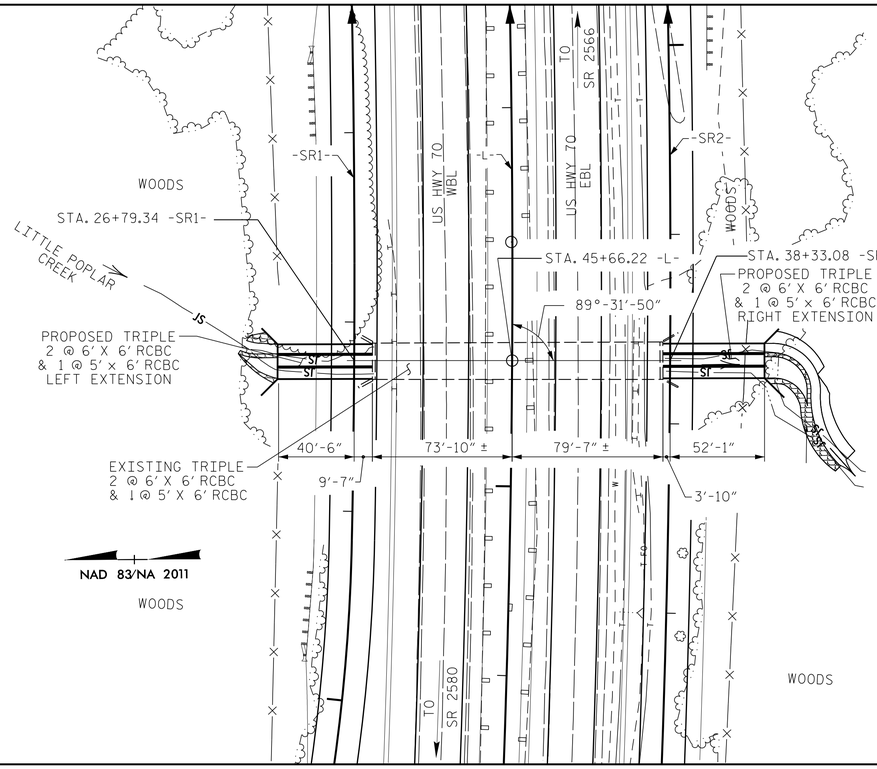
Bm #3, BENCH TIE NAIL SET IN 18" PINE, STA. 48+76.43 -L-, 226.36 RT., EL. 258.83 N670403, E2180067



ROADWAY DATA

GRADE POINT ELEV. @ STA 45+66.22 -L-	= 248.13
BED ELEV. @ STATION 45+66.22 -L-	= 233.05
ROADWAY SLOPES	= 3:1

HYDRAULIC DATA

DESIGN DISCHARGE	= 480 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 238.3
DRAINAGE AREA	= 1.73 SQ. MI.
BASE DISCHARGE (Q100)	= 540 CFS
BASE HIGH WATER ELEVATION	= 238.7

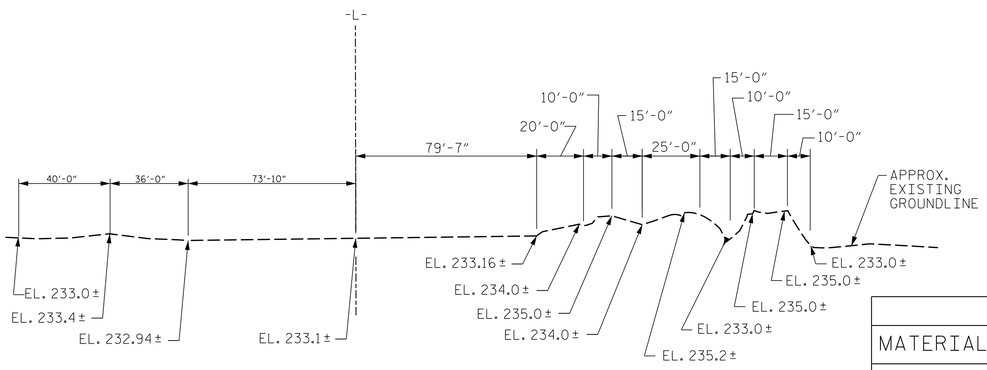
OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 710+ CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YEAR
OVERTOPPING FLOOD ELEVATION	= 251.7

OVERTOPPING OCCURS AT THE TOP OF THE BARRIER RAIL AT THE PROPOSED SAG STA. 44+18.99 -L-

LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.



PROFILE ALONG ℄ CULVERT

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

TOTAL BILL OF MATERIAL					
MATERIAL	ELEMENT	STAGE I LEFT EXT.	STAGE I RIGHT EXT.	STAGE II LEFT EXT.	STAGE II RIGHT EXT.
CLASS A CONCRETE (CU. YDS.)	BARREL	28.2	31.5	61.5	68.7
	HEADWALLS	----	----	0.9	0.9
	CURTAIN WALLS	0.4	0.4	0.7	0.7
	WINGS	5.9	5.9	5.9	5.9
	TOTAL	34.5	37.8	69.0	76.2
			TOTAL	217.5	
REINFORCING STEEL (LBS.)	BARREL	4547	5073	8818	9841
	WINGS	328	328	328	328
	TOTAL	4875	5401	9146	10169
			TOTAL	29591	
FOUNDATION COND. MAT'L (TONS)	———	35	40	50	60
			TOTAL	185	
CULVERT EXCAVATION		LUMP SUM			

F.A. PROJECT NO. HISP-0070(163)

NOTES

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

DESIGN FILL TO BOTTOM OF TOP SLAB ----- 10.0' (MAX.) AND 7.0' (MIN.).

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

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

CONCRETE IN THE CULVERT TO BE POURED IN THE FOLLOWING ORDER:

STAGE I:

1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS.

2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT.

STAGE II

1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF VERTICAL WALLS.

2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY THE ENTIRE 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.

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 EXISTING STRUCTURE CONSISTING OF A 2 @ 6'x6' AND 1 @ 5'x6' REINFORCED CONCRETE BOX CULVERT 153'-5" LONG ALONG THE CENTERLINE OF CULVERT SHALL BE RETAINED AND EXTENDED. THE EXISTING CULVERT IS PRESENTLY NOT POSTED FOR LOAD LIMIT.

FOR CULVERT DIVERSIONS 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 LENGHT OF EXPANSION JOINT.

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.

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.

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

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

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 SAMPLE BARS SHOULD COME FROM STEEL ACTUALLY USED IN THE PROJECT AND THE SAMPLE BARS SHOULD BE REPLACED BY SPLICED BARS AS SPECIFIED IN THE SAMPLE BAR REPLACEMENT CHART. PAYMENT FOR THE SAMPLE BARS AND REPLACEMENT REINFORCING STEEL SHALL BE BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

SAMPLE BAR REPLACMENT	
SIZE	LENGTH
#3	6'-2"
#4	7'-4"
#5	8'-6"
#6	9'-8"
#7	10'-10"
#8	12'-0"
#9	13'-2"
#10	14'-6"
#11	15'-10"

NOTE: SAMPLE BAR REPLACEMENT LENGTHS BASED ON 30"(SAMPLE LENGTH) PLUS TWO SPLICE LENGTHS AND fy = 60 ksi.

PROJECT NO. W-5600

JOHNSTON COUNTY

STATION: 45+66.22 -L-

SHEET 1 OF 10 BRIDGE NO. E2076

DRAWN BY : B.C. HUNT DATE : 4-18

CHECKED BY : J.A. DILWORTH DATE : 5-18

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEER OF RECORD: 3/25/2019

NORTH CAROLINA PROFESSIONAL SEAL 14091 ENGINEER BUCK CHARLES HUNT

Buck Charles Hunt

ETHERILL ENGINEERING

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Raleigh, N.C. 27606
Bus: 919 851 8077
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LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRIPLE BARREL 2 @ 6 FT. X 6 FT. 1 @ 5 FT. X 6 FT. CONCRETE BOX CULVERT LEFT & RIGHT EXTENSIONS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C1-1
1			3			TOTAL SHEETS
2			4			10

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