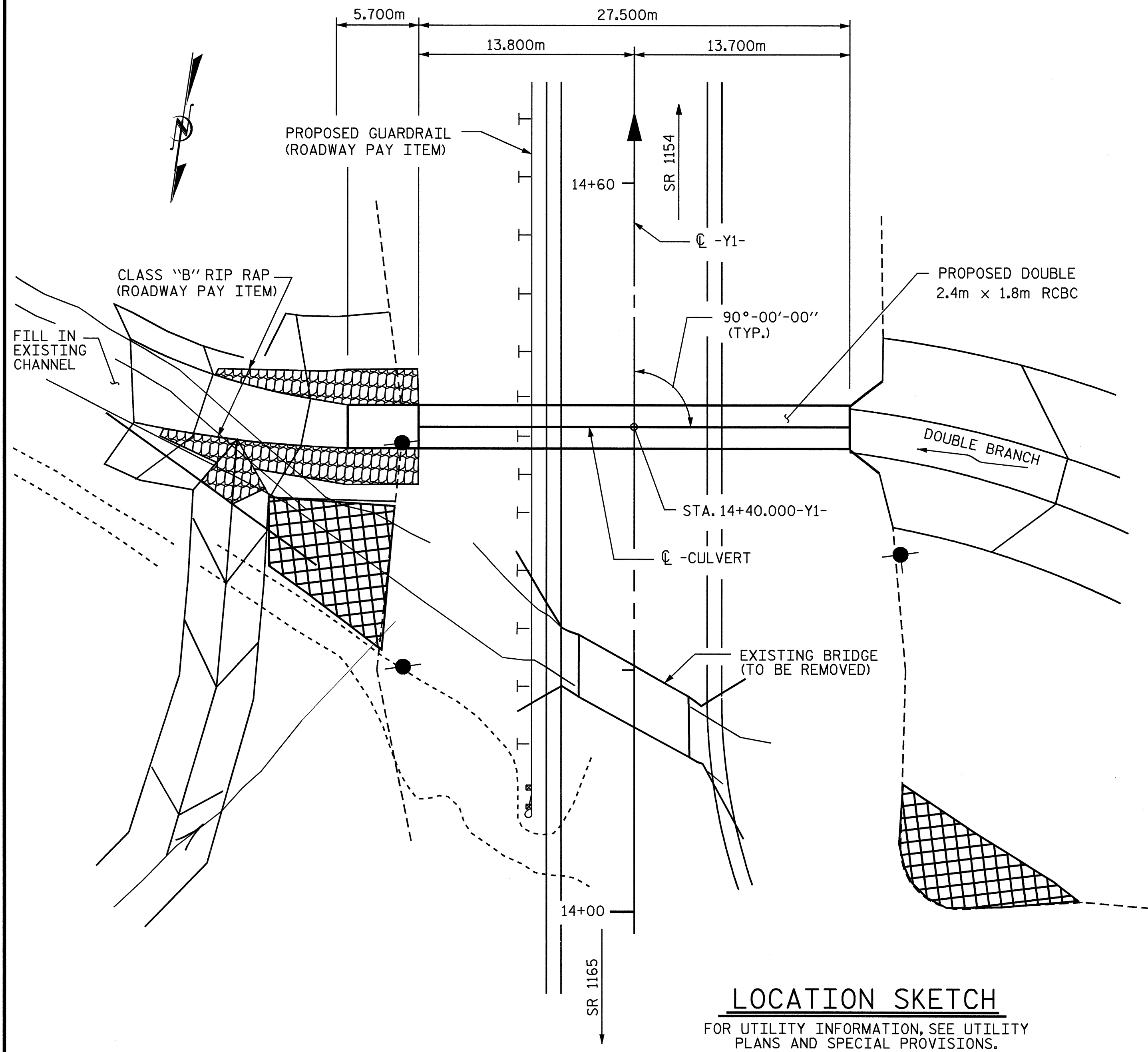


BENCHMARK: RR SPIKE IN BASE OF 900mm TWIN OAK, 30.200m RT. OF STA. 10+27 -BY1- , ELV. 48.634m



**LOCATION SKETCH**

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

**ROADWAY DATA**

GRADE POINT ELEV. @ STA. 14+40.000 -Y1- = 48.940  
BED ELEVATION @ STA. 14+40.000 -RPB- = 45.000  
ROADWAY SLOPES = 3 : 1

**HYDRAULIC DATA**

DESIGN DISCHARGE = 9.9 m<sup>3</sup>/s  
FREQUENCY OF DESIGN FLOOD = 50 YEARS  
DESIGN HIGH WATER ELEVATION = 47.200  
DRAINAGE AREA = 6.6 Sq. Km  
BASIC DISCHARGE (Q100) = 12.5 m<sup>3</sup>/s  
BASIC HIGH WATER ELEVATION = 48.790

**OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE = 15.0 m<sup>3</sup>/s  
FREQUENCY OF OVERTOPPING FLOOD = 500 (+) YEARS  
OVERTOPPING FLOOD ELEVATION = 48.790

**NOTES**

- ASSUMED LIVE LOAD -----MS18 OR ALTERNATE LOADING.
- DESIGN FILL-----2.14m
- 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 THE 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.

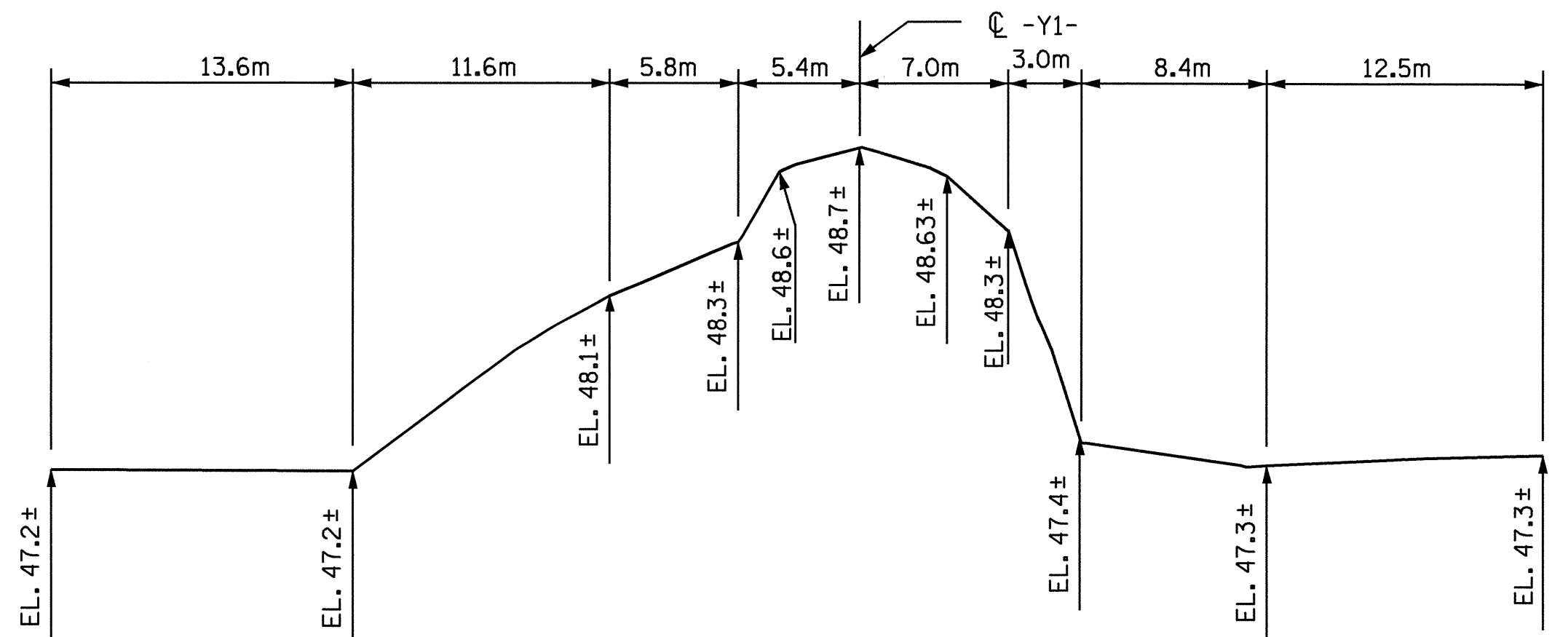
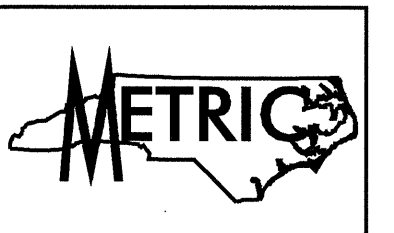
TOP OF BOTTOM SLAB IS TO BE BURIED 305mm BELOW STREAM BED.

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.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1, OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR 'REMOVAL OF EXISTING STRUCTURE @ STATION 14+40.000 -Y1- .

THE EXISTING STRUCTURE CONSISTING OF 1 SPAN (16'-8") REINFORCED CONCRETE DECK SUPPORTED BY 7 LINES OF 16" I BEAMS WITH CLEAR ROADWAY WIDTH OF 27.9' SUPPORTED BY TIMBER CAP & TIMBER PILE. SUBSTRUCTURE LOCATED APPROXIMATELY 25m DOWNSTATION SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD BE THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

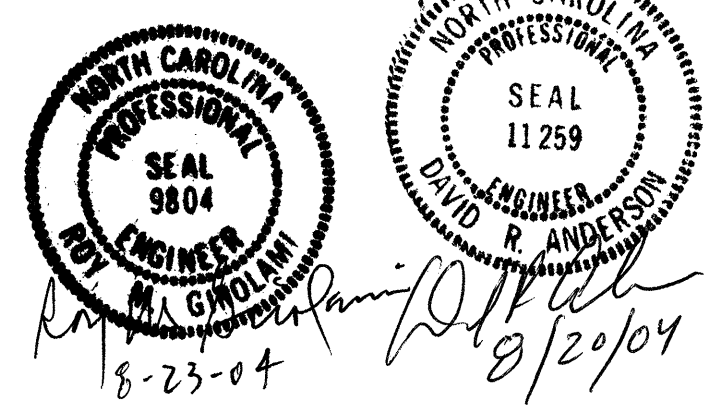
AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS.



**PROFILE ALONG CULVERT**

**TOTAL STRUCTURE QUANTITIES**

CLASS A CONCRETE	
BARREL & OUTLET WINGS	146.1 m <sup>3</sup>
INLET WINGS ETC.	14.1 m <sup>3</sup>
TOTAL	160.2 m <sup>3</sup>
REINFORCING STEEL	
BARREL & OUTLET WINGS	13,360 kg
INLET WINGS	273 kg
TOTAL	13,633 kg
CULVERT EXCAVATION	----- LUMP SUM
FOUNDATION COND. MAT'L	---- 170 METRIC TONS
REMOVING EXISTING STRUCTURE	---- LUMP-SUM



PROJECT NO. R-513BA

ROBESON COUNTY

STATION: 14+40.000 -Y1-

SHEET 1 OF 5 REPLACE BRIDGE #47

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-10	
1			3			TOTAL SHEETS	
2			4			24	

ASSEMBLED BY : N. Q. TRAN DATE : 2-14-03  
CHECKED BY : T. A. WALTER DATE : 4-10-03  
DRAWN BY : EEM 6/97  
CHECKED BY : ARB 7/97