Application Summary

We are pleased to present for your consideration the application for State of Good Repair for Federal Str. No. 1032. The following items are included in this application:

- Project Narrative
- Preliminary Plan and Elevation
- Preliminary Transverse Section
- Approximate Project Limits
- Cost Estimate Summary
- PCES
- Existing Bridge Plans (only plan view and deck section shown due to CII-SII)
- Latest Bridge Safety Inspection Report (not included due to CII-SII)

VIRGINIA DEPARTMENT OF TRANSPORTATION
PROJECT REVIEW
COMMENT AND RESOLUTION SHEET

REVIEWER CODES:
A. REQUIRED TO BE ADDRESSED. SIGNIFICANT ISSUE.
B. REQUIRED TO BE ADDRESSED. POTENTIAL SIGNIFICANT ISSUE.
C. SHOULD OR RECOMMENDED TO BE ADDRESSED.
D. GOOD PRACTICE. COULD BE ADDRESSED
E. BEST PRACTICE. COULD BE ADDRESSED

SCOPE OF WORK: BRIDGE REPLACEMENT	UPC NUMBER: N/A	FEDERAL STRUCTURE ID: 1032	DATE: VARIES PER BELOW
DESCRIPTION: RTE. 159 OVER DUNLAP CREEK	REVIEW PHASE: PRE-SCOPING/FUNDING	DISCIPLINE: VARIOUS – SEE BELOW	REVIEW TYPE: QA REVIEW

NO.	DOCUMENT(1)(4)	REVIEWER / DATE / COMMENT(4)(5)	CODE(4)	DATE / RESPONSE(2)
4	Prescoping Report	**Consultant Reviewer (2/1/2021):** The significant scope elements has not covered the items below. Please provide details on these scope elements. a. The report, indicates the proposed bridge configuration is two – 11-foot lanes with 4-foot shoulders (= 15'-0" each direction), however, the Plan and Transverse Section show 15'-1" each direction. Please verify and revise one accordingly. b. Approach Roadway – Please provide the Existing and proposed cross sections. c. Geotechnical - Please discuss Site Soils/Geology and how that impacts potential foundation options. d. Utility Impacts - Not included in the report. e. Stakeholders - Not included in the report. f. Complex project elements - Not included in the report. **BMPA (3/2/21)** The amount of approach roadway work to be determined during pre-scoping and project selection. It appears that a minimal amount of work is needed to tie the exiting bridge into the existing approach roadway (say 150 ft). Also, the new bridge is skewed differently than the existing bridge which could cause an alignment shift. Please clarify why this is needed. Please clarify. IIM-LD-260/IIM-IID-11 requires that "All assumptions for the project cost estimate shall be clearly documented" and that "all items assumed to be covered by the cost estimate shall be included in the stated assumptions." Further requirements for SGR bridge projects were specifically outlined on the SGR bridge webpage.	A	**PM/Designer (2/3/2021):** Although there is no specific section titled "Significant scope elements" in the report, the cost estimate accounted for the following items a). The Plan and Transverse section are correct. b). Existing and proposed approach roadway cross sections will be prepared during the scoping phase. c). From as-built drawings and information from site visit, it is obvious that the bridge foundation will be shallow. See pictures in the project narrative. d). The RW phase estimate provided by district RW&UT section incorporate costs for potential utility relocation. e). Not applicable at pre-scoping stage. This will be addressed during the public involvement stage of project development process f). Not applicable to this project.

(1) Indicate document reviewed or use "G" for general comment.
(2) To be filled out by Project Manager in conjunction with Designer.
(3) To be filled out by Reviewer based on review by Project Manager and Reviewer (list date resolved).
(4) To be filled out by Reviewer.
(5) Provide name of reviewer and the date of the comment.
Mutual resolution requires concurrence by BOTH the Project Manager and the Reviewer.

VIRGINIA DEPARTMENT OF TRANSPORTATION
PROJECT REVIEW
COMMENT AND RESOLUTION SHEET

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SCOPE OF WORK: BRIDGE REPLACEMENT	**UPC NUMBER: N/A**	**FEDERAL STRUCTURE ID: 1032**	**DATE: VARIES PER BELOW**
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NO.	DOCUMENT(1)(4)	REVIEWER / DATE / COMMENT(4)(5)	CODE(4)	DATE / RESPONSE(2)
7	Cost Estimate	**Consultant Reviewer (2/1/2021):** Per the IID, the earliest PE start date for funding is for FY26 so please revise the date to be July 1, 2025. Also revise the PE Phase length, according to the VDOT Project Development schedule templates. RW and CN dates need to be updated accordingly. **BMPA (3/2/21):** Please include SGR team program manager so that we can provide the full context of the situation to State Bridge Engineer. We will review your program with you to determine what is possible. If not possible, we will require an estimate with the PE phase that accommodates funding availability. Challenges are below. • Program deficit of $1.46M between previous all the way to FY24 due to the impacts from COVID-19 on Revenues. • Budget increases of $11.8M per below o UPC 13285 (Fed ID 16026): $986,060 budget increase CN start in FY21 o UPC 104182 (Fed ID 16985): $466,375 budget increase with CN start in FY21 o UPCs 104177/113487 (Fed IDs 20443/20441): $10,368,110 budget increase with CN start in FY22	A	**PM/Designer (2/3/2021):** This is a posted structure with Fracture Critical elements, high economic impact, and political inquiries. The project has brought to the State Bridge Engineer's attention. Therefore, the PE, RW & CN dates were customized for this project.
9	Cost Estimate	**Consultant Reviewer (2/1/2021) Comment:** Please revise the inflation computation to reflect more accurate duration for each PE, RW and CN, based on the revised dates mentioned above.	A	**PM/Designer (2/4/2021):** The dates for the PE, RW, and CN phases were intentionally modified. See response to comment 7. The inflation costs were computed using realistic durations for each phase.

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Mutual resolution requires concurrence by BOTH the Project Manager and the Reviewer.

VIRGINIA DEPARTMENT OF TRANSPORTATION
PROJECT REVIEW
COMMENT AND RESOLUTION SHEET

REVIEWER CODES:
A. REQUIRED TO BE ADDRESSED. SIGNIFICANT ISSUE.
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SCOPE OF WORK: BRIDGE REPLACEMENT	**UPC NUMBER: N/A**	**FEDERAL STRUCTURE ID: 1032**	**DATE: VARIES PER BELOW**
DESCRIPTION: RTE. 159 OVER DUNLAP CREEK	**REVIEW PHASE: PRE-SCOPING/FUNDING**	**DISCIPLINE: VARIOUS – SEE BELOW**	**REVIEW TYPE: QA REVIEW**

NO.	DOCUMENT[1][4]	REVIEWER / DATE / COMMENT[4][5]	CODE[4]	DATE / RESPONSE[2]
15	Prescoping Report	**Consultant Reviewer (2/1/2021):** Discuss pedestrian-bicycle needs. VA 159 is identified as a bicycle corridor in the 2006 rural bicycle plan.	D	**PM/Designer (2/4/2021):** Per IIM-S&B-95, bridge widening to accommodate bicycle or pedestrian facilities do not qualify for SGR funds since the approach roadway do not have such facilities.
16	Prescoping Report	**Consultant Reviewer (2/1/2021):** There are driveways immediately north and south of the exiting bridge. Explain how access will be maintained during construction.	D	**PM/Designer (2/4/2021):** Temporary signals will be installed to maintain access during construction.
18	Prescoping Report (Design Criteria)	**Consultant Reviewer (2/1/2021):** For GS-3 the ADT range is 400 to 2000, not 400 to 1500 as indicated in the report.	D	**PM/Designer (2/4/2021):** Accepted
19	Narrative	**S&B Reviewer (1/29/2021):** The proposed multi girder bridge would force dropping the low chord or a profile raise and hence applicability of a HERS category should be verified or full H&HA analysis will be required	A	**PM/Designer (2/4/2021):** Based on preliminary design of the girders, the total SSD neither drop the low chord nor raise the finish grade. Thus, HERS is warranted. Minor hydraulic analysis will be conducted for the temporary bridge.
20	Cost estimate	**S&B Reviewer (1/29/2021):** Please adjust cost related to profile raise if applicable	A	**PM/Designer (2/4/2021):** Not applicable.
21	Cost estimate	**S&B Reviewer (1/29/2021):** CN costs should reflect temporary substructure and foundation costs related to the use of a temporary bridge although owned by VDOT	A	**PM/Designer (2/4/2021):** The lump sum price for bid item 60125 NS Bridge (Temp Bridge) includes erection and dismantle of VDOT owned Maybey bridge as well as installation & removal of temporary abutments made of reinforced soil fill. The cost is based on a similar project currently under construction.
22	Narrative	**Matteo (3/8/21):** The narrative states the project is eligible for federal funding due to the sufficiency rating. As an FYI, the sufficiency rating is no longer used or applicable for federal funds availability. No response expected or required.	FYI	

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(5) Provide name of reviewer and the date of the comment.
Mutual resolution requires concurrence by BOTH the Project Manager and the Reviewer.

PROJECT NARRATIVE

PURPOSE:

The purpose of this project is to replace an existing posted, structurally deficient bridge consisting of Fracture Critical elements without added capacity on Route 159 over Dunlap Creek (Virginia Structure No. 1039, Fed ID. 1032). The project is located in Alleghany County approximately 1.4 miles from Route 311 and 0.95 to Route 717. Route 159 is a primary state highway that serves the southwestern part of Alleghany County. The area immediately adjacent to the project location is populated with residential properties. In 2018 the traffic count for Route 159 showed an ADT of 673 vehicles per day with 9% truck traffic.

DESCRIPTION OF EXISTING TRANSPORTATION ELEMENTS:

The width of Route 159 approach roadway to the bridge is predominately 20’and it has a 55 mph speed limit. The approach alignment has minor vertical curve variations and relatively straight horizontal alignment. The existing Route 159 Bridge was built in 1928. It is a 95’-0” long, single-span, 23.95 foot wide Thru-Truss structure with CIP concrete deck built on a 30 degree skew (RHB). See existing plans for additional information.

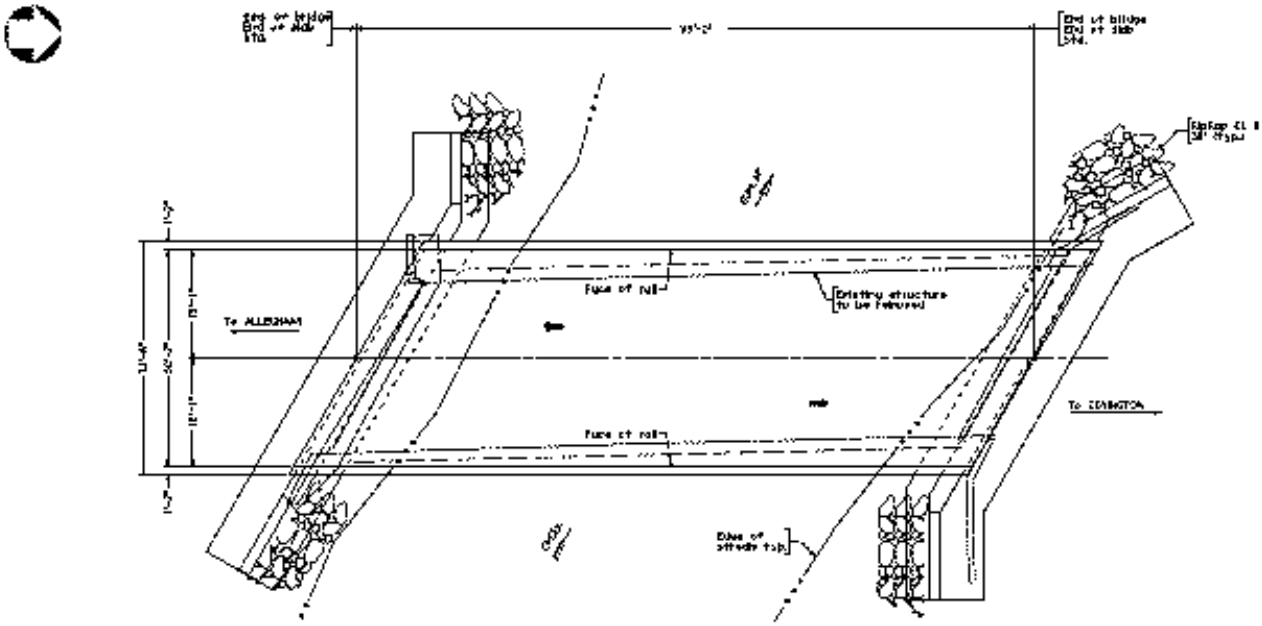
The Sufficiency Rating of the bridge is 45.1 on a scale from 0 to 99. Considering the condition of fracture critical members, the superstructure received a rating of 4 and the substructure rated 4 on a scale of 0 to 9. The structure classified as structurally deficient and posted for weight limits. The current facility has a scour rating of 8, indicating the site is not susceptible to scour. Refer to the current

inspection report for more information. The condition of the existing bridge qualifies the structure as a candidate for Federal funds for replacement or rehab.

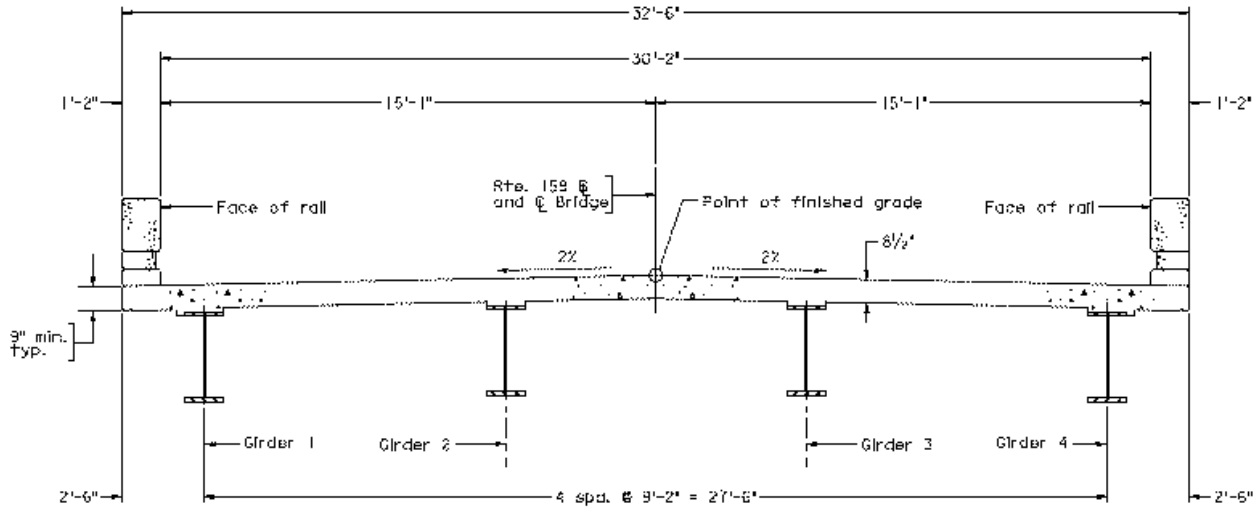
DESIGN CRITERIA:

This project will be designed using AASHTO Geometric Design Guidelines for Rural Collector Road System (GS-3) with (400<ADT<2,000) vehicles per day. The location meets the criteria contained in the design guide regarding traffic volume and roadway classification

The AASHTO LRFD Bridge Design Specifications, Eight Edition, 2017, will be used in the design of replacement structure. The proposed bridge will have 2 - 11 foot lanes with 4'-1" shoulder. The new bridge will be 32'-6" wide (out-to out) and 93'-0" long. The superstructure consists of steel plate girders with CIP concrete deck. The substructures will be semi-integral abutments on spread footing. Based on information from as-built drawings and site visit, there are exposed competent bedrocks (see pictures below) to support the bridge foundation. This will be further evaluated through subsurface exploration during the PE phase. The current horizontal alignment will be maintained. All scope elements are eligible for SGR per IIM-S&B-95. Also, waiver of the requirements in IIM-S&B-95 are not required.



PLAN



TRANSVERSE SECTION

Scale: ⅜" = 1'-0"

MAINTENANCE OF TRAFFIC (MOT):

During construction, the existing Route 159 traffic will be maintained at all times. A temporary diversion will be constructed allowing single lane of traffic to be maintained during the construction of

this project. A 120 foot long, single lane VDOT owned MABEY Bridge will be constructed west or downstream of the existing bridge in order to maintain the required traffic flow. Portion of an existing private road will be upgraded and utilized. Pre-scoping level of coordination has been done with the residency engineers. The work zone will be marked and signed appropriately to allow for existing traffic to follow the temporary detoured traffic pattern. There are no commercial entrances impacted by this project.

PROJECT VALUE:

This project replaces an existing substandard, structurally deficient, fracture critical bridge with weight limit on it on a primary State route that serves both town and county residents along with local business concerns. If not replaced the existing bridge will continue to deteriorate and would eventually have to be closed to vehicular traffic.

ALTERNATIVE ANALYSIS:

Although a complete alternatives analysis as outlined in Chapter 32 of the Manual of the S&B Division is required for SGR Bridge applications, this project meets one of the mitigating factors listed on file No. 32.02-1. Therefore, we recommend a replacement since this can be justified than rehabilitating fracture critical bridge.

RISK ASSESMNET:

During the pre-scoping phase, some activities such as survey, hydraulic analysis, defining the bridge geometry and preliminary analysis etc have been done to well define the scope of the project and minimize the risk level. In addition, information obtained from available resources such as as-built plans and site visit utilized to alleviate uncertainties in bridge foundation. However, this information cannot guarantee depth to rock and it could be a potential risk that leads to cost overrun. Although property owners adjacent to the bridge site are in favor of the project, upgrading portion of the existing private road and use it as temporary detour may be another risk factor. Given these uncertainties, a medium risk

level is assigned to the RW and CN phases of this project while low risk is assumed for the PE phase. As such, appropriate contingencies have been applied to the total estimate.

PROPOSED SMART FLAG:

Given the fact that the existing structure is a truss bridge, a DRF-1 (Design Redundancy) Smart Flag was used in this project. The latest inspection report shows that the Fracture Critical elements are in Poor condition.

CONSTRUCTION AND FINANCING:

Assumed construction advertisement date is: Summer 2028. SYIP 2022-2027

The project cost is estimated as follows:

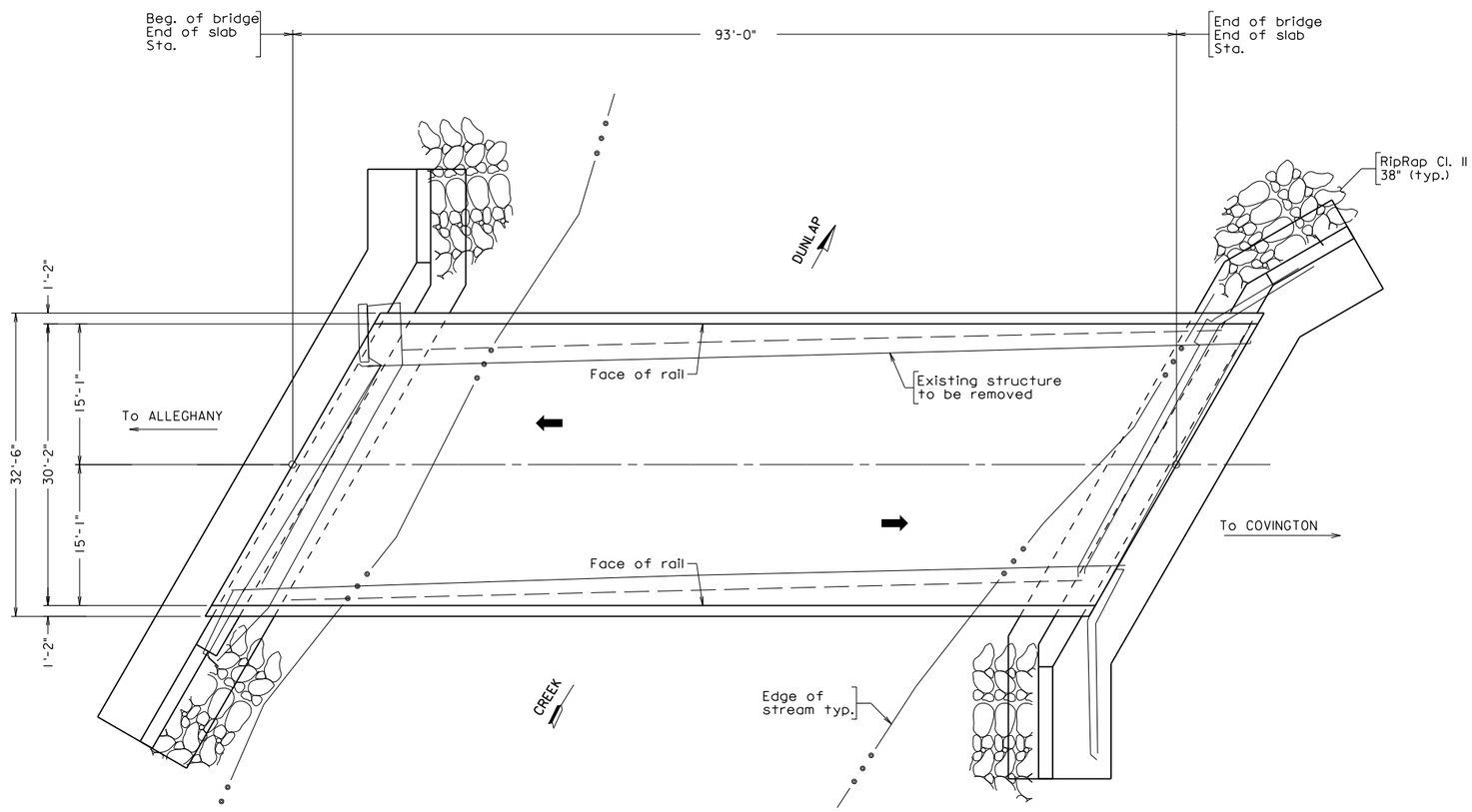
PE $784,249
RW $357,172
CN $6,547,845
Total = **$7,689,266**

See supporting documents for detail breakdown of the above estimate and pertinent assumptions.

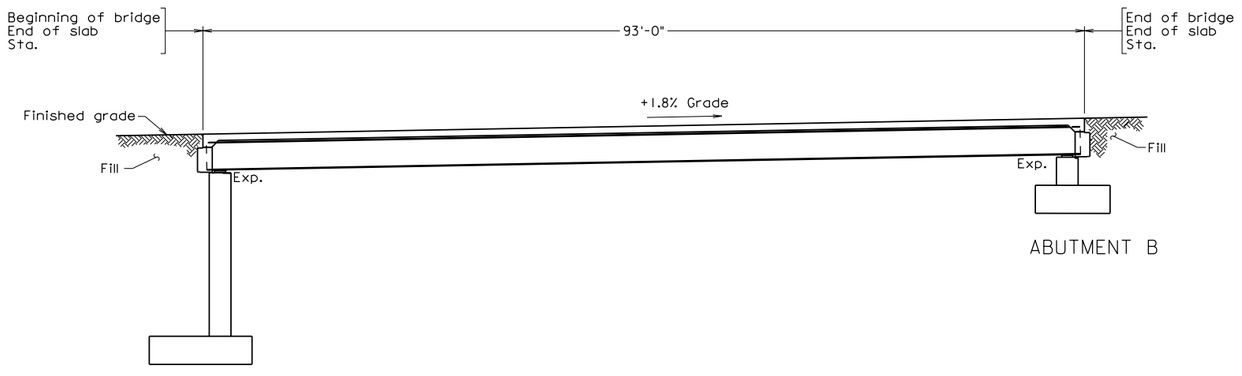
SYIP Total Project Cost Estimate Summary

Phase	Base ($) *	Contingency ($) *	Inflation ($) **	Total ***
PE Phase Estimate	$615,000	$61,500	$107,749	$784,249
RW Phase Estimate	$237,000	$71,100	$49,072	$357,172
CN Phase Estimate	$4,054,544	$1,159,810	$1,333,491	$6,547,845
Total Estimate	$4,906,544	$1,292,410	$1,490,312	$7,689,266

* 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.



PLAN



DEVELOPED SECTION ALONG ℄

PRE-SCOPING PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

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

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—	I	159	0159-003-1039, BXXX	
NBIS Number: 00000000000XXXXX			UPC No. XXXXX		
Federal Oversight Code: N/A			FHWA Construction and Scour Code: X071-S8		

DESIGN EXCEPTION(S):

None

GENERAL NOTES:

Width: 30'-2" face-to-face of rail.

Span layout: 93'-0" Single span steel plate girders or steel rolled beams.

Capacity: HL-93 loading.

Drainage area: sq. mi.

Specifications:

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

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

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

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

This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, August 2011 and latest revisions.

Design loading includes 20 psf allowance for construction tolerances and construction methods.

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

Concrete in superstructure, rails, terminal walls, and integral backwalls shall be Low Shrinkage Class A4 Modified Lightweight in accordance with Section 217.12; in abutments, Class A3.

All reinforcing steel shall be deformed and shall conform to ASTM A615, Grade 60 except for steels noted as Corrosion Resistant Reinforcing (CRR) which shall conform to Section 223 of the Specifications. All reinforcing bar dimensions on the detailed drawings are to centers of bars except where otherwise noted and are subject to fabrication and construction tolerances.

CRR steels shall conform to one or more of the three Classes listed in Section 223 of the Specifications. The Class(es) of CRR steel(s) required on this project is/are noted on plan sheets and in the reinforcing steel schedule. CRR Steel, Class II or Class III may be substituted for Class I. CRR Steel, Class III, may be substituted for Class II.

Bridge No. of existing bridge is 1032. Plan No..

B.M.: See road plan.

General Notes continued on next sheet

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE ON

RTE. 159 (DUNLAP CREEK ROAD) OVER DUNLAP CREEK ALLEGHANY CO. -1.4 MI. TO RTE. 311 & 0.95 MI TO RTE. 717 PROJ. 0159-003-1039, BXXX

VDOT S&B DIVISION
STAUNTON, VA
STRUCTURAL ENGINEER

PLANS BY:	Staunton District S&B
SUPERVISED:	Eulogio A. Javier II, P.E.
DESIGNED:	Amedebrhan M. Asfaw
DRAWN:	Amedebrhan M. Asfaw
CHECKED:	

No.	Description	Date

REVISIONS

For Table of Revisions, see Sheet 2.

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

Approved: _____ _____
District Administrator — Date

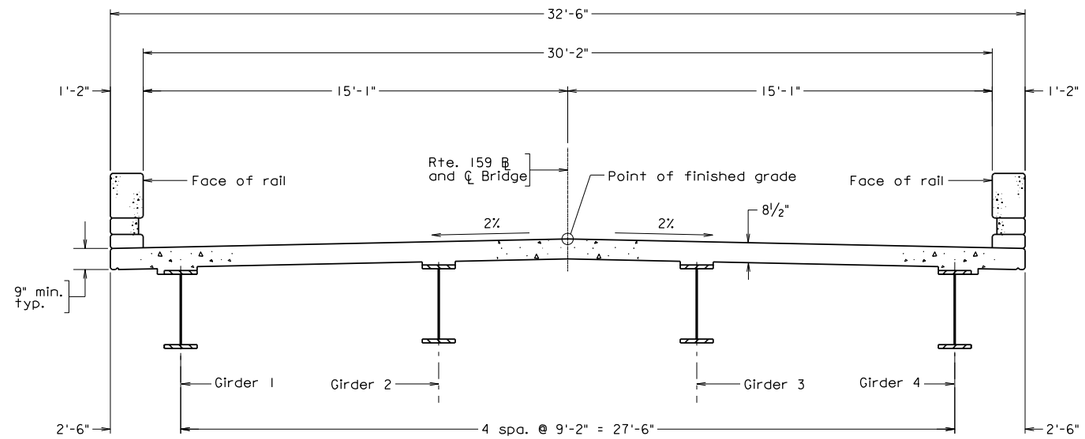
ORIGINAL SIGNATURES ON TITLE SHEET OF ROAD PLANS

Date: _____

XXX-XX

XXX-XX-01.dgn

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
VA.	—		159	0159-003-1039, Bxxx	·



TRANSVERSE SECTION

Scale: ⅜" = 1'-0"

PRE-SCOPING PLANS

THESE PLANS NOT TO BE USED FOR CONSTRUCTION

1039_workingfile.dgn

VDOT S&B DIVISION
STAUNTON, VA
STRUCTURAL ENGINEER

Scale: as shown

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION

STRUCTURE AND BRIDGE DIVISION

TRANSVERSE SECTION

Designed: AMA	Date	Plan No.	Sheet No.
Drawn: AMA	Nov. 2019		X of X
Checked:			


Approx. Project Termini
100' Long MABEY
Temp. Bridge
Approx. limits of
proposed bridge
Route 159 - Dunlap Creek Rd.
Gravel Shoulder
Asphalt Pavement
Hardwood And Pine
Gravel Drive
Edge Of Pavement
Mixed Woods
Metal Sign
Post Post
Dunlap Creek
Tuesday 11-20-2018
El. =1582.07
Conc Bridge
4' Wood Fence
Brush
Gravel
Maple Cluster
18" Maple
18" Maple
In Pl. Endwall
In Pl. 15" RCP
Inv. In = 1614.84
Inv. Out = 1613.78
4' Wire Fence
Broken Pavement
Mixed Brush
4' Wire Fence
W/ Barbed Wire
15" Oak
18" Oak
24" Oak
Cedar Sap
36" Oak
Cedar Sap
MB # 3911
36" Oak
6" Cedar
10" Dec
24" Pecan
Wood Po
Gravel Drive

SYIP PROJECTS

DETAILED PROJECT COST ESTIMATE SUMMARY

(Version: 1/21/2020 - CTS Modified)

Portal ID:		Project UPC:	NA
Prepared By:	AMA	Milestone	Creation/Pre Scope
Reviewed By:		Date:	12/15/2020
County/City/Town:	Alleghany County (03)	Tier Level	1

Preliminary Engineering

Project Estimate Component		Proposed Project Cost Estimate ($)		
Discipline	Source	Base ($)	Contingency (%)	Total
Roadway	Profess. Judgement	$ 210,000	10.00%	$231,000
Hydraulics	Profess. Judgement	$ 25,000	10.00%	$27,500
In-plan Utilities	Profess. Judgement	$ 15,000	10.00%	$16,500
Traffic	Profess. Judgement	$ 30,000	10.00%	$33,000
Structures/Bridges	Profess. Judgement	$ 230,000	10.00%	$253,000
Materials/Geotech	Profess. Judgement	$ 50,000	10.00%	$55,000
Survey	Profess. Judgement	$ 15,000	10.00%	$16,500
Environmental	Profess. Judgement	$ 20,000	10.00%	$22,000
Right of Way	Profess. Judgement	$ 20,000	10.00%	$22,000
Other	Profess. Judgement			$0
	VDOT Oversight Costs			$0
	Total PE Phase Estimate	$ 615,000	10.00%	$676,500
PE Base Estimate Date (12/15/2020)				
PE Phase Dates (XX/XX/XXXX)	Start Date	7/15/2022	End Date	7/15/2025

Right-of-Way & Utilities

Discipline	Source	Base ($)	Contingency (%)	Total
Right-of-Way	Pre-Scoping Plans	$87,000	30.00%	$113,100
Out-of-Plan Utilities (power, cable, gas, etc.)	Pre-Scoping Plans	$150,000	30.00%	$195,000
	VDOT Oversight Costs			$0
	Total RW Phase Estimate	$237,000	30.00%	$308,100
RW Base Estimate Date (XX/XX/XXXX)				
RW Phase Dates (XX/XX/XXXX)	Start Date	7/15/2025	End Date	7/15/2026

Construction

Discipline	Source	Base ($)	Contingency (%)	Total
Mobilization	Norms	$203,779	40.00%	$285,291
MOT			40.00%	$0
Roadway	Pre-Scoping Plans	$1,038,406	40.00%	$1,453,768
Hydraulics			40.00%	$0
In-plan Utilities			40.00%	$0
Traffic			40.00%	$0
Structures/Bridges	Pre-Scoping Plans	$1,657,340	40.00%	$2,320,276
Materials/Geotech			40.00%	$0
Soundwalls				$0
Other	Profess. Judgement	$103,841	0.00%	$103,841
	Total Bid Items	$3,003,366	38.62%	$4,163,176
Incidental-Claims & Work Orders (Percentage of Bid Items)	5% to 10% max	150,168		150,168
Railroad Flagging/Coordination				0
State Forces				0
State Police				0
Contract Requirements (Incentive/Disincentive)	5%	300,337		300,337
Construction Engineering (Inspection)	Environmental Inspection ($)	60,067		60,067
	VDOT or Locality ($)			0
	VDOT Oversight ($)	540,606		540,606
	Total CEI			600,673
	Total CN Phase Estimate	$4,054,544	28.61%	$5,214,354
CN Base Estimate Date (XX/XX/XXXX)		12/15/2020		
CN Phase Start Date (XX/XX/XXXX)		11/15/2026		
CN Phase End Date (XX/XX/XXXX)		6/15/2028		
Total Project Cost Estimate				$6,198,954

Notes / Assumption / Documentation

Preliminary Engineering	Creation / Pre-scope (prior to project initiation)	Final Scopi
Roadway		
Hydraulics		
In-plan Utilities		
Traffic		
Structures/Bridges		
Materials/Geotech		
Survey		
Environmental		
Right of Way		
Other		
Contingencies	12% assuming low risk level	

Right-of-Way & Utilities		
Right-of-Way		
Out-of-Plan Utilities (power, cable, gas, etc.)		
Contingencies	30% assuming low risk level	

Construction		
Mobilization		
MOT		
Roadway		
Hydraulics		
In-plan Utilities		
Traffic		
Structures/Bridges		
Materials/Geotech		
Soundwalls		
Other		
contingencies	40% assuming medium risk level	

Project Cost Estimating System

SUMMARY PAGE

DISTRICT	STAUNTON		
PROJECT NUMBER	PE18968442		
CONSTRUCTION END YEAR	FY2030	UPC	111098
AD YEAR	FY2027	RATE OF INFLATION TO AD	18.25%
ESTIMATE YEAR	FY2021	INFLATION RATE DURING CN	4.64%
Date of previous estimate	12/16/20		
PROJECT MANAGER / DESIGNER	Eulogio.Javier		
Preliminary Engineering Estimate:	MANUAL		
Construction Estimate:	MANUAL		
Right-of-Way Estimate:	MANUAL		
Utilities Estimate:	MANUAL		
DATE	*8/11/2021*		

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)	*$676,500*
CONSTRUCTION ESTIMATE (excluding Bridge CN)	*$6,457,712*
RIGHT-OF-WAY & UTILITIES ESTIMATE(excluding Bridge RW)	*$325,500*
TOTAL PROJECT ESTIMATE (excluding Bridge estimate)	*$7,459,712*

Revised 07/01/20

Estimate Class: Blank

Version 10.00

UPC: 111098

Project Cost Estimating System
CONSTRUCTION / BRIDGE / PE

Project No.	PE18968442		
Interstate Project ?	0	0	
Route Number			
	CONST-1	CONST-2	Total
Geometric Standard			
Construction Base	$0	$0	$0
Bridge Removal			
To AdYear Inflation			
Mid-point construction Inflation			
Total Construction Estimate			

CONSTRUCTION & PE TOTALS

Total Construction Estimate (Roadway plus Bridge)	*$6,457,712*	***Manual***
Total Preliminary Engineering Estimate (Roadway plus Bridge)	*$676,500*	***Manual***

Virginia Department of Transportation 2005

Today's Date: **08/11/21**

Version 10.00

UPC: 111098

Project Cost Estimating System
CONSTRUCTION / BRIDGE / PE

Project No. PE18968442

Interstate Project ? *

Maintenance Project ? *

Route Number *

Geometric Standard *

Ad Date 2027

Design Year ADT * Project Terrain

OR

Current (Recent) ADT *

Select / Enter Data into All Applicable White Boxes (in order from Top to Bottom)

Box Must Be Empty

Box Must Be Empty

Box Must Be Empty

Design Speed =

		Number of Additional Lanes:	*Length of Add'l. Lanes (mi.):*
Project Length (mi.) *			
Total Length -Adding or Building Two Lanes (mi.) *		*None*	
Total Length - Adding or Building Four Lanes (mi.) *		*None*	
Total Length - Building Ramps and Loops (mi.) *		*None*	

Shoulder or Curb & Gutter ? (Select S or C&G) * Enter Lane Width (ft) >

Median Type - Graded, Raised, or None ? * Normal Lane Width(ft) 0

Number of Crossovers (Divided Highways ONLY) *

Length - Curb & Gutter - Left PLUS Right Side (ft.)

Length - Sidewalk - Left PLUS Right Side (ft.)

Bike / Pedestrian Type None

Total Length - Raised Median (ft.)

Number of Right Turn Lanes - Left PLUS Right Side *

Number of Left Turn Lanes - (Undivided Only) *

STAUNTON Cost Factor used

90%

Construction Costs

Signals, ITS, Signs and Lighting Costs*	$0	Base #1	*$0*
Cost of Large Drainage Structures	*$0*	Base #2	*$0*
In-Plan Utility Costs*	*$0*	Enter Const CE Cost >	*$0*
Adjustment for Unusual Construction Costs	*$0*	CE	*$0*
** Totals include district factor calculations*		Estimate (2021)	*$0*

Additional (or Unusual) P. E. Costs

PE Cost

Select % of PE to be performed by Consultants | PE Cost $0

Note: Do Not Include Bridge P. E. Costs Here

Roadway P. E. / Roadway Const. = 0.0%

Today's Date: **08/11/21**

Version 10.00

UPC: 111098

Project Cost Estimating System
CONSTRUCTION / BRIDGE / PE

Project No. PE18968442

Select / Enter Data into All Applicable White Boxes (in order from Top to Bottom)

Interstate Project ?		*		
Route Number		*		
Geometric Standard		*		
Ad Date	2027			
Design Year ADT		*	Project Terrain	
OR				
Current (Recent) ADT		*		
Box Must Be Empty			Design Speed =	
Box Must Be Empty				
Box Must Be Empty				
Project Length (mi.)		*	*Number of Additional Lanes:*	*Length of Add'l. Lanes (mi.):*
Total Length -Adding or Building Two Lanes (mi.)		*	*None*	
Total Length - Adding or Building Four Lanes (mi.)		*	*None*	
Total Length - Building Ramps and Loops (mi.)		*	*None*	
Shoulder or Curb & Gutter ? (Select S or C&G)		*	Enter Lane Width (ft.)	
Median Type - Graded, Raised, or None ?		*	Normal Lane Width (ft.)	0
Number of Crossovers(Divided Highways ONLY)		*		
Length - Curb & Gutter - Left PLUS Right Side (ft.)				
Length - Sidewalk - Left PLUS Right Side (ft.)				
Bike / Pedestrian Type	None			
Total Length - Raised Median (ft.)				
Number of Right Turn Lanes - Left PLUS Right Side		*		
Number of Left Turn Lanes - (Undivided Only)		*		

Construction Costs

Base #2 *$0*

Revised 07/01/20

Today's Date: **08/11/21**

Version 10.00

Project Cost Estimating System
Miscellaneous Cost Estimates

COST OF LARGE DRAINAGE STRUCTURES

Job#	Description	Cost ()
		$0

ADJUSTMENT FOR UNUSUAL CONSTRUCTION COSTS

Type	Description	Cost ()
	Unsuitable Material Excavation / Backfill	
	MOT / Concrete Barrier / Temporary Pavement	
	Soundwalls	
	Retaining Walls / MSE Walls	
	Unusual Borrow / Fill (Anything over 3ft of cut/fill)	
	Wetlands / Stream relocation / Nutrient Credits	
	Stormwater Management Costs	
	Unusual Risks / Contingency for unknowns	
	Railway Flagger	
	Pavement Resurfacing / Buildup	
		$0

Version 10.00

UPC: 111098

Project Cost Estimating System
MANUAL ESTIMATE

	DATE	PE	RW	CN
EXPENDITURES	09/17/20	$578,933	$0	$0
RUMS	12/16/20		$0	
TRNS*PORT				$0
AWARD	12/16/20			$0
PROJECTION	12/16/20			$0

ESTIMATE YEAR		AD YEAR
FY2021	18.25%	FY2027
$676,500	PE	$676,500
$325,500	RW	$325,500
$5,219,145	CN	$6,171,651
$6,221,145	TOTAL	$7,173,651

Job #	Phase	Comment	Estimate
	PE	Use combined base and contingency costs from the workbook	$676,500
	RW	Use combined base and contingency costs from the workbook	$325,500
	CN	Use combined base and contingency costs from the workbook	$5,219,145

Job #	Phase	Comment	Estimate

Version 10.00

PROJECT COST ESTIMATE

8/11/2021
9:28 AM

PROJ.: 0159-003-1039
SITE: Alleghany County

PROJ.: 0159-003-1039
SITE: Alleghany County

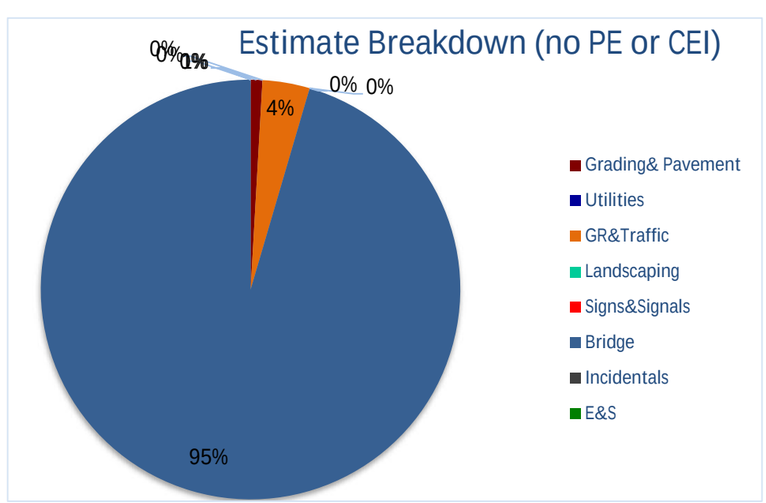
ITEM	ITEM DESCRIPTION	UNITS	QUAN.	UNIT PRICE	AMOUNT	Locked
101	CONSTRUCTION SURVEYING (CONSTR.)	LS	1	15000	$ 15,000.00	Locked
25506	FIELD OFFICE TY.II	MO	18	$2,100.00	$ 37,800.00	Locked
25565	PROGRESS SCHEDULE BASELINE	LS	1	10000	$ 10,000.00	Locked
25567	PROGRESS SCHEDULE UPDATES	EA	17	$740.40	$ 12,586.80	Locked
60125	NS BRIDGE (ERECT AND REMOVE TEMP BRIDGE)	LS	1	$250,000.00	$ 250,000.00	
60411	CONC. CLASS A4 MOD. LIGHTWEIGHT LOW SHRINKAGE	CY	110	$1,400.00	$ 154,000.00	Locked
60490	BRIDGE DECK GROOVING	SY	317	$25.00	$ 7,925.00	Locked
60495	COVER DEPTH SURVEY	SY	317	$15.00	$ 4,755.00	Locked
61711	CORROSION RESISTANT REINF.STEEL CL. I	LB	20000	$3.52	$ 70,400.00	Locked
61812	STR.ST.PLATE GIRDER ASTM A709 GR.50W	LS	81100	$3.10	$ 251,409.99	Locked
62032	RAILING,KANSAS CORRAL 32" W/CURB	LF	190	$451.87	$ 85,855.30	Locked
62534	NS BRIDGE SUPERSTRUCTURE (EPS)	SY	15	$177.34	$ 2,660.10	Locked
62535	NS BRIDGE SUPERSTRUCTURE (LOW PROFILE BEARING)	EA	14	$2,500.00	$ 35,000.00	Locked
62536	NS BRIDGE SUPERSTRUCTURE (TEMP SHORING)	LS	1	$30,000.00	$ 30,000.00	Locked
64011	STRUCTURE EXCAVATION	CY	1420	$50.00	$ 71,000.00	Locked
64015	SELECT BACKFILL (ABUTMENT ZONE)	TON	2500	$35.00	$ 87,500.00	Locked
64032	GEOCOMPOSITE WALL DRAIN	SY	76	$62.40	$ 4,742.40	Locked
64036	PIPE UNDERDRAIN 6"	LF	100	$25.00	$ 2,500.00	Locked
65013	CONCRETE CLASS A3	CY	350	$900.00	$ 315,000.00	Locked
65095	NS CONCRETE	CY	25	$500.00	$ 12,500.00	Locked
65200	REINF. STEEL	LB	20000	$2.00	$ 40,000.00	Locked
66115	TEMP. CAUSEWAY	LS	1	$10,000.00	$ 10,000.00	Locked
66120	COFFERDAM	EA	2	$20,000.00	$ 40,000.00	Locked
66239	DRY RIPRAP CL.II 38"	TON	80	$107.10	$ 8,568.00	Locked
67400	DECK DRAINAGE SYSTEM	LS	1	$15,000.00	$ 15,000.00	Locked
67900	NS DISM.& REM. EXIST. STR.	LS	1	$60,000.00	$ 60,000.00	Locked
68476	NS ENV.& WORKER PROTECT.	LS	1	$16,626.55	$ 16,626.55	Locked
68492	NS MATERIAL DISPOSAL	LS	1	$6,509.76	$ 6,509.76	Locked

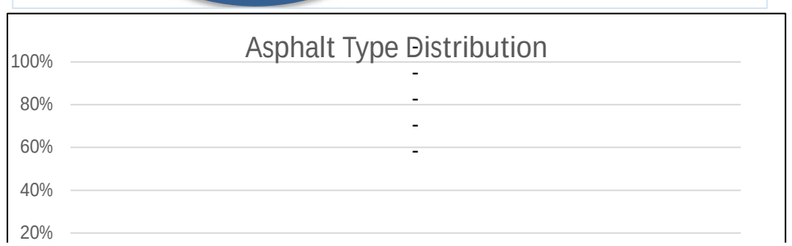
Total Number of Bid items = 28

MOBILIZATION	$	112,866.95	= $80,000 + 5% OF (THE SUM OF BID ITEMS - $1 MILLION)	
SUBTOTAL	$	1,770,205.85	$ 1,657,338.90	
ENGINEERING	$	177,020.58	***10.0%*** OF SUBTOTAL	***Enter % based on Proj. specific conditions & requirements***
CONTINGENCIES	$	354,041.17	***20.0%*** OF SUBTOTAL	
TOTAL	**$**	**2,301,267.60**		

Network Version

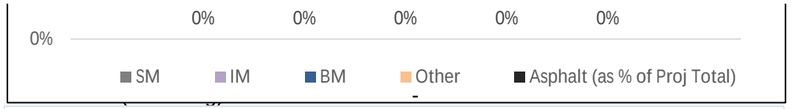
Regression Model: ***Non-Linear***
District: ***Staunton***
Pricing Model Date: ***11/2/2020*** ***Current To 10/2020 Letting***

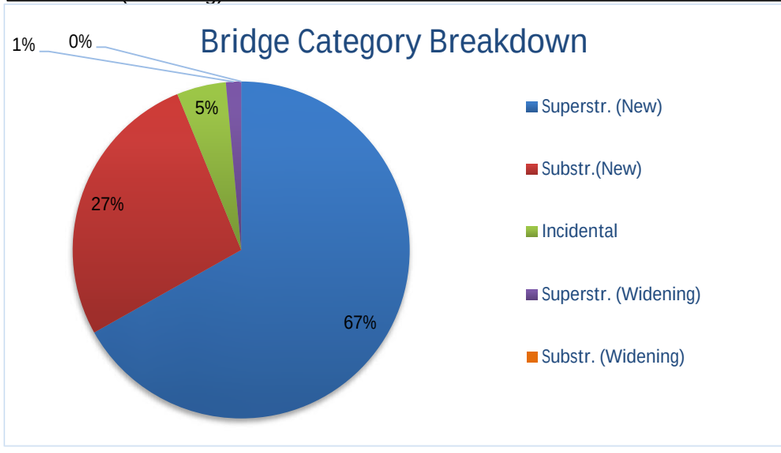




PROJECT COST ESTIMATE

8/11/2021
9:28 AM





ITEM	ITEM DESCRIPTION	UNITS	QUANTITY								AMOUNT
	Pavement Summary		Rt. 159	Rt. 159 Diversion	0	0	Temp	Total	UNIT Cost		Cost
16390	ASPHALT CONCRETE TY. BM-25.0A	TON	146.67	244.44				391.11	145	$	56,710.95
16335	ASPHALT CONCRETE TY. SM-9.5A	TON	385.00	195.56				580.56	117	$	67,925.52
10628	FLEXIBLE PAVE.PLANING 0"-2"	SY	1778.00	0.00				1778.00	28	$	49,784.00
10128	AGGR. BASE MATL. TY. I NO. 21B	TON	222.22	395.06				617.28	95	$	58,641.60
11070	NS SAW-CUT ASPH CONC	LF	1556.00					1556.00	18	$	28,008.00
24410	DEMOLITION OF PAVEMENT	SY	140.00	511.11				651.11	12.00	$	7,813.33
								0.00		$	-
								0.00		$	-
								0.00		$	-
								0.00		$	-
								0.00		$	-
								0.00		$	-
								0.00		$	-
								0.00		$	-
	Incidental Summary		Rt. 159	Rt. 159 Diversion	0	0	Temp	Total			
120	REGULAR EXCAVATION	CY		1318.00				1318.00	35.00	$	46,130.00
140	BORROW EXCAVATION	CY		9600.00				9600.00	40.00	$	384,000.00
101	CONSTRUCTION SURVEY	LS	1.00					1.00	25000.00	$	25,000.00
								0.00		$	-
								0.00		$	-
13286	Guardrail Terminal Gr-MGS2	EA	4.00					4.00	4200.00	$	16,800.00
13383	FIXED OBJECT ATTACH. GR-FOA-1 TY. I	EA	4.00					4.00	3000.00	$	12,000.00
								0.00		$	-
								0.00		$	-
								0.00		$	-
								0.00		$	-
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								0.00		$	-
								0.00		$	-
								0.00		$	-
								0.00		$	-
	Temp. Traffic Ctl & Drainage Summary		Rt. 159	Rt. 159 Diversion	0.00	0.00	Temp	Total			
580	UNDERDRAIN UD-1	LF	20.00	15.00				35.00	21.24	$	743.40
1060	6" PIPE	LF	30.00	45.00				75.00	100.00	$	7,500.00
1156	STORM SEWER PIPE 15"	LF	35.00	25.00				60.00	135.00	$	8,100.00
24278	GROUP 2 CHANNELIZING DEVICES	DAY		3200.00				3200.00	5.00	$	16,000.00
24160	CONSTRUCTION SIGNS	SF		320.00				320.00	25.00	$	8,000.00
24152	TYPE III BARRICADE 8'	EA		4.00				4.00	450.00	$	1,800.00
24282	FLAGGER SERVICE	HR		240.00				240.00	30.00	$	7,200.00
								0.00		$	-
54022	TY. A PAVEMENT LINE MARKING 6"	LF	2400.00	2660.00				5060.00	1.00	$	5,060.00
54105	ERAD. OF EXIST.PAVE.MARKING	LF		1860.00				1860.00	15.00	$	27,900.00
	Temporary Signalization	EA	4.00					4.00	40000.00	$	160,000.00
								0.00		$	-
								0.00		$	-
	Misc Seeding, E&SC,Drainage	LS	1					1.00	100000.00	$	100,000.00
								0.00		$	-
								0.00		$	-
								0.00		$	-
								0.00		$	-
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								0.00		$	-
								0.00		$	-
									Total	**$**	**1,038,405.85**
									Miscellaneous	$	103,840.59
									Mobilization	$	87,112.32
									Mobilization		
										$	**1,229,358.76**

PAVEMENT SUMMARY

Project No. 0623-034-882, M501	Sheet No.	ASPHALT CONCRETE TY. BM-25.0A	ASPHALT CONCRETE TY. SM-9.5A	FLEXIBLE PAVE.PLANING 0"-2"	AGGR. BASE MATL. TY. I NO. 21B	NS SAW-CUT ASPH CONC	DEMOLITION OF PAVEMENT									
		TON	TON	SY	TON	LF	SY									
Rt. 159		146.67	385.00	1778.00	222.22	1556.00	140.00									
Rt. 159 Diversion		244.44	195.56		395.06		511.11									
Temp																
Total		391.11	580.56	1778.00	617.28	1556.00	651.11									

P Denotes Item(s) to be paid for on the basis of plan quantities in accordance with current road and bridge specifications

X Denotes Item(s) to be included in the price bid of other items

S Denotes Subtotal, add to other subtotals of the same item for total Quantity

INCIDENTAL SUMMARY

Project No.	Sheet No.	REGULAR EXCAVATION	BORROW EXCAVATION	CONSTRUCTION SURVEY			Guardrail Terminal Gr-MGS2	FIXED OBJECT ATTACH. GR-FOA-1 TY. I																		
		CY	CY	LS			EA	EA																		
Rt. 159				1.00			4.00	4.00																		
Rt. 159 Diversion		1318.00	9600.00																							
Temp																										
Total		1318.00	9600.00	1.00			4.00	4.00																		

TEMPORARY TRAFFIC CONTROL AND DRAINAGE SUMMARY

Project No.	Sheet No.	UNDERDRAIN UD-1	6" PIPE	STORM SEWER PIPE 15"	GROUP 2 CHANNELIZING DEVICES	CONSTRUCTION SIGNS	TYPE III BARRICADE 8'	FLAGGER SERVICE		TY. A PAVEMENT LINE MARKING 6"	ERAD. OF EXIST.PAVE.MARKING	Temporary Signalization			Misc Seeding, E&SC.Drainage											
		LF	LF	LF	DAY	SF	EA	HR		LF	LF	EA			LS											
Rt. 159		20	30	35						2400		4			1											
Rt. 159 Diversion		15	45	25	3200	320	4	240		2660	1860															
Temp																										
Total		35	75	60	3200	320	4	240		5060	1860	4			1											

			Phase I		Phase II		Phase III		Phase IV		Phase V		
			Duration	6 MONTH		5 MONTH		2.5 MONTH		0.5 MONTH		2.5 MONTH	TOTAL
24160	Temporary Signs	SF											360
	Truck Mounted Attenuator	HR							4	60			60
24278	Group 2 Channelizing Devices	Day		8	240	16	2400	25	1875	25	375	25	1875	6765
24282	Flagger Service	HR	25	days	600					10	240			840
24290	Traffic Barrier Ser. Conc.	LF					310		545		130			985
54524	CONSTR.PAVE.MARK.(TY.D,CL.II)24"	LF					24							24
54512	CONSTR.PAVE.MARK.(TY.D,CL.II)4"	LF					252						200	452
54020	TY. A PAVEMENT LINE MARKING 4"	LF					280				272		200	752
54028	TY.A PAVE. LINE MARKING 24"	LF					**32**						12	44
54024	TY. A PAVEMENT LINE MARKING 8"	LF												
54105	eradicate paint	LF					400						200	600
24152	Type III barricade 8'	EA					6							6
	Stone	Tons			514									
54516	CONSTR.PAVE.MARK.(TY.D,CL.II)8"	LF												

1 month = 30 days
Flagger team = 3 guys 8 hr days

*Extra excavation For PHASE I on Route 1308 396 cy
Calcs in profile drawing

Construction Signs

size	each	Total
3x3	24	216
4x2	6	48
2x3	5	30
		294

			STAGE 1			stage 2
24160	Temporary Signs	SF	280			280
	Truck Mounted Attenuator	HR				
24278	Group 2 Channelizing Devices	Day	22	33		
24282	Flagger Service	HR				
24290	Traffic Barrier Ser. Conc.	LF				

Project Cost Estimating System

SUMMARY PAGE

DISTRICT	STAUNTON		
PROJECT NUMBER	PE18968442		
CONSTRUCTION END YEAR	FY2020	UPC	111098
AD YEAR	FY2020	RATE OF INFLATION TO AD	N/A
ESTIMATE YEAR	FY2020	INFLATION RATE DURING CN	N/A
Date of previous estimate	12/05/19		
PROJECT MANAGER / DESIGNER	Eulogio.Javier		
Preliminary Engineering Estimate:	PCES		
Construction Estimate:	PCES		
Right-of-Way Estimate:	PCES		
Utilities Estimate:	PCES		
DATE	*8/11/2021*		

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)	*$0*
CONSTRUCTION ESTIMATE (excluding Bridge CN)	*$0*
RIGHT-OF-WAY & UTILITIES ESTIMATE(excluding Bridge RW)	*$236,967*
TOTAL PROJECT ESTIMATE (excluding Bridge estimate)	*$236,967*

Revised 06/05/19

Estimate Class: Blank

Version 9.00

UPC: 111098

Project Cost Estimating System
RIGHT-OF-WAY ESTIMATE

Project No.: *PE18968442*

VDOT Construction District : *STAUNTON* *# 8*

Select Project Area Real Estate Costs :

Define Project Land Use Characteristics :

Agricultural :	
Residential :	
Industrial :	
Commercial :	
	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 :

1. LAND VALUE

Prop. Right-of-Way

Total Right-of-Way Project Length (ML + Connections)		ft	*Computed RW Cost per sq ft =*	***$0.27***
Average width of Existing RW		ft	Enter Right-of-Way Estimator's Right-of-Way Cost per sq ft :	
Average width of Proposed RW		ft		
Total area of all additional Prop. Right-of-Way		sf	Enter total sq ft (override calculation):	
			0 sq ft = 0.000 Ac.	
Approx. % of Prop. CL within		ft	of Exist. CL	
Approx. % of Prop. CL between		ft	& ft of Exist. CL	
Approx. % of Prop. CL greater than		ft	from Exist. CL	

Temp. Ease.

Average Width of parallel Temporary Easements Left		ft	*Comp. Temp. Ease. Cost / sq ft =*	***$0.07***
Total Length of parallel Temporary Easements Left		ft	Enter Right-of-Way Estimator's Temp. Ease. Cost per sq ft :	
Average Width of parallel Temporary Easements Right		ft		
Total Length of parallel Temporary Easements Right		ft	Enter total sq ft (override calculation):	
			16,000 sq ft = 0.367 Ac.	

Perm. & Util. Ease.

Total Area of All Replacement Utility Easements AND Select % of RW Cost for Util. Ease.		sf	*Comp. Utility Ease. Cost / sq ft =*	***$0.07***
			RW Est's. Utility Ease. Cost per sq ft :	
			15,000 sq ft = 0.344 Ac.	
This Box Must Be Empty >		ea	*Comp. Perm. Ease. Cost / sq ft =*	***$0.22***
			RW Est's. Perm. Ease. Cost per sq ft :	
Total area of All Permanent Easements		sf	18,000 sq ft = 0.413 Ac.	

COST OF LAND (Item # 1) ***$5,967***

2. BUILDING VALUE

Based upon comparison to similar, occupied **Residential Dwellings** in the Project Area, enter the Number of:

		Computed:
A. Low Cost Residential Dwellings :		*$0*
B. Moderately Low Cost Dwellings :		*$0*
C. Average Cost Residential Dwellings :		*$0*
D. Moderately High Cost Dwellings :		*$0*
E. High Cost Residential Dwellings :		*$0*
Computed Total Residential Dwelling Costs :		***$0***
Estimator's Total Residential Dwelling Costs :		

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 :

3. OTHER IMPROVEMENTS

Enter the estimated cost of ALL OTHER IMPROVEMENTS on the Project:

Computed Total Other Improvements Costs :	***$597***
Estimator's Total Other Improvements Costs :	

4. DAMAGES

Anticipated % of Parcels Affected by Damages to Remainder :	
Anticipated Relative Cost Impact of Damages to Remainder :	
Approximate Number of Parcels Affected :	**3**
Computed Cost of Damages to Remainder :	***$7,040***
Estimator's Total Cost of Damages to Remainder :	**$7,500**

TOTAL ACQUISITIONS (Items # 1 - 4) ***$21,967***

5. ADMINISTRATIVE SETTLEMENTS

Anticipated % of Parcels Affected by Administrative Settlements :	60%
Anticipated Relative Cost Impact of Administrative Settlements :	Low
Approximate Number of Parcels Affected :	3
Computed Cost of Administrative Settlements :	***$11,734***
Estimator's Total Cost of Administrative Settlements :	**$12,500**

6. CONDEMNATION INCREASES

Anticipated % of Parcels Affected by Condemnation Increases :	20%
Anticipated Relative Cost Impact of Condemnation Increases :	Moderate
Approximate Number of Parcels Affected :	1
Computed Cost of Condemnation Increases :	***$21,121***
Estimator's Total Cost of Condemnation Increases :	**$20,000**

7. ADMINISTRATIVE COSTS & INCIDENTAL EXPENSES

Anticipated Relative Cost Impact of Admin. Costs & Incidental Expenses :	Very High
Computed Administrative Costs & Incidental Expenses :	***$19,946***
Estimator's Total Administrative Costs & Incidental Expenses :	**$32,500**

8. DEMOLITION CONTRACTS

Anticipated Relative Cost Impact of Demolition Contracts :	
Computed Costs of Demolition Contracts :	***$0***
Estimator's Total Cost of Demolition Contracts :	**$0**

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 :	
Computed Cost of Hazardous Materials Removal :	***$0***
Estimator's Total Costs of Hazardous Materials Removal :	**$0**

10. PROPERTY MANAGEMENT

Anticipated Relative Cost Impact of Property Management :	
Computed Costs of Property Management :	***$0***
Estimator's Total Cost of Property Management :	**$0**

TOTAL OTHER ITEMS (Items # 5 - 10) ***$65,000***

11. RELOCATION ASSISTANCE

Residential Relocation Costs:	
Anticipated Relative Cost Impact of Residential Relocation Expenses :	
Computed Residential Relocation Costs :	***$0***
Estimator's Total Residential Relocation Costs :	**$0**
Commercial Relocation Costs:	
Note: No Computed Costs Available. Use User Defined Costs Below:	
Estimator's Total Comm/Indust Relocation Costs :	**$0**

Total Displacements:	0	Farms:	
Families:		Non-Profit:	
Businesses:		Personal Property Only:	

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

12. YEAR OF RIGHT-OF-WAY AUTHORIZATION	FY2020	
13. MANUAL INFLATION RATE		

		Today's Cost	Factor	Inflated Cost
SUB-TOTAL RIGHT-OF-WAY COSTS		*$86,967*	*N/A*	*$86,967*
UTILITY COSTS TO RIGHT-OF-WAY PROJECT *	*(PCES)*	*$150,000*	*N/A*	*$150,000*
TOTAL RIGHT-OF-WAY COSTS	*(PCES)*	$236,967		$236,967

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

COMMENTS:

Proposed acquisition areas calculated and provided by PM. Grave, 4-Board Horse Fencing, Various Mature Trees, IP's. Assumptions: No Total Takes; No well / septic impacts; All parcels to retain reasonable access; Condemnation elevated due to recent attorney involvement. [DWL]

RW-238 Data :

Right-of-Way Estimate Date :

Based on Approved / Unapproved Plans ? :

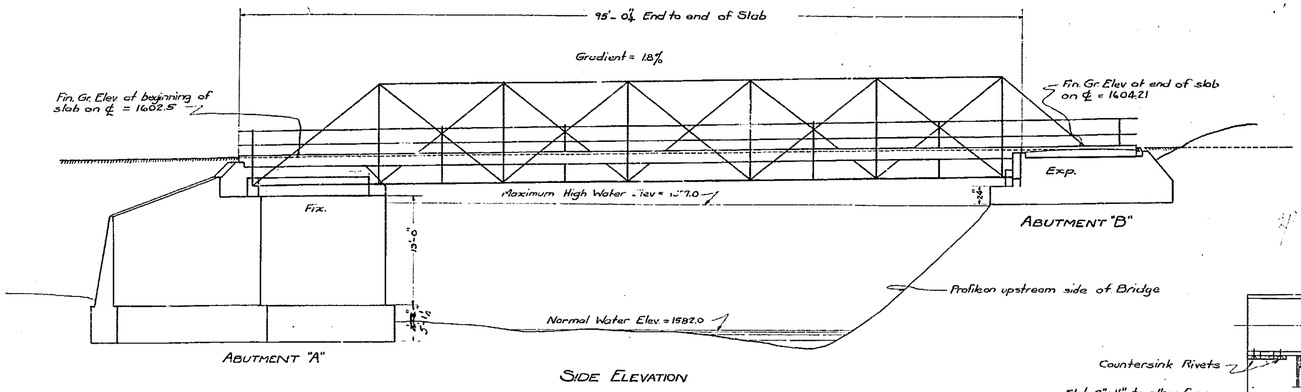
Participating Cost / Non-Participating Cost ? :

Today's Date : **08/11/21**

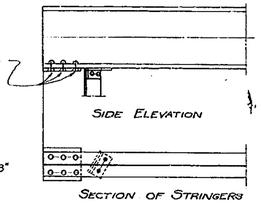
Revised 06/05/19

Version 9.00

FED. ROAD DIST. NO	STATE	B. P. R		STATE		NO. OF SHEET	TOTAL NO. OF SHEETS
		ROUTE NO	PROJ. NO.	ROUTE NO	PROJ. NO.		
10	VA			14	512		



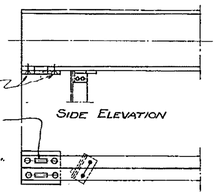
SIDE ELEVATION



SIDE ELEVATION

SECTION OF STRINGERS

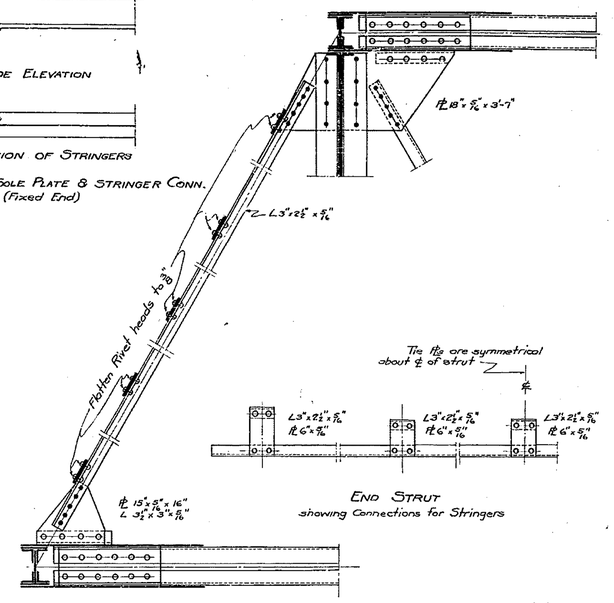
DETAILS OF SOLE PLATE & STRINGER CONN.
(Fixed End)



SIDE ELEVATION

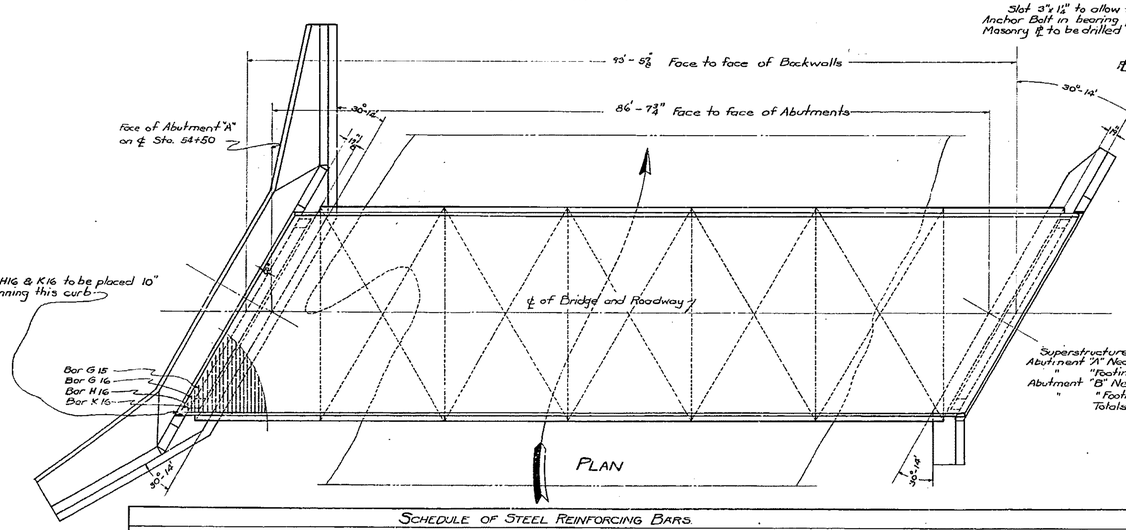
SECTION OF STRINGER

DETAILS OF SOLE PLATE & STRINGER CONN.
(Expansion End)



END STRUT
showing Connections for Stringers

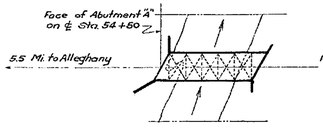
DETAILS OF STEEL TRUSS SKEWED ONE PANEL



ESTIMATED QUANTITIES:-

	Concrete Cu.Yds. Class "A"	Class "B"	Reinforcing Steel Lbs.	Structural Steel Lbs	Excavation Cu.Yds. Dry	Wet
Superstructure	58.4		11,460	97,000		
Abutment "A" Neat		145.7	295			
" "Footing		82.2	96.3		30	43.56
Abutment "B" Neat	8.6		280			
" "Footing		47.7	63.9		60	
Totals	67.0	227.6	3059	12,035	97,000	90

GENERAL NOTE
Roadway 24 feet: Capacity, 2-15 ton trucks passing.
Specifications - Virginia State Highway Commission, 1926.
All footings shall extend to Solid Rock and Foundations shall be approved by the Engineer. Depths of footings shown are approximate only.
All Concrete in Superstructure & Abut. "B" Neat to be Class "A" - All other concrete to be Class B.
All Excavation above Elevation 1582.0 shall be classified as Dry, below as Wet.
For further details of Superstructure see Standard Plan SC 24-90
B.M. Nail in root of 10" Sycamore 68 Ft. Lt. of Station 53+56
Elevation = 1588.60.



LOCATION SKETCH

SCHEDULE OF STEEL REINFORCING BARS.

STEEL IN SUPERSTRUCTURE.

Mark	No.	Size	Length	Location
A	113	⅝"ϕ	24'-6"	Slab
A1	113	⅝"ϕ	26'-3"	"
B	114	⅝"ϕ	25'-6"	"
C	45	⅝"ϕ	33'-9"	"
D	192	⅝"ϕ	4'-0"	"

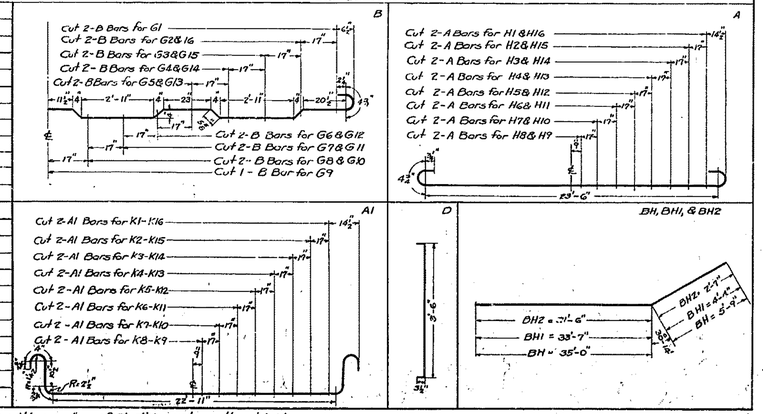
STEEL IN ABUTMENT "A"

Mark	No.	Size	Length	Location
AV	37	½"ϕ	5'-3"	Endwall
AH	2	½"ϕ	39'-9"	"
AH1	1	½"ϕ	36'-8"	"
AH2	1	½"ϕ	33'-7"	"

STEEL IN ABUTMENT "B"

Mark	No.	Size	Length	Location
AV	34	½"ϕ	5'-3"	Endwall
BH	2	½"ϕ	40'-9"	"
BH1	1	½"ϕ	37'-11"	"
BH2	1	½"ϕ	34'-1"	"

BENDING DIAGRAM



BH, BH1, & BH2

All bends to be made with a radius of 2½ diam. unless otherwise shown.
All Bars not shown in Bending Diagram are straight

Drawn by "
Traced "
Checked "

PROPOSED BRIDGE
OVER DUNLAP CREEK 55 MI. FROM ALLEGHANY
STA. 54+50 PROJ. 512 RT. 14 ALLEGHANY CO.
1-90'-0" STEEL TRUSS SPAN
VIRGINIA STATE HIGHWAY COMMISSION
RICHMOND, VA.

Recommended for Approval:-
Bridge Engineer
Approved:-
Chief Engineer

Scale:- ⅛" & ¾" = 1'-0"

Revised- March 21, 1928. August 23, 1927. Finals Posted Oct. 12, 1928 Sheet 1 of 3

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3-13-19

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.