STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

REVISIONS

"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			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350 TL-2	M-350	TYPE-III	CAT-1	VI MOD	B-77	AT-1	EA	G	NG				
L	10+90.62	11+84.37	RT	43.75	25	–	–	–	3′	6′	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	TYPE III SHOP CURVED, R=15′
L	11+77.85	11+84.37	LT	6.25	18.75	–	–	–	3′	6′	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	TYPE III SHOP CURVED, R=10′
L	12+14.95	12+39.95	RT	6.25	18.75	–	–	–	3′	6′	–	–	–	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	TYPE III, SHOP CURVED, R=6′
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	DEDUCTIONS FOR GUARDRAIL ANCHOR UNITS						–	–	–	–	–	–	–	–	–	–
			SUB-TOTAL	56.25′	62.5′										TYPE TL-2			1 @ 25.00′ =		25′										
	DEDUCTIONS FOR GUARDRAIL ANCHOR UNITS			37.5′	56.25′										TYPE III			3 @ 18.75′ =		56.25′										
			TOTAL												AT-1			2 @ 6.25′ =		12.5′										
			SAY	18.75′	6.25′														TOTAL =	93.75′										

SUMMARY OF EARTHWORK (IN CUBIC YARDS)

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
PHASE I					
–L– 10+90.00	11+84.37 (BEGIN BRIDGE)	6	152	146	0
–L– 12+14.95 (END BRIDGE)	13+10.00	52	18	0	34
	SUBTOTAL	58	170	146	34
PHASE II					
–L– 10+90.00	11+84.37 (BEGIN BRIDGE)	84	10	–	74
–L– 12+14.95 (END BRIDGE)	13+10.00	222	0	–	222
	SUBTOTAL	306	10	–	296
–DWY1– 10+10.00	10+80.00	3	1	–	2
–DWY2– 10+10.00	10+60.00	14	61	47	–
PROJECT TOTALS:		381	242	193	332
WASTE IN LIEU OF BORROW		–	–	–47	–47
LOSS DUE TO CLEARING & GRUBBING		–20	–	20	–
GRAND TOTALS:		361	–	166	285
–		–	–	–	–
SAY:		365	–	170	290

DDE = 5 CY
CONTINGENCY ITEMS
UNDERCUT EXCAVATION 50 CY
SELECT GRANULAR MATERIAL 50 CY
GEOTEXTILE FOR SOIL STABILIZATION 50 SY
CLASS IV SUBGRADE STABILIZATION 50 TON
INCIDENTAL STONE BASE 50 TON

NOTE: INVERT ELEVATIONS INDICATED ARE FOR BID PURPOSES ONLY AND SHALL NOT BE USED FOR PROJECT CONSTRUCTION STAKEOUT.
SEE "STANDARDS SPECIFICATIONS FOR ROADS AND STRUCTURES, SECTION 300-5".

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	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L- 12+32.1	LT	0401		3212.00															
	LT	0401	0402		3209.25	3208.75													
-L- 12+22.7	LT	0402		OUTLET															
-L- 11+48	RT	0403	0404		3201.75	3200.10													
SHEET TOTALS																			

STATION	C.S. PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	30" (.079)	36" (.079)	42" (.109)	48" (.109)	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
-L- 12+32.1																								
(0401–0402)										16														
-L- 12+22.7																								
-L- 11+48																								
			15																					
SHEET TOTALS			15							16														

STATION	** " R.C. PIPE (CLASS V)	***" R.C. PIPE CULVERTS, CONTRACTOR DESIGN	***" R.C. PIPE CULVERTS, CONTRACTOR DESIGN	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRASITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.20	G.D.I. FRAME WITH TWO GRATE STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	TB G.D.I STD. 840.35	F.E.S. FLARED END SECTION STD	CONVERT TO MH	DRAINAGE PIPE ELBOWS NO. & SIZE	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L- 12+32.1																																			
(0401–0402)																																			
-L- 12+22.7																																			
-L- 11+48																																			EXTEND EXISTING PIPE
																																			ROD & LUG W/ SLEEVE GASKET @ EXIST 18" CSP
SHEET TOTALS																																			

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED 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 JUNCTION BOX

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, and Clearing and Grubbing will be paid for at the contract lump sum price for "Grading."

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ROADWAY PLANS

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