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TGSBEN-LAPTOP

COMPUTED BY:	BAC	DATE:	04-20-21
CHECKED BY:	BJH	DATE:	04-20-21

PROJECT NO.	SHEET NO.
15614.1075010	3D-1

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	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	C. S. PIPE (ALUMINIZED TYPE 2) 12	15	18	24	30	36	42	48	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48
THICKNESS OR GAUGE								0.079	0.079	0.079	0.109	0.138	0.138	0.168	0.168								
I26 416+09	113 RT	0401																					
		0401	0403		1389.4	1387.4													32				
I26 416+00	84 RT	0402		1393.4																			
		0402	0403		1388.0	1387.9												12					
I26 416+60	85 RT	0404																					
		0404	0403		1397.3	1387.4	1.0				44												
I26 415+78	2 LT	0405																					
		0405	0402																				
I26 415+73	52 LT	0406																					
		0406	0405																				
		0407	0408		1385.0	1345.5	1.4					80											
I26 416+15	171 LT	0408		1351.8																			
		0408	0409		1337.6	1337.0	1.4					16											
HGR 31+99	26 RT	0501		1350.5																			
		0501	0541																				
HGR 33+19	17 RT	0502		1368.5																			
		0502	0501		1364.0	1347.3	1.6						120										
HGR 34+46	8 RT	0503		1385.9																			
		0503	0502		1380.5	1364.5	3.7					124											
HGR 34+78	22 LT	0505		1388.1																			
		0505	0504		1380.7	1327.2	1.2			92													
HGR 34+78	22 RT	0506		1388.5																			
		0506	0505		1381.5	1380.7	1.2			44													
HGR 35+69	89 LT	0507		1367.6																			
		0507	0908		1360.3	1352.9	4.3					68											
HGR 35+67	31 LT	0508		1400.6																			
		0508	0507		1392.0	1361.3	4.3					56											
HGR 35+63	14 RT	0509		1401.2																			
		0509	0508		1394.6	1392.5					44												
		0509	0503		1394.6	1380.5						112											
HGR 35+63	29 RT	0510		1409.8																			
		0510	0509		1395.7	1395.1	3.8						12										
HGR 36+12	120 RT	0515		1464.9																			
		0515	0540		1453.3	1406.5	3.8						80										
I26 453+92	372 LT	0516		1513.7																			
		0516	0515		1503.6	1458.6	3.8						76										
I26 454+25	311 LT	0517		1555.0																			
		0517	0516		1545.3	1505.7	3.8						68										
I26 453+79	201 LT	0518		1583.2																			
		0518	0517		1570.2	1545.3	3.8						120										
I26 453+34	146 LT	0519		1609.9																			
		0519	0518		1602.1	1574.2	3.8						72										
I26 451+17	43 LT	0520		1648.2																			
		0520	0538		1639.4	1638.5				96													
I26 451+17	1 LT	0521		1647.0																			
		0521	0520		1639.8	1639.4																	
I26 451+16	63 RT	0522		1643.4																			
		0522	0521		1640.4	1639.8																	
I26 452+14	42 LT	0523		1654.6																			
		0523	0538		1651.0	1638.5	0.6			24													
							SHEET TOTALS			256	88	456	548					12	32				

FROM	TO	15" PIPE REHABILITAION CIPP LINER	18" PIPE REHABILITAION CIPP LINER	18" PIPE REHABILITATION SMOOTH WALL STEEL SLIP LINER (0.5" THICK)	24" PIPE REHABILITAION CIPP LINER	30" PIPE REHABILITAION CIPP LINER	36" PIPE REHABILITAION CIPP LINER	42" PIPE REHABILITAION CIPP LINER	42" PIPE REHABILITAION SOLID WALL THERMOPLASTIC SLIP LINER	18" WELDED STEEL PIPE 0.5" THICK, GRADE B IN SOIL	18" WELDED STEEL PIPE 0.5" THICK, GRADE B NOT IN SOIL	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) 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
0401												1.500							
0401	0403																		
0402													1	0.4					
0402	0403																		
0404																			
0404	0403																		
0405																			
0405	0402		88																
0406																			
0406	0405		52																
0407	0408																		
0408													1	5.0	4.2				
0408	0409																		
0501													1						
0501	0541						68												
0502													1						
0502	0501																		
0503													1	0.4					
0503	0502																		
0505													1	2.4					
0505	0504																		
0506													1	2.0					
0506	0505																		
0507													1	2.3					
0507	0908																		
0508													1	3.6					
0508	0507																		
0509													1	1.6					
0509	0508																		
0509	0503																		
0510													1	5.0	4.1				
0510	0509																		
0515													1	5.0	1.6				
0515	0540																		
0516													1	5.0	0.1				
0516	0515																		
0517													1	4.7					
0517	0516																		
0518													1	5.0	3.0				
0518	0517																		
0519													1	2.8					
0519	0518																		
0520													1	3.8					
0520	0538																		
0521													1	2.2					
0521	0520									20	20								
0522													1						
0522	0521									32	32								
0523													1						
0523	0538																		
SHEET TOTALS			140				68			52	52	1.500	20	51.2	13.0				

FROM	TO	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	CONCRETE TRANSITIONAL SECTION C.B. STD. 852.05	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	CONCRETE BRIDGE APPROACH D.I. STD. 840.13	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 WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	J.B. STD. 840.31 OR STD. 840.32	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35
0401																					
0401	0403																				
0402									1					1							
0402	0403																				
0404																					
0404	0403																				
0405																					
0405	0402																				
0406																					
0406	0405																				
0407	0408																				
0408																					
0408	0409																				
0501				1																	
0501	0541																				
0502				1																	
0502	0501																				
0503																				1	
0503	0502																				
0505																			1		
0505	0504																				
0506				1																	
0506	0505																				
0507																					
0507	0908																				
0508																					
0508	0507																				
0509																					
0509	0508																				
0509	0503																				
0510																					
0510	0509																				
0515																					
0515	0540																				
0516																					
0516	0515																				
0517																					
0517	0516																				
0518																					
0518	0517																				
0519																					
0519	0518																				
0520									1			1									
0520	0538																				
0521												1									1
0521	0520																				
0522									1					1							
0522	0521																				
0523									1			1									
0523	0538																				
SHEET TOTALS				3					4			3		2					1	1	1

FROM	TO	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	M.H. FRAME AND VENTED M.H. GRATE	ENERGY DISSIPATOR J.B. SEE DETAIL 2D-1	SPITTER BOX SEE DETAIL 2D-4	SPECIAL DESIGN J.B. W/ MH SEE DETAIL 2D-8	HINGED GRATE	G.D.I. TYPE "A" EXTRA DEPTH, SEE DETAIL 2D-12	CONVERT EXISTING D.I. TO J.B.	CONVERT EXISTING J.B. TO D.I.	ADJUST C.B.	ADJUST D.I.	15" C.S. ELBOW	18" C.S. ELBOW	24" C.S. ELBOW	30" C.S. ELBOW	36" C.S. ELBOW	SPEC. DSN. PIPE CONNECTION, SEE DETAIL 2D-11	BERM DITCH OUTLET STD. 850.11 (PER EACH)	PIPE CLEANOUT EA	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
0401																										
0401	0403																									
0402																										
0402	0403																									
0404																				1						24" BDO
0404	0403															1			1							ROD & LUG W/ GASKETS & ELBOW, 12 GAGE SPC. DSN. PIPE CONNECTION - 0403
0405																										
0405	0402																									RETAIN AND LINE W/ CIPP
0406																										
0406	0405																									RETAIN AND LINE W/ CIPP
0407	0408																2		2							ROD & LUG W/ GASKETS & 2 ELBOWS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0407 & 0408
0408				1			1																			SPECIAL DESIGN JB W/ VENTED MH (BOLTED)
0408	0409																		1							ROD & LUG W/ GASKETS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0408
0501																										OTCB-4
0501	0541																									RETAIN AND LINE W/ CIPP
0502																										OTCB-4
0502	0501																		2							ROD & LUG W/ GASKETS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0502 & 0501
0503			1																							TRAFFIC BEARING JB W/ MH
0503	0502																		2							ROD & LUG W/ GASKETS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0503 & 0502
0505			1																							JB W/ MH
0505	0504														2				1							ROD & LUG W/ GASKETS & 2 ELBOWS, 14 GAGE SPC. DSN. PIPE CONNECTION - 0505
0506																										OTCB-4
0506	0505																		2							ROD & LUG W/ GASKETS, 14 GAGE SPC. DSN. PIPE CONNECTION - 0506 & 0505
0507				2	1																					ENERGY DISSIPATOR JB, VENTED MH'S (BOLTED)
0507	0908																		2							ROD & LUG W/ GASKETS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0507 & 0908
0508				1			1																			SPECIAL DESIGN JB W/ VENTED MH (BOLTED)
0508	0507																2		2							ROD & LUG W/ GASKETS & 2 ELBOWS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0508 & 0507
0509			2			1																				SPLITTER BOX W/ MH'S
0509	0508																		2							ROD & LUG W/ GASKETS, 12 GAGE SPC. DSN. PIPE CONNECTION - 0509 & 0508
0509	0503																		2							ROD & LUG W/ GASKETS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0509 & 0503
0510				1			1																			SPECIAL DESIGN JB W/ VENTED MH (BOLTED)
0510	0509																		2							ROD & LUG W/ GASKETS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0510 & 0509
0515				1			1																			SPECIAL DESIGN JB W/ VENTED MH (BOLTED)
0515	0540																	2	2							ROD & LUG W/ GASKETS & 2 ELBOWS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0515 & 0540
0516				1			1																			SPECIAL DESIGN JB W/ VENTED MH (BOLTED)
0516	0515																	2	2							ROD & LUG W/ GASKETS & 2 ELBOWS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0516 & 0515
0517				1			1																			SPECIAL DESIGN JB W/ VENTED MH (BOLTED)
0517	0516																	2	2							ROD & LUG W/ GASKETS & 2 ELBOWS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0517 & 0516
0518				1			1																			SPECIAL DESIGN JB W/ VENTED MH (BOLTED)
0518	0517																		2							ROD & LUG W/ GASKETS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0518 & 0517
0519				2	1																					ENERGY DISSIPATOR JB, VENTED MH'S (BOLTED)
0519	0518																	2	2							ROD & LUG W/ GASKETS & 2 ELBOWS, 10 GAGE SPC. DSN. PIPE CONNECTION - 0519 & 0518
0520																										
0520	0538																		2							ROD & LUG W/ GASKETS, 14 GAGE SPC. DSN. PIPE CONNECTION - 0520 & 0538
0521																										TRAFFIC BEARING 2GI
0521	0520																									TRENCHLESS CONSTRUCTION, L=40'
0522																										
0522	0521																									TRENCHLESS CONSTRUCTION, L=64'
0523																										
0523	0538														2				2							ROD & LUG W/ GASKETS & 2 ELBOWS, 14 GAGE SPC. DSN. PIPE CONNECTION - 0523 & 0538
SHEET TOTALS			4	11	2	1	7								4	1	4	8	35	1						

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