

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{DC}$	$\gamma_{DW}$
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTOR (RF)	TONS = W X 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 FACTOR (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTOR (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTOR (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.03	--	1.75	.841	1.25	1	I	24.6	.972	1.08	3	I	24.4	0.80	.841	1.03	2	I	43.2		
	HL-93 (OPERATING)	N/A		1.23	--	1.35	.841	1.62	1	I	24.6	.972	1.23	1	I	44.8	N/A	-	-	-	-	-		
	HS-20 (INVENTORY)	36.000	②	1.36	49.0	1.75	.841	1.57	1	I	24.6	.972	1.41	3	I	24.4	0.80	.841	1.36	2	I	43.2		
	HS-20 (OPERATING)	36.000		1.69	60.8	1.35	.841	2.04	1	I	24.6	.972	1.69	1	I	49.2	N/A	-	-	-	-	-		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH		1.77	22.1	1.40	.841	2.42	1	I	24.6	.972	2.30	1	I	49.2	0.80	.841	1.77	1	I	24.6		
		S3C		1.86	40.0	1.40	.841	2.55	1	I	24.6	.972	2.43	1	I	49.2	0.80	.841	1.86	1	I	24.6		
		S3A		1.62	36.9	1.40	.841	2.21	1	I	24.6	.972	2.02	1	I	49.2	0.80	.841	1.62	1	I	24.6		
		S4A		③	1.20	32.1	1.40	.841	1.65	1	I	24.6	.972	1.65	1	I	49.2	0.80	.841	1.20	2	I	43.2	
		S5A		1.31	40.0	1.40	.841	1.83	1	I	24.6	.972	1.77	1	I	49.2	0.80	.841	1.31	2	I	43.2		
		S6A		③	1.20	41.4	1.40	.841	1.72	1	I	24.6	.972	1.87	2	I	69.5	0.80	.841	1.20	2	I	43.2	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	S7B		1.21	46.6	1.40	.841	1.69	1	I	24.6	.972	1.80	2	I	16.9	0.80	.841	1.21	2	I	43.2		
		S7A		2.20	88.0	1.40	.841	4.36	1	I	24.6	.972	4.15	1	I	49.2	0.80	.785	2.20	3	EL	0.0		
		T4A		1.62	45.8	1.40	.841	2.27	1	I	24.6	.972	1.98	1	I	49.2	0.80	.841	1.62	2	I	43.2		
		T5B		1.43	45.8	1.40	.841	1.99	1	I	24.6	.972	1.88	1	I	49.2	0.80	.841	1.43	2	I	43.2		
		T6A		1.32	47.5	1.40	.841	1.88	1	I	24.6	.972	1.86	3	I	0.0	0.80	.841	1.32	2	I	43.2		
		T7A		1.24	49.6	1.40	.841	1.81	1	I	24.6	.972	1.87	2	I	16.9	0.80	.841	1.24	2	I	43.2		
T7B		1.34	53.6	1.40	.841	2.00	1	I	24.6	.972	1.71	3	I	0.0	0.80	.841	1.34	2	I	43.2				

NOTES:

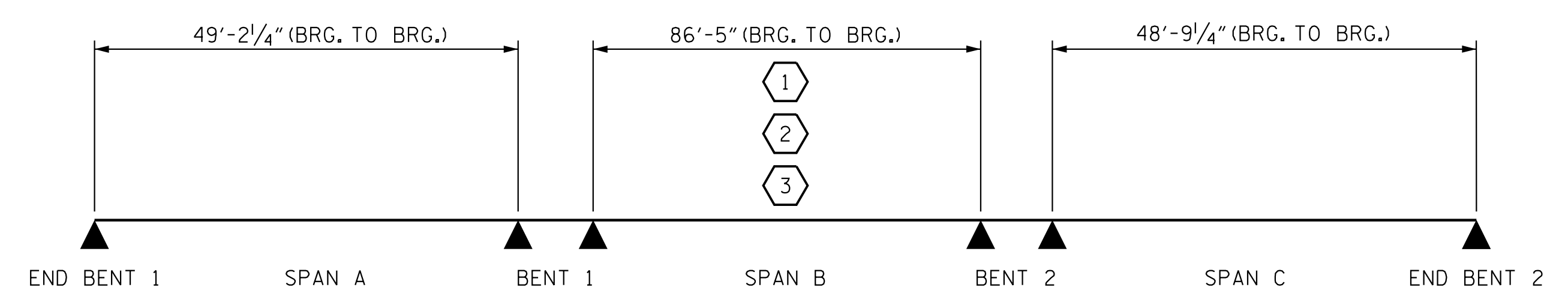
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

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

COMMENTS:

1. SPAN LENGTHS USED FOR LOAD RATING ARE  $\phi$  PIER TO  $\phi$  PIER.

①	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	



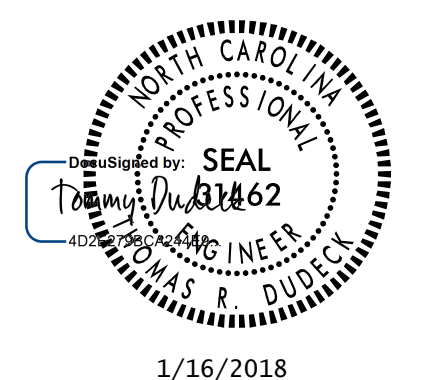
LRFR SUMMARY

LOAD RATING ANALYSIS PERFORMED AS A CONTINUOUS FOR LIVE LOAD STRUCTURE.

PROJECT NO. U-2525C  
 GUILFORD COUNTY  
 STATION: 337+20.09 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 LRFR SUMMARY FOR  
 PRESTRESSED  
 CONCRETE GIRDERS  
 (INTERSTATE TRAFFIC)  
 (RL)



1/16/2018

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DRAWN BY: N. D'AIUTO DATE: 01-25-17  
 CHECKED BY: V. E. FRAGA DATE: 05-18-17  
 DESIGN ENGINEER OF RECORD: T.R. DUDECK DATE: 01/16/18

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	REVISIONS						SHEET NO. S5-4 TOTAL SHEETS 38
	NO.	BY:	DATE:	NO.	BY:	DATE:	
	1			3			
	2			4			