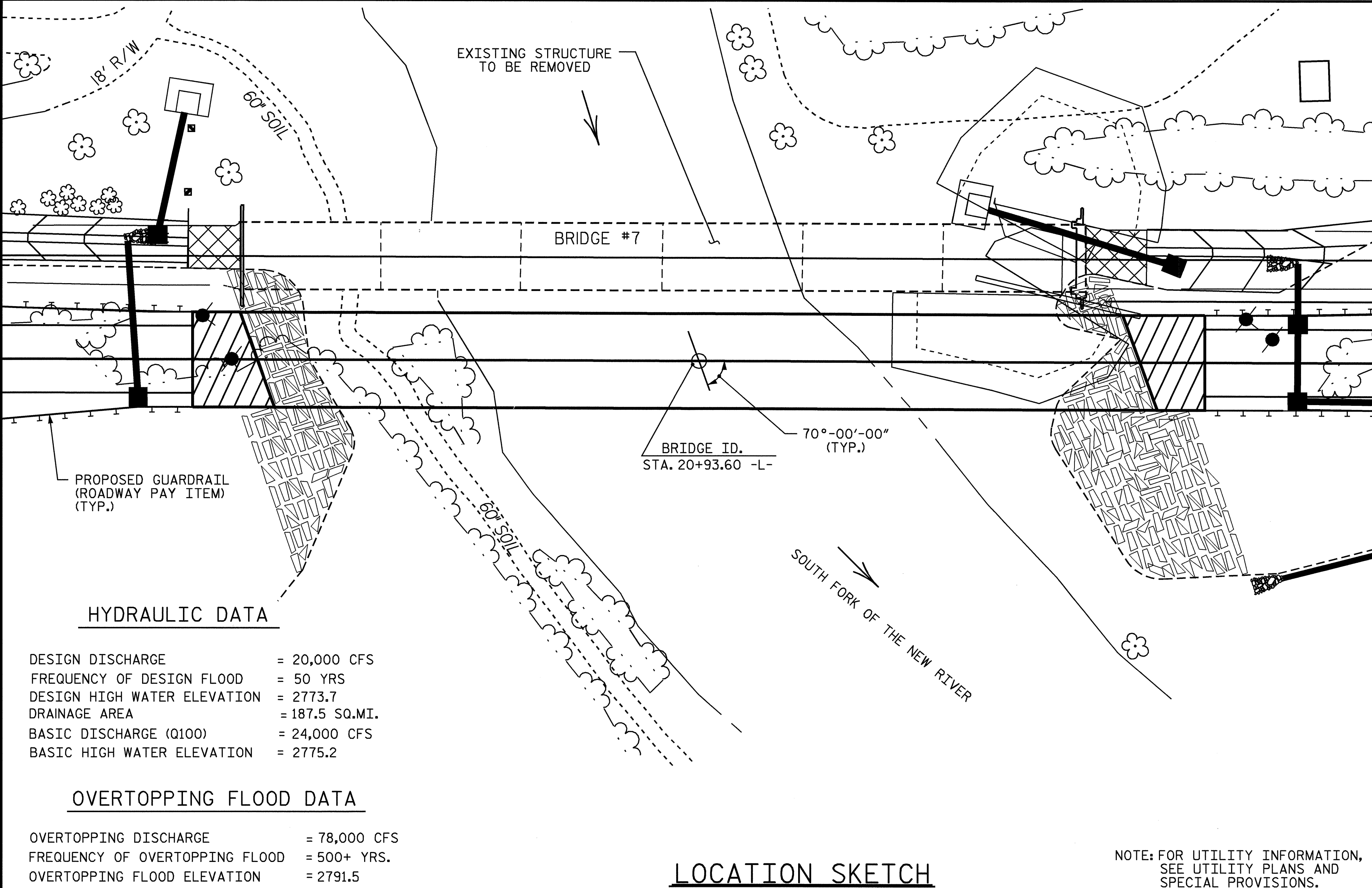


BM #2 SPIKE NAIL IN ROCK; -BL- 16+29.47, 207.4' RT. ELEV. 2770.15



HYDRAULIC DATA

DESIGN DISCHARGE = 20,000 CFS
 FREQUENCY OF DESIGN FLOOD = 50 YRS
 DESIGN HIGH WATER ELEVATION = 2773.7
 DRAINAGE AREA = 187.5 SQ.MI.
 BASIC DISCHARGE (Q100) = 24,000 CFS
 BASIC HIGH WATER ELEVATION = 2775.2

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 78,000 CFS
 FREQUENCY OF OVERTOPPING FLOOD = 500+ YRS.
 OVERTOPPING FLOOD ELEVATION = 2791.5

LOCATION SKETCH

NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.



NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING.

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

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

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

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

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.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, 'EVALUATING SCOUR AT BRIDGES', NOVEMBER, 1995.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY A.

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 SAMPLE OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS.

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

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

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.

AFTER SERVING AS A TEMPORARY STRUCTURE, THE EXISTING 6 SPAN STRUCTURE (6 @ 50') CONSISTING OF REINFORCED CONCRETE DECK GIRDERS WITH A 3/2" ASPHALT WEARING SURFACE, WITH A CLEAR ROADWAY WIDTH OF 24', ON AN SUBSTRUCTURE CONSISTING OF A REINFORCED CONCRETE CAP ON H-PILES AT END BENT #1 AND A REINFORCED CONCRETE ABUTMENT AT END BENT #2 AND REINFORCED CONCRETE POST AND BEAM BENTS AND LOCATED APPROXIMATELY 10' UPSTREAM OF THE PROPOSED BRIDGE SHALL BE REMOVED. THE EXISTING BRIDGE IS CURRENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD IT FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE DRILLED PIERS AT BENT NO.1 AND BENT NO.2 HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 30 TSF.

THE REQUIRED TIP BEARING CAPACITY AT BENT NO.1 AND BENT NO.2 SHALL BE VERIFIED.

DRILLED PIERS FOR BENT NO.1 AND BENT NO.2 HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 765 TONS EACH AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO.1 AND THE CASING SHALL NOT EXTEND BELOW ELEVATION 2756' WITHOUT THE ENGINEER'S PERMISSION.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO.2 AND THE CASING SHALL NOT EXTEND BELOW ELEVATION 2754' WITHOUT THE ENGINEER'S PERMISSION.

FOR PERMANENT STEEL CASING, SEE SPECIAL PROVISION FOR DRILLED PIERS.

DRILLED PIERS AT BENT NO.1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 2748' AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

DRILLED PIERS AT BENT NO. SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 2746' AND SATISFY THE REQUIRED TIP BEARING CAPACITY.

THE SCOUR CRITICAL ELEVATIONS FOR BENT NO.1 AND BENT NO.2 ARE 2751'. THE SCOUR CRITICAL ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.

SID INSPECTIONS ARE NOT REQUIRED TO DETERMINE THE BOTTOM CLEANLINESS OF THE DRILLED PIERS AT BENT NO.1 AND BENT NO.2.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS AT BENT NO.1 AND BENT NO.2. SEE SPECIAL PROVISION FOR CROSSHOLE SONIC LOGGING.

SPT TESTING IS NOT REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS AT BENT NO.1 AND BENT NO.2.

PILES FOR END BENT NO.2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 50 TONS.

STEEL PILE POINTS ARE REQUIRED FOR PILES AT END BENT NO.2. SEE SPECIAL PROVISION FOR STEEL PILE POINTS.

WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.

THE REQUIRED BEARING CAPACITY OF THE SPREAD FOOTINGS AT END BENT NO.1 IS 5 TSF. THE REQUIRED BEARING CAPACITY SHALL BE VERIFIED.

FOOTINGS SHALL BE KEYED AT LEAST 12 INCHES INTO ROCK WITH MINIMUM THICKNESS AS SHOWN ON THE PLANS.

SLURRY CONSTRUCTION SHALL NOT BE USED FOR THIS PROJECT.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	FOUNDATION EXCAVATION FOR END BENT	6'-0" Ø DRILLED PIERS IN SOIL	6'-0" Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 6'-0" Ø DRILLED PIERS	CROSSHOLE SONIC LOGGING	CSL TUBES	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL REINFORCING STEEL	STRUCTURAL STEEL	HP 12 X 53 STEEL PILES	STEEL PILE POINTS	CONCRETE BARRIER RAIL	PLAIN RIPRAP (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	POT BEARINGS	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	EXPANSION JOINT SEALS	
	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	SQ. FT.	SQ. FT.	CU. YARDS	LUMP SUM	LBS.	LBS.	APPROX. LBS.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	
SUPERSTRUCTURE	LUMP SUM	LUMP SUM							11612	11497		LUMP SUM			307100			623.48			LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	
END BENT NO. 1			LUMP SUM								47.0		6510							360	400				
BENT NO. 1				1.00	9.00	2.00	1	75.00			62.3		19399	1337											
BENT NO. 2				4.08	9.00	5.08	1	75.00			60.1		19524	1354											
END BENT NO. 2											34.6		4847		10	300	10		530	585					
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	5.08	18.00	7.08	2	150.00	11612	11497	204.0	LUMP SUM	50280	2691	307100	10	300	10	623.48	890	985	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM

DRAWN BY : CR LEWIS DATE : 11/03
 CHECKED BY : MG CHEEK DATE : 12/03

29-JUL-2004 12:44
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PROJECT NO. B-4010
 ASHE COUNTY
 STATION: 20+93.60 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GENERAL DRAWING
 FOR BRIDGE ON NC 163
 OVER THE SOUTH FORK
 OF THE NEW RIVER BETWEEN
 SR 1181 AND SR 1201

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			37

NCBDS