16-AUG-2016 15:54
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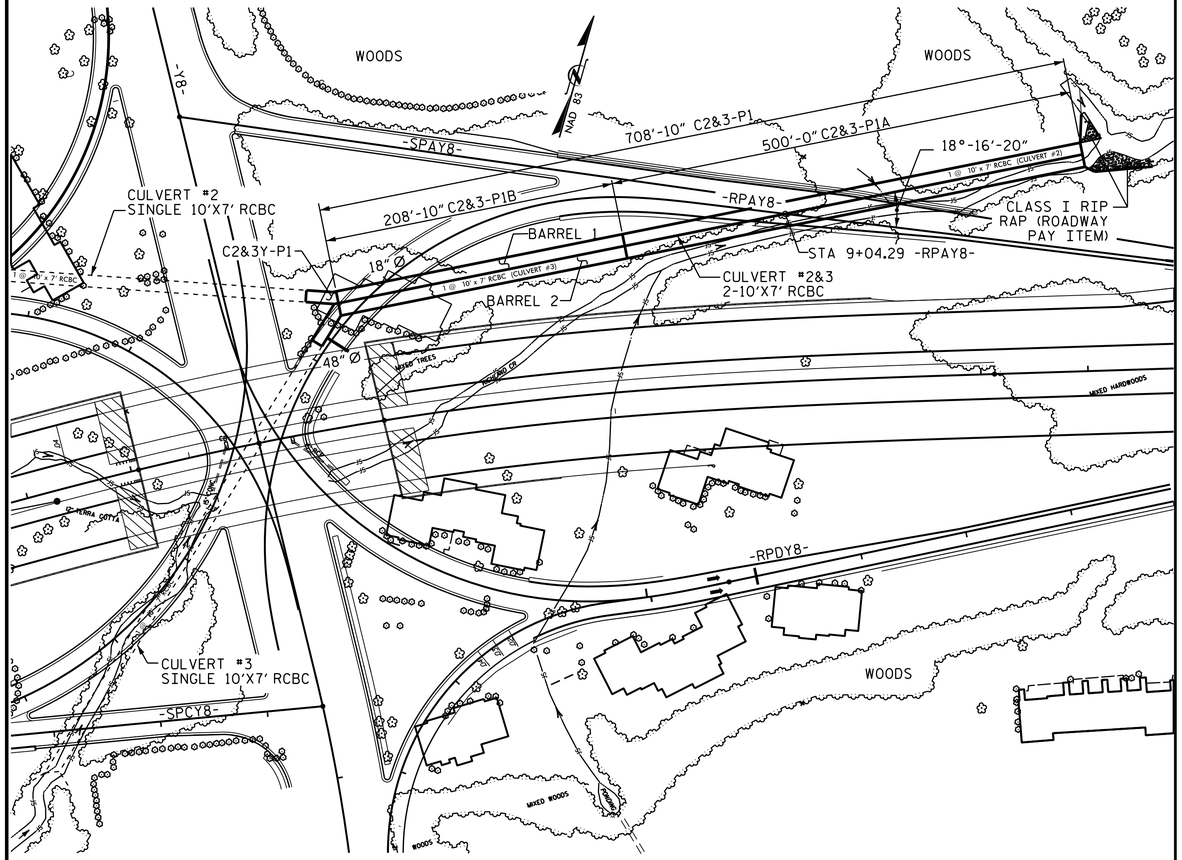
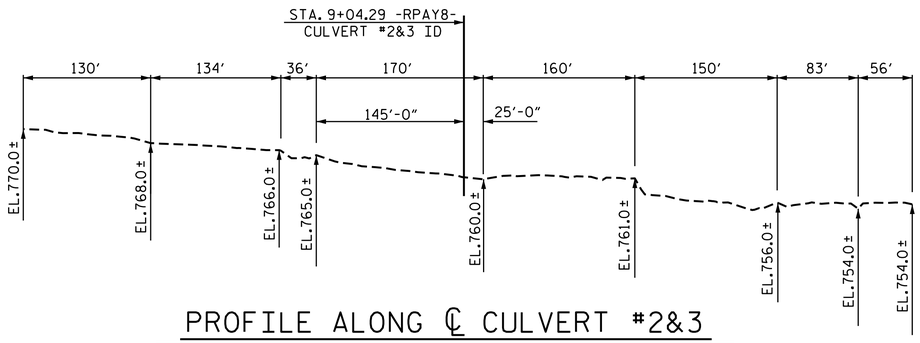
tfang

BM #18: RR SPIKE SET IN 22" OAK, STA. 10+00 -Y8-, N 18° 44' 24.6" W 575.94', EL. 808.40'



FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH



PROFILE ALONG ℄ CULVERT #2&3

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

CULVERT #2&3

GRADE DATA

GRADE POINT ELEVATION @ STA. 9+04.29 -RPAY8-	= 786.82'
BED ELEVATION @ STA. 9+04.29 -RPAY8-	= 757.0'
ROADWAY FILL SLOPES	= 2:1

BARREL 1 - CULVERT #2

HYDRAULIC DATA

DESIGN DISCHARGE	= 390 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YRS.
DESIGN HIGH WATER ELEVATION	= 771.70
DRAINAGE AREA	= 0.38 SQ. MI.
BASE DISCHARGE (Q100)	= 410 CFS
BASE HIGH WATER ELEVATION	= 771.88

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= >470+ CFS
FREQUENCY OF OVERTOPPING FLOOD	= >500+ YRS.
OVERTOPPING FLOOD ELEVATION	= 777.83

GRADE DATA

GRADE POINT ELEVATION @ STA. 1+26.46 -SPBY8-	= 778.54'
BED ELEVATION @ STA. 1+26.46 -SPBY8-	= 765.14'
ROADWAY FILL SLOPES	= 4:1

BARREL 2 - CULVERT #3

HYDRAULIC DATA

DESIGN DISCHARGE	= 712 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YRS.
DESIGN HIGH WATER ELEVATION	= 772.00
DRAINAGE AREA	= 1.12 SQ. MI.
BASE DISCHARGE (Q100)	= 902 CFS
BASE HIGH WATER ELEVATION	= 773.64

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1100 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 100+ YRS.
OVERTOPPING FLOOD ELEVATION	= 777.39

GRADE DATA

GRADE POINT ELEVATION @ STA. 2+22.93 -SPCY8-	= 777.95'
BED ELEVATION @ STA. 2+22.93 -SPCY8-	= 762.42'
ROADWAY FILL SLOPES	= 2:1

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
PHASE C2&3-P1	2,014.1	C.Y.
PHASE C2&3Y-P1	81.1	C.Y.
TOTAL	2,095.2	C.Y.
REINFORCING STEEL		
PHASE C2&3-P1	203,135	LBS.
PHASE C2&3Y-P1	13,025	LBS.
TOTAL	216,160	LBS.
FOUNDATION COND. MATERIAL		
PHASE C2&3-P1	1,300	TONS
PHASE C2&3Y-P1	87	TONS
TOTAL	1,387	TONS
CULVERT EXCAVATION (TOTAL)	LUMP SUM	

NOTES

F.A. PROJECT NO. NHF-0708(53)

ASSUMED LIVE LOAD ----------HL-93 OR ALTERNATE LOADING.

DESIGN FILL MAX./MIN. ------------ 25'/8'

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 FOOTING AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF THE WALLS, AND WING FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALL.

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.

STEEL IN THE BOTTOM SLAB MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

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.

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.

ALL PIPES THROUGH THE SIDEWALL OF THE CULVERT SHALL BE LOCATED BY THE ENGINEER. THE REINFORCING STEEL SHALL BE FIELD BENT AS NECESSARY TO CLEAR PIPE.

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

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT AT WING 2 AND AT THE JOINT BETWEEN WING 1 AND RETAINING WALL #18.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.

DETAILED DRAWINGS FOR FALSEWORK AND FORMS FOR CONSTRUCTION OF C2&3-P1A SHALL BE SUBMITTED. SEE SHEET SN.

RETAINING WALL #18 CONSTRUCTION SEQUENCE

STEP 1: RETAINING WALL #18 FROM STA. 6+35.81 -RPAY8- (OFFSET 77.76' RT.) TO STA. 6+26.35 -RPAY8- (OFFSET 73.0' RT.) SHALL BE CONSTRUCTED DURING PHASE I.

STEP 2: RETAINING WALL #18 FROM STA. 6+26.35 -RPAY8- (OFFSET 73.0' RT.) TO STA. 5+73.18 -RPAY8- (OFFSET 86.09' RT.) SHALL BE CONSTRUCTED DURING PHASE IV AT A TIME WHEN TEMPORARY CHANNEL #1 IS NO LONGER NEEDED AND HAS BEEN REMOVED.

CULVERT #2&3 IS A COMBINATION OF CULVERTS #2 & #3 FROM TWO SINGLE BARRELS TO ONE DOUBLE BARREL

PROJECT NO. U-2524D

GUILFORD COUNTY

STATION: 9+04.29 -RPAY8-

SHEET 1 OF 9 STR. #1223

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING-HSIUNG FANG

DocuSigned by: Ting Fang 8/16/2016 E72088400977435...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CULVERT #2&3 DOUBLE 10' X 7' RCBC C2&3-P1 & C2&3Y-P1 18°-16'-20" SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-14
1			3			TOTAL SHEETS
2			4			34

CUL #2&3

ADDED NOV. 1, 1990

ASSEMBLED BY : E.I. OMILE	DATE : 4/14	SPECIAL	
CHECKED BY : T. H. FANG	DATE : 6/6/16		
DRAWN BY : R.W. WRIGHT	DATE : JULY, 1990	STANDARD	
CHECKED BY : D.A. GLADDEN	DATE : JULY, 1990		