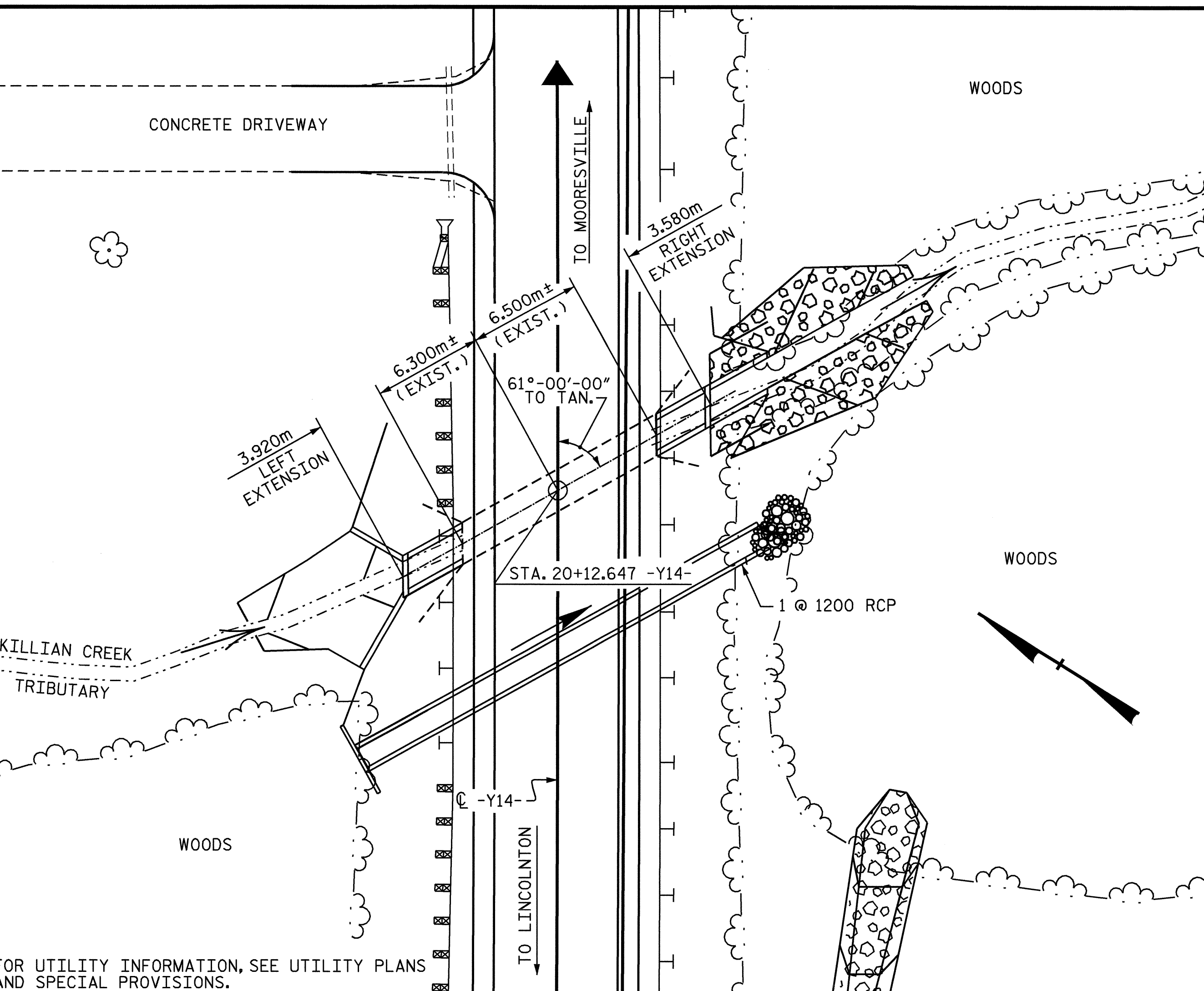
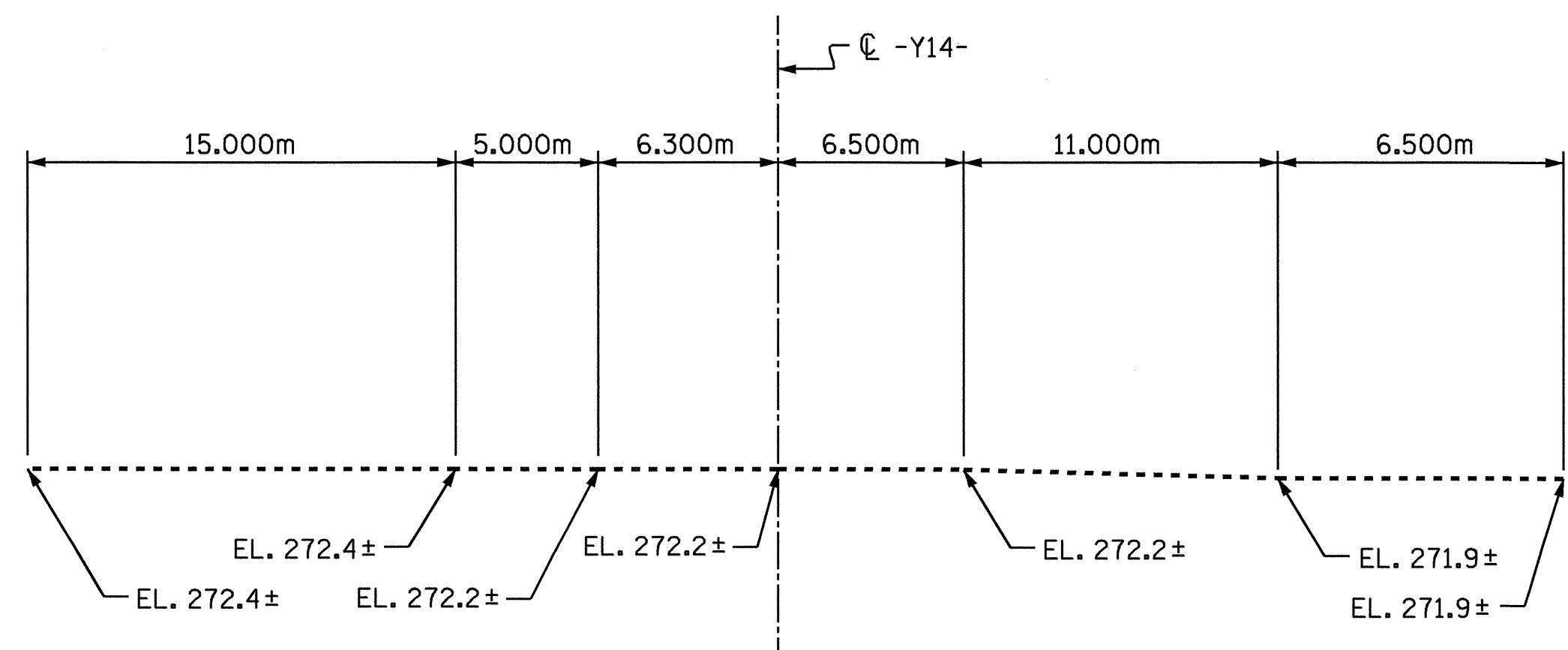


BM: -BY14-100, -BY14- STA. 15+71.122, ELEV.= 275.366.



FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH



PROFILE ALONG CULVERT

DRAWN BY: T.L. AVERETTE DATE: 10-10-02
 CHECKED BY: W.D. CRUTCHER DATE: 2-04

GRADE DATA

GRADE POINT ELEVATION @ STA. 20+12.647 -Y14- = 274.999
 BED ELEVATION @ STA. 20+12.647 -Y14- = 272.200
 ROADWAY SLOPES = 2 : 1

HYDRAULIC DATA

DESIGN DISCHARGE = 11.10 m³/s
 FREQUENCY OF DESIGN FLOOD = 50 YEARS
 DESIGN HIGH WATER ELEVATION = 274.51
 DRAINAGE AREA = 0.70 SQ. KM.
 BASIC DISCHARGE (Q100) = 12.80 m³/s
 BASIC HIGH WATER ELEVATION = 274.79

OVERTOPPING FLOOD DATA

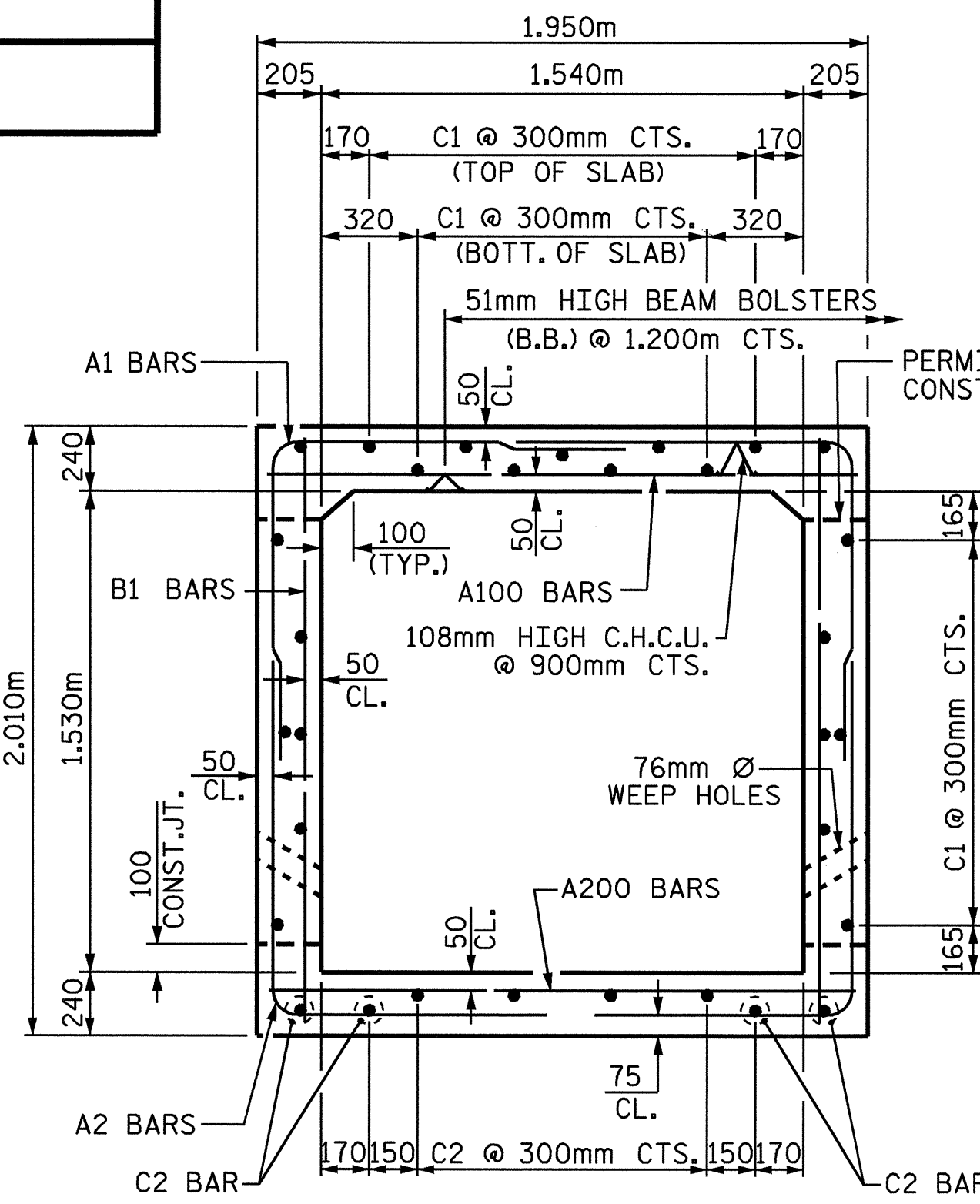
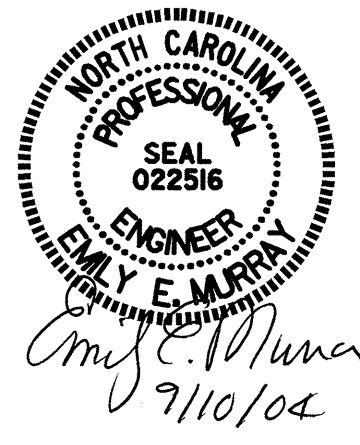
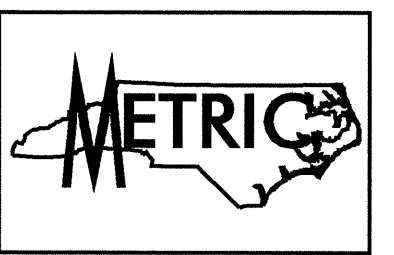
OVERTOPPING DISCHARGE = 14.00 m³/s
 FREQUENCY OF OVERTOPPING FLOOD = 100 YR. +
 OVERTOPPING FLOOD ELEVATION = 274.900

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE		
BARREL @ 1.57 m ³ /m		11.8 m ³
OUTLET WINGS ETC.		4.6 m ³
INLET WINGS ETC.		4.9 m ³
TOTAL		21.3 m ³
REINFORCING STEEL		
RIGHT EXTENSION & OUTLET WINGS ETC.		734 kg
LEFT EXTENSION		499 kg
INLET WINGS ETC.		170 kg
TOTAL		1,403 kg
CULVERT EXCAVATION		LUMP SUM
FOUNDATION COND. MAT'L		15 METRIC TONS
PLAIN RIP RAP CLASS I		12 METRIC TONS
FILTER FABRIC FOR DRAINAGE		13 m ²

NOTES

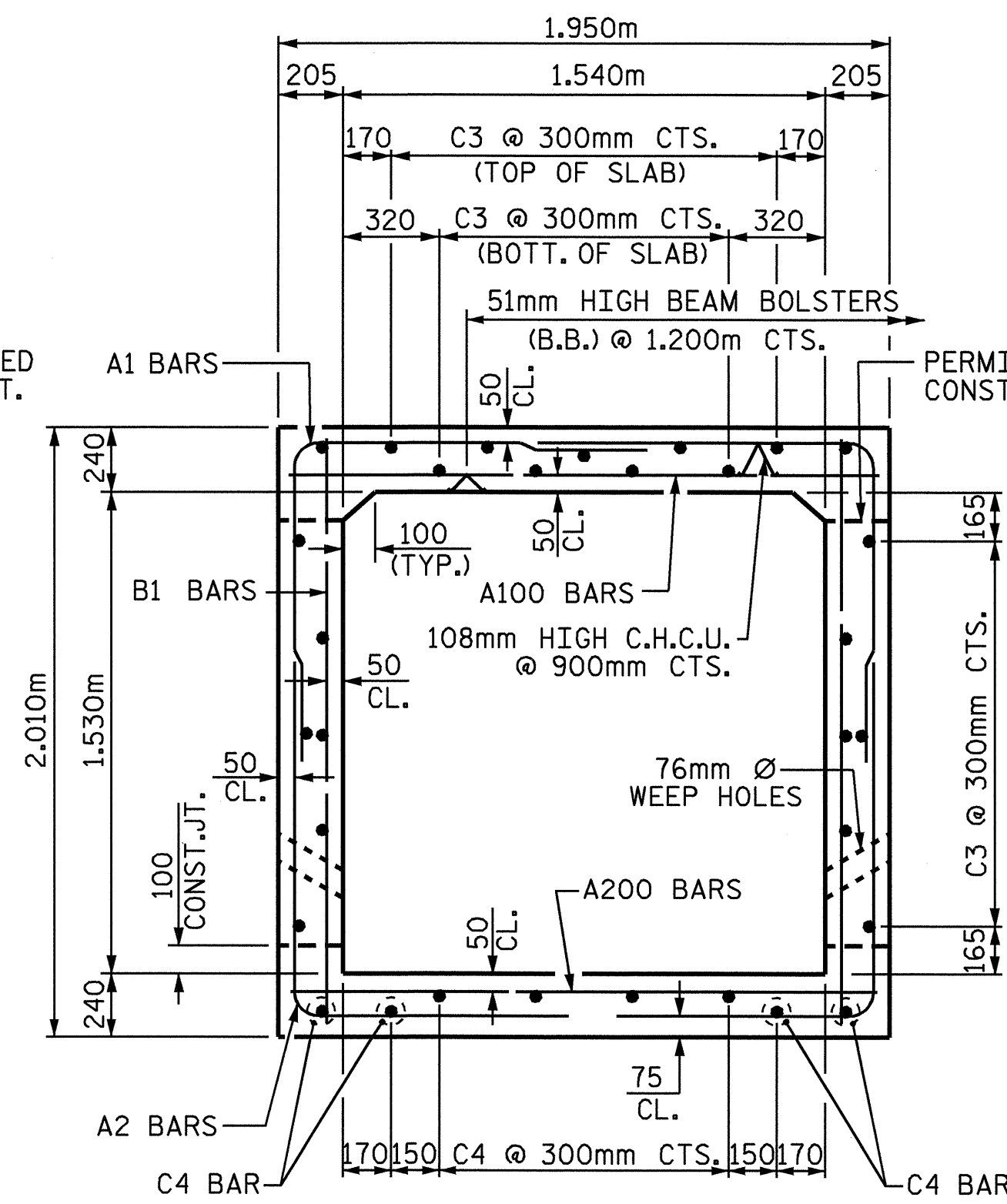
ASSUMED LIVE LOAD -----MS18 OR ALTERNATE LOADING.
 DESIGN FILL----- 1.34m
 FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.
 76mm Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 100mm OF ALL VERTICAL WALLS.
 2. THE REMAINING PORTIONS OF THE WALLS AND INLET WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.
 3. THE REMAINING PORTION OF THE OUTLET WINGS.
 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 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.
 ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
 ALL ELEVATIONS ARE IN METERS.
 THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 360,000kg OF REINFORCING STEEL ONE 760mm SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 360,000kg OF REINFORCING STEEL TWO 760mm 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.
 FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
 A 900mm STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
 AT THE CONTRACTOR'S OPTION THE VERTICAL CONSTRUCTION JOINT BETWEEN THE OUTLET WINGS AND THE BARREL MAY BE ELIMINATED AND THE "C" BARS IN THE BARREL MAY BE EXTENDED TO REPLACE THE "D" AND "H" BARS IN THE WINGS.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
 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.
 IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSION. 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 10.3 MPa.
 DOWELS SHALL BE USED TO CONNECT THE CULVERT EXTENSION TO THE EXISTING CULVERT AS SHOWN. FOR NOTE REGARDING SETTING OF DOWELS, SEE SHEET SNSM.



RIGHT ANGLE SECTION OF BARREL

THERE ARE 31 "C" BARS IN SECTION OF BARREL

LEFT EXTENSION



RIGHT ANGLE SECTION OF BARREL

THERE ARE 31 "C" BARS IN SECTION OF BARREL

RIGHT EXTENSION

PROJECT NO. R-2206C
 LINCOLN-CATAWBA COUNTY
 STATION: 20+12.647 -Y14-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SINGLE 1.540m X 1.530m
 CONCRETE BOX CULVERT
 EXTENSION
 61° SKEW

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		