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RAL-WS090

COMPUTED BY: SMM DATE: 6/26/19

CHECKED BY: JCH DATE: 6/27/19

PROJECT NO.	SHEET NO.
W-5600	3D-8

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**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".**

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC) 15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	C. S. PIPE 15 .064	18 .064	24 .064	30 .079	36 .079	42 .109	48 .109	R. C. PIPE CLASS III 15	18	24	30	36	42	48	R. C. PIPE CLASS IV 15	18	24	30	36	42	48	R. C. PIPE CLASS V 15	18	24	30	42" x 29" C.S. PIPE ARCH CULVERTS, 0.079" THICK	36" WELDED STEEL PIPE 0.312" THICK, GRADE B	48" WELDED STEEL PIPE 0.5" THICK, GRADE B	42" WELDED STEEL PIPE 0.375" THICK, GRADE B	15" WELDED STEEL PIPE 0.25" THICK, GRADE B	18" WELDED STEEL PIPE 0.25" THICK, GRADE B	24" WELDED STEEL PIPE 0.25" THICK, GRADE B	30" WELDED STEEL PIPE 0.312" THICK, GRADE B	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	OPEN THROAT C.B., SEE SPECIAL DETAIL SHEET 20	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	J.B. STD. 840.31 OR STD. 840.32	M.H. FRAME AND COVER STD. 840.54	CONVERT EXISTING D.I. TO J.B.	ADJUST D.I.	15" SIDE DRAIN PIPE ELBOW	18" SIDE DRAIN PIPE ELBOW	15" C.S. ELBOW	18" C.S. ELBOW	BERM DRAINAGE OUTLET STD. 850.10 (SY)	BERM DRAINAGE OUTLET STD. 850.11 (SY)	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	PIPE REMOVAL LIN. FT.	REMARKS
			2105	2106		188.9	187.9	0.3																										112																																																					
Y9RPA 21+50	45	LT	2107		200.5																																																			1													1			1																
			2107	2020		197.5	195.5		272																																																																											3			
L 224+42	50	LT	2109		215.9																																																			1													1		1																	
			2109	2110		212.9	210.7																																			48																																																	
L 224+42	2	LT	2110		214.8																																																			1													1		1																	
			2110	2111		210.7	210.6	0.4																																		4																																																	
L 224+42	2	RT	2111		214.7																																																			1	1.9												1		1																	
			2111	2113		207.9	204.9	0.7																																		56																																															63	
L 223+77	50	RT	2112		215.3																																																			1													1		1																	
			2112	2113		210.3	204.9																							64																																																																		
Y9RPD 18+50	26	RT	2113		211.6																																																			1	2.0																	1	1												
			2113	2113A		204.6	198.0	0.6																																			68																																															
Y9RPD 18+55	42	LT	2113A		201.9																																																			1	2.0																	1	1												
			2113A	2114		194.9	189.0															40																																																													2						
Y9RPA 16+02	21	LT	2116		206.6																																																			1													1			1																
			2116	2117		203.6	201.9																													96																																																										
L 230+00	2	LT	2118		199.0																																																			1													1		1																	
			2118	2119		196.0	195.9	0.4																																		4																																																	
L 230+00	3	RT	2119		199.0																																																			1													1		1																	
			2119	2120		195.9	192.1	0.6																																		80																																																	
L 230+00	84	RT	2120		194.8																																																			1													1			1																
			2120	2126		192.1	187.3	1.0	396																																																																																		
Y9RPA 11+00	42	RT	2121		192.0																																																			1														1		1																
			2121	2123		189.9	188.8			184																																																																																			
			2122	2123		190.8	188.8																																							60																																															60	
L 233+83	67	LT	2123		192.8																																																			1													1			1																
			2123	2124		188.8	188.0																																																64																																		4			
L 233+84	2	LT	2124		194.9																																																			1	1.9												1		1																	
			2124	2125		188.0	187.9	0.3																								4																																																															
L 233+84	3	RT	2125		194.9																																																			1	2.0												1		1																	
			2125	2126		187.9	187.3	0.3																																															72																																		5			
L 234+00	74	RT	2126		192.2																																																			1													1		1																	
			2126	2201		187.3	186.4	0.6																								128																																																												100	
Y9RPD 17+00	23	LT	2128		206.2																																																			1													1		1																	
			2128	2129		203.2	196.1		36																																																																									2										
SR7 16+50	0	CL	2131			192.0	191.7																								84																																																																
SR6 25+32	67	RT	2201		189.6																																																			1														1		1																
			2201	2202		186.4	186.1	0.6																								64																																																												64	
L 240+00	2	LT	2203		187.8																																																			1													1		1																	
			2203	2204		184.8	184.7																																			4																																																	
L 240+00	3	RT	2204		187.8																																																			1													1		1																	
			2204	2205		184.7	181.4																																												68																																				4			
L 240+00	70	RT	2205		184.4																																																			1													1			1																
			2205	2209		181.4	174.4	0.5		492																																																																																		
L 244+93	3	LT	2206		182.3																																																			1													1		1																	
L 244+93	3	RT	2207		182.3																																																			1													1		1																	
SR7 36+79	33	LT	2208																																							48																																																	41	
L 244+95	68	RT	2209		178.7																																																			1													1			1															8	
SHEET TOTALS									704	676												40						64	84		196			112	96							244	68		60						68		136			24	9.8												20	2	14	8		2	2			2			2			16		336	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT