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	1.1	--	1.75	0.875	1.62	A	EL	55.701	0.993	1.57	A	I	77.982	0.80	0.875	1.10	A	EL	55.701	
		HL-93(Opr)	N/A	--	2.04	--	1.35	0.875	2.1	A	EL	55.701	0.993	2.04	A	I	77.982	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.57	56.636	1.75	0.875	2.32	A	EL	55.701	0.993	2.01	A	I	77.982	0.80	0.875	1.57	A	EL	55.701	
		HS-20(Opr)	36.000	--	2.61	94.006	1.35	0.875	3.01	A	EL	55.701	0.993	2.61	A	I	77.982	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.79	51.106	1.4	0.875	6.99	A	EL	55.701	0.993	6.11	A	I	77.982	0.80	0.875	3.79	A	EL	55.701	
		SNGARBS2	20.000	--	2.72	54.364	1.4	0.875	5.02	A	EL	55.701	0.993	4.31	A	I	77.982	0.80	0.875	2.72	A	EL	55.701	
		SNAGRIS2	22.000	--	2.53	55.731	1.4	0.875	4.68	A	EL	55.701	0.993	3.98	A	I	77.982	0.80	0.875	2.53	A	EL	55.701	
		SNCOTTS3	27.250	--	1.88	51.252	1.4	0.875	3.47	A	EL	55.701	0.993	3.05	A	I	77.982	0.80	0.875	1.88	A	EL	55.701	
		SNAGGRS4	34.925	--	1.53	53.505	1.4	0.875	2.83	A	EL	55.701	0.993	2.5	A	I	77.982	0.80	0.875	1.53	A	EL	55.701	
		SNS5A	35.550	--	1.5	53.352	1.4	0.875	2.77	A	EL	55.701	0.993	2.52	A	I	77.982	0.80	0.875	1.50	A	EL	55.701	
		SNS6A	39.950	--	1.36	54.368	1.4	0.875	2.51	A	EL	55.701	0.993	2.29	A	I	77.982	0.80	0.875	1.36	A	EL	55.701	
		SNS7B	42.000	--	1.3	54.407	1.4	0.875	2.39	A	EL	55.701	0.993	2.24	A	I	77.982	0.80	0.875	1.30	A	EL	55.701	
	TTST	TNAGRIT3	33.000	--	1.66	54.610	1.4	0.875	3.05	A	EL	55.701	0.993	2.73	A	I	77.982	0.80	0.875	1.65	A	EL	55.701	
		TNT4A	33.075	--	1.66	54.833	1.4	0.875	3.06	A	EL	55.701	0.993	2.68	A	I	77.982	0.80	0.875	1.66	A	EL	55.701	
		TNT6A	41.600	--	1.34	55.770	1.4	0.875	2.47	A	EL	55.701	0.993	2.36	A	I	77.982	0.80	0.875	1.34	A	EL	55.701	
		TNT7A	42.000	--	1.34	56.259	1.4	0.875	2.47	A	EL	55.701	0.993	2.31	A	I	77.982	0.80	0.875	1.34	A	EL	55.701	
		TNT7B	42.000	--	1.37	57.407	1.4	0.875	2.52	A	EL	55.701	0.993	2.19	A	I	77.982	0.80	0.875	1.37	A	EL	55.701	
		TNAGRIT4	43.000	--	1.31	56.514	1.4	0.875	2.43	A	EL	55.701	0.993	2.13	A	I	77.982	0.80	0.875	1.31	A	EL	55.701	
		TNAGT5A	45.000	--	1.25	56.064	1.4	0.875	2.3	A	EL	55.701	0.993	2.1	A	I	77.982	0.80	0.875	1.25	A	EL	55.701	
		TNAGT5B	45.000	3	1.24	55.655	1.4	0.875	2.28	A	EL	55.701	0.993	2.02	A	I	77.982	0.80	0.875	1.24	A	EL	55.701	

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.

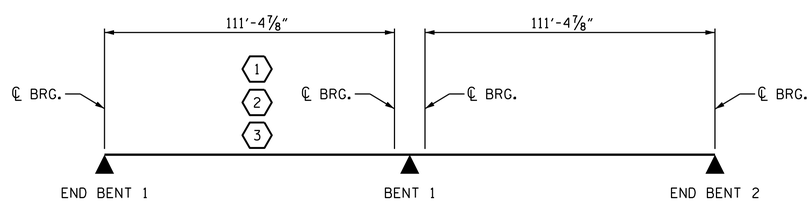
ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

(#) 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: 516+31.30 -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.
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7/30/2014

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-39
1			3			TOTAL SHEETS
2			4			707

ASSEMBLED BY : M.K. BEARD DATE : 4/25/13
CHECKED BY : D.R. SMITH DATE : 4/30/14
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: B.N. GRADY DATE : 6/5/14

29-JUL-2014 14:59
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STR. #2 STD. NO. LRFR1