

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})	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)		
																							MOMENT	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.20	--	1.75	0.797	1.44	A	EL	48.75	0.677	1.20	A	EL	194.99	1.30	0.797	2.24	A	EL	48.75	--	
	HL-93 (OPERATING)	N/A	.	1.55	--	1.35	0.797	1.87	A	EL	48.75	0.677	1.55	A	EL	194.99	1.00	0.797	2.91	A	EL	48.75	--	
	HS-20 (INVENTORY)	36.00	②	2.01	72.36	1.75	0.797	2.46	A	EL	48.75	0.677	2.01	A	EL	194.99	1.30	0.797	3.82	A	EL	48.75	--	
	HS-20 (OPERATING)	36.00	.	2.61	93.96	1.35	0.797	3.19	A	EL	48.75	0.677	2.61	A	EL	194.99	1.00	0.797	4.96	A	EL	48.75	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500	.	6.38	86.13	1.40	0.797	8.08	A	EL	48.75	0.956	6.38	A	EL	196.98	1.30	0.797	8.70	A	EL	48.75	--
		SNGARBS2	20.000	.	4.44	88.80	1.40	0.797	5.46	A	EL	48.75	0.956	4.44	A	EL	196.98	1.30	0.797	5.88	A	EL	48.75	--
		SNAGRIS2	22.000	.	4.08	89.76	1.40	0.797	4.96	A	EL	48.75	0.677	4.08	A	EL	194.99	1.30	0.797	5.35	A	EL	48.75	--
		SNCOTTS3	27.250	.	3.17	86.38	1.40	0.797	4.01	A	EL	48.75	0.956	3.17	A	EL	196.98	1.30	0.797	4.32	A	EL	48.75	--
		SNAGGRS4	34.925	.	2.57	89.76	1.40	0.797	3.16	A	EL	48.75	0.956	2.57	A	EL	196.98	1.30	0.797	3.41	A	EL	48.75	--
		SNS5A	35.550	.	2.54	90.30	1.40	0.797	3.11	A	EL	48.75	0.677	2.54	A	EL	194.99	1.30	0.797	3.35	A	EL	48.75	--
		SNS6A	39.950	.	2.25	89.89	1.40	0.797	2.79	A	EL	48.75	0.797	2.25	A	EL	196.98	1.30	0.797	3.00	A	EL	48.75	--
	SNS7B	42.000	.	2.13	89.46	1.40	0.797	2.65	A	EL	48.75	0.797	2.13	A	EL	196.98	1.30	0.797	2.86	A	EL	48.75	--	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	.	2.74	90.42	1.40	0.797	3.39	A	EL	48.75	0.677	2.74	A	EL	194.99	1.30	0.797	3.66	A	EL	48.75	--
		TNT4A	33.075	.	2.73	90.29	1.40	0.797	3.37	A	EL	48.75	0.677	2.73	A	EL	194.99	1.30	0.797	3.63	A	EL	48.75	--
		TNT6A	41.600	.	2.18	90.69	1.40	0.797	2.70	A	EL	48.75	0.797	2.18	A	EL	196.98	1.30	0.797	2.90	A	EL	48.75	--
		TNT7A	42.000	.	2.16	90.72	1.40	0.797	2.67	A	EL	48.75	0.797	2.16	A	EL	196.98	1.30	0.797	2.88	A	EL	48.75	--
		TNT7B	42.000	.	2.18	91.56	1.40	0.797	2.69	A	EL	48.75	0.677	2.18	A	EL	194.99	1.30	0.797	2.89	A	EL	48.75	--
		TNAGRIT4	43.000	.	2.11	90.73	1.40	0.797	2.60	A	EL	48.75	0.677	2.11	A	EL	194.99	1.30	0.797	2.80	A	EL	48.75	--
TNAGT5A		45.000	.	2.02	90.90	1.40	0.797	2.49	A	EL	48.75	0.677	2.02	A	EL	194.99	1.30	0.797	2.68	A	EL	48.75	--	
TNAGT5B	45.000	③	2.01	90.45	1.40	0.797	2.47	A	EL	48.75	0.797	2.01	A	EL	196.98	1.30	0.797	2.66	A	EL	48.75	--		
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:

- ANALYSIS METHOD: FINITE ELEMENT MODEL ON GRILLAGE.
- FATIGUE RATING IS NOT REQUIRED OR REPORTED SINCE GIRDERS DO NOT INCLUDE FATIGUE-PRONE DETAILS.

① CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93) **

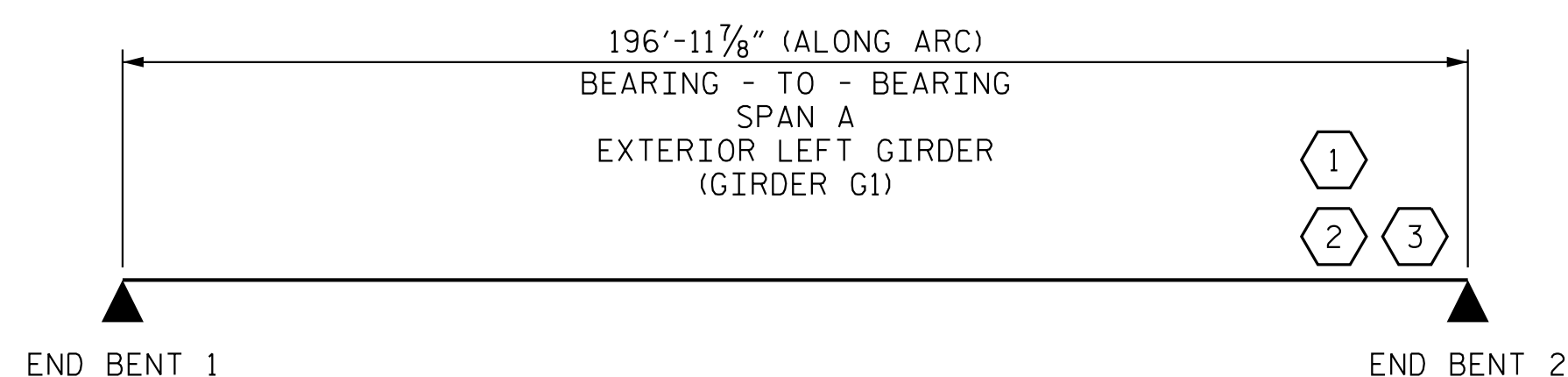
② DESIGN LOAD RATING (HS-20) **

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

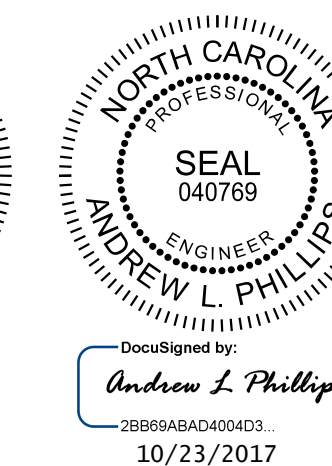
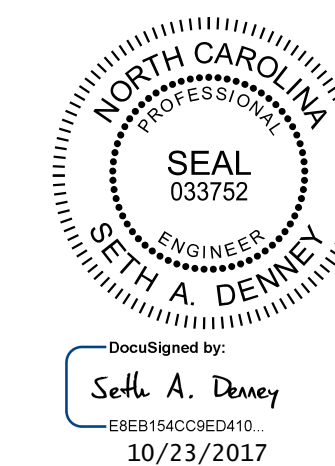
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. U-5806
CABARRUS COUNTY
 STATION: 15+75.56 -Y1-
27+06.95 -L-



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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 LRFR SUMMARY FOR
 STEEL GIRDERS
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			50

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

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