

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

LEVEL	VEHICLE	WEIGHT (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_{LL})	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ_{LL})	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	1.17	--	1.75	0.879	1.68	B	EL	44.10	0.879	2.32	B	I	83.50	0.80	0.879	1.17	B	EL	44.10	1-3	
	HL-93 (OPERATING)	N/A		2.17	--	1.35	0.879	2.17	B	EL	44.10	0.879	3.03	B	I	83.50	N/A	--	--	--	--	--	1-3	
	HS-20 (INVENTORY)	36.000	②	1.59	57.24	1.75	0.879	2.29	B	EL	44.10	0.879	3.14	B	I	83.50	0.80	0.879	1.59	B	EL	44.10	1-3	
	HS-20 (OPERATING)	36.000		2.96	106.56	1.35	0.879	2.96	B	EL	44.10	0.879	4.08	B	I	83.50	N/A	--	--	--	--	--	1-3	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.73	50.36	1.40	0.879	6.69	B	EL	44.10	0.879	8.32	A	I	46.40	0.80	0.879	3.73	B	EL	44.10	1-3
		SNGARBS2	20.000		2.72	54.40	1.40	0.879	4.88	B	EL	44.10	0.879	6.00	A	I	46.40	0.80	0.879	2.72	B	EL	44.10	1-3
		SNAGRIS2	22.000		2.55	56.10	1.40	0.879	4.58	B	EL	44.10	0.879	5.61	A	I	46.40	0.80	0.879	2.55	B	EL	44.10	1-3
		SNCOTTS3	27.250		1.86	50.69	1.40	0.879	3.35	B	EL	44.10	0.879	4.10	A	I	46.40	0.80	0.879	1.86	B	EL	44.10	1-3
		SNAGGRS4	34.925		1.53	53.44	1.40	0.879	2.74	B	EL	44.10	0.879	3.47	A	I	46.40	0.80	0.879	1.53	B	EL	44.10	1-3
		SNS5A	35.550		1.49	52.97	1.40	0.879	2.68	B	EL	44.10	0.879	3.56	A	I	46.40	0.80	0.879	1.49	B	EL	44.10	1-3
		SNS6A	39.950		1.36	54.33	1.40	0.879	2.44	B	EL	44.10	0.879	3.28	A	I	46.40	0.80	0.879	1.36	B	EL	44.10	1-3
		SNS7B	42.000		1.30	54.60	1.40	0.879	2.33	B	EL	44.10	0.879	3.27	A	I	46.40	0.80	0.879	1.30	B	EL	44.10	1-3
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.66	54.78	1.40	0.879	2.98	B	EL	44.10	0.879	3.86	A	I	46.40	0.80	0.879	1.66	B	EL	44.10	1-3
		TNT4A	33.075		1.66	54.90	1.40	0.879	2.99	B	EL	44.10	0.879	3.72	A	I	46.40	0.80	0.879	1.66	B	EL	44.10	1-3
		TNT6A	41.600		1.35	56.16	1.40	0.879	2.43	B	EL	44.10	0.879	3.55	A	I	46.40	0.80	0.879	1.35	B	EL	44.10	1-3
		TNT7A	42.000		1.35	56.70	1.40	0.879	2.43	B	EL	44.10	0.879	3.31	A	I	46.40	0.80	0.879	1.35	B	EL	44.10	1-3
		TNT7B	42.000		1.39	58.38	1.40	0.879	2.49	B	EL	44.10	0.879	3.12	A	I	46.40	0.80	0.879	1.39	B	EL	44.10	1-3
		TNAGRIT4	43.000		1.33	57.19	1.40	0.879	2.39	B	EL	44.10	0.879	3.01	A	I	46.40	0.80	0.879	1.33	B	EL	44.10	1-3
		TNAGT5A	45.000		1.26	56.70	1.40	0.879	2.26	B	EL	44.10	0.879	3.05	A	I	46.40	0.80	0.879	1.26	B	EL	44.10	1-3
		TNAGT5B	45.000	③	1.24	55.80	1.40	0.879	2.24	B	EL	44.10	0.879	2.85	A	I	46.40	0.80	0.879	1.24	B	EL	44.10	1-3

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:

- GIRDERS DESIGNED AS SIMPLE SPANS FOR FLEXURE AND SHEAR.
- FUTURE WEARING SURFACE WAS CONSIDERED BETWEEN INTERIOR BARRIERS.
- ADTT OF 5000 WAS ASSUMED.

⊕ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

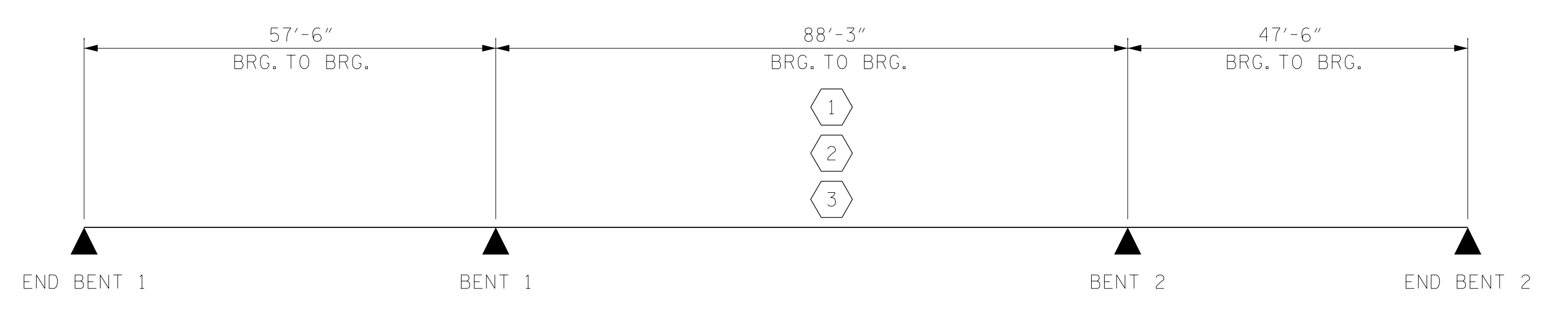
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-5318
 WAKE COUNTY
 STATION: 19+73.00 -L-

2610 WYCLIFF ROAD
 SUITE 410
 RALEIGH, NC 27607
 PHONE: 919.881.9929
 NC COA No. F-0929

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

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

SHEET NO.
S-5

REVISIONS

NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

TOTAL SHEETS
41

DRAWN BY: E. JONES DATE: JUNE 21
 CHECKED BY: P. O'NEILL DATE: JUNE 21
 DESIGN ENGINEER OF RECORD: Z. BROWN DATE: JUNE 21