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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 $\gamma_{(LL)}$	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 $\gamma_{(LL)}$	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	1.14	1	1.75	0.830	1.21	F	E	33.67	0.910	1.14	F	I	47.42	0.80	0.830	1.22	F	I	33.67	
		HL-93 (OPERATING)	N/A	--	1.22	--	1.35	0.830	1.57	F	E	33.67	0.910	1.54	A	I	8.21	0.80	0.800	1.22	F	I	33.67	
		HS-20 (INVENTORY)	36.000	2	1.55	55.800	1.75	0.830	1.57	F	E	33.67	0.910	1.55	A	I	8.21	0.80	0.800	1.58	F	I	33.67	
		HS-20 (OPERATING)	36.000	--	1.58	56.880	1.35	0.830	2.04	F	E	33.67	0.910	2.04	A	I	8.21	0.80	0.800	1.58	F	I	33.67	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500	--	3.50	47.250	1.40	0.830	4.36	F	E	33.67	0.910	4.91	A	I	8.21	0.80	0.800	3.50	F	I	33.67	
		SNGARBS2	20.000	--	2.64	52.800	1.40	0.830	3.28	F	E	33.67	0.910	3.43	A	I	8.21	0.80	0.800	2.64	F	I	33.67	
		SNAGRIS2	22.000	--	2.51	55.220	1.40	0.830	3.12	F	E	33.67	0.910	3.16	A	I	8.21	0.80	0.800	2.51	F	I	33.67	
		SNSCOTTS3	27.250	--	1.74	47.415	1.40	0.830	2.17	F	E	33.67	0.910	2.40	A	I	8.21	0.80	0.800	1.74	F	I	33.67	
		SNAGGRS4	34.925	--	1.47	51.340	1.40	0.830	1.83	F	E	33.67	0.910	1.95	A	I	8.21	0.80	0.800	1.47	F	I	33.67	
		SNS5A	35.550	--	1.43	50.837	1.40	0.830	1.78	F	E	33.67	0.910	1.96	A	I	8.21	0.80	0.800	1.43	F	I	33.67	
		SNS6A	39.950	--	1.32	52.734	1.40	0.830	1.64	F	E	33.67	0.910	1.77	A	I	8.21	0.80	0.800	1.32	F	I	33.67	
		SNS7B	42.000	--	1.26	52.920	1.40	0.830	1.56	F	E	33.67	0.910	1.73	A	I	8.21	0.80	0.800	1.26	F	I	33.67	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	--	1.61	53.130	1.40	0.830	2.00	F	E	33.67	0.910	2.12	A	I	8.21	0.80	0.800	1.61	F	I	33.67	
		TNT4A	33.075	--	1.62	53.582	1.40	0.830	2.01	F	E	33.67	0.910	2.09	A	I	8.21	0.80	0.800	1.62	F	I	33.67	
		TNAGRIT4	43.000	--	1.32	56.760	1.40	0.830	1.64	F	E	33.67	0.910	1.64	A	I	8.21	0.80	0.800	1.32	F	I	33.67	
		TNAGRT5A	45.000	--	1.24	55.800	1.40	0.830	1.54	F	E	33.67	0.910	1.61	A	I	8.21	0.80	0.800	1.24	F	I	33.67	
		TNAGRT5B	45.000	3	1.22	54.900	1.40	0.830	1.52	F	E	33.67	0.910	1.56	A	I	8.21	0.80	0.800	1.22	F	I	33.67	
		TNT6A	41.600	--	1.33	55.328	1.40	0.830	1.65	F	E	33.67	0.910	1.83	A	I	8.21	0.80	0.800	1.33	F	I	33.67	
		TNT7A	42.000	--	1.34	56.280	1.40	0.830	1.66	F	E	33.67	0.910	1.79	A	I	8.21	0.80	0.800	1.34	F	I	33.67	
		TNT7B	42.000	--	1.39	58.380	1.40	0.830	1.73	F	E	33.67	0.910	1.69	A	I	8.21	0.80	0.800	1.39	F	I	33.67	

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. SPAN LENGTHS SHOWN ARE ℄ BRG. TO ℄ BRG.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

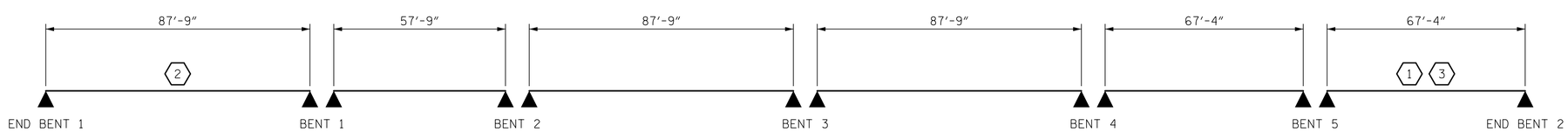
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
E - EXTERIOR GIRDER



PROJECT NO. U-2707

FORSYTH COUNTY

STATION: 90+25.00 -L-

BRIDGE NO. 656

LRFR SUMMARY

AECOM
AECOM TECHNICAL SERVICES, INC.
701 CORPORATE CENTER DRIVE, SUITE 475
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
AECOM License No. F-0342

NORTH CAROLINA PROFESSIONAL SEAL 050474 ENGINEER JOHN C. MORRISON
DocuSigned by: John C. Morrison
1/12/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-04
1			3			TOTAL SHEETS
2			4			86

STD. NO. LRFR1

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