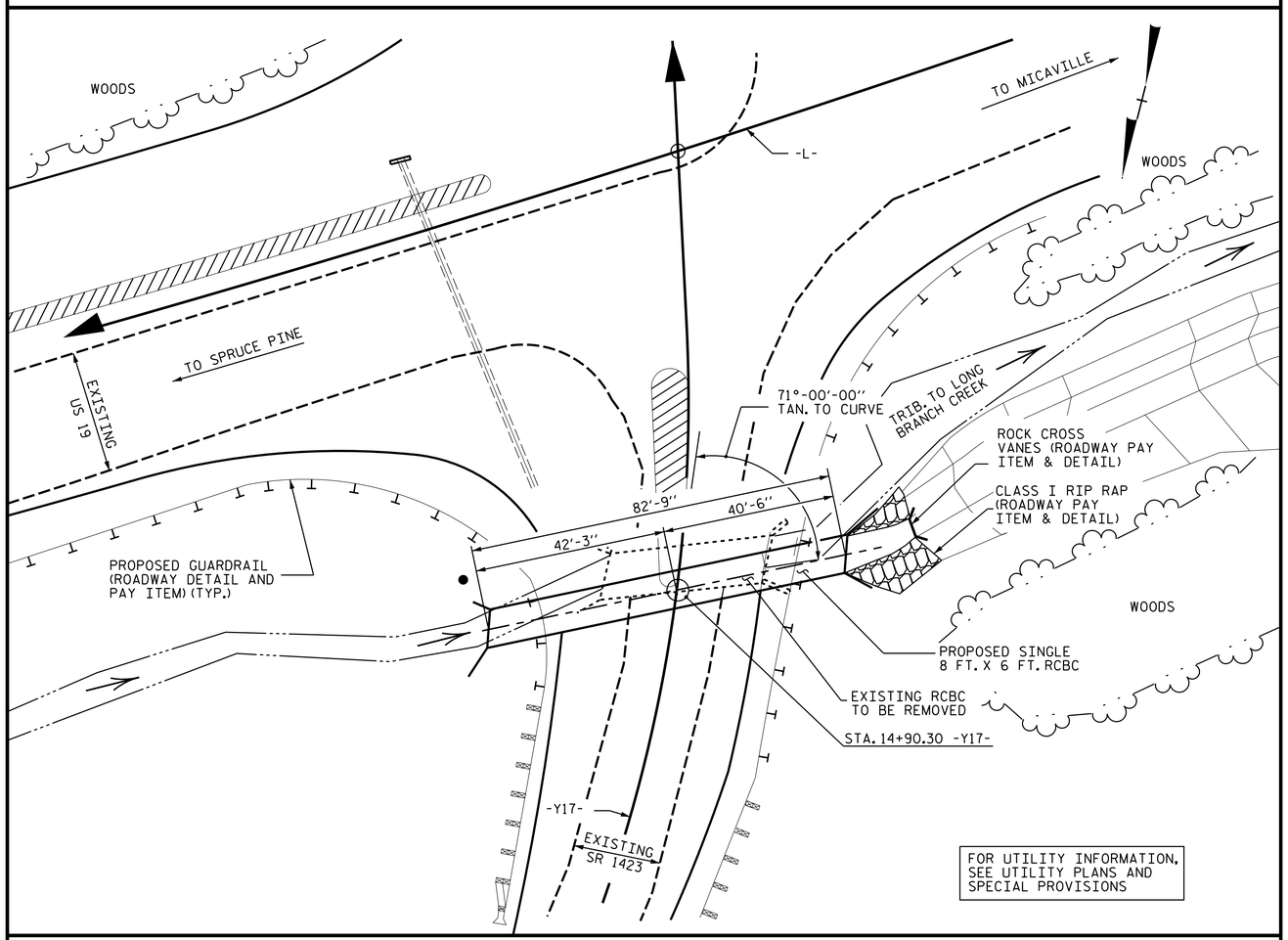
BENCHMARK #12 : RAILROAD SPIKE IN 22" WHITE PINE, STA. 157+59.38 -L-, 125.54' LT., ELEV. = 2575.05



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE_____300 CFS

FREQUENCY OF DESIGN FLOOD_____50 YEARS

DESIGN HIGH WATER ELEVATION_____2472.31

DRAINAGE AREA_____0.39 SQ. MI.

BASE DISCHARGE(Q100)_____360 CFS

BASE HIGH WATER ELEVATION_____2473.01

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE_____480 CFS

FREQUENCY OF OVERTOPPING FLOOD___100 YRS.+

OVERTOPPING FLOOD ELEVATION_____2474.50

GRADE DATA

GRADE POINT ELEV. @
STATION 14+90.30 -Y17-_____ 2577.25

BED ELEV. @
STATION 14+90.30 -Y17-_____ 2565.22

ROADWAY SLOPES_____ 2 : 1

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

DESIGN FILL = 6.6 FT.

FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.

3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CONCRETE IN CULVERT TO BE POURED IN THE FOLLOWING ORDER:

1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF THE VERTICAL WALLS
2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FEET. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF THE EXTERIOR WALL ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAILED DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

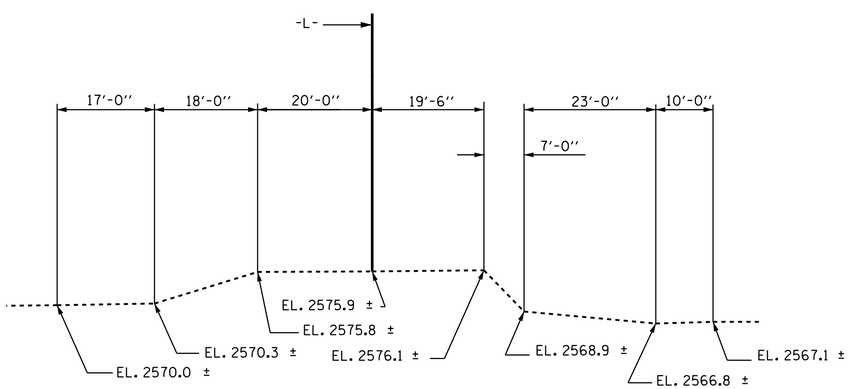
FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

REMOVAL OF THE EXISTING CULVERT SHALL BE CONSIDERED INCIDENTAL TO CULVERT EXCAVATION.



PROFILE ALONG ℄ CULVERT

TOTAL STRUCTURE QUANTITIES		
CLASS A CONCRETE		
BARREL @ 0.761 CY/FT	63.0	C.Y.
WINGS, ETC.	16.1	C.Y.
SILLS	1.1	C.Y.
TOTAL	80.2	C.Y.
REINFORCING STEEL		
BARREL & SILLS	9788	LBS.
WINGS, ETC.	934	LBS.
TOTAL	10722	LBS.
CULVERT EXCAVATION -------- LUMP SUM		
FOUNDATION COND. MAT'L. -------- 55 TONS		

PROJECT NO. R-2519B
YANCEY COUNTY
STATION: 14+90.30 -Y17-

SHEET 1 OF 5

NORTH CAROLINA PROFESSIONAL SEAL 13014 ENGINEER QUANG H. NGUYEN
8/27/2014 Quang H. Nguyen
DocuSign Envelope ID: F1C74D1D9225477...

NORTH CAROLINA PROFESSIONAL SEAL 20125 ENGINEER MARSHALL G. CHECK, JR.
8/27/2014 Marshall G. Check, Jr.
DocuSign Envelope ID: 6549D6EBA3B405...

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 8 FT. X 6 FT. CONCRETE BOX CULVERT

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			C-78
1			3					TOTAL SHEETS
2			4					87

DRAWN BY : M.E. POOLE DATE : 08/2011
CHECKED BY : S.W. PEARCE DATE : 03/2013

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

STR. #14