COMPUTED BY: MJD DATE: 8-09-04
CHECKED BY: SA DATE: 3-28-05

PROJECT REFERENCE NO.	SHEET NO.
B-4047	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 12"	15"	18"	24"	30"	36"	42"	48"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHRWISE) 12" .064	15" .064	18" .064	24" .064	24"	30" .079	30"	36" .079	36"	42" .109	42"	48" .109	48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') LIN. +FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	TYPE OF GRATE E	F	G	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	M.D.I. TYPE "A" STD. 840.17 OR 840.26	M.D.I. TYPE "B" STD. 840.18 OR 840.27	M.D.I. TYPE "D" STD. 840.19 OR 840.28	M.D.I. FRAME WITH GRATE STD. 840.22	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.29	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.D.I. STD. 840.35	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
11+40	RT	1			1078.54	1077.38				32																																																			21.3	DRIVEWAY PIPE
11+62	LT	2			1077.38	1076.28				28																																																			25.2	DRIVEWAY PIPE
14+64	RT	3			1067.50	1064.00															32																																								
15+67	RT	4	5		1065.60	1067.00			64																																																		69	
16+30	RT	5		1071.40																													1					1				1																	
16+30	RT	6		1073.20																													1										1		1													
16+30	RT	6	5		1069.50	1067.00			8																																																	23.0	LT @ 15+82.29
16+30	RT	5	7		1067.00	1068.40			116																																																		114.6	
17+50	RT	7		1071.20																													1					1				1																
TOTAL									188	60											32												3					2				2		1		1											253.1	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I. (N.S.)	MEDIAN DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUCTION BOX

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS GRAU 350	TYPE III	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	11+69.21	14+44.21	RT	275			14+44.21 (BRIDGE RAIL)		5.2	8.2	50'		1'		1	1								
-L-	13+54.14	14+51.78	LT	97.64				14+51.78 (BRIDGE RAIL)	5.2	8.2		50'		1'	1	1								
-L-	16+08.11	16+98.85	RT	90.74				16+08.11 (BRIDGE RAIL)	5.6	8.6		50'		1'	1	1		DEDUCTION FOR ANCHORS			STRAIGHT			
-L-	16+15.62	18+03.12	LT	187.5			16+15.62 (BRIDGE RAIL)		5.6	8.6	50'		1'		1	1		TYPE III	4@18.75		75.00			
																		GRAU-350	4@50.00		200.00			
			SUBTOTAL:	650.88																				
			DEDUCT ANCHORS:	-275														ANCHOR TOTAL			-275.00			
			TOTAL:	375.88																				
			SAY:	400																				
	ADDITIONAL POSTS:	5 EACH																						

SHOULDER BERM GUTTER LOCATION SUMMARY

LINE	LOCATION	BEGINNING STATION	ENDING STATION	LENGTH
-L-	RT	14+23	14+43	20.00
-L-	RT	16+10	16+35	25.00
			TOTAL	45.00
			SAY	50.00

SUMMARY OF PAVEMENT REMOVAL IN SQUARE YARDS

STATION TO STATION	LOCATION	AREA
12+50.00 TO 15+24.26	LT & RT	498.87
15+63.74 TO 16+50.00	LT & RT	153.98
	PROJECT TOTAL	652.85
	SAY	685

SUMMARY OF EARTHWORK IN CUBIC YARDS

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- 9+45 TO 14+59.53 (BEGIN BRIDGE)	210		446	236	
-L- 15+99.59 (END BRIDGE) TO 18+50	292		150		142
TOTAL	502		596	236	142
LOSS DUE TO CLEARING & GRUBBING	-50			50	
WASTE IN LIEU OF BORROW				-142	-142
PROJECT TOTAL	452		596	144	0
GRAND TOTAL	452			144	0
SAY	475			150	
UNDERCUT = 500 CY					
DDE = 144 CY					

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