

## 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 (γ <sub>L</sub> )	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ <sub>L</sub> )	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	1.14	--	1.75	0.73	1.14	A	I	22.1	0.85	1.24	A	I	13.0	0.80	0.70	1.14	B	E	34.4		
	HL-93 (OPERATING)	N/A		1.48	--	1.35	0.73	1.48	A	I	22.1	0.85	2.23	A	I	13.0	N/A	---	---	---	---	---		
	HS-20 (INVENTORY)	36.000	②	1.40	50.400	1.75	0.73	1.40	A	I	22.1	0.85	1.69	A	I	31.2	0.80	0.70	1.49	B	E	34.4		
	HS-20 (OPERATING)	36.000		1.81	65.160	1.35	0.73	1.81	A	I	22.1	0.85	3.09	A	I	13.0	N/A	---	---	---	---	---		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.11	41.985	1.40	0.73	3.42	A	I	22.1	0.85	6.63	A	I	40.2	0.80	0.73	3.11	A	I	22.1	
		SNGARBS2	20.000		2.49	49.800	1.40	0.73	2.76	A	I	22.1	0.85	4.87	A	I	3.9	0.80	0.70	2.49	B	E	34.4	
		SNAGRIS2	22.000		2.36	51.920	1.40	0.73	2.69	A	I	17.5	0.85	4.59	A	I	40.2	0.80	0.70	2.36	B	E	34.4	
		SNCOTTS3	27.250		1.55	42.238	1.40	0.73	1.71	A	I	22.1	0.85	2.99	A	I	13.0	0.80	0.73	1.55	A	I	22.1	
		SNAGGRS4	34.925		1.37	47.847	1.40	0.73	1.51	A	I	22.1	0.85	2.34	A	I	13.0	0.80	0.73	1.37	A	I	22.1	
		SNS5A	35.550		1.33	47.282	1.40	0.73	1.47	A	I	22.1	0.85	2.68	A	I	13.0	0.80	0.73	1.33	A	I	22.1	
		SNS6A	39.950		1.24	49.538	1.40	0.73	1.38	A	I	22.1	0.85	2.31	A	I	13.0	0.80	0.70	1.24	B	E	34.4	
		SNS7B	42.000		1.19	49.980	1.40	0.73	1.32	A	I	22.1	0.85	2.45	A	I	13.0	0.80	0.70	1.19	B	E	34.4	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.52	50.160	1.40	0.73	1.70	A	I	22.1	0.85	3.20	A	I	40.2	0.80	0.70	1.52	B	E	34.4	
		TNT4A	33.075		1.53	50.605	1.40	0.73	1.71	A	I	22.1	0.85	2.90	A	I	13.0	0.80	0.70	1.53	B	E	34.4	
		TNT6A	41.600		1.25	52.000	1.40	0.73	1.44	A	I	22.1	0.85	2.69	A	I	13.0	0.80	0.70	1.25	B	E	34.4	
		TNT7A	42.000		1.26	52.920	1.40	0.73	1.47	A	I	22.1	0.85	2.28	A	I	13.0	0.80	0.70	1.26	B	E	34.4	
		TNT7B	42.000		1.30	54.600	1.40	0.73	1.53	A	I	22.1	0.85	2.19	A	I	13.0	0.80	0.70	1.30	B	E	34.4	
		TNAGRIT4	43.000		1.24	53.320	1.40	0.73	1.45	A	I	22.1	0.85	2.00	A	I	13.0	0.80	0.70	1.24	B	E	34.4	
TNAGR5A	45.000		1.17	52.650	1.40	0.73	1.35	A	I	22.1	0.85	2.25	A	I	13.0	0.80	0.70	1.17	B	E	34.4			
TNAGR5B	45.000		③	1.15	51.750	1.40	0.73	1.32	A	I	22.1	0.85	1.75	A	I	13.0	0.80	0.70	1.15	B	E	34.4		

**LOAD FACTORS:**

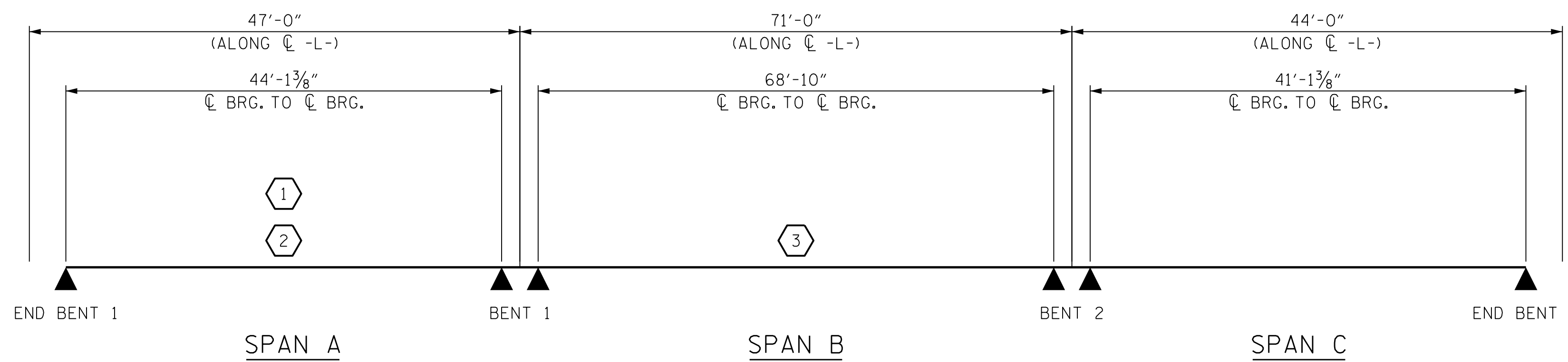
DESIGN LOAD RATING FACTORS	LIMIT STATE	γ <sub>DC</sub>	γ <sub>DW</sub>
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

**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.

DISTANCE FROM LEFT END OF SPAN IS GIVEN WITH RESPECT TO THE CENTERLINE OF BEARING AND IS MEASURED ALONG THE CONTROLLING GIRDER.



③ 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 GIRDER

PROJECT NO. B-5352

ROCKINGHAM COUNTY

STATION: P.O.T. 22+16.89 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

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



DocuSigned by:  
Matthew T. Neiheisel  
2/20/2018

REVISIONS

BY:	DATE:	NO.	BY:	DATE:	SHEET NO.
		③			S-4
		④			TOTAL SHEETS 37

DRAWN BY : D. H. CARTER DATE : FEB 2018  
 CHECKED BY : M. T. NEIHEISEL DATE : FEB 2018  
 DESIGN ENGINEER OF RECORD: M. T. NEIHEISEL DATE : FEB 2018

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PLOT DRIVER: NCDOT\_STRUCTURES\_DEFAULT\_PLOTTER.plt PENTABLE: NCDOT\_STRUCTURES\_DEFAULT\_PEN.tbl  
 USER: dcarter DATE: 2/19/2018 TIME: 1:41:59 PM  
 FILE: ... \structures\dgm\Final\CAD\0340