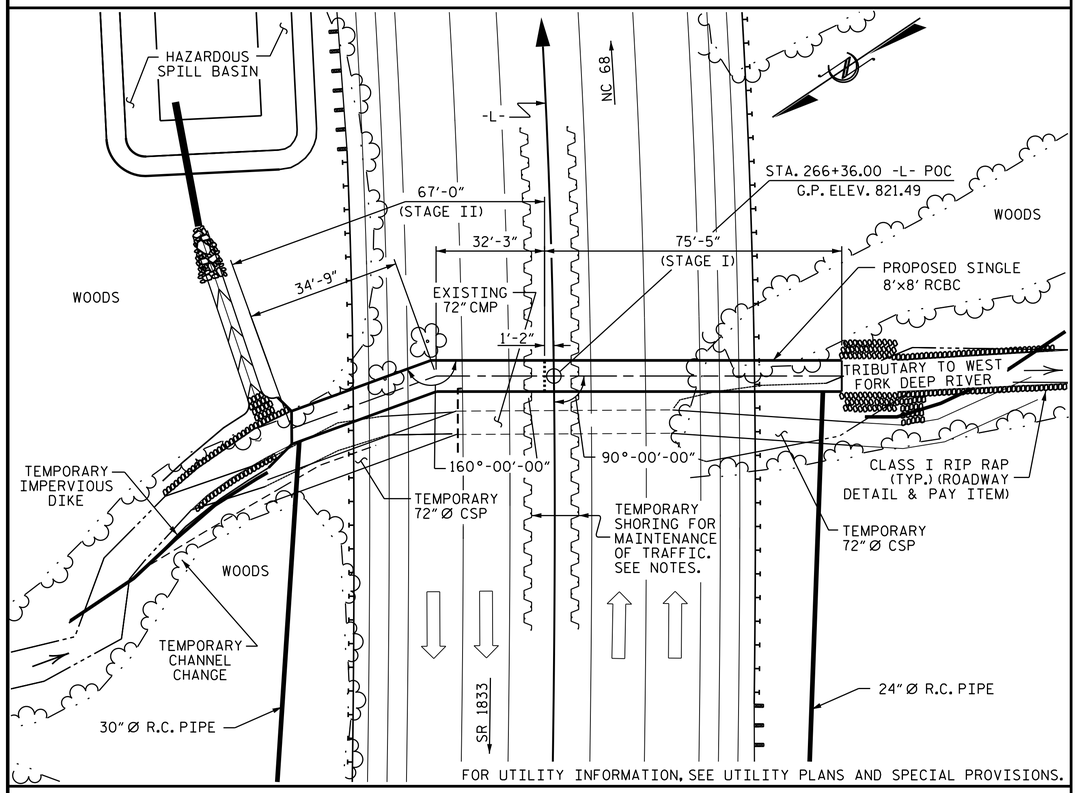
F. A. PROJECT NO. STP-1820(5)

BM #16: NAIL IN ROOT OF 15 INCH PIN OAK, 158' LT OF STA. 277+57.32 -L-, EL. 158.07' LT. EL. 847.86'



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE	=	670 CFS
FREQUENCY OF DESIGN FLOOD	=	50 YRS.
DESIGN HIGH WATER ELEVATION	=	816.21
DRAINAGE AREA	=	0.63 SQ. MI.
BASE DISCHARGE (Q100)	=	770 CFS
BASE HIGH WATER ELEVATION	=	817.75

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	920 CFS
FREQUENCY OF OVERTOPPING FLOOD	=	100 + YRS.
OVERTOPPING FLOOD ELEVATION	=	820.95

ROADWAY DATA

GRADE POINT EL. STA. 266+36.00 -L-	=	821.49
BED EL. STA. 266+36.00 -L-	=	805.24
ROADWAY SLOPES	=	2:1

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
STAGE I	75.6	C.Y.
STAGE II	71.1	C.Y.
TOTAL	146.7	C.Y.
REINFORCING STEEL		
STAGE I	11,311	LBS.
STAGE II	9,485	LBS.
TOTAL	20,796	LBS.
CULVERT EXCAVATION		LUMP SUM
FOUNDATION COND. MAT'L		
STAGE I	61.4	TONS
STAGE II	44.1	TONS
TOTAL	104.5	TONS

NOTES:

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

DESIGN FILL ---------- 10.06'

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

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.

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

CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:

1. STAGE I WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
2. THE REMAINING PORTIONS OF STAGE I WALLS FOLLOWED BY THE OUTLET WINGS FULL HEIGHT, ROOF SLAB, AND HEADWALL.
3. STAGE II WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
4. THE REMAINING PORTIONS OF STAGE II WALLS FOLLOWED BY THE WINGS FULL HEIGHT, 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.

AT THE CONTRACTORS OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF 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.

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 SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL 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.

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 30" DIA. AND 24" DIA. 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.

THE CONTRACTOR SHALL FILL THE PROPOSED CULVERT WITH NATURAL BED MATERIAL TO A DEPTH OF 1 FOOT. EXISTING BED MATERIAL SHALL BE STOCKPILED FOR USE IN THE PROPOSED CULVERT AS DIRECTED BY THE ENGINEER. THE BED MATERIAL MAY BE SUPPLEMENTED WITH CLASS B RIP RAP IF NEEDED. PAYMENT SHALL BE INCLUDED IN THE LUMP SUM PAY ITEM FOR CULVERT EXCAVATION.

FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS. FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

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

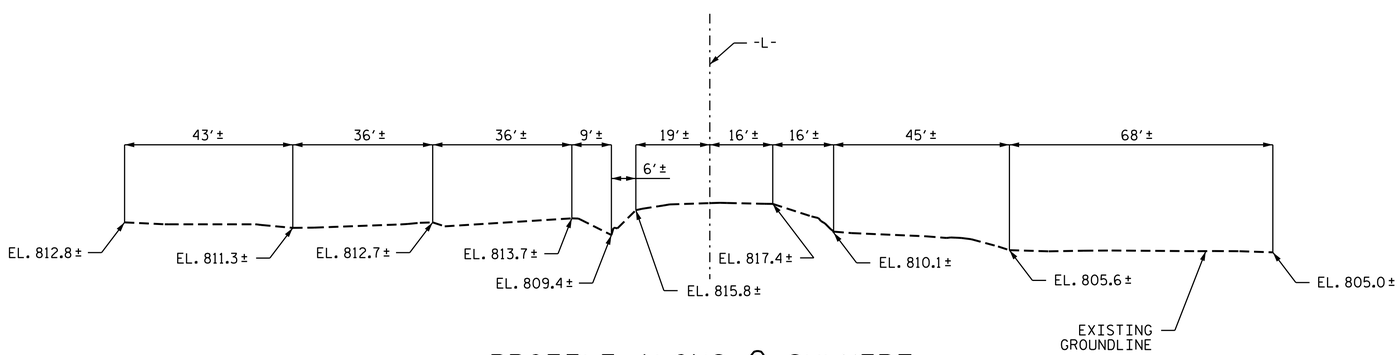
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.



PROFILE ALONG ℄ CULVERT

PROJECT NO. U-3615B
GUILFORD COUNTY
STATION: 266+36.00 -L- POC

SHEET 1 OF 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SINGLE 8 FT. X 8 FT. CONCRETE BOX CULVERT

NORTH CAROLINA PROFESSIONAL SEAL 022506 ENGINEER JESSE McARTHUR BAILEY

DocuSigned by: J. M. Bailey
9026554D9528471...
12/3/2014

NORTH CAROLINA PROFESSIONAL SEAL 16301 ENGINEER TING HSIUNG FANG

DocuSigned by: Ting H. Fang
E720884009774 35...
12/3/2014

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			7

ASSEMBLED BY : T. KIRSCHBAUM DATE : 5/31/13
CHECKED BY : T.H. FANG DATE : 1/3/14
DESIGN ENGINEER OF RECORD : P. K. NEWTON DATE : 1/7/14
DRAWN BY : R.W. WRIGHT DATE : AUG. 1989
CHECKED BY : A.R. BISSETTE DATE : AUG. 1989

SPECIAL
STANDARD

REVISED 11-13-91 BY E.L.R. CHECKED BY G.R.P.
ADDED 8-22-89

STD. NO. CB11A