

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	1.02	--	1.75	0.815	1.24	A	EL	54.18	0.847	1.41	A	EL	21.67	0.80	0.815	1.02	A	EL	54.18		
	HL-93 (OPERATING)	N/A		1.61	--	1.35	0.815	1.61	A	EL	54.18	0.847	2.03	A	EL	21.67	N/A	--	--	--	--	--	.	
	HS-20 (INVENTORY)	36.000		1.46	52.26	1.75	0.815	1.77	A	EL	54.18	0.847	2.09	A	EL	21.67	0.80	0.815	1.46	A	EL	54.18		
	HS-20 (OPERATING)	36.000		2.30	82.80	1.35	0.815	2.30	A	EL	54.18	0.847	2.77	A	EL	21.67	N/A	--	--	--	--	--	.	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH	13.500		3.81	51.44	1.40	0.815	5.79	A	EL	54.18	0.847	7.08	A	I	21.67	0.80	0.815	3.81	A	EL	54.18	.
		S3C	20.000		2.22	44.40	1.40	0.815	3.36	A	EL	54.18	0.847	4.07	A	I	21.67	0.80	0.815	2.22	A	EL	54.18	.
		S3A	22.000		2.10	46.20	1.40	0.815	3.19	A	EL	54.18	0.847	3.58	A	I	21.67	0.80	0.815	2.10	A	EL	54.18	.
		S4A	27.250		1.84	50.14	1.40	0.815	2.79	A	EL	54.18	0.847	3.32	A	I	21.67	0.80	0.815	1.84	A	EL	54.18	.
		S5A	34.925		1.62	56.58	1.40	0.815	2.46	A	EL	54.18	0.847	3.01	A	I	21.67	0.80	0.815	1.62	A	EL	54.18	.
		S6A	35.550		1.46	51.90	1.40	0.815	2.22	A	EL	54.18	0.847	2.69	A	I	21.67	0.80	0.815	1.46	A	EL	54.18	.
		S7B	39.950		1.32	52.73	1.40	0.815	2.01	A	EL	54.18	0.847	2.48	A	I	21.67	0.80	0.815	1.32	A	EL	54.18	.
	S7A	42.000	②	1.30	54.60	1.40	0.815	1.97	A	EL	54.18	0.847	2.52	A	I	21.67	0.80	0.815	1.30	A	EL	54.18	.	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	33.000		1.79	59.70	1.40	0.815	2.72	A	EL	54.18	0.847	3.20	A	I	21.67	0.80	0.815	1.79	A	EL	54.18	.
		T5B	33.075		1.58	52.26	1.40	0.815	2.39	A	EL	54.18	0.847	3.00	A	I	21.67	0.80	0.815	1.58	A	EL	54.18	.
T6A		41.600		1.43	59.49	1.40	0.815	2.18	A	EL	54.18	0.847	2.73	A	I	21.67	0.80	0.815	1.43	A	EL	54.18	.	
	T7A	42.000	③	1.32	55.44	1.40	0.815	2.00	A	EL	54.18	0.847	2.51	A	I	21.67	0.80	0.815	1.32	A	EL	54.18	.	
	T7B	42.000		1.38	57.96	1.40	0.815	2.10	A	EL	54.18	0.847	2.38	A	I	21.67	0.80	0.815	1.38	A	EL	54.18	.	

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:

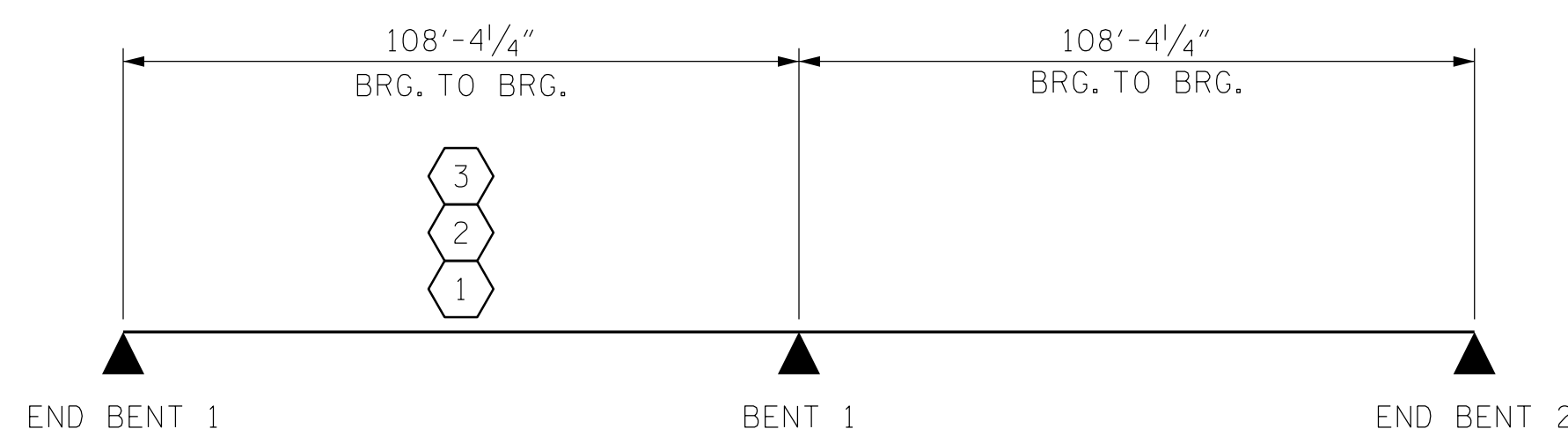
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

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

COMMENTS:

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

① CONTROLLING LOAD RATING
② DESIGN LOAD RATING (HL-93)
③ DESIGN LOAD RATING (HS-20)
④ 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. R-5737

DAVIDSON COUNTY

STATION: 61+02.86 -L-

SHEET 5 OF 5

<p>2610 WYCLIFF ROAD SUITE 410 RALEIGH, NC 27607 PHONE: 919.881.9939 NC COA No. F-0929</p>	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH STANDARD LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS (INTERSTATE TRAFFIC)			SHEET NO. S1-5 TOTAL SHEETS 25		
	REVISIONS					
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030046 MATTHEW PAYNE 9/14/2021	NO. 1	BY:	DATE:	NO. 3	BY:	DATE:
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	NO. 2			NO. 4		

DRAWN BY : JAE DATE : 8/21
 CHECKED BY : ZHB DATE : 8/21
 DESIGN ENGINEER OF RECORD: MTP DATE : 8/21