RALD101

COMPUTED BY:	DTK	DATE:	09/28/2021
CHECKED BY:	DMW	DATE:	09/30/2021

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
GUARDRAIL SUMMARY

PROJECT REFERENCE NO.	SHEET NO.
R-5021	3B-1

"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

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS						IMPACT ATTENUATOR - MASH, TL-3		SINGLE FACED CONCRETE BARRIER (LF)	REMOVE EXISTING GUARDRAIL (LF)	REMOVE & RESET EXISTING GUARDRAIL (LF)	REMARKS
				STRAIGHT	SHOP CURVED	DEEPER POSTS	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU, TL-3	GREU TL-2	CAT-1	AT-1	TYPE III	B-77	G	NG				
-L-	63+14.11	69+59.75	RT	602.0'	48.0'				8.0'	9.4'	50.0'		1.00'		1		1									SHOULDER BERM GUTTER INSTALLATION
-L-	63+93.80		LT	125.0'	87.5'		64+26.99		8.0'	9.4'							1							306		SHOULDER BERM GUTTER INSTALLATION
-YE-		11+90.20	RT						2.3'	3.8'	17.9'		4.00'					1								SHOULDER BERM GUTTER INSTALLATION
-L-	70+24.32	74+78.65	RT	400.0'	100.0'				8.0'	9.4'	25.0'					1	1									SHOULDER BERM GUTTER INSTALLATION
-L-	76+20.68	78+92.16	RT	275.0'				BRIDGE	8.0'	11.0'	50.0'		1.00'		1					1			90.9			
-L-	79+83.08	86+12.89	RT	637.5'			BRIDGE		8.0'	11.0'							1			1				330		
-L-	79+71.77	81+63.95	LT	200.0'				BRIDGE	8.0'	11.0'								1		1			91.8			
-L-	83+24.81	84+80.00	LT	162.5'			83+93.25		8.0'	9.4'			1.00'		1		1							239		SHOULDER BERM GUTTER INSTALLATION
-L-	85+40.01	86+60.00	LT	125.0'			85+51.92		8.0'	9.4'			1.00'		1		1									SHOULDER BERM GUTTER INSTALLATION
-L-	155+13.41	157+05.91	CL	200.0'					13.8'													1				
-L-	155+13.41	157+05.91	CL	200.0'					13.8'													1				
-L-	214+06.23	217+21.35	RT	325.0'			216+68.03		8.0'	9.4'	50.0'		1.00'		1		1							166		SHOULDER BERM GUTTER INSTALLATION
-L-	217+33.15	220+48.37	LT	325.0'			217+78.44		8.0'	9.4'	50.0'		1.00'		1		1							166		SHOULDER BERM GUTTER INSTALLATION
-L-	222+99.25	226+89.90	RT	400.0'			225+55.69		8.0'	9.4'	50.0'		1.00'		1		1							454		SHOULDER BERM GUTTER INSTALLATION
-L-	225+11.50	229+01.54	LT	400.0'			226+45.10		8.0'	9.4'	50.0'		1.00'		1		1							456		
-Y5- **	11+12.95		LT	362.5'	75.0'			11+19.71	2.3'	3.8'		27.7'		4.00'				1								SHOULDER BERM GUTTER INSTALLATION. USE 3'-1.5" STEEL POST SPACING WITH NESTED RAIL
-L- **		236+64.82	LT				236+49.23		2.3'	3.8'	12.0'		4.00'					1								SHOULDER BERM GUTTER INSTALLATION. USE 3'-1.5" STEEL POST SPACING WITH NESTED RAIL
-L- **	236+89.32	239+40.00	LT	237.5'	50.0'		237+90.00		8.0'	9.4'		12.0'		4.00'	1			1								SHOULDER BERM GUTTER INSTALLATION. USE 3'-1.5" STEEL POST SPACING WITH NESTED RAIL
-L-	275+50.00	287+06.24	RT	1162.5'			276+08.39	287+65.03	8.0'	11.0'	50.0'		1.00'		1		1									
-L-	275+93.82	287+50.00	LT	1162.5'			275+93.82	287+50.00	8.0'	11.0'	50.0'		1.00'		1		1									GUARDRAIL FOR RED COCKADED WOODPECKER PROTECTION
-L-	313+24.02		RT	200.0'	100.0'		314+40.76		8.0'	11.0'	12.0'		4.00'					1								
-Y11-		11+02.54	LT					10+84.57	8.0'	11.0'		13.5'		4.00'				1								
-Y11-	10+92.84		RT	125.0'	62.5'		10+61.30		8.0'	11.0'	14.4'		4.00'					1								
-L-		317+30.00	RT						8.0'	11.0'																
-L- **	317+30.00	318+86.25	RT	150.0'				318+86.25	8.0'	11.0'							1							182		USE 3'-1.5" STEEL POST SPACING WITH NESTED RAIL
-L-	316+19.13		LT	200.0'	75.0'			316+62.59	8.0'	9.4'							1							273		SHOULDER BERM GUTTER INSTALLATION
-Y12-		12+70.64	RT				13+06.78				14.1'		4.00'					1								SHOULDER BERM GUTTER INSTALLATION
-L-	329+49.82	330+77.13	RT	125.0'	50.0'			BRIDGE	8.0'	11.0'								1		1			81.3			
-L-	331+63.21	333+38.20	LT	175.0'				BRIDGE	8.0'	11.0'	50.0'		1.00'		1					1			81.0			
-L-	366+44.54	368+83.94	LT	250.0'			BRIDGE		8.0'	11.0'							1		1							
-L-	367+09.44	368+59.90	RT	162.5'				BRIDGE	4.0'	5.3'	50.0'		1.00'		1				1					222		SHOULDER BERM GUTTER INSTALLATION
-L-	367+20.79	368+68.36	MED	150.0'				BRIDGE	2.0'		50.0'		1.00'		1				1					98		
-L-	367+44.32	368+75.63	MED	137.5'			BRIDGE		2.0'		50.0'			1.00'	1				1							
-L-/-LREV-	370+00.90	370+72.83	RT	75.0'			BRIDGE		4.0'	5.4'							1		1					97		SHOULDER BERM GUTTER INSTALLATION
-L-/-LREV-	370+08.66	371+47.40	MED	150.0'			BRIDGE		2.0'		50.0'			1.00'	1				1					222		
-L-/-LREV-	370+15.33	371+69.33	MED	162.5'				BRIDGE	2.0'		50.0'		1.00'		1				1							
-L-/-LREV-	370+22.95	371+70.84	LT	150.0'				BRIDGE	4.0'	7.0'	50.0'		1.00'		1				1							
-LREV-	373+30.13	376+14.69	LT	237.5'	37.5'		375+39.98		8.0'	11.0'							1	1								
-LREV-	386+87.80	388+42.94	RT	162.5'			BRIDGE		4.0'	7.0'					1				1					212		SHOULDER BERM GUTTER INSTALLATION
-LREV-	386+98.14	388+51.72	MED	162.5'			BRIDGE		2.0'						1				1					235		
-LREV-	387+25.33	388+59.27	MED	137.5'				BRIDGE	2.0'						1				1							
-LREV-	388+36.87	388+67.91	LT	37.5'				BRIDGE	4.0'	7.0'							1		1							
-L-	391+56.37	392+11.14	RT	62.5'				BRIDGE	4.0'	7.0'							1		1					236		SHOULDER BERM GUTTER INSTALLATION
-L-	391+63.80	395+01.25	MED	350.0'				BRIDGE	2.0'		50.0'								1			1		264		
-L-	391+70.19	395+01.25	MED	350.0'			BRIDGE		2.0'		50.0'								1							
-L-	391+77.51	393+20.42	LT	150.0'			BRIDGE		4.0'	7.0'	50.0'				1				1							
-YREV-	24+50.00	29+51.83	LT	506.3'				25+50.00	8.0'	11.0'							1									
-YREV-	29+51.83	30+72.24	LT	125.0'			BRIDGE		8.0'	11.0'										1						USE DEEPER 8' POST IN FRONT OF WALL
-YD-	11+97.19		RT	350.0'	87.5'				2.3'	3.8'	18.1'		4.00'					1								SHOULDER BERM GUTTER INSTALLATION
-YREV-		29+65.69	RT						8.0'	9.4'																SHOULDER BERM GUTTER INSTALLATION
-YREV-	29+65.69	30+62.04	RT	200.0'				BRIDGE	8.0'	9.4'										1						SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-YREV-	32+03.79	33+50.33	RT	300.0'			BRIDGE		8.0'	11.0'										1						SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-YREV-	33+50.33	36+56.38	RT	312.5'					8.0'	11.0'							1									SHOULDER BERM GUTTER INSTALLATION
-YREV-	32+08.57	33+49.60	LT	250.0'				BRIDGE	8.0'	11.0'			1.00'							1						USE DEEPER 8' POST IN FRONT OF WALL
-YREV-	33+49.60	37+95.00	LT	450.0'					8.0'	11.0'																
-YREV-	37+95.00	48+22.02	LT	1037.5'			47+66.75		8.0'	11.0'	50.0'				1											SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-YREV-	46+26.24	51+21.29	RT	500.0'			46+75.00	51+15.00	8.0'		50.0'		1.00'		1		1									USE DEEPER 8' POST IN FRONT OF WALL
-Y14C-	11+89.55		LT	300.0'	125.0'		28+55.24		2.0'	4.0'														120		TIE TO EXISTING GUARDRAIL
-Y14A-	28+22.98	31+80.45	RT	312.5'	50.0'				8.0'	9.4'							1									SHOULDER BERM GUTTER INSTALLATION.
-Y14A-	29+43.75	30+80.42	LT	137.5'			29+50.00		8.0'	11.0'							1									SHOULDER BERM GUTTER INSTALLATION.
-Y14A-	30+80.42	34+44.57	LT	375.0'					8.0'	11.0'																
-Y14A-	34+44.57	36+92.52	LT	250.0'					8.0'	11.0'																USE DEEPER 8' POST IN FRONT OF WALL
-Y14A-	36+92.52	38+95.20	LT	212.5'				BRIDGE	8.0'	11.0'										1						SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-Y14A-	32+17.74	38+98.41	RT	662.5'	25.0'			BRIDGE	8.0'	9.4'								1		1						SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-Y14A-	40+14.03	41+45.72	LT	137.5'				BRIDGE	8.0'	9.4'										1						SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-Y14A-	41+45.72	47+39.02	LT	662.5'					8.0'	9.4'																USE DEEPER 8' POST IN FRONT OF WALL
-Y14E-		10+85.93	RT		50.0'		11+14.02		2.3'	3.8'	24.8'		4.00'					1								SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-Y14A-	40+17.25	41+12.43	RT	100.0'			BRIDGE		8.0'	9.4'										1						SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-Y14A-	41+12.43	45+06.25	RT	400.0'				45+00.00	8.0'	11.0'							1									SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-Y14E-	10+69.07		LT		100.0'		11+04.64		2.3'	3.8'		19.1'	4.00'					1								SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST
-Y14A-		48+50.52	LT						8.0'	9.4'																
-Y14A-	48+50.52	51+11.77	LT	275.0'					8.0'	9.4'																USE DEEPER 8' POST IN FRONT OF WALL
-Y14A-	51+11.77		LT	300.0'					8.0'	9.4'																SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-Y14F-		11+29.15	RT		100.0'			11+74.31	2.3'	3.8'	12.7'							1								SHOULDER BERM GUTTER INSTALLATION. USE DEEPER 8' POST IN FRONT OF WALL
-Y14A	50+75.00		RT	425.0'	125.0'		51+74.87		8.0'	11.0'	50.0'				1											
-Y14D-		22+43.36	LT					21+68.36	2.0'	6.0'				1.00'			1									
-Y14D-	21+73.03		RT	625.0'	75.0'		22+27.57		2.0'	6.0'	50.0'		1.00'			1										
-Y14A-	55+93.96	59+44.15	RT					59+37.90	8.0'	11.0'				1.00'			1							655		
-Y14A-	59+75.00	66+00.00	LT	625.0'				64+75.00	8.0'	11.0'		50.0'		1.00'	1		1							605		SHOULDER BERM GUTTER INSTALLATION
-Y14D-	13+63.31	16+20.55	LT	250.0'			15+96.96	13+63.33	8.0'	12.0'	25.0'			1.00'		1	1									GUARDRAIL FOR BRUNSWICK ELECTRIC FENCE PROTECTION
		SUBTOTAL		21245.8'	1423.0'	0.0'																				
		LESS ANCHOR DEDUCTIONS																								
	GREU, TL-3	26 @ 50.00'	=	1250.00'																						
	GREU, TL-2	2 @ 25.00'	=	75.00'																						
	CAT-1	29 @ 6.25'	=	168.75'																						
	AT-1	17 @ 6.25'	=	100.00'																						
	TYPE III	16 @ 18.75'	=	300.00'																						
	B-77	13 @ 22.875'	=	114.375'											26	3	29	16	16	13	0	3	345.0	5538		
TOTAL				19237.6'	1423.0'	0.0'																				
			SAY	**19725.00'**	**1462.5'**	**0.0'**									**26**	**3**	**29**	**16**	**16**	**13**	**0**	**3**	**350.0**	**5600**		
** 3'-1.5" STEEL POST SPACING WITH NESTED RAIL =				750.0'	125.0'																					
ADDITIONAL GUARDRAIL POSTS =				**140**																						
ADDITIONAL 8' GUARDRAIL POSTS =				**25**																						