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COMPUTED BY: SKR DATE: 08-30-2013
CHECKED BY: MJD DATE: 09-27-2013

PROJECT REFERENCE NO.	SHEET NO.
B-4475	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION / SIZE / THICKNESS OR GAUGE / -L-	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	C.S. PIPE 12"	15"	18"	24"	36"	42"	48"	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
																				.064	.064	.064	.064	.079	.109	.109																
16+38.00	LT	0401		64.34	61.59																																				
16+38.00	LT	0401	0402		61.59	60.50			12							*	*																								
PROJECT TOTAL									12																																

STATION / SIZE / THICKNESS OR GAUGE / -L-	*** R. C. PIPE (CLASS V)	*** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	*** R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	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'	LIN. *FT. 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 TRANSITIONAL SECTION CATCH BASIN	DROP INLET	J.B. STD. 840.31 OR 840.32	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES 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	T.B.D.I. STD. 840.35 OR STD. 840.46	DRAINAGE PIPE 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
16+38.00								1															1	1										TB2GI
16+38.00																																		
PROJECT TOTAL																							1	1										

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

"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 XI MOD	TYPE III	GRAU 350 TL-3	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	14+46.00	15+21.00	LT	75'			BRIDGE		5.42'	9.00'		56.25'		1		1	1													
-L-	14+46.00	15+21.00	RT	75'				BRIDGE	5.42'	9.00'	56.25'		1			1	1													
-L-	16+11.00	16+86.00	LT	75'				BRIDGE	5.42'	9.00'	56.25'		1			1	1													
-L-	16+11.00	16+86.00	RT	75'			BRIDGE		5.42'	9.00'		56.25'		1		1	1													
TOTAL				300'												4	4													
DEDUCTION FOR ANCHORS				-275'											DEDUCTION FOR ANCHORS:															
PROJECT TOTAL				25'											(GRAU 350 TL-3) 4 @ 50' = 200'															
SAY				50'											(TYPE III) 4 @ 18.75' = 75'															
ADDITIONAL GUARDRAIL POST = 5 EACH															TOTAL DEDUCTIONS = 275'															

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L-					
14+00.00 TO 15+21.00 (BEGIN BRIDGE)	13		75	62	
16+11.00 (END BRIDGE) TO 17+15.00	32		46	14	
SUB-TOTAL	45		121	76	
PROJECT TOTAL	45		121	76	
5% TO REPLACE TOP SOIL ON BORROW PIT				4	
GRAND TOTAL	45			80	
SAY	50			100	

GEOTEXTILE FOR SOIL STABILIZATION = 400 SY
SELECT GRANULAR MATERIAL = 400 CY
EST. UNDERCUT EXCAVATION = 400 CY

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading".

REMOVAL OF EXISTING ASPHALT PAVEMENT SUMMARY

LINE	BEGIN STATION	END STATION	LOCATION	SQ. YD.
-L-	14+50.00	15+39.47	CL	175.55
-L-	15+92.55	16+65.00	CL	142.53
			TOTAL	318.08
			SAY	325

SUMMARY OF SUBSURFACE DRAINAGE

LINE	BEGIN STATION	END STATION	LOCATION	DRAIN TYPE * UD /BD /SD	LENGTH (FT.)
	CONTINGENCY			SD	100
				TOTAL	100

* UD = UNDERDRAIN
* BD = BLIND DRAIN
* SD = SUBSURFACE DRAIN

SUMMARY OF ROCK PLATING

LINE	BEGINNING SLOPE	APPROXIMATE STATION	ENDING SLOPE	APPROXIMATE STATION	LOCATION	ROCK PLATING DETAIL NO.	RIP RAP CLASS * 1/2 /B	SQ. YD.
-L-	1.7:1 (H:V)	14+25.00	2:1 (H:V)	15+14.50	RIGHT	1		130
							TOTAL SQ. YD.	130

* USE CLASS 1, 2, OR B RIP RAP IF RIP RAP CLASS IS NOT SHOWN FOR ROCK PLATING LOCATION.

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