

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 BEAMS

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	BEAM LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	BEAM LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ_{LL})		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	BEAM LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.11	--	1.75	0.680	1.11	B	I	85.00	0.887	2.96	B	I	0.00	1.30	0.680	1.63	B	I	85.00	1	
	HL-93 (OPERATING)	N/A		1.44	--	1.35	0.680	1.44	B	I	85.00	0.887	3.84	B	I	0.00	1.00	0.680	2.12	B	I	85.00	1	
	HS-20 (INVENTORY)	36.000	②	2.03	73.08	1.75	0.680	2.03	B	I	85.00	0.887	3.94	B	I	0.00	1.30	0.646	3.39	B	I	42.50	1	
	HS-20 (OPERATING)	36.000		2.63	94.68	1.35	0.680	2.63	B	I	85.00	0.887	5.11	B	I	0.00	1.00	0.646	4.41	B	I	42.50	1	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		6.45	87.08	1.40	0.680	6.45	B	I	85.00	0.887	12.27	B	I	0.00	1.30	0.646	7.42	B	I	42.50	1
		SNGARBS2	20.000		4.42	88.40	1.40	0.680	4.42	B	I	85.00	0.887	8.53	B	I	0.00	1.30	0.646	5.63	B	I	42.50	1
		SNAGRIS2	22.000		4.04	88.88	1.40	0.680	4.04	B	I	85.00	0.887	7.85	B	I	0.00	1.30	0.646	5.37	B	I	42.50	1
		SNCOTTS3	27.250		3.17	86.38	1.40	0.680	3.17	B	I	85.00	0.887	6.09	B	I	0.00	1.30	0.646	3.72	B	I	42.50	1
		SNAGGRS4	34.925		2.51	87.66	1.40	0.680	2.51	B	I	85.00	0.887	4.92	B	I	0.00	1.30	0.646	3.15	B	I	42.50	1
		SNS5A	35.550		2.48	88.16	1.40	0.680	2.48	B	I	85.00	0.887	4.92	B	I	0.00	1.30	0.646	3.08	B	I	42.50	1
		SNS6A	39.950		2.24	89.49	1.40	0.680	2.24	B	I	85.00	0.887	4.45	B	I	0.00	1.30	0.646	2.84	B	I	42.50	1
	SNS7B	42.000		2.12	89.04	1.40	0.680	2.12	B	I	85.00	0.887	4.32	B	I	0.00	1.30	0.646	2.71	B	I	42.50	1	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.69	88.77	1.40	0.680	2.69	B	I	85.00	0.887	5.34	B	I	0.00	1.30	0.646	3.48	B	I	42.50	1
		TNT4A	33.075		2.72	89.96	1.40	0.680	2.72	B	I	85.00	0.887	5.26	B	I	0.00	1.30	0.646	3.47	B	I	42.50	1
		TNT6A	41.600		2.18	90.69	1.40	0.680	2.18	B	I	85.00	0.887	4.52	B	I	0.00	1.30	0.646	2.86	B	I	42.50	1
		TNT7A	42.000		2.16	90.72	1.40	0.680	2.16	B	I	85.00	0.887	4.45	B	I	0.00	1.30	0.646	2.88	B	I	42.50	1
		TNT7B	42.000		2.19	91.98	1.40	0.680	2.19	B	I	85.00	0.887	4.28	B	I	0.00	1.30	0.646	2.95	B	I	42.50	1
		TNAGRIT4	43.000		2.10	90.30	1.40	0.680	2.10	B	I	85.00	0.887	4.15	B	I	0.00	1.30	0.646	2.85	B	I	42.50	1
TNAGT5A		45.000		2.01	90.45	1.40	0.680	2.01	B	I	85.00	0.887	4.06	B	I	0.00	1.30	0.646	2.68	B	I	42.50	1	
TNAGT5B	45.000	③	1.99	89.55	1.40	0.680	1.99	B	I	85.00	0.887	3.95	B	I	0.00	1.30	0.646	2.64	B	I	42.50	1		
FATIGUE	HL-93 (INVENTORY)	$\gamma_{LL}=0.75$		-																				

NOTES:

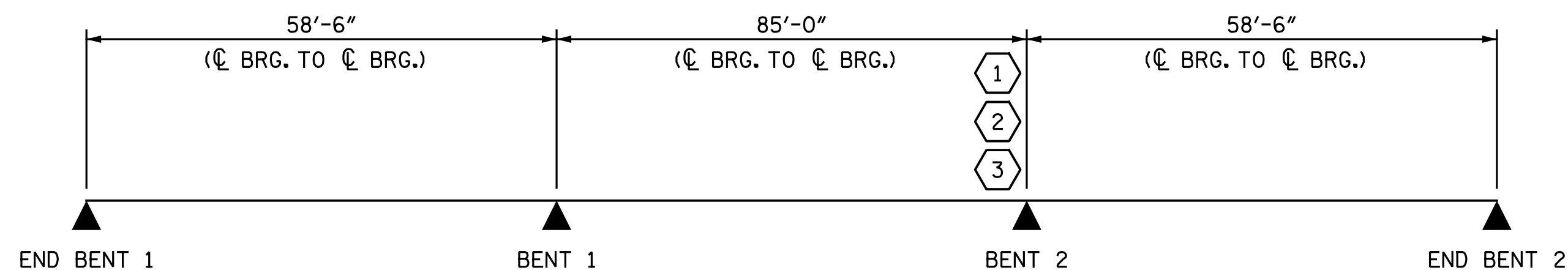
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE II LIMIT STATES.

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

COMMENTS:

- DISTANCE FROM LEFT END OF SPAN IS GIVEN WITH RESPECT TO CENTERLINE OF BEARING AND IS MEASURED ALONG THE CONTROLLING BEAM.
- FATIGUE RATING IS NOT REQUIRED SINCE BEAM DOES NOT INCLUDE FATIGUE-PRONE DETAILS.

#	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
**	SEE CHART FOR VEHICLE TYPE
BEAM LOCATION	
I	INTERIOR BEAM
EL	EXTERIOR LEFT BEAM
ER	EXTERIOR RIGHT BEAM



LRFR SUMMARY

PROJECT NO. U-3330
NASH COUNTY
 STATION: 61+03.00 -L-
 SHEET 5 OF 5

DRAWN BY : C. E. MAYHEW DATE : 12-14-16
 CHECKED BY : B. J. BELL DATE : 12-15-16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH GENERAL DRAWING LRFR SUMMARY FOR STEEL BEAMS (NON-INTERSTATE TRAFFIC)																	
	DocuSigned by: 2/3/2017	REVISIONS																	
	Michael Baker INTERNATIONAL Michael Baker Engineering 8000 Regency Parkway, Suite 600 Cary, North Carolina 27518 NC License No.: F-1084	<table border="1"> <tr> <th>NO.</th> <th>BY:</th> <th>DATE:</th> <th>NO.</th> <th>BY:</th> <th>DATE:</th> </tr> <tr> <td>1</td> <td></td> <td></td> <td>3</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> </tr> </table>	NO.	BY:	DATE:	NO.	BY:	DATE:	1			3			2			4	
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