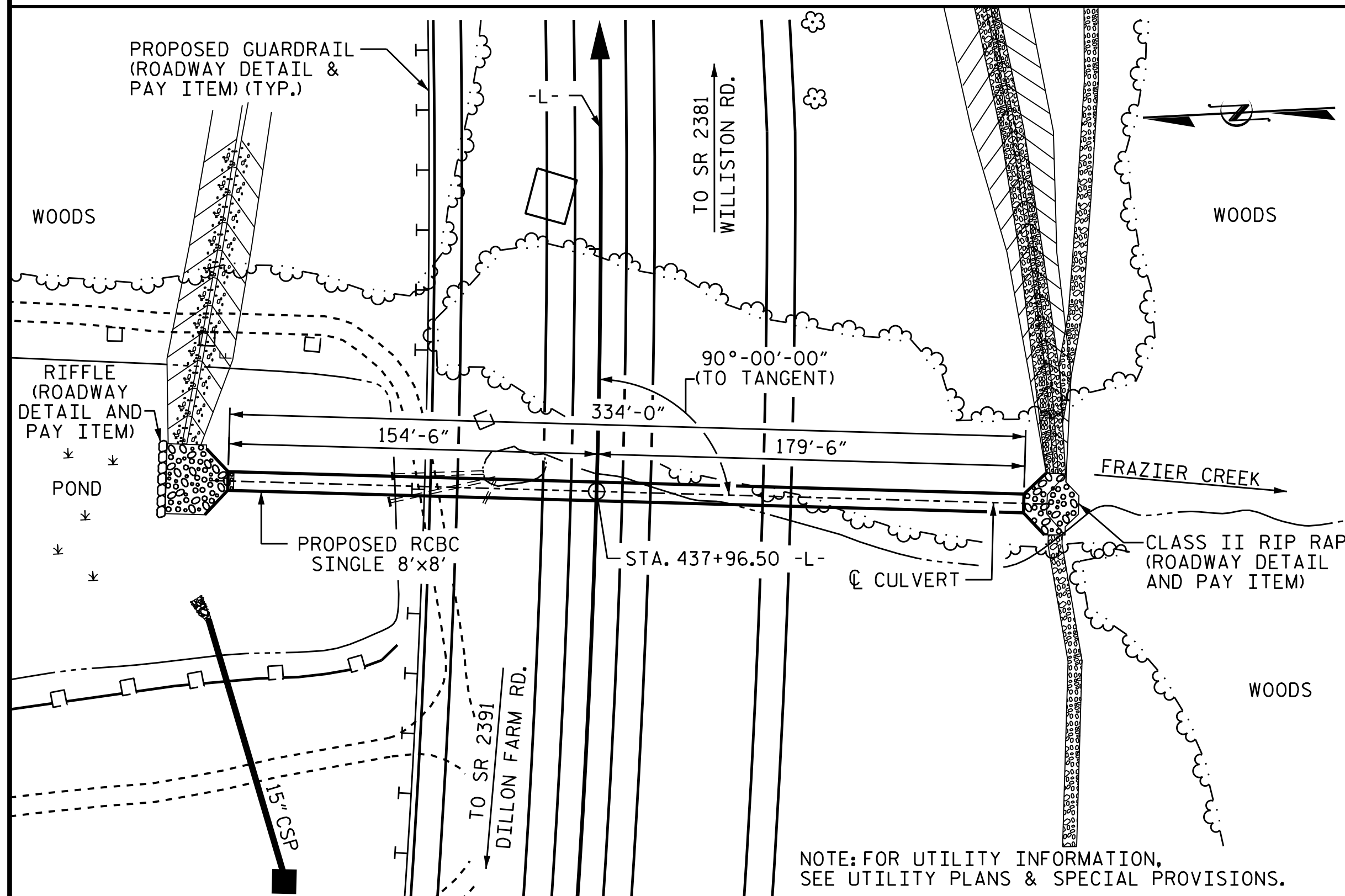


BENCHMARK #3: RAILROAD SPIKE SET IN BASE OF 30" WHITE OAK TREE
STA. 31+99.00 -Y2-, 120' LT, EL.=957.76



LOCATION SKETCH

ROADWAY DATA

GRADE POINT ELEV. @ STA. 437+96.50 -L-	= 901.03
BED ELEV. @ STA. 437+96.50 -L-	= 893.57
ROADWAY SLOPES	= 2:1

HYDRAULIC DATA

DESIGN DISCHARGE	= 385 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 50 YR.
DESIGN HIGH WATER ELEV.	= 902.3
DRAINAGE AREA	= 0.259 SQ. MI.
BASE DISCHARGE (Q100)	= 445 C.F.S.
BASE HIGH WATER ELEV.	= 902.9

OVERTOPPING FLOOD DATA

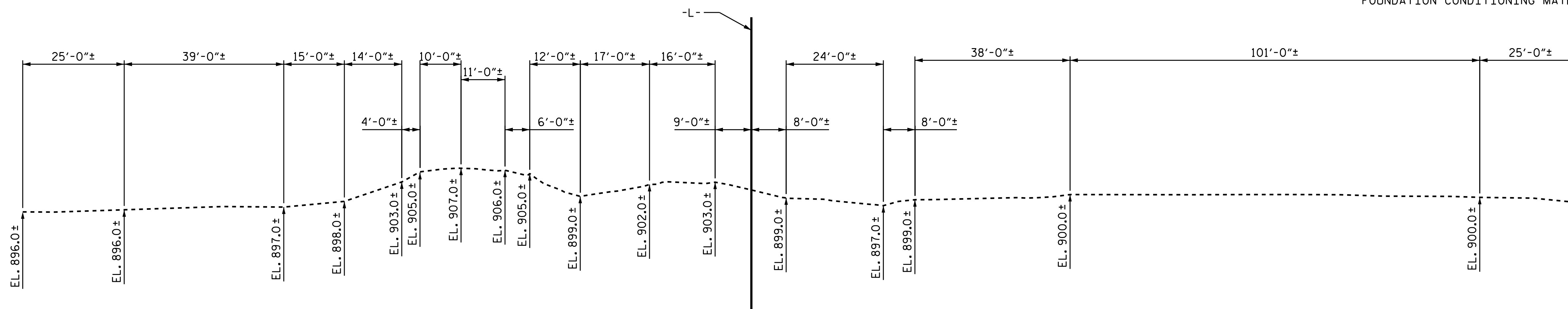
OVERTOPPING DISCHARGE	= N/A
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YR.
OVERTOPPING FLOOD ELEV.	= 910.0

TOTAL STRUCTURE QUANTITIES

CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	330 TONS
CLASS A CONCRETE	
BARREL @ 1.677 CY/FT	560.1 C.Y.
WINGS, ETC.	23.1 C.Y.
SILLS	0.6 C.Y.
TOTAL	583.8 C.Y.
REINFORCING STEEL	
BARREL @	48,618 LBS.
WINGS, ETC.	1,463 LBS.
TOTAL	50,081 LBS.

NOTES

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
- DESIGN FILL = 46.87 FEET.
- FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTE SHEET.
- 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL 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 FT. 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 EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS 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.
- NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- 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 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. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.
- THE REINFORCED CONCRETE BOX CULVERT SHALL BE PLACED ON THE STANDARD 1.0 FOOT BLANKET OF FOUNDATION CONDITIONING MATERIAL. SEE SECTION 414 OF THE STANDARD SPECIFICATIONS.
- CONSTRUCT THE REINFORCED CONCRETE BOX CULVERT WITH 9 INCHES OF CAMBER TO ACCOUNT FOR ANTICIPATED SETTLEMENT.
- UNDERCUT SOFT/LOOSE SOILS THAT MAY BE ENCOUNTERED BENEATH THE BOTTOM OF THE FOUNDATION CONDITIONING MATERIAL. BACKFILL UNDERCUT AREAS WITH FOUNDATION CONDITIONING MATERIAL.

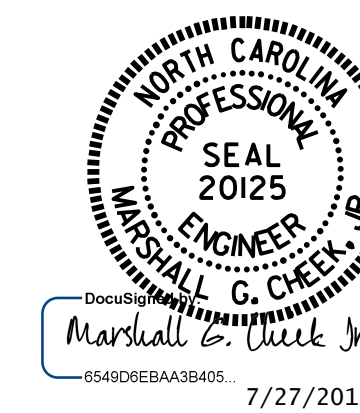
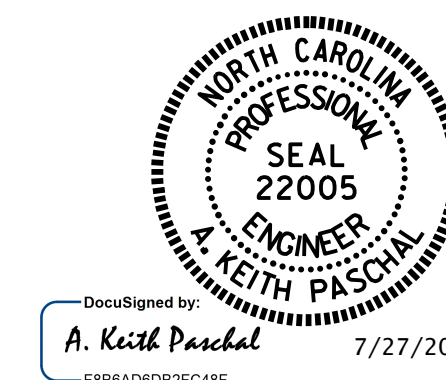


PROFILE ALONG CULVERT

PROJECT NO. U-2579C
FORSYTH COUNTY
STATION: 437+96.50 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SINGLE 8 FT. X 8 FT.
CONCRETE BOX CULVERT
90° SKEW



DRAWN BY : N.D. AIUTO DATE : 3/30/16
CHECKED BY : H.A. LOCKLEAR DATE : 4/6/16
DESIGN ENGINEER OF RECORD : J.K. BOWLES DATE : 4/6/2016

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO. C2-1
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 5
2			4			

STR #6 STD. NO. CB11A