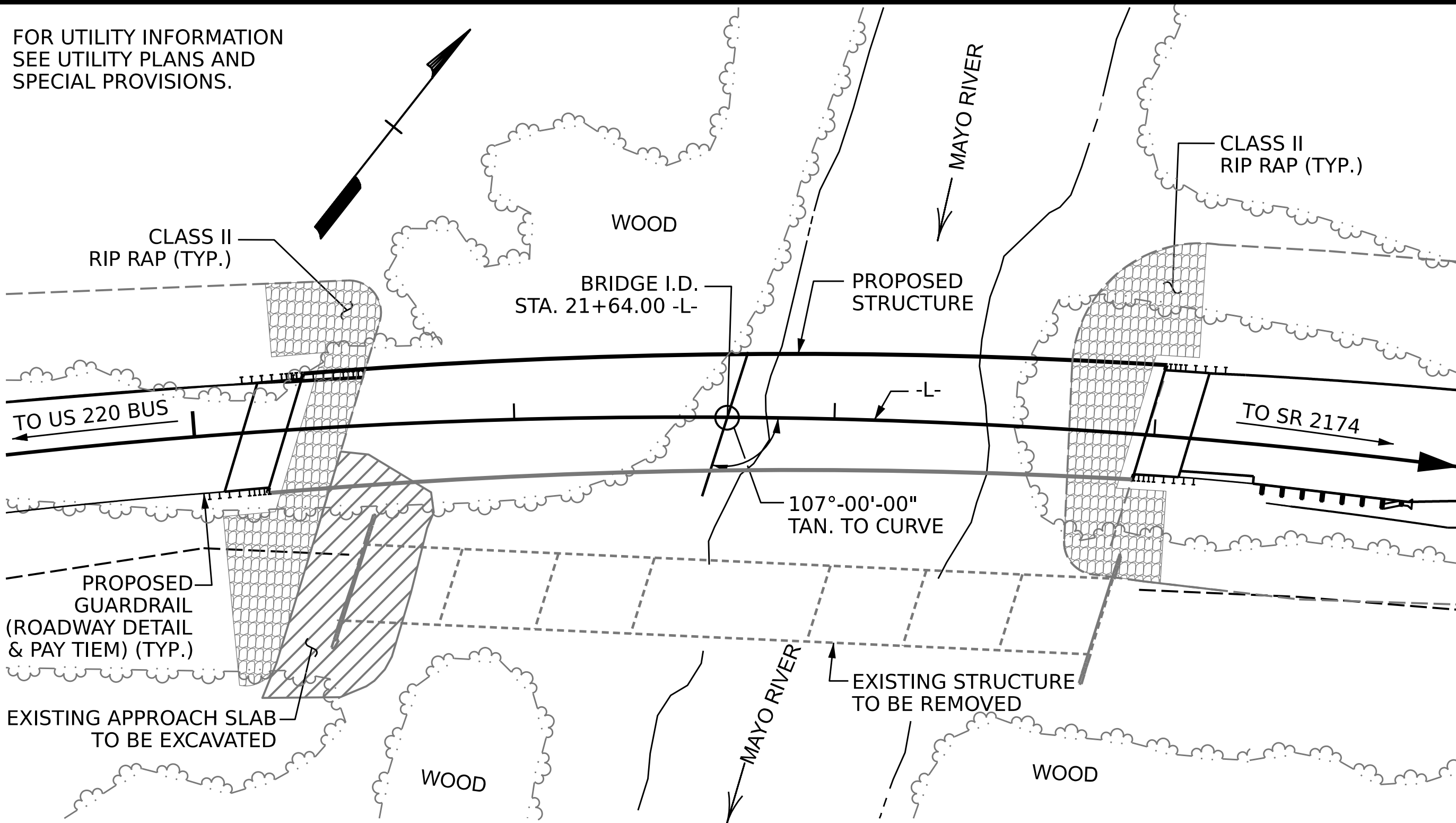


**BM #1: STA. 21+12.83 -L-, 25.04' LEFT, SPIKE IN 20" MAPLE, EL. 556.55**

FOR UTILITY INFORMATION  
SEE UTILITY PLANS AND  
SPECIAL PROVISIONS.



**LOCATION SKETCH**

**NOTES**

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS AT STATION 21+64.00 -L-.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 21+64.00-L-."

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-01 SHALL BE EXCAVATED FOR A DISTANCE OF 82 FT ON RIGHT OF -L- AT END BENT 1 AND 5 FT EACH SIDE OF CENTERLINE ROADWAY AT END BENT 2 AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF REINFORCED CONCRETE DECK ON I-BEAMS WITH SPAN LENGTH OF 4 @ 30 FT, 1 @ 55 FT AND 2 @ 30 FT, WITH A CLEAR ROADWAY WIDTH OF 24 FT ON A REINFORCED CONCRETE CAP ON PPC PILE END BENTS AND REINFORCED CONCRETE CAP ON POST AND BEAM BENT SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

ALL METALIZED SURFACES SHALL RECEIVE A SEAL COATING AS SPECIFIED IN TABLE 2 OF THE DEPARTMENTS THERMAL SPRAYED COATINGS (METALLIZATION) PROGRAM. FOR THERMAL SPRAYED COATINGS, SEE SPECIAL PROVISIONS.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1 IS ELEVATION 523.5 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE LOCATION OF THE CONSTRUCTION JOINT IN THE DRILLED PIERS IS BASED ON AN APPROXIMATE GROUND LINE ELEVATION. IF THE CONSTRUCTION JOINT IS ABOVE THE ACTUAL GROUND ELEVATION, THE CONTRACTOR SHALL PLACE THE CONSTRUCTION JOINT 1 FT. BELOW THE GROUND LINE.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

WHEN REMOVING EXISTING PILES NO MORE THAN 50% OF STREAM CAN BE BLOCKED BY CAUSEWAY.

CUT BENT 4 AND 5 EXISTING PILES ONE FOOT BELOW RIVERBED.

FOR REMOVAL OF EXISTING STRUCTURE AT STA. 21+64.00 -L-, SEE SPECIAL PROVISIONS.

FOR MODIFIED 74" PRESTRESSED CONCRETE GIRDER, SEE SPECIAL PROVISIONS.

**TOTAL BILL OF MATERIAL**

	CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE AT STA. 21+64.00 -L-	ASBESTOS ASSESSMENT	UNCLASSIFIED STRUCTURE EXCAVATION	4'-0" DIA. DRILLED PIER IN SOIL	4'-0" DIA. DRILLED PIER NOT IN SOIL	PERMANENT STEEL CASING FOR 4'-0" DIA. DRILLED PIER	PDA TESTING	SID INSPECTION	CSL TESTING	STEEL PILE POINTS	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS
	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	EA.	EA.	SQ. FT.	SQ. FT.
SUPERSTRUCTURE												9,707	8,874
END BENT 1													
BENT 1					180	210	60				21		
END BENT 2													
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	180	210	60	1	3	1	21	9,707	8,874

**HYDRAULIC DATA**

DESIGN DISCHARGE	= 20,600 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YRS.
DESIGN HIGH WATER ELEVATION	= 553.4 FT.
DRAINAGE AREA	= 314 SQ.MI.
BASE DISCHARGE (Q100)	= 28,800 CFS.
BASE HIGH WATER ELEVATION	= 555.9 FT.

**OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE	= 16,600 CFS.
FREQUENCY OF OVERTOPPING FLOOD	= 10+ YRS.
OVERTOPPING FLOOD ELEVATION	= 551.0 FT. *

\* OVERTOPPING AT APPROXIMATELY STATION 13+00.00 -L-

**TOTAL BILL OF MATERIAL**

	CLASS A CONCRETE	BRIDGE APPROACH SLABS STA. 21+64.00 -L-	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	MODIFIED 74" PRESTRESSED CONCRETE GIRDER	PILE DRIVING EQUIPMENT SETUP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES	CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	FOAM JOINT SEALS		
	CU. YDS.	LUMP SUM	LBS.	LBS.	NO.	LIN. FT.	EA.	NO.	LIN. FT.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM
SUPERSTRUCTURE					10	1,327.4				535.68				
END BENT 1	56.7		6,167				10	10	350		395	435		
BENT 1	41.4		14,662	3,983										
END BENT 2	54.9		6,035				11	11	275		295	330		
TOTAL	153.0	LUMP SUM	26,864	3,983	10	1,327.4	21	21	625	535.68	690	765	LUMP SUM	LUMP SUM

**SAMPLE BAR REPLACEMENT**

SIZE	LENGTH
#3	6'-2"
#4	7'-4"
#5	8'-6"
#6	9'-8"
#7	10'-10"
#8	12'-0"
#9	13'-2"
#10	14'-6"
#11	15'-10"

NOTE:  
SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30" (SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND fy = 60ksi.



03/23/2023

PROJECT NO. B-5721  
ROCKINGHAM COUNTY

STATION: 21+64.00 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
**GENERAL DRAWING**  
FOR BRIDGE OVER MAYO RIVER  
ON SR 2177 (DAN VALLEY RD)  
BETWEEN SR 2174 (LAUTEN LOOP)  
AND US 220 BUS

DRAWN BY: Q. T. NGUYEN DATE: 01/2023  
CHECKED BY: F. LEA DATE: 01/2023  
DESIGN ENGINEER OF RECORD: Z. MALIK DATE: 06/2022

2/16/2023  
R:\Structures\Plans\401\_007\_B5721\_SMU\_GD\_S05\_780124.dgn  
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO	BY:	DATE:	NO	BY:	DATE:	S-05
1			3			TOTAL SHEETS
2			4			31