

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	1.06	--	1.75	0.920	1.340	B	ER	48.790	1.070	1.190	B	I	88.390	0.80	0.790	1.060	B	I	48.790		
	HL-93 (OPERATING)	N/A		1.57	--	1.35	0.920	1.740	B	ER	48.790	1.070	1.570	B	I	88.390	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.47	52.920	1.75	0.920	1.870	B	ER	48.790	1.070	1.620	B	I	88.390	0.80	0.790	1.470	B	I	48.790		
	HS-20 (OPERATING)	36.000		2.12	76.320	1.35	0.920	2.420	B	ER	48.790	1.070	2.120	B	I	88.390	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.49	47.115	1.40	0.920	5.520	B	ER	48.790	1.070	5.160	B	I	88.390	0.80	0.790	3.490	B	I	48.790	
		SNGARBS2	20.000		2.53	50.600	1.40	0.920	4.000	B	ER	48.790	1.070	3.590	B	I	88.390	0.80	0.790	2.530	B	I	48.790	
		SNAGRIS2	22.000		2.36	51.920	1.40	0.920	3.750	B	ER	48.790	1.070	3.300	B	I	88.390	0.80	0.790	2.360	B	I	48.790	
		SNCOTTS3	27.250		1.73	47.143	1.40	0.920	2.740	B	ER	48.790	1.070	2.520	B	I	88.390	0.80	0.790	1.730	B	I	48.790	
		SNAGGRS4	34.925		1.42	49.594	1.40	0.920	2.250	B	ER	48.790	1.070	2.040	B	I	88.390	0.80	0.790	1.420	B	I	48.790	
		SNS5A	35.550		1.39	49.415	1.40	0.920	2.200	B	ER	48.790	1.070	2.050	B	I	88.390	0.80	0.790	1.390	B	I	48.790	
		SNS6A	39.950		1.26	50.337	1.40	0.920	2.000	B	ER	48.790	1.070	1.850	B	I	88.390	0.80	0.790	1.260	B	I	48.790	
		SNS7B	42.000		1.20	50.400	1.40	0.920	1.910	B	ER	48.790	1.070	1.780	B	I	88.390	0.80	0.790	1.200	B	I	48.790	
	TRUCK TRACTOR SEMI-TRAILER (TTS)	TNAGRIT3	33.000		1.54	50.820	1.40	0.920	2.440	B	ER	48.790	1.070	2.230	B	I	88.390	0.80	0.790	1.540	B	I	48.790	
		TNT4A	33.075		1.54	50.936	1.40	0.920	2.440	B	ER	48.790	1.070	2.180	B	I	88.390	0.80	0.790	1.540	B	I	48.790	
		TNT6A	41.600		1.25	52.000	1.40	0.920	1.980	B	ER	48.790	1.070	1.890	B	I	88.390	0.80	0.790	1.250	B	I	48.790	
		TNT7A	42.000		1.25	52.500	1.40	0.920	1.980	B	ER	48.790	1.070	1.850	B	I	88.390	0.80	0.790	1.250	B	I	48.790	
		TNT7B	42.000		1.28	53.760	1.40	0.920	2.030	B	ER	48.790	1.070	1.760	B	I	88.390	0.80	0.790	1.280	B	I	48.790	
		TNAGRIT4	43.000		1.23	52.890	1.40	0.920	1.950	B	ER	48.790	1.070	1.710	B	I	88.390	0.80	0.790	1.230	B	I	48.790	
TNAGT5A	45.000		1.16	52.200	1.40	0.920	1.840	B	ER	48.790	1.070	1.680	B	I	88.390	0.80	0.790	1.160	B	I	48.790			
TNAGT5B	45.000		③	1.15	51.750	1.40	0.920	1.830	B	ER	48.790	1.070	1.620	B	I	88.390	0.80	0.790	1.150	B	I	48.790		

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:

- 1.
- 2.
- 3.
- 4.

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

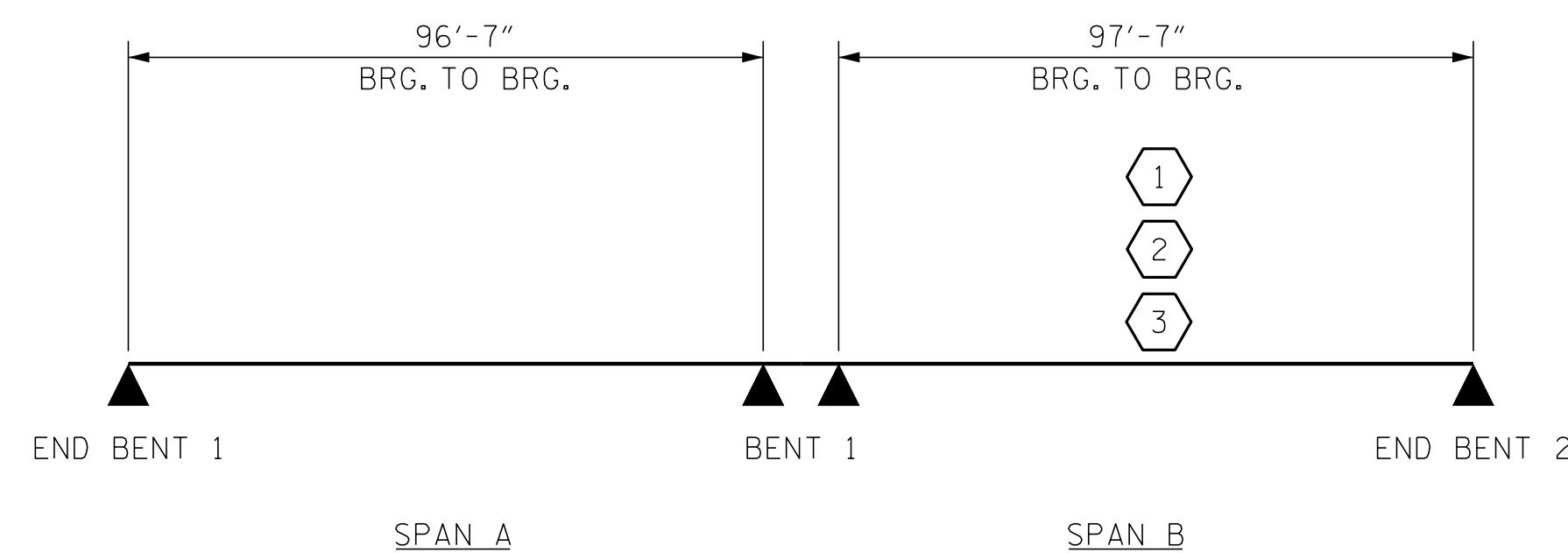
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING ***

*** SEE CHART FOR VEHICLE TYPE

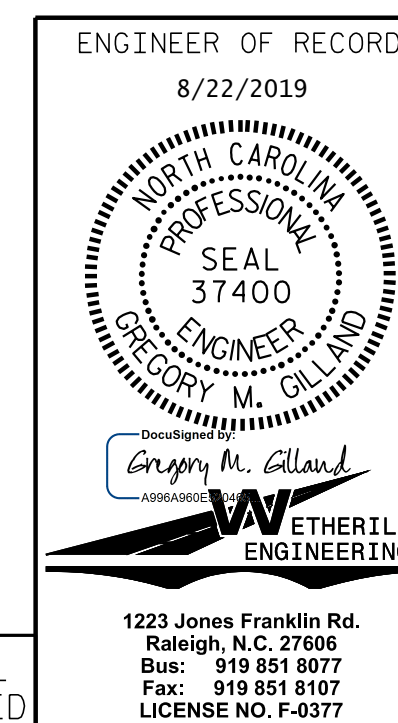
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. R-5797
COLUMBUS COUNTY
 STATION: 30+65.33 -Y1B-



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

REVISIONS

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

SHEET NO.
S-4
TOTAL SHEETS
33

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : D. HODGE	DATE : 4/19
CHECKED BY : G.M. GILLILAND	DATE : 4/19
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