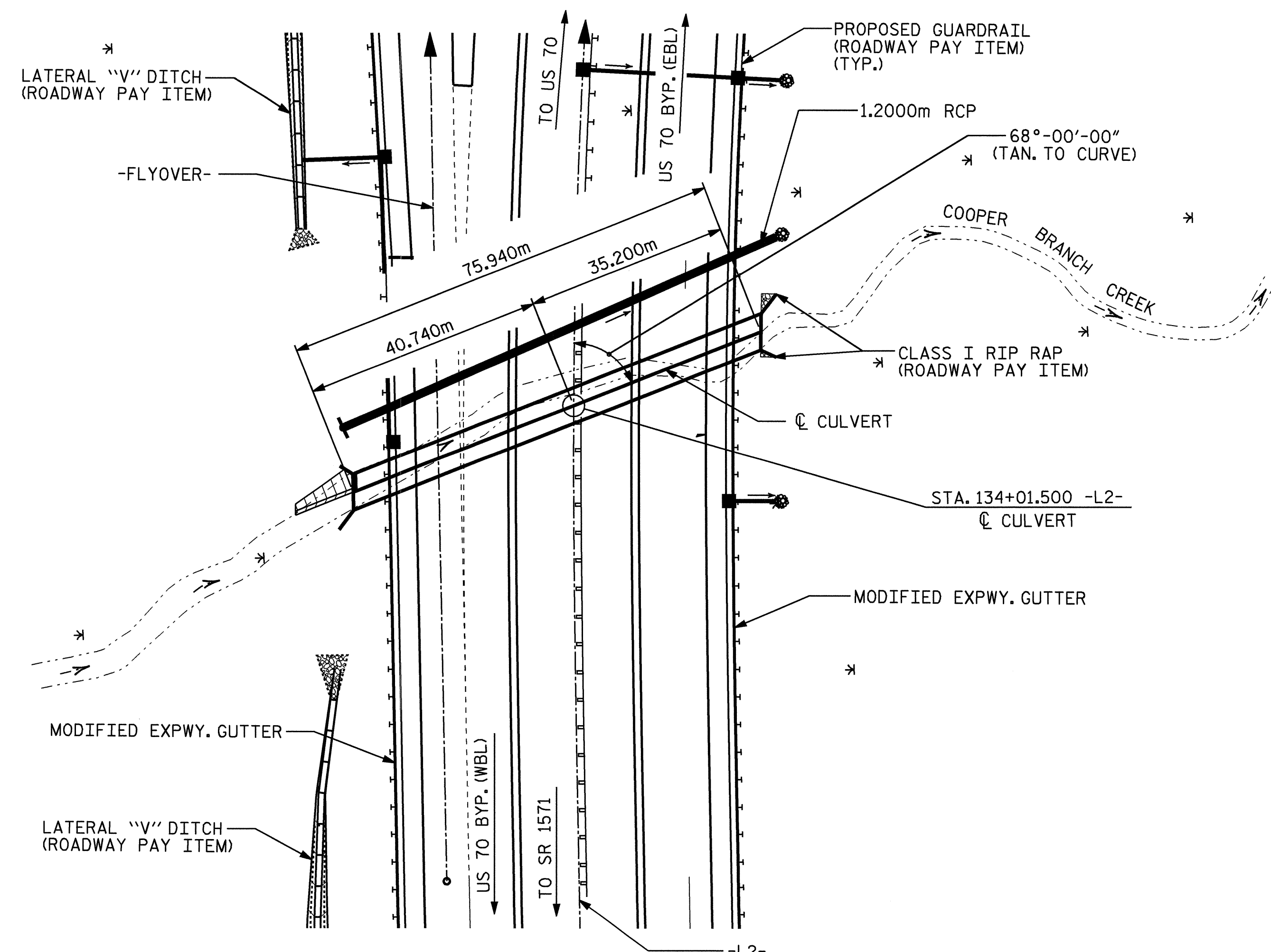
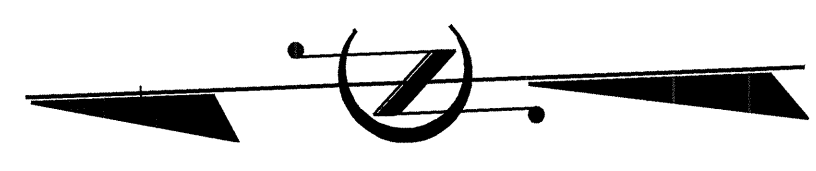


BENCH MARK IS R/R SPIKE DRIVEN VERTICALLY IN THE BASE OF 16" HOLLY TREE
120.089m RT. OF STA. 135+85.578 -BL- EL. 85.921, DATUM 1929

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

NOTES

ASSUMED LIVE LOAD -----MS18 OR ALTERNATE LOADING.
DESIGN FILL-----3.990m
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.
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 SHALL BE PAID FOR BY THE CONTRACTOR.
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 WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT A SILL IS REQUIRED IN INLET END OF CULVERT.
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. 134+01.500 -L2- = 83.593
BED ELEV. @ STA. 134+01.500 -L2- = 79.156
ROADWAY SLOPES = 2:1

HYDRAULIC DATA

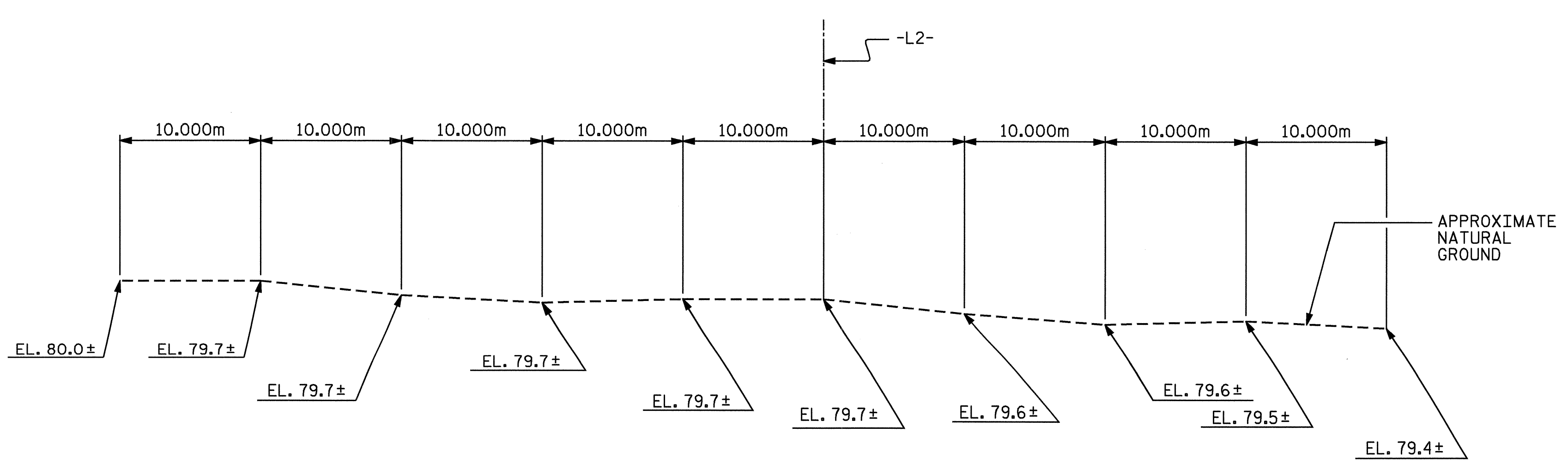
DESIGN DISCHARGE = 27.0 m³/s
FREQUENCY OF DESIGN FLOOD = 50 YRS.
DESIGN HIGH WATER ELEVATION = 81.430
DRAINAGE AREA = 2.2 SQ. Km
BASIC DISCHARGE (Q100) = 30.0 m³/s
BASIC HIGH WATER ELEVATION = 81.630

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE = 56.7 m³/s
FREQUENCY OF OVERTOPPING FLOOD = 500+ YRS
OVERTOPPING FLOOD ELEVATION = 83.920

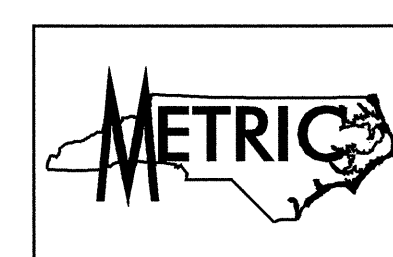
FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH



PROFILE ALONG CULVERT

TOTAL STRUCTURE QUANTITIES	
CLASS A CONCRETE	
BARREL @ 4.70 m ³ /m	356.9 m ³
WINGS, ETC.	13.3 m ³
CONCRETE SILL	0.5 m ³
CONCRETE TOTAL	370.7 m³
REINFORCING STEEL	
BARREL	34918 Kg
WINGS, ETC.	430 Kg
CONCRETE SILL	5 Kg
TOTAL	35353 Kg
CULVERT EXCAVATION	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	309 M.TONS



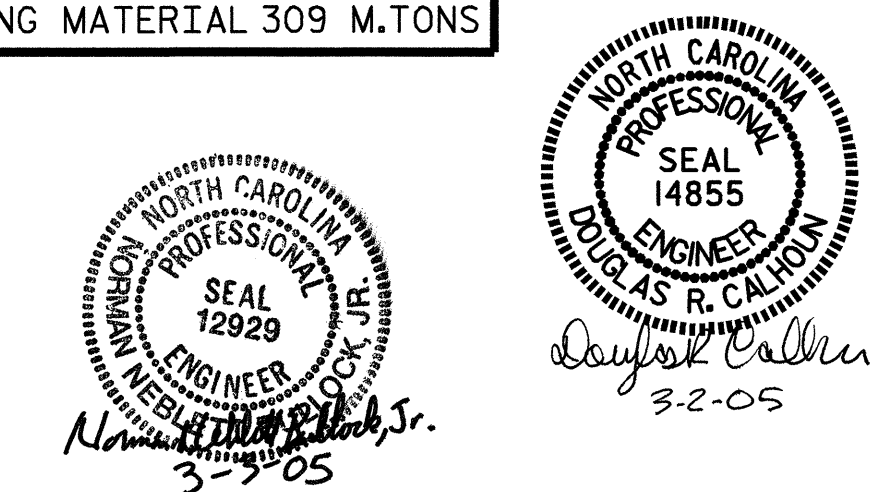
PROJECT NO. R-2552C
JOHNSTON COUNTY
STATION: 134+01.500 -L2-

SHEET 1 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**DOUBLE
2.700m X 1.800m
CONCRETE BOX CULVERT
68° SKEW**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-17
1			3			TOTAL SHEETS 42
2			4			



DRAWN BY: A. K. PATEL/TLC DATE: 11/10/03
CHECKED BY: J. A. HARRIS DATE: 12/4/03