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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
								MOMENT					SHEAR						MOMENT					
							LIVE-LOAD FACTORS (γ_{LL})	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 (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	**1.04**	--	1.75	0.649	1.32	B	EL	51.120	0.907	1.74	A	I	9.89	0.80	0.649	**1.04**	B	EL	51.120	
		HL-93 (OPERATING)	N/A	--	1.71	--	1.35	0.649	1.71	B	EL	51.120	0.883	2.80	B	I	10.22	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	2	**1.45**	52.20	1.75	0.656	1.74	A	I	24.718	0.907	2.51	A	I	9.89	0.80	0.649	**1.45**	B	EL	51.120	
		HS-20 (OPERATING)	36.000	--	2.25	81.00	1.35	0.656	2.25	A	I	24.718	0.883	3.80	B	I	10.22	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH	12.500	--	3.75	46.88	1.40	0.656	4.79	A	I	24.718	0.907	9.54	A	I	9.89	0.80	0.649	3.75	B	EL	51.120	
		S3C	21.500	--	2.19	47.09	1.40	0.656	2.82	A	I	24.718	0.907	5.61	A	I	9.89	0.80	0.649	2.19	B	EL	51.120	
		S3A	22.750	--	2.08	47.32	1.40	0.656	2.67	A	I	24.718	0.907	5.35	A	I	9.89	0.80	0.649	2.08	B	EL	51.120	
		S4A	26.750	--	1.82	48.69	1.40	0.656	2.43	A	I	24.718	0.883	4.76	B	I	10.22	0.80	0.649	1.82	B	EL	51.120	
		S5A	30.500	--	1.60	48.80	1.40	0.656	2.16	A	I	24.718	0.883	4.28	B	I	10.22	0.80	0.649	1.60	B	EL	51.120	
		S6A	34.500	--	1.45	50.03	1.40	0.656	2.01	A	I	24.718	0.883	3.86	B	I	10.22	0.80	0.649	1.45	B	EL	51.120	
		S7B	38.500	--	1.31	50.44	1.40	0.656	1.86	A	I	24.718	0.883	3.57	B	I	10.22	0.80	0.649	1.31	B	EL	51.120	
		S7A	40.000	3	**1.29**	51.60	1.40	0.656	1.90	A	I	24.718	0.883	3.57	B	I	10.22	0.80	0.649	**1.29**	B	EL	51.120	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250	--	1.78	50.29	1.40	0.656	2.50	A	I	24.718	0.883	4.59	B	I	10.22	0.80	0.649	1.78	B	EL	51.120	
		T5B	32.000	--	1.57	50.24	1.40	0.656	2.19	A	I	24.718	0.883	4.29	B	I	10.22	0.80	0.649	1.57	B	EL	51.120	
		T6A	36.000	--	1.43	51.48	1.40	0.656	2.07	A	I	24.718	0.883	3.87	B	I	10.22	0.80	0.649	1.43	B	EL	51.120	
		T7A	40.000	--	1.32	52.80	1.40	0.656	1.99	A	I	24.718	0.883	3.57	B	I	10.22	0.80	0.649	1.32	B	EL	51.120	
		T7B	40.000	--	1.39	55.60	1.40	0.656	2.21	A	I	24.718	0.883	3.40	B	I	10.22	0.80	0.649	1.39	B	EL	51.120	

LOAD FACTORS:

	LIMIT STATE	γ_{DC}	γ_{DW}
DESIGN LOAD RATING FACTORS	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:

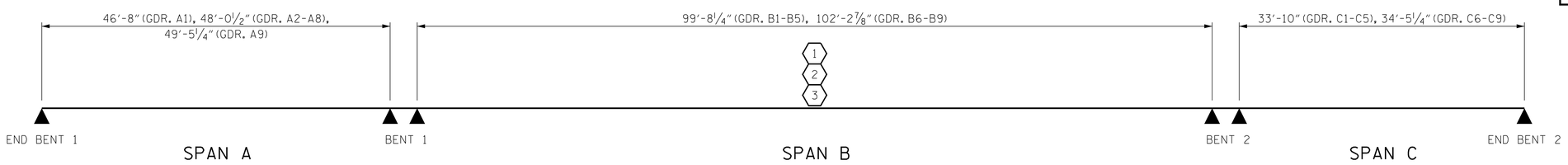
1.
2.
3.
4.

(#) 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: 26+31.94 -L -
16+43.93 -Y1-

NORTH CAROLINA PROFESSIONAL SEAL 12186 ENGINEER CECIL L. NARRON

DocuSigned by: Cecil L. Narron C169A3D645024DD... 11/3/2014

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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-5
1			3			TOTAL SHEETS
2			4			77

ASSEMBLED BY : JIK DATE : 10/14
CHECKED BY : JCW DATE : 10/14
DRAWN BY : MAA 1/08 REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08 REV. 10/1/11 MAA/GM

10/31/2014 K:\RDT_Structures_Bridge\NC\01103686_B-5119 I40-85 Bridges\Cad\dgn\B-5119_349_S05.dgn

STD. NO. LRFR2