

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{DC}$	$\gamma_{DW}$
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

## 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			
						LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	MOMENT					SHEAR					LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	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 RATING	HL-93 (INVENTORY)	N/A	①	1.21	--	1.75	0.800	1.600	1	E	55.130	0.800	1.560	1	E	99.790	0.80	0.800	1.210	1	E	55.130	1 & 2	
	HL-93 (OPERATING)	N/A		2.07	--	1.35	0.800	2.070	1	E	55.130	0.800	2.070	1	E	99.790	N/A	--	--	--	--	--	1 & 2	
	HS-20 (INVENTORY)	36.000	②	1.72	61.920	1.75	0.800	2.280	1	E	55.130	0.800	2.190	1	E	99.790	0.80	0.800	1.720	1	E	55.130	1 & 2	
	HS-20 (OPERATING)	36.000		2.89	104.040	1.35	0.800	2.960	1	E	55.130	0.800	2.890	1	E	99.790	N/A	--	--	--	--	--	1 & 2	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.14	55.890	1.40	0.800	6.850	1	E	55.130	0.800	7.160	1	E	99.790	0.80	0.800	4.140	1	E	55.130	1 & 2
		SNGARBS2	20.000		2.98	59.600	1.40	0.800	4.930	1	E	55.130	0.800	4.940	1	E	99.790	0.80	0.800	2.980	1	E	55.130	1 & 2
		SNAGRIS2	22.000		2.78	61.160	1.40	0.800	4.590	1	E	55.130	0.800	4.540	1	E	99.790	0.80	0.800	2.780	1	E	55.130	1 & 2
		SNCOTTS3	27.250		2.06	56.135	1.40	0.800	3.410	1	E	55.130	0.800	3.470	1	E	99.790	0.80	0.800	2.060	1	E	55.130	1 & 2
		SNAGGRS4	34.925		1.68	58.674	1.40	0.800	2.780	1	E	55.130	0.800	2.790	1	E	99.790	0.80	0.800	1.680	1	E	55.130	1 & 2
		SNS5A	35.550		1.64	58.302	1.40	0.800	2.720	1	E	55.130	0.800	2.790	1	E	99.790	0.80	0.800	1.640	1	E	55.130	1 & 2
		SNS6A	39.950		1.49	59.526	1.40	0.800	2.470	1	E	55.130	0.800	2.510	1	E	99.790	0.80	0.800	1.490	1	E	55.130	1 & 2
		SNS7B	42.000		1.42	59.640	1.40	0.800	2.350	1	E	55.130	0.800	2.430	1	E	99.790	0.80	0.800	1.420	1	E	55.130	1 & 2
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.81	59.730	1.40	0.800	3.000	1	E	55.130	0.800	3.040	1	E	99.790	0.80	0.800	1.810	1	E	55.130	1 & 2
		TNT4A	33.075		1.82	60.197	1.40	0.800	3.000	1	E	55.130	0.800	2.980	1	E	99.790	0.80	0.800	1.820	1	E	55.130	1 & 2
		TNT6A	41.600		1.47	61.152	1.40	0.800	2.430	1	E	55.130	0.800	2.540	1	E	99.790	0.80	0.800	1.470	1	E	55.130	1 & 2
		TNT7A	42.000		1.47	61.740	1.40	0.800	2.420	1	E	55.130	0.800	2.500	1	E	99.790	0.80	0.800	1.470	1	E	55.130	1 & 2
		TNT7B	42.000		1.50	63.000	1.40	0.800	2.480	1	E	55.130	0.800	2.390	1	E	99.790	0.80	0.800	1.500	1	E	55.130	1 & 2
		TNAGRIT4	43.000		1.44	61.920	1.40	0.800	2.380	1	E	55.130	0.800	2.320	1	E	99.790	0.80	0.800	1.440	1	E	55.130	1 & 2
		TNAGT5A	45.000		1.37	61.650	1.40	0.800	2.260	1	E	55.130	0.800	2.260	1	E	99.790	0.80	0.800	1.370	1	E	55.130	1 & 2
TNAGT5B	45.000	③	1.35	60.750	1.40	0.800	2.240	1	E	55.130	0.800	2.200	1	E	99.790	0.80	0.800	1.350	1	E	55.130	1 & 2		

**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. END RESTRAINT FOR INTEGRAL END BENTS IS NOT CONSIDERED FOR LOAD RATING ANALYSIS.  
 2. LOAD RATING ASSUMES SIMPLE SPAN CONDITIONS PER NCDOT BRIDGE DESIGN MANUAL, CHAPTER 6.

# CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

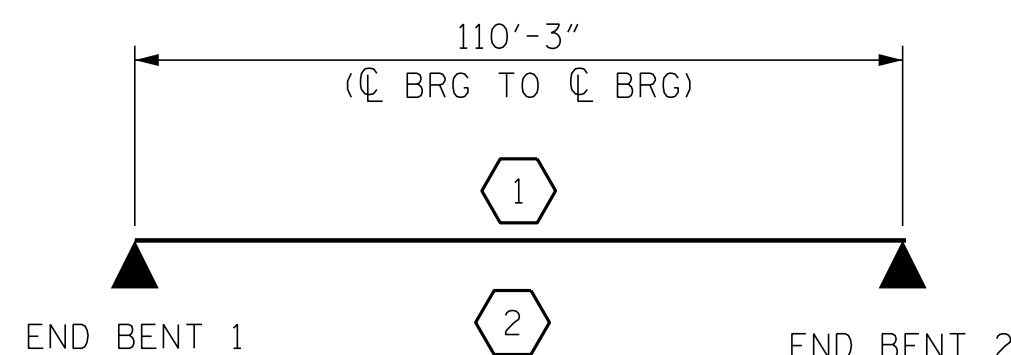
③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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GIRDER LOCATION

I - INTERIOR GIRDER  
 E - EXTERIOR LEFT AND RIGHT GIRDER



LRFR SUMMARY

PROJECT NO. R-5769  
JOHNSTON COUNTY  
 STATION: 33+26.33 -L-

ENGINEER OF RECORD

**ETHERILL ENGINEERING**

1223 Jones Franklin Rd.  
 Raleigh, N.C. 27606  
 Bus: 919 851 8077  
 Fax: 919 851 8107  
 LICENSE NO. F-0377

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

STANDARD  
 LRFR SUMMARY FOR  
 PRESTRESSED  
 CONCRETE GIRDERS  
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			23

DRAWN BY : J. PENDERGRAFT      DATE : 2-16  
 CHECKED BY : J. T. DIFFEE      DATE : 6-16

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

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