

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 (FF)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FF)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.53	--	1.75	0.737	1.53	B	E	39.04	0.948	3.53	A	I	32.42	1.30	0.722	1.55	B	I	39.25		
	HL-93 (OPERATING)	N/A		1.98	--	1.35	0.737	1.98	B	E	39.04	0.948	4.58	A	I	32.42	1.00	0.722	2.01	B	I	39.25		
	HS-20 (INVENTORY)	36.00	②	2.02	72.54	1.75	0.737	2.02	B	E	39.04	0.948	4.09	A	I	32.42	1.30	0.722	2.05	B	I	39.25		
	HS-20 (OPERATING)	36.00		2.61	94.03	1.35	0.737	2.61	B	E	39.04	0.948	5.30	A	I	32.42	1.00	0.722	2.66	B	I	39.25		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH		4.73	63.81	1.40	0.737	5.84	B	E	39.04	0.948	10.36	A	I	0.65	1.30	0.722	4.73	B	I	39.25		
		SNGARBS2	20,000	3.46	69.26	1.40	0.737	4.26	B	E	41.35	0.948	7.91	A	I	0.65	1.30	0.722	3.46	B	I	39.25		
		SNAGRIS2	22,000	3.25	71.57	1.40	0.737	4.00	B	E	41.35	0.948	7.58	A	I	0.65	1.30	0.722	3.25	B	I	41.35		
		SNCOTTS3	27,250	2.32	63.22	1.40	0.737	2.86	B	E	39.04	0.948	5.15	A	I	32.42	1.30	0.722	2.32	B	I	39.25		
		SNAGGRS4	34,925	1.93	67.41	1.40	0.737	2.37	B	E	41.35	0.948	4.64	A	I	32.42	1.30	0.722	1.93	B	I	39.04		
		SNS5A	35,550	1.89	67.30	1.40	0.737	2.33	B	E	41.35	0.948	4.87	A	I	0.65	1.30	0.722	1.89	B	I	39.25		
		SNS6A	39,950	1.73	69.27	1.40	0.737	2.13	B	E	41.35	0.948	4.53	A	I	0.65	1.30	0.722	1.73	B	I	39.25		
		SNS7B	42,000	1.65	69.34	1.40	0.737	2.03	B	E	39.04	0.948	4.65	A	I	0.65	1.30	0.722	1.65	B	I	39.25		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33,000		2.12	69.83	1.40	0.737	2.60	B	E	39.04	0.948	5.50	A	I	0.65	1.30	0.722	2.12	B	I	39.04	
		TNT4A	33,075		2.12	69.99	1.40	0.737	2.60	B	E	39.04	0.948	5.17	A	I	0.65	1.30	0.722	2.12	B	I	39.04	
		TNT6A	41,600		1.72	71.72	1.40	0.737	2.12	B	E	39.04	0.948	4.84	A	I	0.65	1.30	0.722	1.72	B	I	39.04	
		TNT7A	42,000		1.73	72.74	1.40	0.737	2.13	B	E	39.04	0.948	4.49	A	I	0.65	1.30	0.722	1.73	B	I	39.04	
		TNT7B	42,000		1.80	75.43	1.40	0.737	2.20	B	E	41.35	0.948	4.41	A	I	0.65	1.30	0.722	1.80	B	I	39.04	
		TNAGRIT4	43,000		1.71	73.44	1.40	0.737	2.10	B	E	39.04	0.948	4.41	A	I	0.65	1.30	0.722	1.71	B	I	37.15	
		TNAGRIT5A	45,000		1.61	72.32	1.40	0.737	1.98	B	E	39.04	0.948	4.64	A	I	32.42	1.30	0.722	1.61	B	I	39.04	
TNAGRIT5B	45,000		③	1.59	71.51	1.40	0.737	1.95	B	E	39.04	0.948	4.03	A	I	0.65	1.30	0.722	1.59	B	I	39.04		
FATIGUE	HL-93 (INVENTORY)	$\gamma_{LL}=0.75$																						

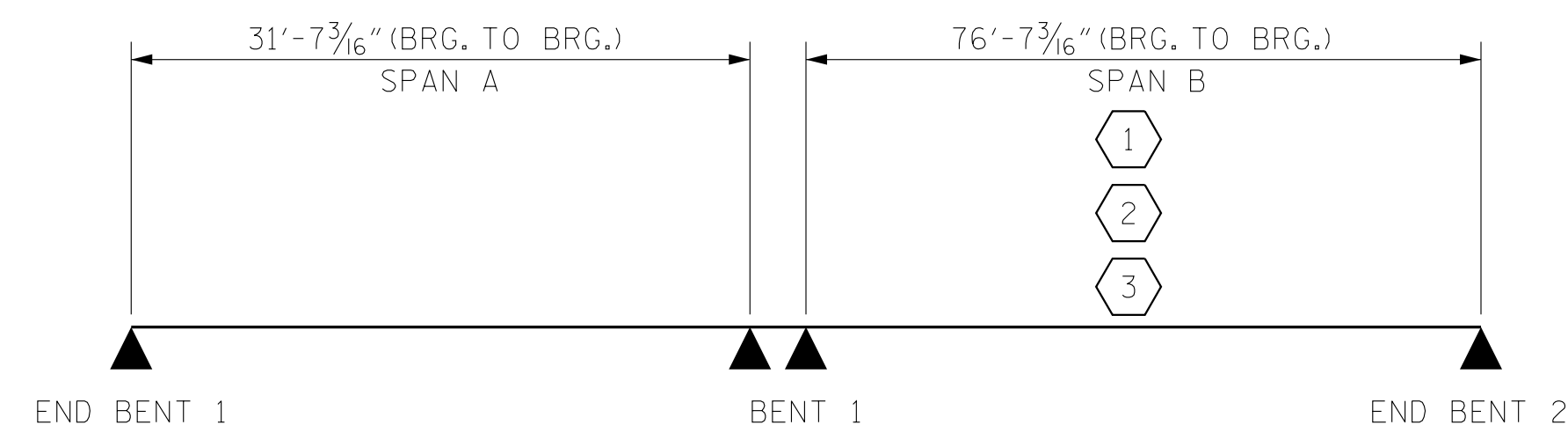
NOTES:

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:

- 1.
- 2.
- 3.
- 4.

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 E - EXTERIOR GIRDER



LRFR SUMMARY

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796

Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488
Atlanta, GA 404-627-3509

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PROJECT NO. U-5738
ROWAN COUNTY
STATION: 70+72.50 -L-

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

ASSEMBLED BY : FRJ	DATE : 11/18
CHECKED BY : CDB	DATE : 11/18
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/THC

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			39