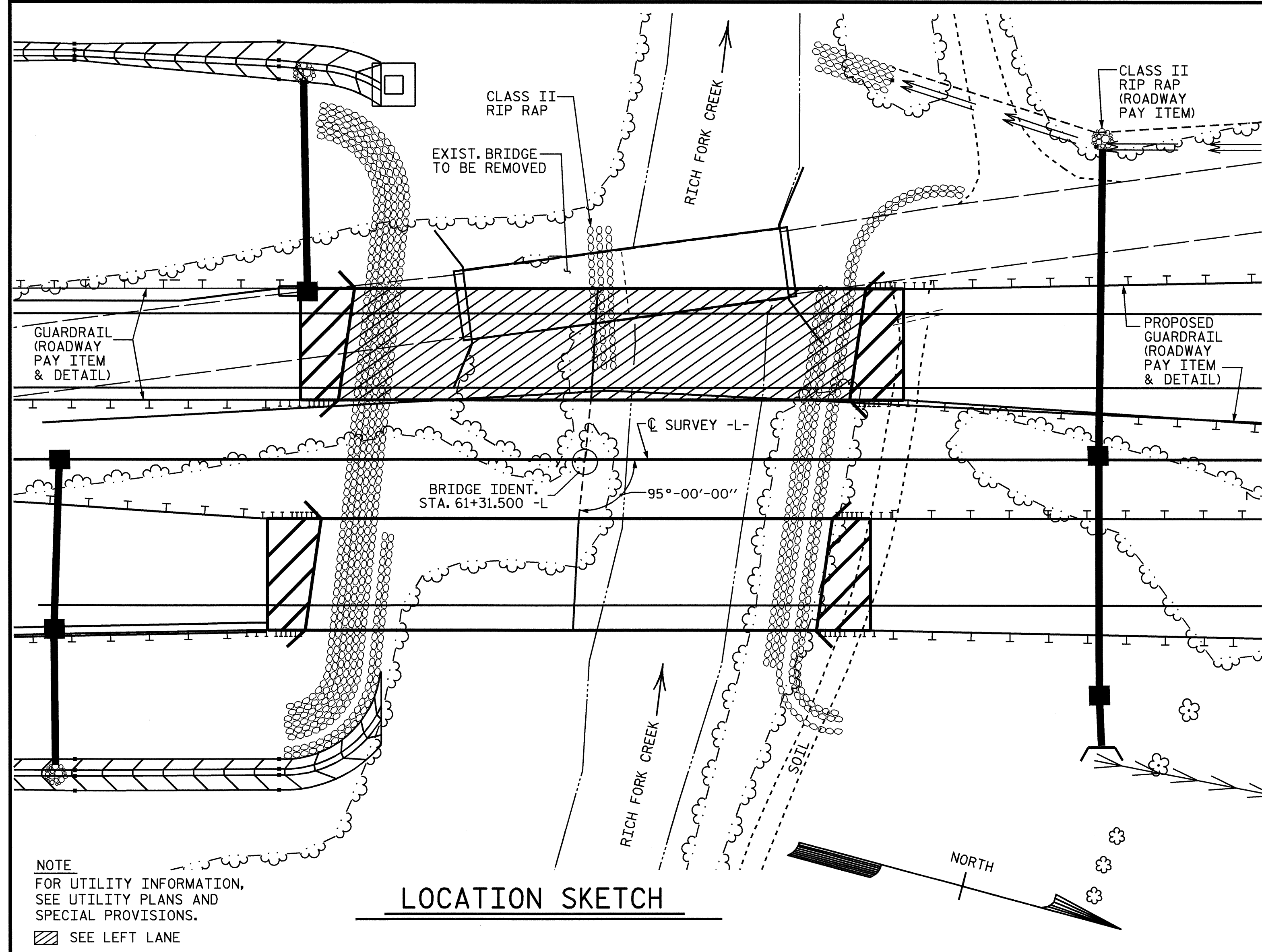


BM#J5: A RR SPIKE IN A 600mm RED OAK TREE 76.100m RT. OF STA. 52+48.800 -L- EL. 231.146



NOTE
FOR UTILITY INFORMATION,
SEE UTILITY PLANS AND
SPECIAL PROVISIONS.
▨ SEE LEFT LANE

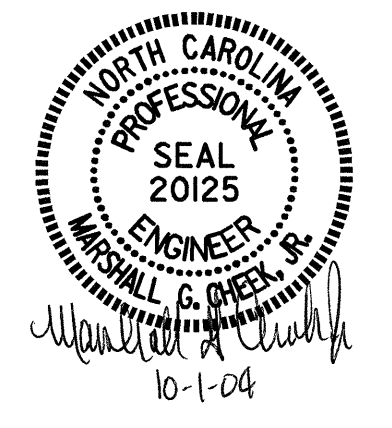
LOCATION SKETCH

NOTES

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
ALL ELEVATIONS ARE IN METERS.
ASSUMED LIVE LOAD = MS 18 OR ALTERNATE LOADING.
FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SNSM.
FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.
THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.
ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 345W 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.
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 300mm BELOW THE GROUND LINE.
THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 15m EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUM SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. FOR UNCLASSIFIED STRUCTURE EXCAVATION, SEE SPECIAL PROVISIONS.
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 360,000 kg OF REINFORCING STEEL, ONE 760mm SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 360,000 kg OF REINFORCING STEEL, TWO 760mm SAMPLES 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.

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 SLOPEPROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS.
NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
FOR METRIC STRUCTURAL STEEL, SEE SPECIAL PROVISIONS.
FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
PILES FOR END BENT NO. 1 AND END BENT NO. 2 SHALL BE DRIVEN TO A BEARING CAPACITY OF 530 KN EACH.
THE REQUIRED TIP BEARING CAPACITY AT END BENT NO. 1 AND END BENT NO. 2 SHALL BE VERIFIED.
WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.
THE DRILLED PIERS AT BENT NO. 1 HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 2900 kPa.
DRILLED PIERS FOR BENTS NO. 1 HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 2171kN EACH AT THE TOP OF THE COLUMN.
PERMANENT STEEL CASING MAY BE REQUIRED FOR ALL DRILLED PIERS AT BENT NO. 1 AND THE CASING SHALL NOT EXTEND BELOW ELEVATION 212.0 WITHOUT THE ENGINEER'S PERMISSION.
FOR PERMANENT STEEL CASING, SEE SPECIAL PROVISIONS FOR DRILLED PIERS.
DRILLED PIERS AT END BENT NO. 1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 206.0 AND SATISFY THE REQUIRED TIP BEARING CAPACITY.
THE SCOUR CRITICAL ELEVATIONS FOR BENT NO. 1 IS 207. 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.
SPT TESTING IS NOT REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS AT BENT NO. 1.
SLURRY CONSTRUCTION SHALL NOT BE USED FOR THIS PROJECT.
SID INSPECTIONS ARE NOT REQUIRED TO DETERMINE THE BOTTOM CLEANLINESS OF THE DRILLED PIERS AT BENT NO. 1.
CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS AT BENT NO. 1. SEE SPECIAL PROVISION FOR CROSSHOLE SONIC LOGGING.
FOR FABRICATED METAL STAY-IN-PLACE FORMS, SEE SPECIAL PROVISIONS.

THE CONTRACTOR MAY CHOOSE TO UTILIZE THE STANDARD OVERHANG FALSEWORK BRACING SYSTEM. SEE "STANDARD OVERHANG FALSEWORK" SHEETS.



HYDRAULIC DATA

DESIGN DISCHARGE = 134 m³/SEC
FREQUENCY OF DESIGN FLOOD = 50 YR
DESIGN HIGH WATER ELEVATION = 214.97
DRAINAGE AREA = 66.3 Sq. km
BASIC DISCHARGE (Q100) = 174 m³/SEC
BASIC HIGH WATER ELEVATION = 215.35

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = > 242 m³/SEC
FREQUENCY OF OVERTOPPING FLOOD = >500 YR
OVERTOPPING FLOOD ELEVATION = 218.46

TOTAL BILL OF MATERIAL

	CONSTRUCTION MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS	1220mm Ø DRILLED PIER IN SOIL	1220mm Ø DRILLED PIER NOT IN SOIL	PERMANENT STEEL CASING FOR 1220mm Ø DRILLED PIERS	CROSSHOLE SONIC LOGGING	CSL TUBES	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	SPIRAL COLUMN REINFORCING STEEL	1372mm PRESTRESSED CONCRETE GIRDERS	HP 310 X 79 STEEL PILES	CONCRETE BARRIER RAIL	PLAIN RIP RAP CLASS II (600mm THICK)	FILTER FABRIC FOR DRAINAGE	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	
	LUMP SUM	METERS	METERS	METERS	EACH	METERS	LUMP SUM	SQ. METERS	SQ. METERS	CU. METERS	LUMP SUM	kg	kg	METERS	NO.	METERS	METERS	METRIC TONS	SQ. METERS	LUMP SUM	LUMP SUM
SUPERSTRUCTURE	LUMP SUM						LUMP SUM	606.0	506.3		LUMP SUM			203.520		102.728			LUMP SUM	LUMP SUM	
END BENT NO. 1										22.6		2076			10	100		265	271		
BENT NO. 1		14.3	7.0	3.3	2	94.2				21.7		4149	1123								
END BENT NO. 2										22.6		2075			10	30		228	233		
TOTAL	LUMP SUM	14.3	7.0	3.3	2	94.2	LUMP SUM	606.0	506.3	66.9	LUMP SUM	8300	1123	203.520	20	130	102.728	493	504	LUMP SUM	LUMP SUM

DRAWN BY : QT NGUYEN DATE : 3-04
CHECKED BY : MG CHEEK DATE : 5-04

PROJECT NO. R-2568B
DAVIDSON COUNTY
STATION: 61+31.500 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE OVER RICH FORK CREEK
ON NC 109 BETWEEN
SR 2900 AND SR 1798
(RIGHT LANE)

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

S-35
TOTAL SHEETS 64