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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 × 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	SPANS	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	SPANS	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	1.08	--	1.75	0.966	1.21	A	E	43.9	1.109	1.28	A	I	26.1	0.80	0.966	1.08	A	E	43.9	--
		HL-93 (OPERATING)	N/A		1.57	--	1.35	0.966	1.57	A	E	43.9	1.109	2.01	A	I	17.1	N/A	--	--	--	--	--	--
		HS-20 (INVENTORY)	36.000	2	1.47	52.92	1.75	0.966	1.64	A	E	43.9	1.109	1.97	A	I	17.1	0.80	0.966	1.47	A	E	43.9	--
		HS-20 (OPERATING)	36.000		2.13	76.68	1.35	0.966	2.13	A	E	43.9	1.109	2.59	A	I	17.1	N/A	--	--	--	--	--	--
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.43	46.31	1.40	0.966	4.79	A	E	43.9	1.109	6.17	A	I	17.1	0.80	0.966	3.43	A	E	43.9	--
		SNGARBS2	20.000		2.51	50.20	1.40	0.966	3.50	A	E	43.9	1.109	4.33	A	I	17.1	0.80	0.966	2.51	A	E	43.9	--
		SNAGRIS2	22.000		2.36	51.92	1.40	0.966	3.29	A	E	43.9	1.109	4.01	A	I	17.1	0.80	0.966	2.36	A	E	43.9	--
		SNCOTTS3	27.250		1.70	46.33	1.40	0.966	2.38	A	E	43.9	1.109	3.01	A	I	17.1	0.80	0.966	1.70	A	E	43.9	--
		SNAGGRS4	34.925		1.41	49.24	1.40	0.966	1.96	A	E	43.9	1.109	2.47	A	I	17.1	0.80	0.966	1.41	A	E	43.9	--
		SNS5A	35.550		1.38	49.06	1.40	0.966	1.92	A	E	43.9	1.109	2.49	A	I	17.1	0.80	0.966	1.38	A	E	43.9	--
		SNS6A	39.950		1.26	50.34	1.40	0.966	1.75	A	E	43.9	1.109	2.26	A	I	17.1	0.80	0.966	1.26	A	E	43.9	--
		SNS7B	42.000		1.20	50.40	1.40	0.966	1.67	A	E	43.9	1.109	2.21	A	I	17.1	0.80	0.966	1.20	A	E	43.9	--
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.53	50.49	1.40	0.966	2.13	A	E	43.9	1.109	2.71	A	I	17.1	0.80	0.966	1.53	A	E	43.9	--
		TNT4A	33.075		1.53	50.60	1.40	0.966	2.14	A	E	43.9	1.109	2.65	A	I	17.1	0.80	0.966	1.53	A	E	43.9	--
		TNT6A	41.600		1.25	52.00	1.40	0.966	1.74	A	E	43.9	1.109	2.35	A	I	17.1	0.80	0.966	1.25	A	E	43.9	--
		TNT7A	42.000		1.25	52.50	1.40	0.966	1.74	A	E	43.9	1.109	2.30	A	I	17.1	0.80	0.966	1.25	A	E	43.9	--
		TNT7B	42.000		1.28	53.76	1.40	0.966	1.79	A	E	43.9	1.109	2.16	A	I	17.1	0.80	0.966	1.28	A	E	43.9	--
		TNAGRIT4	43.000		1.23	52.89	1.40	0.966	1.71	A	E	43.9	1.109	2.09	A	I	17.1	0.80	0.966	1.23	A	E	43.9	--
		TNAGT5A	45.000		1.16	52.20	1.40	0.966	1.62	A	E	43.9	1.109	2.06	A	I	17.1	0.80	0.966	1.16	A	E	43.9	--
		TNAGT5B	45.000	3	1.15	51.75	1.40	0.966	1.61	A	E	43.9	1.109	1.98	A	I	17.1	0.80	0.966	1.15	A	E	43.9	--

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. RIGHT EXTERIOR GIRDER IS THE CONTROLLING EXTERIOR GIRDER.

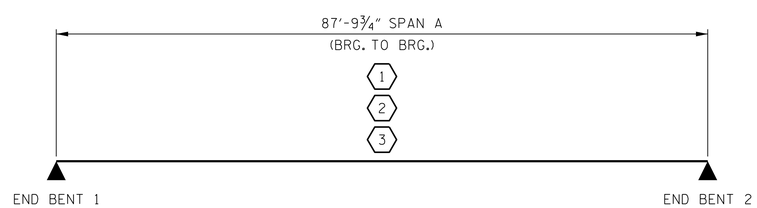
(#) CONTROLLING LOAD RATING

1. DESIGN LOAD RATING (HL-93)
2. DESIGN LOAD RATING (HS-20)
3. LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
E - EXTERIOR GIRDER (RIGHT)



LRFR SUMMARY

PROJECT NO. R-2707C
CLEVELAND COUNTY
STATION: 611+32.01 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 19299 ENGINEER THOMAS M. HARRIS
DocuSigned by: Thomas M. Harris
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2/3/2017

PLANS PREPARED BY :
PARSONS
5540 Centerview Drive, Suite 217
Raleigh, NC 27606-3386
NC LICENSE No. F-0246
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DRAWN BY :	K. E. LOFTON	DATE :	6-16
CHECKED BY :	A. D. SHAH	DATE :	10-16
DESIGN ENGINEER :	T. M. HARRIS	DATE :	10-16

ASSEMBLED BY : K.E.LOFTON	DATE : 6-16
CHECKED BY : A.D.SHAH	DATE : 10-16
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM

REVISIONS						SHEET No.
No.	BY:	DATE:	No.	BY:	DATE:	S9-4
1			3			TOTAL SHEETS
2			4			25

STD. No. LRFR1

STR. #9

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