

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						LIVE-LOAD FACTORS (γ_{LL})	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ_{LL})	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.16	--	1.75	0.713	1.64	A	E	53.0	0.925	1.49	A	I	10.0	0.80	0.811	1.16	A	E	53.0		
	HL-93 (OPERATING)	N/A		1.97	--	1.35	0.713	2.12	A	E	53.0	0.925	1.97	A	I	10.0	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36,000	②	1.64	59.04	1.75	0.713	2.32	A	E	53.0	0.925	2.07	A	I	10.0	0.80	0.811	1.64	A	E	53.0		
	HS-20 (OPERATING)	36,000		2.72	97.92	1.35	0.713	3.00	A	E	53.0	0.925	2.72	A	I	10.0	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13,500		3.93	53.06	1.40	0.713	6.92	A	E	53.0	0.925	6.67	A	I	10.0	0.80	0.811	3.93	A	E	53.0	
		SNGARBS2	20,000		2.83	56.60	1.40	0.713	4.99	A	E	53.0	0.925	4.62	A	I	10.0	0.80	0.811	2.83	A	E	53.0	
		SNAGRIS2	22,000		2.64	58.08	1.40	0.713	4.66	A	E	53.0	0.925	4.25	A	I	10.0	0.80	0.811	2.64	A	E	53.0	
		SNCOTTS3	27,250		1.95	53.14	1.40	0.713	3.44	A	E	53.0	0.925	3.25	A	I	10.0	0.80	0.811	1.95	A	E	53.0	
		SNAGGRS4	34,925		1.59	55.53	1.40	0.713	2.81	A	E	53.0	0.925	2.62	A	I	10.0	0.80	0.811	1.59	A	E	53.0	
		SNS5A	35,550		1.56	55.46	1.40	0.713	2.75	A	E	53.0	0.925	2.63	A	I	10.0	0.80	0.811	1.56	A	E	53.0	
		SNS6A	39,950		1.42	56.73	1.40	0.713	2.50	A	E	53.0	0.925	2.36	A	I	10.0	0.80	0.811	1.42	A	E	53.0	
		SNS7B	42,000		1.35	56.70	1.40	0.713	2.38	A	E	53.0	0.925	2.29	A	I	10.0	0.80	0.811	1.35	A	E	53.0	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33,000		1.72	56.76	1.40	0.713	3.04	A	E	53.0	0.925	2.85	A	I	10.0	0.80	0.811	1.72	A	E	53.0	
		TNT4A	33,075		1.73	57.22	1.40	0.713	3.04	A	E	53.0	0.925	2.80	A	I	10.0	0.80	0.811	1.73	A	E	53.0	
		TNT6A	41,600		1.40	58.24	1.40	0.713	2.46	A	E	53.0	0.925	2.40	A	I	10.0	0.80	0.811	1.40	A	E	53.0	
		TNT7A	42,000		1.40	58.80	1.40	0.713	2.46	A	E	53.0	0.925	2.36	A	I	10.0	0.80	0.811	1.40	A	E	53.0	
		TNT7B	42,000		1.43	60.06	1.40	0.713	2.52	A	E	53.0	0.925	2.25	A	I	10.0	0.80	0.811	1.43	A	E	53.0	
		TNAGRIT4	43,000		1.37	58.91	1.40	0.713	2.42	A	E	53.0	0.925	2.19	A	I	10.0	0.80	0.811	1.37	A	E	53.0	
EMERGENCY VEHICLE (EV)	EV2	28,750		1.99	57.21	1.30	0.713	3.78	A	E	53.0	0.925	3.45	A	I	10.0	0.80	0.811	1.99	A	E	53.0		
	EV3	43,000	④	1.31	56.33	1.30	0.713	2.49	A	E	53.0	0.925	2.27	A	I	10.0	0.80	0.811	1.31	A	E	53.0		

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

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CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

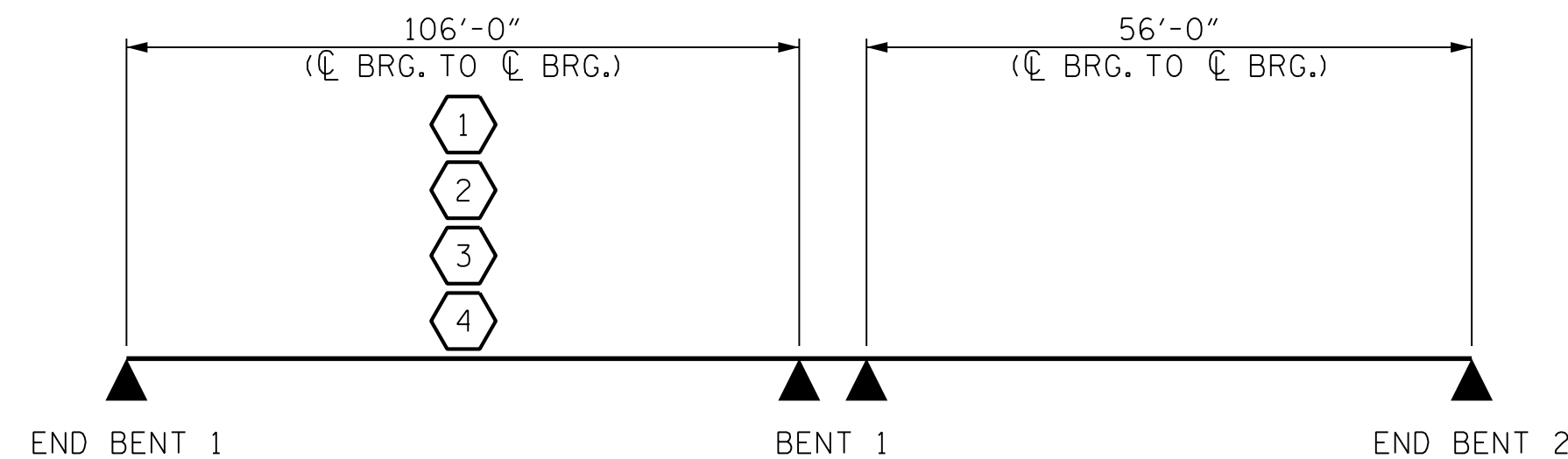
③ LEGAL LOAD RATING **

④ EMERGENCY VEHICLE LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
E - EXTERIOR GIRDER

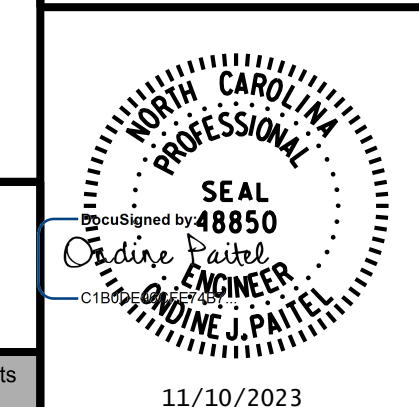


LRFR SUMMARY

PROJECT NO. R-2577A
 FORSYTH COUNTY
 STATION: 140+39.50 -L-

SHEET 5 OF 5

BRIDGE NO. 330814



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 LRFR SUMMARY FOR
 PRESTRESSED CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)
 RIGHT LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SR-5
1			3			TOTAL SHEETS
2			4			34

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

11/10/2023 R:\Structures\BRIDGE\RightBridge\GNV\FINAL\R2577A_SMU_SUM_330815.dgn

DRAWN BY : T. K. BOYD DATE : SEP 2023
 CHECKED BY : L. K. AUSTIN DATE : SEP 2023
 DESIGN ENGINEER OF RECORD : O. J. PATEL DATE : SEP 2023