

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	1.029	--	1.75	0.770	1.25	A	EL	38.68	0.915	1.05	A	I	61.88	0.80	0.770	1.03	A	EL	38.68		
	HL-93 (OPERATING)	N/A		1.356	--	1.35	0.770	1.62	A	EL	38.68	0.915	1.36	A	I	61.88	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.283	46.199	1.75	0.770	1.65	A	EL	38.68	0.915	1.28	A	I	58.02	0.80	0.770	1.36	A	EL	38.68		
	HS-20 (OPERATING)	36.000		1.664	59.887	1.35	0.770	2.14	A	EL	38.68	0.915	1.66	A	I	58.02	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.110	41.984	1.40	0.770	4.71	A	EL	38.68	0.915	3.76	A	I	58.02	0.80	0.770	3.11	A	EL	38.68	
		SNGARBS2	20.000		2.302	46.045	1.40	0.770	3.48	A	EL	38.68	0.915	2.69	A	I	58.02	0.80	0.770	2.30	A	EL	38.68	
		SNAGRIS2	22.000		2.174	47.826	1.40	0.770	3.28	A	EL	34.81	0.915	2.51	A	I	58.02	0.80	0.770	2.17	A	EL	38.68	
		SNCOTTS3	27.250		1.547	42.160	1.40	0.770	2.34	A	EL	38.68	0.915	1.88	A	I	58.02	0.80	0.770	1.55	A	EL	38.68	
		SNAGGRS4	34.925		1.287	44.950	1.40	0.770	1.95	A	EL	38.68	0.915	1.57	A	I	58.02	0.80	0.770	1.29	A	EL	38.68	
		SNS5A	35.550		1.259	44.757	1.40	0.770	1.91	A	EL	38.68	0.915	1.60	A	I	58.02	0.80	0.770	1.26	A	EL	38.68	
		SNS6A	39.950		1.153	46.050	1.40	0.770	1.74	A	EL	38.68	0.915	1.46	A	I	58.02	0.80	0.770	1.15	A	EL	38.68	
		SNS7B	42.000		1.098	46.100	1.40	0.770	1.66	A	EL	38.68	0.915	1.45	A	I	58.02	0.80	0.770	1.10	A	EL	38.68	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.405	46.362	1.40	0.770	2.13	A	EL	38.68	0.915	1.74	A	I	58.02	0.80	0.770	1.41	A	EL	38.68	
		TNT4A	33.075		1.410	46.650	1.40	0.770	2.13	A	EL	38.68	0.915	1.69	A	I	58.02	0.80	0.770	1.41	A	EL	38.68	
		TNT6A	41.600		1.151	47.877	1.40	0.770	1.74	A	EL	38.68	0.915	1.55	A	I	58.02	0.80	0.770	1.15	A	EL	38.68	
		TNT7A	42.000		1.155	48.526	1.40	0.770	1.75	A	EL	38.68	0.915	1.52	A	I	58.02	0.80	0.770	1.16	A	EL	38.68	
		TNT7B	42.000		1.192	50.072	1.40	0.770	1.80	A	EL	34.81	0.915	1.41	A	I	58.02	0.80	0.770	1.19	A	EL	38.68	
		TNAGRIT4	43.000		1.136	48.866	1.40	0.770	1.72	A	EL	38.68	0.915	1.36	A	I	58.02	0.80	0.770	1.14	A	EL	38.68	
		TNAGT5A	45.000		1.073	48.266	1.40	0.770	1.62	A	EL	38.68	0.915	1.36	A	I	58.02	0.80	0.770	1.07	A	EL	38.68	
TNAGT5B	45.000	③	1.061	47.725	1.40	0.770	1.61	A	EL	38.68	0.915	1.29	A	I	58.02	0.80	0.770	1.06	A	EL	38.68			

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)

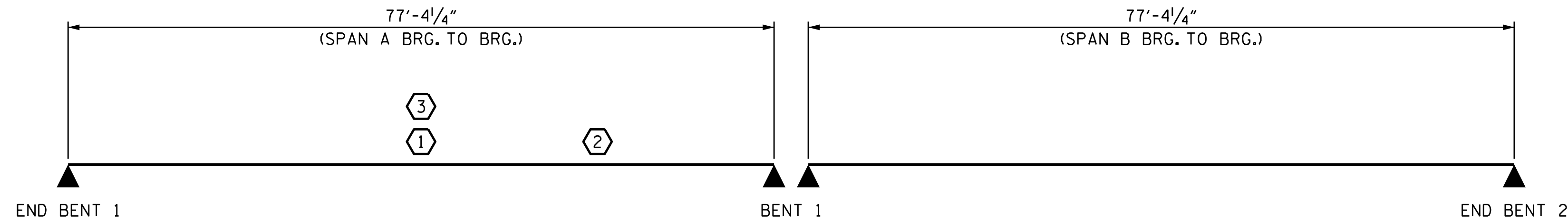
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

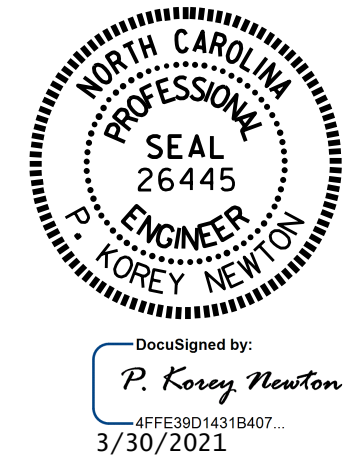
I - INTERIOR GIRDER
 EL - EXTERIOR LEFT GIRDER
 ER - EXTERIOR RIGHT GIRDER



PROJECT NO. BR-0017
DUPLIN COUNTY
 STATION: 18+27.00 -L-

LRFR SUMMARY

DESIGN ENGINEER OF RECORD: P. D. BRYANT DATE: <u>3/1/21</u>	
ASSEMBLED BY: P. K. NEWTON DATE: <u>2/1/21</u>	CHECKED BY: M. K. BEARD DATE: <u>2/9/21</u>
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



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			28

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED