

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 × RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE					COMMENT NUMBER			
						LIVE-LOAD FACTORS (γ _L)	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ _L)	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	1.11	--	1.75	0.868	1.11	A	I	37.28	1.101	1.64	B	I	11.26	0.80	0.780	1.11	B	I	59.13		
	HL-93 (OPERATING)	N/A		1.44	--	1.35	0.868	1.44	A	I	37.28	1.101	2.16	B	I	11.26	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.47	52.92	1.75	0.868	1.47	A	I	37.28	1.101	2.37	B	I	11.26	0.80	0.843	1.58	C	I	42.28		
	HS-20 (OPERATING)	36.000		1.90	68.40	1.35	0.868	1.90	A	I	37.28	1.101	3.10	B	I	11.26	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.68	49.68	1.40	0.868	4.18	A	I	37.28	1.101	7.97	B	I	11.26	0.80	0.843	3.68	C	I	42.28	
		SNGARBS2	20.000		2.70	54.00	1.40	0.868	3.10	A	I	37.28	1.101	5.53	B	I	11.26	0.80	0.843	2.70	C	I	42.28	
		SNAGRIS2	22.000		2.53	55.66	1.40	0.868	2.93	A	I	37.28	1.101	5.08	B	I	11.26	0.80	0.843	2.53	C	I	42.28	
		SNCOTTS3	27.250		1.83	49.87	1.40	0.868	2.08	A	I	37.28	1.101	3.83	B	I	11.26	0.80	0.843	1.83	C	I	42.28	
		SNAGGRS4	34.925		1.51	52.74	1.40	0.868	1.73	A	I	37.28	1.101	2.95	B	I	11.26	0.80	0.843	1.51	C	I	42.28	
		SNS5A	35.550		1.48	52.61	1.40	0.868	1.69	A	I	37.28	1.101	2.92	B	I	11.26	0.80	0.843	1.48	C	I	42.28	
		SNS6A	39.950		1.35	53.93	1.40	0.868	1.55	A	I	37.28	1.101	2.66	B	I	11.26	0.80	0.843	1.35	C	I	42.28	
		SNS7B	42.000		1.29	54.18	1.40	0.868	1.48	A	I	37.28	1.101	2.57	B	I	11.26	0.80	0.843	1.29	C	I	42.28	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.64	54.12	1.40	0.868	1.89	A	I	37.28	1.101	3.17	B	I	11.26	0.80	0.843	1.64	C	I	42.28	
		TNT4A	33.075		1.65	54.57	1.40	0.868	1.90	A	I	37.28	1.101	3.09	B	I	11.26	0.80	0.843	1.65	C	I	42.28	
		TNT6A	41.600		1.34	55.74	1.40	0.868	1.55	A	I	37.28	1.101	2.65	B	I	11.26	0.80	0.843	1.34	C	I	42.28	
		TNT7A	42.000		1.34	56.28	1.40	0.868	1.56	A	I	37.28	1.101	2.58	B	I	11.26	0.80	0.843	1.34	C	I	42.28	
		TNT7B	42.000		1.38	57.96	1.40	0.868	1.61	A	I	37.28	1.101	2.48	B	I	11.26	0.80	0.843	1.38	C	I	42.28	
		TNAGRIT4	43.000		1.32	56.76	1.40	0.868	1.53	A	I	37.28	1.101	2.41	B	I	11.26	0.80	0.843	1.32	C	I	42.28	
TNAGT5A	45.000		1.25	56.25	1.40	0.868	1.45	A	I	37.28	1.101	2.35	B	I	11.26	0.80	0.843	1.25	C	I	42.28			
TNAGT5B	45.000	③	1.24	55.80	1.40	0.868	1.43	A	I	37.28	1.101	2.42	B	I	11.26	0.80	0.843	1.24	C	I	42.28			

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:

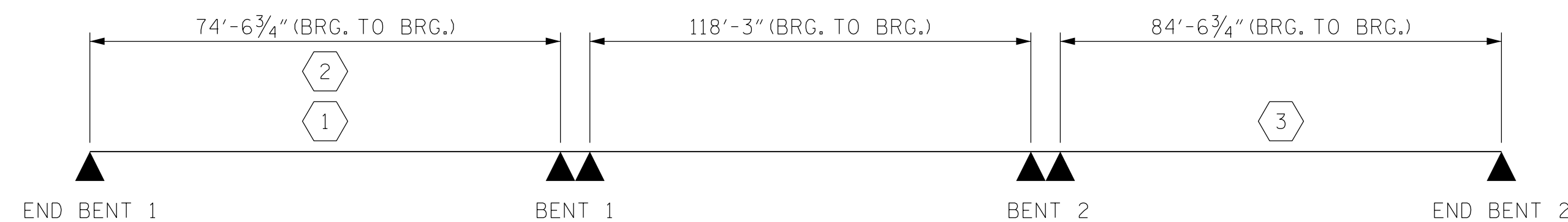
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

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

COMMENTS:

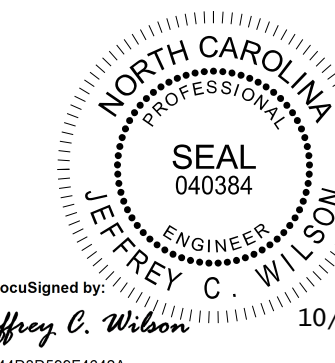
- 1.
- 2.
- 3.
- 4.

#	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



LRFR SUMMARY

PROJECT NO. BR-0070
CASWELL COUNTY
STATION: 30+57.00 -L-



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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STEWART

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:	S-5
1			3			TOTAL SHEETS
2			4			39

STD. NO. LRFR1

ASSEMBLED BY : JCW	DATE : 10/22
CHECKED BY : DRR	DATE : 10/22
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/11/11 MAA/GM
	REV. 12/17 MAA/THC

10/10/2022
BR-0070-SMU.GD3-160061.dgn
USER: jwilson

BR-0070