

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			
						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	1.07	--	1.75	0.95	1.27	A	EL	63.4	1.14	1.16	B	I	13.21	0.80	0.87	1.07	A	I	63.4		
	HL-93 (OPERATING)	N/A		1.54	--	1.35	0.95	1.64	A	EL	63.4	1.14	1.54	B	I	13.21	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.59	57,240	1.75	0.95	1.88	A	EL	63.4	1.14	1.73	B	I	13.21	0.80	0.87	1.59	A	I	63.4		
	HS-20 (OPERATING)	36.000		2.27	81,720	1.35	0.95	2.44	A	EL	63.4	1.14	2.27	B	I	124.53	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13,500		3.89	52,515	1.40	0.95	5.73	A	EL	63.4	1.14	5.70	B	I	13.21	0.80	0.87	3.89	A	I	63.4	
		SNGARBS2	20,000		2.77	55,400	1.40	0.95	4.08	A	EL	63.4	1.14	3.91	B	I	124.53	0.80	0.87	2.77	A	I	63.4	
		SNAGRIS2	22,000		2.57	56,540	1.40	0.95	3.79	A	EL	63.4	1.14	3.58	B	I	13.21	0.80	0.87	2.57	A	I	63.4	
		SNCOTTS3	27,250		1.93	52,593	1.40	0.95	2.85	A	EL	63.4	1.14	2.78	B	I	124.53	0.80	0.87	1.93	A	I	63.4	
		SNAGGRS4	34,925		1.56	54,483	1.40	0.95	2.31	A	EL	63.4	1.14	2.22	B	I	13.21	0.80	0.87	1.56	A	I	63.4	
		SNS5A	35,550		1.53	54,392	1.40	0.95	2.26	A	EL	63.4	1.14	2.21	B	I	124.53	0.80	0.87	1.53	A	I	63.4	
		SNS6A	39,950		1.39	55,531	1.40	0.95	2.04	A	EL	63.4	1.14	1.98	B	I	124.53	0.80	0.87	1.39	A	I	63.4	
	SNS7B	42,000		1.32	55,440	1.40	0.95	1.95	A	EL	63.4	1.14	1.91	B	I	124.53	0.80	0.87	1.32	A	I	63.4		
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33,000		1.68	55,440	1.40	0.95	2.48	A	EL	63.4	1.14	2.40	B	I	13.21	0.80	0.87	1.68	A	I	63.4	
		TNT4A	33,075		1.69	55,897	1.40	0.95	2.49	A	EL	63.4	1.14	2.36	B	I	13.21	0.80	0.87	1.69	A	I	63.4	
		TNT6A	41,600		1.36	56,576	1.40	0.95	2.01	A	EL	63.4	1.14	1.98	B	I	13.21	0.80	0.87	1.36	A	I	63.4	
		TNT7A	42,000		1.36	57,120	1.40	0.95	2.00	A	EL	63.4	1.14	1.95	B	I	124.53	0.80	0.87	1.36	A	I	63.4	
		TNT7B	42,000		1.39	58,380	1.40	0.95	2.06	A	EL	63.4	1.14	1.89	B	I	13.21	0.80	0.87	1.39	A	I	63.4	
		TNAGRIT4	43,000		1.33	57,190	1.40	0.95	1.96	A	EL	63.4	1.14	1.83	B	I	124.53	0.80	0.87	1.33	A	I	63.4	
TNAGT5A		45,000		1.26	56,700	1.40	0.95	1.86	A	EL	63.4	1.14	1.78	B	I	13.21	0.80	0.87	1.26	A	I	63.4		
TNAGT5B	45,000	③	1.26	56,700	1.40	0.95	1.85	A	EL	63.4	1.14	1.74	B	I	124.53	0.80	0.87	1.26	A	I	63.4			

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.

COMMENTS:

1. TRANSFORMING ALL PRESTRESSING TENDONS.
- 2.
- 3.
- 4.

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

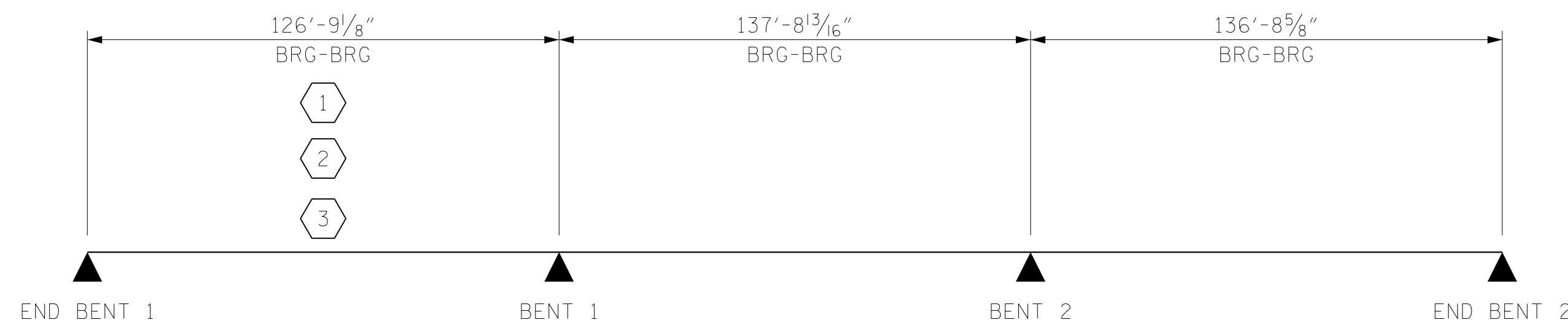
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

SECTION PROPERTIES			
SPAN A & B - INTERIOR			
	UNITS	NON-COMPOSITE	COMPOSITE
HEIGHT	IN	74	82.75
AREA	IN ²	885.1	1707.6
Ixx	IN ⁴	640172	1390848
Ycg	IN	36.56	56.70
SELF WT.	PLF	922.0	2207.1
EFF. WIDTH	IN	-	141.0

SECTION PROPERTIES PROVIDED AT MIDSPAN

SECTION PROPERTIES			
SPAN A - EXTERIOR			
	UNITS	NON-COMPOSITE	COMPOSITE
HEIGHT	IN	74	82.75
AREA	IN ²	885.1	1586.8
Ixx	IN ⁴	640172	1329038
Ycg	IN	36.56	55.05
SELF WT.	PLF	922.0	2018.5
EFF. WIDTH	IN	-	120.3

SECTION PROPERTIES PROVIDED AT MIDSPAN



LRFR SUMMARY

PROJECT NO. R-2707C
CLEVELAND COUNTY
 STATION: 384+50.00 -L-

DRAWN BY : PDS DATE : 03/2017
 CHECKED BY : TLC DATE : 03/2017
 DESIGN ENGINEER OF RECORD: MAL DATE : 03/2017

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-5
2			4			TOTAL SHEETS 36