

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			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	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	1.15	--	1.75	0.268	1.58	45'	EL	22.0	0.294	2.98	45'	EL	1.50	0.80	0.268	1.15	45'	EL	22.0		
	HL-93 (OPERATING)	N/A	--	2.04	--	1.35	0.268	2.04	45'	EL	22.0	0.294	3.89	45'	EL	1.50	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	2	1.41	50.76	1.75	0.268	1.93	45'	EL	22.0	0.294	3.54	45'	EL	1.50	0.80	0.268	1.41	45'	EL	22.0		
	HS-20 (OPERATING)	36.000	--	2.51	90.36	1.35	0.268	2.51	45'	EL	22.0	0.294	4.62	45'	EL	1.50	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICAL (SV)	SNSH	13.500	--	2.76	37.26	1.4	0.268	4.73	45'	EL	22.0	0.294	9.98	45'	EL	1.50	0.80	0.268	2.76	45'	EL	22.0	
		SNGARBS2	20.000	--	2.23	44.60	1.4	0.268	3.82	45'	EL	22.0	0.294	7.29	45'	EL	1.50	0.80	0.268	2.23	45'	EL	22.0	
		SNAGRIS2	22.000	--	2.19	48.18	1.4	0.268	3.70	45'	EL	17.5	0.294	6.85	45'	EL	1.50	0.80	0.268	2.19	45'	EL	22.0	
		SNCOTTS3	27.250	--	1.38	37.61	1.4	0.268	2.36	45'	EL	22.0	0.294	4.95	45'	EL	1.50	0.80	0.268	1.38	45'	EL	22.0	
		SNAGGRS4	34.925	--	1.21	42.26	1.4	0.268	2.08	45'	EL	22.0	0.294	4.25	45'	EL	1.50	0.80	0.268	1.21	45'	EL	22.0	
		SNS5A	35.550	--	1.18	41.95	1.4	0.268	2.03	45'	EL	22.0	0.294	4.40	45'	EL	1.50	0.80	0.268	1.18	45'	EL	22.0	
		SNS6A	39.950	--	1.11	44.34	1.4	0.268	1.91	45'	EL	22.0	0.294	4.08	45'	EL	1.50	0.80	0.268	1.11	45'	EL	22.0	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	SNS7B	42.000	3	1.06	44.52	1.4	0.268	1.82	45'	EL	22.0	0.294	4.10	45'	EL	1.50	0.80	0.268	1.06	45'	EL	22.0	
		TNAGRIT3	33.000	--	1.37	45.21	1.4	0.268	2.35	45'	EL	22.0	0.294	4.81	45'	EL	1.50	0.80	0.268	1.37	45'	EL	22.0	
		TNT4A	33.075	--	1.38	45.64	1.4	0.268	2.37	45'	EL	22.0	0.294	4.61	45'	EL	1.50	0.80	0.268	1.38	45'	EL	22.0	
		TNT6A	41.600	--	1.16	48.26	1.4	0.268	1.99	45'	EL	22.0	0.294	4.48	45'	EL	1.50	0.80	0.268	1.16	45'	EL	22.0	
		TNT7A	42.000	--	1.18	49.56	1.4	0.268	2.03	45'	EL	22.0	0.294	4.13	45'	EL	1.50	0.80	0.268	1.18	45'	EL	22.0	
		TNT7B	42.000	--	1.23	51.66	1.4	0.268	2.11	45'	EL	22.0	0.294	3.93	45'	EL	1.50	0.80	0.268	1.23	45'	EL	22.0	
		TNAGRIT4	43.000	--	1.17	50.31	1.4	0.268	2.01	45'	EL	22.0	0.294	3.78	45'	EL	1.50	0.80	0.268	1.17	45'	EL	22.0	
EMERGENCY VEHICLE (EV)	TNAGT5A	45.000	--	1.09	49.05	1.4	0.268	1.87	45'	EL	22.0	0.294	3.87	45'	EL	1.50	0.80	0.268	1.09	45'	EL	22.0		
	TNAGT5B	45.000	--	1.07	48.15	1.4	0.268	1.83	45'	EL	22.0	0.294	3.58	45'	EL	1.50	0.80	0.268	1.07	45'	EL	22.0		
	EV2	28.750	--	1.60	46.00	1.3	0.268	2.93	45'	EL	22.0	0.294	5.51	45'	EL	1.50	0.80	0.268	1.60	45'	EL	22.0		
	EV3	43.000	4	1.03	44.29	1.3	0.268	1.89	45'	EL	22.0	0.294	3.70	45'	EL	1.50	0.80	0.268	1.03	45'	EL	22.0		

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{DC}$	$\gamma_{DW}$
	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:

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# CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING \*\*

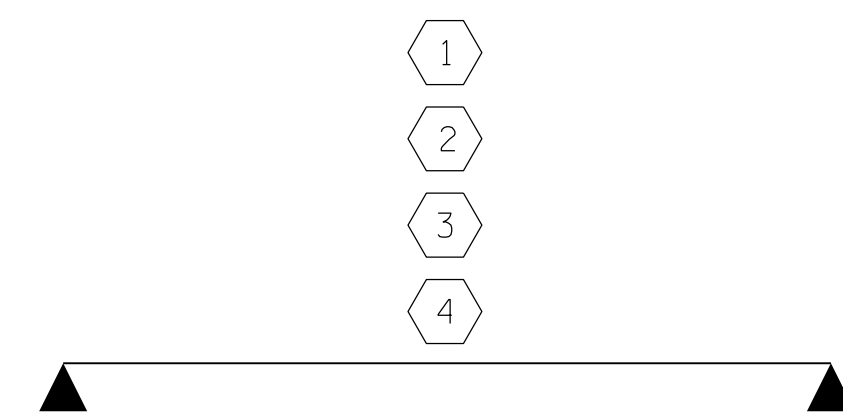
④ EMERGENCY VEHICLE LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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GIRDER LOCATION

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



LRFR SUMMARY  
FOR SPAN 'A'

PROJECT NO. B-5610  
DARE COUNTY  
 STATION: 15+42.50 -L-



DocuSigned by: *Jeffrey C. Wilson* 4/8/2024

DOCUMENT NOT CONSIDERED  
FINAL UNLESS ALL  
SIGNATURES COMPLETED

Firm License No. C-1051  
 223 S West St,  
 Suite 1100  
 Raleigh, NC 27603  
 T 919.380.8750  
 www.stewartinc.com

**STEWART**

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

LRFR SUMMARY FOR  
 45' CORED SLAB UNIT  
 90° SKEW  
 (NON-INTERSTATE TRAFFIC)

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

SHEET NO. S-5  
TOTAL SHEETS 29

DRAWN BY: G. RAMBOULI DATE: 1/24  
 CHECKED BY: J. WILSON DATE: 1/24  
 DESIGN ENGINEER OF RECORD: J. WILSON DATE: 1/24