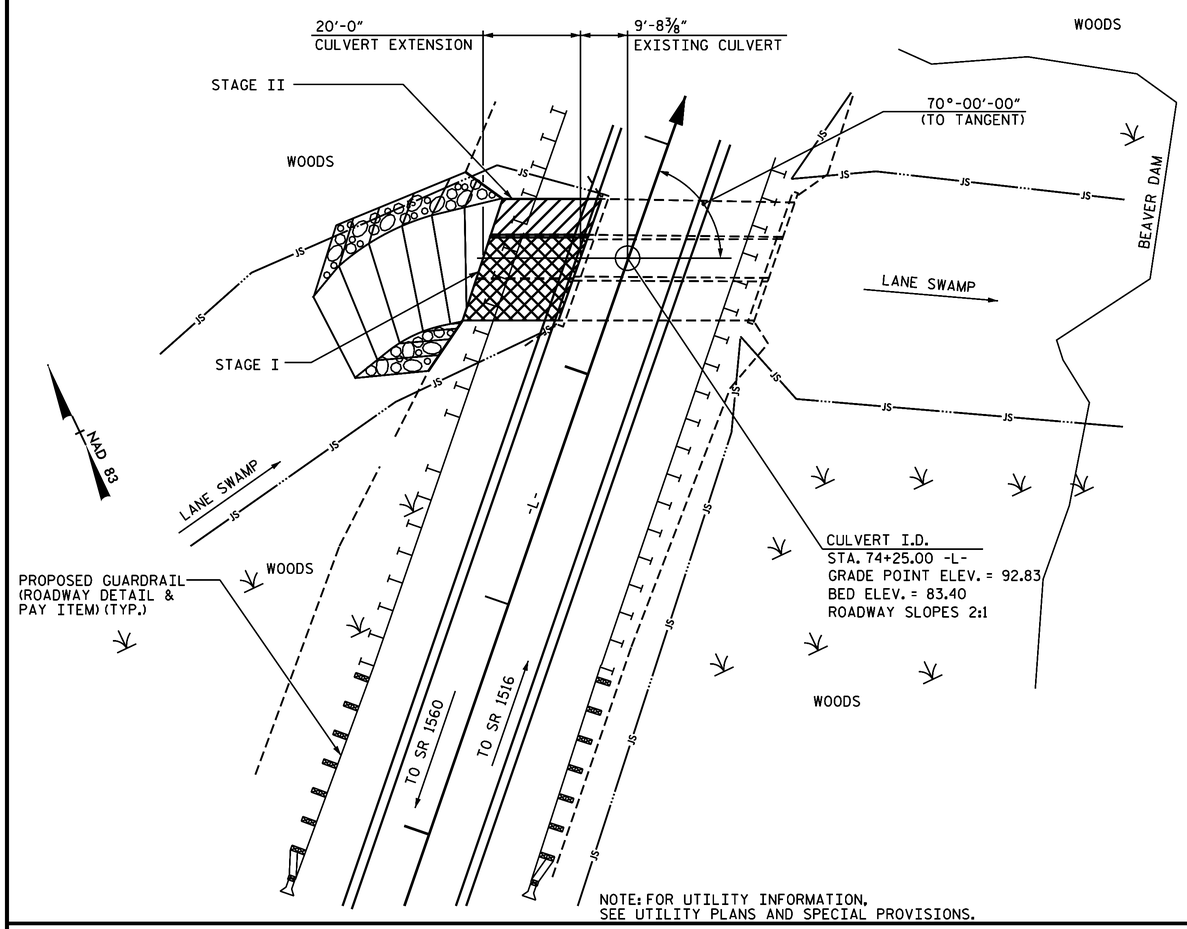
TBM #5, R.R. SPIKE IN BASE OF 21" SWEET GUM TREE, 25' LEFT OF STA. 76+14.00 -L- ELEV. 91.08



NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

F.A. PROJECT NO. BRSTP-0301(25)

NOTES:

ASSUMED LIVE LOAD HL-93 OR ALERNATE LOADING.

DESIGN FILL (LEFT EXTENSION) 3.44'.

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

CONCRETE IN STAGES I & STAGE II TO BE POURED IN THE FOLLOWING ORDER:

1. STAGE I WING FOOTING AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS AS INDICATED IN THE CONSTRUCTION SEQUENCE.

2. THE REMAINING PORTIONS OF THE STAGE I WALLS, WING FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALL.

3. STAGE II WING FOOTING AND FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS AS INDICATED IN THE CONSTRUCTION SEQUENCE.

4. THE REMAINING PORTIONS OF THE STAGE II WALLS, WING FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALL.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE 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 THE WING SHEETS.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF THE EXTERIOR WALL AND BOTH FACES OF THE INTERIOR WALLS ABOVE THE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL 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.

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSIONS. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSION SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE STRENGTH HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSE WORK AND FORMWORK, SEE SPECIAL PROVISIONS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

DOWELS SHALL BE USED TO CONNECT THE CULVERT EXTENSION TO THE EXISTING CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SN.

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 30 BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

CULVERT IS SUBMERGED. PRIOR TO CONSTRUCTION, CONTACT DIVISION TO HAVE WATER DRAINED, THEN VERIFY ALL DIMENSIONS AND ELEVATIONS.

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.

FOR CONSTRUCTION SEQUENCE DIAGRAM, SEE SHEET 7 OF 10.

STAGE I STRUCTURE QUANTITIES

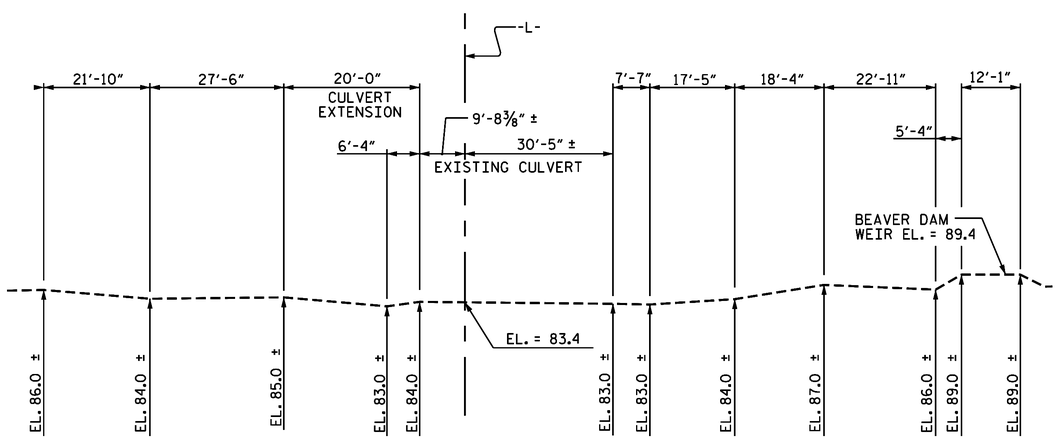
CLASS A CONCRETE	
2 BARRELS & ROOF	29.6 CU.YDS.
END CURTAIN WALL	1.2 CU.YDS.
1 HEADWALL & 2 EDGE BEAMS	2.4 CU.YDS.
1 WING	4.9 CU.YDS.
STAGE I CONCRETE	38.1 CU.YDS.
REINFORCING STEEL	
2 BARRELS & ROOF	4,750 LBS.
1 WING	317 LBS.
STAGE I REINFORCING STEEL	5,067 LBS.
FOUNDATION COND. MAT'L.	32 TONS
CULVERT EXCAVATION	LUMP SUM

STAGE II STRUCTURE QUANTITIES

CLASS A CONCRETE	
1 BARREL & ROOF	11.3 CU.YDS.
END CURTAIN WALL	0.5 CU.YDS.
1 HEADWALL & 2 EDGE BEAMS	1.0 CU.YDS.
1 WING	3.1 CU.YDS.
STAGE II CONCRETE	15.9 CU.YDS.
REINFORCING STEEL	
1 BARREL & ROOF	1,911 LBS.
1 WING	204 LBS.
STAGE II REINFORCING STEEL	2,115 LBS.
FOUNDATION COND. MAT'L.	15 TONS
CULVERT EXCAVATION	LUMP SUM

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
3 BARRELS & ROOF	40.9 CU.YDS.
END CURTAIN WALL	1.7 CU.YDS.
1 HEADWALL & 2 EDGE BEAMS	3.4 CU.YDS.
2 WINGS	8.0 CU.YDS.
TOTAL CLASS A CONCRETE	54.0 CU.YDS.
REINFORCING STEEL	
3 BARRELS & ROOF	6,661 LBS.
2 WINGS	521 LBS.
TOTAL REINFORCING STEEL	7,182 LBS.
FOUNDATION COND. MAT'L.	47 TONS
CULVERT EXCAVATION	LUMP SUM



PROFILE ALONG ℄ CULVERT

HYDRAULIC DATA

DESIGN DISCHARGE	=	750 C.F.S.
FREQUENCY OF DESIGN FLOOD	=	50 YEARS
DESIGN HIGH WATER ELEVATION	=	91.5'
DRAINAGE AREA	=	4.37 SQ. MI.
BASE DISCHARGE (Q100)	=	900 C.F.S.
BASE HIGH WATER ELEVATION	=	92.02'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	1,125 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	=	200 YRS ±
OVERTOPPING FLOOD ELEVATION	=	92.9'

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

NORTH CAROLINA PROFESSIONAL SEAL 025516 ENGINEER EMILY E. MURRAY 3/9/2015
DocuSigned by: Emily Murray CAEB97AEDC5B4E0...

NORTH CAROLINA PROFESSIONAL SEAL 14045 ENGINEER TIMOTHY L. COGGINS 3/9/2015
DocuSigned by: Tim Coggins DEFD4A8D48FA47B...

PROJECT NO. B-5124
NASH COUNTY
STATION: 74+25.00 -L-

SHEET 1 OF 10 BRIDGE NO. C-161

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CULVERT EXTENSION
TRIPLE 8'-0" X 6'-0"
CONCRETE BOX CULVERT

ON US 301 AT LANE SWAMP
BETWEEN SR 1560 AND SR 1516

70° SKEW

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		C-11
1			3				TOTAL SHEETS
2			4				20

STR. #5

DRAWN BY : M. D. PISO DATE : 06-20-14
CHECKED BY : K. P. SEDAI DATE : 10-12-14
DESIGN ENGINEER OF RECORD: K. P. SEDAI DATE : 01-08-15

09-MAR-2015 09:30
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pruffin