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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
B-6029	3B-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039234 ENGINEER MICHAEL T. HONEYCUTT
11/16/2023

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 038053 ENGINEER DAVID C. MORRISON
11/16/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

EARTHWORK SUMMARY (IN CUBIC YARDS)

CHAIN	FROM STATION	TO STATION	SIDE	UNCL. EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
–L–	14 + 50.00	16 + 71.20	LT & RT	185		345	160	
–L–	17 + 43.87	20 + 60.00	LT & RT	743		33		710
–DR1–	10 + 50.00	11 + 69.25	LT & RT	3		129	126	
–DR2–	10 + 30.00	10 + 83.47	LT & RT	65				65
–DR3–	10 + 18.27	11 + 42.00	LT & RT	32		2		30
TOTAL				1028		509	286	805
LOSS DUE TO CLEARING AND GRUBBING								
WASTE IN LIEU OF BORROW							–286	–286
PROJECT TOTAL				1028		509		519
ESTIMATE 5% FOR TOPSOIL ON BORROW PITS								
GRAND TOTAL				1,028		509		519
SAY				1,040		520		530

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

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
–L–	15 + 29	19 + 82	LT	99
			TOTAL:	100
			SAY:	100

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS IV R.C. PIPE (UNLESS NOTED OTHERWISE) SIZE: 12" 15" 18" 24" 30" 36" 42" 48"	C.S. PIPE THICKNESS OR GAUGE: 12" 15" 18" 24" 30" 36" 42" 48"		15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" 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	D.I. STD. 840.15 OR STD. 840.14	D.I. FRAME AND 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	TRAFFIC BEARING G.D.I. STD. 840.35	G.D.I. FRAME WITH GRATE STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.20	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.29	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	CORR. STEEL 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
–L– STA. 15 + 04	RT	0401	0402		2269.4′	2268.7′	0.02	46																										15′	
–L– STA. 16 + 54	RT	0404	0403	2274.9′	2271.2′	2268.0′	0.09	44										1							1		1								
–L– STA. 18 + 18	LT	0406	0405	2282.6′	2278.7′	2277.5′	0.02	60										1				1	1										37′	
–L– STA. 19 + 50	LT																																15′	
–L– STA. 20 + 14	LT	0408	0407		2295.3′	2294.0′	0.03	40																										
TOTAL								44′	46′	40′								2				1	1			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

* W MEASURED FROM "N" AT THE BEGINNING OF THE ANCHOR TO "N" AT THE END OF THE ANCHOR.
"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	B–77	GREU TL–2	M–350	TYPE III	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–	15 + 93.56	16 + 62.30	LT	68.75				16 + 62.30	5.4	8.4		25		0.5			1		1											
–L–	16 + 23.85	16 + 80.10	RT	56.25			16 + 80.10		5.4	8.4	25		0.5				1		1											
–L–	17 + 34.90	17 + 80.93	LT	37.50	18.75		17 + 34.90		5.6 – 6.9	9.9									1				1							
–L–	17 + 53.61	18 + 12.34	RT	43.75	12.50			17 + 53.61	4.4 – 4.8	7.8		25		0.5			1		1											
TOTAL:				206.25	31.25												3 EA		4 EA				1 EA							
TOTAL ANCHOR LENGTH:				156.25													75.00		75.00				6.25							
TOTAL GUARDRAIL LENGTH:				50.00	31.25																									
SAY:				50.00 LF	31.25 LF		ADDITIONAL GUARDRAIL POSTS: 5 EA																								

11/14/2023
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