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					
							LIVE LOAD 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)	LIVE LOAD 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	1.07	--	1.75	0.269	1.45	A	EL	44.25	0.49	1.25	A	EL	4.425	0.80	0.269	1.07	A	EL	44.25	1
		HL-93(Opr)	N/A	--	1.62	--	1.35	0.269	1.88	A	EL	44.25	0.49	1.62	A	EL	4.425	N/A	--	--	--	--	--	1
		HS-20(Inv)	36.000	2	1.46	52.550	1.75	0.269	1.98	A	EL	44.25	0.49	1.63	A	EL	4.425	0.80	0.269	1.46	A	EL	44.25	1
		HS-20(Opr)	36.000	--	2.12	76.183	1.35	0.269	2.56	A	EL	44.25	0.49	2.12	A	EL	4.425	N/A	--	--	--	--	--	1
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.41	46.009	1.40	0.269	5.77	A	EL	44.25	0.49	4.99	A	EL	4.425	0.80	0.269	3.41	A	EL	44.25	1
		SNGARBS2	20.000	--	2.49	49.814	1.40	0.269	4.21	A	EL	44.25	0.49	3.51	A	EL	4.425	0.80	0.269	2.49	A	EL	44.25	1
		SNAGRIS2	22.000	--	2.34	51.452	1.40	0.269	3.96	A	EL	44.25	0.49	3.24	A	EL	4.425	0.80	0.269	2.34	A	EL	44.25	1
		SNCOTTS3	27.250	--	1.70	46.176	1.40	0.269	2.87	A	EL	44.25	0.49	2.49	A	EL	4.425	0.80	0.269	1.69	A	EL	44.25	1
		SNAGGRS4	34.925	--	1.40	48.798	1.40	0.269	2.36	A	EL	44.25	0.49	2.03	A	EL	4.425	0.80	0.269	1.40	A	EL	44.25	1
		SNS5A	35.550	--	1.37	48.618	1.40	0.269	2.31	A	EL	44.25	0.49	2.05	A	EL	4.425	0.80	0.269	1.37	A	EL	44.25	1
		SNS6A	39.950	--	1.25	49.819	1.40	0.269	2.11	A	EL	44.25	0.49	1.85	A	EL	4.425	0.80	0.269	1.25	A	EL	44.25	1
		SNS7B	42.000	--	1.19	49.865	1.40	0.269	2.01	A	EL	44.25	0.49	1.81	A	EL	4.425	0.80	0.269	1.19	A	EL	44.25	1
	TTST	TNAGRIT3	33.000	--	1.52	50.107	1.40	0.269	2.57	A	EL	44.25	0.49	2.22	A	EL	4.425	0.80	0.269	1.52	A	EL	44.25	1
		TNT4A	33.075	--	1.52	50.373	1.40	0.269	2.58	A	EL	44.25	0.49	2.17	A	EL	4.425	0.80	0.269	1.52	A	EL	44.25	1
		TNT6A	41.600	--	1.24	51.499	1.40	0.269	2.09	A	EL	44.25	0.49	1.90	A	EL	4.425	0.80	0.269	1.24	A	EL	44.25	1
		TNT7A	42.000	--	1.24	52.092	1.40	0.269	2.1	A	EL	44.25	0.49	1.86	A	EL	4.425	0.80	0.269	1.24	A	EL	44.25	1
		TNT7B	42.000	--	1.27	53.494	1.40	0.269	2.15	A	EL	44.25	0.49	1.77	A	EL	4.425	0.80	0.269	1.27	A	EL	44.25	1
		TNAGRIT4	43.000	--	1.22	52.401	1.40	0.269	2.06	A	EL	44.25	0.49	1.72	A	EL	4.425	0.80	0.269	1.22	A	EL	44.25	1
		TNAGT5A	45.000	--	1.15	51.855	1.40	0.269	1.95	A	EL	44.25	0.49	1.69	A	EL	4.425	0.80	0.269	1.15	A	EL	44.25	1
		TNAGT5B	45.000	3	1.14	51.361	1.40	0.269	1.93	A	EL	44.25	0.49	1.64	A	EL	4.425	0.80	0.269	1.14	A	EL	44.25	1

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:

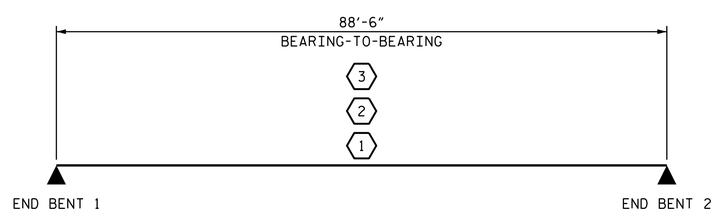
1. FUTURE SIDEWALK LOADING NOT INCLUDED.

(#) 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-4511
FORSYTH COUNTY
STATION: 18+66.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

NORTH CAROLINA PROFESSIONAL SEAL 031480 ENGINEER DONALD R. SMITH, JR.
DocuSigned by: Donald R. Smith, Jr
EDC87706174B490...
8/26/2014

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			19

STD. NO. LRFR1

ASSEMBLED BY : T. H. CARROLL DATE : 7/15/14
CHECKED BY : M.E. GILES DATE : 7/15/14
DRAWN BY : MAA 1/08
CHECKED BY : GM/DI 2/08
REV. 11/12/08RR MAA/GM
REV. 10/1/11 MAA/GM
DESIGN ENGINEER OF RECORD:
T.H. CARROLL DATE : 7-8-14

22-AUG-2014 14:06
R:\Structures\Plans\B4511_SD_LR_01.dgn
jdhawk