

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 (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.03		1.75	0.852	1.48	B	E	54.1	0.980	1.11	B	I	21.2	0.80	0.852	1.03	B	E	54.1		
	HL-93 (OPERATING)	N/A		1.49		1.35	0.852	1.91	B	E	54.1	0.980	1.49	B	I	21.2	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.46	52.56	1.75	0.852	2.10	B	E	54.1	0.980	1.53	B	I	21.2	0.80	0.852	1.46	B	E	54.1		
	HS-20 (OPERATING)	36.000		2.03	73.08	1.35	0.852	2.72	B	E	54.1	0.980	2.03	B	I	21.2	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SN5H	13.500		3.51	47.38	1.40	0.964	5.57	A	I	19.9	0.980	5.05	B	I	21.2	0.80	0.852	3.51	B	E	54.1	
		SNGARBS2	20.000		2.52	50.40	1.40	0.852	4.52	B	E	54.1	0.980	3.48	B	I	21.2	0.80	0.852	2.52	B	E	54.1	
		SNAGRIS2	22.000		2.35	51.70	1.40	0.852	4.23	B	E	54.1	0.980	3.21	B	I	21.2	0.80	0.852	2.35	B	E	54.1	
		SNCOTTS3	27.250		1.74	47.41	1.40	0.964	2.78	A	I	19.9	0.980	2.43	B	I	21.2	0.80	0.852	1.74	B	E	54.1	
		SNAGGRS4	34.925		1.42	49.59	1.40	0.964	2.49	A	I	19.9	0.980	1.95	B	I	21.2	0.80	0.852	1.42	B	E	54.1	
		SNS5A	35.550		1.39	49.41	1.40	0.964	2.43	A	I	19.9	0.980	1.96	B	I	21.2	0.80	0.852	1.39	B	E	54.1	
		SNS6A	39.950		1.26	50.33	1.40	0.852	2.27	B	E	54.1	0.980	1.76	B	I	21.2	0.80	0.852	1.26	B	E	54.1	
	SNS7B	42.000		1.20	50.40	1.40	0.852	2.16	B	E	54.1	0.980	1.71	B	I	21.2	0.80	0.852	1.20	B	E	54.1		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.54	50.82	1.40	0.852	2.76	B	E	54.1	0.980	2.14	B	I	21.2	0.80	0.852	1.54	B	E	54.1	
		TNT4A	33.075		1.54	50.93	1.40	0.852	2.76	B	E	54.1	0.980	2.08	B	I	21.2	0.80	0.852	1.54	B	E	54.1	
		TNT6A	41.600		1.25	52.00	1.40	0.852	2.24	B	E	54.1	0.980	1.80	B	I	21.2	0.80	0.852	1.25	B	E	54.1	
		TNT7A	42.000		1.24	52.08	1.40	0.852	2.24	B	E	54.1	0.980	1.77	B	I	21.2	0.80	0.852	1.24	B	E	54.1	
		TNT7B	42.000		1.27	53.34	1.40	0.852	2.28	B	E	54.1	0.980	1.68	B	I	21.2	0.80	0.852	1.27	B	E	54.1	
		TNAGRIT4	43.000		1.22	52.46	1.40	0.852	2.19	B	E	54.1	0.980	1.61	B	I	21.2	0.80	0.852	1.22	B	E	54.1	
TNAGT5A		45.000		1.16	52.20	1.40	0.852	2.08	B	E	54.1	0.980	1.58	B	I	21.2	0.80	0.852	1.16	B	E	54.1		
TNAGT5B	45.000	③	1.15	51.75	1.40	0.852	2.06	B	E	54.1	0.980	1.54	B	I	21.2	0.80	0.852	1.15	B	E	54.1			

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.

# CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

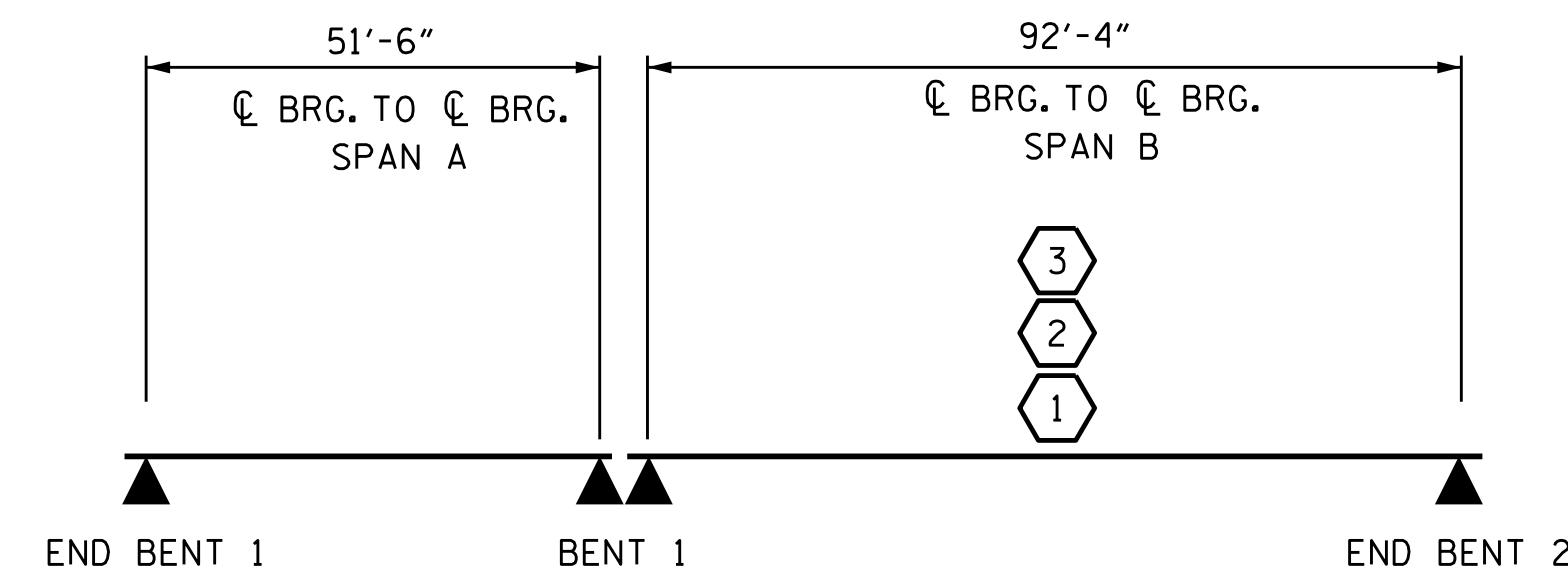
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER  
E - EXTERIOR



PROJECT NO. R-2561CA  
COLUMBUS COUNTY  
STATION: 71+06.00 -L-

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

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S4-4	
1			3			TOTAL SHEETS 29	
2			4				

DocuSigned by:  
DB3C8E45B06D495  
8/15/2022  
NORTH CAROLINA PROFESSIONAL SEAL 14114  
ENGINEER ROBERT C. LARSON

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

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STD. NO. LRFR1

\$FILED \$ DATES \$ TIME \$ \$USERS \$ \$PLTDORVYS \$ \$PENTBLIS \$ \$PROJECT NO. 241704391.04

DESIGN ENGINEER OF RECORD	DocuSigned by:	DATE: 8/15/2022
ASSEMBLED BY: C. E. LARSON	DATE: 09/05/19	
CHECKED BY: R. C. LARSON	DATE: 09/09/19	
DRAWN BY: MAA 1/08	REV. 11/2/08RR MAA/GM	
CHECKED BY: GM/DI 2/08	REV. 10/1/11 MAA/GM	
	REV. 12/17 MAA/THC	