

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	<div>⬡</div>	MINIMUM RATING FACTORS (RF)	TONS = W × 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	<div>1</div>	2.52	---	1.75	0.28	3.19	A	EL	19.25	0.54	2.52	A	ER	7.25	0.80	0.28	4.33	A	EL	19.25	
		HL-93 (OPERATING)	N/A		3.31	---	1.35	0.28	4.14	A	EL	19.25	0.54	3.31	A	ER	7.25	NA	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	<div>2</div>	2.91	104.76	1.75	0.28	3.94	A	EL	15.25	0.54	2.91	A	ER	7.25	0.80	0.28	5.45	A	EL	15.25	
		HS-20 (OPERATING)	36.000		3.82	137.52	1.35	0.28	5.10	A	EL	15.25	0.54	3.82	A	ER	7.25	NA	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		7.64	103.14	1.40	0.28	9.24	A	EL	19.25	0.54	7.64	A	ER	7.25	0.80	0.28	10.01	A	EL	19.25	
		SNGARBS2	20.000		5.77	115.40	1.40	0.28	7.44	A	EL	15.25	0.54	5.77	A	ER	7.25	0.80	0.28	8.23	A	EL	15.25	
		SNAGRIS2	22.000		5.51	121.22	1.40	0.28	7.28	A	EL	15.25	0.54	5.51	A	ER	7.25	0.80	0.28	8.05	A	EL	15.25	
		SNCOTTS3	27.250		3.77	102.73	1.40	0.28	4.62	A	EL	19.25	0.54	3.77	A	ER	7.25	0.80	0.28	5.01	A	EL	19.25	
		SNAGGRS4	34.925		3.38	118.05	1.40	0.28	4.17	A	EL	19.25	0.54	3.38	A	ER	7.25	0.80	0.28	4.52	A	EL	19.25	
		SNS5A	35.550		3.59	127.62	1.40	0.28	4.05	A	EL	19.25	0.54	3.59	A	ER	7.25	0.80	0.28	4.39	A	EL	19.25	
		SNS6A	39.950		3.36	134.23	1.40	0.28	3.86	A	EL	19.25	0.54	3.36	A	ER	7.25	0.80	0.28	4.18	A	EL	19.25	
		SNS7B	42.000		3.46	145.32	1.40	0.28	3.68	A	EL	19.25	0.54	3.46	A	ER	7.25	0.80	0.28	3.99	A	EL	19.25	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		3.97	131.01	1.40	0.28	4.75	A	EL	19.25	0.54	3.97	A	ER	7.25	0.80	0.28	5.15	A	EL	19.25	
		TNT4A	33.075		3.72	123.04	1.40	0.28	4.79	A	EL	15.25	0.54	3.72	A	ER	7.25	0.80	0.28	5.22	A	EL	19.25	
		TNT6A	41.600		3.64	151.42	1.40	0.28	4.09	A	EL	19.25	0.54	3.64	A	ER	7.25	0.80	0.28	4.43	A	EL	19.25	
		TNT7A	42.000		3.38	141.96	1.40	0.28	4.19	A	EL	15.25	0.54	3.38	A	ER	7.25	0.80	0.28	4.55	A	EL	19.25	
		TNT7B	42.000		3.28	137.76	1.40	0.28	4.23	A	EL	15.25	0.54	3.28	A	ER	7.25	0.80	0.28	4.63	A	EL	19.25	
		TNAGRIT4	43.000		3.15	135.45	1.40	0.28	4.07	A	EL	15.25	0.54	3.15	A	ER	7.25	0.80	0.28	4.50	A	EL	15.25	
		TNAGRT5A	45.000		3.36	151.20	1.40	0.28	3.86	A	EL	19.25	0.54	3.36	A	ER	7.25	0.80	0.28	4.18	A	EL	19.25	
		TNAGRT5B	45.000	<div>3</div>	2.96	133.20	1.40	0.28	3.75	A	EL	19.25	0.54	2.96	A	ER	7.25	0.80	0.28	4.06	A	EL	19.25	
EMERGENCY VEHICLE (EV)		EV2	28.750		4.37	125.64	1.30	0.28	5.73	A	EL	15.25	0.54	4.37	A	ER	7.25	0.80	0.28	5.89	A	EL	15.25	
		EV3	43.000	<div>4</div>	2.93	125.99	1.30	0.28	3.82	A	EL	19.25	0.54	2.93	A	ER	7.25	0.80	0.28	3.84	A	EL	19.25	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γDC	γDW
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

COMMENTS:

1.
2.
3.
4.

⬡\* CONTROLLING LOAD RATING

⬡1 DESIGN LOAD RATING (HL-93)

⬡2 DESIGN LOAD RATING (HS-20)

⬡3 LEGAL LOAD RATING \*\*

⬡4 EMERGENCY VEHICLE LOAD RATING \*\*

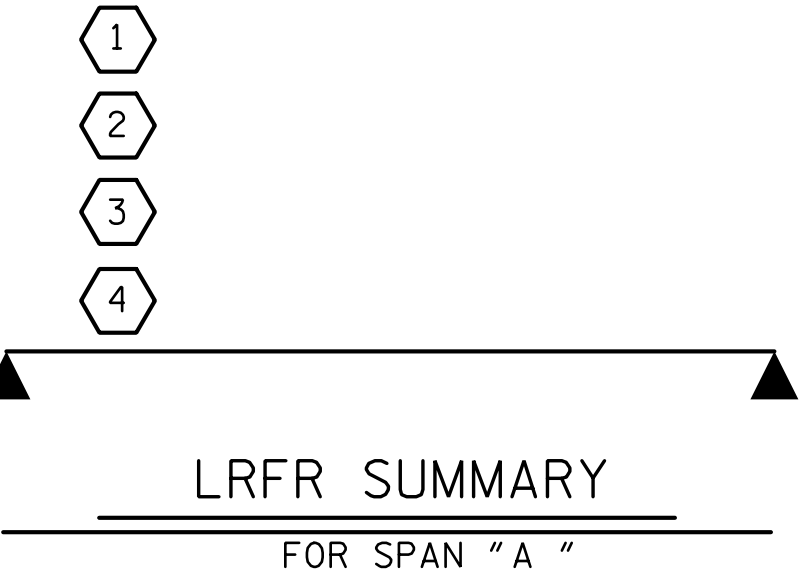
\*\* SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER

EL - EXTERIOR LEFT GIRDER

ER - EXTERIOR RIGHT GIRDER



PROJECT NO. DF18314.2075090

POLK COUNTY

STATION: 12+15.00 -L-

SHEET 1 OF 2

DRAWN BY : J. SCACCA DATE : 02/2025  
CHECKED BY : M. KHIN DATE : 02/2025  
DESIGN ENGINEER OF RECORD: T. R. LAWS DATE : 10/2025

DOCUMENT NOT CONSIDERED  
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10/7/2025

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
LRFR SUMMARY FOR  
40' BOX BEAM UNIT  
90° SKEW  
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-5
2			4			TOTAL SHEETS 24

10/7/2025  
\\rsandh.com\\files\\Projects\\NCDOT\\10034734006-Polk-112\\03.00 Project Execution\\03.04 Design\\Structures\\CAD\\401.009\_DF18314.2075090\_SMU\_LRFR\_S-5\_740112.dgn  
Acostam