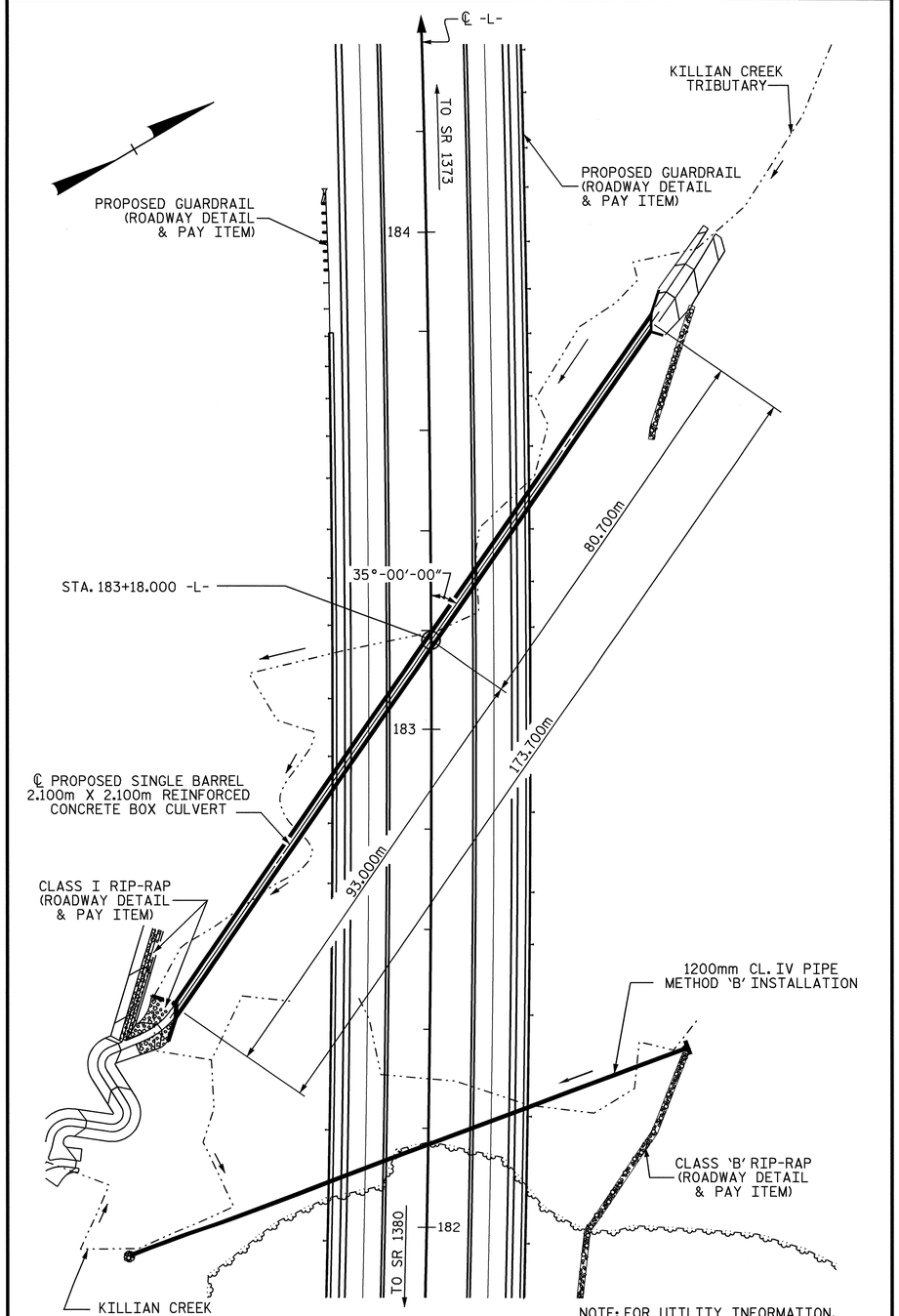
F.A. PROJECT NO. STP-16 (31)

B.M. #1: TOP OF NAIL IN EAST BASE OF 600mm MAPLE JUST NORTH OF A SMALL STREAM 14.071m RT. OF -L- STA. 191+02.216, EL. 239.044



LOCATION SKETCH

GRADE DATA

GRADE POINT ELEVATION @ STA. 183+18.000 -L-	= 254.433
BED ELEVATION @ STA. 183+18.000 -L-	= 237.756
ROADWAY SLOPES	= 2 :1

HYDRAULIC DATA

DESIGN DISCHARGE	= 8.32 m^3/s
FREQUENCY OF DISCHARGE FLOOD	= 50 YEARS
DESIGN HIGH WATER ELEVATION	= 240.960
DRAINAGE AREA	= 0.44 Sq. Km
BASIC DISCHARGE (Q100)	= 9.65 m^3/s
BASIC HIGH WATER ELEVATION	= 241.152

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= **
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YEARS
OVERTOPPING FLOOD ELEVATION	= 247.60

** - OVERTOPPING FLOOD IS GREATER THAN THE 500YR (+) EVENT

TOTAL STRUCTURE QUANTITIES

CLASS A CONCRETE	
BARREL @ 2.90m^3/m	503.7 m^3
SILLS	4.3 m^3
WINGS ETC.	18.1 m^3
TOTAL	526.1 m^3
REINFORCING STEEL	
BARREL	45,486 kg
WINGS, ETC.	668 kg
TOTAL	46,154 kg
FOUNDATION COND. MAT'L	298 METRIC TONS
CULVERT EXCAVATION	LUMP SUM

NOTES

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

DESIGN FILL---------- 15.0m

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

76mm ∅ 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.

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 SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.

ALL ELEVATIONS ARE IN METERS.

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

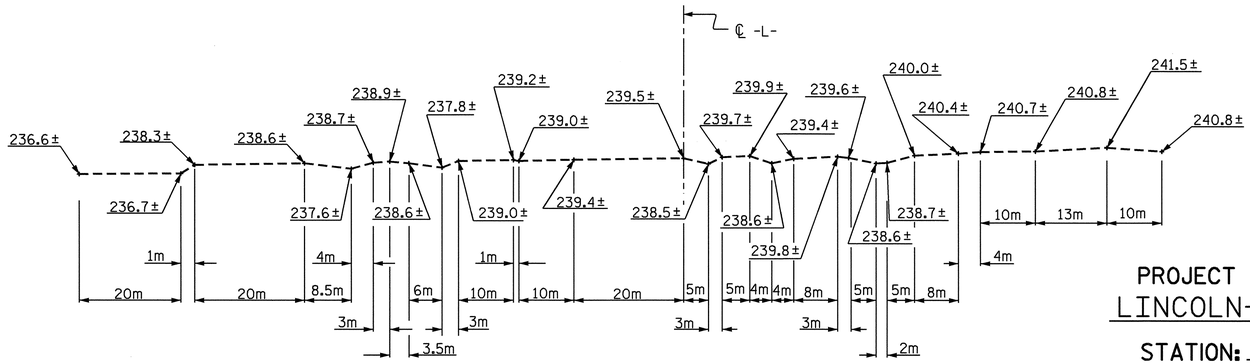
AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

NO PRECAST REINFORCED CONCRETE BOX OPTION WILL BE ALLOWED.

THE REINFORCED CONCRETE BOX CULVERT SHALL BE CONSTRUCTED WITH 305mm OF CAMBER TO ACCOUNT FOR ANTICIPATED SETTLEMENT.

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 360,000kg 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.



PROFILE ALONG ℄ CULVERT

PROJECT NO. R-2206C
LINCOLN-CATAWBA COUNTY
STATION: 183+18.000 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BARREL STANDARD SINGLE 2.100m X 2.100m CONCRETE BOX CULVERT 35° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			9

NORTH CAROLINA PROFESSIONAL SEAL 12274 ENGINEER OMAR R. AZIZI 10/7/04

NORTH CAROLINA PROFESSIONAL SEAL 022516 ENGINEER EMILY E. MURRAY 10/7/04

ASSEMBLED BY : W.D. CRUTCHER	DATE : 10-4-04
CHECKED BY : M.M. PARSONS	DATE : 10-5-04
DRAWN BY : EEM 6/97	
CHECKED BY : ARB 7/97	

STD. No. CBM45SM