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	1.09	--	1.75	0.277	1.35	A	EL	21.406	0.546	1.32	B	EL	2.141	0.80	0.277	1.09	A	EL	21.406	
		HL-93(Opr)	N/A	--	1.71	--	1.35	0.277	1.75	A	EL	21.406	0.546	1.71	B	EL	2.141	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.34	48.2	1.75	0.277	1.66	A	EL	21.406	0.546	1.55	B	EL	2.141	0.80	0.277	1.34	A	EL	21.406	
		HS-20(Opr)	36.000	--	2.01	72.1	1.35	0.277	2.15	A	EL	21.406	0.546	2.01	B	EL	2.141	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.59	34.9	1.40	0.277	4.00	A	EL	21.406	0.546	4.24	B	EL	2.141	0.80	0.277	2.59	A	EL	21.406	
		SNGARBS2	20.000	--	2.10	42.0	1.40	0.277	3.25	A	EL	17.125	0.546	3.13	B	EL	2.141	0.80	0.277	2.10	A	EL	21.406	
		SNAGRIS2	22.000	--	2.06	45.2	1.40	0.277	3.14	A	EL	17.125	0.546	2.95	B	EL	2.141	0.80	0.277	2.06	A	EL	21.406	
		SNCOTTS3	27.250	--	1.29	35.2	1.40	0.277	2.00	A	EL	21.406	0.546	2.13	B	EL	2.141	0.80	0.277	1.29	A	EL	21.406	
		SNAGGRS4	34.925	--	1.15	39.9	1.40	0.277	1.77	A	EL	21.406	0.546	1.84	B	EL	2.141	0.80	0.277	1.14	A	EL	21.406	
		SNS5A	35.550	--	1.12	39.6	1.40	0.277	1.72	A	EL	21.406	0.546	1.91	B	EL	2.141	0.80	0.277	1.12	A	EL	21.406	
		SNS6A	39.950	--	1.05	42.0	1.40	0.277	1.63	A	EL	21.406	0.546	1.78	B	EL	2.141	0.80	0.277	1.05	A	EL	21.406	
		SNS7B	42.000	3	1.00	42.1	1.40	0.277	1.55	A	EL	21.406	0.546	1.79	B	EL	2.141	0.80	0.277	1.00	A	EL	21.406	
	TTST	TNAGRIT3	33.000	--	1.29	42.6	1.40	0.277	2.00	A	EL	21.406	0.546	2.09	B	EL	2.141	0.80	0.277	1.29	A	EL	21.406	
		TNT4A	33.075	--	1.31	43.2	1.40	0.277	2.02	A	EL	21.406	0.546	2.00	B	EL	2.141	0.80	0.277	1.31	A	EL	21.406	
		TNT6A	41.600	--	1.10	45.7	1.40	0.277	1.70	A	EL	21.406	0.546	1.95	B	EL	2.141	0.80	0.277	1.10	A	EL	21.406	
		TNT7A	42.000	--	1.12	47.1	1.40	0.277	1.73	A	EL	21.406	0.546	1.80	B	EL	2.141	0.80	0.277	1.12	A	EL	21.406	
		TNT7B	42.000	--	1.17	49.0	1.40	0.277	1.80	A	EL	21.406	0.546	1.72	B	EL	2.141	0.80	0.277	1.17	A	EL	21.406	
		TNAGRIT4	43.000	--	1.11	47.8	1.40	0.277	1.72	A	EL	21.406	0.546	1.65	B	EL	2.141	0.80	0.277	1.11	A	EL	21.406	
		TNAGT5A	45.000	--	1.03	46.5	1.40	0.277	1.60	A	EL	21.406	0.546	1.69	B	EL	2.141	0.80	0.277	1.03	A	EL	21.406	
		TNAGT5B	45.000	--	1.01	45.4	1.40	0.277	1.56	A	EL	21.406	0.546	1.56	B	EL	2.141	0.80	0.277	1.01	A	EL	21.406	

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.

ALL MOMENT RATING FACTORS ARE THE SAME FOR SPANS A AND B.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

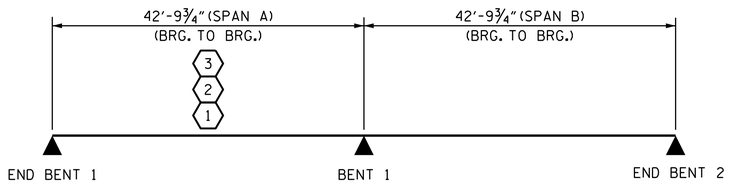
(2) DESIGN LOAD RATING (HS-20)

(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-4475
COLUMBUS COUNTY
STATION: 15+66.00 -L-

DocuSigned by: Kristy Alford
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12/18/2013

NORTH CAROLINA PROFESSIONAL SEAL 29441 ENGINEER KRISTY W. ALFORD

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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			16

STD. NO. LRFR1

ASSEMBLED BY : Fr. Lea DATE : 5-3-2012
CHECKED BY : A.C. OUTLAW DATE : 5/12
DRAWN BY : MAA 1/08
CHECKED BY : GM/DI 2/08
REV. 11/12/08R MAA/GM

20-NOV-2013 10:31
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kalford