

bklappenbach 8/10/2023 \\ad.rkk.com\fs\Cloud\Projects\2015\15213_NCEas+LSA\M01_I5972_I95-UST0Bus-Inter-chn\Design\Structures\DG\BR_500066\Final\I5972_SMU_SUM_500066.dgn

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 _L)	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 _L)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	1	1.23	-	1.75	0.747	1.73	A & B	E	53.1	0.949	1.36	A & B	I	10.0	0.8	0.747	1.23	A & B	E	53.1	-	
	HL-93 (OPERATING)	N/A		1.80	-	1.35	0.747	2.24	A & B	E	53.1	0.949	1.80	A & B	I	10.0	N/A	-	-	-	-	-	-	-
	HS-20 (INVENTORY)	36,000	2	1.74	62,640	1.75	0.747	2.44	A & B	E	53.1	0.949	1.89	A & B	I	10.0	0.80	0.747	1.74	A & B	E	53.1	-	
	HS-20 (OPERATING)	36,000		2.48	89,280	1.35	0.747	3.17	A & B	E	53.1	0.949	2.48	A & B	I	10.0	N/A	-	-	-	-	-	-	-
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13,500		4.16	56,160	1.40	0.747	7.31	A & B	E	53.1	0.949	6.10	A & B	I	10.0	0.80	0.747	4.16	A & B	E	53.1	-
		SNGARBS2	20,000		3.00	60,000	1.40	0.747	5.27	A & B	E	53.1	0.949	4.23	A & B	I	10.0	0.80	0.747	3.00	A & B	E	53.1	-
		SNAGRIS2	22,000		2.80	61,600	1.40	0.747	4.92	A & B	E	53.1	0.949	3.88	A & B	I	10.0	0.80	0.747	2.80	A & B	E	53.1	-
		SNCOTTS3	27,250		2.07	56,408	1.40	0.747	3.63	A & B	E	53.1	0.949	2.97	A & B	I	10.0	0.80	0.747	2.07	A & B	E	53.1	-
		SNAGGRS4	34,925		1.69	59,023	1.40	0.747	2.97	A & B	E	53.1	0.949	2.39	A & B	I	10.0	0.80	0.747	1.69	A & B	E	53.1	-
		SNS5A	35,550		1.65	58,658	1.40	0.747	2.91	A & B	E	53.1	0.949	2.40	A & B	I	10.0	0.80	0.747	1.65	A & B	E	53.1	-
		SNS6A	39,950		1.50	59,925	1.40	0.747	2.64	A & B	E	53.1	0.949	2.16	A & B	I	10.0	0.80	0.747	1.50	A & B	E	53.1	-
		SNS7B	42,000		1.43	60,060	1.40	0.747	2.51	A & B	E	53.1	0.949	2.09	A & B	I	10.0	0.80	0.747	1.43	A & B	E	53.1	-
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33,000		1.82	60,060	1.40	0.747	3.21	A & B	E	53.1	0.949	2.61	A & B	I	10.0	0.80	0.747	1.82	A & B	E	53.1	-
		TNT4A	33,075		1.83	60,527	1.40	0.747	3.21	A & B	E	53.1	0.949	2.56	A & B	I	10.0	0.80	0.747	1.83	A & B	E	53.1	-
		TNT6A	41,600		1.48	61,568	1.40	0.747	2.60	A & B	E	53.1	0.949	2.19	A & B	I	10.0	0.80	0.747	1.48	A & B	E	53.1	-
		TNT7A	42,000		1.48	62,160	1.40	0.747	2.60	A & B	E	53.1	0.949	2.15	A & B	I	10.0	0.80	0.747	1.48	A & B	E	53.1	-
		TNT7B	42,000		1.51	63,420	1.40	0.747	2.66	A & B	E	53.1	0.949	2.06	A & B	I	10.0	0.80	0.747	1.51	A & B	E	53.1	-
		TNAGRIT4	43,000		1.45	62,350	1.40	0.747	2.55	A & B	E	53.1	0.949	2.00	A & B	I	10.0	0.80	0.747	1.45	A & B	E	53.1	-
EMERGENCY VEHICLE (EV)	EV2	28,750		2.11	60,663	1.30	0.747	3.70	A & B	E	53.1	0.949	2.92	A & B	I	10.0	0.80	0.747	2.11	A & B	E	53.1	-	
	EV3	43,000	4	1.39	59,770	1.30	0.747	2.44	A & B	E	53.1	0.949	1.92	A & B	I	10.0	0.80	0.747	1.39	A & B	E	53.1	-	

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. PRESTRESSED GIRDERS WERE DESIGNED USING SIMPLE SPAN ANALYSIS.
2. EXTERIOR GIRDER NO. 11 CONTROLS THE RATING.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

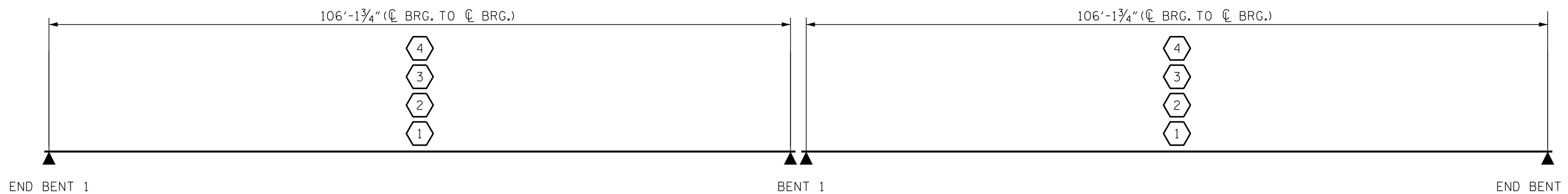
3 LEGAL LOAD RATING **

4 EMERGENCY VEHICLE LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
E - EXTERIOR GIRDER

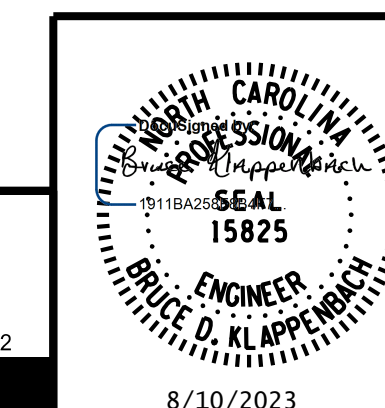


LRFR SUMMARY

PROJECT NO. I-5972
JOHNSTON COUNTY
 STATION: 36+93.50 -Y1-

SHEET 4 OF 4

DRAWN BY : B. A. HAAG DATE : JUN 2021
 CHECKED BY : B. D. KLAPPENBACH DATE : JUN 2021
 DESIGN ENGINEER OF RECORD : B. D. KLAPPENBACH DATE : JUN 2021



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			54

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 UNLESS ALL SIGNATURES COMPLETED**