

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

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
						MOMENT					SHEAR					MOMENT										
						LIVE-LOAD FACTORS (γ <sub>LL</sub> )	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)	LIVE-LOAD FACTORS (γ <sub>LL</sub> )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)				
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.04	--	1.75	0.78	1.24	A	ER	23.73	0.99	1.04	B	I	7.11	0.80	0.79	1.11	B	ER	38.96				
	HL-93 (OPERATING)	N/A		1.37	--	1.35	0.78	1.61	A	ER	23.73	0.99	1.37	B	I	7.11	N/A	--	--	--	--	--				
	HS-20 (INVENTORY)	36.000	②	1.35	48.6	1.75	0.78	1.55	A	ER	23.73	0.99	1.35	B	I	69.3	0.80	0.79	1.48	B	ER	38.96				
	HS-20 (OPERATING)	36.000		1.78	64.1	1.35	0.78	2.00	A	ER	23.73	0.99	1.78	B	I	69.3	N/A	--	--	--	--	--				
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.42	46.2	1.40	0.78	3.96	A	ER	23.73	0.99	4.24	B	I	7.11	0.80	0.79	3.42	B	ER	38.96			
		SNGARBS2	20.000		2.52	50.4	1.40	0.78	3.12	A	ER	23.73	0.99	2.98	B	I	7.11	0.80	0.79	2.52	B	ER	38.96			
		SNAGRIS2	22.000		2.37	52.1	1.40	0.78	3.01	A	ER	28.61	0.99	2.76	B	I	7.11	0.80	0.79	2.37	B	ER	38.96			
		SNCOTTS3	27.250		1.69	46.1	1.40	0.78	1.97	A	ER	23.73	0.99	2.04	B	I	7.11	0.80	0.79	1.69	B	ER	38.96			
		SNAGGRS4	34.925		1.41	49.2	1.40	0.78	1.71	A	ER	23.73	0.99	1.75	B	I	69.3	0.80	0.79	1.41	B	ER	38.96			
		SNS5A	35.550		1.38	49.1	1.40	0.78	1.67	A	ER	23.73	0.99	1.74	B	I	69.3	0.80	0.79	1.38	B	ER	38.96			
		SNS6A	39.950		1.26	50.3	1.40	0.78	1.56	A	ER	23.73	0.99	1.61	B	I	69.3	0.80	0.79	1.26	B	ER	38.96			
		SNS7B	42.000		1.20	50.4	1.40	0.78	1.49	A	ER	23.73	0.99	1.55	B	I	69.3	0.80	0.79	1.20	B	ER	38.96			
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.54	50.8	1.40	0.78	1.91	A	ER	23.73	0.99	1.99	B	ER	70.7	0.80	0.79	1.54	B	ER	38.96			
		TNT4A	33.075		1.54	50.9	1.40	0.78	1.93	A	ER	23.73	0.99	1.82	B	I	69.3	0.80	0.79	1.54	B	ER	38.96			
		TNT6A	41.600		1.25	52.0	1.40	0.78	1.60	A	ER	23.73	0.99	1.62	B	I	69.3	0.80	0.79	1.25	B	ER	38.96			
		TNT7A	42.000		1.26	52.9	1.40	0.78	1.63	A	ER	23.73	0.99	1.58	B	I	7.11	0.80	0.79	1.26	B	ER	38.96			
		TNT7B	42.000		1.29	54.2	1.40	0.78	1.70	A	ER	23.73	0.99	1.51	B	I	69.3	0.80	0.79	1.29	B	ER	38.96			
		TNAGRIT4	43.000		1.24	53.3	1.40	0.78	1.61	A	ER	23.73	0.99	1.44	B	I	69.3	0.80	0.79	1.24	B	ER	38.96			
TNAGT5A	45.000		1.17	52.7	1.40	0.78	1.50	A	ER	23.73	0.99	1.42	B	I	69.3	0.80	0.79	1.17	B	ER	38.96					
TNAGT5B	45.000		③	1.16	52.2	1.40	0.78	1.47	A	ER	23.73	0.99	1.39	B	I	69.3	0.80	0.79	1.16	B	ER	38.96				

**LOAD FACTORS:**

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ <sub>DC</sub>	γ <sub>DW</sub>
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

**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:**

- 1.
- 2.
- 3.
- 4.

⊠ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

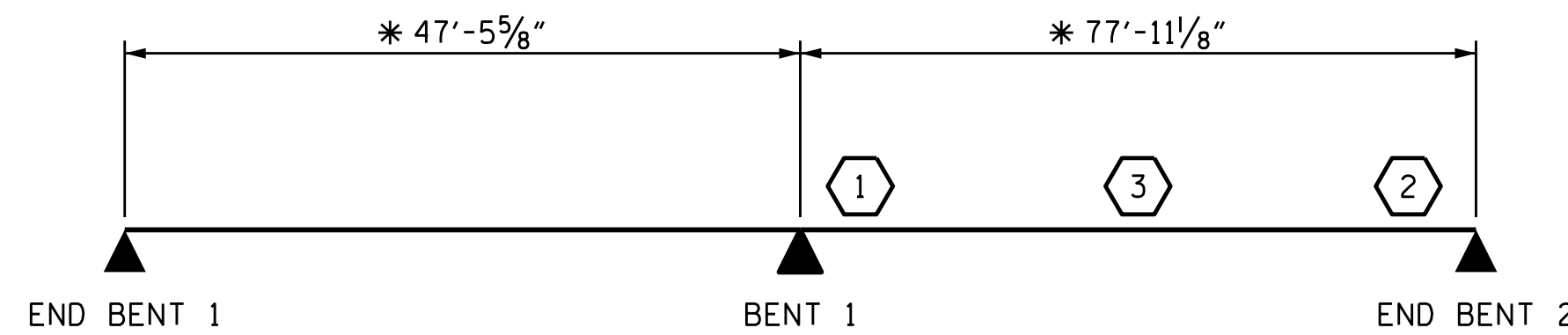
③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

---

GIRDER LOCATION

I - INTERIOR GIRDER  
EL - EXTERIOR LEFT GIRDER  
ER - EXTERIOR RIGHT GIRDER



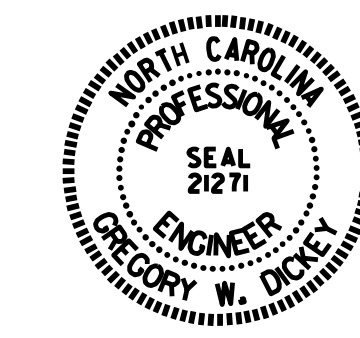
**LRFR SUMMARY**

\*GIRDER LENGTHS VARY,  
LONGEST GIRDER BEARING  
TO BEARING DISTANCE SHOWN

Prepared in the Office of:



NC FIRM LICENSE No: P-0339  
1110 Navaho Drive, Suite 600  
Raleigh, NC 27609  
Ph: 919-322-0115 Fax: 919-322-0116  
www.summitde.com



DocuSigned by:  
Greg Dickey  
641EB8AC897741C  
11/17/2022

PROJECT NO. B-5989  
MADISON COUNTY  
STATION: 16+18.00 -L-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
LRFR SUMMARY FOR  
PRESTRESSED  
CONCRETE GIRDERS  
(NON-INTERSTATE TRAFFIC)

ASSEMBLED BY : NEIL ROHRBAUCH	DATE : 10/19
CHECKED BY : G. DICKEY	DATE : 01/20
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			35