

## 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 <sub>LL</sub> )	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 <sub>LL</sub> )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.14	--	1.75	0.840	1.46	A	EL	46.100	1.040	1.33	A	I	83.560	0.80	0.780	1.14	A	I	46.100		
	HL-93 (OPERATING)	N/A		1.75	--	1.35	0.840	1.89	A	EL	46.100	1.040	1.75	A	I	83.560	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.57	56.520	1.75	0.840	2.00	A	EL	46.100	1.040	1.78	A	I	83.560	0.80	0.780	1.57	A	I	46.100		
	HS-20 (OPERATING)	36.000		2.33	83.880	1.35	0.840	2.59	A	EL	46.100	1.040	2.33	A	I	83.560	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.68	49.680	1.40	0.840	5.88	A	EL	46.100	1.040	5.66	A	I	83.560	0.80	0.780	3.68	A	I	46.100	
		SNGARBS2	20.000		2.68	53.600	1.40	0.840	4.28	A	EL	46.100	1.040	3.95	A	I	83.560	0.80	0.780	2.68	A	I	46.100	
		SNAGRIS2	22.000		2.51	55.220	1.40	0.840	4.01	A	EL	46.100	1.040	3.64	A	I	83.560	0.80	0.780	2.51	A	I	46.100	
		SNCOTTS3	27.250		1.83	49.868	1.40	0.840	2.92	A	EL	46.100	1.040	2.77	A	I	83.560	0.80	0.780	1.83	A	I	46.100	
		SNAGGRS4	34.925		1.50	52.388	1.40	0.840	2.40	A	EL	46.100	1.040	2.25	A	I	83.560	0.80	0.780	1.50	A	I	46.100	
		SNS5A	35.550		1.47	52.259	1.40	0.840	2.35	A	EL	46.100	1.040	2.26	A	I	83.560	0.80	0.780	1.47	A	I	46.100	
		SNS6A	39.950		1.34	53.533	1.40	0.840	2.14	A	EL	46.100	1.040	2.04	A	I	83.560	0.80	0.780	1.34	A	I	46.100	
		SNS7B	42.000		1.28	53.760	1.40	0.840	2.04	A	EL	46.100	1.040	1.99	A	I	83.560	0.80	0.780	1.28	A	I	46.100	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.63	53.790	1.40	0.840	2.61	A	EL	46.100	1.040	2.46	A	I	83.560	0.80	0.780	1.63	A	I	46.100	
		TNT4A	33.075		1.64	54.243	1.40	0.840	2.62	A	EL	46.100	1.040	2.41	A	I	83.560	0.80	0.780	1.64	A	I	46.100	
		TNT6A	41.600		1.33	55.328	1.40	0.840	2.12	A	EL	46.100	1.040	2.09	A	I	83.560	0.80	0.780	1.33	A	I	46.100	
		TNT7A	42.000		1.33	55.860	1.40	0.840	2.13	A	EL	46.100	1.040	2.06	A	I	83.560	0.80	0.780	1.33	A	I	46.100	
		TNT7B	42.000		1.36	57.120	1.40	0.840	2.18	A	EL	46.100	1.040	1.95	A	I	83.560	0.80	0.780	1.36	A	I	46.100	
		TNAGRIT4	43.000		1.31	56.330	1.40	0.840	2.09	A	EL	46.100	1.040	1.89	A	I	83.560	0.80	0.780	1.31	A	I	46.100	
TNAGT5A	45.000		1.24	55.800	1.40	0.840	1.98	A	EL	46.100	1.040	1.86	A	I	83.560	0.80	0.780	1.24	A	I	46.100			
TNAGT5B	45.000		③	1.23	55.350	1.40	0.840	1.96	A	EL	46.100	1.040	1.79	A	I	83.560	0.80	0.780	1.23	A	I	46.100		

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ <sub>DC</sub>	γ <sub>DW</sub>
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

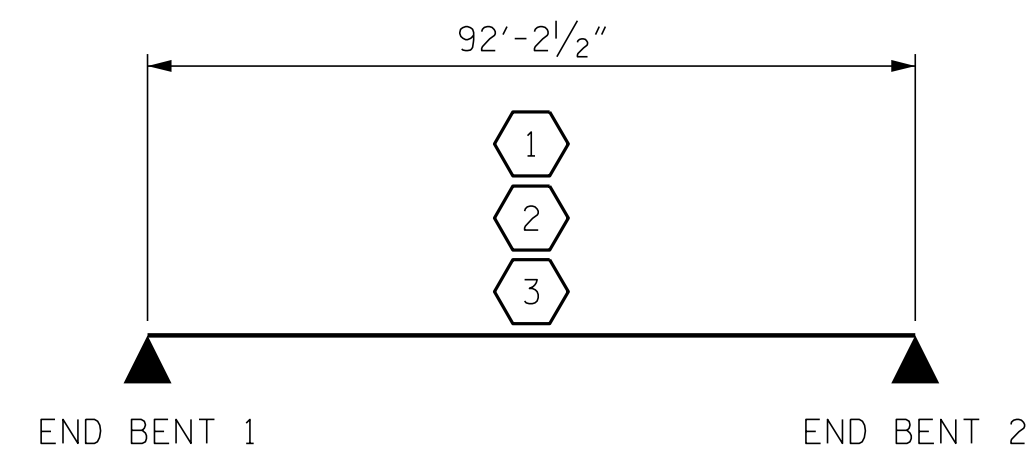
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

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

COMMENTS:

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

# 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

PROJECT NO. W-5600  
JOHNSTON COUNTY  
 STATION: 217+31.76 -L-

P:\2017\1712101\W-5600\USTO\Structures\DGN\L- over -Y9-DGN (LEFT LANE\W-5600\Y9\_LRFR (LEFT LANE)\_WE.L.dgn 3/20/2019 7:30:25 AM

ASSEMBLED BY : D. HODGE	DATE : 4/18
CHECKED BY : B.C. HUNT	DATE : 6/18
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

ENGINEER OF RECORD:  
3/25/2019

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS (NON-INTERSTATE TRAFFIC) (LEFT LANE)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S1-5
					TOTAL SHEETS 27