12/06/07

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-5947	3B-1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

WETHERILL ENGINEERING

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV. (CY)	EMBANK. +% (CY)	BORROW (CY)	WASTE (CY)
–LREV– STA. 11+23.00	–LREV– STA. 22+25.50 (BEGIN BRIDGE)	281	18074	17793	
–DR1– STA. 10+14.09	–DR1– STA. 15+62.09	50	5851	5801	
SUBTOTALS:		331	23925	23594	
–LREV– STA. 25+55.50 (END BRIDGE)	–LREV– STA. 36+94.94	437	22920	22483	
SUBTOTALS:		437	22920	22483	
PROJECT SUBTOTALS:		768	46845	46077	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				2304	
PROJECT SUBTOTALS:		768	46845	48381	
GRAND TOTALS:		768	46845	48381	
SAY:		800		49000	

UNDERCUT EXCAVATION = 300 CY PER GEOTECH RECS
SELECT GRANULAR MATERIAL CLASS III = 300 CY PER GEOTECH RECS
GEOTEXTILE SOIL STABILIZATION = 600 SY PER GEOTECH RECS
SHALLOW UNDERCUT = 100 CY PER GEOTECH RECS
CLASS IV SUBGRADE STABILIZATION = 200 TONS PER GEOTECH RECS
DDE = 710 CY

Approximate quantities only. Unclassified excavation, fine grading, clearing and grubbing, and removal of existing asphalt pavement will be paid for at the lump sum price for "Grading".

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
–LREV–	11+23.00	22+24.89	RT.	1963.24
–LREV–	25+36.78	36+14.05	RT.	2517.67
			TOTAL:	4480.91
			SAY:	4490

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
–LREV– RT.	25+79.67	25+95.00	15.33′
–LREV– LT.	25+79.67	25+95.00	15.33′
–LREV– RT.	20+00.00	22+01.33	201.33′
		TOTAL:	231.99′
		SAY:	232.00′

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

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".

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)											
SIZE								12"	15"	18"	24"	30"	36"	42"	48"				
THICKNESS OR GAUGE		FROM	TO													DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
–LREV– 15+25	CL	401		178.8′	175.0′														
–DR1– 15+23	CL	402																	
–DR2– 11+83	CL	405																	
–LREV– 21+90	RT.	406		163.0′	160.0′														
–LREV– 21+90	RT.	406	407		160.0′	158.4′			16′										
–LREV– 25+91	RT.	505		160.9′	157.9′														
–LREV– 25+91	RT.	505	506		157.9′	157.6′			16′										
–LREV– 25+91	LT.	501		160.9′	157.6′														
–LREV– 25+91	LT.	501	502		157.6′	142.1′													
–LREV– 30+75	RT	503																	
–LREV– 20+39	LT																		
–LREV– 20+99	LT																		
TOTAL									32′										

STATION	C.S. PIPE							R.C. PIPE (CLASS III)							R.C. PIPE (CLASS IV)							
SIZE	12"	15"	18"	24"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE	.064	.064	.064	.064	.079	.109	.109															
–LREV– 15+25																	72′					
–DR1– 15+23																						
–DR2– 11+83																						
–LREV– 21+90																						
–LREV– 21+90																						
–LREV– 25+91																						
–LREV– 25+91																						
–LREV– 25+91																						
–LREV– 25+91		48′																				
–LREV– 30+75																						
–LREV– 20+39																						
–LREV– 20+99																						
TOTAL		48′															72′					

STATION	**" 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.	ENDWALLS CU. YDS. 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	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	
–LREV– 15+25															
–DR1– 15+23					48′										
–DR2– 11+83				44′											
–LREV– 21+90								1							
–LREV– 21+90															
–LREV– 25+91								1							
–LREV– 25+91															
–LREV– 25+91								1							
–LREV– 25+91															
–LREV– 30+75					52′										
–LREV– 20+39															
–LREV– 20+99															
TOTAL				44′	100′			3							

STATION	CONCRETE TRANSITIONAL SECTION CATCH BASIN	CONCRETE TRANSITIONAL SECTION DROP INLET	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.35 OR STD. 840.46	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	M.H. FRAME & COVER STD. 840.54	T.B.J.B. STD. 840.34	CSP 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
–LREV– 15+25													REMOVE 61′ OF 18" CMP
–DR1– 15+23													
–DR2– 11+83													
–LREV– 21+90					1	1							
–LREV– 21+90													
–LREV– 25+91					1	1							
–LREV– 25+91													
–LREV– 25+91					1	1							
–LREV– 25+91									2@15"				
–LREV– 30+75													
–LREV– 20+39												34′	REMOVE 24" RCP
–LREV– 20+99												21′	REMOVE 18" RCP
TOTAL					3	3			2@15"			55′	

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
–LREV–	17+44.25	22+25.50	LT.	481.25′				22+25.50	VAR. 5′–0" TO 8′–0"	VAR. 8′–0" TO 11′–0"		412′–6"		3′–0"
–LREV–	19+19.25	22+25.50	RT.	306.25′			22+25.50		VAR. 5′–0" TO 8′–0"	VAR. 8′–0" TO 11′–0"	237′–6"		3′–0"	
–LREV–	25+55.50	30+74.25	LT.	518.75′			25+55.50		VAR. 5′–0" TO 8′–0"	VAR. 8′–0" TO 11′–0"	450′–0"		3′–0"	
–LREV–	25+55.50	26+99.25	RT.	143.75′				25+55.50	VAR. 5′–0" TO 8′–0"	VAR. 8′–0" TO 9′–5"		75′–0"		3′–0"
			PROJECT SUBTOTAL	1450.00′										
			LESS ANCHOR DEDUCTIONS	(–)275.00′										
			GR PROJECT TOTAL	1175.00′										
			PERMANENT GR SAY	1175.00′		ADDITIONAL GUARDRAIL POSTS = 5 EACH								
–LREV–	19+80.07	22+25.33	RT.											
–LREV–	20+81.29	22+25.25	RT.											
–LREV–	25+35.71	28+29.28	RT.											
–LREV–	25+35.75	26+78.54	RT.											
			TOTAL											
			SAY											

SURVEY LINE	BEG. STA.	ANCHORS XI MOD	ANCHORS TYPE III	ANCHORS GREU TL–3	ANCHORS AT–1		ANCHORS CAT–1	ANCHORS VI MOD	ANCHORS BIC	ANCHORS AT–1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–LREV–	17+44.25		1	1													FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL. FLATTER THAN 50:1
–LREV–	19+19.25		1	1													FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL. FLATTER THAN 50:1
–LREV–	25+55.50		1	1													FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL. FLATTER THAN 50:1
–LREV–	25+55.50		1	1													FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL. FLATTER THAN 50:1
PROJECT SUBTOTAL			4	4													
LESS ANCHOR DEDUCTIONS																	
GR PROJECT TOTAL						GUARDRAIL ANCHOR DEDUCTIONS											
PERMANENT GR SAY						TYPE III = 4 @ 18.75′ = 75.00′											
						GREU TL–3 = 4 @ 50′ = 200′											
						TOTAL DEDUCTIONS = 275.00′											
–LREV–	19+80.07														245.26′		
–LREV–	20+81.29														143.96′		
–LREV–	25+35.71														243.57′		
–LREV–	25+35.75														142.79′		
TOTAL															775.58′		
SAY															776′		

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