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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 $\gamma_{(LL)}$	MOMENT					SHEAR					LIVE-LOAD FACTORS $\gamma_{(LL)}$	MOMENT					
								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)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	1.00	- -	1.75	0.93	1.08	A	EL	49.042	0.761	1.23	B	I	16.6	0.80	0.93	1.00	A	EL	49.042	
		HL-93 (OPERATING)	N/A		1.39	- -	1.35	0.93	1.39	A	EL	49.042	0.761	1.70	A	I	9.8	N/A	- -	- -	- -	- -	- -	
		HS-20 (INVENTORY)	36.000	2	1.40	50.4	1.75	0.93	1.50	A	EL	49.042	0.761	1.74	A	I	9.8	0.80	0.93	1.40	A	EL	49.042	
		HS-20 (OPERATING)	36.000		1.94	69.8	1.35	0.93	1.94	A	EL	49.042	0.761	2.29	A	I	9.8	N/A	- -	- -	- -	- -	- -	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.32	44.8	1.40	0.93	4.32	B	EL	41.5	0.761	5.86	A	I	9.8	0.80	0.93	3.32	A	EL	49.042	
		SNGARBS2	20.000		2.40	48.0	1.40	0.93	3.18	B	EL	41.5	0.761	4.09	A	I	9.8	0.80	0.93	2.40	A	EL	49.042	
		SNAGRIS2	22.000		2.23	49.1	1.40	0.93	2.99	A	EL	49.042	0.761	3.77	A	I	9.8	0.80	0.93	2.23	A	EL	49.042	
		SNCOTTS3	27.250		1.64	44.7	1.40	0.93	2.15	B	EL	41.5	0.761	2.83	A	I	9.8	0.80	0.93	1.64	A	EL	49.042	
		SNAGGRS4	34.925		1.35	47.1	1.40	0.93	1.78	B	EL	41.5	0.761	2.21	A	I	9.8	0.80	0.93	1.35	A	EL	49.042	
		SNS5A	35.550		1.32	46.9	1.40	0.93	1.74	B	EL	41.5	0.761	2.22	A	I	9.8	0.80	0.93	1.32	A	EL	49.042	
		SNS6A	39.950		1.20	47.9	1.40	0.93	1.59	B	EL	41.5	0.761	2.00	A	I	9.8	0.80	0.93	1.20	A	EL	49.042	
		SNS7B	42.000		1.14	47.9	1.40	0.93	1.52	B	EL	41.5	0.761	1.94	A	I	9.8	0.80	0.93	1.14	A	EL	49.042	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.46	48.2	1.40	0.93	1.94	B	EL	41.5	0.761	2.41	A	I	9.8	0.80	0.93	1.46	A	EL	49.042	
		TNT4A	33.075		1.46	48.3	1.40	0.93	1.95	B	EL	41.5	0.761	2.46	C/D	I	11.57	0.80	0.93	1.46	A	EL	49.042	
		TNT6A	41.600		1.18	49.1	1.40	0.93	1.58	B	EL	41.5	0.761	2.07	A	I	9.8	0.80	0.93	1.18	A	EL	49.042	
		TNT7A	42.000		1.19	50.0	1.40	0.93	1.59	A	EL	49.042	0.761	2.01	A	I	9.8	0.80	0.93	1.19	A	EL	49.042	
		TNT7B	42.000		1.21	50.8	1.40	0.93	1.62	A	EL	49.042	0.761	1.91	A	I	9.8	0.80	0.93	1.21	A	EL	49.042	
		TNAGRIT4	43.000		1.16	49.9	1.40	0.93	1.56	A	EL	49.042	0.761	1.90	A	I	9.8	0.80	0.93	1.16	A	EL	49.042	
		TNAGT5A	45.000		1.10	49.5	1.40	0.93	1.47	A	EL	49.042	0.761	1.86	A	I	9.8	0.80	0.93	1.10	A	EL	49.042	
		TNAGT5B	45.000	3	1.09	49.1	1.40	0.93	1.46	A	EL	49.042	0.761	1.78	A	I	9.8	0.80	0.93	1.09	A	EL	49.042	

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)

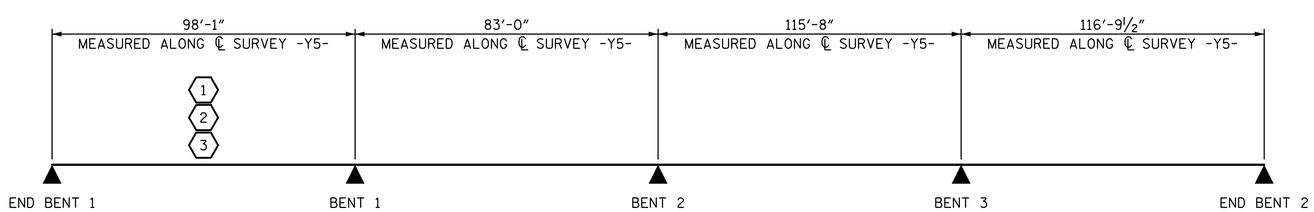
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. U-2579B
FORSYTH COUNTY
STATION: 28+50.16 -Y5-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

PLANS PREPARED BY:
SIMPSON ENGINEERS & ASSOCIATES
5640 Dillard Drive
Suite 200
Cary, NC 27518
(919) 852-0468
(919) 852-0598 (Fax)
www.simpsonengr.com
LICENSURE NO. C-2521

NORTH CAROLINA PROFESSIONAL SEAL 027908 ENGINEER MARK A. AVERETTE
DocuSigned by: Mark A. Averette
8/15/2014

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-664
1			3					TOTAL SHEETS
2			4					S-707

DRAWN BY: T. BANKOVICH DATE: 3-14
CHECKED BY: M. AVERETTE DATE: 3-14
DESIGN ENGINEER OF RECORD: M. AVERETTE DATE: 3-14

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