

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE BOX BEAMS

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			
						LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT						
							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)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.05	--	1.75	0.268	1.10	A	EL	51.75	0.485	1.40	A	EL	5.175	0.80	0.268	1.05	A	EL	51.750		
	HL-93(0pr)	N/A	--	1.42	--	1.35	0.268	1.42	A	EL	51.75	0.485	1.82	A	EL	5.175	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.47	53.043	1.75	0.268	1.54	A	EL	51.75	0.485	1.92	A	EL	5.175	0.80	0.268	1.47	A	EL	51.750		
	HS-20(0pr)	36.000	--	2.00	71.975	1.35	0.268	2.00	A	EL	51.75	0.485	2.48	A	EL	5.175	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.52	47.448	1.40	0.268	4.60	A	EL	51.75	0.485	5.94	A	EL	5.175	0.80	0.268	3.51	A	EL	51.750	
		SNGARBS2	20.000	--	2.54	50.732	1.40	0.268	3.32	A	EL	51.75	0.485	4.15	A	EL	5.175	0.80	0.268	2.54	A	EL	51.750	
		SNAGRIS2	22.000	--	2.37	52.121	1.40	0.268	3.10	A	EL	51.75	0.485	3.82	A	EL	5.175	0.80	0.268	2.37	A	EL	51.750	
		SNCOTTS3	27.250	--	1.75	47.594	1.40	0.268	2.29	A	EL	51.75	0.485	2.96	A	EL	5.175	0.80	0.268	1.75	A	EL	51.750	
		SNAGGRS4	34.925	--	1.43	49.863	1.40	0.268	1.87	A	EL	51.75	0.485	2.40	A	EL	5.175	0.80	0.268	1.43	A	EL	51.750	
		SNS5A	35.550	--	1.40	49.709	1.40	0.268	1.83	A	EL	51.75	0.485	2.40	A	EL	5.175	0.80	0.268	1.40	A	EL	51.750	
		SNS6A	39.950	--	1.27	50.736	1.40	0.268	1.66	A	EL	51.75	0.485	2.17	A	EL	5.175	0.80	0.268	1.27	A	EL	51.750	
	SNS7B	42.000	--	1.21	50.776	1.40	0.268	1.58	A	EL	51.75	0.485	2.11	A	EL	5.175	0.80	0.268	1.21	A	EL	51.750		
	TTST	TNAGRIT3	33.000	--	1.55	50.982	1.40	0.268	2.02	A	EL	51.75	0.485	2.60	A	EL	5.175	0.80	0.268	1.54	A	EL	51.750	
		TNT4A	33.075	--	1.55	51.208	1.40	0.268	2.03	A	EL	51.75	0.485	2.56	A	EL	5.175	0.80	0.268	1.55	A	EL	51.750	
		TNT6A	41.600	--	1.25	52.160	1.40	0.268	1.64	A	EL	51.75	0.485	2.20	A	EL	5.175	0.80	0.268	1.25	A	EL	51.750	
		TNT7A	42.000	--	1.25	52.659	1.40	0.268	1.64	A	EL	51.75	0.485	2.17	A	EL	5.175	0.80	0.268	1.25	A	EL	51.750	
		TNT7B	42.000	--	1.28	53.831	1.40	0.268	1.68	A	EL	51.75	0.485	2.08	A	EL	5.175	0.80	0.268	1.28	A	EL	51.750	
		TNAGRIT4	43.000	--	1.23	52.919	1.40	0.268	1.61	A	EL	51.75	0.485	2.02	A	EL	5.175	0.80	0.268	1.23	A	EL	51.750	
TNAGT5A		45.000	--	1.17	52.460	1.40	0.268	1.53	A	EL	51.75	0.485	1.98	A	EL	5.175	0.80	0.268	1.17	A	EL	51.750		
TNAGT5B	45.000	3	1.16	52.044	1.40	0.268	1.51	A	EL	51.75	0.485	1.92	A	EL	5.175	0.80	0.268	1.16	A	EL	51.750			

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.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

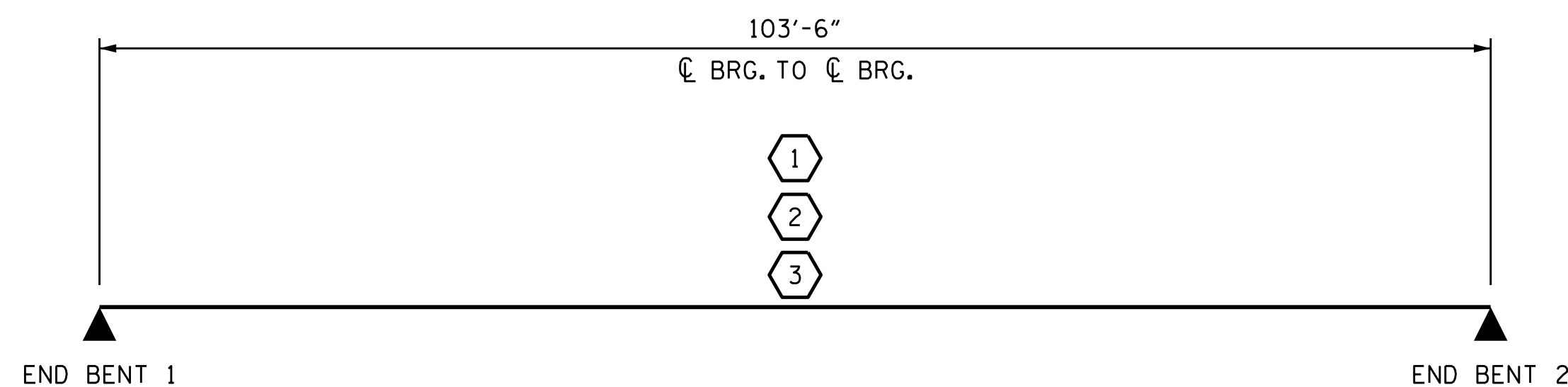
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

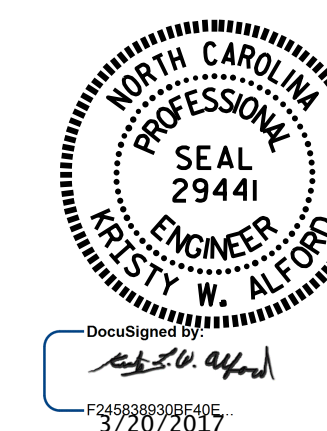
GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. B-4830
WAKE COUNTY
 STATION: 15+32.50 -L-



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

ASSEMBLED BY : R. P. PATEL	DATE : 2-27-15
CHECKED BY : J.K. BOWLES	DATE : 3-25-15
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/11/11 MAA/GM
DESIGN ENGINEER OF RECORD: R. P. PATEL DATE : 5/2/16	

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO.	S-4
TOTAL SHEETS	16