

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
						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 (FF)	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)		
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.26	--	1.75	--	1.26	B	ER	105.28	--	1.70	B	I	175.50	1.30	--	2.11	B	ER	0.00		
	HL-93 (OPERATING)	N/A		1.63	--	1.35	--	1.63	B	ER	105.28	--	2.20	B	I	175.50	1.00	--	2.74	B	ER	0.00		
	HS-20 (INVENTORY)	36.00	②	1.96	70.39	1.75	--	1.96	B	ER	107.50	--	2.52	B	I	175.50	1.30	--	3.73	B	ER	105.28		
	HS-20 (OPERATING)	36.00		2.54	91.38	1.35	--	2.54	B	ER	107.50	--	3.27	B	I	175.50	1.00	--	4.85	B	ER	105.28		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13,500		5.52	74.56	1.40	--	5.52	B	ER	0.00	--	7.55	A	ER	137.28	1.30	--	7.18	B	ER	0.00	
		SNGARBS2	20,000		4.28	85.57	1.40	--	4.28	B	ER	0.00	--	5.39	B	I	175.50	1.30	--	5.56	B	ER	0.00	
		SNAGRIS2	22,000		4.00	88.05	1.40	--	4.00	B	ER	0.00	--	5.01	B	I	175.50	1.30	--	5.20	B	ER	0.00	
		SNCOTTS3	27,250		2.92	79.67	1.40	--	2.92	B	ER	107.50	--	3.80	B	I	175.50	1.30	--	4.45	B	ER	0.00	
		SNAGGRS4	34,925		2.44	85.28	1.40	--	2.44	B	ER	107.50	--	3.15	B	I	175.50	1.30	--	3.20	B	ER	105.28	
		SNS5A	35,550		2.38	84.54	1.40	--	2.38	B	ER	107.50	--	3.15	B	I	175.50	1.30	--	3.62	B	ER	0.00	
		SNS6A	39,950		2.15	85.90	1.40	--	2.15	B	ER	107.50	--	2.85	B	I	175.50	1.30	--	3.26	B	ER	105.28	
	SNS7B	42,000		2.09	87.66	1.40	--	2.09	B	ER	107.50	--	2.77	B	I	175.50	1.30	--	3.11	B	ER	105.28		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33,000		2.68	88.31	1.40	--	2.68	B	ER	107.50	--	3.46	B	I	175.50	1.30	--	3.84	B	ER	0.00	
		TNT4A	33,075		2.69	89.02	1.40	--	2.69	B	ER	107.50	--	3.40	B	I	175.50	1.30	--	3.84	B	ER	0.00	
		TNT6A	41,600		2.19	91.01	1.40	--	2.19	B	ER	105.28	--	2.88	B	I	175.50	1.30	--	3.19	B	ER	105.28	
		TNT7A	42,000		2.19	92.14	1.40	--	2.19	B	ER	107.50	--	2.82	B	I	175.50	1.30	--	3.18	B	ER	0.00	
		TNT7B	42,000		2.18	91.62	1.40	--	2.18	B	ER	105.28	--	2.75	B	I	175.50	1.30	--	3.20	B	ER	105.28	
		TNAGRIT4	43,000		2.13	91.56	1.40	--	2.13	B	ER	105.28	--	2.66	B	I	175.50	1.30	--	3.09	B	ER	105.28	
TNAGT5A		45,000		2.04	91.62	1.40	--	2.04	B	ER	105.28	--	2.63	B	I	175.50	1.30	--	2.95	B	ER	105.28		
TNAGT5B	45,000		③	2.01	90.30	1.40	--	2.01	B	ER	107.50	--	2.52	B	I	175.50	1.30	--	2.94	B	ER	105.28		
FATIGUE	HL-93 (INVENTORY)	$\gamma_{LL}=0.75$		--																				

NOTES:

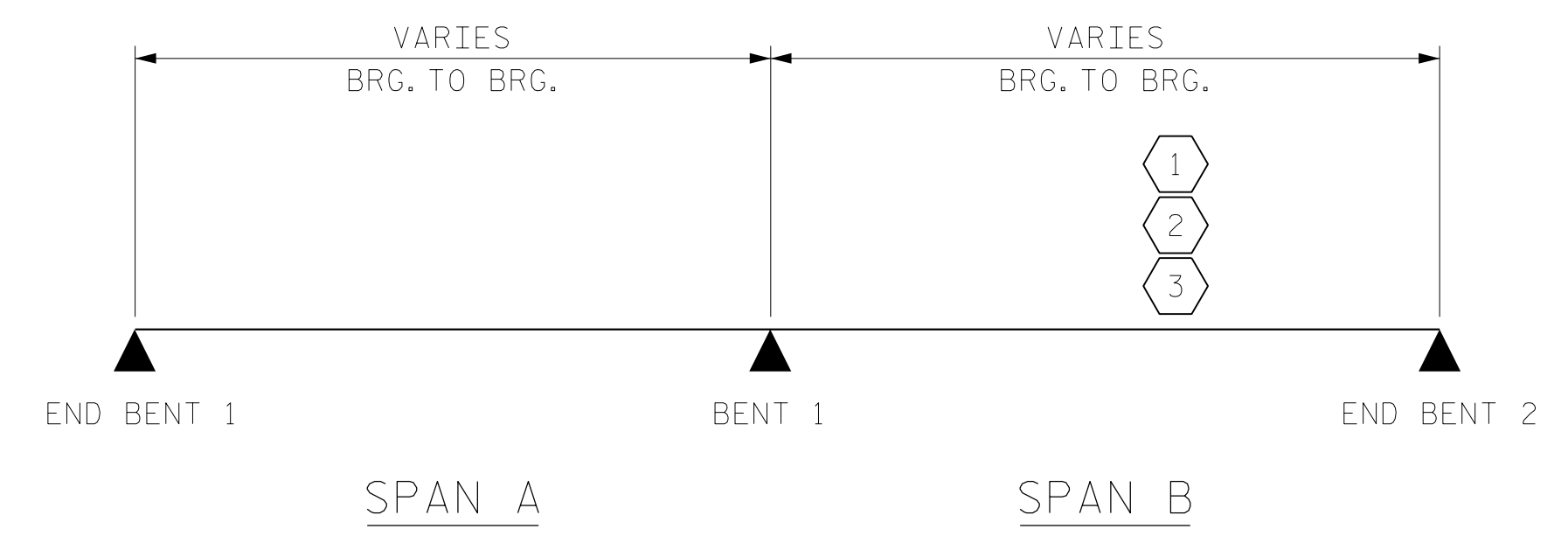
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE II LIMIT STATES.

ALLOWABLE STRESS FOR SERVICE II LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- THE LIVE LOAD DISTRIBUTION WAS BASED ON A REFINED METHOD OF ANALYSIS USING A GRILLAGE ANALOGY METHOD.

⊕	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
FOR BEARING TO BEARING LENGTHS, SEE "STRUCTURAL STEEL DETAILS" SHEET 1 OF 4.

PROJECT NO. U-2579AB
FORSYTH COUNTY
STATION: 22+26.35 -Y1B-

ASSEMBLED BY : NSC	DATE : 11/2019
CHECKED BY : JMR	DATE : 11/2019
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/11/11 MAA/GM
	REV. 12/17 MAA/THG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						STANDARD		SHEET NO. S1-5	
LRFR SUMMARY FOR STEEL GIRDERS (NON-INTERSTATE TRAFFIC)						TOTAL SHEETS 47			
REVISIONS									
NO.	BY:	DATE:	NO.	BY:	DATE:				
1			3						
2			4						