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COMPUTED BY: SGM	DATE: 3/12/2019
CHECKED BY: JLT	DATE:3/14/2019

PROJECT NO.	SHEET NO.
17BP.14.R.210	3B-1

STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- 10+55.00	-L- 15+52.20	978	1035	57	
BRIDGE					
-L- 16+39.80	-L-20+50.00	46	1707	1661	
TOTALS:		1024	2742	1718	
PROJECT TOTALS:		1024	2742	1718	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				86	
GRAND TOTALS:		1024	2742	1804	
SAY:		1,100		1,900	

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.

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.

EST. DDE = 470 CY

EST. SHALLOW UNDERCUT = 100 CY

SELECT GRANULAR MATERIAL = 400 CY

GEOTEXTILE FOR SOIL STABILIZATION = 600 SY

CLASS IV SUBGRADE STABILIZATION = 200 TON

PER GEOTECH RECOMMENDATION, ESTIMATED 450 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L-	10+94	15+45	LT	772.92			
-L-	15+87	19+39	LT	541.47			
			TOTAL:	1,314.39			
			SAY:	1,320			

"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

IN FEET

LINE	BEG. STA.	END STA.	LOC.	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPR. END	WARRANT POINT TRAIL. END	"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLAIR LENGTH APPR. END	FLAIR LENGTH TRAIL. END	W APPR. END	W TRAIL. END	ANCHORS III	ANCHORS GREU TL-2	ANCHORS AT-1	ANCHORS III SC		IMP. ATTEN. TYPE 350 EA	IMP. ATTEN. TYPE 350 G	IMP. ATTEN. TYPE 350 NG	REMOVE EXISTING GUARDRAIL	REMOVE & RESET EXISTING GUARDRAIL	REMARKS
-L-	14+87.92	15+44.17	LT	56.25				15+44.17	3.92'	6.92'		25'		0.5'	1	1									
-L-	15+03.99	15+60.24	RT	56.25			15+60.24		3.92'	6.92'	25'		0.5'		1	1									
-L-	16+31.76	16+81.76	LT	50.00			16+31.76		3.92'	6.92'	25'		0.5'		1	1									
-L-	16+47.83	16+97.83	RT	50.00				16+47.83	3.92'	6.92'		25'		0.5'	1	1									
		SUB-TOTALS		212.50											4	4									
	LESS ANCHOR DEDUCTIONS																								
	GREU TL-2	4@25.00 ft		100.00																					
	TYPE III	4@18.75 ft		75.00																					
	ANCHOR TOTALS			175.00																					
		GRAND-TOTALS		37.50											4	4									
		SAY		37.5											4	4									
		ADDITIONAL GUARDRAIL POSTS = 5 EA																							
	TEMPORARY GUARDRAIL																								
-L-	15+15+/-	15+40+/-	RT	25.00												1									Temporary Anchor
		SUB-TOTALS		25.00												1									
	LESS ANCHOR DEDUCTIONS																								
	GREU TL-2	1@25.00 ft		25.00																					
		GRAND-TOTALS		0.00												1									
		SAY		0												1									

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

COMPUTED BY: Zachary J. Richard, PE	DATE: 7/12/2018
CHECKED BY: David B. Petty, PE	DATE: 3/9/2019

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & 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	C.S. PIPE 12"	15"	18"	24"	30"	36"	42"	48"	.064	.064	.064	.064	.079	.079	.109	.109
-L- 15+20	LT	0401		2086.7																															
		0401	0402		2084.7	2084.6		12																											
-L- 15+36	RT	0403		2087.0				16																											
		0403	0404		2084.2	2084.1																													
-L- 12+75	CL	0405			2081.1	2080.7																													
-L- 11+35	RT	0406						72																											
TOTALS								100																											

STATION / SIZE / THICKNESS OR GAUGE	R.C. PIPE CLASS III	R.C. PIPE CLASS IV	R.C. PIPE CLASS V	CONTRACTOR DESIGN	RC PIPE CULVERTS, CONTRACTOR DESIGN	1" SIDE DRAIN PIPE	15" SIDE DRAIN PIPE	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"	ENDWALLS STD. 838.01 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	ENDWALLS CU. YARDS C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (# THRU 3.0')	TOTAL L.F. OF PIPE W/ QUANTITY SHALL BE (COL. "A" + (1.3 X COL. "B")) LIN. FT. A 3.0' 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 DROP INLET	CATCH BASIN		T.B.D. STD. 840.35	FRAME AND NARROW FLAT GRATE STD. 840.29						CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L- 15+20																																															
-L- 15+36																																															
-L- 12+75																																															
-L- 11+35																																															
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.)	(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