ID. 5341 (VA STR 6007), Rte. 746 (Enon Church Road) over Colemans Creek in Chesterfield County, VA.*

# SGR PRE-SCOPING REPORT

Rte. 746 (Enon Church Road) over Johnson Creek

## Existing Structure

The existing structure consists of a triple line of 72" x 44" bituminous coated corrugated metal pipe arches, with a 226 ft. drain barrel total length, constructed in 2003. The existing approach roadway width of approximately 33'-1". Existing structure plans are not available for this structure; refer to **Appendix A** for sketch.

The overall condition structure rating is POOR; the culvert rating is 4 (POOR) with the channel rated at 5 (FAIR) and channel/channel protection rated at 4 (POOR). The structure is not posted.



# **SGR PRE-SCOPING REPORT**

Rte. 746 (Enon Church Road) over Johnson Creek



# SGR PRE-SCOPING REPORT

Rte. 746 (Enon Church Road) over Johnson Creek

## Scope Justification

This culvert is identified as structurally deficient due to a General Condition Rating (GCR) of 4 for both the culvert and the channel. The purpose of this report is to document pre-scoping efforts in preparation for final project scoping. Key efforts will include developing project assumptions, gathering available information, assessing concepts, assessing design waivers and/or exceptions, identifying potential risks, determining project stakeholders, preparing conceptual cost estimates and schedules, and providing a recommendation. The goal is to establish a clear scope for future preliminary design efforts and an accurate estimated cost for programming the project.

## Significant Scope Elements <sup>1</sup>

This culvert meets the eligibility requirements for State of Good Repair (SGR) Funding as it meets the Federal definition of an NBI structure and is structurally deficient. This proposed culvert replacement project will remove the culvert's structurally deficient status, meets the Federal definition of a culvert and adds strength.

### Approach Roadway

Assumes a 6" increase to the roadway profile grade.

### Bridge/Culvert

The existing structural deficient culvert will be replaced with a new triple barrel box culvert supporting two 11-foot traffic lanes, an 11-foot turn lane and 4-foot shoulders on each side. This does not meet Structure and Bridge geometric standards for a new bridge on an Urban Minor Arterial Road System with an ADT over 2000 as denoted in the Manual of the Structure and Bridge Division Part 2-06.02-3. It does however meet AASHTO Minimum geometric requirements. Due to the width of the existing approach roadway along Route 746, a design waiver will be pursued for approval of this modification.

The structure length will increase slightly based on the typical section for triple box culverts found in the Road and Bridge Standards. This changes the structure length from approximately 24'-0" to approximately 25'-3" outside edge of box to outside edge of box along the baseline of Rte. 746.

The proposed concept layout is a triple 6' (span) by 4' (height) box culvert standard BCT-DT as can be found in the 2016 Road and Bridge Standards. Two standard BCW-11 and two BCW-12 wingwalls will be used (one of each at each end) along with the standard headwall. This concept eliminates the need to construct a bridge at this location.

The existing corrugated metal pipe culverts will be removed in their entirety.

### Maintenance of Traffic, including Temporary Detours

District Structure and Bridge requested Traffic review the feasibility of a detour at this location given the current condition of the existing culvert. Traffic has recommended the use of a detour as demonstrated in **Appendix B**. This will need to be further evaluated during the design phase for the use of a temporary signal, as well as for additional operation analysis. As with any proposed detour route, this will require support and approval of the locality.

### Utilities

The known utility information at this time include an 18" reinforced concrete pipe (RCP) sewer and a 12" polyvinyl chloride (PVC) water main. Utility mapping is GIS based and may not be completely accurate. It is unknown whether the sewer

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<sup>1</sup> Specifically include how scope is eligible for SGR Bridge funding per [S&B-IIM-95](#).  
February 26, 2021

# SGR PRE-SCOPING REPORT

## Rte. 746 (Enon Church Road) over Johnson Creek

and water will be in conflict at this time. It is unknown whether the 12" water main can be shut down during construction and if so, the duration allowed for the shutdown. If the 18" sewer main is in conflict and cannot be relocated due to slope constraints, the flow will need to be bypassed while maintaining traffic on Enon Church Road for the duration of the project.

### Site Soils/Geology

The culvert replacement site at Rte. 746 (Enon Church Road) over Johnson Creek is located in the Coastal Plain geologic setting characterized by geologically recent deep, layered soil deposits. Geologic mapping shows the specific culvert site is underlain by Lower Tertiary Deposits (TI) which are briefly described as fine-to-coarse glauconitic quartz sand, silt and clay that is variably shelly and may contain sandy limestone. The VDOT Geotechnical Database Management System (GTDMS) includes two soil test borings performed at the Rte. 746 over Johnson Creek culvert crossing. Boring B-1 encountered auger refusal at 12 feet in silty sand containing rip rap; boring B-2 was terminated at 31 feet in white clayey sand with hard layers.

Replacing the existing culvert with a new culvert will require demolishing the existing culvert and excavating for the new culvert. Culvert design should consider measures to limit water flow around the exterior of the culvert such as burying the culvert below the bottom of the creek and placing "cutoff" barriers under and around the culvert. Cutoff barriers are areas of low-permeability soil or concrete that disrupt flow paths around the exterior of the culvert.

### Stormwater & Hydraulics

The Route 746 (Enon Church Road) waterway crossing over Johnson Creek in Chesterfield County is located within a FEMA Detailed Zone AE Floodplain, also with a Floodway delineated (shown on Panel 0354D of the Flood Insurance Rate Maps). The Chesterfield County Flood Insurance Study (FIS) dated December 18, 2012 is used to obtain the flood discharges and water-surface elevation profiles to evaluate the performance of the existing structure and to recommend the replacement structure.

The current crossing consists of three Corrugated Steel Pipe Arches each measuring 72" wide by 44" high and 226' long. According to pipe charts in the VDOT Standards, this dimension corresponds to an equivalent 60" round pipe. The channel upstream of the crossing is a natural channel located in mostly wooded area. The FEMA Floodway is very wide (350') in this upstream reach. There are scattered residential properties backing to this channel; the downstream channel is also in a wooded area. The channel runs 900' before going under East Hundred Road (Route 10) where the waterway crossing creates a backwater on the Route 746 crossing.

The FEMA FIS profile shows the existing crossing does not pass any of the FEMA floods; the 10-Year overtops the roadway by 2.5', and the other higher floods overtop by about 3.5'. There is no adequate freeboard to the edge of shoulder; this crossing does not meet the 50-Year design storm criteria for freeboard under its roadway classification of Urban Minor Arterial. The weir flow over the roadway is part of the FEMA Floodplain and Floodway and is shown about 350' wide. Therefore, this existing crossing is submerged by the floodplain and floodway, and the roadway surface is essentially serving as the conveyance channel.

A simplified hydraulic analysis is performed of this crossing using the VDOT LD-269 culvert chart form within an Excel spreadsheet. This is for the purpose of finding a replacement culvert that matches the hydraulic performance of the existing. The existing triple pipe crossing is modeled as 60" round pipes, and the hydraulic parameters are calibrated to give the same results as the FEMA FIS. The downstream tailwater elevations used in the analysis are calibrated to match the FEMA profile just downstream of the culvert. Overtopping weir flow is also calculated and incorporated into the analysis by the spreadsheet.



# SGR PRE-SCOPING REPORT

## Rte. 746 (Enon Church Road) over Johnson Creek

This analysis finds that a Triple 6' x 4' Standard VDOT Box Culvert can replace the existing pipes and maintain the same hydraulic performance for the range of storm frequency events. Since the crossing does not meet the 50-Year design storm freeboard criteria of at least 1.5' to the shoulder and, given that there is little cover to increase the height of the culverts, it appears the only way to meet criteria is to raise the roadway (it does not appear feasible to add more culvert pipes or box cells). Raising the roadway would impact the FEMA Floodway and require a CLOMR/LOMR unless the road were raised completely over the Floodway. Given that this roadway is overtopped by the 100-Year FEMA Floodplain, and the floodwaters over the roadway are included in the Floodway, the roadway/bridge design would require the bridge to span the full 350' width of the Floodway. A replacement in kind is recommended, keeping the roadway overtopping weir flow unchanged, would result in a "No Rise" finding in compliance with FEMA, state, and local policy.

Stormwater management considerations are minimal since the project will not likely exceed 2,500 square feet of disturbance and thus not require a VPDES permit. Quality control will not be needed or would be very minor and able to be handled with Nutrient Credit purchase. Quantity Control is met by showing the project disturbance is less than 1% of the overall Johnson Creek watershed area draining to this crossing site.

### Environmental

If the Project involves a federal action (federal funding, US Army Corps of Engineers (USACE) permit), a Programmatic Categorical Exclusion (PCE) would likely be required. However, if the Project does not qualify for a PCE, it would likely require a Categorical Exclusion (CE) to be completed to comply with NEPA.

- Waters of the US (WOUS) Review

National Wetlands Inventory (NWI) mapping indicates the presence of potential jurisdictional features within and adjacent to the Project Area. Aerial imagery has confirmed the presence of these features, which appear to consist of two Freshwater Forested/Shrub (PFO/PSS) wetlands. Additionally, the Project Area crosses two Riverine habitats (R5UBH) and (R2UBH). Because the Project crosses Johnson Creek and would potentially have stream and wetland impacts, a field team would need to complete a wetland and stream delineation in order to determine possible impacts to the watershed. The wetland delineation would determine the extent and type of wetlands, type of permit, and if any potential mitigation would be required.

- Cultural Resources

A historical and cultural resource screening through the Virginia Cultural Resource Information System (VCRIS) identified one site adjacent to the Project Area.

- Site 123-5025, Petersburg Battlefield II, which was deemed potentially eligible by DHR staff.

If the Project Area footprint impacts the potential resource area, additional coordination may be required in accordance with section 106 of the National Historic Preservation Act of 1996 (NHPA).

- Threatened and Endangered Species

A threatened and endangered database query was performed using the Virginia Department of Wildlife Resources-Virginia Fish and Wildlife Information Service (VDGIF-VAFWIS), VA Department of Conservation and Recreation-Virginia Natural Heritage Database (DCR-VNHD), and U.S. Fish and Wildlife Service Information for Planning Consultation (USFWS IPaC) databases. The USFWS IPaC database identified the northern long eared bat (*Myotis septentrionalis*). No critical habitat is identified within the Project Area. State database DCR-VNHD identified the Atlantic Sturgeon (*Acipenser oxyrinchus*) (state and federal listed) as present within the sub-watershed. VDGIF-VAFWIS identified the Atlantic Sturgeon as known to occur within a two-mile radius of the Project site. VDGIF-VAFWIS also

# SGR PRE-SCOPING REPORT

Rte. 746 (Enon Church Road) over Johnson Creek

identified Loggerhead Shrike (*Lanis ludovicianus*) (state listed), and the Green Floater (*Lasmigona subviridis*) (state listed) as potentially occurring within a two-mile radius of the Project site.

- Environmental Permitting

If the Project qualifies for Federal Funding, Nationwide Permit 23 (Categorical Exclusions) may be applicable. If no Federal Funding is available, the Project may qualify for a Nationwide Permit 3 (Maintenance) which allows for the repair, rehabilitation, or replacement of previously authorized, currently serviceable structures or fills. Mitigation will be required for any permanent wetland impacts associated with Project activities. Due to the drainage area of Johnson Creek (7.34 square miles), a VMRC permit will be required for the Project.

- Hazardous Materials

The Virginia Environmental Geographic Information System (VEGIS) Mapper does not identify any hazardous materials sites within the immediate vicinity of the Project Area. There are petroleum releases and Registered Tank Facilities located near but not within the immediate vicinity of the Project Area.

## Scope Elements Not Eligible for SGR <sup>2</sup>

All scope items included are eligible for SGR.

## Design Waivers/Exceptions

The proposed structure geometrics are in accordance with the AASHTO minimums but less than the geometric requirements shown in chapter 6 of the Manual of the Structure and Bridge Division Part 2. As such, a design waiver would be required to modify the bridge to the proposed width. If however, the project is accepted by L&D to meet IIM-LD-235 and IIM-LD-255, the design waiver can be omitted and the proposed structure geometrics can be documented in the Stage I Report. The Richmond District L&D Engineer has been involved in the development of the project geometrics and has indicated support of such acceptance.

## Alternative Analysis <sup>3</sup>

No alternative analysis was performed for this project due to the fact that the preliminary hydraulic analysis shows that this structure is in a FEMA detailed zone AE with a Floodway and increasing the hydraulic performance would require raising the grade of the roadway significantly. Additionally, the bituminous coating on the existing corrugated metal pipe culverts has failed and reestablishing this protection system was not deemed viable. Any other form of rehabilitation would reduce the hydraulic opening of the existing structure that already does not meet the hydraulic needs of the site. The current culvert and roadway are overtopped during extreme events and further reducing the hydraulic performance of the structure is not desirable.

## Risk Assessment

The following is a list of identified potential risks to the project that were observed at the site:

- Hydraulic analysis of culvert crossing.
- Utilities (water and sewer) may be impacted by the proposed structure.

For this pre-scoping effort, risk has been addressed through the inclusion of appropriate levels of contingency in the Pre-Scoping Cost Estimate in accordance with the suggested contingencies for the given risk level, as shown in **Table 3** below.

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<sup>2</sup> Address items not eligible for SGR. Immediately contact district to advise how such elements will be funded.

<sup>3</sup> Complete alternatives analysis as outlined in [Chapter 32](#) of the Manual of the S&B Division.

# SGR PRE-SCOPING REPORT

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During final scoping efforts, a more complete risk analysis will be performed based upon more complete investigations by the various disciplines.

## PE Phase

VDOT assessed a medium level of risk for all associated design disciplines for PE phase and included 12% contingency in the cost estimate.

**Table 3:** Suggested Contingency for Given Risk Level

	Prescoping Documents (Prior to Project Selection)		
Level of Project Development	0% to 10%		
Phase	Low	Medium	High
PE	10%	12%	15%
RW	30%	50%	75%
CN	25%	40%	75%

## RW Phase

VDOT assessed Right-of-Way and Utilities as a low level of risk with 15% contingency included in the cost estimate for Right-of-way and 20% for out-of-plan utilities. These contingency values are slightly below the recommended for this phase of development due to the level of detail provided in these estimates was equivalent to that usually provided for a preliminary field inspection (PFI) estimate.

## CN Phase

VDOT assessed Structure and Bridge as a medium level of risk with 40% contingency included in the cost estimate and a low level of risk with 25% contingency included in the cost estimate for all other construction activities. Refer to **Appendix D**.

## Proposed Smart Flags

Smart Flags not proposed for scoring this structure.

## Project Cost Estimate (Summary)

The estimate provided in **Appendix C** is based on engineering judgement using historical cost for similar structure types. Culvert costs were itemized using bid tabulations and smaller items, such as in-plan utilities were broken down based on percentages of a typical conservative cost per foot of road construction. The estimated culvert cost for this concept is \$433,000. This value does not represent the construction contingencies or incentive/disincentive costs.

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**Table 4:** Dates used for inflation calculation

Phase	Activity	Date	Activity	Date
Prelim. Engr.	PE Authorization	7/1/25 (FY26)	END Prelim. Engr.	4/15/28 (FY28)
ROW & UT	RW Authorization	4/15/28 (FY28)	END ROW & UT	8/12/29 (FY30)
Construction	CN Authorization	8/12/29 (FY30)	END CN	3/1/31 (FY31)

*Table 5* summarizes the Project Estimate Summary Workbook found, which can be found in *Appendix D*. The inflation in *Table 5* has been computed using the PCES Workbook, which can be found in *Appendix E*.

**Table 5:** SYIP Total Project Cost Estimate Summary

SYIP Total Project Cost Estimate Summary				
Phase	Base (\$) *	Contingency (\$) *	Inflation (\$) **	Total ***
PE Phase Estimate	\$600,000	\$72,000	\$60,840	\$732,840
RW Phase Estimate	\$350,470	\$62,640	\$41,870	\$454,980
CN Phase Estimate	\$1,684,720	\$503,890	\$478,620	\$2,667,230
<b>Total Estimate</b>	<b>\$2,635,190</b>	<b>\$638,530</b>	<b>\$581,330</b>	<b>\$3,855,050</b>
<p>* Use combined Base and Contingency Costs into SMART Portal or PCES workbook.</p> <p>** Obtain Inflation costs from SMART Portal or PCES workbook and enter into highlighted cells.</p> <p>*** Total Costs shall match with total costs in SMART Portal or PCES.</p>				

**SGR PRE-SCOPING REPORT**  
RTE 746 (ENON CHURCH ROAD) OVER JOHNSON CREEK

**APPENDIX A**  
**EXISTING PLANS**

CHESTERFIELD COUNTY  
 ENON CHURCH ROAD  
 FROM 0.868 MI. W. INT. RTE. 10 (WBL)  
 TO INT. RTE. 10 (RECREATIONAL ACCESS)  
 LENGTH: 4506.81 FT. = 0.854 MI.  
 EQUALITY LENGTH: 469 FT.

PR 534 DATA 15007

INDEX OF SHEETS

SHEET 1-18	TYPICAL SECTION, SUMMARY, & TITLE SHEET
2-23	SUMMARY SHEETS
3-24	PLAN & PROFILE
4-24	
5-24	
6-24	
7-7A	
8-8A	
9-9A	
10-10A	

ESTIMATED QUANTITIES 0746-020-196, M-501

Items	Unit	Quantity
Grading	Lump Sum	Lump Sum
Concrete Class A3	Cu. Yds.	7
Reinf. Steel	Lb.	1,197
Structural Steel UB-1	Lb.	40
15" Pipe	Lin. Ft.	1,194
24" Pipe	Lin. Ft.	12
36" Pipe	Lin. Ft.	120
Pipe Arch 21" x 15"	Lin. Ft.	102
Pipe Arch 24" x 18"	Lin. Ft.	170
Pipe Arch 28" x 20"	Lin. Ft.	171
Pipe Arch 37" x 38"	Lin. Ft.	46
Mobilization	Lump Sum	Lump Sum
Drop Inlet DI-7	Each	1
Frame & Cover MH-1	Each	1
Erosion Control Treatment Ty. A EC-1	Cu. Yds.	32
Aggr. Base Mat'l. Ty. 1 No. 21 or 21A	Ton	2,623
Bit. Conc. Base Course Ty. I-2	Ton	1,559
Liquid Bit. Mat'l.	Gal.	1,133
Cover Mat'l. Aggr. No. 78	Ton	71
Plain Cement Conc. Pave. 7"	Sq. Yds.	29
Guardrail 6x2	Lin. Ft.	150
Guardrail Terminal SR-7	Each	4
Alaying Dust	Hour	1,500
Cr. Run Aggr. No. 25 or 26	Ton	2,017
Barricade Group 2	Day	2,200
Warning Lights	Day	1,300
Flagmen	Hour	2,000
Field Office Ty. II	Lump Sum	Lump Sum
Paved Ditch PG-5	Sq. Yd.	244

WORK TO BE DONE BY STATE FORCES

Construction Signs	Lump Sum	Lump Sum
Permanent Signs	Lump Sum	Lump Sum

Note: Holes shall be pre-bored prior to guardrail post installation if wood or concrete post is used.

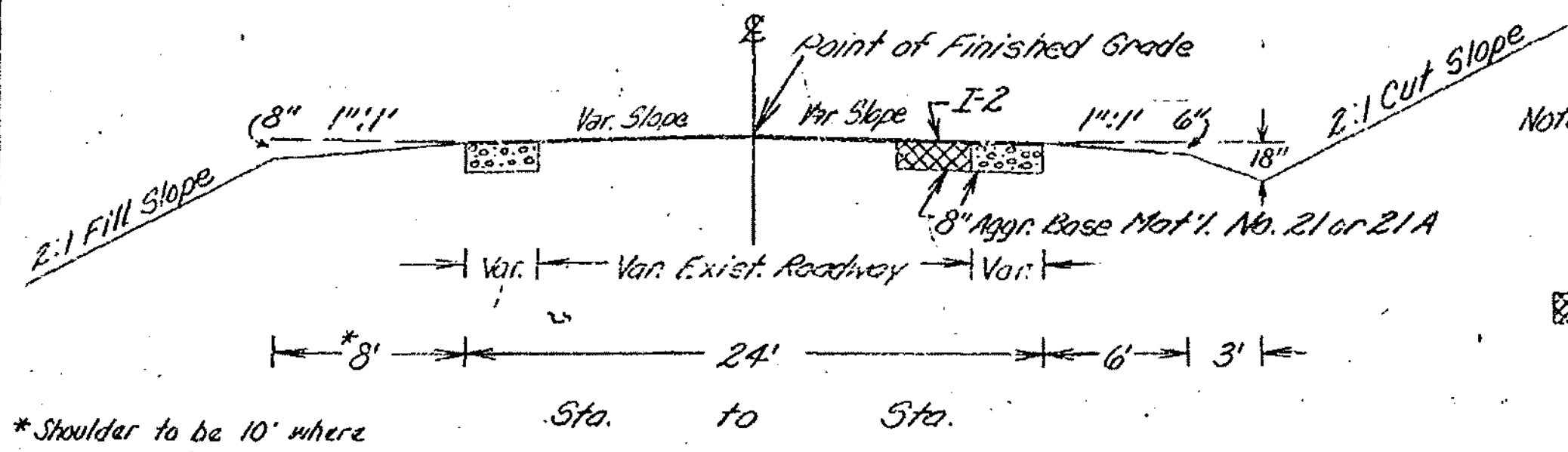
A MINIMUM 50 FOOT RIGHT OF WAY IS TO BE SECURED BASED ON THE CENTERLINE SHOWN ON THE PLANS

THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH VIRGINIA DEPARTMENT OF HIGHWAYS AND TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS DATED JULY 1, 1982 AND ROAD AND BRIDGE STANDARDS DATED JULY 1, 1982, AS AMENDED BY CONTRACT PROVISIONS AND THESE PLANS.

ALL CURVES ARE TO BE SUPERELEVATED TRANSITIONED AND WIDENED IN ACCORDANCE WITH STANDARD TC-4 EXCEPT WHERE OTHERWISE NOTED

VAR. x 8" AGGREGATE BASE MAT'L. TYPE 1 SIZE NO. 21 OR 21A; ENTIRE PAVEMENT TO BE SURFACED WITH BIT. CONC. TYPE I-2 @ 220 LBS. PER SQ. YD.

36' to 40' Clear Roadway



Shoulder to be 10' where prop. guardrail is to be erected.	83+00	"	93+50
	97+50	"	117+46.18
Shoulders to be Constr. in Accordance With GS-12	125+50	"	128+11.5

Surface Only

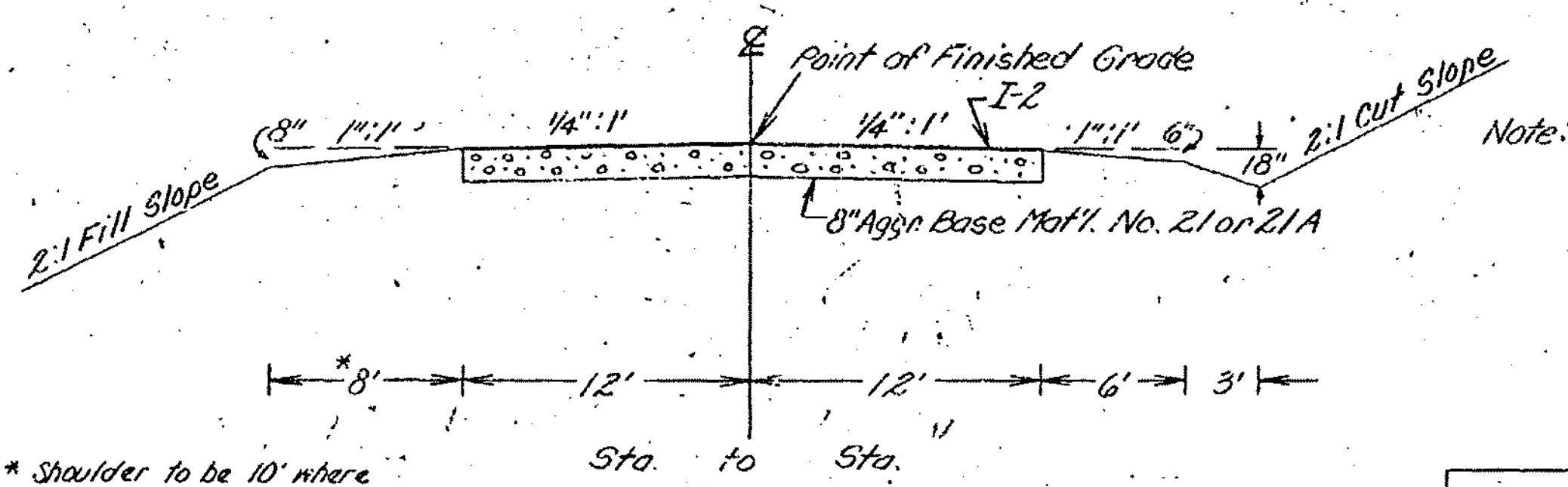
Note: Base to be primed with Bit. Mat'l. CMS-2, CMS-2h or CR5-2 @ 0.20 Gal. Per Sq. Yd. and cover with No. 78 Aggr. @ 25 Lbs. Per Sq. Yd.

Between Sta. 90+70 and Sta. 93+00 Ft. of 1/2 centerline, remove 4' of existing pavement and replace.

Cans. are to be widened between the exist. flares and prop. flares and resurface from M.E.P. to back of prop. flares, or to end of transition.

24" x 8" AGGREGATE BASE MAT'L. TYPE 1 SIZE NO. 21 OR 21A WITH BIT. CONC. SURFACE COURSE TYPE I-2 @ 220 LBS. PER SQ. YD.

36' to 40' Clear Roadway



Shoulder to be 10' where prop. guardrail is to be erected.	93+50	"	97+50
	117+46.18	"	125+50
Shoulders to be Constr. in Accordance With GS-12	10126.67	"	11775

Conn. Rte. 2416

All existing pipes under entrances that are to be rebuilt are to be removed and is to be included in the price bid for Lump Sum Grading.

Existing surface, aggregate base and subbase material which will be demolished or obliterated during construction and which is suitable for maintenance of traffic, as determined by the Engineer, shall be salvaged and utilized for maintenance of traffic prior to the use of commercial material. The cost of salvaging and using the existing materials shall be included in the price bid for other items in the contract.

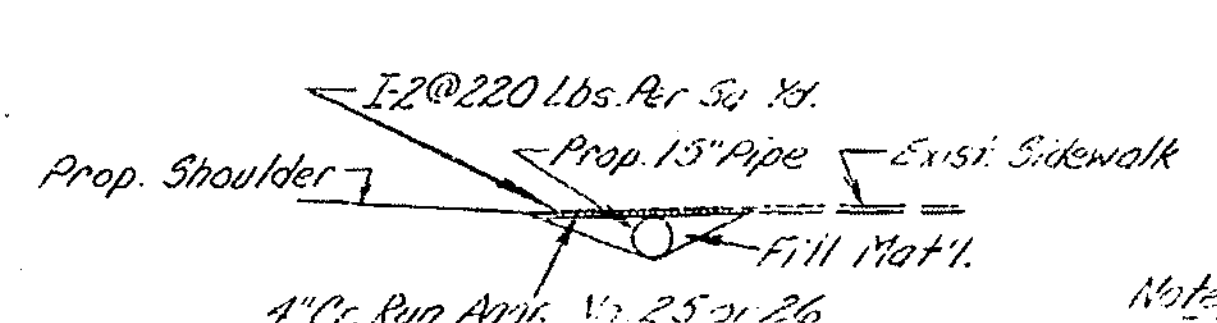
Proposed Permanent Drainage Easements are to be acquired by Chesterfield County and retained in their ownership for which they will maintain same.

ESTIMATED QUANTITIES 0746-020-196, D-665

Items	Unit	Quantity
Minor Structure Excav.	Cu. Yd.	20
Bedding Mat'l. Aggr. No. 25 or 26	Ton	68
Pipe Arch 12" x 14"	Lin. Ft.	78
Dry Riprap Cl. I 18"	Sq. Yd.	59

\* Incl. in price of pipe

TREATMENT AT EXISTING SIDEWALKS TO DWELLINGS



Note: If it becomes necessary to remove a portion of an exist. sidewalk back to the R/W line, this cost will be included in other items of work and no additional compensation will be allowed.

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

REVISED	6-18-82	5-17-83
FHWA REGION	2	VA.
STATE	VA.	
FEDERAL AID		
ROUTE		
PROJECT		
ROUTE	746	
PROJECT	0746-020-196, M-501	0746-020-196, D-665

GENERAL NOTES

GRADING

THE GRADE LINE DENOTES TOP OF FINISHED PAVEMENT UNLESS SHOWN OTHERWISE ON TYPICAL SECTIONS OR PLANS. GRADE LINES MAY BE ADJUSTED AS DEEMED NECESSARY BY THE ENGINEER.  
 PIPE NOTED "TO BE REMOVED" IS TO BE INCLUDED IN THE PRICE BID FOR LUMP SUM GRADING.

DRAINAGE

THE LOCATION OF ALL DRAINAGE STRUCTURES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY, WITH THE EXCEPTION OF CULVERTS SHOWING SPECIFIC STATIONS AND SPECIAL DESIGN BRIDGES.  
 PIPE CULVERTS ARE TO CONFORM TO ANY OF THE ALLOWABLE TYPES LISTED BELOW, WITHIN THE APPLICABLE FILL HEIGHT LIMITATIONS. FOR STRENGTH, SHEET THICKNESS, OR CLASS DESIGNATION, AVAILABLE SIZES; HEIGHT OF FILL LIMITATIONS; AND METHOD OF BEDDING REQUIRED FOR A PARTICULAR HEIGHT OF COVER SEE STANDARD DRAWINGS PC-1 AND PB-1. STRUCTURAL PLATE STEEL PIPE MAY BE SUBSTITUTED FOR CORRUGATED STEEL PIPE OF THE SAME SIZE AND A STRUCTURAL PLATE STEEL PIPE ARCH MAY BE SUBSTITUTED FOR A CORRUGATED STEEL PIPE ARCH OF THE SAME SIZE, PROVIDED THE SUBSTITUTION COMPLIES WITH STANDARD DRAWINGS PC-1 AND PB-1.

- POLYETHYLENE CORRUGATED CONCRETE
- CORRUGATED STEEL (UNCOATED OR COATED WITH PAVED INVERT)
- CORRUGATED ALUMINUM ALLOY (UNCOATED)
- VITRIFIED CLAY
- CAST IRON
- ASBESTOS CEMENT

INCIDENTALS

ALL PROPOSED ENTRANCES ARE TO BE STANDARD PE-1 UNLESS OTHERWISE NOTED ON PLANS, AND ARE TO BE REPLACED IN KIND. FIGURES IN BRACKETS, AND DOT-DASHED LINES DENOTE PERMANENT EASEMENTS.  
 FIGURES IN PARENTHESIS, AND DOT-DOT-DASHED LINES DENOTE TEMPORARY EASEMENTS.

That portion of the right of way lying within 10 feet from the edge of pavement, or surfacing, or within the limits of the construction slopes beyond 10 feet shall be cleaned and grubbed in accordance with the Specifications, Section 301.02, where sufficient right of way is provided.  
 Exceptions:  
 Certain trees to be preserved as noted on plans or as directed by the Engineer.  
 When no centerline alignment is shown for a proposed entrance, the entrance is to be constructed in the same location as the existing entrance.

RECOMMENDED FOR APPROVAL FOR RIGHT OF WAY ACQUISITION	
DATE	DIRECTOR OF ENGINEERING
DATE	DIRECTOR OF PROGRAM MANAGEMENT
DATE	SECONDARY ROADS ENGINEER
DATE	LOCATION AND DESIGN ENGINEER
DATE	DEPUTY COMMISSIONER AND CHIEF ENGINEER

APPROVED FOR RIGHT OF WAY ACQUISITION	
DATE	COMMISSIONER

PLANS REVISED		
PROJECT	SHEET NO.	DATE
0746-020-196	36-85A	5-28-83
0746-020-196	36-85A	6-10-86
0746-020-196	36-85A	5-27-83
0746-020-196	36-85A	5-27-83
Additional Revision No. 1		
Sup. The. Rev. Date	Sheet	#

RECOMMENDED FOR APPROVAL FOR CONSTRUCTION	
DATE	SECONDARY ROADS ENGINEER
DATE	LOCATION AND DESIGN ENGINEER
DATE	ASSISTANT CHIEF ENGINEER
DATE	DIRECTOR OF PLANNING

APPROVED FOR CONSTRUCTION	
DATE	CHIEF ENGINEER

PAVEMENT

The materials listed below are to be paid on a temporary basis on this project. The theoretical footage shown on these plans is based on the weight shown therein. The weight will vary in accordance with the specific gravity of the aggregates and the asphaltic content of the mix actually used to secure the design depth. The weight of the bituminous concrete is based on 95% of theoretical maximum density.  
 Bituminous Concrete Type I-2 @ 110 Lbs. Per Sq. Yd. Per inch of depth.  
 Aggregate Base Material Type 1 No. 21 or 21A @ 115 Lbs. Per Cu. Ft. Plus 6% moisture correction.

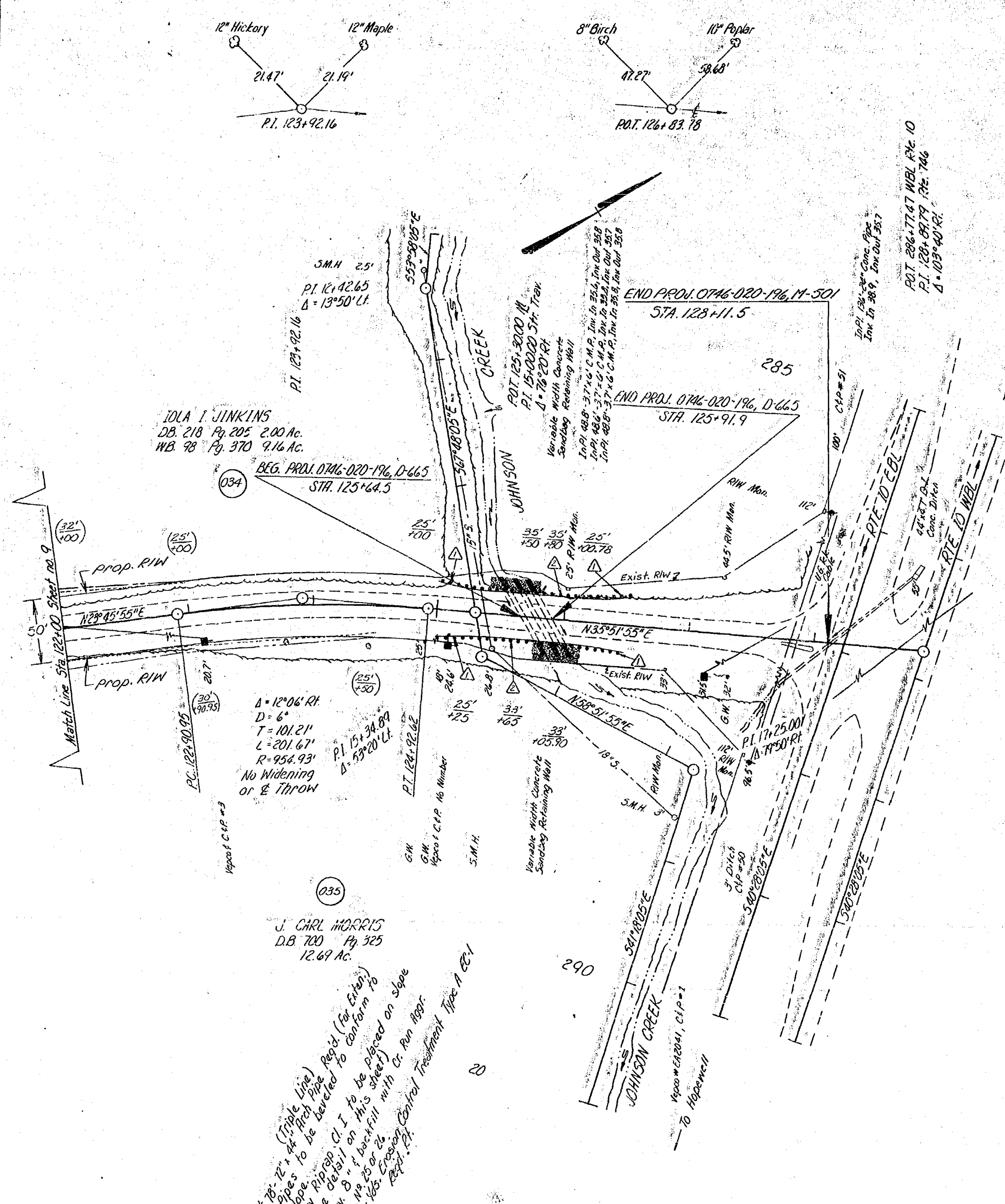
REV. 7-25-79  
 REV. 7-6-79

A21842

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

REVISION	PRJWA REGION	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		746	0746-020-196, M-501 0746-020-196, D-665	10

PLAN	DATE	BY
SURVEYED	5/78	A. M. SALTON
PLOTTED	6/78	A. Y. STEWART
NOTED	7/78	A. Y. STEWART
PT. OF WAY CHECKED	8/78	A. Y. STEWART
ALIGNMENT	8/78	A. Y. STEWART



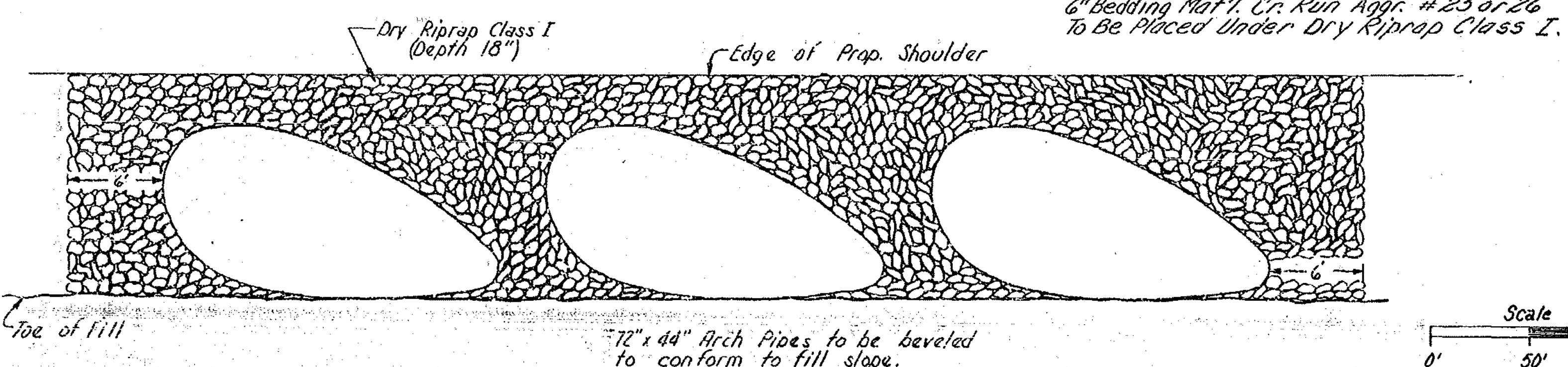
\* 72" x 44" Arch Pipes to be beveled to conform to slope. (See detail on this sheet.)  
 \* Existing 8" x 4" bedfill with Cr. Run Aggr. to be replaced with Cr. Run Aggr. Erosion Control Treatment Type A EC-1.

△ Prop. Term. Treat. GR-7  
 △ Prop. Guardrail GR-2

Note: Figures in parentheses and dot-dot-dashed lines denote temporary easements.

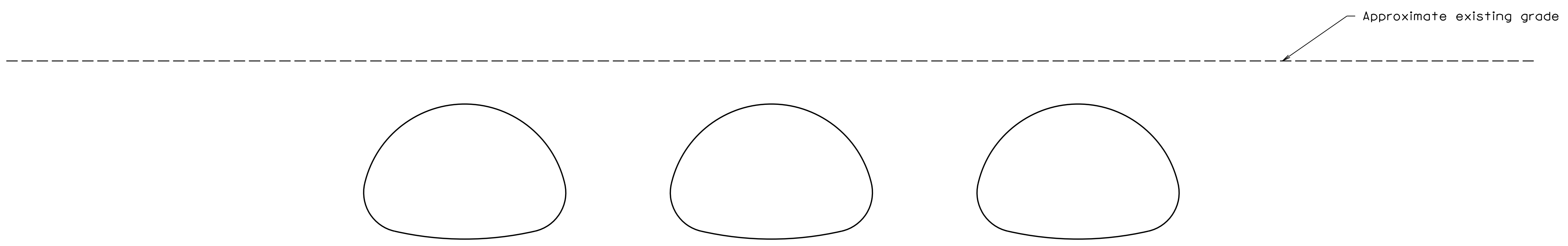
Exist. R/W is based on Proj. 0010-020-022, C-502 (microfilm file No. A5599)

DETAILS OF DRY RIPRAP CLASS I ON ENDS OF BEVELED 72" x 44" ARCH PIPES AT STA. 125+80



Scale  
 0' 50' 100'

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	0746-020-196, M-501	68-6-2	13



RTE. 746 OVER JOHNSON CREEK	
EXISTING ELEVATION	
Date : JAN. 2021	Drawing Number : 1 of 2



**SGR PRE-SCOPING REPORT**  
RTE 746 (ENON CHURCH ROAD) OVER JOHNSON CREEK

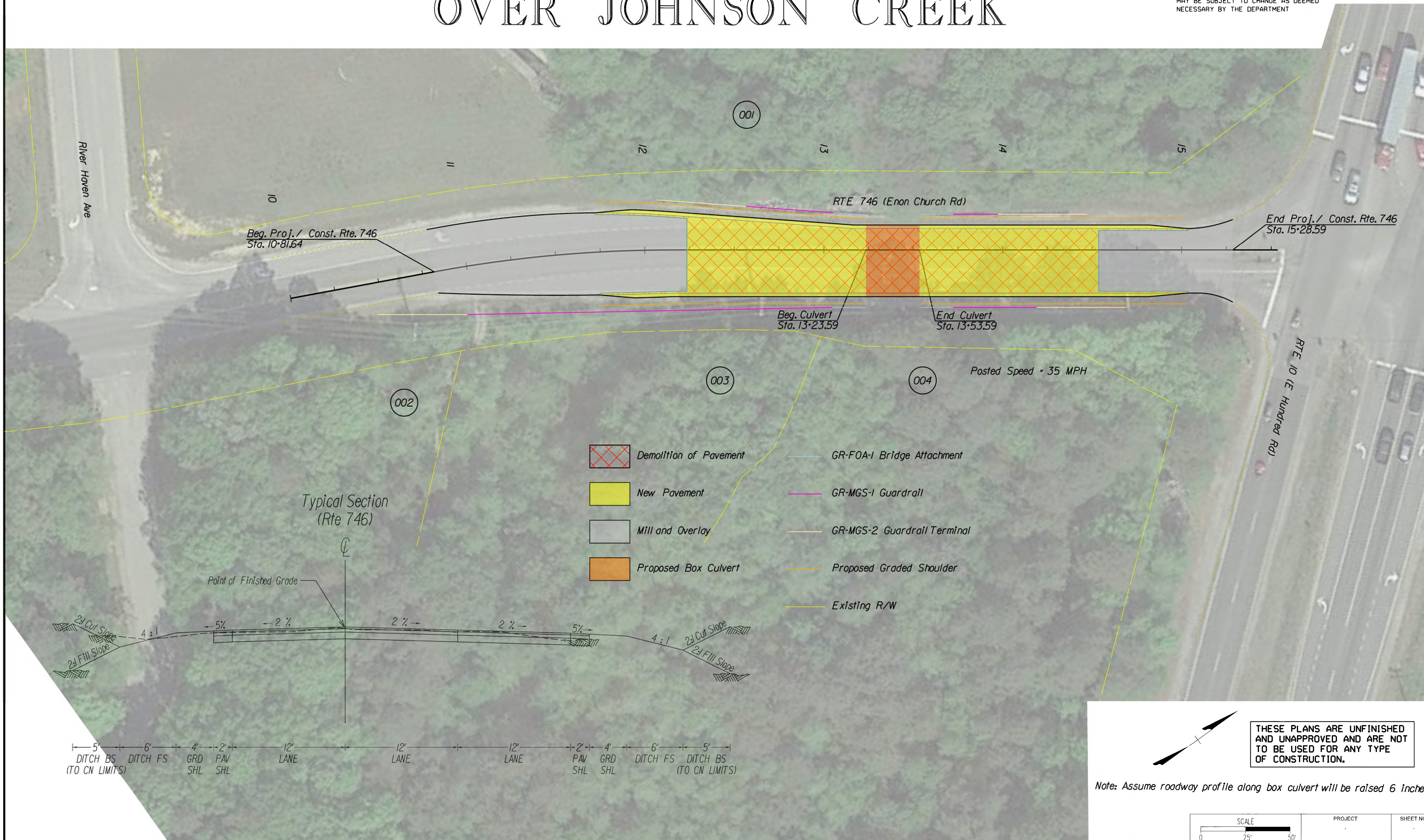
**APPENDIX B**  
**CONCEPTUAL PLANS**

PROJECT MANAGER \_\_\_\_\_  
SURVEYED BY, DATE \_\_\_\_\_  
DESIGN BY \_\_\_\_\_  
SUBSURFACE UTILITY BY, DATE \_\_\_\_\_

# RTE 746 BOX CULVERT OVER JOHNSON CREEK

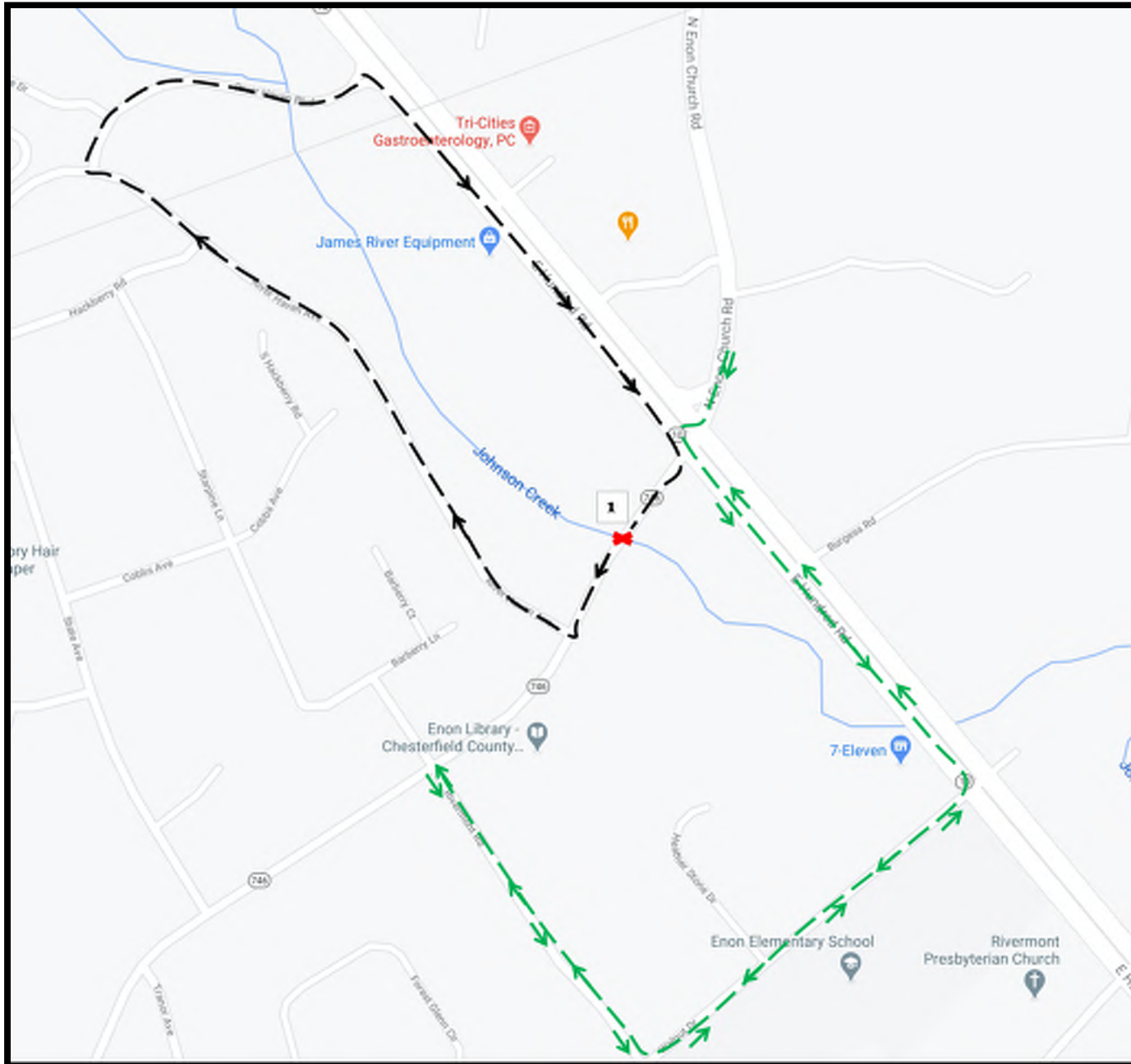
REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.				

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

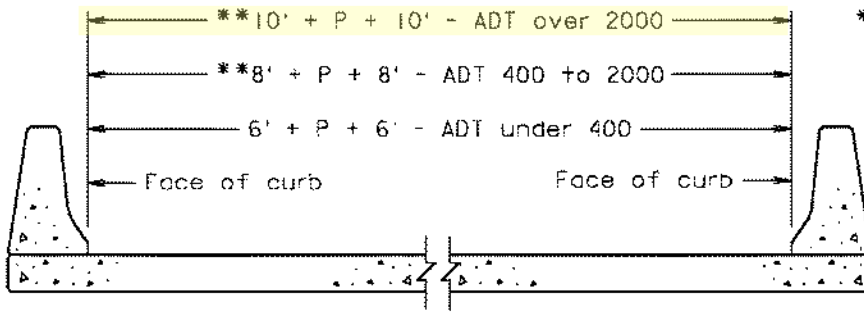


# SGR PRE-SCOPING REPORT

## RTE 746 (ENON CHURCH ROAD) OVER JOHNSON CREEK

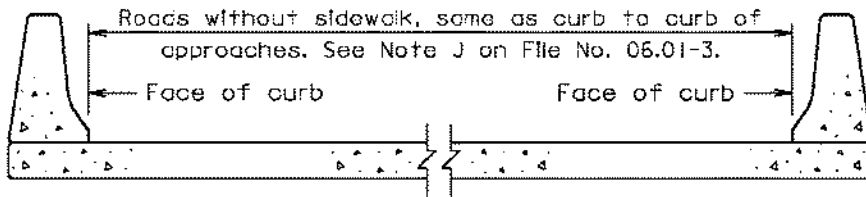
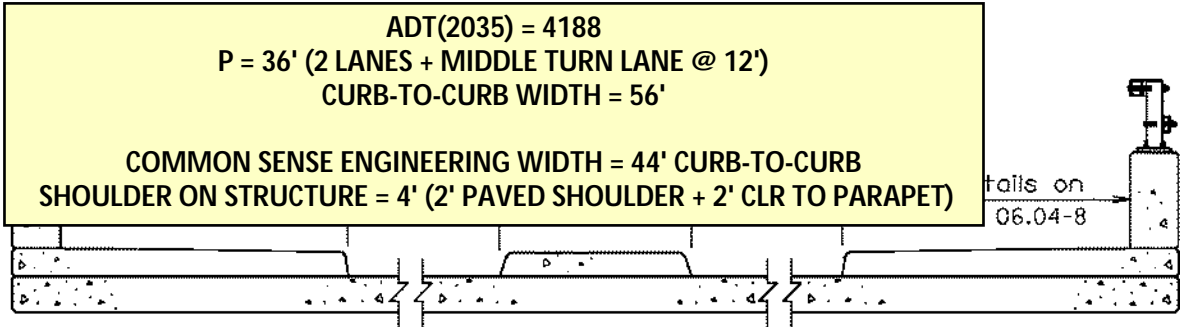


PROPOSED DETOUR

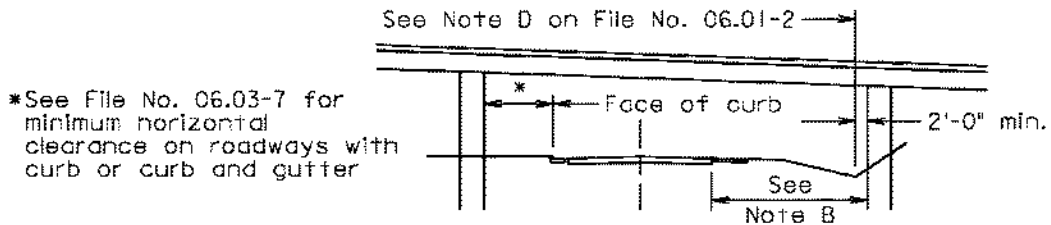


\*\*Use width shown for two-way traffic. Use 6 feet on the left of traffic for one-way traffic with 2 thru lanes or less.

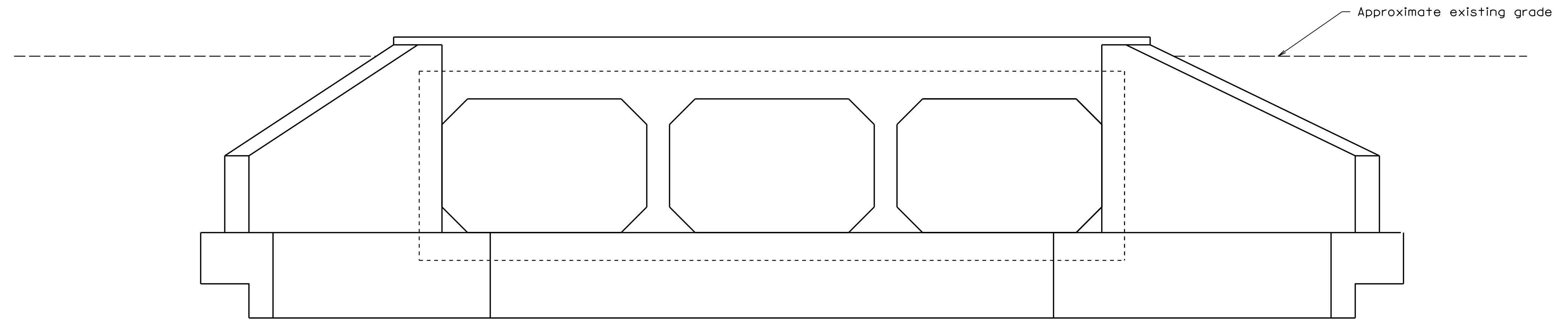
**ROADWAY WITH SHOULDER**



**ROADWAY WITH CURB OR CURB AND GUTTER**



**URBAN MINOR ARTERIAL SYSTEM**



RTE. 746 OVER JOHNSON CREEK

PROPOSED ELEVATION

Date : JAN. 2021

Drawing Number : 2 of 2

**SGR PRE-SCOPING REPORT**  
RTE 746 (ENON CHURCH ROAD) OVER JOHNSON CREEK

**APPENDIX C**  
**BRIDGE ESTIMATE**



PROPOSED BRIDGE REPLACEMENT ON  
 ROUTE 746 OVER JOHNSON CREEK  
 PROJ. XXX-XXX-XXXX  
 PRELIMINARY ENGINEER'S ESTIMATE  
 JANUARY 2021

**CULVERT REPLACEMENT**

Item Code	Item	Unit	Quantity	Unit Cost	Total Cost
<b>SUBSTRUCTURE</b>					
212	Minor Structure Excavation Box Culvert	CY	891	\$ 40.00	\$ 35,640.00
NS	Bedding Material Aggr. No. 57 Stone	TON	659	\$ 44.00	\$ 28,996.00
522	Concrete Class A4 Box Culvert	CY	150.538	\$ 1,675.00	\$ 252,151.15
541	Corrosion Resistant Reinforcing Steel, Class I	LB	17341.9	\$ 4.50	\$ 78,038.65
9148	Eros. Ctrl. Stone CL. A1 EC-1	TON	163	\$ 75.00	\$ 12,225.00
<b>SUBTOTAL:</b>					<b>\$ 407,050.80</b>
<b>LUMP SUM BID ITEMS</b>					
NS	Dismantle & Remove Existing Structure	LS	1	\$ 10,000.00	\$ 10,000.00
67910	Bridge Incidentals Inspect Structure	LS	1	\$ 5,000.00	\$ 5,000.00
<b>SUBTOTAL:</b>					<b>\$ 15,000.00</b>
<b>SUBTOTAL:</b>					<b>\$ 422,050.80</b>
Total Cost:					\$ 422,050.80
<b>Say:</b>					<b>\$ 423,000.00</b>

Detailed Project Estimate Cost Summary Workbook				
Construction				
100	Bridge Mobilization	LS	1	\$36,653.81
101	Construction Surveying	LS	1	\$10,000.00
Note: Add Construction Items to the Roadway Estimate Costs for the above categories Do not include in the Total Bridge Cost.				

**SGR PRE-SCOPING REPORT**  
RTE 746 (ENON CHURCH ROAD) OVER JOHNSON CREEK

**APPENDIX D**  
**PROJECT COST ESTIMATE**  
**SUMMARY WORKBOOK**



**SYIP PROJECTS**  
**DETAILED PROJECT COST ESTIMATE SUMMARY**  
 (Version: 1/21/2020 - CTS Modified)

Portal ID:	5341	Project UPC:	
Prepared By:	VJE, MRC	Milestone	Creation/Pre Scope
Reviewed By:	JWW	Date:	2/22/2021
County/City/Town:	Chesterfield County (20)	Tier Level	1

**Preliminary Engineering**

Project Estimate Component		Proposed Project Cost Estimate (\$)		
Discipline	Source	Base (\$)	Contingency (%)	Total
Roadway	Similar Project	\$ 180,000	12.00%	\$201,600
Hydraulics	Similar Project	\$ 12,000	12.00%	\$13,440
In-plan Utilities	Similar Project	\$ 12,000	12.00%	\$13,440
Traffic	Similar Project	\$ 30,000	12.00%	\$33,600
Structures/Bridges	Similar Project	\$ 240,000	12.00%	\$268,800
Materials/Geotech	Similar Project	\$ 30,000	12.00%	\$33,600
Survey	Similar Project	\$ 60,000	12.00%	\$67,200
Environmental	Similar Project	\$ 18,000	12.00%	\$20,160
Right of Way	Similar Project	\$ 18,000	12.00%	\$20,160
Other				\$0
VDOT Oversight Costs				\$0
Total PE Phase Estimate		\$ 600,000	12.00%	\$672,000
PE Base Estimate Date (XX/XX/XXXX)		1/9/2021		
PE Phase Dates (XX/XX/XXXX)	Start Date	7/1/2025	End Date	4/15/2028

**Right-of-Way & Utilities**

Discipline	Source	Base (\$)	Contingency (%)	Total
Right-of-Way	Aerial Photo	\$ 149,120	15.00%	\$171,490
Out-of-Plan Utilities (power, cable, gas, etc.)	Aerial Photo	\$ 201,350	20.00%	\$241,620
VDOT Oversight Costs				\$0
Total RW Phase Estimate		\$350,470	17.87%	\$413,110
RW Base Estimate Date (XX/XX/XXXX)		1/9/2021		
RW Phase Dates (XX/XX/XXXX)	Start Date	4/15/2028	End Date	8/12/2029

**Construction**

Discipline	Source	Base (\$)	Contingency (%)	Total
Mobilization	Profess. Judgement	\$ 157,000	25.00%	\$196,250
MOT	Profess. Judgement	\$ 206,080	25.00%	\$257,600
Roadway	Profess. Judgement	\$ 295,610	25.00%	\$369,513
Hydraulics	Profess. Judgement	\$ 82,340	25.00%	\$102,925
In-plan Utilities				\$0
Traffic	Profess. Judgement	\$ 24,740	25.00%	\$30,925
Structures/Bridges	PCES	\$ 423,000	40.00%	\$592,200
Materials/Geotech	Profess. Judgement	\$ 57,690	25.00%	\$72,113
Soundwalls				\$0
Other	Profess. Judgement	\$ 49,470	25.00%	\$61,838
Total Bid Items		\$1,295,930	29.90%	\$1,683,370

**SYIP PROJECTS**  
**DETAILED PROJECT COST ESTIMATE SUMMARY**  
 (Version: 1/21/2020 - CTS Modified)

Portal ID:	5341		Project UPC:	
Prepared By:	VJE, MRC		Milestone	Creation/Pre Scope
Reviewed By:	JWW		Date:	2/22/2021
County/City/Town:	Chesterfield County (20)		Tier Level	1
Incidental-Claims & Work Orders (Percentage of Bid Items)	5%	\$ 64,800	29.95%	\$84,210
Railroad Flagging/Coordination				0
State Forces				0
State Police				0
Contract Requirements (Incentive/Disincentive)	5%	\$ 64,800	29.95%	\$84,210
Construction Engineering (Inspection)	Environmental Inspection (\$)			0
	VDOT or Locality (\$)	\$ 259,190	29.95%	\$336,820
	VDOT Oversight (\$)			0
	Total CEI			\$336,820
Total CN Phase Estimate		\$1,684,720	29.91%	\$2,188,610
CN Base Estimate Date (XX/XX/XXXX)		1/9/2021		
CN Phase Start Date (XX/XX/XXXX)		8/12/2029		
CN Phase End Date (XX/XX/XXXX)		3/1/2031		
<b>Total Project Cost Estimate</b>				<b>\$3,273,720</b>

**SYIP Total Project Cost Estimate Summary**

Phase	Base (\$) *	Contingency (\$) *	Inflation (\$) **	Total ***
PE Phase Estimate	\$600,000	\$72,000	\$60,840	\$732,840
RW Phase Estimate	\$350,470	\$62,640	\$41,870	\$454,980
CN Phase Estimate	\$1,684,720	\$503,890	\$478,620	\$2,667,230
<b>Total Estimate</b>	<b>\$2,635,190</b>	<b>\$638,530</b>	<b>\$581,330</b>	<b>\$3,855,050</b>



\* Use combined Base and Contingency Costs into SMART Portal or PCES workbook.

\*\* Obtain Inflation costs from SMART Portal or PCES workbook and enter into highlighted cells.

\*\*\* Total Costs shall match with total costs in SMART Portal or PCES.

**SGR PRE-SCOPING REPORT**  
RTE 746 (ENON CHURCH ROAD) OVER JOHNSON CREEK

**APPENDIX E**  
**PCES WORKBOOK v10.10**  
**(USED FOR INFLATION ONLY)**

 **Project Cost Estimating System**   
Draft Estimate

ENTER PROJECT DATA REQUIRED TO COMPUTE A DRAFT ESTIMATE

District:	<input type="text" value="RICHMOND"/>
Project Number:	<input type="text" value="FED ID 5341 REV"/>
UPC:	<input type="text" value="TBD"/>
Project Manager:	<input type="text" value="TBD"/>
Project Description:	<input type="text" value="Rte 746 (Enon Church Rd) over Johnson Crk"/>



# Project Cost Estimating System

## SUMMARY PAGE

DISTRICT	RICHMOND		
PROJECT NUMBER	FED ID 5341 REV		
CONSTRUCTION END YEAR	FY2031	UPC	TBD
AD YEAR	FY2030	RATE OF INFLATION TO AD	21.87%
ESTIMATE YEAR	FY2021	INFLATION RATE DURING CN	N/A
Date of previous estimate	N/A		
PROJECT MANAGER / DESIGNER	TBD		

Preliminary Engineering Estimate:	MANUAL
Construction Estimate:	MANUAL
Right-of-Way Estimate:	MANUAL
Utilities Estimate:	MANUAL

DATE 2/26/2021

THE FOLLOWING DATA WILL BE PROVIDED UPON COMPLETION OF THE REMAINDER OF THE WORKBOOK, WHICH IS ACCESSED BY SELECTING THE CONST, RW, & UTIL TABS BELOW

Bridge PE ESTIMATE	\$0
Bridge CN ESTIMATE	\$0
Bridge RW ESTIMATE	\$0
PRELIMINARY ENGINEERING ESTIMATE (excluding Bridge PE)	\$732,840
CONSTRUCTION ESTIMATE (excluding Bridge CN)	\$2,667,230
RIGHT-OF-WAY & UTILITIES ESTIMATE(excluding Bridge RW)	\$454,980
TOTAL PROJECT ESTIMATE (excluding Bridge estimate)	\$3,855,050

**Project Cost Estimating System  
MANUAL ESTIMATE**

	DATE	PE	RW	CN
<b>EXPENDITURES</b>		\$0	\$0	\$0
<b>RUMS</b>			\$0	
<b>TRNS*PORT</b>				\$0
<b>AWARD</b>				\$0
<b>PROJECTION</b>				\$0

**ESTIMATE YEAR**

FY2021
\$732,840
\$454,980
\$2,188,610
\$3,376,430

21.87%

**PE**

**RW**

**CN**

**TOTAL**

**AD YEAR**

FY2030
\$732,840
\$454,980
\$2,667,230
\$3,855,050

Job #	Phase	Comment	Estimate
<input type="text"/>	PE		\$600,000
<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="text"/>	<input type="text"/>	PE Phase Inflation (3% to mid point of PE Phase)	<input type="text"/>


**SGR PRE-SCOPING REPORT**  
RTE 746 (ENON CHURCH ROAD) OVER JOHNSON CREEK

**APPENDIX F**  
**DETAILED DISCIPLINE ESTIMATES**



**5341 - Rte 746 over Johnson Creek Box Culvert**  
**Opinion of Probable Project Costs - 2/22/2021**  
**Non-inflated Costs are in FY2020 Dollars**

Item	Description	Unit	Quantity	Unit Cost	Extension
<b>Mobilization Items</b>					
1	Mobilization	LS	1	\$ 123,654	\$ 124,000
2	CN Surveying	LS	1	\$ 33,000	\$ 33,000
	<b>MOBILIZATION SUB-TOTAL</b>				<b>\$ 157,000</b>
<b>Maintenance of Traffic (MOT) Items</b>					
5	Maintenance of Traffic	LS	1	\$ 206,075	\$ 206,080
	<b>MAINTENANCE OF TRAFFIC (MOT) SUB-TOTAL</b>				<b>\$ 206,080</b>
<b>Roadway Items</b>					
6	Field Office Type II	MO	12	\$ 3,500.00	\$ 42,000
7	Progress Schedule Baseline	LS	1	\$ 50,000.00	\$ 50,000
8	Progress Schedule Updates	EA	10	\$ 1,000.00	\$ 10,000
9	Clearing and Grubbing	ACRE	0.16	\$ 20,000.00	\$ 3,200
10	Demolition of Pavement	SY	977	\$ 20.00	\$ 19,540
11	Pavement - Mill and Overlay	SY	973	\$ 20.00	\$ 19,460
12	Pavement - Full Depth Asphalt	SY	982	\$ 70.00	\$ 68,740
13	Saw Cut Asphalt Concrete (Full Depth)	LF	280	\$ 10.00	\$ 2,800
14	Guardrail (GR-MGS1)	LF	330	\$ 20.00	\$ 6,600
15	Guardrail Terminal (GR-MGS2)	EA	4	\$ 3,000.00	\$ 12,000
16	Fixed Object Attachment (GR-FOA-1)	EA	4	\$ 3,000.00	\$ 12,000
	Unaccounted for Items (20%)	LS	1	\$ 49,270	\$ 49,270
	<b>ROADWAY SUB-TOTAL</b>				<b>\$ 295,610</b>
<b>Hydraulics Items</b>					
27	Drop Inlets and Manholes	EA	4	\$ 7,000.00	\$ 28,000
30	Nutrient Credits	EA	1	\$ 10,000	\$ 10,000
31	SWM/BMP Facilities	LS	1	\$ 10,000	\$ 10,000
32	E&S Controls	LS	1	\$ 20,610	\$ 20,610
	Unaccounted for Items (20%)	LS	1	\$ 13,730.00	\$ 13,730
	<b>HYDRAULICS SUB-TOTAL</b>				<b>\$ 82,340</b>
<b>Traffic Items</b>					
40	Ground Signing and Pavement Markings	LS	1	\$ 20,610	\$ 20,610
	Unaccounted for Items (20%)	LS	1	\$ 4,130.00	\$ 4,130
	<b>TRAFFIC SUB-TOTAL</b>				<b>\$ 24,740</b>
<b>Structures/Bridges Items</b>					
41	BOX CULVERT	LS	1	\$ 423,000	\$ 423,000
	<b>STRUCTURES/BRIDGES SUB-TOTAL</b>				<b>\$ 423,000</b>
<b>Earthwork/Materials Items</b>					
48	Regular Excavation	CY	506	\$ 50.00	\$ 25,300
49	Embankment	CY	253	\$ 30.00	\$ 7,590
50	Undercut/Unsuitable Materials	CY	759	\$ 20.00	\$ 15,180
	Unaccounted for Items (20%)	LS	1	\$ 9,620.00	\$ 9,620
	<b>EARTHWORK/MATERIALS SUB-TOTAL</b>				<b>\$ 57,690</b>

<b>Other Items</b>						
53	Roadside Development	LS	1	\$	41,220	\$ 41,220
	Unaccounted for Items (20%)	LS	1	\$	8,250.00	\$ 8,250
	<b>OTHER SUB-TOTAL</b>					<b>\$ 49,470</b>
<b>MAJOR ITEMS SUBTOTAL</b>						<b>\$ 1,295,930</b>
<b>Construction Totals</b>						
	<b>Construction Contract Total</b>					<b>\$ 1,295,930</b>
	Construction Contingency - Roadway (25%)	LS	1	\$	218,240	\$ 218,240
	Construction Contingency - Bridge (40%)	LS	1	\$	169,200	\$ 169,200
	<b>Construction Total (Before CEI and Require.)</b>					<b>\$ 1,683,370</b>
	Incidental Claims & Work Orders (5%)	LS	1	\$	64,800	\$ 64,800
	Contract Contingency (5%)	LS	1	\$	64,800	\$ 64,800
	<b>Construction Engineering &amp; Inspection (20%)</b>	LS	1	\$	259,190	\$ 259,190
	<b>Construction Contingency - Claims &amp; CEI (29.95%)</b>	LS	1	\$	116,443	\$ 116,450
	<b>CEI &amp; Work Order Total</b>					<b>\$ 505,240</b>

**Total Construction Phase (in FY2020 Dollars) \$ 2,188,610**

<b>Preliminary Engineering</b>						
	Preliminary Engineering					\$ 600,000
	Preliminary Engineering Contingency					\$ 72,000

**Total Preliminary Engineering Phase (in FY2020 Dollars) \$ 672,000**

<b>Right of Way</b>						
	Utilities			\$	201,347	\$ 201,350
	Utilities Contingency			\$	40,270	\$ 40,270
	Right of Way			\$	149,120	\$ 149,120
	Right of Way Contingency			\$	22,368	\$ 22,370

**Total Right of Way Phase (in FY2020 Dollars) \$ 413,110**

**Total Project Cost in FY2020 Dollars \$ 3,273,720**



**Project Cost Estimating System  
RIGHT-OF-WAY ESTIMATE**



Project No.: **\*\* MISSING DATA \*\***

VDOT Construction District : **RICHMOND # 4**

Select Project Area Real Estate Costs : **Average**

Define Project Land Use Characteristics :	Agricultural :	
	Residential :	
	Industrial :	0%
	Commercial :	100%
		100%

Instructions: Please fill-in all applicable White Boxes or make a choice from the Drop-down Lists

**Enter the Approximate Number of Parcels on the Project :** 3

**1. LAND VALUE**

Prop. Right-of-Way	Total Right-of-Way Project Length (ML + Connections)		ft	Computed RW Cost per sq ft =	\$5.75
	Average width of Existing RW	106	ft	Enter Right-of-Way Estimator's Right-of-Way Cost per sq ft :	\$5.00
	Average width of Proposed RW	106	ft	Enter total sq ft (override calculation):	
	Total area of all additional Prop. Right-of-Way	0	sf	0 sq ft = 0.000 Ac.	
	Approx. % of Prop. CL within	0	ft	of Exist. CL	100%

Temp. Ease.	Average Width of parallel Temporary Easements Left	0	ft	Comp. Temp. Ease. Cost / sq ft =	\$1.44
	Total Length of parallel Temporary Easements Left	0	ft	Enter Right-of-Way Estimator's Temp. Ease. Cost per sq ft :	\$1.50
	Average Width of parallel Temporary Easements Right	0	ft	Enter total sq ft (override calculation):	
	Total Length of parallel Temporary Easements Right	0	ft	0 sq ft = 0.000 Ac.	

Perm. & Util. Ease.	Total Area of All Replacement Utility Easements AND Select % of RW Cost for Util. Ease.	15,000	sf	Comp. Utility Ease. Cost / sq ft =	\$2.87
		50%		RW Est's. Utility Ease. Cost per sq ft :	\$2.50
	<i>This Box Must Be Empty &gt;</i>		ea	15,000 sq ft = 0.344 Ac.	
				Comp. Perm. Ease. Cost / sq ft =	\$4.60
	Total area of All Permanent Easements		sf	RW Est's. Perm. Ease. Cost per sq ft :	\$4.50

**COST OF LAND (Item # 1) \$37,500**

**2. BUILDING VALUE**

Based upon comparison to similar, occupied <b>Residential Dwellings</b> in the Project Area, enter the Number of:		Computed:
A. Low Cost Residential Dwellings :	<input type="text"/>	\$0
B. Moderately Low Cost Dwellings :	<input type="text"/>	\$0
C. Average Cost Residential Dwellings :	<input type="text"/>	\$0
D. Moderately High Cost Dwellings :	<input type="text"/>	\$0
E. High Cost Residential Dwellings :	<input type="text"/>	\$0
<b>Computed Total Residential Dwelling Costs :</b>		<b>\$0</b>
<b>Estimator's Total Residential Dwelling Costs :</b>		<b>\$0</b>

Enter the total estimated cost of ALL **COMMERCIAL & INDUSTRIAL BUILDINGS** to be taken:  
**Note: No Computed Costs Available. Use User Defined Costs Below:**  
**Estimator's Total Commercial / Industrial Buildings Costs :** \$0

**3. OTHER IMPROVEMENTS**

Enter the estimated cost of ALL **OTHER IMPROVEMENTS** on the Project:  
**Computed Total Other Improvements Costs :** \$3,750  
**Estimator's Total Other Improvements Costs :** \$0

**4. DAMAGES**

Anticipated % of Parcels Affected by Damages to Remainder :	
Anticipated Relative Cost Impact of Damages to Remainder :	
Approximate Number of Parcels Affected :	0
<b>Computed Cost of Damages to Remainder :</b>	<b>\$0</b>
<b>Estimator's Total Cost of Damages to Remainder :</b>	<b>\$0</b>

**TOTAL ACQUISITIONS (Items # 1 - 4) \$37,500**

**5. ADMINISTRATIVE SETTLEMENTS**

Anticipated % of Parcels Affected by Administrative Settlements :	
Anticipated Relative Cost Impact of Administrative Settlements :	
Approximate Number of Parcels Affected :	0
<i>Computed Cost of Administrative Settlements :</i>	<i>\$0</i>
<b>Estimator's Total Cost of Administrative Settlements :</b>	<b>\$5,000</b>

**6. CONDEMNATION INCREASES**

Anticipated % of Parcels Affected by Condemnation Increases :	
Anticipated Relative Cost Impact of Condemnation Increases :	
Approximate Number of Parcels Affected :	0
<i>Computed Cost of Condemnation Increases :</i>	<i>\$0</i>
<b>Estimator's Total Cost of Condemnation Increases :</b>	<b>\$0</b>

**7. ADMINISTRATIVE COSTS & INCIDENTAL EXPENSES**

Anticipated Relative Cost Impact of Admin. Costs & Incidental Expenses :	
<i>Computed Administrative Costs &amp; Incidental Expenses :</i>	<i>\$0</i>
<b>Estimator's Total Administrative Costs &amp; Incidental Expenses :</b>	<b>\$106,620</b>

**8. DEMOLITION CONTRACTS**

Anticipated Relative Cost Impact of Demolition Contracts :	
<i>Computed Costs of Demolition Contracts :</i>	<i>\$0</i>
<b>Estimator's Total Cost of Demolition Contracts :</b>	<b>\$0</b>

**9. HAZARDOUS MATERIALS REMOVAL**

Anticipated Number of Demolished Buildings Requiring Asbestos Removal :	
Anticipated Relative Cost of Asbestos Removal from Demolished Buildings :	
Anticipated Number of Other Hazardous Materials Removal Sites :	
Anticipated Relative Cost Impact of Other Hazardous Materials Removal :	
<i>Computed Cost of Hazardous Materials Removal :</i>	<i>\$0</i>
<b>Estimator's Total Costs of Hazardous Materials Removal :</b>	<b>\$0</b>

**10. PROPERTY MANAGEMENT**

Anticipated Relative Cost Impact of Property Management :	
<i>Computed Costs of Property Management :</i>	<i>\$0</i>
<b>Estimator's Total Cost of Property Management :</b>	<b>\$0</b>

**TOTAL OTHER ITEMS (Items # 5 - 10)      \$111,620**

**11. RELOCATION ASSISTANCE****Residential Relocation Costs:**

Anticipated Relative Cost Impact of Residential Relocation Expenses :	
<i>Computed Residential Relocation Costs :</i>	<i>\$0</i>
<b>Estimator's Total Residential Relocation Costs :</b>	<b>\$0</b>

**Commercial Relocation Costs:**

*Note: No Computed Costs Available. Use User Defined Costs Below:*

<b>Estimator's Total Comm/Indust Relocation Costs :</b>	<b>\$0</b>
---	------------

Total Displacements:

Farms:

Families:

Non-Profit:

Businesses:

Personal Property Only:

**TOTAL RELOCATION ASSISTANCE (Item # 11)      \$0**

12. YEAR OF RIGHT-OF-WAY AUTHORIZATION (PCES)

13. MANUAL INFLATION RATE

		Today's Cost	Factor	Inflated Cost
SUB-TOTAL RIGHT-OF-WAY COSTS		\$149,120	N/A	\$149,120
UTILITY COSTS TO RIGHT-OF-WAY PROJECT *	(PCES)	\$165,000	N/A	\$165,000
TOTAL RIGHT-OF-WAY COSTS	(PCES)	\$314,120		\$314,120

\* Utility Data display requires completion of Utilities Estimate Worksheet (tab below)

COMMENTS:

1/6/21 - SGR Application #5341 Preliminary Right of Way Cost/Utility Estimate.

RW-238 Data :

Right-of-Way Estimate Date :

Based on Approved / Unapproved Plans ? :

Participating Cost / Non-Participating Cost ? :

Today's Date :

1/5/2021

## Rte 746 Over Johnson Creek Bridge Replacement - R/W Summary

Parcel Information				Area: Areas greater than or equal to 1 acre will be shown								
Number	Parcel Number	Landowner Name	Sheet	Deed	Fee Taking	Fee Remainder	Proposed R/W	Perm	Temporary			
			Number	Acreage		Total	Total	Total	Total			
001	8236466995	Rivermont Development Co LLC	1	4.60 AC	0 SF	4.600 AC	SF	SF	SF			
002	8236469854	Morris J Carl Trustee	1	2.19 AC	0 SF	2.190 AC	SF	SF	SF			
003	8246462062	Morris J Carl Trustee	1	3.44 AC	0 SF	3.440 AC	SF	SF	SF			
004	8246463280	Morris J Carl Trustee	1	3.06 AC	0 SF	3.060 AC	SF	SF	SF			
005				AC	SF	AC	SF	SF	SF			
006				AC	SF	AC	SF	SF	SF			
007				AC	SF	AC	SF	SF	SF			
008				AC	SF	AC	SF	SF	SF			
009				AC	SF	AC	SF	SF	SF			
010				AC	SF	AC	SF	SF	SF			
011				AC	SF	AC	SF	SF	SF			
012				AC	SF	AC	SF	SF	SF			
013				AC	SF	AC	SF	SF	SF			
014				AC	SF	AC	SF	SF	SF			
015				AC	SF	AC	SF	SF	SF			
016				AC	SF	AC	SF	SF	SF			
017				AC	SF	AC	SF	SF	SF			
018				AC	SF	AC	SF	SF	SF			
019				AC	SF	AC	SF	SF	SF			
020				AC	SF	AC	SF	SF	SF			

**DISCLAIMER:**

UTILITY AND PARCEL DATA ARE APPROXIMATE AND BASED ONLY ON GIS. THIS DATA IS MEANT FOR GENERAL INFORMATION/ESTIMATION PURPOSES ONLY.

FORMAL SURVEY HAS NOT YET BEEN COMPLETED.

ASSUMED 10' FROM EDGE OF GRADED SHOULDER FOR R/W, 5' BEYOND FOR TCE



PRELIMINARY  
UTILITY DATA SHEET

Utility Information						
	Utility Type	Sheet	Potential Impact		Number of Structures*	Notes
		Number	LF	SF		
001	16" Force Main		125		2 Valves / 1 Hydrant	2 Valves located along Walnut Grove Road force main on Walnut Grove Rd. 1 Hydrant located to east
002	Above Ground Electrical		700			MOT/Construction may just require notification or coverings due to equipment within area and height of utility

\*Valves, Utility poles, Manholes, Junctions, Communication boxes

DISCLAIMER:  
UTILITY AND PARCEL DATA ARE APPROXIMATE AND BASED ONLY ON GIS. THIS DATA IS MEANT FOR GENERAL INFORMATION/ESTIMATION PURPOSES ONLY.  
FORMAL SURVEY HAS NOT YET BEEN COMPLETED.



Carretta, P.E., Michael <michael.carretta@vdot.virginia.gov>

## Utility Estimate SGR Fed ID 5341

**Nathaniel Baines** <nathaniel.baines@vdot.virginia.gov> Wed, Jan 6, 2021 at 9:17 AM  
To: "Michael Carretta, P.E." <michael.carretta@vdot.virginia.gov>  
Cc: Mike Wilder <michael.wilder@vdot.virginia.gov>, "Gruber Glaubke, Kimberly" <kim.gruber@vdot.virginia.gov>

Michael,

Here is the estimated cost for the utility relocation on the aforementioned SGR project.

Utility Administration PE Phase Estimate	= \$	8,164.00
Utility Relocation Estimate	= \$	165,000.00
In-plan Utilities	= \$	0.00
Utility Administration RW Phase Estimate	= \$	76,616.00

The estimated utility relocation time is 6 months.

Kim,

Please use 15,000 sq. ft. for proposed utility easements in the Right of Way estimate.

Three parcels will need PUE.

Thanks,

**Nathaniel Keith Baines**

Utilities Relocation Coordinator- Southeast Region

Virginia Department of Transportation

*7511 Burbage Drive*

*Suffolk, VA 23435*

Phone: (757) 956-3251

Mobile: (757) 945-1498

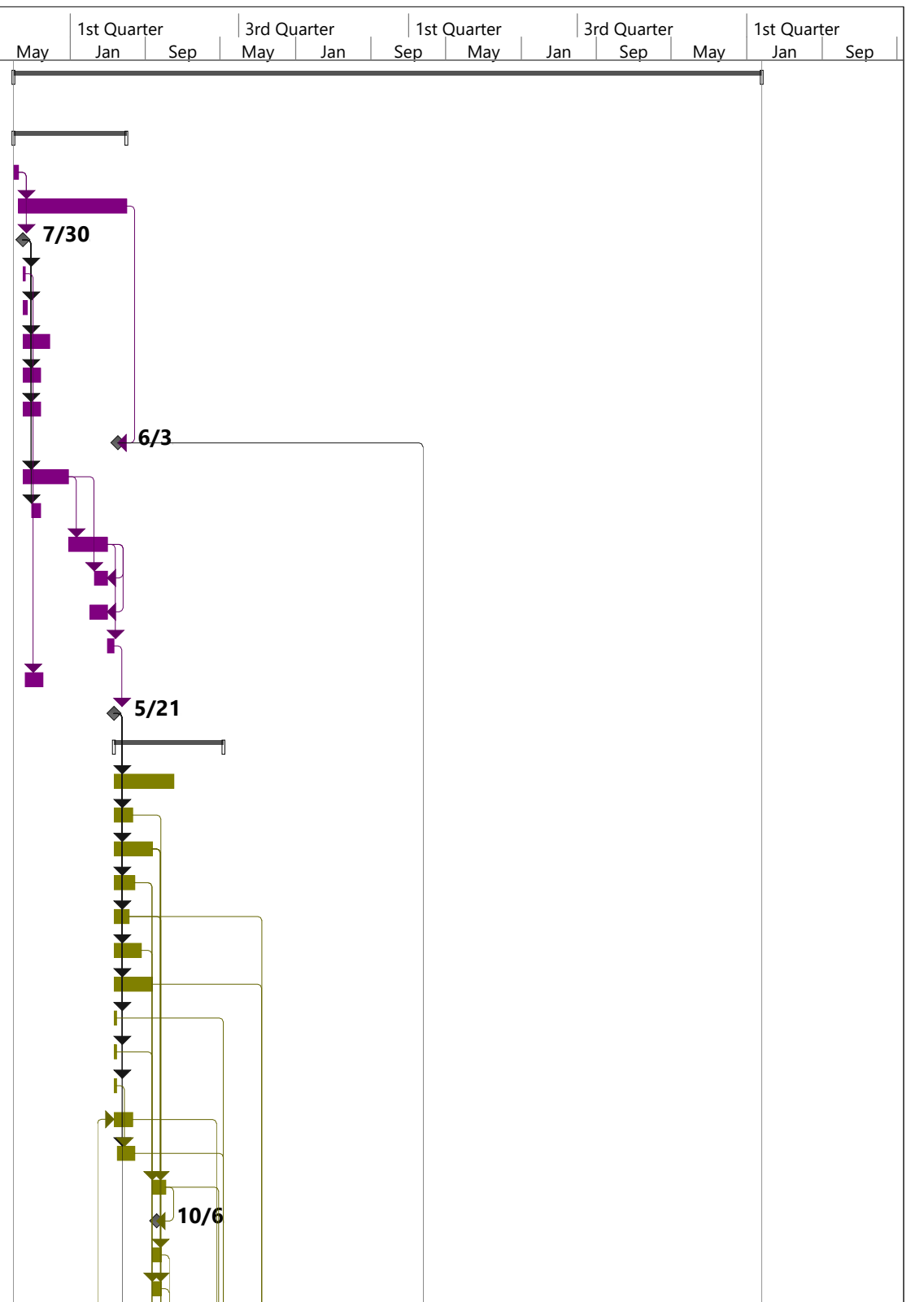
Email: [Nathaniel.Baines@VDOT.Virginia.gov](mailto:Nathaniel.Baines@VDOT.Virginia.gov)



**SGR PRE-SCOPING REPORT**  
RTE 746 (ENON CHURCH ROAD) OVER JOHNSON CREEK

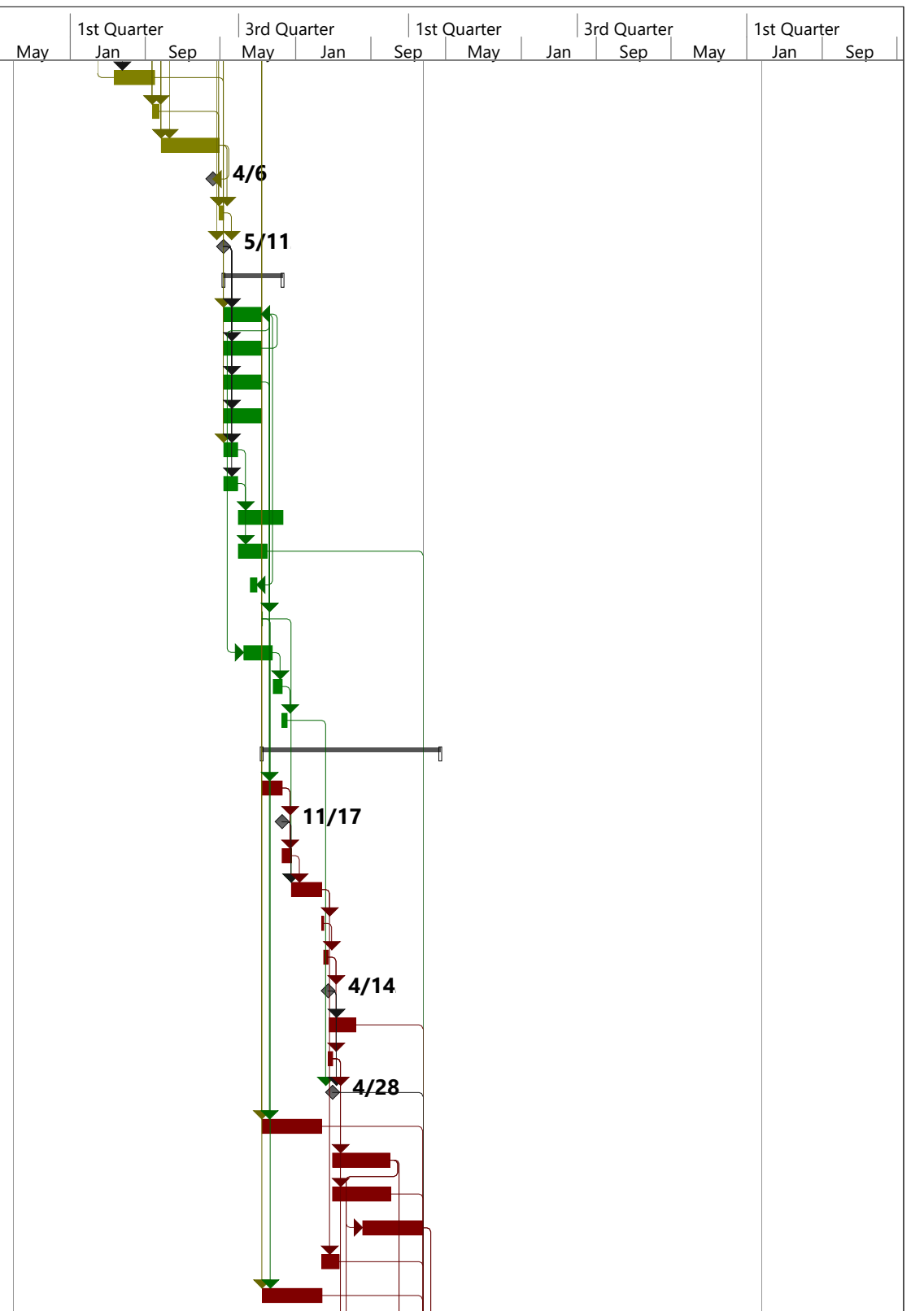
**APPENDIX G**  
**SCHEDULE**

ID	Task Name	Responsible Division	Duration	Actual Duration	Start	Actual Start	Finish	Actual Finish	4th Quarter	1st Quarter	3rd Quarter	1st Quarter	3rd Quarter	1st Quarter				
									Sep	May	Jan	Sep	May	Jan	Sep	May	Jan	Sep
1	<b>PROJECT: 5341 - Rte 746 (Enon Church Rd) over Johnson Creek</b>		<b>1648 days</b>	<b>0 days</b>	<b>Tue 7/1/25</b>	<b>NA</b>	<b>Tue 2/17/32</b>	<b>NA</b>										
2	<b>Scoping Phase</b>		<b>250 days</b>	<b>0 days</b>	<b>Tue 7/1/25</b>	<b>NA</b>	<b>Wed 7/1/26</b>	<b>NA</b>										
3	<b>12-Authorize Preliminary Engineering</b>	PMD	10 days	0 days	Tue 7/1/25	NA	Tue 7/15/25	NA										
4	<b>22-Scope Project</b>	PM	240 days	0 days	Wed 7/16/25	NA	Wed 7/1/26	NA										
5																		
6	<b>17E-Environmental Review Process (ERP)</b>	ENV	5 days	0 days	Thu 7/31/25	NA	Wed 8/6/25	NA										
7	<b>22C-Scoping Constructability Review</b>	PM	10 days	0 days	Thu 7/31/25	NA	Wed 8/13/25	NA										
8	<b>22S-Photogrammetry/Aerial Photo/Image Proc</b>	LDS	60 days	0 days	Thu 7/31/25	NA	Fri 10/24/25	NA										
9	<b>21T-Traffic Operations Analysis</b>	TED	40 days	0 days	Thu 7/31/25	NA	Thu 9/25/25	NA										
10	<b>23-Furnish Environmental Traffic Data</b>	TMP	40 days	0 days	Thu 7/31/25	NA	Thu 9/25/25	NA										
11	<b>29X-Public Information Meeting</b>	PM	1 day	0 days	Wed 6/3/26	NA	Wed 6/3/26	NA										
12	<b>31S-Conduct Location Survey</b>	LDS	100 days	0 days	Thu 7/31/25	NA	Wed 12/24/25	NA										
13	<b>28-Consultant Procurement</b>	PM	20 days	0 days	Thu 8/28/25	NA	Thu 9/25/25	NA										
14	<b>36F-Roadway Plan Design / PFI</b>	LD	85 days	0 days	Fri 12/26/25	NA	Wed 4/29/26	NA										
15	<b>21H-Hydraulic Plan Design / PFI</b>	LDH	30 days	0 days	Thu 3/19/26	NA	Wed 4/29/26	NA										
16	<b>34P-Preliminary Soil Survey</b>	MAT	40 days	0 days	Thu 3/5/26	NA	Wed 4/29/26	NA										
17	<b>36C-PFI Constructability Review</b>	PM	15 days	0 days	Thu 4/30/26	NA	Wed 5/20/26	NA										
18	<b>24-Determine Permits Needed</b>	ENV	40 days	0 days	Thu 8/7/25	NA	Thu 10/2/25	NA										
19	<b>36X-PFI Team Meeting Date</b>	PM	1 day	0 days	Thu 5/21/26	NA	Thu 5/21/26	NA										
20	<b>Preliminary Design Phase</b>		<b>241 days</b>	<b>0 days</b>	<b>Fri 5/22/26</b>	<b>NA</b>	<b>Tue 5/11/27</b>	<b>NA</b>										
21	<b>25-Draft Environmental Document or CE</b>	ENV	130 days	0 days	Fri 5/22/26	NA	Mon 11/30/26	NA										
22	<b>36H-Hydraulic Plan Design / Public Hearing</b>	LDH	40 days	0 days	Fri 5/22/26	NA	Mon 7/20/26	NA										
23	<b>36P-Plan Design / Public Hearing</b>	LD	85 days	0 days	Fri 5/22/26	NA	Tue 9/22/26	NA										
24	<b>30-Preliminary UFI</b>	LDU	45 days	0 days	Fri 5/22/26	NA	Mon 7/27/26	NA										
25	<b>35-Traffic Control Device Recommendations</b>	LDT	32 days	0 days	Fri 5/22/26	NA	Wed 7/8/26	NA										
26	<b>37H-River Mechanics Project Studies</b>	LDH	60 days	0 days	Fri 5/22/26	NA	Mon 8/17/26	NA										
27	<b>37S-Major Structures / Bridge Survey</b>	LDS	85 days	0 days	Fri 5/22/26	NA	Tue 9/22/26	NA										
28	<b>38-Retaining Wall Data Request</b>	LD	5 days	0 days	Fri 5/22/26	NA	Fri 5/29/26	NA										
29	<b>39-Sound Wall Foundation Data Request</b>	LD	5 days	0 days	Fri 5/22/26	NA	Fri 5/29/26	NA										
30	<b>40-Minor Structures Data Request</b>	LD	5 days	0 days	Fri 5/22/26	NA	Fri 5/29/26	NA										
31	<b>41-Bridge Foundation Data</b>	MAT	40 days	0 days	Fri 5/22/26	NA	Mon 7/20/26	NA										
32	<b>45-Minor Structures Report</b>	MAT	40 days	0 days	Mon 6/1/26	NA	Mon 7/27/26	NA										
33	<b>47-Approve Willingness</b>	PM	30 days	0 days	Wed 9/23/26	NA	Wed 11/4/26	NA										
34	<b>47X-Willingness Posted Date</b>	PM	1 day	0 days	Tue 10/6/26	NA	Tue 10/6/26	NA										
35	<b>50-Survey Data Verification</b>	LDS	20 days	0 days	Wed 9/23/26	NA	Wed 10/21/26	NA										
36	<b>44-Furnish RWU Data for PHrg/PI Process</b>	RW	20 days	0 days	Wed 9/23/26	NA	Wed 10/21/26	NA										



Project: T1_Road_BR_PE_UT_RW Date: Wed 2/24/21	Task		Inactive Task		Manual Summary Rollup		External Milestone		Manual Progress	
	Split		Inactive Milestone		Manual Summary		Deadline			
	Milestone		Inactive Summary		Start-only		Critical			
	Summary		Manual Task		Finish-only		Critical Split			
	Project Summary		Duration-only		External Tasks		Progress			

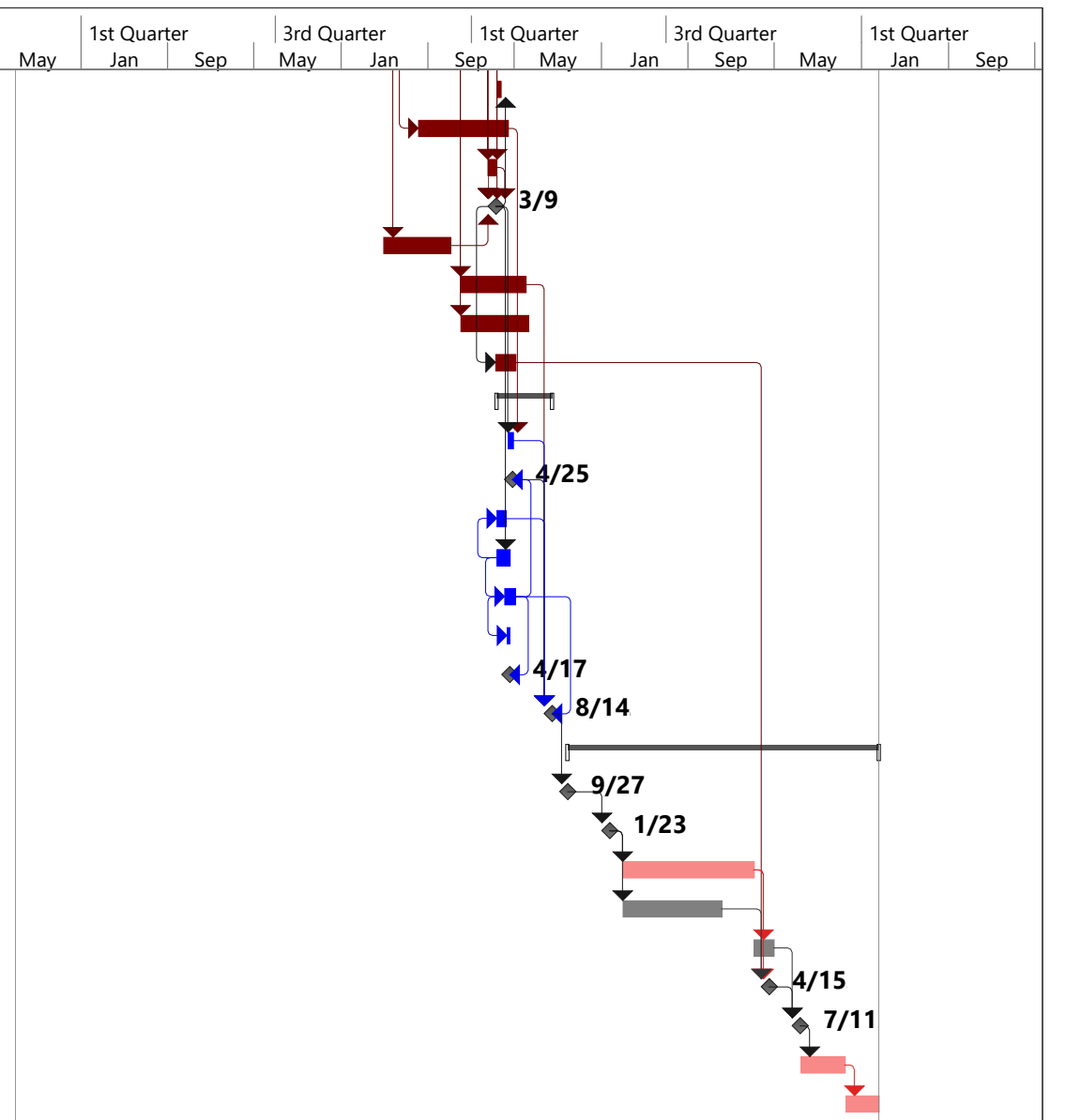
ID	Task Name	Responsible Division	Duration	Actual Duration	Start	Actual Start	Finish	Actual Finish	4th Quarter		1st Quarter		3rd Quarter		1st Quarter		3rd Quarter		1st Quarter		
									Sep	May	Jan	Sep	May	Jan	Sep	May	Jan	Sep	May	Jan	Sep
37	46B-Preliminary Bridge Plans	SB	90 days	0 days	Fri 5/22/26	NA	Tue 9/29/26	NA													
38	49C-Design Approval Constructability Review	PM	15 days	0 days	Wed 9/23/26	NA	Tue 10/13/26	NA													
39	48-Conduct Location/Design Public Hearing	PM	125 days	0 days	Thu 10/22/26	NA	Mon 4/26/27	NA													
40	48X-Public Hearing Date	PM	1 day	0 days	Tue 4/6/27	NA	Tue 4/6/27	NA													
41	49-Adopt Location/Design	LD	10 days	0 days	Tue 4/27/27	NA	Mon 5/10/27	NA													
42																					
43	Detailed Design Phase		132 days	0 days	Wed 5/12/27	NA	Thu 11/18/27	NA													
44	65F-Plan Design/Field Inspection	LD	85 days	0 days	Wed 5/12/27	NA	Fri 9/10/27	NA													
45	43H-Hydraulic Plan Design / FI	LDH	85 days	0 days	Wed 5/12/27	NA	Fri 9/10/27	NA													
46	46H-Hydrologic / Hydraulic Analysis / Major Str	LDH	85 days	0 days	Wed 5/12/27	NA	Fri 9/10/27	NA													
47	34F-Furnish Final Soils Survey	MAT	85 days	0 days	Wed 5/12/27	NA	Fri 9/10/27	NA													
48	54-Retaining Wall Data Report	MAT	32 days	0 days	Wed 5/12/27	NA	Fri 6/25/27	NA													
49	55-Noise Abatement Data Report	MAT	32 days	0 days	Wed 5/12/27	NA	Fri 6/25/27	NA													
50	59-Noise Abatement Design	ENV	100 days	0 days	Mon 6/28/27	NA	Thu 11/18/27	NA													
51	62-Develop Retaining Structure Plans	SB	65 days	0 days	Mon 6/28/27	NA	Tue 9/28/27	NA													
52	65C-FI Constructability Review	PM	15 days	0 days	Fri 8/6/27	NA	Thu 8/26/27	NA													
53	65X-Field Inspection Team Meeting Date	PM	1 day	0 days	Mon 9/13/27	NA	Mon 9/13/27	NA													
54	51T-Furnish Approved RW Plans for Total Take Par	LD	65 days	0 days	Fri 7/16/27	NA	Fri 10/15/27	NA													
55	52T-Authorize RW Funds for Total Take Parcels on	PMD	20 days	0 days	Tue 10/19/27	NA	Tue 11/16/27	NA													
56	60T-Notice to Proceed for Total Take RW Acquisiti	RW	10 days	0 days	Wed 11/17/27	NA	Thu 12/2/27	NA													
57	Final Design and ROW Acquisition Phase		393 days	0 days	Mon 9/13/27	NA	Thu 4/12/29	NA													
58	43-Furnish Utility Field Inspection Plans	LD	45 days	0 days	Mon 9/13/27	NA	Tue 11/16/27	NA													
59	43X-Utility Field Inspection Team Meeting Date	PM	1 day	0 days	Wed 11/17/27	NA	Wed 11/17/27	NA													
60	58-Survey Right of Way Plan Sheets	LDS	20 days	0 days	Wed 11/17/27	NA	Thu 12/16/27	NA													
61	51-Furnish R/W and Utility Plans	LD	65 days	0 days	Fri 12/17/27	NA	Thu 3/23/28	NA													
62	51X-Right of Way and Utilities Plan Date	PM	5 days	0 days	Fri 3/24/28	NA	Thu 3/30/28	NA													
63	52-Authorize RW & UT Funds	PMD	10 days	0 days	Fri 3/31/28	NA	Thu 4/13/28	NA													
64																					
65	57S-Right of Way Survey & Stakeout	LDS	60 days	0 days	Mon 4/17/28	NA	Tue 7/11/28	NA													
66	60P-NTP for Partial RW Acquisitions	RW	10 days	0 days	Fri 4/14/28	NA	Thu 4/27/28	NA													
67	60X-Final RW and Utilities Notice to Proceed Da	RW	1 day	0 days	Fri 4/28/28	NA	Fri 4/28/28	NA													
68	64-Final Bridge Plans	SB	130 days	0 days	Mon 9/13/27	NA	Thu 3/23/28	NA													
69	69-Acquire Right of Way	RW	128 days	0 days	Fri 4/28/28	NA	Mon 10/30/28	NA													
70																					
71	65P-Plan Design (PAC)	LD	130 days	0 days	Fri 8/4/28	NA	Wed 2/14/29	NA													
72	51H-Hydraulic Review for Construction / PAC	LDH	40 days	0 days	Fri 3/24/28	NA	Thu 5/18/28	NA													
73	61-Final Traffic Control Device Plans	LDT	130 days	0 days	Tue 9/14/27	NA	Fri 3/24/28	NA													



Project: T1\_Road\_BR\_PE\_UT\_RW  
Date: Wed 2/24/21

Task		Inactive Task		Manual Summary Rollup		External Milestone		Manual Progress	
Split		Inactive Milestone		Manual Summary		Deadline			
Milestone		Inactive Summary		Start-only		Critical			
Summary		Manual Task		Finish-only		Critical Split			
Project Summary		Duration-only		External Tasks		Progress			

ID	Task Name	Responsible Division	Duration	Actual Duration	Start	Actual Start	Finish	Actual Finish	4th Quarter		1st Quarter		3rd Quarter		1st Quarter		3rd Quarter		1st Quarter		
									Sep	May	Jan	Sep	May	Jan	Sep	May	Jan	Sep	May	Jan	Sep
74	<b>46-Review &amp; Approval of ESC and SWM Plan</b>	LDH	10 days	0 days	Mon 3/12/29	NA	Fri 3/23/29	NA													
75	<b>70-Obtain Environmental Permits</b>	ENV	170 days	0 days	Fri 8/4/28	NA	Thu 4/12/29	NA													
76																					
77	<b>71X-PreAdvertisement Conference (PAC) Date</b>	PM	1 day	0 days	Fri 3/9/29	NA	Fri 3/9/29	NA													
78	<b>67-Clear Utility Agreements</b>	RW	130 days	0 days	Fri 4/28/28	NA	Wed 11/1/28	NA													
79	<b>67U-Utility Relocation By Others</b>	RW	125 days	0 days	Fri 12/1/28	NA	Fri 6/1/29	NA													
80																					
81	<b>70R-Va Stormwater Mgt Program (VSMP) Const Pe</b>	LDH	40 days	0 days	Fri 3/9/29	NA	Thu 5/3/29	NA													
82	<b>Advertise Plans Phase</b>		<b>110 days</b>	<b>0 days</b>	<b>Mon 3/12/29</b>	<b>NA</b>	<b>Tue 8/14/29</b>	<b>NA</b>													
83	<b>66-Environmental Reevaluation</b>	ENV	10 days	0 days	Fri 4/13/29	NA	Thu 4/26/29	NA													
84	<b>69X-Right of Way / Utility Certification Date</b>	RW	1 day	0 days	Wed 4/25/29	NA	Wed 4/25/29	NA													
85	<b>79-CN Funding Review/Authorization of Funds</b>	PMD	20 days	0 days	Mon 3/12/29	NA	Fri 4/6/29	NA													
86	<b>71-Approved CN Plans</b>	PM	27 days	0 days	Mon 3/12/29	NA	Tue 4/17/29	NA													
87	<b>72-Prepare for Advertisement</b>	CN	22 days	0 days	Tue 4/3/29	NA	Wed 5/2/29	NA													
88	<b>72B-Bidability Review</b>	CN	5 days	0 days	Tue 4/10/29	NA	Mon 4/16/29	NA													
89	<b>72X-Plan Submission Date</b>	CN	1 day	0 days	Tue 4/17/29	NA	Tue 4/17/29	NA													
90	<b>80-Advertise Project</b>	CN	1 day	0 days	Tue 8/14/29	NA	Tue 8/14/29	NA													
91																					
92	<b>82-Conduct Bid Opening</b>	CN	1 day	0 days	Thu 9/27/29	NA	Thu 9/27/29	NA													
93	<b>84-Award Contract</b>	CN	1 day	0 days	Wed 1/23/30	NA	Wed 1/23/30	NA													
94	<b>91-Administer Contract</b>	PMC	250 days	0 days	Fri 3/1/30	NA	Mon 3/3/31	NA													
95																					
96	<b>88-Survey Monumentation</b>	LDS	40 days	0 days	Tue 3/4/31	NA	Mon 4/28/31	NA													
97	<b>92X-Contractor Final Voucher Date</b>	CN	1 day	0 days	Tue 4/15/31	NA	Tue 4/15/31	NA													
98	<b>94X-Claims Period End Date</b>	CN	1 day	0 days	Fri 7/11/31	NA	Fri 7/11/31	NA													
99	<b>95-District Closeout Completion Date</b>	PIM	87 days	0 days	Mon 7/14/31	NA	Fri 11/14/31	NA													
100	<b>96-Central Office Closeout</b>	PMD	60 days	0 days	Mon 11/17/31	NA	Tue 2/17/32	NA													

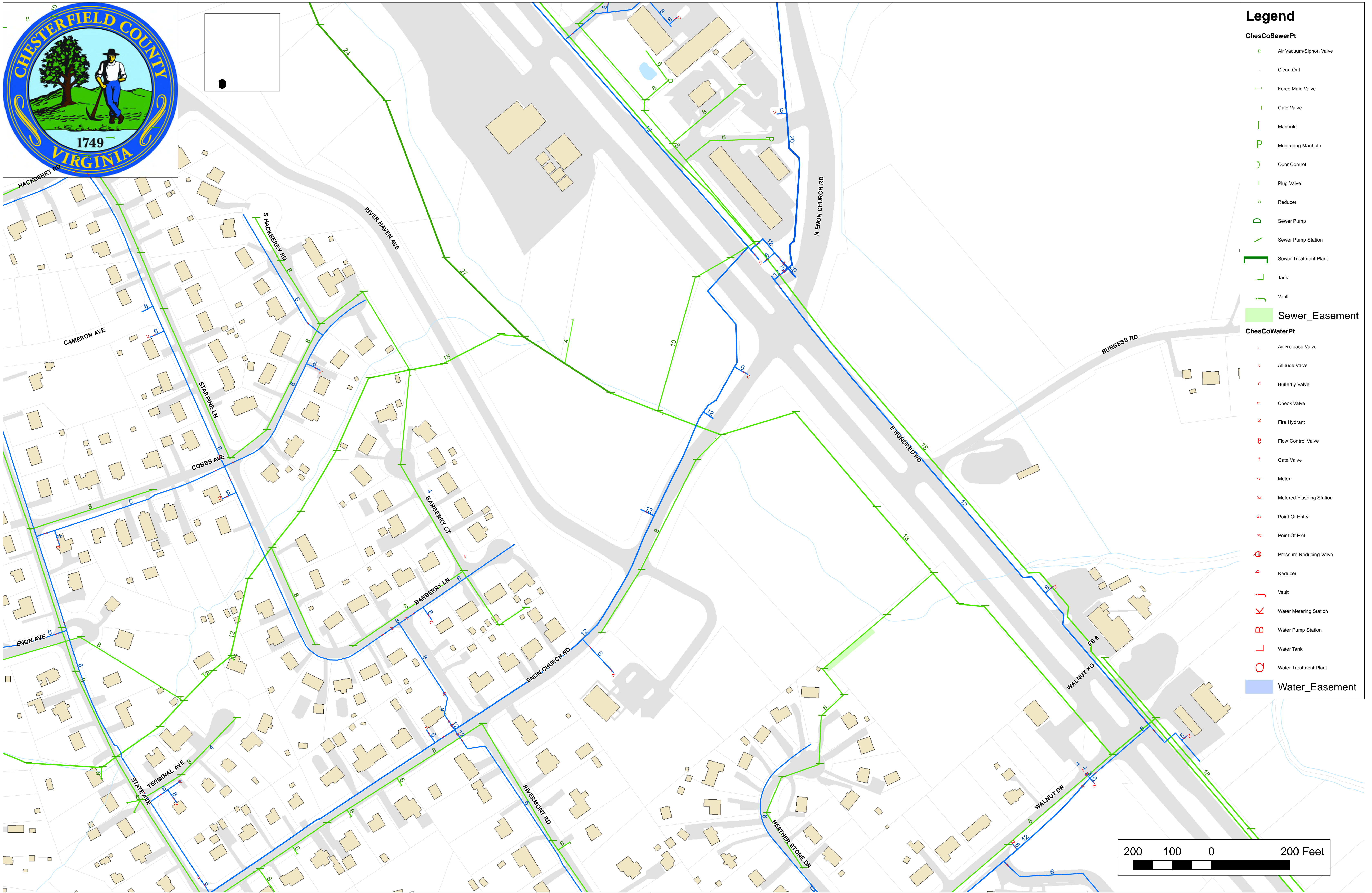
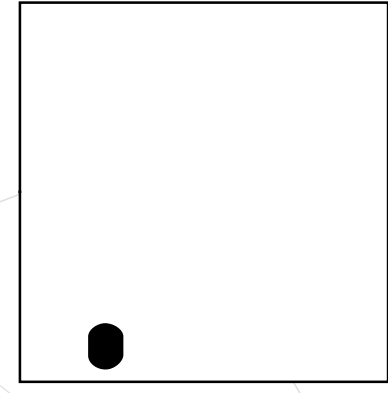


Project: T1\_Road\_BR\_PE\_UT\_RW  
Date: Wed 2/24/21

Task		Inactive Task		Manual Summary Rollup		External Milestone		Manual Progress	
Split		Inactive Milestone		Manual Summary		Deadline			
Milestone		Inactive Summary		Start-only		Critical			
Summary		Manual Task		Finish-only		Critical Split			
Project Summary		Duration-only		External Tasks		Progress			

**SGR PRE-SCOPING REPORT**  
RTE 746 (ENON CHURCH ROAD) OVER JOHNSON CREEK

**APPENDIX H**  
**GIS MAPPING - EXISTING UTILITIES**



### Legend

#### ChesCoSewerPt

- Air Vacuum/Siphon Valve
- Clean Out
- Force Main Valve
- Gate Valve
- Manhole
- Monitoring Manhole
- Odor Control
- Plug Valve
- Reducer
- Sewer Pump
- Sewer Pump Station
- Sewer Treatment Plant
- Tank
- Vault

#### Sewer\_Easement

#### ChesCoWaterPt

- Air Release Valve
- Altitude Valve
- Butterfly Valve
- Check Valve
- Fire Hydrant
- Flow Control Valve
- Gate Valve
- Meter
- Metered Flushing Station
- Point Of Entry
- Point Of Exit
- Pressure Reducing Valve
- Reducer
- Vault
- Water Metering Station
- Water Pump Station
- Water Tank
- Water Treatment Plant

#### Water\_Easement



Note the full Bridge Safety Inspection Report was included in the application. Due to CII, this report has not been included in this public sample application.