

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{dc}	γ_{dw}
	STRENGTH I	1.25	1.50
	SERVICE II	1.00	1.00

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR STEEL GIRDERS

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE II LIMIT STATE					COMMENT NUMBER			
						MOMENT					SHEAR					MOMENT								
						LIVE-LOAD FACTORS (γ_{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 (γ_{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	1.09	--	1.75	0.880	1.47	A	EL	73.17	0.878	1.09	A	I	139.01	1.30	0.880	1.57	A	EL	73.17		
	HL-93 (OPERATING)	N/A		1.41	--	1.35	0.880	1.91	A	EL	73.17	0.878	1.41	A	I	139.01	1.00	0.880	2.04	A	EL	73.17		
	HS-20 (INVENTORY)	36.00	②	1.63	58.68	1.75	0.880	2.28	A	EL	73.17	0.878	1.63	A	I	7.32	1.30	0.880	2.43	A	EL	73.17		
	HS-20 (OPERATING)	36.00		2.12	76.32	1.35	0.880	2.96	A	EL	73.17	0.878	2.12	A	I	7.32	1.00	0.880	3.16	A	EL	73.17		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SN5H	13.500		5.18	69.93	1.40	0.880	7.04	A	EL	73.17	0.878	5.18	A	I	139.01	1.30	0.880	6.00	A	EL	73.17	
		SNGARBS2	20.000		3.58	71.60	1.40	0.880	4.97	A	EL	73.17	0.878	3.58	A	I	139.01	1.30	0.880	4.24	A	EL	73.17	
		SNAGRIS2	22.000		3.28	72.16	1.40	0.880	4.60	A	EL	73.17	0.878	3.28	A	I	139.01	1.30	0.880	3.92	A	EL	73.17	
		SNCOTTS3	27.250		2.57	70.03	1.40	0.880	3.49	A	EL	73.17	0.878	2.57	A	I	7.32	1.30	0.880	2.98	A	EL	73.17	
		SNAGGRS4	34.925		2.07	72.29	1.40	0.880	2.82	A	EL	73.17	0.878	2.07	A	I	139.01	1.30	0.880	2.40	A	EL	73.17	
		SNS5A	35.550		2.06	73.23	1.40	0.880	2.76	A	EL	73.17	0.878	2.06	A	I	139.01	1.30	0.880	2.35	A	EL	73.17	
		SNS6A	39.950		1.85	73.91	1.40	0.880	2.49	A	EL	73.17	0.878	1.85	A	I	7.32	1.30	0.880	2.12	A	EL	73.17	
		SNS7B	42.000		1.78	74.76	1.40	0.880	2.37	A	EL	73.17	0.878	1.78	A	I	7.32	1.30	0.880	2.02	A	EL	73.17	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.22	73.26	1.40	0.880	3.03	A	EL	73.17	0.878	2.22	A	I	139.01	1.30	0.880	2.58	A	EL	73.17	
		TNT4A	33.075		2.20	72.77	1.40	0.880	3.03	A	EL	73.17	0.878	2.20	A	I	7.32	1.30	0.880	2.58	A	EL	73.17	
		TNT6A	41.600		1.84	76.54	1.40	0.880	2.44	A	EL	73.17	0.878	1.84	A	I	139.01	1.30	0.880	2.08	A	EL	73.17	
		TNT7A	42.000		1.82	76.44	1.40	0.880	2.43	A	EL	73.17	0.878	1.82	A	I	139.01	1.30	0.880	2.07	A	EL	73.17	
		TNT7B	42.000		1.77	74.34	1.40	0.880	2.47	A	EL	73.17	0.878	1.77	A	I	139.01	1.30	0.880	2.10	A	EL	73.17	
		TNAGRIT4	43.000		1.72	73.96	1.40	0.880	2.38	A	EL	73.17	0.878	1.72	A	I	139.01	1.30	0.880	2.03	A	EL	73.17	
		TNAGT5A	45.000		1.67	75.15	1.40	0.880	2.26	A	EL	73.17	0.878	1.67	A	I	139.01	1.30	0.880	1.93	A	EL	73.17	
TNAGT5B	45.000	③	1.64	73.80	1.40	0.880	2.25	A	EL	73.17	0.878	1.64	A	I	139.01	1.30	0.880	1.92	A	EL	73.17			
FATIGUE	EV2	45.000		2.50	112.50	1.40	0.880	3.49	A	EL	73.17	0.878	2.50	A	I	139.01	1.30	0.880	2.97	A	EL	73.17		
	EV3	45.000		1.68	75.60	1.40	0.880	2.31	A	EL	73.17	0.878	1.68	A	I	139.01	1.30	0.880	1.97	A	EL	73.17		

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE II LIMIT STATES.
ALLOWABLE STRESS FOR SERVICE II LIMIT STATE ARE AS REQUIRED FOR DESIGN.

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93) **

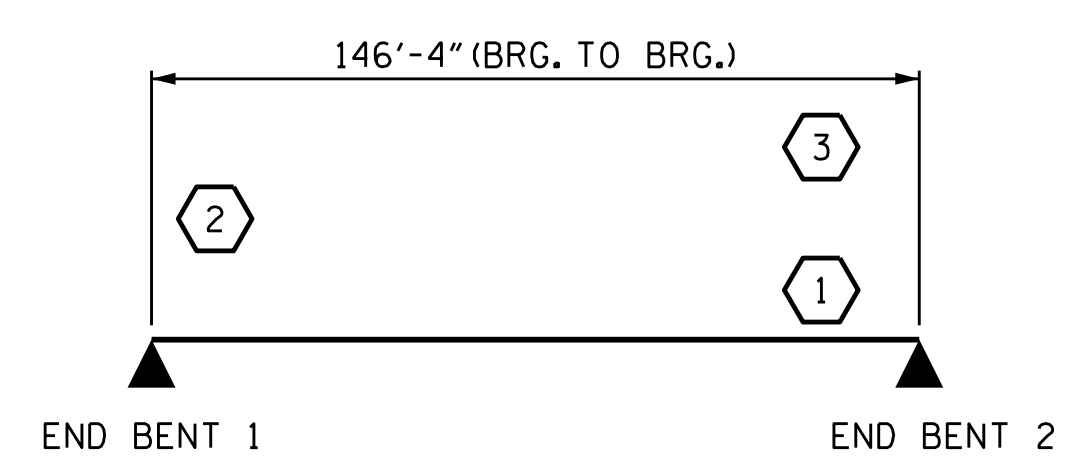
② DESIGN LOAD RATING (HS-20) **

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

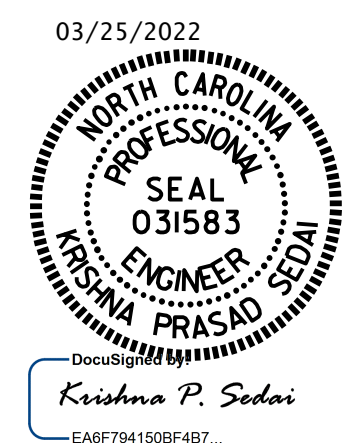
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-5772
ROWAN COUNTY
STATION: 20+91.04 -EL-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
STEEL GIRDERS
(NON-INTERSTATE TRAFFIC)

DRAWN BY: M. G. SHAIKH DATE: 02/2021
CHECKED BY: A. SORSENGINH DATE: 02/2021
DESIGN ENGINEER OF RECORD: A. SORSENGINH DATE: 02/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	REVISIONS						SHEET NO. S-4 TOTAL SHEETS 25
	NO.	BY:	DATE:	NO.	BY:	DATE:	
	1			3			
	2			4			