

## 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 x RF	STRENGTH I LIMIT STATE								SERVICE III LIMIT STATE								COMMENT NUMBER		
						MOMENT				SHEAR				MOMENT										
						LIVE-LOAD FACTORS (γ <sub>LL</sub> )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	LIVE-LOAD FACTORS (γ <sub>LL</sub> )	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (FF)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.14	--	1.75	0.86	1.51	A	EL	49.30	0.89	1.96	A	EL	24.30	0.80	0.86	<b>1.14</b>	A	EL	<b>49.30</b>		
	HL-93 (OPERATING)	N/A		1.95	--	1.35	0.86	1.95	A	EL	49.30	0.93	2.51	A	I	36.80	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.67	60.12	1.75	0.86	2.21	A	EL	49.30	0.93	2.52	A	I	36.80	0.80	0.86	<b>1.67</b>	A	EL	<b>49.30</b>		
	HS-20 (OPERATING)	36.000		2.87	103.32	1.35	0.86	2.87	A	EL	49.30	0.93	3.22	A	I	36.80	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13,500		4.03	54.41	1.40	0.86	6.65	A	EL	49.30	0.93	6.92	A	I	36.80	0.80	0.86	4.03	A	EL	49.30	
		SNGARBS2	20,000		2.88	57.60	1.40	0.86	4.76	A	EL	49.30	0.93	5.05	A	I	36.80	0.80	0.86	2.88	A	EL	49.30	
		SNAGRIS2	22,000		2.68	58.96	1.40	0.86	4.43	A	EL	49.30	0.93	4.72	A	I	36.80	0.80	0.86	2.68	A	EL	49.30	
		SNCOTTS3	27,250		2.01	54.77	1.40	0.86	3.31	A	EL	49.30	0.93	3.66	A	I	36.80	0.80	0.86	2.01	A	EL	49.30	
		SNAGGRS4	34,925		1.63	56.93	1.40	0.86	2.69	A	EL	49.30	0.94	3.05	B	ER	89.20	0.80	0.86	1.63	A	EL	49.30	
		SNS5A	35,550		1.60	56.88	1.40	0.86	2.65	A	EL	49.30	0.94	2.89	B	ER	89.20	0.80	0.86	1.60	A	EL	49.30	
		SNS6A	39,950		1.45	57.93	1.40	0.86	2.39	A	EL	49.30	0.94	2.66	B	ER	89.20	0.80	0.86	1.45	A	EL	49.30	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	SNS7B	42,000		1.39	58.38	1.40	0.86	2.29	A	EL	49.30	0.94	2.62	B	ER	89.20	0.80	0.86	1.39	A	EL	49.30	
		TNAGRIT3	33,000		1.77	58.41	1.40	0.86	2.93	A	EL	49.30	0.93	3.26	A	I	86.81	0.80	0.86	1.77	A	EL	49.30	
		TNT4A	33,075		1.76	58.21	1.40	0.86	2.91	A	EL	49.30	0.93	3.17	A	I	86.81	0.80	0.86	1.76	A	EL	49.30	
		TNT6A	41,600		1.43	59.49	1.40	0.86	2.36	A	EL	49.30	0.93	2.90	A	I	86.81	0.80	0.86	1.43	A	EL	49.30	
		TNT7A	42,000		1.43	60.06	1.40	0.86	2.36	A	EL	49.30	0.94	2.71	B	ER	89.20	0.80	0.86	1.43	A	EL	49.30	
		TNT7B	42,000		1.45	60.90	1.40	0.86	2.39	A	EL	49.30	0.94	2.55	B	ER	89.20	0.80	0.86	1.45	A	EL	49.30	
		TNAGRIT4	43,000		1.40	60.20	1.40	0.86	2.31	A	EL	49.30	0.93	2.60	A	I	86.81	0.80	0.86	1.40	A	EL	49.30	
TNAGT5A	45,000		1.33	59.85	1.40	0.86	2.20	A	EL	49.30	0.93	2.58	A	I	86.81	0.80	0.86	1.33	A	EL	49.30			
TNAGT5B	45,000		③	1.32	59.40	1.40	0.86	2.17	A	EL	49.30	0.93	2.55	A	I	36.80	0.80	0.86	<b>1.32</b>	A	EL	<b>49.30</b>		

**LOAD FACTORS:**

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ <sub>DC</sub>	γ <sub>DW</sub>
	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:**

- DISTANCE FROM LEFT END OF SPAN IS GIVEN WITH RESPECT TO CENTERLINE BEARING AND IS MEASURED ALONG CONTROLLING GIRDER.

# CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

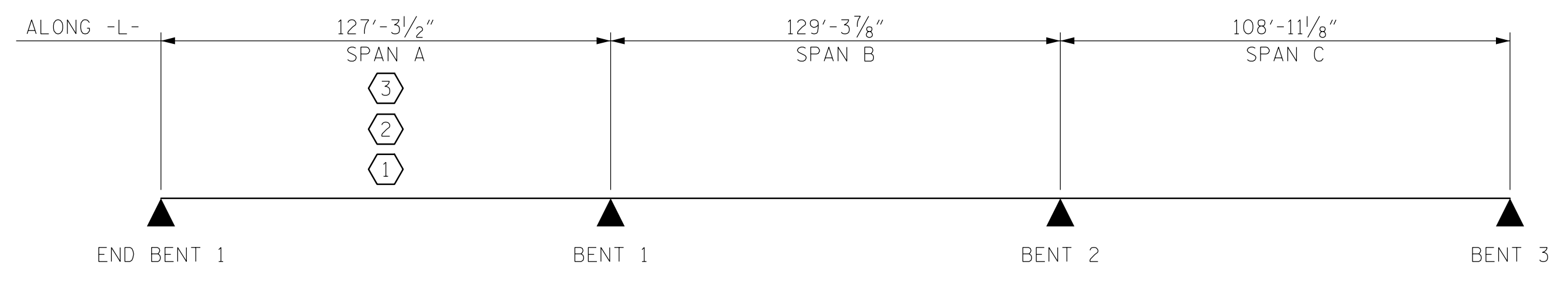
③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

---

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. U-5008  
MECKLENBURG COUNTY  
 STATION: 20+45.05 -L- P.O.T. =  
14+54.24 -Y4- P.O.T.  
 SHEET 1 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 UNIT 1  
 LRFR SUMMARY FOR  
 PRESTRESSED  
 CONCRETE GIRDERS  
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			SHEETS
2			4			78

KCI ASSOCIATES OF NC, P.A.  
 9741 SOUTHERN PINE BLVD  
 SUITE J  
 CHARLOTTE, NC 28273  
 704-499-9452  
 NC LICENSE No. C-0764

NORTH CAROLINA  
 PROFESSIONAL  
 SEAL  
 032954  
 JARED C. MEDLIN  
 ENGINEER

DocuSign  
 Jared C. Medlin 2/19/2015