LOAD AND RESISTANCE FACTOR RATING (LRFD) 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					
							LIVELOAD FACTORS	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)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.01	--	1.75	0.711	1.8	A	EL	50.3	1.025	2.64	A	I	4.957	0.80	0.711	1.01	A	EL	50.300	
		HL-93(Opr)	N/A	--	2.33	--	1.35	0.711	2.33	A	EL	50.3	1.025	3.42	A	I	4.957	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.38	49.751	1.75	0.711	2.46	A	EL	50.3	0.944	3.4	A	EL	50.3	0.80	0.711	1.38	A	EL	50.300	
		HS-20(Opr)	36.000	--	3.19	114.696	1.35	0.711	3.19	A	EL	50.3	0.944	4.41	A	EL	50.3	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SH	12.500	--	3.56	44.538	1.4	0.711	7.92	A	EL	50.3	0.944	10.56	A	EL	50.3	0.80	0.711	3.56	A	EL	50.300	
		S3C	21.500	--	2.08	44.770	1.4	0.711	4.63	A	EL	50.3	0.944	6.23	A	EL	50.3	0.80	0.711	2.08	A	EL	50.300	
		S3A	22.750	--	1.97	44.872	1.4	0.711	4.38	A	EL	50.3	0.944	5.93	A	EL	50.3	0.80	0.711	1.97	A	EL	50.300	
		S4A	26.750	--	1.73	46.205	1.4	0.711	3.84	A	EL	50.3	0.944	5.25	A	EL	50.3	0.80	0.711	1.73	A	EL	50.300	
		S5A	30.500	--	1.52	46.465	1.4	0.711	3.39	A	EL	50.3	0.944	4.94	A	EL	50.3	0.80	0.711	1.52	A	EL	50.300	
		S6A	34.500	--	1.38	47.480	1.4	0.711	3.06	A	EL	50.3	0.944	4.51	A	EL	50.3	0.80	0.711	1.38	A	EL	50.300	
		S7B	38.500	--	1.25	48.107	1.4	0.711	2.78	A	EL	50.3	0.944	4.33	A	EL	50.3	0.80	0.711	1.25	A	EL	50.300	
		S7A	40.000	3	1.23	49.189	1.4	0.711	2.73	A	EL	50.3	1.025	4.38	A	I	4.957	0.80	0.711	1.23	A	EL	50.300	
	TTST	T4A	28.250	--	1.69	47.803	1.4	0.711	3.76	A	EL	50.3	0.944	5.17	A	EL	50.3	0.80	0.711	1.69	A	EL	50.300	
		T5B	32.000	--	1.49	47.604	1.4	0.711	3.31	A	EL	50.3	0.944	5.14	A	EL	50.3	0.80	0.711	1.49	A	EL	50.300	
		T6A	36.000	--	1.36	48.858	1.4	0.711	3.02	A	EL	50.3	1.025	4.73	A	I	4.957	0.80	0.711	1.36	A	EL	50.300	
		T7A	40.000	--	1.25	50.102	1.4	0.711	2.78	A	EL	50.3	1.025	4.37	A	I	4.957	0.80	0.711	1.25	A	EL	50.300	
		T7B	40.000	--	1.32	52.872	1.4	0.711	2.94	A	EL	50.3	0.944	4.16	A	EL	50.3	0.80	0.711	1.32	A	EL	50.300	

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.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

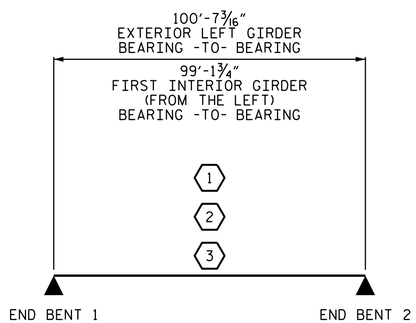
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-5119
GUILFORD COUNTY
STATION: 12+32.31 -RP-

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER KRISTY W. ALFORD

DocuSigned by:
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11/25/2014

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS
(INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-52
1			3			TOTAL SHEETS
2			4			77

ASSEMBLED BY : R.L. CHESSON DATE : 9-15-14
CHECKED BY : E. OMILE DATE : 9/2014
DRAWN BY : MAA 1/08 REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08 REV. 10/1/11 MAA/GM

25-NOV-2014 10:59
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jpaddams

STD. NO. LRFR2