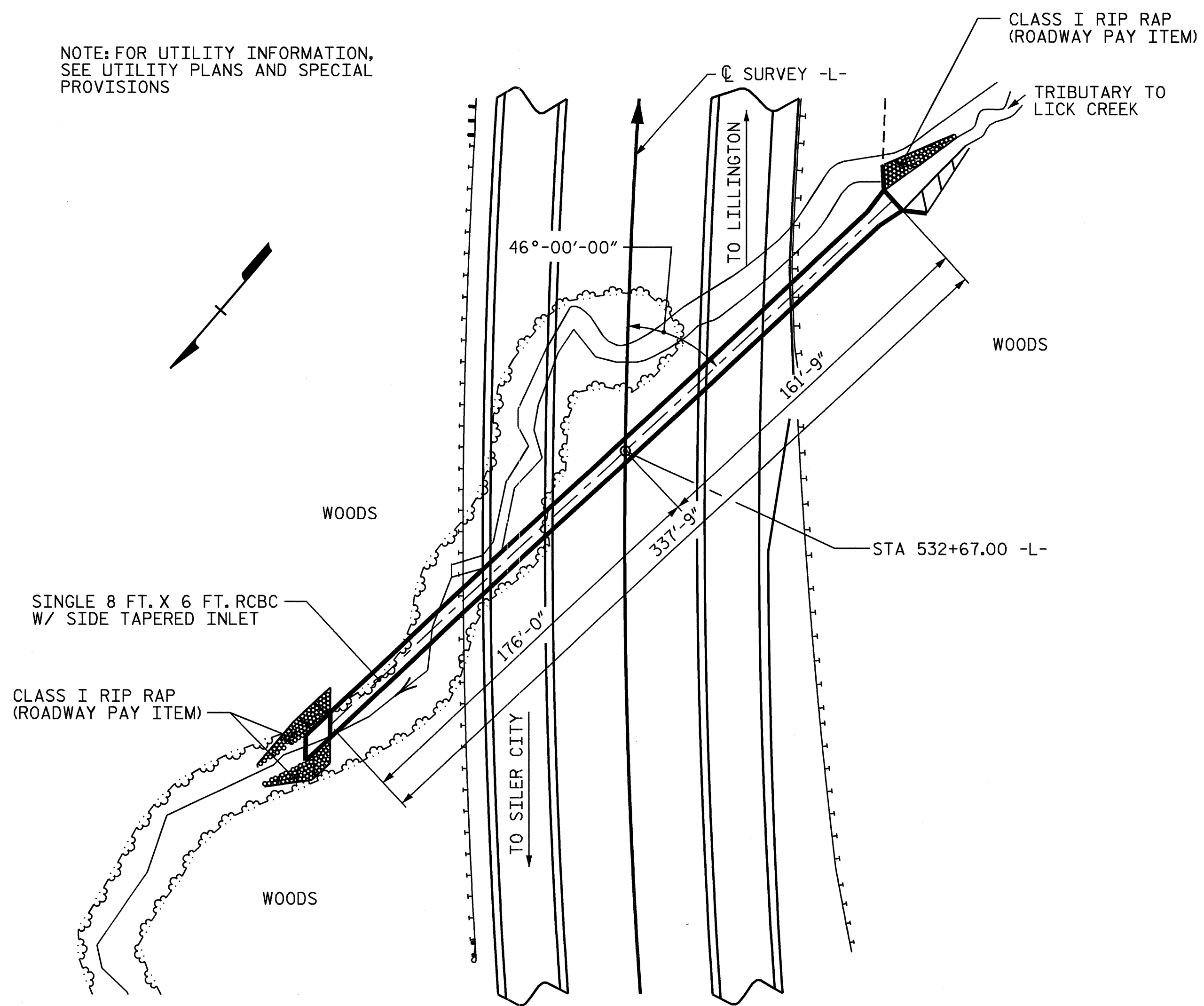


BM #21: RR SPIKE IN BASE OF 18" PINE TREE, 163.32' RT OF STA 531+84.71 -L-, EL. 411.330 NGVD 1929

NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS



LOCATION SKETCH

GRADE POINT ELEV. @ STA. 532+67.00 -L- = 395.453  
BED ELEV. @ STA 532+67.00 -L- = 365.380  
ROADWAY SLOPES = 2:1

**HYDROGRAPHIC DATA**

DESIGN DISCHARGE = 515 cfs  
FREQUENCY OF DESIGN FLOOD = 50 YR  
DESIGN HIGH WATER ELEVATION = 375.21  
DRAINAGE AREA = 197 AC.  
BASIC DISCHARGE (Q100) = 585 cfs  
BASIC HIGH WATER ELEVATION = 375.99

**OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE = 925+ cfs  
FREQUENCY OF OVERTOPPING FLOOD = 500+ YR  
OVERTOPPING FLOOD ELEVATION = 395.44

**REINFORCING BAR SCHEDULE FOR BARREL**

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	1250	5	6	4'-8"	6084
A2	1250	5	6	4'-9"	6193
A100	556	7	STR	8'-11"	10133
A101	3	7	STR	7'-1"	43
A102	3	7	STR	5'-4"	33
A103	3	7	STR	3'-7"	22
A111	5	7	STR	9'-11"	101
A112	6	7	STR	10'-11"	134
A113	5	7	STR	11'-11"	122
A200	570	7	STR	8'-11"	10389
A211	5	7	STR	9'-11"	101
A212	4	7	STR	10'-11"	89
A213	5	7	STR	11'-11"	122
A400	9	4	STR	8'-11"	54
B1	812	4	STR	7'-5"	4023
B2	1250	4	STR	5'-4"	4453
C1	540	4	STR	29'-6"	10641
C2	50	4	STR	11'-8"	390
C3	8	4	STR	9'-0"	48
D1	23	6	STR	3'-0"	104
F1	66	4	STR	6'-5"	283
F2	1	4	STR	8'-1"	5
F3	1	4	STR	9'-9"	7
G1	2	4	STR	12'-8"	17
G2	2	4	STR	13'-0"	17
S2	3	8	STR	12'-8"	101
TOTAL LBS					53709

**NOTES**

ASSUMED LIVE LOAD -----HS20-44 OR ALTERNATE LOADING.

DESIGN FILL----- 26.31'

FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.

3" 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 4" 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 70 FT. LOCATION OF 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 ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE 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.

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 AND SLAB.

NO PRECAST CONCRETE BOX CULVERT OPTION WILL BE ALLOWED.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING CONVERGING THE ENTIRE LENGTH OF THE EXPANSION JOINT.

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

**TOTAL STRUCTURE QUANTITIES**

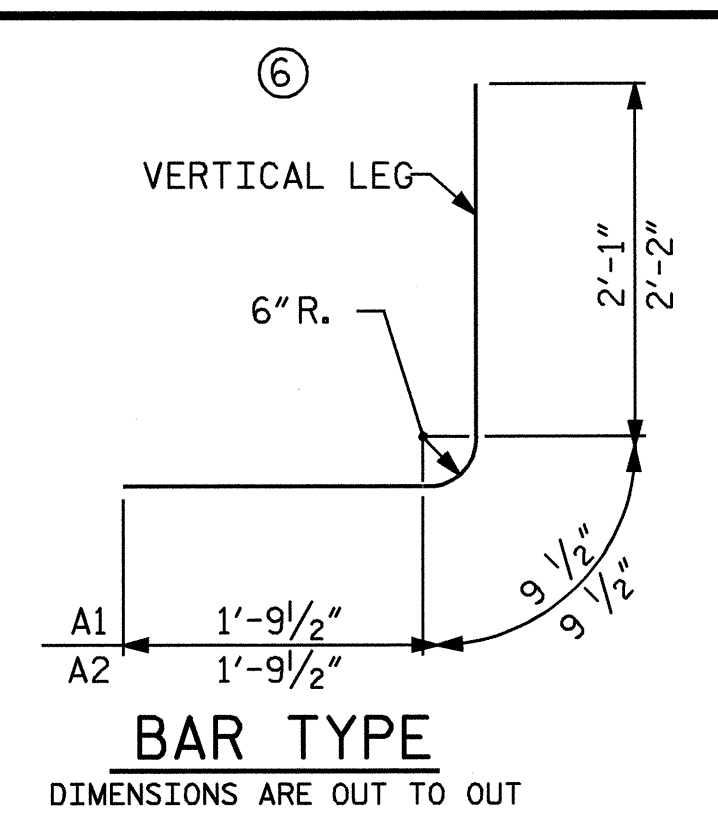
CLASS A CONCRETE	
BARREL & TAPERED INLET	331.8 C.Y.
INLET WING ETC.	8.2 C.Y.
OUTLET WING ETC.	11.6 C.Y.
TOTAL	351.6 C.Y.

REINFORCING STEEL	
BARREL & TAPERED INLET	53709 LBS.
INLET WINGS ETC.	396 LBS.
OUTLET WINGS ETC.	857 LBS.
TOTAL	54962 LBS.

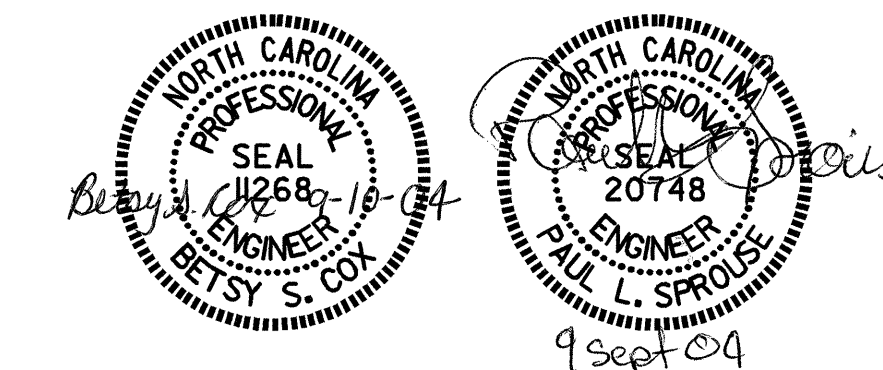
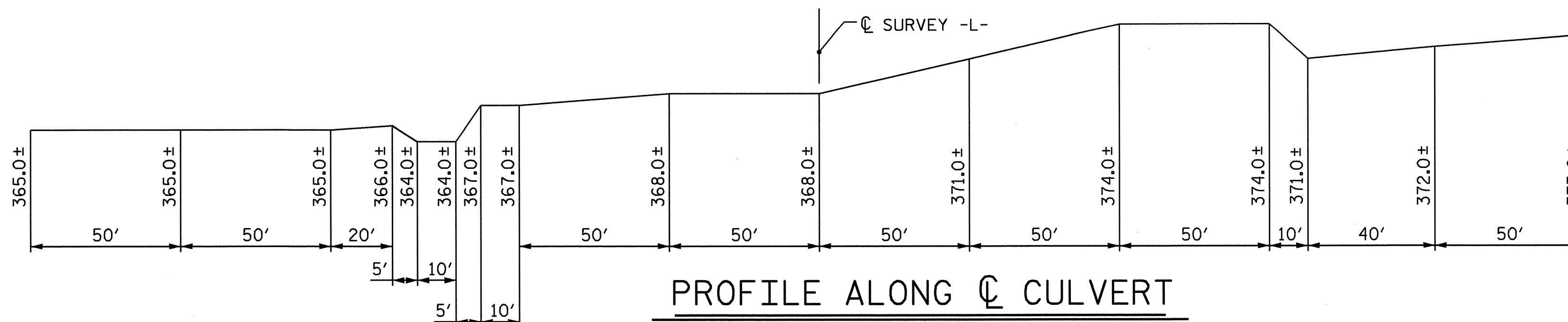
CULVERT EXCAVATION	----- LUMP SUM
FOUNDATION COND. MAT'L	----- 235 TONS

**SPLICE LENGTH CHART**

BAR	SIZE	SPLICE LENGTH
B1	4	1'-9"
C1	4	1'-11"



**PROFILE ALONG CULVERT**



PROJECT NO. R-2417BB  
LEE COUNTY  
STATION: 532+67.00 -L-

SHEET 1 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
BARREL STANDARD SINGLE 8 FT. X 6 FT. CONCRETE BOX CULVERT WITH SIDE TAPERED INLET 46° SKEW					
AUGUST 1989					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					11

ASSEMBLED BY : <u>K.W. ALFORD</u>	DATE : <u>3/03</u>	<b>SPECIAL</b>
CHECKED BY : <u>P. SPROUSE</u>	DATE : <u>3/03</u>	
DRAWN BY : <u>R.W. WRIGHT</u>	DATE : <u>AUG. 1989</u>	<b>STANDARD</b>
CHECKED BY : <u>A.R. BISSETTE</u>	DATE : <u>AUG. 1989</u>	