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COMPUTED BY: SGM DATE:5/15/2019
CHECKED BY: JLT DATE: 5/16/2019

PROJECT NO.	SHEET NO.
17BP.14.R.207	3B-1

STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- 11+50.00	-L- 12+71.20	66	33		33
BRIDGE					
-L- 13+28.80	-L-15+10.00	64	86	22	
TOTALS:		130	119	22	33
WASTE IN LIEU OF BORROW				-22	-22
GRAND TOTALS:		130	119		11
SAY:		150			

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, and Clearing and Grubbing 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 = 30 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.

"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	ANCHORS B-83 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-	12+28.27	12+78.27	LT	50.00				12+78.27	2.25'	5.25'		25'		0.5'	1	1									
-L-	12+04.50	12+63.35	RT	25.00	25.00		12+63.35		2.25'	5.25'	25'		0.5'			1		1							R=100'
-L-	13+35.87	13+92.12	LT	56.25			13+35.87		2.25'	5.25'	25'		0.5'		1	1									
-L-	13+21.73	13+23.52	RT		31.25			13+21.73	2.25	5.25'							1		1						R=10'
		SUB-TOTALS		131.25	56.25										2	3	1	1	1						
	LESS ANCHOR DEDUCTIONS																								
	GREU TL-2	3@25.00 ft		75.00																					
	TYPE III	2@18.75 ft		37.50																					
	TYPE III SC	1@18.75 ft			18.75																				
	B-83 SC	1@25.00 ft			25.00																				
	AT-1	1@6.25 ft			6.25																				
	ANCHOR TOTALS			112.50	50.00																				
		GRAND-TOTALS		18.75	6.25										2	3	1	1	1						
		SAY		25.00	12.50										2	3	1	1	1						
		ADDITIONAL GUARDRAIL POSTS = 5 EA																							
	TEMPORARY GUARDRAIL																								
-L-	12+62+/-	13+31+/-	RT	56.25	18.75											1	1								Temporary Guardrail and Anchors
-L-	12+56+/-	13+57+/-	RT	100.00												2									Temporary Guardrail and Anchors
		SUB-TOTALS		156.25	18.75											3	1								
	LESS ANCHOR DEDUCTIONS																								
	TEMP. GREU TL-2	3@25.00 ft		75.00																					
	TEMP. AT-1	1@6.25 ft			6.25																				
		GRAND-TOTALS (TEMP)		81.25	12.50											3	1								
		SAY		87.50	12.50											3	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: 7/31/2018
CHECKED BY: David B. Petty, PE DATE: 1/28/2019

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" .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- 13+50	LT	0401		2338.6																																							
		0401	0402		2336.7	2336.6			12																																		
-L- 12+09	CL	0403			2341.2	2340.8																															52						
TOTALS									12																												52						

STATION / SIZE / THICKNESS OR GAUGE	R.C. PIPE (CLASS V)	RC BOX CULVERTS, CONTRACTOR DESIGN	RC PIPE CULVERTS, CONTRACTOR DESIGN	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	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 (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 DROP INLET	CATCH BASIN		T.B.D.I 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.
-L- 13+50								1										1	1									
-L- 12+09																												21
TOTALS								1										1	1									21

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

REMARKS