

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			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.22	--	1.75	0.800	1.34	A	EL	48.2	.841	1.70	A	I	9.10	0.80	.800	1.22	A	EL	48.2		
	HL-93 (OPERATING)	N/A		1.74	--	1.35	0.800	1.74	A	EL	48.2	.841	2.23	A	I	9.10	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.69	60.8	1.75	0.800	1.87	A	EL	48.2	.841	2.29	A	I	9.10	0.80	.800	1.69	A	EL	48.2		
	HS-20 (OPERATING)	36.000		2.42	87.1	1.35	0.800	2.42	A	EL	48.2	.841	3.00	A	I	9.10	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13,500		1.63	22.0	1.40	0.800	2.25	A	EL	48.2	.841	2.89	A	I	9.10	0.80	.800	1.63	A	EL	48.2	
		SNGARBS2	20,000		1.45	29.0	1.40	0.800	2.00	A	EL	48.2	.841	2.62	A	I	9.10	0.80	.800	1.45	A	EL	48.2	
		SNAGRIS2	22,000		2.91	64.0	1.40	0.800	4.01	A	EL	48.2	.841	5.06	A	I	9.10	0.80	.800	2.91	A	EL	48.2	
		SNCOTTS3	27,250		1.60	43.6	1.40	0.800	2.20	A	EL	48.2	.841	2.90	A	I	9.10	0.80	.800	1.60	A	EL	48.2	
		SNAGGRS4	34,925		1.99	69.5	1.40	0.800	2.74	A	EL	48.2	.841	3.56	A	I	9.10	0.80	.800	1.99	A	EL	48.2	
		SNS5A	35,550		1.38	49.1	1.40	0.800	1.90	A	EL	48.2	.841	2.53	A	I	9.10	0.80	.800	1.38	A	EL	48.2	
		SNS6A	39,950		4.03	161.0	1.40	0.800	5.55	A	EL	48.2	.841	7.27	A	I	9.10	0.80	.800	4.03	A	EL	48.2	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33,000		1.77	58.4	1.40	0.800	2.44	A	EL	48.2	.841	3.15	A	I	9.10	0.80	.800	1.77	A	EL	48.2	
		TNT4A	33,075		1.77	58.5	1.40	0.800	2.44	A	EL	48.2	.841	3.09	A	I	9.10	0.80	.800	1.77	A	EL	48.2	
		TNT6A	41,600		1.43	59.5	1.40	0.800	1.98	A	EL	48.2	.841	2.67	A	I	9.10	0.80	.800	1.43	A	EL	48.2	
		TNT7A	42,000		1.44	60.5	1.40	0.800	1.98	A	EL	48.2	.841	2.63	A	I	9.10	0.80	.800	1.44	A	EL	48.2	
		TNT7B	42,000		1.47	61.7	1.40	0.800	2.02	A	EL	48.2	.841	2.50	A	I	9.10	0.80	.800	1.47	A	EL	48.2	
		TNAGRIT4	43,000		1.41	60.6	1.40	0.800	1.94	A	EL	48.2	.841	2.42	A	I	9.10	0.80	.800	1.41	A	EL	48.2	
		TNAGT5A	45,000		1.33	59.9	1.40	0.800	1.84	A	EL	48.2	.841	2.38	A	I	9.10	0.80	.800	1.33	A	EL	48.2	
TNAGT5B	45,000	③	1.32	59.4	1.40	0.800	1.83	A	EL	48.2	.841	2.30	A	I	9.10	0.80	.800	1.32	A	EL	48.2			

**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.

SPAN LENGTHS IN LRFR SUMMARY SKETCH BELOW ARE THOSE USED IN ANALYSIS MODEL FOR COMPOSITE DL AND LIVE LOAD.

# CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

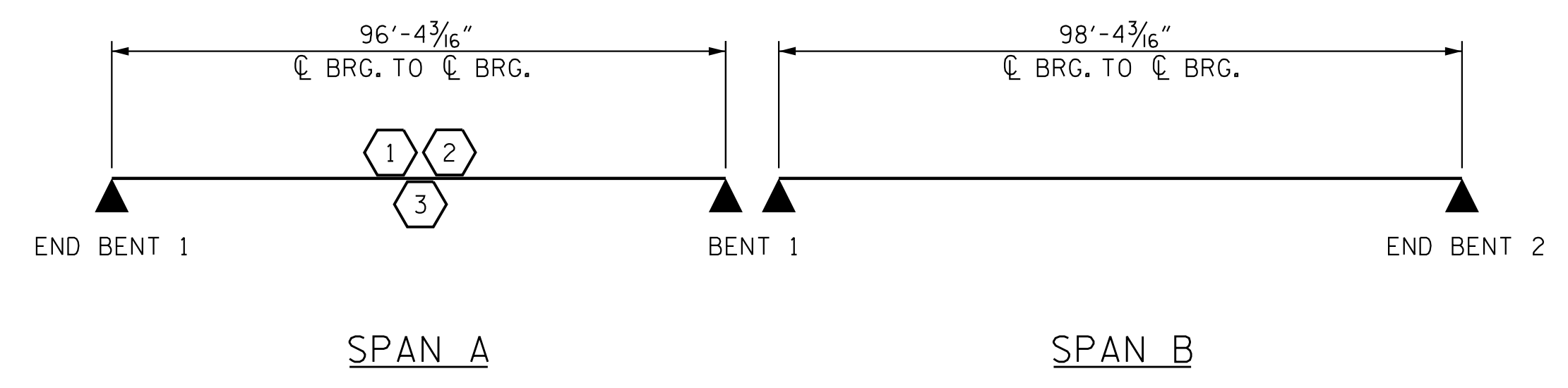
③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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GIRDER LOCATION

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



PROJECT NO. R-2707D  
CLEVELAND COUNTY  
 STATION: 20+16.72 -Y2-

LRFR SUMMARY

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 Suite 300  
 Raleigh, NC 27606  
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 www.stantec.com  
 License No. F-0672

ASSEMBLED BY : M. B. ISENHOUR DATE : 6/2/18  
 CHECKED BY : V. E. FRAGA DATE : 10/24/18

DRAWN BY : MAA 1/08  
 CHECKED BY : GM/DI 2/08

REV. 11/2/08RR MAA/GM  
 REV. 10/1/11 MAA/GM  
 REV. 12/17 MAA/THC

DESIGN ENGINEER OF RECORD: J.T. KELVINGTON DATE : 04/27/22

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	REVISIONS						SHEET NO. S2-05 TOTAL SHEETS 35
	NO.	BY:	DATE:	NO.	BY:	DATE:	
	1			3			
	2			4			

jhagenbush

4/27/2023

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