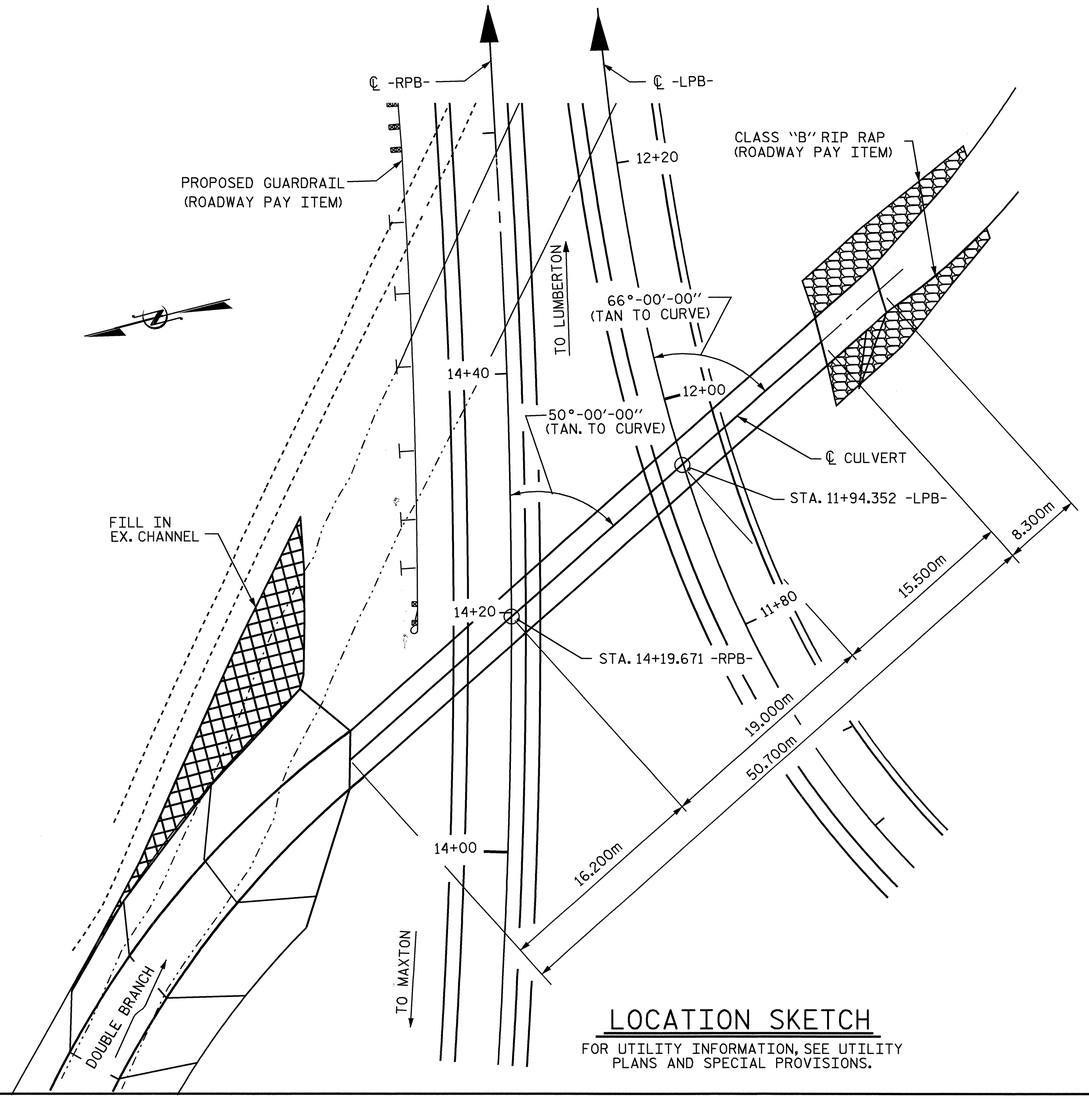
BENCHMARK: BM #5 RR SPIKE IN BASE OF 900mm TWIN OAK, 10.7m RT. OF STA. 10+27 -BY1- , ELV. 48.634m



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

ROADWAY DATA

GRADE POINT ELEV. @ STA. 14+19.671 -RPB- __ 48.860
BED ELEVATON @ STA. 14+19.671 -RPB- _____ 45.280
ROADWAY SLOPES _____ 3:1 (LEFT)
4:1 (RIGHT)

HYDRAULIC DATA

DESIGN DISCHARGE =9.9 m³/s
FREQUENCY DESIGN FLOOD_____=50 YEARS
DESIGN HIGH WATER ELEVATION __=47.610
DRAINAGE AREA_____=6.6 SQ. Km
BASIC DISCHARGE (Q100) _____=12.5 m³/s
BASIC HIGH WATER ELEVATION___=48.070

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 15.3 m³/s
FREQUENCY OF OVERTOPPING FLOOD = 100 (+) YEARS
OVERTOPPING FLOOD ELEVATION = 48.600

NOTES

ASSUMED LIVE LOAD ----------MS18 OR ALTERNATE LOADING.

DESIGN FILL----------2.12m

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

76mm 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 100mm 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 21.0m. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

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.

A 900mm STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

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

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

ALL ELEVATIONS ARE IN METERS.

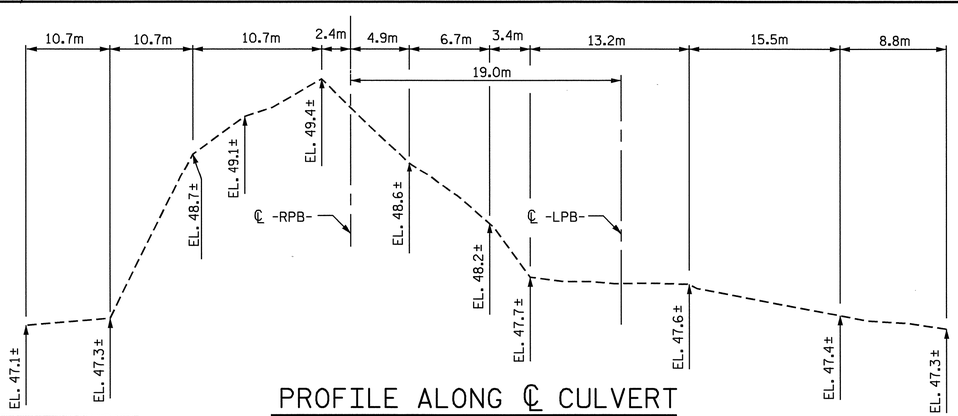
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

TOP OF BOTTOM SLAB IS TO BE BURIED 305mm BELOW STREAM BED.

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 WILL 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.



PROFILE ALONG ℄ CULVERT

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
BARREL & OUTLETWINGS	206.1	m^3
INLET WINGS & ETC.	12.4	m^3
TOTAL	218.5	m^3
REINFORCING STEEL		
BARREL & OUTLET WINGS	24,074	kg
INLET WINGS ETC.	388	kg
TOTAL	24,462	kg
CULVERT EXCAVATION ---------- LUMP SUM		
FOUNDATION COND. MAT'L ---- 217 METRIC TONS		

NORTH CAROLINA PROFESSIONAL SEAL 9804 ENGINEER ROY M. GHOLAMI
8-23-04

NORTH CAROLINA PROFESSIONAL SEAL 21545 ENGINEER STEVEN V. MANCE
08/20/04

ASSEMBLED BY : N. O. TRAN DATE : 2-15-03
CHECKED BY : SWANcePE DATE :08-06-04

w66

PROJECT NO. R-513BA
ROBESON COUNTY
STATION: 14+19.671 -RPB-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

DOUBLE 2.400m X 1.800m CONCRETE BOX CULVERT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-5
1			3			TOTAL SHEETS
2			4			24

STR.#5