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LOAD AND RESISTANCE FACTOR RATING (LRFD) 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
							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 RATING		HL-93(Inv)	N/A	**1**	2.053	--	1.75	0.276	2.26	50'	EL	29.5	0.52	**2.05**	50'	EL	**5.9**	0.80	0.276	2.22	50'	EL	29.5	
		HL-93(Opr)	N/A	--	2.661	--	1.35	0.276	2.93	50'	EL	29.5	0.52	2.66	50'	EL	5.9	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	**2**	2.47	88.93	1.75	0.276	2.86	50'	EL	29.5	0.52	**2.47**	50'	EL	**5.9**	0.80	0.276	2.81	50'	EL	29.5	
		HS-20(Opr)	36.000	--	3.202	115.279	1.35	0.276	3.71	50'	EL	29.5	0.52	3.2	50'	EL	5.9	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	6.053	81.711	1.4	0.276	7.7	50'	EL	29.5	0.52	7.14	50'	EL	5.9	0.80	0.276	6.05	50'	EL	29.5	
		SNGARBS2	20.000	--	4.634	92.672	1.4	0.276	5.89	50'	EL	29.5	0.52	5.14	50'	EL	5.9	0.80	0.276	4.63	50'	EL	29.5	
		SNAGRIS2	22.000	--	4.43	97.466	1.4	0.276	5.65	50'	EL	29.5	0.52	4.8	50'	EL	5.9	0.80	0.276	4.43	50'	EL	29.5	
		SNCOTTS3	27.250	--	3.015	82.171	1.4	0.276	3.84	50'	EL	29.5	0.52	3.57	50'	EL	5.9	0.80	0.276	3.02	50'	EL	29.5	
		SNAGGRS4	34.925	--	2.567	89.643	1.4	0.276	3.27	50'	EL	29.5	0.52	3.01	50'	EL	5.9	0.80	0.276	2.57	50'	EL	29.5	
		SNS5A	35.550	--	2.507	89.116	1.4	0.276	3.19	50'	EL	29.5	0.52	3.07	50'	EL	5.9	0.80	0.276	2.51	50'	EL	29.5	
		SNS6A	39.950	--	2.32	92.685	1.4	0.276	2.95	50'	EL	29.5	0.52	2.82	50'	EL	5.9	0.80	0.276	2.32	50'	EL	29.5	
		SNS7B	42.000	--	2.21	92.825	1.4	0.276	2.81	50'	EL	29.5	0.52	2.8	50'	EL	5.9	0.80	0.276	2.21	50'	EL	29.5	
	TTST	TNAGRIT3	33.000	--	2.835	93.559	1.4	0.276	3.61	50'	EL	29.5	0.52	3.34	50'	EL	5.9	0.80	0.276	2.84	50'	EL	29.5	
		TNT4A	33.075	--	2.853	94.369	1.4	0.276	3.63	50'	EL	29.5	0.52	3.24	50'	EL	5.9	0.80	0.276	2.85	50'	EL	29.5	
		TNT6A	41.600	--	2.352	97.863	1.4	0.276	2.99	50'	EL	29.5	0.52	3.03	50'	EL	5.9	0.80	0.276	2.35	50'	EL	29.5	
		TNT7A	42.000	--	2.375	99.744	1.4	0.276	3.02	50'	EL	29.5	0.52	2.89	50'	EL	5.9	0.80	0.276	2.37	50'	EL	29.5	
		TNT7B	42.000	--	2.475	103.971	1.4	0.276	3.16	50'	EL	29.5	0.52	2.71	50'	EL	5.9	0.80	0.276	2.48	50'	EL	29.5	
		TNAGRIT4	43.000	--	2.343	100.737	1.4	0.276	2.98	50'	EL	29.5	0.52	2.62	50'	EL	5.9	0.80	0.276	2.34	50'	EL	29.5	
		TNAGT5A	45.000	--	2.2	98.988	1.4	0.276	2.8	50'	EL	29.5	0.52	2.63	50'	EL	5.9	0.80	0.276	2.20	50'	EL	29.5	
		TNAGT5B	45.000	**3**	**2.165**	97.428	1.4	0.276	2.75	50'	EL	29.5	0.52	2.49	50'	EL	5.9	0.80	0.276	**2.17**	50'	EL	**29.5**	

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.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

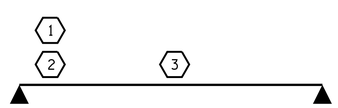
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

FOR SPAN 'A, C'

PROJECT NO. 17BP.1.R.92

NORTHAMPTON COUNTY

STATION: 14+22.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

NORTH CAROLINA PROFESSIONAL SEAL 036548 ENGINEER DANIEL N. BURGUNDY

DocuSigned by: Daniel N. Burgundy
5/4/2021

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

SHEET NO. S-4

TOTAL SHEETS 22

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY :	CAB	DATE :	4/19
CHECKED BY :	MHR	DATE :	6/19
DRAWN BY : CVC	6/10		
CHECKED BY : DNS	6/10		

STD. NO. 24LRFR1_90S_50L (TOP DOWN)