

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
						MOMENT					SHEAR					MOMENT										
						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)				
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.08	--	1.75	0.698	1.08	H	EL	81.23	0.810	2.02	H	I	64.98	0.80	0.698	1.08	H	EL	81.23				
	HL-93 (OPERATING)	N/A		1.40	--	1.35	0.698	1.40	H	EL	81.23	0.810	2.62	H	I	64.98	N/A	--	--	--	--	--				
	HS-20 (INVENTORY)	36.000	②	1.73	62.25	1.75	0.698	1.73	H	EL	81.23	0.815	2.75	H	I	64.98	0.80	0.698	1.73	H	EL	81.23				
	HS-20 (OPERATING)	36.000		2.24	80.69	1.35	0.698	2.24	H	EL	81.23	0.810	3.57	H	I	64.98	N/A	--	--	--	--	--				
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.31	58.20	1.40	0.698	5.38	H	EL	81.23	0.810	8.40	H	I	64.98	0.80	0.698	4.31	H	EL	81.23			
		SNGARBS2	20.000		3.03	60.59	1.40	0.698	3.78	H	EL	81.23	0.810	5.84	H	I	64.98	0.80	0.698	3.03	H	EL	81.23			
		SNAGRIS2	22.000		2.80	61.55	1.40	0.698	3.49	H	EL	81.23	0.810	5.37	H	I	64.98	0.80	0.698	2.80	H	EL	81.23			
		SNCOTTS3	27.250		2.14	58.33	1.40	0.698	2.67	H	EL	81.23	0.810	4.33	H	I	64.98	0.80	0.698	2.14	H	EL	81.23			
		SNAGGRS4	34.925		1.72	60.02	1.40	0.698	2.14	H	EL	81.23	0.810	3.54	H	I	64.98	0.80	0.698	1.72	H	EL	81.23			
		SNS5A	35.550		1.69	59.92	1.40	0.698	2.10	H	EL	81.23	0.810	3.63	H	I	64.98	0.80	0.698	1.69	H	EL	81.23			
		SNS6A	39.950		1.52	60.67	1.40	0.698	1.90	H	EL	81.23	0.810	3.28	H	I	64.98	0.80	0.698	1.52	H	EL	81.23			
		SNS7B	42.000		1.45	60.70	1.40	0.698	1.80	H	EL	81.23	0.810	3.12	H	I	64.98	0.80	0.698	1.45	H	EL	81.23			
	TRUCK TRACTOR SEMI-TRAILER (TTS1)	TNAGRIT3	33.000		1.84	60.85	1.40	0.698	2.30	H	EL	81.23	0.810	3.73	H	I	64.98	0.80	0.698	1.84	H	EL	81.23			
		TNT4A	33.075		1.84	60.98	1.40	0.698	2.30	H	EL	81.23	0.810	3.73	H	I	64.98	0.80	0.698	1.84	H	EL	81.23			
		TNT6A	41.600		1.48	61.70	1.40	0.698	1.85	H	EL	81.23	0.810	3.20	H	I	64.98	0.80	0.698	1.48	H	EL	81.23			
		TNT7A	42.000		1.48	62.03	1.40	0.698	1.84	H	EL	81.23	0.810	3.20	H	I	64.98	0.80	0.698	1.48	H	EL	81.23			
		TNT7B	42.000		1.49	62.77	1.40	0.698	1.87	H	EL	81.23	0.810	3.12	H	I	64.98	0.80	0.698	1.49	H	EL	81.23			
		TNAGRIT4	43.000		1.45	62.21	1.40	0.698	1.81	H	EL	81.23	0.810	2.99	H	I	64.98	0.80	0.698	1.45	H	EL	81.23			
TNACT5A	45.000		1.38	61.91	1.40	0.698	1.72	H	EL	81.23	0.810	2.86	H	I	64.98	0.80	0.698	1.38	H	EL	81.23					
TNACT5B	45.000		③	1.37	61.91	1.40	0.698	1.71	H	EL	81.23	0.810	2.86	H	I	64.98	0.80	0.698	1.37	H	EL	81.23				

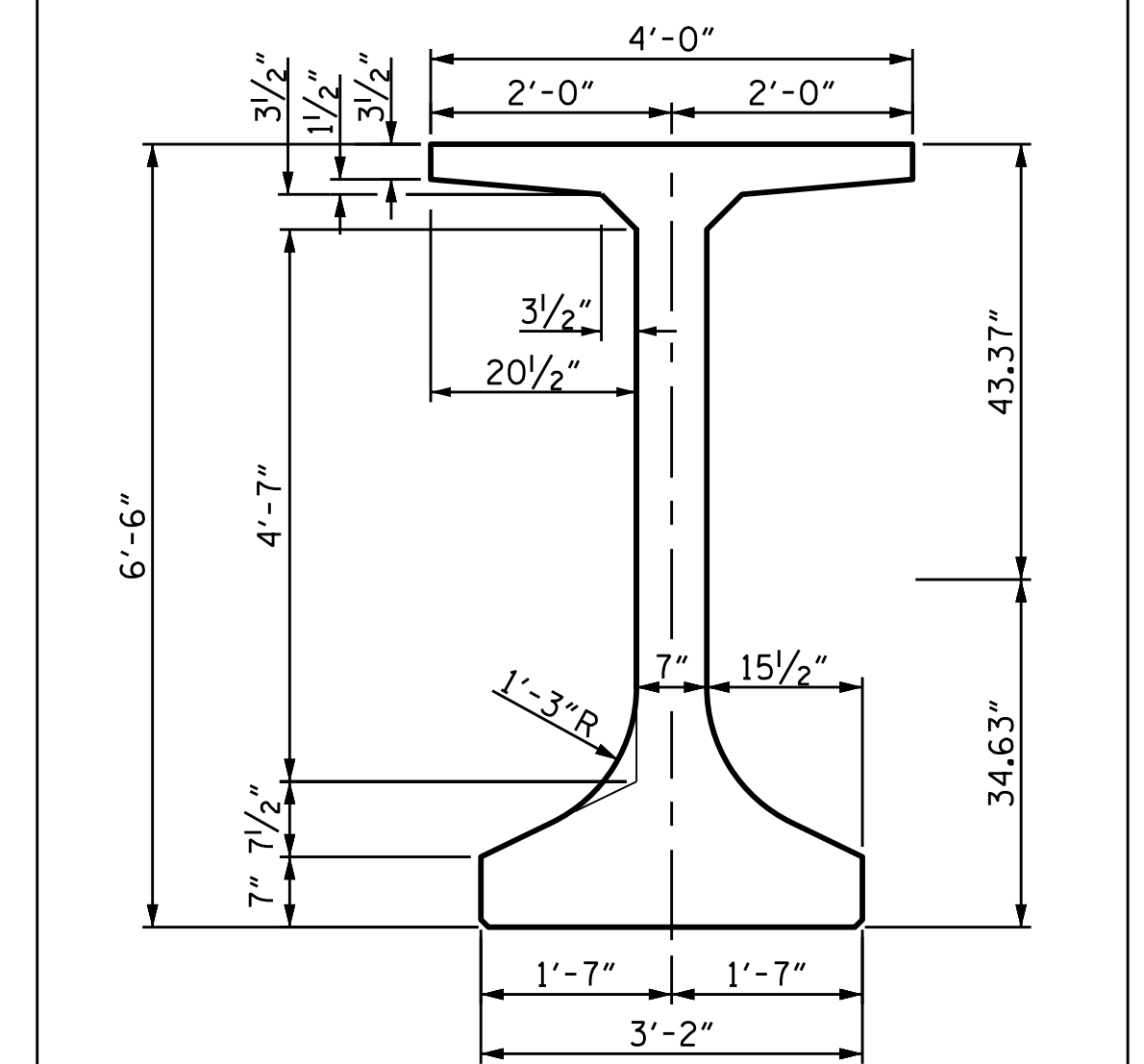
LOAD FACTORS:

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

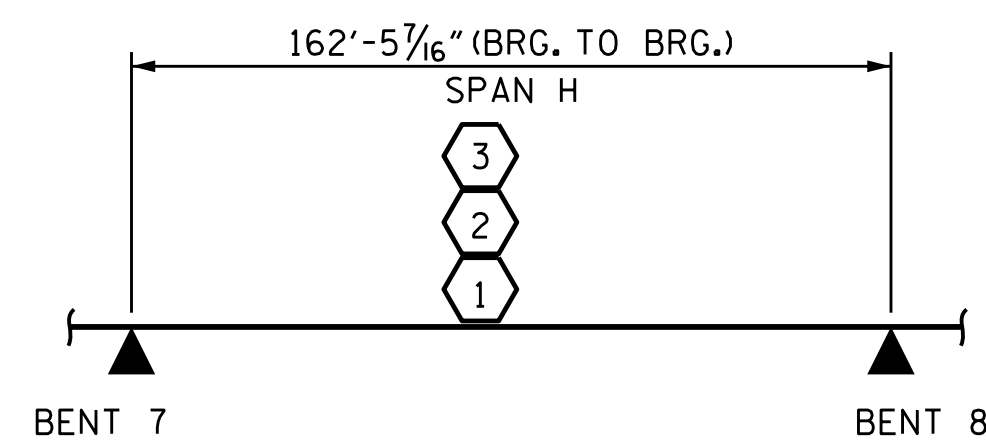
NOTES:

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.

SECTION PROPERTIES 78" CFRP F.I.B.

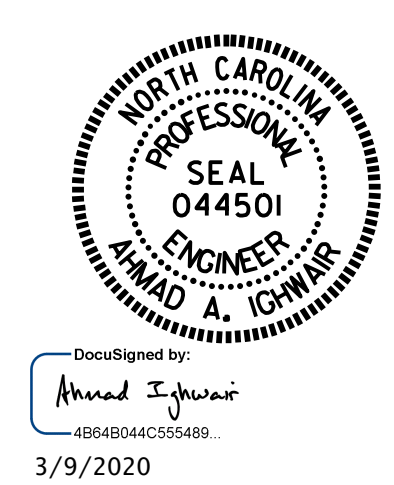


AREA = 1100.58 SQ. IN. = 7.6429 SQ. FT.
WEIGHT = 7.6429 x 150 = 1146.43 LBS./FT.
I_{XX} = 903,861 IN.⁴ I_{YY} = 82,270 IN.⁴
C_T = 43.37 IN. C_B = 34.63 IN.
S_T = 20,841 IN.³ S_B = 26,101 IN.³



LRFR SUMMARY

#	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	



PROJECT NO. B-4863
CARTERET COUNTY
STATION: 34+75.00 -L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
LRFR SUMMARY
78" CFRP F.I.B.
PRESTRESSED CONCRETE GIRDERS
(GFRP STIRRUP OPTION)
SPAN H

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S1-028
1			3			TOTAL SHEETS 194
2			4			

ASSEMBLED BY : S. M. MATTA	DATE : 12/19
CHECKED BY : A. A. ICHWAIR	DATE : 12/19
DRAWN BY : MAA	1/08
CHECKED BY : GM/DI	2/08
REV. 11/12/OBRR	MAA/GM
REV. 10/1/11	MAA/GM
REV. 12/17	MAA/THC

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED