

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 _{LL})	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 _{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.37	--	1.75	0.824	1.84	A,B,C	I	29.20	0.960	1.37	A,B,C	I	11.30	0.80	0.824	1.89	A,B,C	I	29.20		
	HL-93 (OPERATING)	N/A		1.81	--	1.35	0.824	2.38	A,B,C	I	29.20	0.960	1.81	A,B,C	I	11.30	N/A	0.824	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.66	59.76	1.75	0.824	2.33	A,B,C	I	29.20	0.960	1.66	A,B,C	I	11.30	0.80	0.824	2.39	A,B,C	I	29.20		
	HS-20 (OPERATING)	36.000		2.18	78.48	1.35	0.824	3.01	A,B,C	I	29.20	0.960	2.18	A,B,C	I	11.30	N/A	0.824	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.87	65.75	1.40	0.824	6.24	A,B,C	I	29.20	0.960	4.87	A,B,C	I	11.30	0.80	0.824	5.13	A,B,C	I	29.20	
		SNGARBS2	20.000		3.52	70.40	1.40	0.824	4.78	A,B,C	I	29.20	0.960	3.52	A,B,C	I	11.30	0.80	0.824	3.93	A,B,C	I	29.20	
		SNAGRIS2	22.000		3.29	72.38	1.40	0.824	4.59	A,B,C	I	29.20	0.960	3.29	A,B,C	I	11.30	0.80	0.824	3.77	A,B,C	I	29.20	
		SNCOTTS3	27.250		2.39	65.13	1.40	0.824	3.11	A,B,C	I	29.20	0.960	2.39	A,B,C	I	11.30	0.80	0.824	2.55	A,B,C	I	29.20	
		SNAGGRS4	34.925		2.02	70.55	1.40	0.824	2.65	A,B,C	I	29.20	0.960	2.02	A,B,C	I	11.30	0.80	0.824	2.18	A,B,C	I	29.20	
		SNS5A	35.550		2.06	73.23	1.40	0.824	2.59	A,B,C	I	29.20	0.960	2.06	A,B,C	I	11.30	0.80	0.824	2.13	A,B,C	I	29.20	
		SNS6A	39.950		1.90	75.91	1.40	0.824	2.40	A,B,C	I	29.20	0.960	1.90	A,B,C	I	11.30	0.80	0.824	1.97	A,B,C	I	29.20	
		SNS7B	42.000		1.88	78.96	1.40	0.824	2.28	A,B,C	I	29.20	0.960	1.90	A,B,C	I	11.30	0.80	0.824	1.88	A,B,C	I	29.20	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.28	75.24	1.40	0.824	2.93	A,B,C	I	29.20	0.960	2.28	A,B,C	I	11.30	0.80	0.824	2.41	A,B,C	I	29.20	
		TNT4A	33.075		2.19	72.43	1.40	0.824	2.95	A,B,C	I	29.20	0.960	2.19	A,B,C	I	11.30	0.80	0.824	2.42	A,B,C	I	29.20	
		TNT6A	41.600		2.00	83.20	1.40	0.824	2.43	A,B,C	I	29.20	0.960	2.11	A,B,C	I	11.30	0.80	0.824	2.00	A,B,C	I	29.20	
		TNT7A	42.000		1.95	81.90	1.40	0.824	2.45	A,B,C	I	29.20	0.960	1.95	A,B,C	I	11.30	0.80	0.824	2.02	A,B,C	I	29.20	
		TNT7B	42.000		1.82	76.44	1.40	0.824	2.56	A,B,C	I	29.20	0.960	1.82	A,B,C	I	11.30	0.80	0.824	2.11	A,B,C	I	29.20	
		TNAGRIT4	43.000		1.77	76.11	1.40	0.824	2.42	A,B,C	I	29.20	0.960	1.77	A,B,C	I	11.30	0.80	0.824	1.99	A,B,C	I	29.20	
TNAGT5A	45.000		1.80	81.00	1.40	0.824	2.27	A,B,C	I	29.20	0.960	1.80	A,B,C	I	11.30	0.80	0.824	1.87	A,B,C	I	29.20			
TNAGT5B	45.000		③	1.68	75.60	1.40	0.824	2.24	A,B,C	I	29.20	0.960	1.68	A,B,C	I	11.30	0.80	0.824	1.84	A,B,C	I	29.20		

LOAD FACTORS:

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

NOTES:

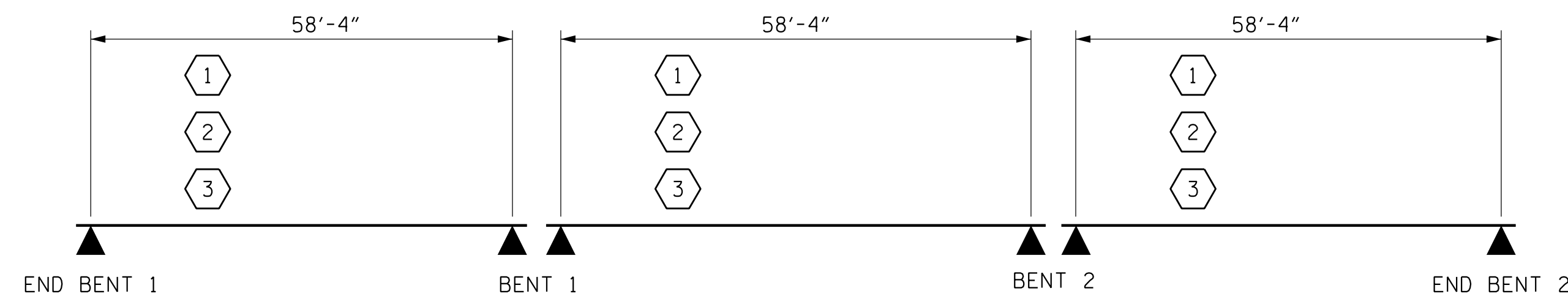
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

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



PROJECT NO. U-5839
HAYWOOD COUNTY
 STATION: 31+45.00 -L- POT

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S2-4
1			3			TOTAL SHEETS
2			4			49

PLANS PREPARED BY:

NV5

NV5 ENGINEERS & CONSULTANTS, INC.
 3300 REGENCY PARKWAY, SUITE 100
 CARY, NC 27518
 P: 919.851.1912 www.nv5.com
 NC License # F-1333

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

DocuSigned by:

ROBERT C. LARSON
 PROFESSIONAL ENGINEER
 STATE OF NORTH CAROLINA

5/19/2023

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

5/18/2023 10:05:46 AM R:\Structures\Bridge over Richard Creek\03 U5839_SMU.GD3_43086.dgn

DESIGN ENGINEER OF RECORD: R. C. LARSON DATE : 2/23	DocuSigned by: BEB23880220476
ASSEMBLED BY : C. D. ROBINSON DATE : 7/19	
CHECKED BY : Z. H. BROWN DATE : 7/19	
DRAWN BY : MAA 1/08 MAA/GM	
CHECKED BY : GM/DI 2/08 MAA/GM	
REV. 11/12/08RR MAA/GM	
REV. 10/1/11 MAA/GM	
REV. 12/17 MAA/THC	