Application Summary

We are pleased to present for your consideration the application for State of Good Repair for Federal Str. No. 2320. The following items are included in this application:

- Project Narrative
- SGR Pre-Scoping PowerPoint
- Cost Estimate Summary
- Bridge Quote
- Structure Information
- 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)
- Bridge Signage Form
- Example Bridge Plans (only plan view and deck section shown 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: TRUSS REPLACEMENT	UPC NUMBER: N/A	FEDERAL STRUCTURE ID: 2320	DATE: VARIES PER BELOW
DESCRIPTION: RTE. 778 OVER MIDDLE RIVER	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	Pre-Scoping powerpoint	**BMPA (2/3/2021) Comment:** Per the requirements on the SGR bridge webpage, please provide the alterative analysis per Chapter 32 of the Manual of the Structure and Bridge Division to determine the proposed bridge scope alternative (bridge replacement, deck replacement, superstructure replacement, minor bridge rehabilitation, culvert rehabilitation, culvert replacement). Another option, if applicable to not providing an alternative analysis, is to please expand on the presence of mitigating factors per S&B Manual 32.02-1 (sheet 1 of 4) that justify a replacement without providing an alternative analysis. Please use information such as settlement or scour defects, scour rating, waterway adequacy rating, etc.“	B	**PM/Designer (02/12/2021)**: Chapter 32 alternative analysis was not formally conducted due to the following: Preliminary study completed by the District verified that the existing superstructure is Fracture Critical. Per Part 2 Chapter 32.02-01, this mitigation factor alone warrants replacement. Existing Substructure components (Rated: 6) were concluded to be structurally sound and salvageable with minor rehab/retrofit work and does not warrant a full replacement.
5	Pre-Scoping powerpoint	**Consultant Reviewer (1/22/2021) Comment:** Please provide proposed existing and proposed cross sections of immediate approach roadway. **BMPA (3/2/21)** 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.	B	**PM/Designer (02/09/2021)**: Cross sections will be provided during PE Phase. If project is not selected for SYIP FY2022-2027 cycle, transverse sections will be provided for next round. GS-4 (Rural local road) typical section was used for estimating proposed approach estimate.

(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

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: TRUSS REPLACEMENT	UPC NUMBER: N/A	FEDERAL STRUCTURE ID: 2320	DATE: VARIES PER BELOW
DESCRIPTION: RTE. 778 OVER MIDDLE RIVER	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)	
6	Cost estimate workbook	**Consultant Reviewer (1/22/2021) Comment:** For now, please modify your Inflation costs for a PE phase starting in FY2026 (7/1/2025) as directed by IID. Once we determine where funding will be provided, we can allow for an earlier schedule and work with you to adjust/reduce inflation. Please advise on district priority and desired schedule relative to existing and the newly proposed projects.	B	**PM/Designer (02/16/2021)**: Accepted; Proposed project schedule has been revised and follows the practice outlined in the IIM. Proposed PE Phase start date is FY2026 (07/01/2025). RW and CN Phases have been revised. Note: Recommend not to move the AD date for the following reasons: This project currently ranks high in District's priority list. Existing structure is fracture critical and is rated as structurally deficient. Bridge was recently reopen and posted for 3 TON limit. This clarification has been added to the pre-scoping powerpoint.	**BMPA (3/2/2021):** We will do our best to work with the district during programming to advance schedule but this will be a function of available SGR district funding. The district can consider the following: • a district engineer exception request to prioritize this bridge ahead of other bridges. • delaying less critical existing SGR projects. • using M&O funds if there are safety concerns to maintain the bridge in safe condition until the bridge can be rehabilitated or replaced.

(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

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: TRUSS REPLACEMENT	**UPC NUMBER: N/A**	**FEDERAL STRUCTURE ID: 2320**	**DATE: VARIES PER BELOW**
DESCRIPTION: RTE. 778 OVER MIDDLE RIVER	**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)
14	Narrative Cost estimate	**BMPA (02/04/21):** Could the replacement be other a truss bridge? Why used fracture critical structure again. Can a conventional bridge (deck& girders) be feasible? **BMPA (02/04/21):** In the alternative analysis results in a bridge replacement, please expand on the reasoning for the use of a truss bridge. If a Design Waiver is required then then approval please obtain (at least in concept) from CO S&B and include in the documentation for this report. Checked our design manual and it is permitted to use Fracture Critical structures when the ADT is less than 400. The current ADT is 290 (2019 traffic data). The Design ADT year should be 2032. In addition to requesting the future ADT from Planning Division, I am not sure what is the ADT will be in 2032. But the 2013 ADT was 292. ADT has dropped. Being the rural area, It will be fair to think that ADT will not be higher than the 400 threshold from the design manual.		**PM/Designer (02/12/2021)**: Agreed. Traffic Data reports for Rte. 778: -2013: ADT of 290 (reported in 2019 report; most current) -2007: ADT of 320 -2001: ADT of 310 Bridge Structure query: ADT = 292 (2013) Per Design Aids Part 2 Chapter 11.09-01, a design waiver is not required on new trusses for projects with Design ADT less than 400. Using PCES Estimate Workbook v10.00, Design Year ADT = 2041 (Ad Date = FY30) Design ADT = 350 (using current yr. ADT = 292)

(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.

Project Narrative

Route 624 Back Creek (Pre-Scoping)

The purpose of this project is to replace an existing structurally deficient bridge and associated approaches on Route 624 with a new wider structure. The project is located in Augusta County approximately 0.7 miles east of the intersection with Route 664 in Lyndhurst. Route 624 (Mt. Torrey Road) is an urban minor arterial (GS-6) that is the crossroad at exit 91 on I-64. The area to the south of the project is populated with residential properties, to the northwest is a commercial warehouse, and to the northeast is a field. In 2018, the traffic count for Route 624 at this location was 3400 vehicles per days, with 7% trucks.

The width of the Route 624 approach roadway to the bridge is 24' (2 x 12' travel lanes) with 8ft shoulders, and it has a 45mph posted speed limit. The approach alignment contains a horizontal curve but constant roadway elevation. The existing two-lane 213'-0" long route 624 bridge, built in 1948, has a 5-span, 24ft wide (clear) concrete T-beam superstructure with a sufficiency rating of 17.2. The proposed two-lane 220'-0" long bridge will have a 2-span, 44'-0" wide (clear) steel girder superstructure.

Based on our documentation, the existing structure had grout bags added around pier 3 in or before 1990, and the streambed profile has been shown to be scouring around pier 3 over the last 50 years. Based on FHWA studies, pier scour countermeasures are only effective to a certain point; however, it is still susceptible to failure. The original plans show that the substructures are sitting on firm material, and it does not show existing piles. Our recent geotechnical borings from 2019 show no rock below the streambed for the complete length of the 195ft drilled so the assumption is that the existing bridge is not set rock. Based on the District institutional knowledge of the structure, it is actively scouring and attempting to maintain / rehabilitate the existing substructures would continue its exposure to possible undermining and in turn continue exposing the travelling public to a safety issue. Friction piles will support the proposed replacement substructures. The substructure footing will be set at an elevation determined in the scour analysis. As an additional safety measure, the piles will also be designed for an unsupported length. According to the SGR submittal requirements, assessment of an alternative rehabilitation option is necessary using Chapter 32 of the Manual of the Structure and Bridge Division. The above condition presented of scour susceptibility was considered as mitigating factors noted in File No. 32.03-1 that led us to decide not to pursue the alternate maintenance option.

The project cost is estimated to be:

PE	$1,579,972
RW	$213,680
CN	$9,990,581
Total	$11,784,233

This is based on $3,404,054 line-item base bridge estimate, $749,220 line-item base roadway estimate, $50,000 in-plan utilities, $511,000 temporary bridge, $50,000 MOT, $268,214 mobilization ($80k + 5% of (Subtotal - $1M)), 20% CEI, and $75k incentive. This is combined with 30% contingency (closer to a low risk project due to increased information from preliminary survey / geotechnical / hydraulics) to form the CN total. Base PE is 20% of the base CN, to which medium risk 12% contingency is applied, and base RW is 150k, to which 20% estimated contingency is applied. 2.9% yearly inflation adjustment is then applied to each subtotal over the period of that phase from today (5 years for PE, 6 years for RW, and 8 years for CN). Estimate includes results from consultant review comments from January 2020.


VDOT
Virginia Department of Transportation

SGR PRE-SCOPING: 0778-007-6149

Rte. 778 over Middle River – Truss Replacement

Bridge Fed ID: 02320

Staunton District Structure and Bridge

FEB. 20210

NARRATIVE SUMMARY

- **Project Description:**
  - In-kind truss replacement with abutment retrofit on Route 778 over Middle River in Augusta County.
  - Replace superstructure with in-kind, galvanized truss superstructure with concrete deck.
  - Rehab/repair existing abutments; seat retrofit required for proposed superstructure.
  - Approach work within project limits (100 ft. from both approaches).

- **Scope Justification:**
  - Bridge was closed at the end of 2019. Then reopened in early 2020 after urgent repair work due to political pushback. Currently posted at 3 tons.
  - Per Part 2 Design Aids, Chapter 32, Identifies mitigation factor: “Fracture critical superstructure elements” as justification for replacement.

NARRATIVE SUMMARY

- **Scope Justification (continue…):**
  - District S&B investigated and concluded that the existing substructure is salvageable.
    - Substructure Rating: 6
    - No major concerns identified via 2020 Inspection Report.
      - No evidence of scour/settlement.
    - Scope of work includes rehab/repair of substructure elements.
    - Deemed structurally stable with proposed super configuration.
    - Does not warrant full-replacement.
  - Existing bridge is eligible to received SGR funding as it meets both criteria per IIM-S&B-95.
  - Per IIM-S&B-95, the scope of work for the proposed bridge project is eligible to received SGR funding as it achieves all three program requirements. Additionally, all scope elements identified in the pre-scoping document are covered under the list of qualifying work items eligible for reimbursement under the SGR program.

NARRATIVE SUMMARY

- **Significant Scope Elements:**
  - **Overview:** Existing truss has significant deterioration which required closing the bridge in 2019. Repairs were made in the following year to reopen the bridge and post at 3 tons.
  - **Maintenance of Traffic:**
    - Existing bridge and section of Rte. 778 will be closed for construction.
    - Traffic will be detoured via alternative route; Approx. 6.8 miles long.
  - **Right-of-Way Impacts:**
    - Minimal RoW impacts are anticipated.
    - Temp. Easement may be required for truss erection/unloading.
  - **Utility and Environmental Impacts and Permits:**
    - Unknown at this time. Will be investigated during PE Phase.

NARRATIVE SUMMARY

- **Significant Scope Elements (continue…):**
  - **Stakeholders:**
    - Locality – High political push back to keep the bridge open.
    - Additional Stakeholders and details to be determine in RW Phase.
  - **Complex Project Elements:**
    - Truss design and fabrication meets Agency's standards and specifications.
  - **Hydraulic Impacts:**
    - Not anticipated. Existing low cord will be maintained for HERS condition.
- **Risk Assessment:**
  - Truss design/details must meet Agency's standards/specs.
  - Design waiver required for non-standard bridge roadway clear width
  - Hydraulics – Maintain existing low cord to eliminate hydraulic impact.

NARRATIVE SUMMARY

- **Project Cost Estimate:**
  - **Considerations:**
    - Truss replacement based on Cost/SF of similar project, inflated to estimate date.
    - Quote from U.S Bridge used to support SF estimate. Price was increased to account for unloading, assembly, and installation of proposed truss.
    - 8” Concrete deck with Class A4 concrete.
    - Abutment reconstruction/retrofit design based on previous modifications used for similar rehab project (Contract ID No.: CM804BRA39606).
    - GS-4 Standards for roadway approach, approximately 100 ft. prior to both approaches with full depth milling.

NARRATIVE SUMMARY

- **Project Cost Estimate (continue…):**
  - **Contingency / Risk:**
    - 10% Contingency used for PE relative to low risk associated with scope of work.
    - 25% Contingency used for CN on Bridge related costs relative to low risk.
    - 35% Contingency for Road Way CN Cost, as requested from L&D Designer.

  - **Proposed Schedule:** Project ranks high on District's priority list and is anticipated to be funded and started quickly. Existing structure is fracture critical, structurally deficient and recently reopened at 3 ton posting.

NARRATIVE SUMMARY

- **Project Cost Estimate (continue…):**
  - **Inflation:**
    - 29.47% Inflation factor (anticipated AD Date of FY30) applied to total Project CN Cost.
      - Obtained from VDOT's PCES Spreadsheet v10.00
    - 3.00% Inflation rate (typ.) per yr. for PE Phase Cost (Start Date: 07/01/2025)
    - 3.00% Inflation rate (typ.) per yr. for RW Phase Cost (Start Date: 07/01/2027)

SMART FLAG(S) – SUPPORTING DOCS.

- **Fracture Critical Member**
  - Advanced section loss.
  - Superstructure Rating: 4.
  - Bridge is posted at 3 tons.

- **Replace Existing Truss with In-Kind Truss**
  - Low cost option
  - ADT < 300 (2013)
  - Roadway Classification: Rural Local Road

PROJECT COST ESTIMATE SUMMARY

- **Project Estimate:**

Preliminary Engineering

Project Estimate Component		Proposed Project Cost Estimate ($)		
Discipline	Source	Base ($)	Contingency (%)	Total
Roadway	Profess. Judgement	$ 96,944	12.00%	$108,577
Hydraulics	Profess. Judgement	$ 15,000	12.00%	$16,800
In-plan Utilities	Profess. Judgement			$0
Traffic	Profess. Judgement	$ 15,000	12.00%	$16,800
Structures/Bridges	Profess. Judgement	$ 224,561	12.00%	$251,508
Materials/Geotech	Profess. Judgement	$ 15,000	12.00%	$16,800
Survey	Profess. Judgement	$ 30,000	10.00%	$33,000
Environmental	Profess. Judgement	$ 75,000	15.00%	$86,250
Right of Way	Profess. Judgement	$ 10,000	12.00%	$11,200
Other				$0
VDOT Oversight Costs				$0
Total PE Phase Estimate		$ 481,505	12.34%	$540,935
Inflation factor (%)		3.0%		$78,033.85
Total Inflated PE Estimate				$618,969
PE Base Estimate Date (XX/XXXX)		12/10/2020		
PE Phase Start Date (XX/XX/XXXX)		7/1/2025		

Right-of-Way & Utilities

Discipline	Source	Base ($)	Contingency (%)	Total
Right-of-Way	Aerial Photo	$40,000	50.00%	$60,000
Out-of-Plan Utilities (power, cable, gas, etc.)				$0
VDOT Oversight Costs				$0
Total RW Phase Estimate		$40,000	50.00%	$60,000
Inflation factor (%)		3.0%		$12,836.55
Total Inflated RW Estimate				$72,837
Base Estimate Date (XX/XXXX)		Dec-20		
RW Phase Start Date (XX/XX/XXXX)		7/1/2027		

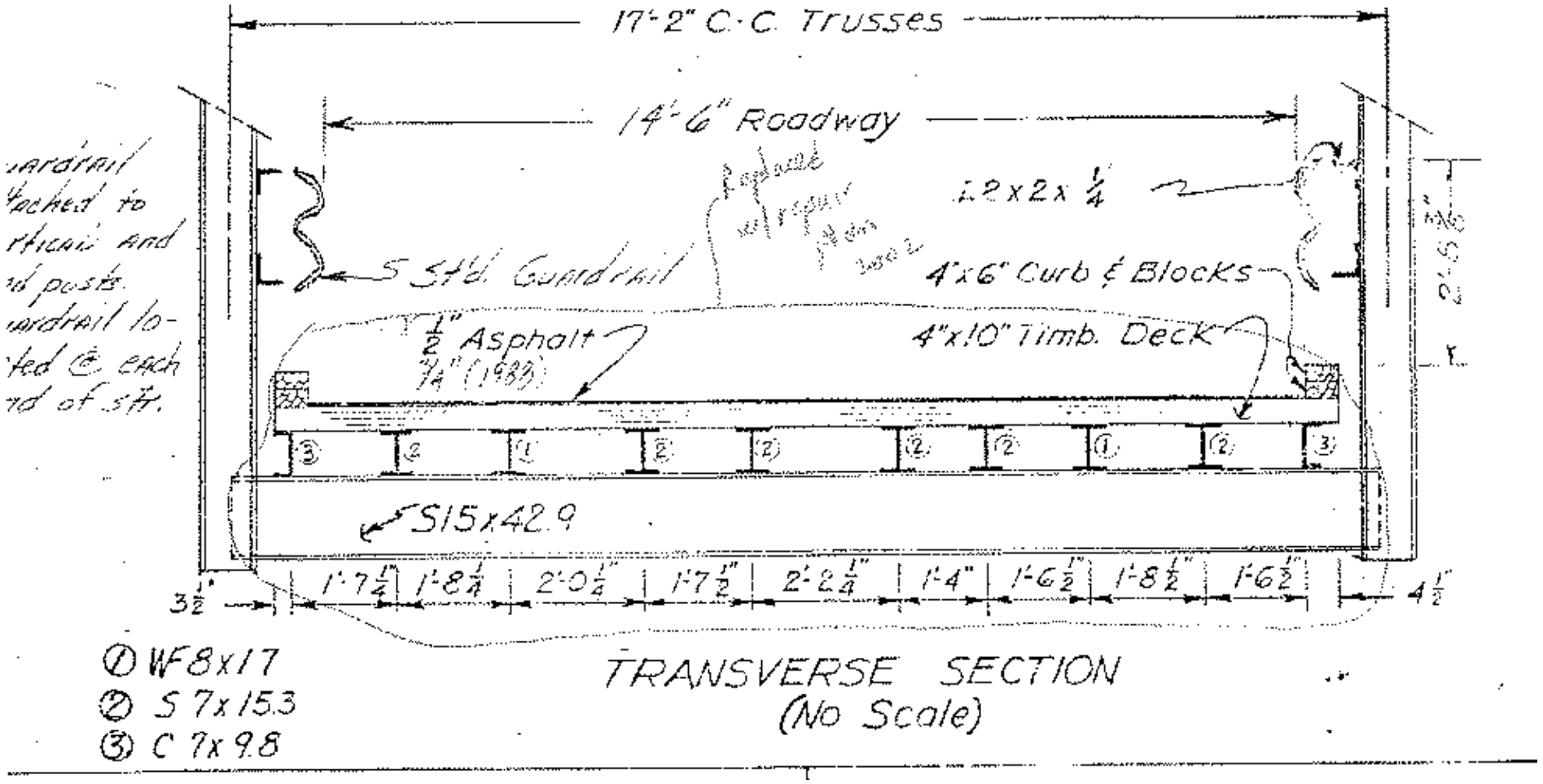
Construction

Discipline	Source	Base ($)	Contingency (%)	Total
Mobilization	Profess. Judgement	$100,000	40.00%	$140,000
MOT	Profess. Judgement	$50,000	40.00%	$70,000
Roadway	Profess. Judgement	$323,146	40.00%	$452,404
Hydraulics	Profess. Judgement			$0
In-plan Utilities	Profess. Judgement			$0
Traffic	Profess. Judgement	$30,000	40.00%	$42,000
Structures/Bridges	Similar Project	$1,122,805	40.00%	$1,571,927
Materials/Geotech	Profess. Judgement			$0
Soundwalls	Profess. Judgement			$0
Other				$0
Total Bid Items		$1,625,951	40.00%	$2,276,331
Incidental - Claims & Work Orders (5% to 10% max)	5%	$81,297.54	40.00%	$113,816.55
Railroad Flagging/Coordination				0
State Forces				0
State Police				0
Contract Requirements (Incentive/Disincentive)	5%	$81,297.54	40.00%	$113,816.55
Construction Engineering (Inspection)	Environmental Inspection ($)			0
	VDOT or Locality ($)	$ 351,041.82	40.00%	$491,458.55
	VDOT Oversight ($)			0
	Total CEI			$491,458.55
Total CN Phase Estimate		$2,139,588	40.00%	$2,995,423
Inflation factor (%)				$882,751
Total Inflated CN Phase Estimate				$3,878,174
CN Base Estimate Date (XX/XXXX)		Dec-20		
CN Phase Start Date (XX/XX/XXXX)		8/1/2029		
CN Phase End Date (XX/XX/XXXX)		12/1/2030		
Total Project Cost Estimate				$4,569,979

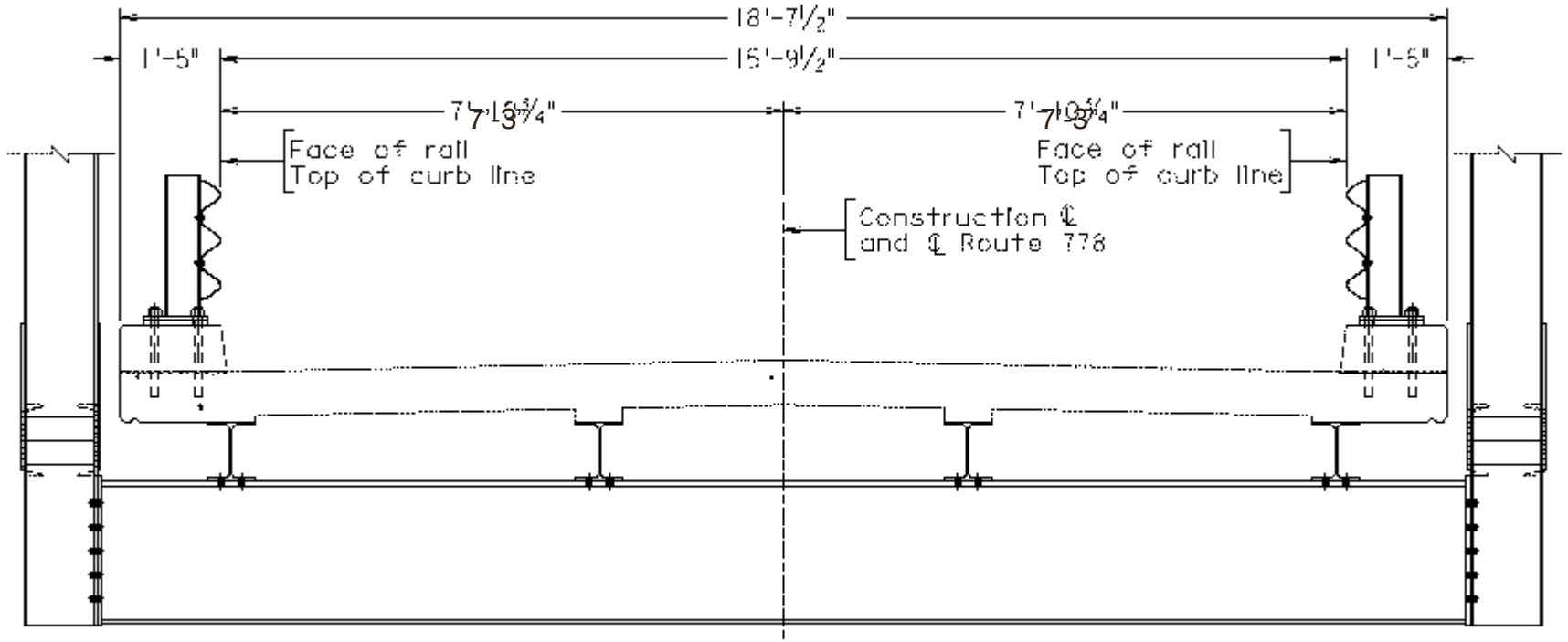
SITE PLAN – EXISTING ARIAL IMAGE

- **Conceptual Site Plan: Replace in kind**

PRE-SCOPING: EXISTING BRIDGE SECTION



PRE-SCOPING: PROPOSED TRANSVERSE SECTION



SYIP PROJECTS
DETAILED PROJECT COST ESTIMATE SUMMARY
(Version: 11/14/2019)

Portal ID:	Route 778 over Middle River	Project UPC:	117024
Prepared By:	Alex Bellido	Milestone	Creation/Pre Scope
Reviewed By:	Eulogion "Jo" Javier II	Date:	2/12/2021
County/City/Town:	Augusta County (07)	Tier Level	1

Preliminary Engineering

Project Estimate Component		Proposed Project Cost Estimate ($)		
Discipline	Source	Base ($)	Contingency (%)	Total
Roadway	Profess. Judgement	$ 96,944	12.00%	$108,577
Hydraulics	Profess. Judgement	$ 15,000	12.00%	$16,800
In-plan Utilities	Profess. Judgement			$0
Traffic	Profess. Judgement	$ 15,000	12.00%	$16,800
Structures/Bridges	Profess. Judgement	$ 224,561	12.00%	$251,508
Materials/Geotech	Profess. Judgement	$ 15,000	12.00%	$16,800
Survey	Profess. Judgement	$ 30,000	10.00%	$33,000
Environmental	Profess. Judgement	$ 75,000	15.00%	$86,250
Right of Way	Profess. Judgement	$ 10,000	12.00%	$11,200
Other				$0
	VDOT Oversight Costs			$0
	Total PE Phase Estimate	$ 481,505	12.34%	$540,935
	Inflation factor (%)	3.0%		$78,033.85
	Total Inflated PE Estimate			$618,969
PE Base Estimate Date (XX/XXXX)		12/10/2020		
PE Phase Start Date (XX/XX/XXXX)		7/1/2025		

Right-of-Way & Utilities

Discipline	Source	Base ($)	Contingency (%)	Total
Right-of-Way	Aerial Photo	$40,000	50.00%	$60,000
Out-of-Plan Utilities (power, cable, gas, etc.)				$0
	VDOT Oversight Costs			$0
	Total RW Phase Estimate	$40,000	50.00%	$60,000
	Inflation factor (%)	3.0%		$12,836.55
	Total Inflated RW Estimate			$72,837
Base Estimate Date (XX/XXXX)		Dec-20		
RW Phase Start Date (XX/XX/XXXX)		7/1/2027		

Construction

Discipline	Source	Base ($)	Contingency (%)	Total
Mobilization	Profess. Judgement	$100,000	40.00%	$140,000
MOT	Profess. Judgement	$50,000	40.00%	$70,000
Roadway	Profess. Judgement	$323,146	40.00%	$452,404
Hydraulics	Profess. Judgement			$0
In-plan Utilities	Profess. Judgement			$0
Traffic	Profess. Judgement	$30,000	40.00%	$42,000
Structures/Bridges	Similar Project	$1,122,805	40.00%	$1,571,927
Materials/Geotech	Profess. Judgement			$0
Soundwalls	Profess. Judgement			$0
Other				$0
	Total Bid Items	$1,625,951	40.00%	$2,276,331
Incidental - Claims & Work Orders (5% to 10% max)	5%	$81,297.54	40.00%	$113,816.55
Railroad Flagging/Coordination				0
State Forces				0
State Police				0
Contract Requirements (Incentive/Disincentive)	5%	$81,297.54	40.00%	$113,816.55
Construction Engineering (Inspection)	Environmental Inspection ($)			0
	VDOT or Locality ($)	$ 351,041.82	40.00%	$491,458.55
	VDOT Oversight ($)			0
	Total CEI			$491,458.55
	Total CN Phase Estimate	$2,139,588	40.00%	$2,995,423
	Inflation factor (%)			$882,751
	Total Inflated CN Phase Estimate			$3,878,174
CN Base Estimate Date (XX/XXXX)		Dec-20		
CN Phase Start Date (XX/XX/XXXX)		8/1/2029		
CN Phase End Date (XX/XX/XXXX)		12/1/2030		
Total Project Cost Estimate				$4,569,979

SYIP Total Project Cost Estimate Summary Comparrison Between Consultant and Agency												
Phase	Base ($) *			Contingency ($) *			Inflation ($) **			Total ***		
	VDOT	Consultant	Diff. (+/-)	VDOT	Consultant	Diff. (+/-)	VDOT	Consultant	Diff. (+/-)	VDOT	Consultant	Diff. (+/-)
PE Phase Estimate	$ 482 K	$ 615 K	$ 133 K	$ 59 K	$ 86 K	$ 27 K	$ 78 K	$ 104 K	$ 26 K	$ 619 K	$ 805 K	$ 186 K
RW Phase Estimate	$ 40 K	$ 0 K	-$ 40 K	$ 20 K	$ 0 K	-$ 20 K	$ 13 K	$ 0 K	-$ 13 K	$ 73 K	$ 0 K	-$ 73 K
CN Phase Estimate	$ 2,140 K	$ 2,021 K	-$ 118 K	$ 856 K	$ 911 K	$ 55 K	$ 883 K	$ 864 K	-$ 19 K	$ 3,878 K	$ 3,797 K	-$ 82 K
Total Estimate	$ 2,661 K	$ 2,636 K	-$ 25 K	$ 935 K	$ 997 K	$ 62 K	$ 974 K	$ 968 K	-$ 6 K	$ 4,570 K	$ 4,601 K	$ 31 K

Estimate

AISC Advance Bridge Certification (ABR)

201 Wheeling Avenue, P.O. Box 757
Cambridge, OH 43725, 1 (888) 872-7434
www.usbridge.com

U.S. Bridge Contact: Brian Mergenthaler
412-445-7661
bmergenthaler@usbridge.com

Estimate No: E1806028
Quotation Date: January 21, 2020

To: VDOT – Staunton District
Attn.: Mr. Alex Bellido
811 Commerce Road, Staunton, VA 24401
Phone: (540) 569-4520

Project: Augusta Co., VA
Route 778

Price: $415,000.00

The following is a U.S. Bridge ENGINEER'S COST ESTIMATE for the subject project. This ESTIMATE is intended for preliminary estimating purposes only and should not be interpreted as a final QUOTATION. The information presented is based on the most current data made available to U.S. Bridge

Details:

• Bridge length	182'-0" c/c bearings
• Bridge roadway width	14'-6" c/w
• Bridge loading	HL-93
• Steel grade	ASTM A709, Grade 50
• Steel finish	Hot-dipped galvanized
• Steel components	See page 2
• Bridge roadway flooring	Stay-in-place forms, included
• Shear studs (shop attached)	Included
• Finished wearing surface	8" Concrete by others
• Bridge roadway railing	Thrie-beam, galvanized
• Bearing plates	Included
• Bearing pads	Included
• Assembly hardware	Included
• Anchor bolts	Included
• Freight to the site*	See Page 2
• Skew	N/A
• Design	Cambridge Flat Truss, All-bolted
• Drawings stamped by PE in	Virginia
• Additional details	See Page 2

U.S. BRIDGE
BRIDGING AMERICA SINCE 1936

Estimate

AISC Advance Bridge Certification (ABR)

201 Wheeling Avenue, P.O. Box 757
Cambridge, OH 43725, 1 (888) 872-7434
www.usbridge.com

U.S. Bridge Contact: Brian Mergenthaler
412-445-7661
bmergenthaler@usbridge.com

Estimate No: E1806028
Quotation Date: January 21, 2020

ADDITIONAL DETAILS

COMPONENTS:

The bridge consists of two trusses and a floor system. Each truss will be shipped in four (4) sections. All steel to be unloaded, assembled and installed by others.

Please note that all sizes and weights are approximate and are subject to change. Final design drawings govern for weights and lifting points.

Pricing is based on steel cost as of January 20, 2020. Fluctuations of +/- 2% between time of quote and fabrication of bridges will necessitate a new quote.

FREIGHT: Shipment to the closest location (accessible by common carrier) for the loads described below has been included. Any deviation will result in additional freight charges to the customer. 8 over-dimensional load + 1 legal load.

TECHNICAL ASSISTANCE: On site technical assistance for three days (per span) for the installation of the U.S. Bridge products has been included. Advance notice of 30 days is required to schedule this assistance. Additional days can be provided for $1,000/day.

DELIVERY: Tentatively, 8-10 weeks after drawing approval, subject to material and freight availability, and backlog.

PAYMENT: 30% due upon receipt of order
30% due upon completion of fabrication
30% due prior delivery to site
Balance due the earlier of last shipment or 30 days after completion of fabrication

EXCLUDED: All items not specifically listed above. Sales tax has been excluded.

TERMS AND CONDITIONS OF SALE: Page 3

BUYER:	U.S. BRIDGE:
Authorized Signature:	Authorized Signature:
Name & Title:	Name Printed: Dan Rogovin, President
Date & P.O.#:	Date: January 21, 2020

U.S. BRIDGE
BRIDGING AMERICA SINCE 1936

Estimate

AISC Advance Bridge Certification (ABR)

201 Wheeling Avenue, P.O. Box 757
Cambridge, OH 43725, 1 (888) 872-7434
www.usbridge.com

U.S. Bridge Contact: Brian Mergenthaler
412-445-7661
bmergenthaler@usbridge.com

Estimate No: E1806028
Quotation Date: January 21, 2020

U.S. BRIDGE TERMS AND CONDITIONS OF SALE

1. DEFINITIONS. U.S. Bridge is the "Seller" and the customer is the "Buyer". The materials and, if applicable, the construction work ("work") sold by the Seller to the Buyer are the "Project".

2. ENTIRE AGREEMENT. These terms and the terms of Seller's quotation are the entire contract between the parties with respect to the Project, replace all prior agreements, oral or written, and may only be amended in a writing signed by the parties. If Buyer submits its own purchase order or other document, Seller objects to any terms that are additional or different from Seller's terms unless Seller expressly accepts each such term separately in writing. Delivery of materials and/or performance of work by Seller shall not be deemed to be such acceptance.

3. COST INCREASES. Seller's price may be increased to reflect increases in Seller's cost for materials ordered specifically to fill Buyer's order.

4. P.E. STAMPED DOCUMENTS. All documents bearing the stamp of a registered professional engineer that are submitted by Seller to Buyer in connection with the Project remain the property of Seller and may not be changed, transferred to third parties, nor used for any purpose other than the Project without Seller's express written consent.

5. FOB; TAXES; INVOICE; PAYMENT. Unless otherwise specified by Seller in writing: (a) any separate contract price for Seller's materials is FOB Project site, where title and risk of loss shall pass upon full payment by Buyer; (b) applicable sales taxes are not included in the price and are due absent a legal tax exemption certificate; (c) Seller's invoices shall be paid when due or shall accrue interest of one and one-half percent (1.5%) per month; (d) Seller may hold its materials as security for payments due or past due and invoice storage charges of one and one half percent (1 ½%) of the contract price per month which shall extend the final delivery date. Completed bridges not released for shipment within 30 days of completion of fabrication shall incur storage fees equal to one and one half percent (1 ½%) of the contract price per month.

6. WARRANTIES. Unless otherwise specified by Seller in writing, all of Seller's warranties on materials are included in the document entitled "One Year Limited Warranty" ("Warranty"), the terms being incorporated herein. If Seller is performing work as part of the Project, Seller also warrants that the work shall conform to the written plans and specifications in all material respects, provided that Seller is not liable for errors made by Buyer or the Project owner therein. Buyer's remedies for breach of warranty shall be limited to the remedies in the Warranty.

7. DELAYS. Seller shall not be liable for any delays due to Acts of God, accidents, labor or transportation problems, shortages of materials, Buyer's default, or any other cause beyond Seller's control.

8. RESPONSIBILITY, DAMAGES. Unless the Project includes work by Seller, (a) Buyer shall indemnify and hold Seller harmless against any property damage or personal injury caused by the handling and/or installation of Seller's materials, and (b) Seller's technical assistance during installation shall not be considered a professional service, shall not relieve Buyer of its sole responsibility for installation, and Seller shall have no liability by reason of such assistance. In no event and under no circumstances shall Seller be liable for any incidental, consequential, liquidated or punitive damages upon any claim arising out of the Project. Buyer shall not withhold payment or issue backcharges against Seller's invoices for any reason.

9. APPLICABLE LAW, ARBITRATION, POWER OF ATTORNEY. This contract shall be subject to Ohio law and any claim by either party shall be resolved solely by arbitration in Columbus, Ohio pursuant to the applicable rules of the American Arbitration Association. The prevailing party shall recover its costs and expenses of arbitration and collection including its reasonable attorney fees. In addition to arbitration, Buyer hereby appoints Seller its attorney in fact to collect from any third party sums due Buyer for work of which the Project is a part and to apply such sums to Buyer's account, Buyer remaining liable for the balance.

10. LIMITED WARRANTY. See page 4.

U.S. BRIDGE
BRIDGING AMERICA SINCE 1936

Estimate

AISC Advance Bridge Certification (ABR)

U.S. Bridge Contact: Brian Mergenthaler
412-445-7661
bmergenthaler@usbridge.com

201 Wheeling Avenue, P.O. Box 757
Cambridge, OH 43725, 1 (888) 872-7434
www.usbridge.com

Estimate No: E1806028
Quotation Date: January 21, 2020

ONE YEAR LIMITED WARRANTY

1. WARRANTY. US Bridge warrants to the ultimate owner (the "Owner") of its bridges and other bridge products (the "Products") that the Products will conform to all plans and specifications and will be free from defects in material or workmanship for one (1) year from the delivery date, subject to the terms and conditions herein.

2. CORROSION. U.S. Bridge is not responsible for any corrosion of steel if (a) de-icing materials are applied to the Products, or (b) paint properly applied by U.S. Bridge is not maintained. U.S. Bridge does not perform and therefore does not warrant any galvanizing. V & S Columbus Galvanizing LLC issues its own 35 year limited warranty which excludes galvanized bridge decks and pans.

3. EXCLUSION. The above limited warranty excludes all other warranties, express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.

4. NOTICE OF DEFECTS. The Products shall be inspected upon receipt and written notice shall be given of any visible defects together with photographic evidence. Where defects are not visible, written notice and photographic evidence shall be given within the 1-year warranty period. Time is of the essence.

5. CONDITIONS. Damage to the Products caused by (a) unloading, storage, assembly or installation by others, (b) live loads in excess of design loads, impact or other abnormal conditions, or (c) alterations by others not authorized in writing shall void this warranty.

6. REMEDIES. Owner's sole and exclusive remedy for breach of warranty is limited to U.S. Bridge's repair or replacement (at its option) of defective parts of the Products at the place of delivery or installation in the manner most cost-effective and in conformity with generally accepted engineering practices. U.S. Bridge shall not be liable for damages (whether compensatory, punitive, incidental, consequential or otherwise) for any defects, or the cost of any labor or material incurred without U.S. Bridge's written authority. The Owner shall provide all necessary access to the Products and all detours, safety and traffic controls without charge to U.S. Bridge.

7. APPLICABLE LAW AND ARBITRATION. This Warranty shall be construed in accordance with and governed by the laws of the state of Ohio. Any controversy or claim arising out of or relating to this Warranty, or the breach thereof, shall be settled by arbitration in Columbus, Ohio in accordance with the Commercial Arbitration Rules of the American Arbitration Association, and judgment upon the award may be entered in any court having jurisdiction thereof. The prevailing party shall recover its costs and expenses, including its reasonable attorney fees.

Structure Information

District:	Staunton (8)	**Residency:**	Harrisonburg (54)
Route:	778 (Knightly Mill Rd)	**Length:**	182
County:	Augusta (7)	**Deck Width:**	15.5
VA Structure Number:	6149	**Roadway Width:**	14.58
Feature Intersected:	MIDDLE RIVER	**Skew:**	0
Functional Classification:	Rural Local	**Sufficiency Rating:**	16.2
Milepoint:	3.488999	**Detour Length:**	6.835083
Lane:	0	**Deck Rating:**	7
HTRIS ID:	2320	**Superstructure Rating:**	4
Year Built:	1915	**Substructure Rating:**	6
ADT:	292	**Number of Spans:**	1
Year of ADT:	2013	**Scour:**	7-Countermeasures installed
Roadway System:	Secondary	**Deck Material:**	Timber
Posting Status:	Posted for Load- 3 T	**Posted Load:**	3
Span Material:	Steel	**Main Span Type:**	Thru-Truss
Deck Wearing Surface:	Bituminous	**Inspection Freq:**	12 months
Historic Significance:	Eligible for Nat'l Register	**Last Inspection:**	4/30/2020
Original Plan Number:	-----	**Next Inspection:**	4/30/2021
Functionally Obsolete:	---	**Structurally Deficient:**	Yes
Structure Location:	0.26 RT 777 - 2.05 RT 608	**Integral Bridge:**	No

Click Here for Current Inspection Report

asbestos

Database information was Updated from PONTIS on 12/10/2020

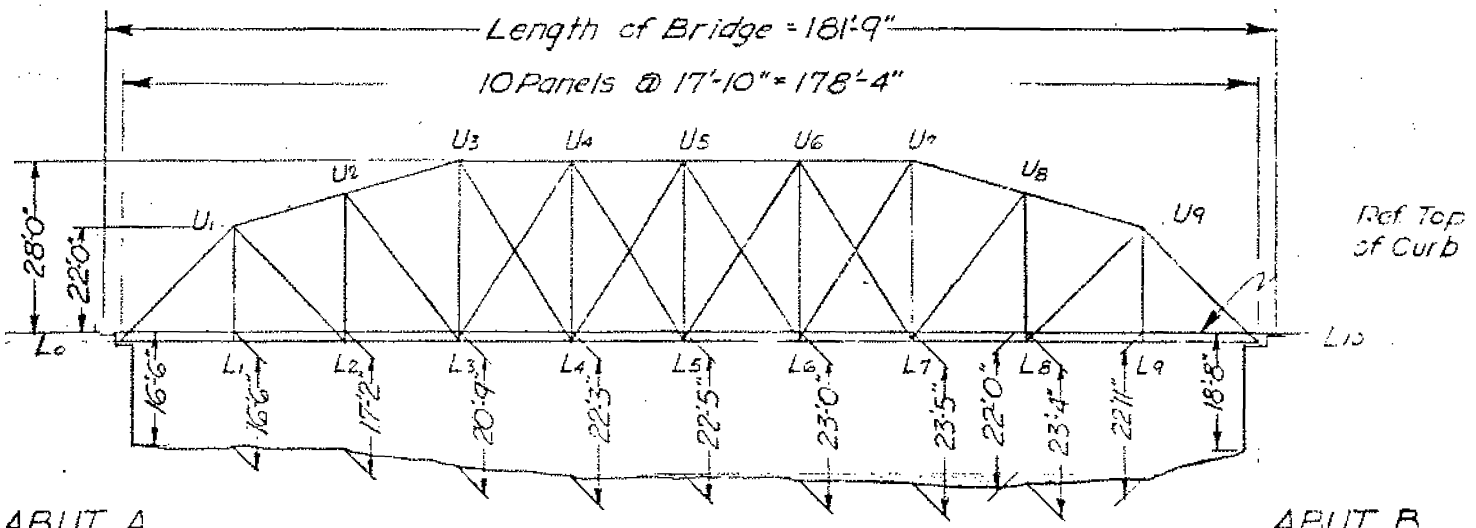
Code By Keith Weakley

DIMENSION & PROFILE SHEET

RTE. 778 OVER MIDDLE RIVER
STR. 6149
AUGUSTA COUNTY

3-5-72
AWS.
Sheet 1 of 7

Revised 11-2-81

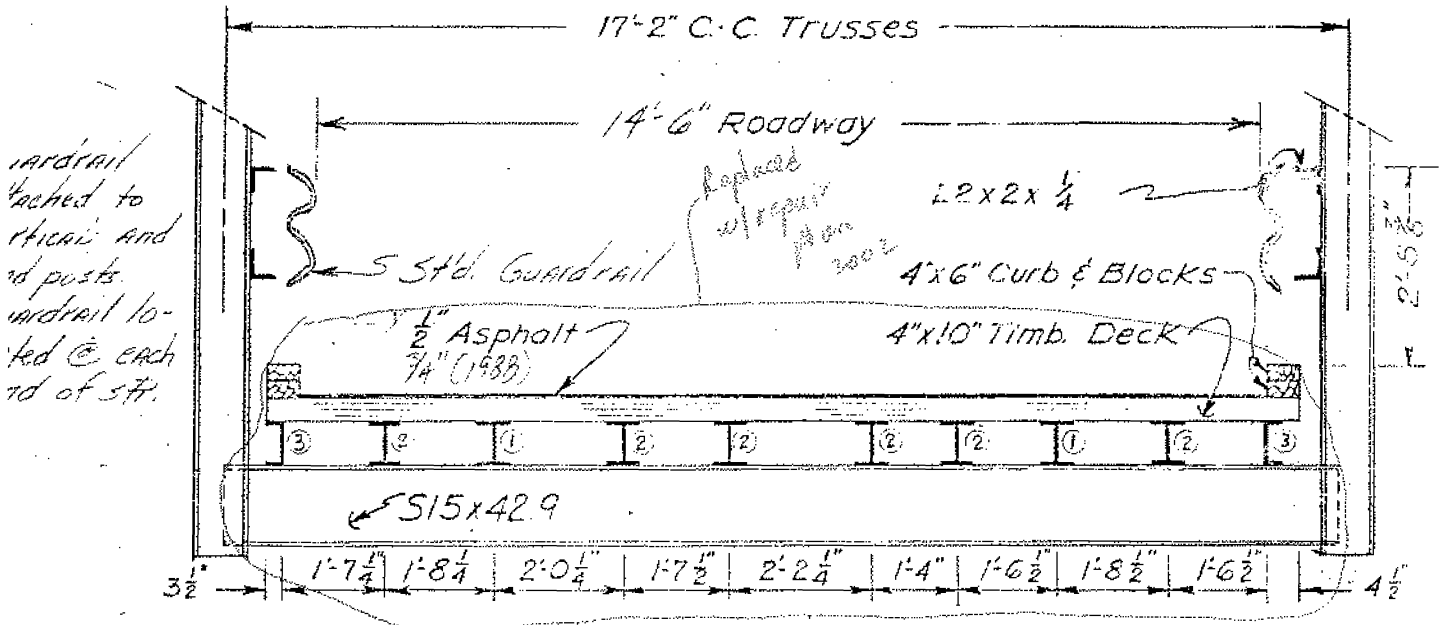


ABUT. A

ABUT. B

PROFILE
(Looking Downstream)

Scale 1"=30'

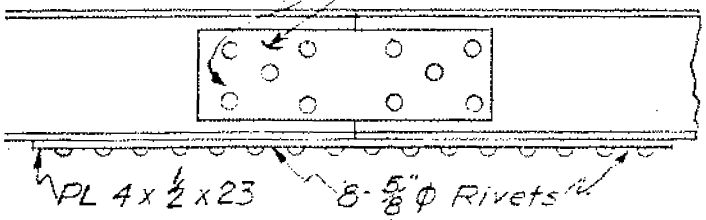


① WF 8x17
② S 7x15.3
③ C 7x9.8

TRANSVERSE SECTION
(No Scale)

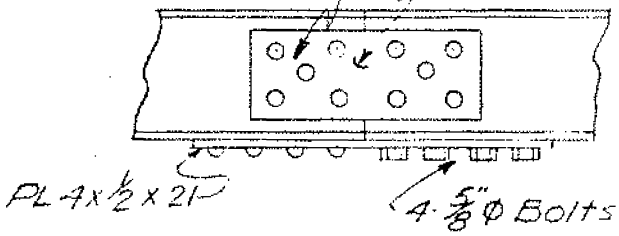
STRINGER SPLICE
ALL INTERIOR STRINGERS

10-5/8" ϕ Rivet Dbl. Shear Connection



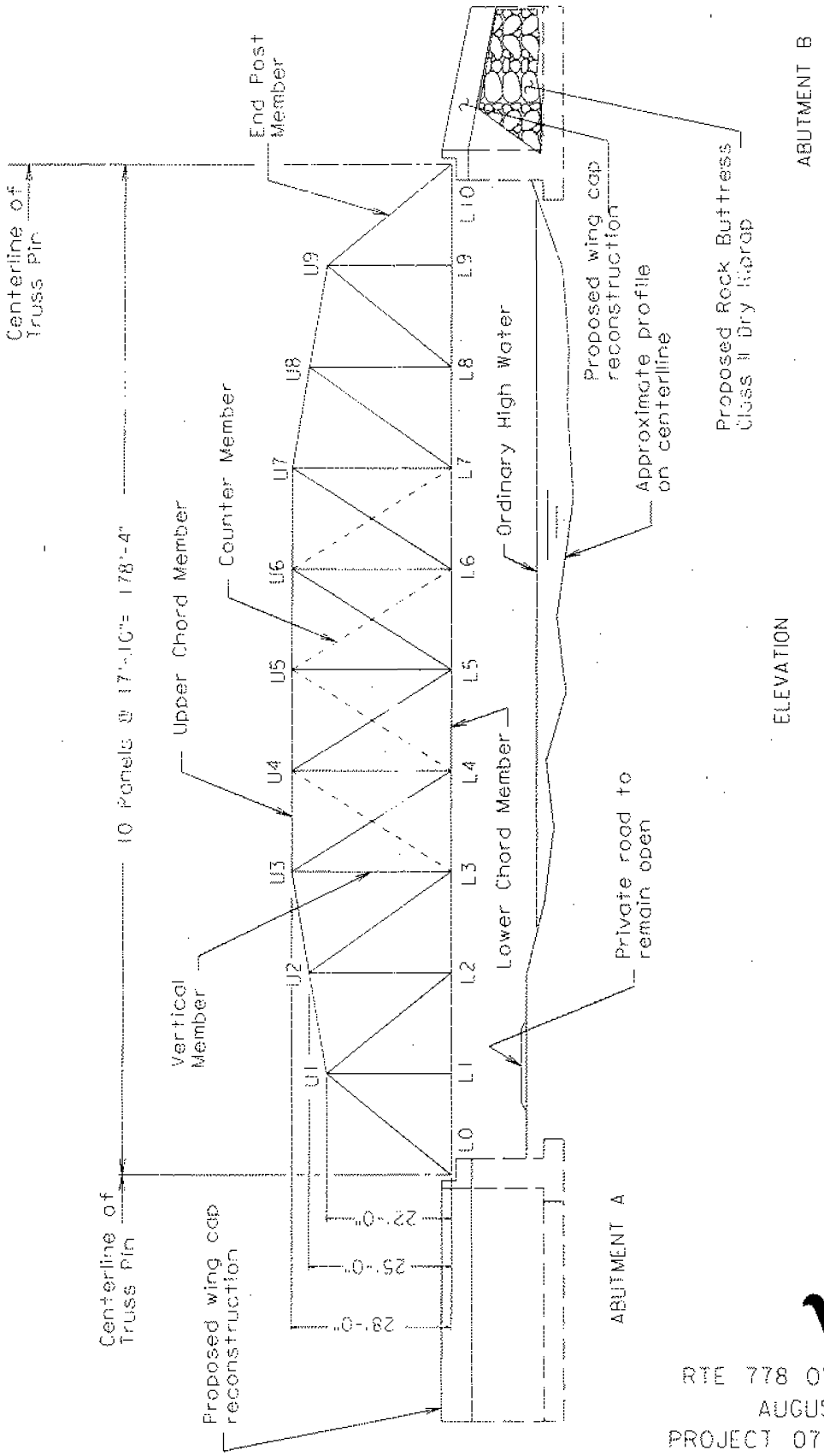
STRINGER SPLICE
ALL EXTERIOR STRINGERS

10-5/8" ϕ Rivet Single Shear Connection



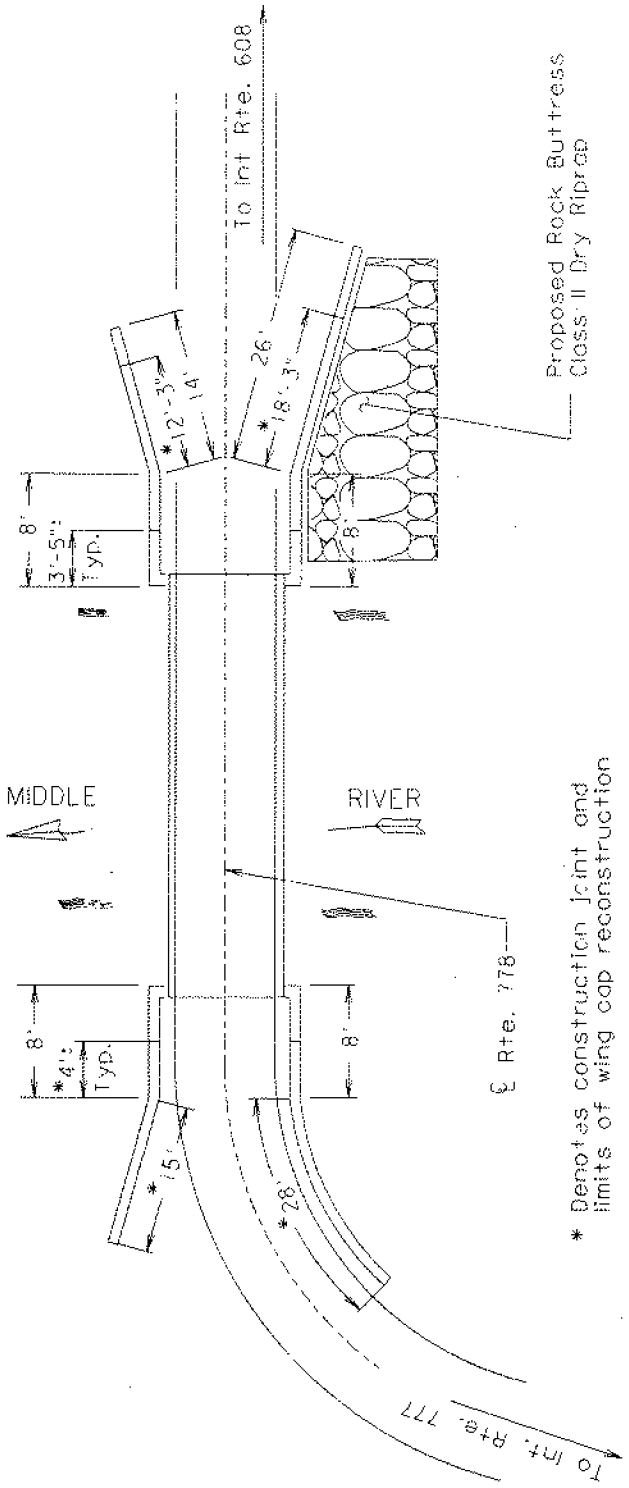
Note: All Stringers are continuous. There are four splices in each stringer approx. 2' from F.B.

ORDER NO.: NJ2
CONTRACT ID. NO.: CM804BRA39606



RTE 778 OVER MIDDLE RIVER
AUGUSTA COUNTY
PROJECT 0778-007-6149, SR01
STR. NO 6149

ORDER NO.: NJ2
CONTRACT ID. NO.: CM804BRA39606

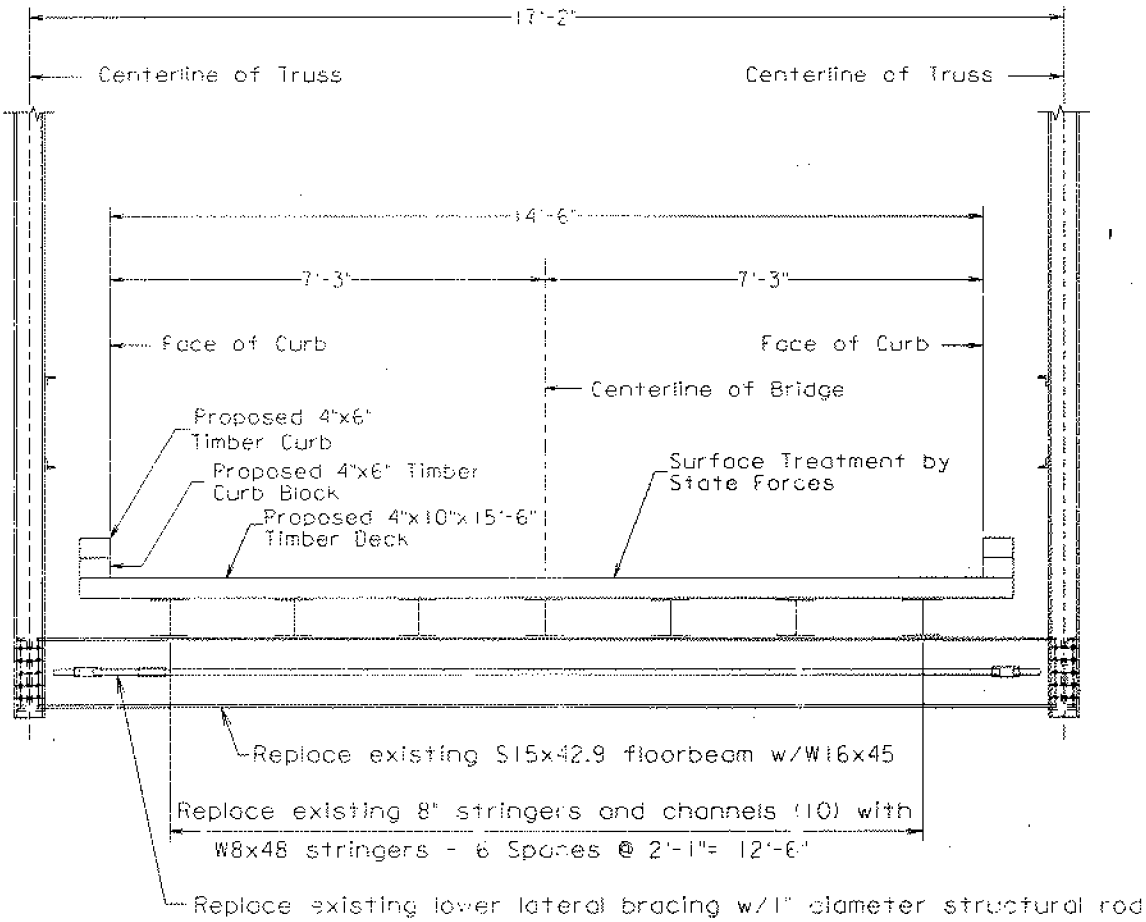


PLAN VIEW

* Denotes construction joint and limits of wing cap reconstruction

RTE 778 OVER MIDDLE RIVER
AUGUSTA COUNTY
PROJECT 0778-007-6149, SR01
STR. NO 6149

ORDER NO.: NJ2
CONTRACT ID. NO.: CM804BRA39606



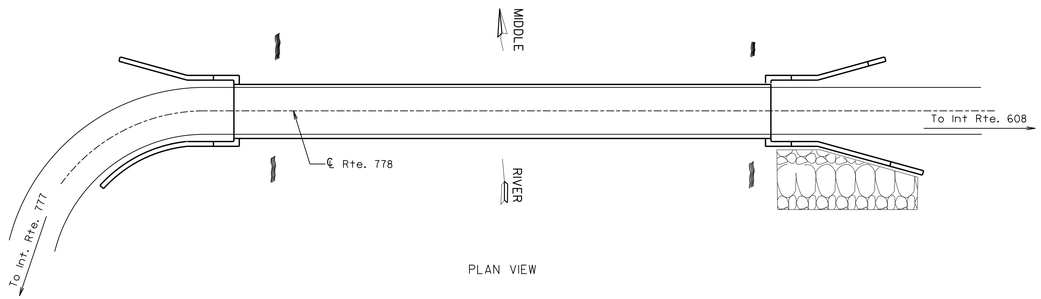
TYPICAL TRANSVERSE SECTION

Note:
Replacement members shall be hot dipped galvanized.
Remaining truss members shall be recoated.

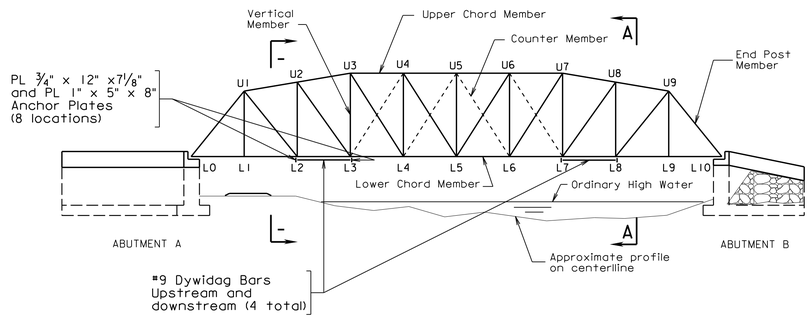
VHHT

RTE 778 OVER MIDDLE RIVER
AUGUSTA COUNTY
PROJECT 0778-007-6149, SR01
STR. NO 6149

STATE	FEDERAL AID		STATE		SHEET NO.
	ROUTE	PROJECT	ROUTE	PROJECT	
V-.	—		778	0778-007-6149	1
Federal Structure No. 000000000002320			FHW- Construction and Scour Code:		
Federal Stewardship and Oversight Code:				UPC No.	



PLAN VIEW



ELEVATION

MATERIAL REQUIREMENTS

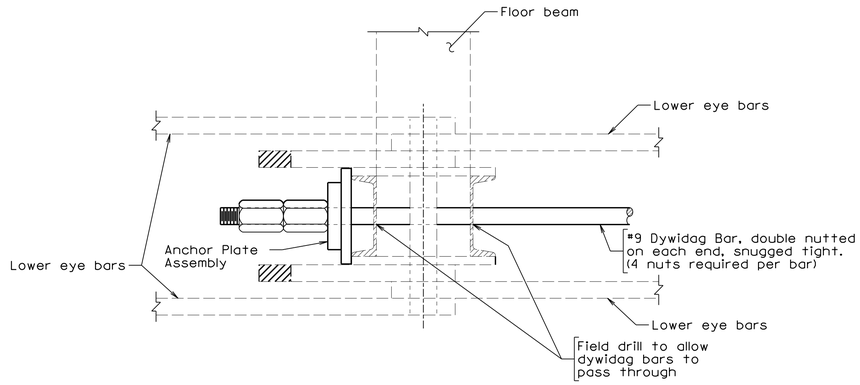
4 ea. - #9 Dywidag Bars, Grade 100 with 4 nuts per bar (16 nuts total). Contractor to determine length.

8 ea. - Anchor Plate Assembly

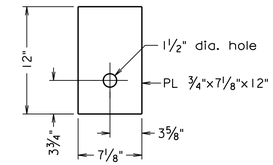
NOTES:

Double nuts on #9 Dywidag Bars

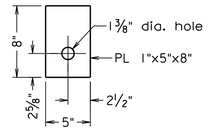
Anchor Plates to be 50 ksi steel or better.



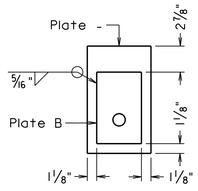
SECTION C-C



ANCHOR PLATE A

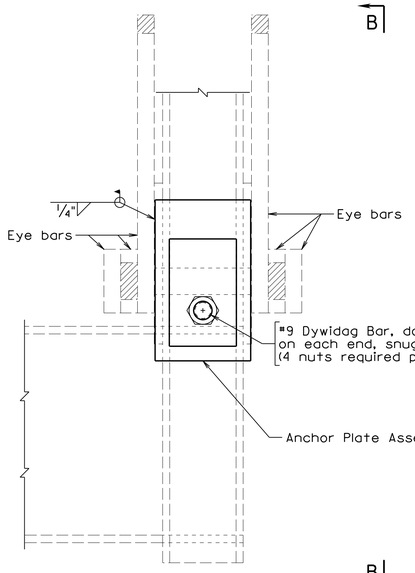


ANCHOR PLATE B

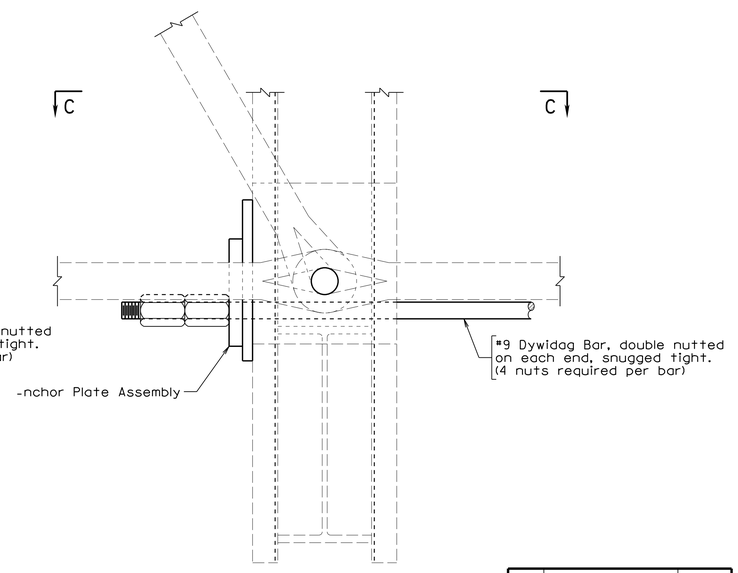


ANCHOR PLATE ASSEMBLY

Prefabricated - 8 required



SECTION A-A



SECTION B-B

VDOT

COMMONWEALTH OF VIRGINIA

DEPARTMENT OF TRANSPORTATION

PROPOSED BRIDGE REPAIR ON RTE. 778 OVER MIDDLE RIVER AUGUSTA CO. - 0.06 MI. S. INT. RTE. 777 PROJ.: 0778-007-6149

COMMONWEALTH OF VIRGINIA
JOSHUA RYAN HALL
Lic. No. 055669
PROFESSIONAL ENGINEER

VDOT S&B DIVISION
STAUNTON, VA
STRUCTURAL ENGINEER

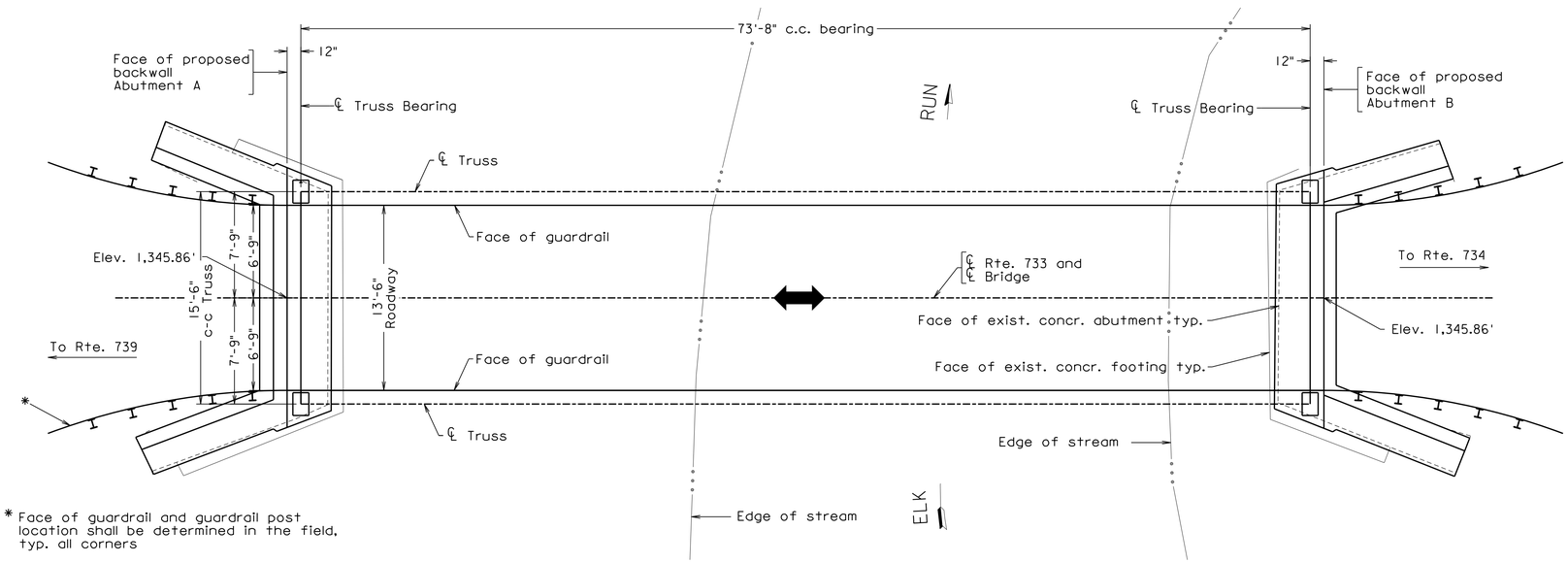
PLANS BY:
SUPERVISED:
DESIGNED:
DRAWN:
CHECKED:

No.	Description	Date
REVISIONS		
For Table of Revisions, see Sheet 2.		

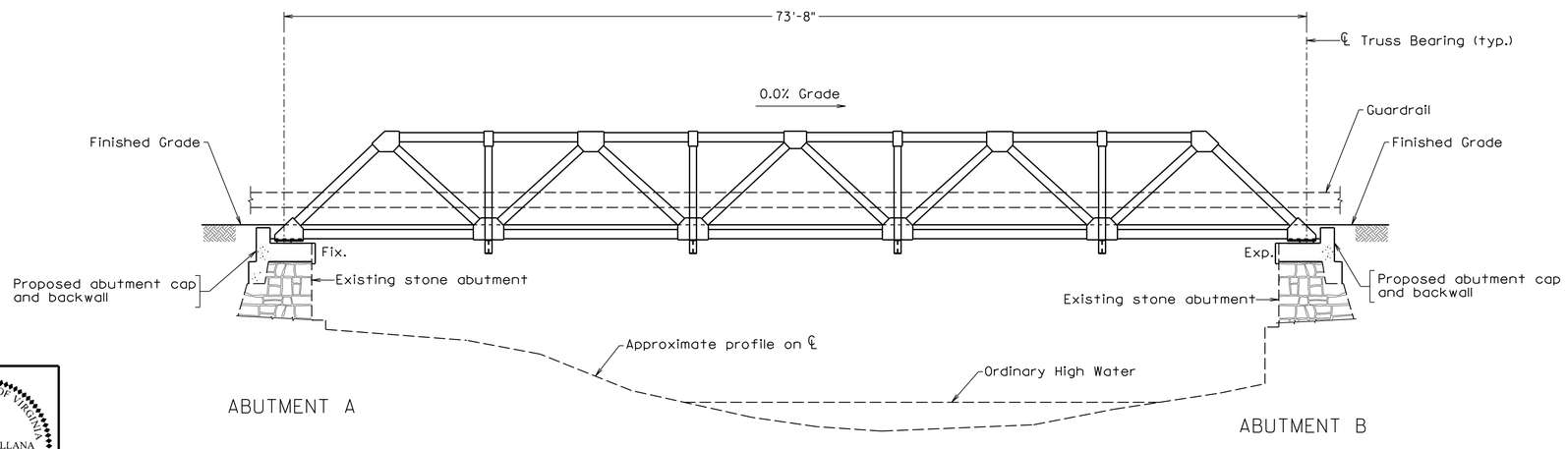
Date: November 2019

0778_truss_repair.dgn

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.



PLAN



DEVELOPED SECTION ALONG ℄

STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
VA.	—	---------	733	0733-007-6127	1

NBIS Number: 000000000002257 — UPC No. ------

Federal Oversight Code: N/A — FHWA Construction and Scour Code: X032-S8

GENERAL NOTES:

Width: 13'-6" face-to-face of rails.

Span Layout: 1 - 73'-8" steel truss span.

Capacity: HL-93 loading.

Specifications:

Construction: Virginia Department of Transportation Road and Bridge Specifications, 2007.

Design: AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012; and Interim Specifications; and VDOT Modifications

Standards: Virginia Department of Transportation Road and Bridge Standards, 2008.

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

Design loading includes 15 psf allowance for future wearing surface.

Concrete in the substructure shall be Class A4 having a minimum compressive cylinder strength of 4 ksi at 28 days. Low permeability concrete shall be used in this project.

All reinforcing steels shall be CRR (corrosion resistant reinforcement) - low carbon/chromium and shall conform to the requirements of ASTM A-1035 and the applicable specifications in SBIIM 81. The minimum yield strength shall be: 100 ksi. Reinforcing Steel, Class II or Class III, may be substituted for Class I. All dimensions on the detailed drawings are to centers of bars except where otherwise noted and are subject to fabrication and construction tolerances.

Bridge Number of existing structure is 6127. No existing plans.

Pony truss type and the number of panels may differ from that shown. Floorbeams shall be below bottom chords. Stringers shall rest on abutments. Stringers shall be continuous over two supports. Adjacent stringers shall not end on same floorbeam.

B.M. #1: Rebar Driven in Ground, 130' W of Abutment A Upstream
Elevation (Top of Rebar) - 1341.47'
B.M. #2: Rebar Driven in Ground, 85' E of Abutment B Downstream
Elevation (Top of Rebar) - 1343.67'

Work is to be performed by State Forces.

One bolted field splice permitted.

General notes continued on Sheet No. 2

VDOT

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
PROPOSED SUPERSTRUCTURE ON

RTE. 733 OVER ELK RUN
AUGUSTA CO. - 0.93 MI. NORTH OF RTE. 734
PROJ: 0733-007-6127

COMMONWEALTH OF VIRGINIA
EULOGIO ABELLANA JAVIER II
Lic. No. 046733
PROFESSIONAL ENGINEER

VDOT S&B DIVISION
STAUNTON, VA
STRUCTURAL ENGINEER

PLANS BY:	STAUNTON DISTRICT S & B
SUPERVISED:	Eulogio Javier II, PE
DESIGNED:	Jamie Johnston
DRAWN:	Jamie Johnston
CHECKED:	Keith Harrop, P.E.

No.	Description	Date
REVISIONS		

Scale: 3/16"= 1'-0"

Date: June 2015