

BENCH MARK (BY18-1016) IS PINC AT STA. 15+64.610 -BY18-, EL. 79.424, DATUM NGVD 1929

~~A. PROJECT NO. : NHF 60-1016~~

**NOTES**

ASSUMED LIVE LOAD -----MS18 OR ALTERNATE LOADING.  
 DESIGN FILL-----4.150m  
 FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.  
 ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.  
 ALL ELEVATIONS ARE IN METERS.

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.

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.

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 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.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 360,000 kg OF REINFORCING STEEL, ONE 760mm SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 360,000 kg 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.

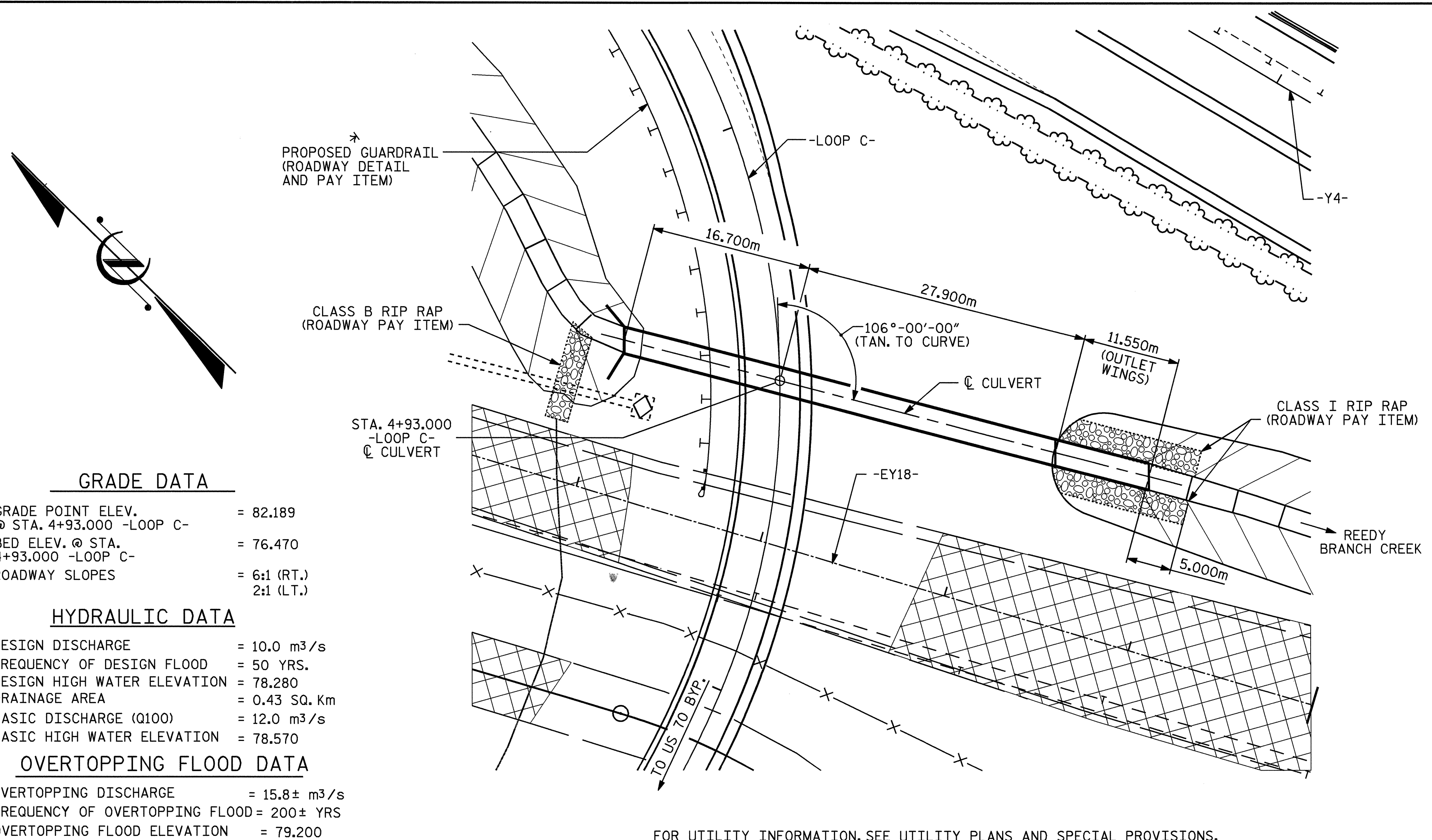
A 900mm STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE INLET WINGS COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.



**GRADE DATA**

GRADE POINT ELEV. @ STA. 4+93.000 -LOOP C-	= 82.189
BED ELEV. @ STA. 4+93.000 -LOOP C-	= 76.470
ROADWAY SLOPES	= 6:1 (RT.) 2:1 (LT.)

**HYDRAULIC DATA**

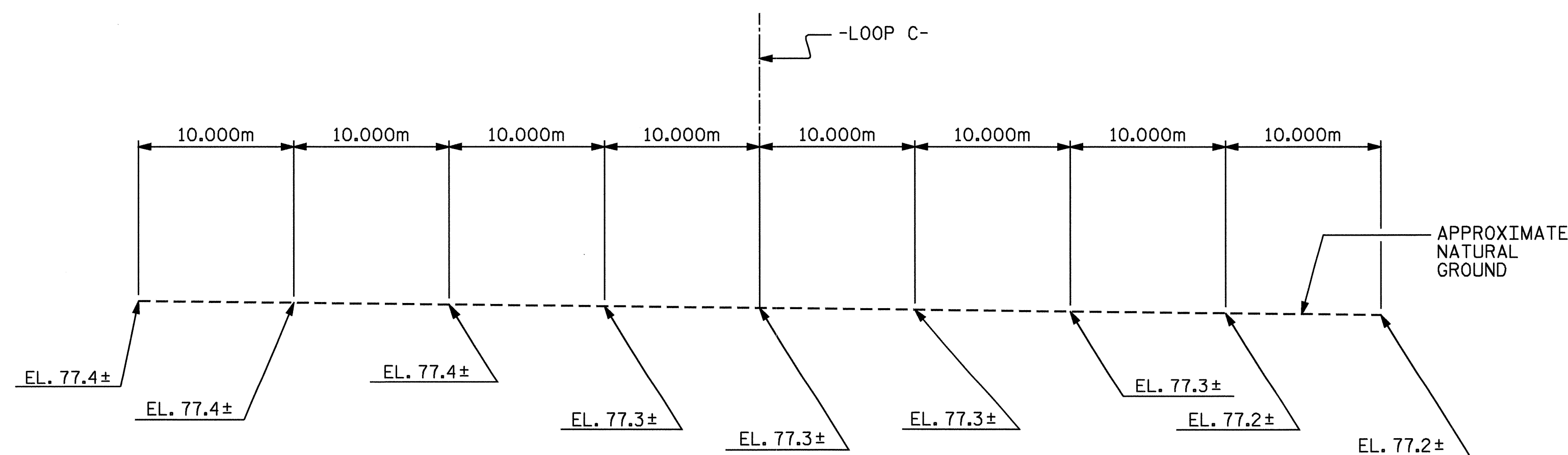
DESIGN DISCHARGE	= 10.0 m <sup>3</sup> /s
FREQUENCY OF DESIGN FLOOD	= 50 YRS.
DESIGN HIGH WATER ELEVATION	= 78.280
DRAINAGE AREA	= 0.43 SQ. Km
BASIC DISCHARGE (Q100)	= 12.0 m <sup>3</sup> /s
BASIC HIGH WATER ELEVATION	= 78.570

**OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE	= 15.8± m <sup>3</sup> /s
FREQUENCY OF OVERTOPPING FLOOD	= 200± YRS
OVERTOPPING FLOOD ELEVATION	= 79.200

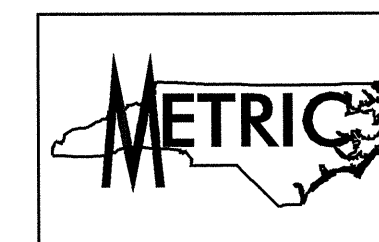
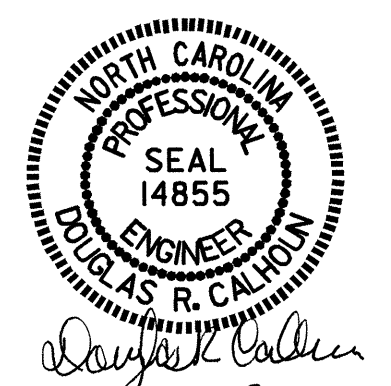
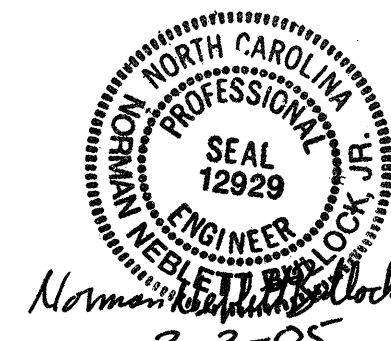
FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

**LOCATION SKETCH**



**PROFILE ALONG C CULVERT**

TOTAL STRUCTURE QUANTITIES		
CLASS A CONCRETE		
BARREL	2.16 m <sup>3</sup> /m.	96.3 m <sup>3</sup>
OUTLET WING FLOOR SLAB		9.6 m <sup>3</sup>
WINGS, HEADWALLS, END CURTAIN WALL		13.2 m <sup>3</sup>
TOTAL		119.1 m <sup>3</sup>
REINFORCING STEEL		
BARREL AND OUTLET WING FLOOR SLAB		9915 Kg
WINGS, HEADWALL, END CURTAIN WALL		983 Kg
TOTAL		10898 Kg
CULVERT EXCAVATION		LUMP SUM
FOUNDATION CONDITIONING MATERIAL		118 M. TONS



PROJECT NO. R-2552C  
JOHNSTON COUNTY  
 STATION: 4+93.000 -LOOP C-

SHEET 1 OF 6

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**SINGLE**  
**2.700m X 1.800m**  
**CONCRETE BOX CULVERT**  
**106° SKEW**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-31
1			3			TOTAL SHEETS
2			4			42

DRAWN BY : A. K. PATEL/TLC DATE : 12/10/03  
 CHECKED BY : T.A.HARRIS DATE : 11/09/04