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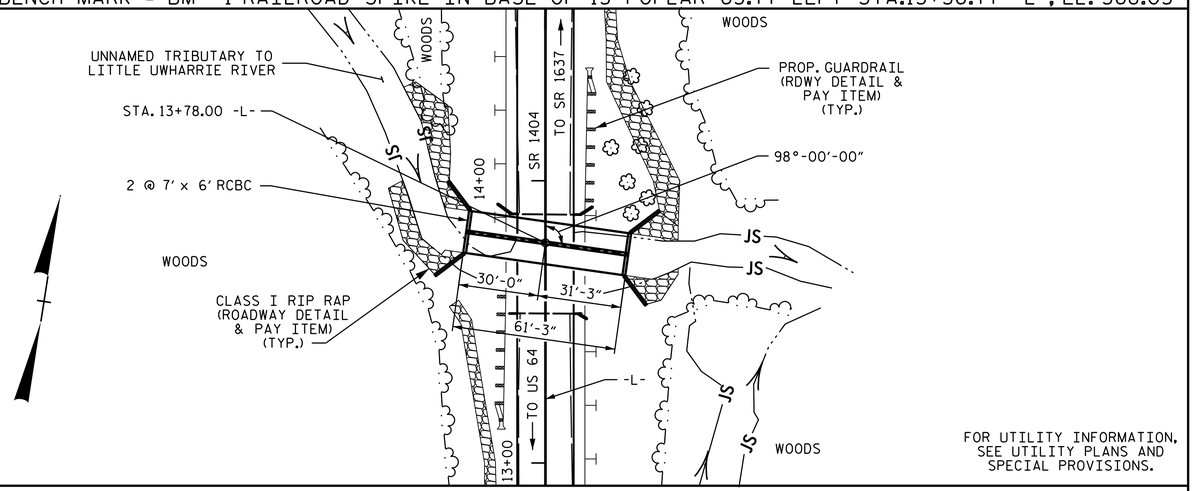
kalford

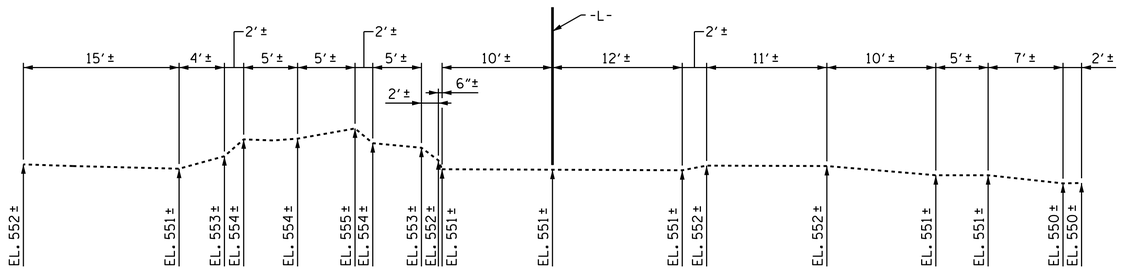
F. A. PROJECT NO. : BRZ-1404 (12)

BENCH MARK = BM #1 RAILROAD SPIKE IN BASE OF 15" POPLAR 63.77' LEFT STA.13+36.77 -L-, EL. 568.05



FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH



PROFILE ALONG ℄ CULVERT

NOTES

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

DESIGN FILL----------7.58'.

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.

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 WALL ABOVE LOWER CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTHS 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 DETAIL DRAWINGS FOR A PRECAST REINFORCED 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 CULVERT, SEE SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, 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.

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.

THE EXISTING STRUCTURE CONSISTING OF A TIMBER DECK WITH 1" AWS ON TIMBER JOISTS (1 SPAN @ 18'-1" & 1 SPAN @ 17'-8"), ON TIMBER CAPS WITH TIMBER PILES AND TIMBER BULKHEADS, WITH A CLEAR ROADWAY WIDTH OF 19'-1" AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED FOR LOAD LIMIT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVAL OF THE BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

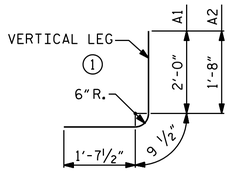
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

BACKFILL BOTH BARRELS OF RCBC WITH NATIVE MATERIAL TO A DEPTH OF 1 FOOT. NATIVE MATERIAL SHALL CONSIST OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	246	#4	1	4'-5"	726
A2	246	#4	1	4'-1"	671
A100	123	#4	STR	15'-7"	1280
A200	123	#4	STR	15'-7"	1280
A300	123	#4	STR	15'-7"	1280
A400	123	#4	STR	15'-7"	1280
B1	123	#4	STR	6'-11"	568
B2	246	#4	STR	5'-4"	876
B3	123	#4	STR	6'-11"	568
C1	174	#4	STR	21'-9"	2528
D1	18	#6	STR	1'-4"	36
G1	8	#5	STR	15'-8"	131
REINFORCING STEEL = 11224 LBS					

BAR TYPE



BAR DIMENSIONS ARE OUT TO OUT

HYDRAULIC DATA

DESIGN DISCHARGE	= 340 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YEARS
DESIGN HIGH WATER ELEVATION	= 554.9
DRAINAGE AREA	= 0.69 SQ. MI.
BASE DISCHARGE (Q100)	= 550 CFS
BASE HIGH WATER ELEVATION	= 556.5

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1375 CFS.
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YRS.
OVERTOPPING FLOOD ELEVATION	= 562.8 *

ROADWAY DATA

G.P. EL. @ STA. 13+78.00 -L-	= 562.94
BED EL. @ STA. 13+78.00 -L-	= 549.41
ROADWAY SLOPES	= 2:1

* OVERTOPPING OCCURS AT SAG LOCATION STA.14+35.00 -L-. OVERTOPPING ELEVATION REPRESENTS HIGH SIDE OF SUPER ELEVATION.

SPLICE LENGTHS CHART

BAR	SIZE	SPLICE LENGTH
A200	4	1'-5''
A400	4	1'-5"
B1	4	1'-5''
B3	4	1'-5''
C1	4	1'-11''

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE

BARREL @	1.292 CY/FT	79.1	C.Y.
SILLS		1.6	C.Y.
WINGS ETC.		17.0	C.Y.
TOTAL		97.7	C.Y.

REINFORCING STEEL

BARREL & SILLS	11224	LBS.
WINGS ETC.	793	LBS.
TOTAL	12017	LBS.

FOUNDATION COND. MAT'L	=	69 TONS
CULVERT EXCAVATION	=	LUMP SUM
REMOVAL OF EXIST. STR.	=	LUMP SUM
ASBESTOS ASSESSMENT	=	LUMP SUM

PROJECT NO. B-5128

RANDOLPH COUNTY

STATION: 13+78.00 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 58

NORTH CAROLINA PROFESSIONAL SEAL 022506 ENGINEER JESSE McARTHUR BAILEY

DocuSigned by: J. M. Bailey 90265540952BA71...

1/28/2016

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER KRISTY W. ALFORD

DocuSigned by: Kristy W. Alford F2458389308F40E...

1/28/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD DOUBLE 7 FT. X 6 FT. CONCRETE BOX CULVERT 98° SKEW

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : William T Parker DATE : 10/2014
CHECKED BY : T.L. AVERETTE DATE : 1/20/15

DRAWN BY : R.W. WRIGHT DATE : JULY, 1990
CHECKED BY : D.A. GLADDEN DATE : JULY, 1990

SPECIAL
STANDARD

ADDED NOV. 1, 1990

STD. NO. CB12A