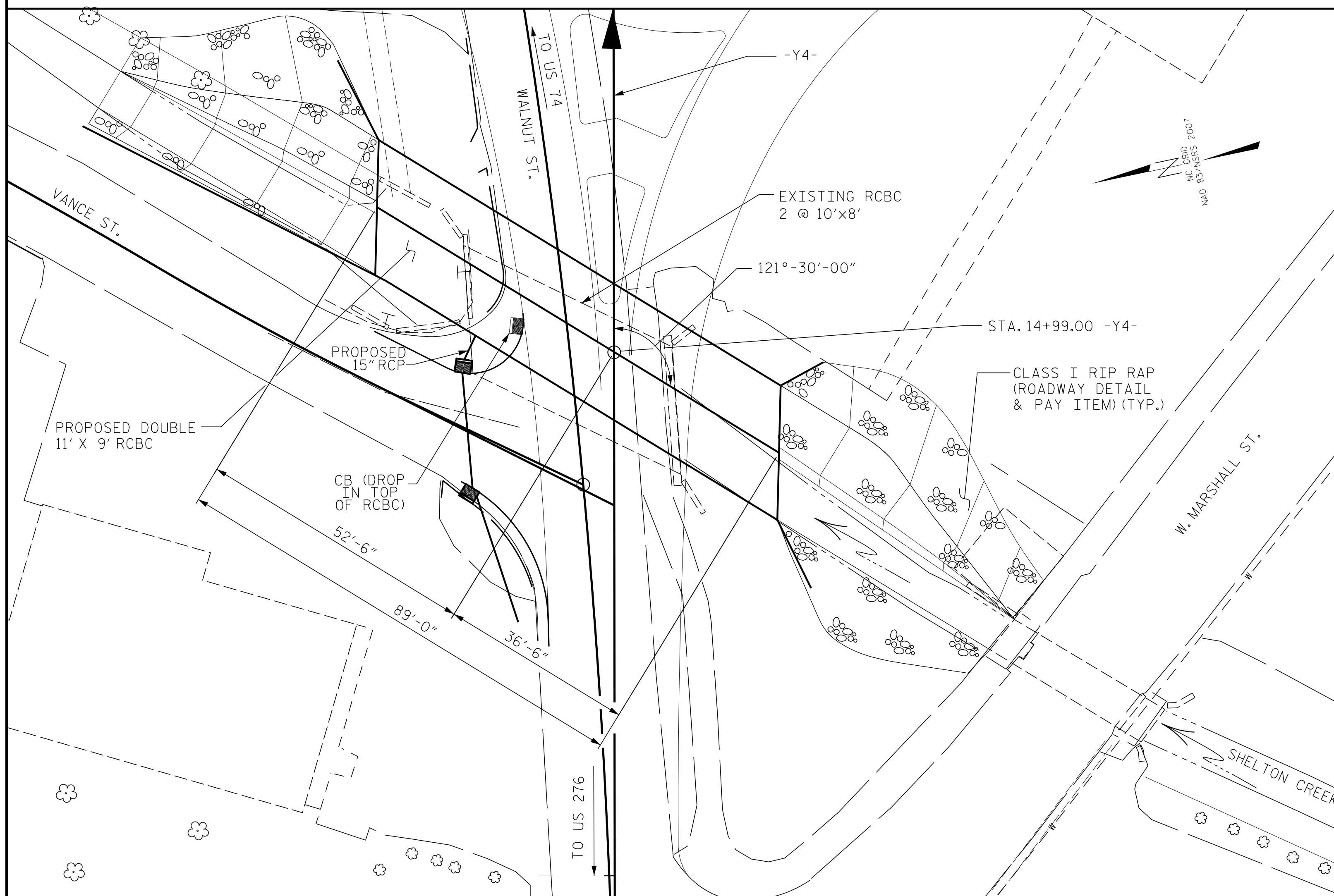


BM4: BENCHTIE NAIL IN 24" LEELAND CYPRUS; STA. 9+29.52 -Y5-, 124.88' RT., ELEV. 2613.47; N660405, E815800



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

NOTES
 ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.
 DESIGN FILL TO BOTTOM OF TOP SLAB 2.00' (MIN.) AND 5.19' (MAX)
 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.
 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 LENGTH 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.
 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 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 PROVISIONS.
 THE EXISTING STRUCTURE CONSISTING OF A 10'x8' DOUBLE BARREL REINFORCED CONCRETE BOX CULVERT 43'-6" LONG ALONG CENTERLINE OF CULVERT AND LOCATED AT PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING CULVERT IS PRESENTLY NOT POSTED FOR LOAD LIMIT.
 FOR CHANNEL SUBSTRATE MATERIAL, SEE SPECIAL PROVISIONS.
 FOR HIGH FLOW CHANNEL - PLACEMENT OF NATURAL STREAM BED MATERIAL, SEE SPECIAL PROVISIONS.

ROADWAY DATA

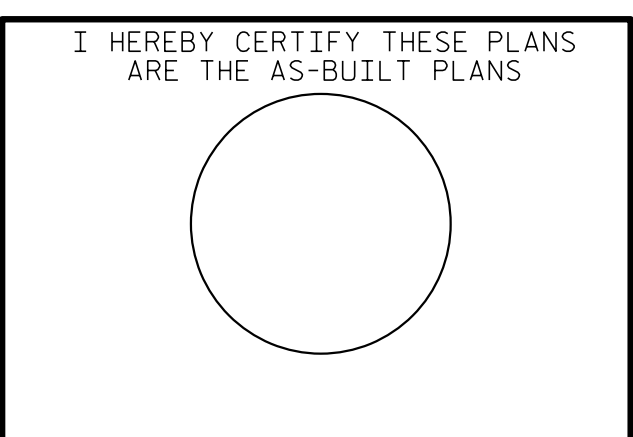
GRADE POINT ELEV. @ STA 14+99.00 -Y4- = 2626.35
 BED ELEV. @ STA 14+99.00 -Y4- = 2614.15
 ROADWAY SLOPES = 2:1

HYDRAULIC DATA

DESIGN DISCHARGE = 1100 CFS
 FREQUENCY OF DESIGN FLOOD = 25 YEAR
 DESIGN HIGH WATER ELEVATION = 2623.0
 DRAINAGE AREA = 1.93 SQ. MI.
 BASE DISCHARGE (Q100) = 1500 CFS
 BASE HIGH WATER ELEVATION = 2624.6

OVERTOPPING FLOOD DATA

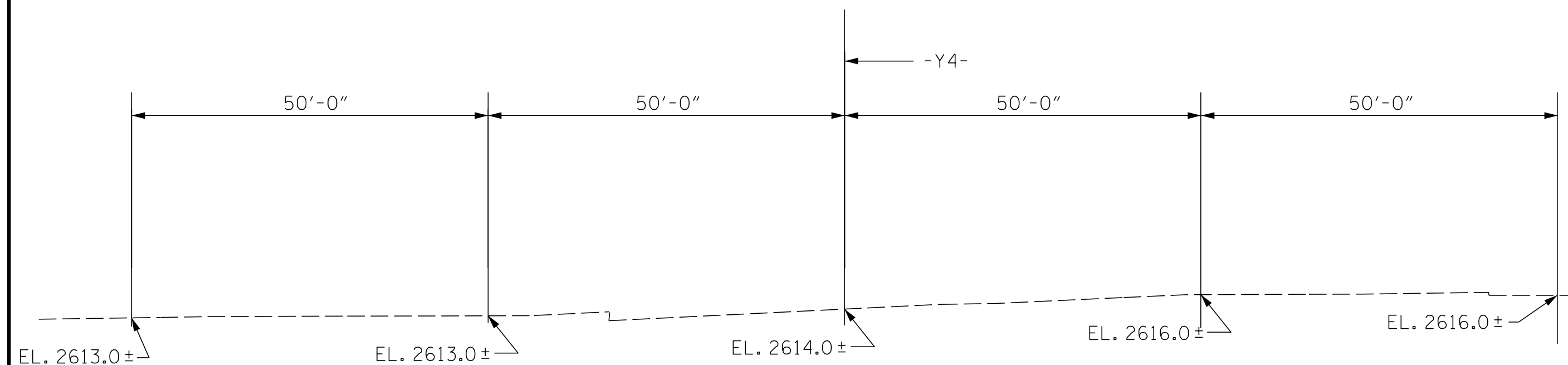
OVERTOPPING DISCHARGE = 1720 CFS
 FREQUENCY OF OVERTOPPING FLOOD = 100+ YEAR
 * OVERTOPPING FLOOD ELEVATION = 2625.5
 OVERTOPPING OCCURS AT * STA. 14+29 -Y4- +/- AT THE ROADWAY CENTERLINE



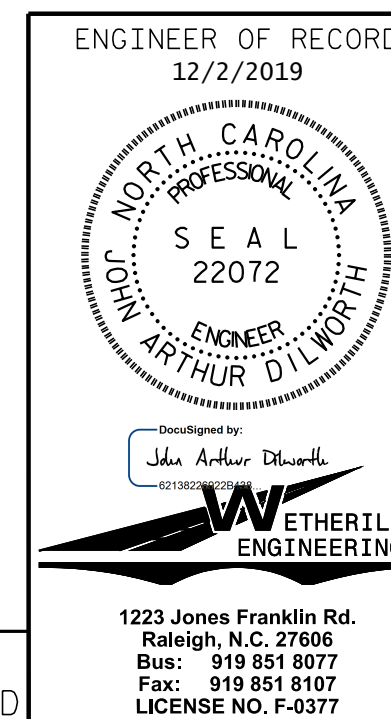
PROJECT NO. U-5888
HAYWOOD COUNTY
 STATION: 14+99.00 -Y4-

SHEET 1 OF 11 REPLACES BRIDGE NO. 460

TOTAL STRUCTURE QUANTITIES	
CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	176 TONS
CLASS A CONCRETE	
BARREL @ 2.897 CY/FT	257.8 C.Y.
WINGS	58.3 C.Y.
HEADWALLS	2.6 C.Y.
STILLS	5.6 C.Y.
END CURTAIN WALLS	2.9 C.Y.
TOTAL	327.2 C.Y.
REINFORCING STEEL	
BARREL	38134 LBS.
WINGS	4218 LBS.
TOTAL	42352 LBS.
REMOVAL OF EXISTING STRUCTURE	LUMP SUM
GALVANIZED RAILS	164.88 LIN. FT.
CHANNEL SUBSTRATE MATERIAL	LUMP SUM



PROFILE ALONG CULVERT



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**BARREL STANDARD
 DOUBLE 11 FT. X 9 FT.
 CONCRETE BOX CULVERT
 121°-30'-00" SKEW**

NOVEMBER 1990		REVISIONS		SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			11
2			4			

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

DRAWN BY: J. PENDERGRAFT DATE: 11-18
 CHECKED BY: J.A. DILWORTH DATE: 1-19

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