

## 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	1.09	--	1.75	0.821	1.25	A	E	56.6	0.956	1.27	A	I	33.7	0.80	0.821	1.09	A	E	56.6	1	
	HL-93 (OPERATING)	N/A	--	1.62	--	1.35	0.821	1.62	A	E	56.6	0.956	1.78	A	I	22.2	N/A	--	--	--	--	--	1	
	HS-20 (INVENTORY)	36.000	②	1.56	56.160	1.75	0.821	1.80	A	E	56.6	0.956	1.85	A	I	22.2	0.80	0.821	1.56	A	E	56.6	1	
	HS-20 (OPERATING)	36.000	--	2.33	83.880	1.35	0.821	2.33	A	E	56.6	0.956	2.44	A	I	22.2	N/A	--	--	--	--	--	1	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH	12.500	--	4.09	51.125	1.40	0.821	5.87	A	E	56.6	0.956	6.57	A	I	22.2	0.80	0.821	4.09	A	E	56.6	1
		S3C	21.500	--	2.39	51.385	1.40	0.821	3.43	A	E	56.6	0.956	3.77	A	I	22.2	0.80	0.821	2.39	A	E	56.6	1
		S3A	22.750	--	2.26	51.415	1.40	0.821	3.25	A	E	56.6	0.956	3.57	A	I	22.2	0.80	0.821	2.26	A	E	56.6	1
		S4A	26.750	--	1.97	52.698	1.40	0.821	2.83	A	E	56.6	0.956	3.08	A	I	22.2	0.80	0.821	1.97	A	E	56.6	1
		S5A	30.500	--	1.74	53.070	1.40	0.821	2.50	A	E	56.6	0.956	2.78	A	I	22.2	0.80	0.821	1.74	A	E	56.6	1
		S6A	34.500	--	1.57	54.165	1.40	0.821	2.25	A	E	56.6	0.956	2.48	A	I	22.2	0.80	0.821	1.57	A	E	56.6	1
		S7B	38.500	--	1.42	54.670	1.40	0.821	2.04	A	E	56.6	0.956	2.29	A	I	22.2	0.80	0.821	1.42	A	E	56.6	1
	S7A	40.000	③	1.39	55.600	1.40	0.821	2.00	A	E	56.6	0.956	2.31	A	I	22.2	0.80	0.821	1.39	A	E	56.6	1	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250	--	1.93	54.523	1.40	0.821	2.76	A	E	56.6	0.956	2.97	A	I	22.2	0.80	0.821	1.93	A	E	56.6	1
		T5B	32.000	--	1.69	54.080	1.40	0.821	2.43	A	E	56.6	0.956	2.77	A	I	22.2	0.80	0.821	1.69	A	E	56.6	1
		T6A	36.000	--	1.54	55.440	1.40	0.821	2.21	A	E	56.6	0.956	2.51	A	I	22.2	0.80	0.821	1.54	A	E	56.6	1
		T7A	40.000	--	1.42	56.800	1.40	0.821	2.03	A	E	56.6	0.956	2.31	A	I	22.2	0.80	0.821	1.42	A	E	56.6	1
		T7B	40.000	--	1.48	59.200	1.40	0.821	2.13	A	E	56.6	0.956	2.19	A	I	22.2	0.80	0.821	1.48	A	E	56.6	1

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. THE REDUCTION OF LOAD DISTRIBUTION FACTOR FOR MOMENT IN LONGITUDINAL BEAMS ON SKEWED SUPPORTS (AASHTO TABLE 4.6.2.2E-1) WAS NOT APPLIED.

# CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

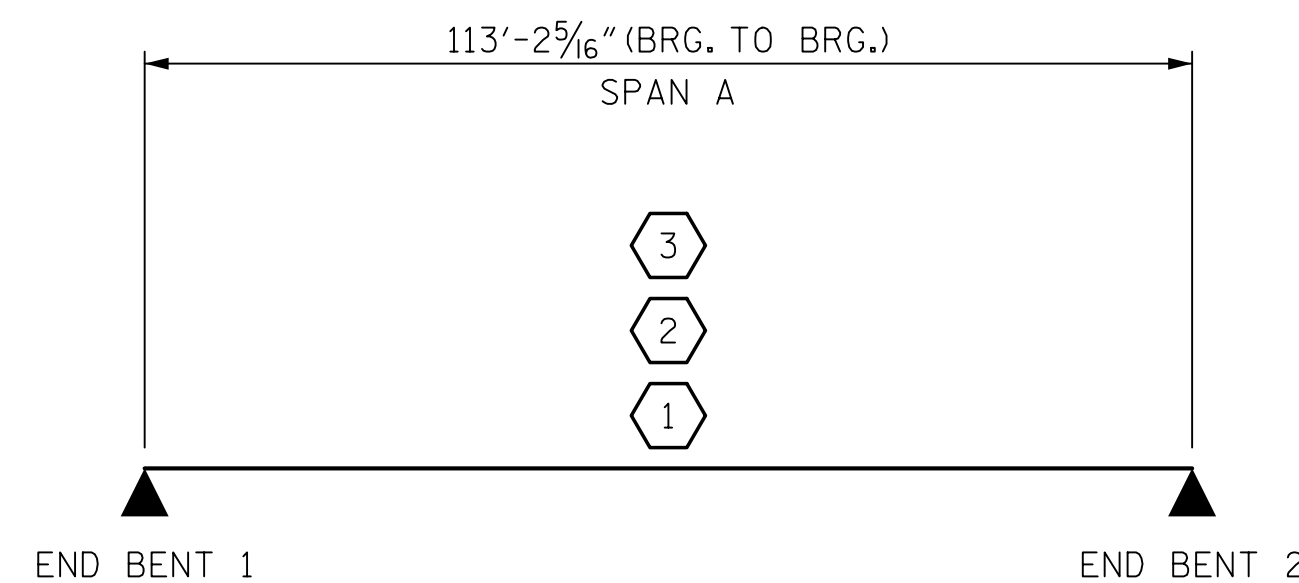
③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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GIRDER LOCATION

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



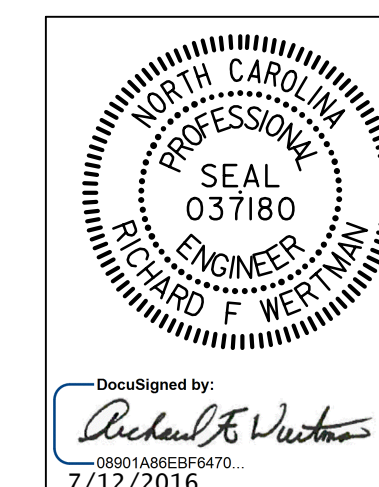
LRFR SUMMARY

PROJECT NO. B-4447  
BURKE COUNTY  
 STATION: 25+85.40 -L-  
15+67.23 -Y-

ASSEMBLED BY : T.J. KIRSCHBAUM DATE : 11/16/15  
 CHECKED BY : A.J. FORFA DATE : 12/2/15  
 DRAWN BY : MAA 1/08 REV. 11/12/08RR MAA/GM  
 CHECKED BY : GM/DI 2/08 REV. 10/1/11 MAA/GM

PLANS PREPARED BY:  
**Gannett Fleming**  
 Excellence Delivered *As Promised* NC Lic. No. F-0270  
 2610 Wycliff Road  
 Suite 102  
 Raleigh NC 27607-3073  
 (919) 420-7660

THESE PLANS HAVE BEEN PROPERLY EXAMINED BY THE UNDERSIGNED. I HAVE DETERMINED THAT THEY COMPLY WITH EXISTING NORTH CAROLINA CODES, AND HAVE BEEN PROPERLY ADAPTED FOR USE IN THIS AREA.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 LRFR SUMMARY FOR  
 PRESTRESSED  
 CONCRETE GIRDERS  
 (INTERSTATE TRAFFIC)  
 WESTBOUND LANE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S01-4
1			3			TOTAL SHEETS
2			4			28