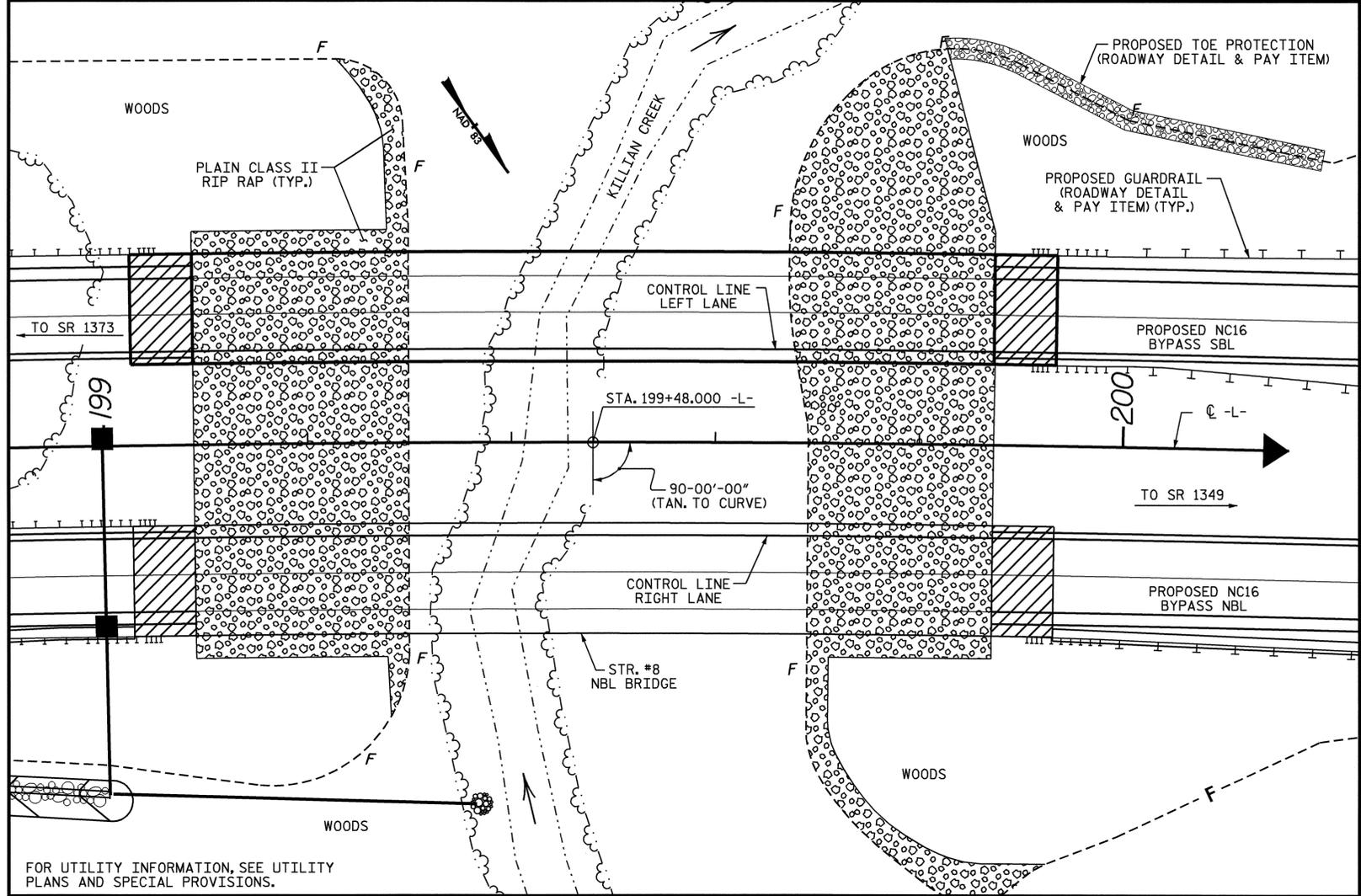


BM #2: TOP OF NAIL IN EAST BASE OF A 500mm MAPLE, JUST SOUTH OF A CREEK, -L- STA. 199+35.520 30.472m RIGHT EL. 234.182, NGVD 29.



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

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.
 - PRESTRESSED CONCRTE DECK PANELS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.
 - 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.
 - 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.
 - 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 FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
 - 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.

- PILES FOR END BENT NOS. 1 AND 2 SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 530 KN EACH.
- THE SCOUR CRITICAL ELEVATION FOR BENT NOS. 1 AND 2 IS 229.5. THE SCOUR CRITICAL ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
- DRILLED PIERS FOR BENT NOS. 1 AND 2 HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 2,385 KN EACH AT THE TOP OF THE COLUMN.
- THE DRILLED PIERS AT BENT NOS. 1 AND 2 HAVE BEEN DESIGNED FOR BOTH SKIN FRICTION AND TIP BEARING. THE REQUIRED TIP BEARING CAPACITY IS 2,900 kPa.
- PERMANENT STEEL CASING IS NOT REQUIRED FOR DRILLED PIERS AT BENT NOS. 1 AND 2.
- THE REQUIRED TIP BEARING CAPACITY AT BENT NOS. 1 AND 2 SHALL BE VERIFIED.
- DRILLED PIERS AT BENT NO. 1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 223.5 AND SATISFY THE REQUIRED TIP BEARING CAPACITY.
- DRILLED PIERS AT BENT NO. 2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 223.0 (LEFT AND CENTER) AND 224.0 (RIGHT) AND SATISFY THE REQUIRED TIP BEARING CAPACITY.
- FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.
- SPT TESTING IS NOT REQUIRED TO DETERMINE THE TIP BEARING CAPACITY OF THE DRILLED PIERS AT BENT NOS. 1 AND 2.
- 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 NOS. 1 AND 2.
- CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS AT BENT NOS. 1 AND 2. SEE SPECIAL PROVISION FOR CROSSHOLE SONIC LOGGING.
- WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.
- 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.
- FOR METRIC STRUCTURAL STEEL, SEE SPECIAL PROVISIONS.
- 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.

HYDRAULIC DATA

DESIGN DISCHARGE	= 53.0 m ³ /s
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 235.11
DRAINAGE AREA	= 9.35 Sq. Km
BASIC DISCHARGE (Q100)	= 59.7 m ³ /s
BASIC HIGH WATER ELEVATION	= 235.27

OVERTOPPING FLOOD DATA

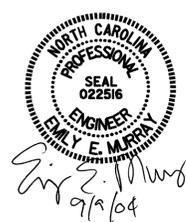
OVERTOPPING DISCHARGE	= ***
FREQUENCY OF OVERTOPPING FLOOD	= 500 YR +
OVERTOPPING FLOOD ELEVATION	= 244.549

*** OVERTOPPING FLOOD IS GREATER THAN 500+ YR. EVENT

TOTAL BILL OF MATERIAL

	1372mm Ø DRILLED PIERS IN SOIL	1372mm Ø DRILLED PIERS NOT IN SOIL	CROSSHOLE SONIC LOGGING	CSL TUBES	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		
	METERS	METERS	EACH	METERS	SO. METERS	SO. METERS	CU. METERS	LUMP SUM	kg	kg	NO.	METERS	NO.	METERS	METERS	METRIC TONS	SQ. METERS	LUMP SUM	LUMP SUM
SUPERSTRUCTURE					912.1	882.1		LUMP SUM			15	383.200				154.730			
END BENT #1									1,865			10	125.0			613	625		
BENT #1	18.3	12.3	0	132.6					13,672	3,024									
BENT #2	19.4	9.0	1	123.8					13,419	2,929									
END BENT #2									1,850			10	105.0			916	935		
TOTAL	37.7	21.3	1	256.4	912.1	882.1	168.6	LUMP SUM	30,806	5,953	15	383.200	20	230.0	154.730	1,529	1,560	LUMP SUM	LUMP SUM

DRAWN BY : T.L. AVERETTE DATE : 02-04
 CHECKED BY : PEGGY ADKINS DATE : 06-04



PROJECT NO. R-2206C
 LINCOLN-CATAWBA COUNTY
 STATION: 199+48.000 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER KILLIAN CREEK ON NC16 BYPASS BETWEEN SR 1373 AND SR 1349 LEFT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			3-35
2			4			374