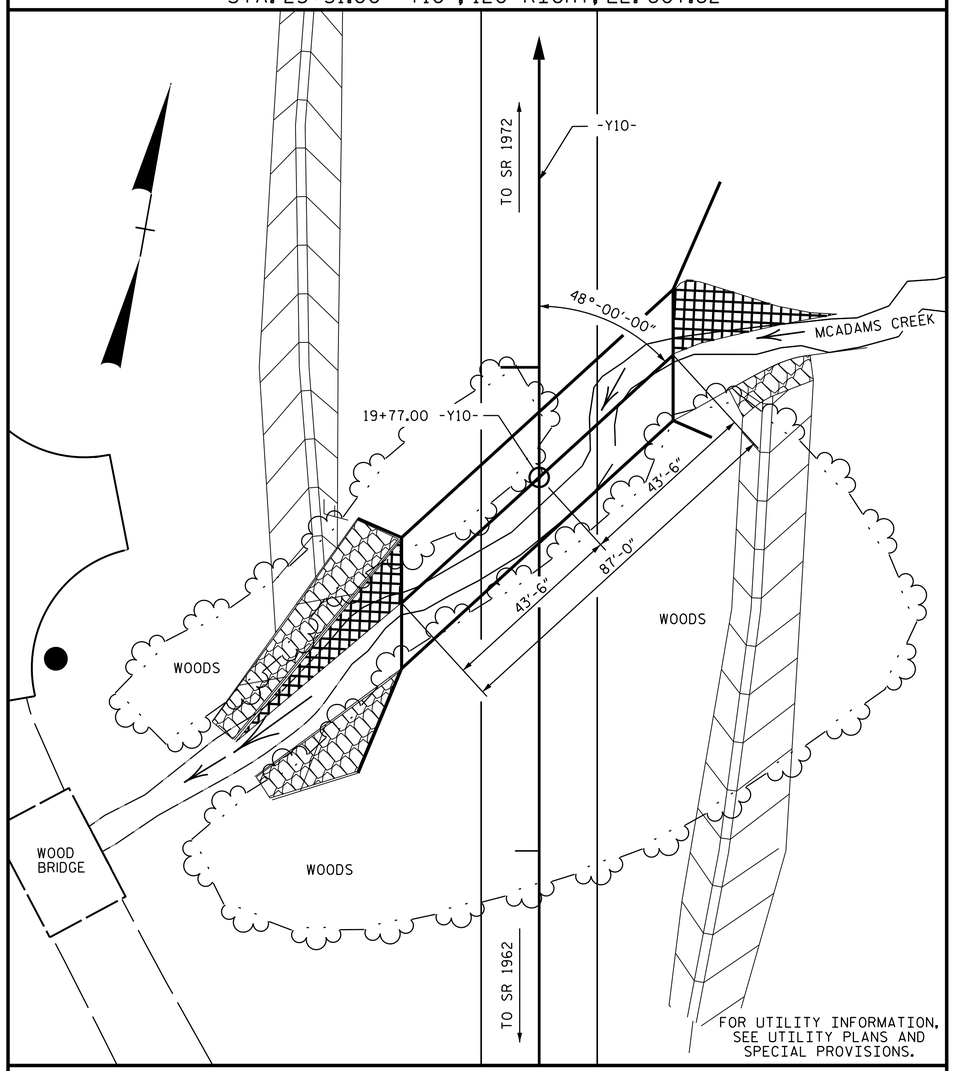
F.A. PROJECT NO.: STP-0119(9)

BENCHMARK #22, RAILROAD SPIKE IN BASE OF 18" SWEETGUM,
STA. 23+31.00 -Y10-, 120' RIGHT, EL. 607.62



LOCATION SKETCH

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
BARREL @ 2.061 CY/FT	179.3	C.Y.
SILLS	1.5	C.Y.
WING ETC.	35.4	C.Y.
TOTAL	216.2	C.Y.
REINFORCING STEEL		
BARREL	23735	LBS.
WINGS ETC.	1876	LBS.
TOTAL	25611	LBS.
FOUNDATION CONDITIONING MATERIAL	160	TONS
CULVERT EXCAVATION	LUMP SUM	
REMOVAL OF EXISTING STRUCTURE	LUMP SUM	

HYDRAULIC DATA

DESIGN DISCHARGE	= 800 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YRS.
DESIGN HIGH WATER ELEVATION	= 605.4
DRAINAGE AREA	= 0.94 SQ. MI.
BASE DISCHARGE (Q100)	= 1220 CFS
BASE HIGH WATER ELEVATION	= 607.6

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 1720 + CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500 + YRS.
OVERTOPPING FLOOD ELEVATION	= 611.0 *

GRADE DATA

GRADE POINT ELEVATION @ STA. 19+77.00 -Y10-	= 612.02'
BED ELEVATION @ STA. 19+77.00 -Y10-	= 597.74'
ROADWAY FILL SLOPES	= 2:1

*OVERTOPS PROP. ROADWAY @ STA. 18+40 -Y10-

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

NOTES

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

MINIMUM DESIGN FILL---------- 5.94'

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.

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.

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.

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

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 CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING 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.

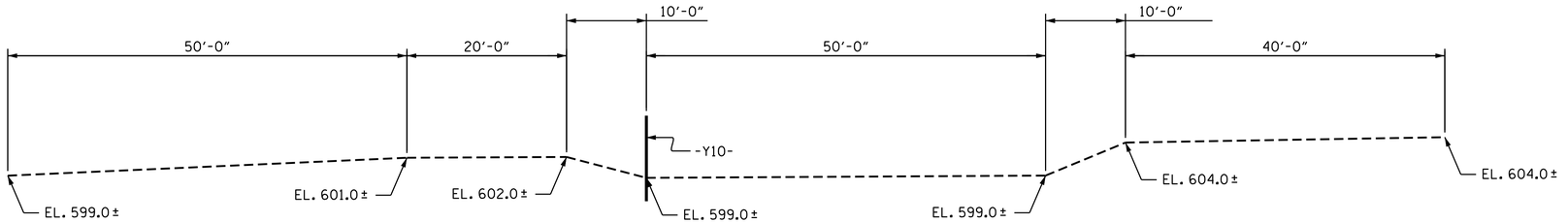
FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

THE EXISTING WOODEN BRIDGE LOCATED 125' DOWNSTREAM FROM THE PROPOSED STRUCTURE SHALL BE REMOVED.

REMOVAL OF THE EXISTING 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.

PROJECT NO. U-3109A
ALAMANCE COUNTY
STATION: 19+77.00 -Y10-

SHEET 1 OF 5 CULVERT #438



PROFILE ALONG ℄ CULVERT

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER KRISTY W. ALFORD
DocuSigned by: F24583893OBF40E...
3/16/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD
DOUBLE 10 FT.X 8 FT.
CONCRETE BOX CULVERT

48° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C3-1
1			3			TOTAL SHEETS
2			4			5

ASSEMBLED BY : A.C. OUTLAW	DATE : 4/25/14	SPECIAL
CHECKED BY : W. F. PARKER	DATE : 5/14	
DRAWN BY : C.O. CUEVAS	DATE : 8-28-90	STANDARD
CHECKED BY : M.A.J.	DATE : 10-2-90	

NOV. 1990

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STD. NO. CB42A