

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 _{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 (γ _{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	1.02	--	1.75	0.921	1.40	A & B	1	54.44	1.051	1.02	A & B	1	32.38	1.00	0.921	1.04	A & B	1	54.44	1, 2	
	HL-93 (OPERATING)	N/A		1.68	--	1.35	0.921	1.81	A & B	1	54.44	1.051	1.68	A & B	1	98.56	N/A	-	-	-	-	-	-	2
	HS-20 (INVENTORY)	36.000	②	1.48	53.28	1.75	0.921	1.99	A & B	1	54.44	1.049	1.77	A & B	3	98.56	1.00	0.921	1.48	A & B	1	54.44	1, 2	
	HS-20 (OPERATING)	36.000		2.33	83.88	1.35	0.921	2.58	A & B	1	54.44	1.049	2.33	A & B	3	98.56	N/A	-	-	-	-	-	-	2
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.54	47.79	1.40	0.921	5.96	A & B	1	54.44	1.049	5.73	A & B	3	98.56	1.00	0.921	3.54	A & B	1	54.44	1, 2
		SNARB2	20.000		2.55	51.00	1.40	0.921	4.29	A & B	1	54.44	1.049	3.97	A & B	3	10.32	1.00	0.921	2.55	A & B	1	54.44	1, 2
		SNAGRIS2	22.000		2.37	52.14	1.40	0.921	4.00	A & B	1	54.44	1.049	3.64	A & B	3	98.56	1.00	0.921	2.37	A & B	1	54.44	1, 2
		SNCOOTS3	27.250		1.76	47.96	1.40	0.921	2.96	A & B	1	54.44	1.049	2.79	A & B	3	10.32	1.00	0.921	1.76	A & B	1	54.44	1, 2
		SNAGGRS4	34.925		1.43	49.94	1.40	0.921	2.42	A & B	1	54.44	1.049	2.25	A & B	3	98.56	1.00	0.921	1.43	A & B	1	54.44	1, 2
		SNS5A	35.550		1.40	49.77	1.40	0.921	2.37	A & B	1	54.44	1.049	2.25	A & B	3	98.56	1.00	0.921	1.40	A & B	1	54.44	1, 2
		SNS6A	39.950		1.27	50.74	1.40	0.921	2.15	A & B	1	54.44	1.049	2.02	A & B	3	98.56	1.00	0.921	1.27	A & B	1	54.44	1, 2
		SNS7B	42.000		1.21	50.82	1.40	0.921	2.04	A & B	1	54.44	1.049	1.96	A & B	3	98.56	1.00	0.921	1.21	A & B	1	54.44	1, 2
	TRUCK TRACTOR SEMI-TRAILER (TST)	TNAGRIT3	33.000		1.55	51.15	1.40	0.921	2.61	A & B	1	54.44	1.049	2.45	A & B	3	10.32	1.00	0.921	1.55	A & B	1	54.44	1, 2
		TNT4A	33.075		1.55	51.27	1.40	0.921	2.62	A & B	1	54.44	1.049	2.40	A & B	3	98.56	1.00	0.921	1.55	A & B	1	54.44	1, 2
		TNT6A	41.600		1.26	52.42	1.40	0.921	2.12	A & B	1	54.44	1.049	2.05	A & B	3	10.32	1.00	0.921	1.26	A & B	1	54.44	1, 2
		TNT7A	42.000		1.26	52.92	1.40	0.921	2.11	A & B	1	54.44	1.049	2.02	A & B	3	98.56	1.00	0.921	1.26	A & B	1	54.44	1, 2
		TNT7B	42.000		1.28	53.76	1.40	0.921	2.16	A & B	1	54.44	1.049	1.93	A & B	3	98.56	1.00	0.921	1.28	A & B	1	54.44	1, 2
		TNAGRIT4	43.000		1.23	52.89	1.40	0.921	2.08	A & B	1	54.44	1.049	1.87	A & B	3	98.56	1.00	0.921	1.23	A & B	1	54.44	1, 2
		TNAGT5A	45.000		1.17	52.65	1.40	0.921	1.97	A & B	1	54.44	1.051	1.83	A & B	1	98.56	1.00	0.921	1.17	A & B	1	54.44	1, 2
		TNAGT5B	45.000	③	1.16	52.20	1.40	0.921	1.95	A & B	1	54.44	1.049	1.78	A & B	3	98.56	1.00	0.921	1.16	A & B	1	54.44	1, 2

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ _{DC}	γ _{DW}
	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:

- A SERVICE III LIVE LOAD FACTOR OF 1.0 WAS USED TO BE CONSISTENT WITH THE VALUE USED DURING DESIGN.
- DISTANCE FROM LEFT END OF SPAN IS GIVEN WITH RESPECT TO THE CENTERLINE OF BEARING AND IS MEASURED ALONG THE CONTROLLING GIRDER.

Ⓝ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

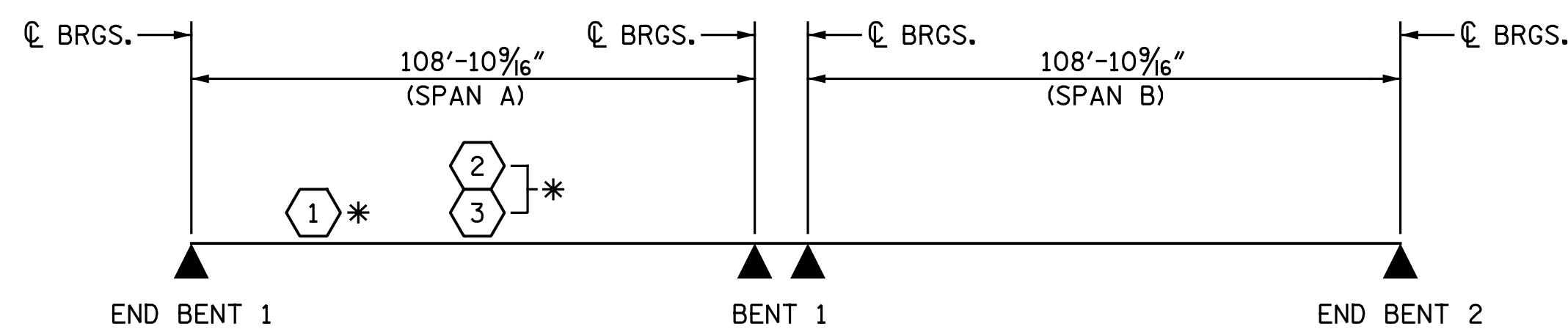
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

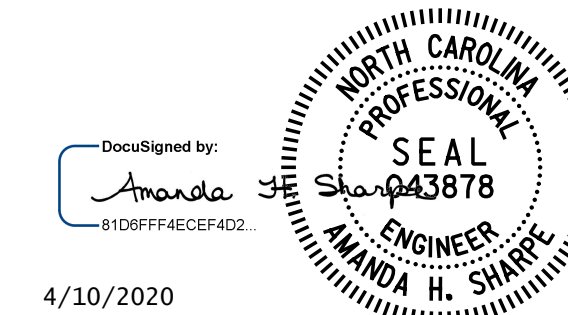
GIRDER LOCATION

GIRDER LOCATION IS PROVIDED USING GIRDER NUMBER, WHERE GIRDER 1 IS THE LEFT EXTERIOR GIRDER LOOKING AHEAD STATION. SEE "GIRDER LAYOUT" SHEET FOR ALL GIRDER LOCATIONS.



LRFR SUMMARY
* TYPICAL SPANS A & B

PROJECT NO. I-5878
HARNETT COUNTY
 STATION: 26+05.28 -Y14-



4/10/2020

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

Michael Baker INTERNATIONAL
 Michael Baker Engineering
 8000 Regency Parkway, Suite 600
 Cary, North Carolina 27518
 NC License No.: F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	SI-4
1			3			TOTAL SHEETS
2			4			35

ASSEMBLED BY : N. B. SPEAKS	DATE : 7-9-19
CHECKED BY : A. H. SHARPE	DATE : 8-30-19
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC