

8/26/21

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE	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	HL-93 (INVENTORY)	N/A	⬢1	1.531	--	1.75	0.261	2.42	35'	EL	16.920	0.657	1.53	35'	EL	6.769	0.80	0.261	2.23	35'	EL	16.920		
	HL-93 (OPERATING)	N/A		1.985	--	1.35	0.261	3.14	35'	EL	16.920	0.657	1.98	35'	EL	6.769	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	⬢2	1.745	62.819	1.75	0.261	3.17	35'	EL	20.307	0.657	1.74	35'	EL	6.769	0.80	0.261	2.94	35'	EL	20.307		
	HS-20 (OPERATING)	36.000		2.262	81.432	1.35	0.261	4.11	35'	EL	20.307	0.657	2.26	35'	EL	6.769	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		4.240	57.234	1.40	0.261	6.92	35'	EL	16.920	0.657	4.24	35'	EL	6.769	0.80	0.261	5.09	35'	EL	16.920	
		SNGARBS2	20.000		3.289	65.784	1.40	0.261	5.81	35'	EL	20.307	0.657	3.29	35'	EL	6.769	0.80	0.261	4.31	35'	EL	20.307	
		SNAGRIS2	22.000		3.173	69.798	1.40	0.261	5.77	35'	EL	20.307	0.657	3.17	35'	EL	6.769	0.80	0.261	4.28	35'	EL	20.307	
		SNCOTTS3	27.250		2.142	58.380	1.40	0.261	3.46	35'	EL	16.920	0.657	2.14	35'	EL	6.769	0.80	0.261	2.55	35'	EL	16.920	
		SNAGGRS4	34.925		1.979	69.101	1.40	0.261	3.21	35'	EL	16.920	0.657	1.98	35'	EL	6.769	0.80	0.261	2.36	35'	EL	16.920	
		SNS5A	35.550		2.128	75.649	1.40	0.261	3.11	35'	EL	16.920	0.657	2.13	35'	EL	6.769	0.80	0.261	2.29	35'	EL	16.920	
		SNS6A	39.950		2.007	80.167	1.40	0.261	3.00	35'	EL	16.920	0.657	2.01	35'	EL	6.769	0.80	0.261	2.21	35'	EL	16.920	
		SNS7B	42.000		2.047	85.964	1.40	0.261	2.86	35'	EL	16.920	0.657	2.05	35'	EL	6.769	0.80	0.261	2.11	35'	EL	16.920	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.349	77.521	1.40	0.261	3.71	35'	EL	16.920	0.657	2.35	35'	EL	6.769	0.80	0.261	2.73	35'	EL	16.920	
		TNT4A	33.075		2.182	72.179	1.40	0.261	3.70	35'	EL	16.920	0.657	2.18	35'	EL	6.769	0.80	0.261	2.73	35'	EL	16.920	
		TNT6A	41.600		2.105	87.558	1.40	0.261	3.25	35'	EL	16.920	0.657	2.10	35'	EL	6.769	0.80	0.261	2.39	35'	EL	16.920	
		TNT7A	42.000		2.025	85.067	1.40	0.261	3.35	35'	EL	20.307	0.657	2.02	35'	EL	6.769	0.80	0.261	2.47	35'	EL	20.307	
		TNT7B	42.000		1.963	82.464	1.40	0.261	3.30	35'	EL	16.920	0.657	1.96	35'	EL	6.769	0.80	0.261	2.43	35'	EL	16.920	
		TNAGRIT4	43.000		1.901	81.727	1.40	0.261	3.29	35'	EL	20.307	0.657	1.90	35'	EL	6.769	0.80	0.261	2.44	35'	EL	20.307	
		TNAGT5A	45.000		2.050	92.245	1.40	0.261	3.09	35'	EL	16.920	0.657	2.05	35'	EL	6.769	0.80	0.261	2.27	35'	EL	16.920	
		TNAGT5B	45.000	⬢3	1.789	80.490	1.40	0.261	2.98	35'	EL	16.920	0.657	1.79	35'	EL	6.769	0.80	0.261	2.19	35'	EL	16.920	
EMERGENCY VEHICLE (EV)	EV2	28.750		2.522	72.498	1.30	0.261	4.51	35'	EL	20.307	0.657	2.52	35'	EL	6.769	0.80	0.261	3.10	35'	EL	20.307		
	EV3	43.000	⬢4	1.726	74.222	1.30	0.261	2.97	35'	EL	16.920	0.657	1.73	35'	EL	6.769	0.80	0.261	2.03	35'	EL	16.920		

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γDC	γDW
	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.

⬡# CONTROLLING LOAD RATING

⬡1 DESIGN LOAD RATING (HL-93)

⬡2 DESIGN LOAD RATING (HS-20)

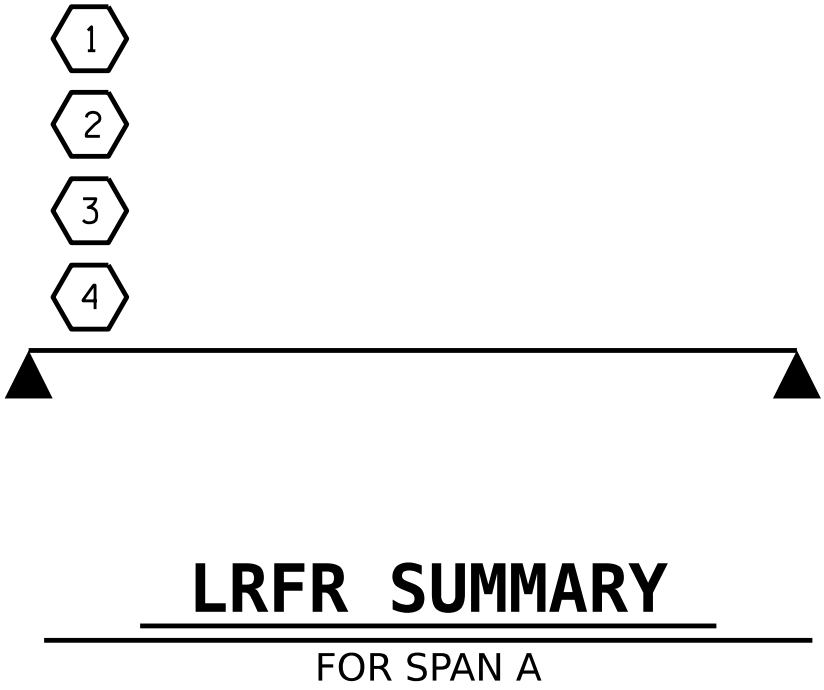
⬡3 LEGAL LOAD RATING * *

⬡4 EMERGENCY VEHICLE LOAD RATING **

* * SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. **BP14-R038**
POLK COUNTY
STATION: **13+52.50 -L1-**

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
35' CORED SLAB UNIT
60° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

S-5
TOTAL SHEETS
32

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



DRAWN BY : C.P. MALAGON DATE : 08/2025
CHECKED BY : E.C. PHELPS DATE : 08/2025
DESIGN ENGINEER OF RECORD: W.K. FISCHER DATE : 09/2025

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