

LOAD FACTORS:

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

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 (%LL)	MOMENT					SHEAR					LIVE-LOAD FACTORS (%LL)	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (++)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (++)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (++)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.06	--	1.75	0.857	1.06	A	EL	166	0.985	1.07	A	2	133	1.30	0.857	1.50	C	EL	130		
	HL-93 (OPERATING)	N/A		1.39	--	1.35	0.857	1.39	A	EL	166	0.985	1.39	A	2	133	1.00	0.857	1.95	C	EL	130		
	HS-20 (INVENTORY)	36.00	②	1.67	60.12	1.75	0.857	2.55	D	EL	108	0.985	1.67	A	2	133	1.30	0.857	2.48	D	EL	108		
	HS-20 (OPERATING)	36.00		2.18	78.48	1.35	0.857	3.33	D	EL	108	0.985	2.18	A	2	133	1.00	0.857	2.48	D	EL	108		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		5.40	72.90	1.40	0.857	7.94	D	EL	108	0.985	5.40	A	2	133	1.30	0.857	6.13	D	EL	108	
		SNGARBS2	20.000		3.71	74.20	1.40	0.857	5.60	D	EL	108	0.985	3.71	A	2	133	1.30	0.857	4.32	D	EL	108	
		SNAGRIS2	22.000		3.40	74.80	1.40	0.857	5.17	D	EL	108	0.985	3.40	A	2	133	1.30	0.857	3.99	D	EL	108	
		SNCOTTS3	27.250		2.68	73.03	1.40	0.857	3.95	D	EL	108	0.985	2.68	A	2	133	1.30	0.857	3.05	D	EL	108	
		SNAGGRS4	34.925		2.14	74.74	1.40	0.857	3.18	D	EL	108	0.985	2.14	A	2	133	1.30	0.857	2.45	D	EL	108	
		SNS5A	35.550		2.12	75.37	1.40	0.857	3.12	D	EL	108	0.985	2.12	A	2	133	1.30	0.857	2.41	D	EL	108	
		SNS6A	39.950		1.90	75.91	1.40	0.857	2.81	D	EL	108	0.985	1.90	A	2	133	1.30	0.857	2.17	D	EL	108	
		SNS7B	42.000		1.83	76.86	1.40	0.857	2.68	D	EL	108	0.985	1.83	A	2	133	1.30	0.857	2.07	D	EL	108	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.29	75.57	1.40	0.857	3.43	D	EL	108	0.985	2.29	A	2	133	1.30	0.857	2.65	D	EL	108	
		TNT4A	33.075		2.27	75.08	1.40	0.857	3.41	D	EL	108	0.985	2.27	A	2	133	1.30	0.857	2.64	D	EL	108	
		TNT6A	41.600		1.88	78.21	1.40	0.857	2.75	D	EL	108	0.985	1.88	A	2	133	1.30	0.857	2.13	D	EL	108	
		TNT7A	42.000		1.85	77.70	1.40	0.857	2.74	D	EL	108	0.985	1.85	A	2	133	1.30	0.857	2.12	D	EL	108	
		TNT7B	42.000		1.82	76.44	1.40	0.857	2.77	D	EL	108	0.985	1.82	A	2	133	1.30	0.857	2.14	D	EL	108	
		TNAGRIT4	43.000		1.77	76.11	1.40	0.857	2.69	D	EL	108	0.985	1.77	A	2	133	1.30	0.857	2.07	D	EL	108	
FATIGUE	TNACT5A	45.000		1.71	76.95	1.40	0.857	2.56	D	EL	108	0.985	1.71	A	2	133	1.30	0.857	1.98	D	EL	108		
	TNACT5B	45.000	③	1.69	76.05	1.40	0.857	2.54	D	EL	108	0.985	1.69	A	2	133	1.30	0.857	1.96	D	EL	108		
FATIGUE	HL-93 (INVENTORY)	$\gamma_{LL}=0.75$		1.04																				

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:

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③ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93) **

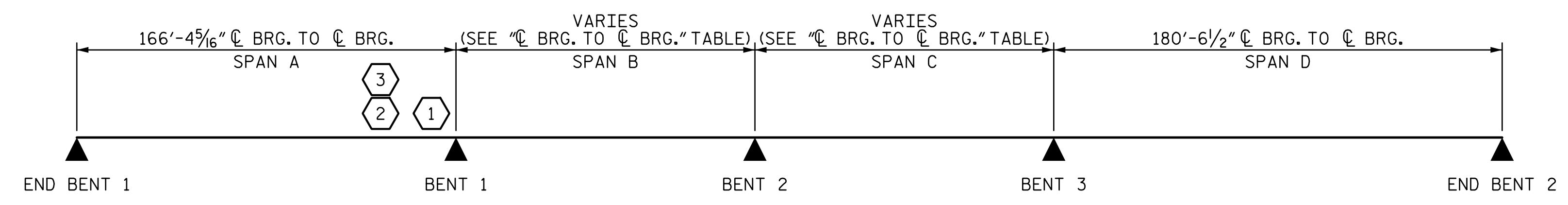
② DESIGN LOAD RATING (HS-20) **

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

GDR.	SPAN B	SPAN C
1	157'-7 ¹¹ / ₁₆ "	129'-7"
2	143'-0 ⁷ / ₁₆ "	122'-0"
3	128'-5 ¹ / ₈ "	114'-4 ⁹ / ₁₆ "
4	113'-9 ⁷ / ₈ "	106'-9 ¹ / ₁₆ "
5	99'-2 ⁹ / ₁₆ "	99'-1 ³ / ₄ "

PROJECT NO. R-2707C
CLEVELAND COUNTY
STATION: 596+50.98 -L-

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DRAWN BY: ACA DATE: 10-16 DESIGN ENGINEER OF RECORD: T. LAWS DATE: 10-16
CHECKED BY: TJT DATE: 10-16

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
STEEL GIRDERS
(NON-INTERSTATE TRAFFIC)
(SITE 6L)

SEAL 40317
ENGINEER
TONY R. LAWS, JR.
DocuSigned by:
Tony R. Laws, Jr.
12/13/2016

STV 100 years
STV ENGINEERS, INC.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-5991

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	S7-4
1			3	TOTAL SHEETS
2			4	56