

LOAD FACTORS:

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

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																							
LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III 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	1.21	--	1.75	0.722	1.43	A	I	44.50	0.717	1.23	B	I	98.00	0.80	0.722	1.21	A	I	44.50	
	HL-93 (OPERATING)	N/A		1.65	--	1.35	0.722	1.85	A	I	44.50	0.717	1.65	B	I	98.00	N/A	--	--	-	--	--	
	HS-20 (INVENTORY)	36.000	②	1.65	59.4	1.75	0.722	1.95	A	I	44.50	0.717	1.75	B	I	98.00	0.80	0.722	1.65	A	I	44.50	
	HS-20 (OPERATING)	36.000		2.32	83.5	1.35	0.722	2.53	A	I	44.50	0.717	2.32	B	I	98.00	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH		3.88	52.4	1.40	0.722	5.74	A	I	44.50	0.717	5.86	B	I	98.00	0.80	0.722	3.88	A	I	44.50	
		SNGARBS2	20.000		1.58	31.6	1.40	0.722	2.34	A	I	44.50	0.717	2.24	B	I	98.00	0.80	0.722	1.58	A	I	44.50
		SNAGRIS2	22.000		1.41	31.0	1.40	0.722	2.09	A	I	44.50	0.717	2.01	B	I	98.00	0.80	0.722	1.41	A	I	44.50
		SNCOTTS3	27.250		1.55	42.2	1.40	0.722	2.29	A	I	44.50	0.717	2.24	B	I	98.00	0.80	0.722	1.55	A	I	44.50
		SNAGGRS4	34.925		1.34	46.8	1.40	0.722	1.99	A	I	44.50	0.717	1.94	B	I	98.00	0.80	0.722	1.34	A	I	44.50
		SNS5A	35.550		1.92	68.3	1.40	0.722	2.85	A	I	44.50	0.717	2.81	B	I	98.00	0.80	0.722	1.92	A	I	44.50
		SNS6A	39.950		2.64	105.5	1.40	0.722	3.91	A	I	44.50	0.717	3.69	B	I	98.00	0.80	0.722	2.64	A	I	44.50
		SNS7B	42.000		2.82	118.4	1.40	0.722	4.18	A	I	44.50	0.717	4.02	B	I	98.00	0.80	0.722	2.82	A	I	44.50
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.72	56.8	1.40	0.722	2.55	A	I	44.50	0.717	2.45	B	I	98.00	0.80	0.722	1.72	A	I	44.50
		TNT4A	33.075		1.44	47.6	1.40	0.722	2.13	A	I	44.50	0.717	1.91	B	I	98.00	0.80	0.722	1.44	A	I	44.50
		TNT6A	41.600		1.38	57.4	1.40	0.722	2.04	A	I	44.50	0.717	1.85	B	I	98.00	0.80	0.722	1.38	A	I	44.50
		TNT7A	42.000		1.30	54.6	1.40	0.722	1.93	A	I	44.50	0.717	1.81	B	I	98.00	0.80	0.722	1.30	A	I	44.50
		TNT7B	42.000	③	1.29	54.2	1.40	0.722	1.91	A	I	44.50	0.717	1.75	B	I	98.00	0.80	0.722	1.29	A	I	44.50
		TNAGRIT4	43.000		1.72	74.0	1.40	0.722	2.55	A	I	44.50	0.717	2.40	B	I	98.00	0.80	0.722	1.72	A	I	44.50
TNAGT5A	45.000		1.40	63.0	1.40	0.722	2.07	A	I	44.50	0.717	2.03	B	I	98.00	0.80	0.722	1.40	A	I	44.50		
TNAGT5B	45.000		1.40	63.0	1.40	0.722	2.08	A	I	44.50	0.717	2.00	B	I	98.00	0.80	0.722	1.40	A	I	44.50		

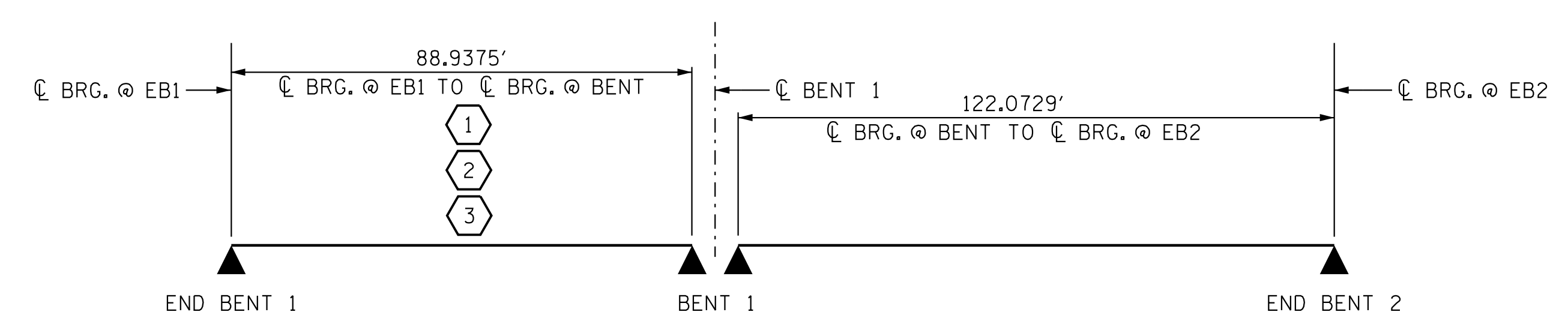
NOTES:
 MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.
 ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.
 SPAN LENGTHS IN LRFR SUMMARY SKETCH BELOW ARE THOSE USED IN ANALYSIS MODEL AND REPRESENT PLAN VIEW SPAN LENGTHS FROM C BEARING TO C BEARING.
 LOAD RATING BASED ON SIMPLY SUPPORTED SPAN ANALYSIS.

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

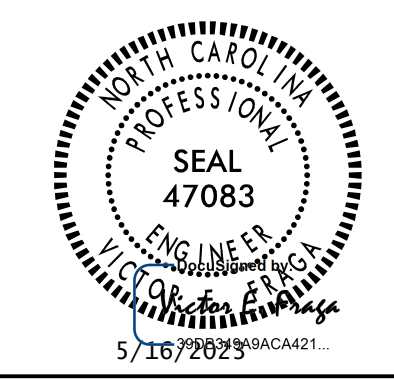


GIRDER	
54" PRESTRESSED CONCRETE FLORIDA I-BEAM GIRDER	
AREA = 933 SQ. IN.	WEIGHT = 972 LB/FT.
$Y_{neutral} = 24.04$ IN.	$Y_{top} = 29.96$ IN.
$I_{xx} = 359,929$ IN. ⁴	$I_{yy} = 81,584$ IN. ⁴
V/S = 3.84 IN.	

PROJECT NO. R-2707D
CLEVELAND COUNTY
 STATION: 23+21.80 -Y3-
 SHEET 6 OF 6

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ASSEMBLED BY: J.E. HAGENBUSH	DATE: 5/4/23
CHECKED BY: V. E. FRAGA	DATE: 5/5/23
DRAWN BY: MAA	1/08
CHECKED BY: GM/DI	2/08
REV. 11/2/08RR	MAA/GM
REV. 10/1/11	MAA/GM
REV. 12/17	MAA/THC
DESIGN ENGINEER OF RECORD: V. E. FRAGA	DATE: 05/16/23



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

REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					TOTAL SHEETS: 36