

LOAD FACTORS:

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

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LOAD TYPE	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						
						LIVE-LOAD FACTORS (γ_{LL})	MOMENT			SHEAR			LIVE-LOAD FACTORS (γ_{LL})	MOMENT										
							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)							
DESIGN LOAD	HL-93 (INVENTORY)	N/A	①	1.14	--	1.75	0.843	1.26	A	EL	53.400	0.914	1.46	A	I	31.700	0.80	0.843	1.14	A	EL	53.400	1	
	HL-93 (OPERATING)	N/A		1.63	--	1.35	0.843	1.63	A	EL	53.400	0.914	1.93	A	I	10.100	N/A	--	--	--	--	--	--	1, 2
	HS-20 (INVENTORY)	36.000	②	1.61	57.96	1.75	0.843	1.78	A	EL	53.400	0.914	2.02	A	I	10.100	0.80	0.843	1.61	A	EL	53.400	1	
	HS-20 (OPERATING)	36.000		2.31	83.16	1.35	0.843	2.31	A	EL	53.400	0.914	2.66	A	I	10.100	N/A	--	--	--	--	--	--	1, 2
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		3.87	52.25	1.40	0.843	5.33	A	EL	53.400	0.914	6.50	A	I	10.100	0.80	0.843	3.87	A	EL	53.400	1
		SNGARBS2	20.000		2.78	55.60	1.40	0.843	3.84	A	EL	53.400	0.914	4.51	A	I	10.100	0.80	0.843	2.78	A	EL	53.400	1
		SNAGRIS2	22.000		2.60	57.20	1.40	0.843	3.58	A	EL	53.400	0.914	4.14	A	I	10.100	0.80	0.843	2.60	A	EL	53.400	1
		SNCOTTS3	27.250		1.92	52.32	1.40	0.843	2.65	A	EL	53.400	0.914	3.18	A	I	10.100	0.80	0.843	1.92	A	EL	53.400	1
		SNAGGRS4	34.925		1.57	54.83	1.40	0.843	2.16	A	EL	53.400	0.914	2.56	A	I	10.100	0.80	0.843	1.57	A	EL	53.400	1
		SNS5A	35.550		1.54	54.75	1.40	0.843	2.12	A	EL	53.400	0.914	2.57	A	I	10.100	0.80	0.843	1.54	A	EL	53.400	1
		SNS6A	39.950		1.39	55.53	1.40	0.843	1.92	A	EL	53.400	0.914	2.31	A	I	10.100	0.80	0.843	1.39	A	EL	53.400	1
		SNS7B	42.000		1.33	55.86	1.40	0.843	1.83	A	EL	53.400	0.914	2.24	A	I	10.100	0.80	0.843	1.33	A	EL	53.400	1
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.70	56.10	1.40	0.843	2.34	A	EL	53.400	0.914	2.79	A	I	10.100	0.80	0.843	1.70	A	EL	53.400	1
		TNT4A	33.075		1.70	56.23	1.40	0.843	2.34	A	EL	53.400	0.914	2.74	A	I	10.100	0.80	0.843	1.70	A	EL	53.400	1
		TNT6A	41.600		1.38	57.41	1.40	0.843	1.90	A	EL	53.400	0.914	2.34	A	I	10.100	0.80	0.843	1.38	A	EL	53.400	1
		TNT7A	42.000		1.37	57.54	1.40	0.843	1.90	A	EL	53.400	0.914	2.30	A	I	10.100	0.80	0.843	1.37	A	EL	53.400	1
		TNT7B	42.000		1.40	58.80	1.40	0.843	1.94	A	EL	53.400	0.914	2.20	A	I	10.100	0.80	0.843	1.40	A	EL	53.400	1
		TNAGRIT4	43.000		1.35	58.05	1.40	0.843	1.86	A	EL	53.400	0.914	2.14	A	I	10.100	0.80	0.843	1.35	A	EL	53.400	1
TNAGT5A	45.000		1.28	57.60	1.40	0.843	1.76	A	EL	53.400	0.914	2.09	A	I	10.100	0.80	0.843	1.28	A	EL	53.400	1		
TNAGT5B	45.000	③	1.27	57.15	1.40	0.843	1.75	A	EL	53.400	0.914	2.03	A	I	10.100	0.80	0.843	1.27	A	EL	53.400	1		
EMERGENCY VEHICLE (EV)	EV2	28.750		1.96	56.35	1.30	0.843	2.91	A	EL	53.400	0.914	3.37	A	I	10.100	0.80	0.843	1.96	A	EL	53.400	1	
	EV3	43.000	④	1.29	55.47	1.30	0.843	1.92	A	EL	53.400	0.914	2.22	A	I	10.100	0.80	0.843	1.29	A	EL	53.400	1	

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. ALL DISTANCES ARE MEASURED FROM CENTERLINE OF BEARING AT THE LEFT END OF THE SPAN.
 2. SERVICE III LIMIT STATE NOT APPLICABLE AT THE OPERATIONAL LEVEL.
 3.
 4.

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

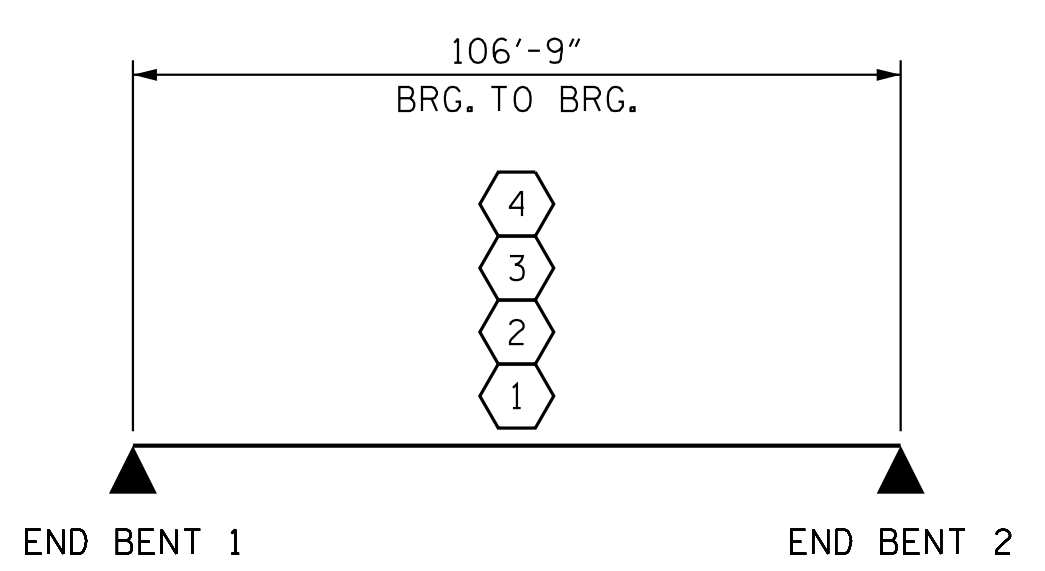
③ LEGAL LOAD RATING **

④ EMERGENCY VEHICLE LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

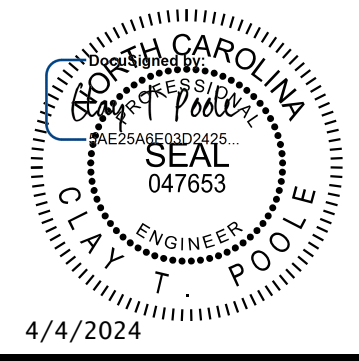
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. U-5108
MECKLENBURG COUNTY
 STATION: 74+01.00 -L-



Kimley»Horn
 421 Fayetteville Street, Suite 600
 Raleigh, NC 27601-1772
 Phone (919) 677-2000 NC LICENSE # F-0102

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-5
1			3			TOTAL SHEETS
2			4			33

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

This document, together with the concepts and designs presented herein, is an integral part of the project. It is intended only for the specific project and site. Any use, reproduction, or distribution of this document without written authorization and approval by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.
 Copyright Kimley-Horn and Associates, Inc., 2024

K:\BIDI_Structures\Bridges\NC\011036359 - U-5108\Geo\09\U5108_SML\003_591403.dgn 2/28/2024

ASSEMBLED BY : J. I. KIMBLE	DATE : 10/2023
CHECKED BY : T. H. ORR	DATE : 10/2023
DRAWN BY : MAA 1/08	REV. 11/27/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 04/23 BNB/AAI