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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 × 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 (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 (INVENTORY)	N/A	1	1.49	--	1.75	0.220	1.820	A	EL	29.290	0.690	1.490	A	EL	47.290	0.80	0.220	2.140	A	EL	29.290	
		HL-93 (OPERATING)	N/A		1.98	--	1.35	0.220	2.370	A	EL	29.290	0.690	1.980	A	EL	47.290	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	2	1.81	65.160	1.75	0.220	2.300	A	EL	29.290	0.690	1.810	A	EL	47.290	0.80	0.220	2.710	A	EL	29.290	
		HS-20 (OPERATING)	36.000		2.40	86.400	1.35	0.220	2.980	A	EL	29.290	0.690	2.400	A	EL	47.290	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		5.44	73.440	1.40	0.220	6.240	A	EL	29.290	0.690	5.440	A	EL	47.290	0.80	0.220	5.830	A	EL	29.290	
		SNGARBS2	20.000		3.91	78.200	1.40	0.220	4.680	A	EL	29.290	0.690	3.910	A	EL	47.290	0.80	0.220	4.460	A	EL	29.290	
		SNAGRIS2	22.000		3.65	80.300	1.40	0.220	4.440	A	EL	29.290	0.690	3.650	A	EL	47.290	0.80	0.220	4.280	A	EL	29.290	
		SNCOTTS3	27.250		2.64	71.940	1.40	0.220	3.110	A	EL	29.290	0.690	2.640	A	EL	47.290	0.80	0.220	2.900	A	EL	29.290	
		SNAGGRS4	34.925		2.22	77.534	1.40	0.220	2.650	A	EL	29.290	0.690	2.220	A	EL	47.290	0.80	0.220	2.470	A	EL	29.290	
		SNS5A	35.550		2.27	80.699	1.40	0.220	2.590	A	EL	29.290	0.690	2.270	A	EL	47.290	0.80	0.220	2.410	A	EL	29.290	
		SNS6A	39.950		2.08	83.096	1.40	0.220	2.400	A	EL	29.290	0.690	2.080	A	EL	47.290	0.80	0.220	2.240	A	EL	29.290	
		SNS7B	42.000		2.08	87.360	1.40	0.220	2.280	A	EL	29.290	0.690	2.080	A	EL	47.290	0.80	0.220	2.130	A	EL	29.290	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.48	81.840	1.40	0.220	2.930	A	EL	29.290	0.690	2.480	A	EL	47.290	0.80	0.220	2.730	A	EL	29.290	
		TNT4A	33.075		2.41	79.711	1.40	0.220	2.930	A	EL	23.290	0.690	2.410	A	EL	47.290	0.80	0.220	2.750	A	EL	29.290	
		TNT6A	41.600		2.27	94.432	1.40	0.220	2.430	A	EL	29.290	0.690	2.320	A	EL	47.290	0.80	0.220	2.270	A	EL	29.290	
		TNT7A	42.000		2.14	89.880	1.40	0.220	2.450	A	EL	29.290	0.690	2.140	A	EL	47.290	0.80	0.220	2.290	A	EL	29.290	
		TNT7B	42.000		2.00	84.000	1.40	0.220	2.490	A	EL	29.290	0.690	2.000	A	EL	47.290	0.80	0.220	2.390	A	EL	29.290	
		TNAGRIT4	43.000		1.94	83.420	1.40	0.220	2.380	A	EL	29.290	0.690	1.940	A	EL	47.290	0.80	0.220	2.260	A	EL	29.290	
		TNAGT5A	45.000		1.97	88.650	1.40	0.220	2.270	A	EL	29.290	0.690	1.970	A	EL	47.290	0.80	0.220	2.120	A	EL	29.290	
		TNAGT5B	45.000	3	1.83	82.350	1.40	0.220	2.230	A	EL	29.290	0.690	1.830	A	EL	47.290	0.80	0.220	2.090	A	EL	29.290	

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.

COMMENTS:

1.
2.
3.
4.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

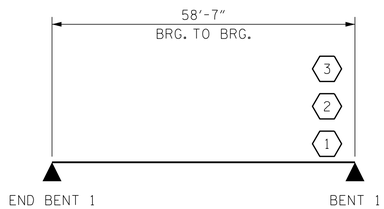
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



SPAN A

LRFR SUMMARY

PROJECT NO. 17BP.1.R.79
NORTHAMPTON COUNTY
STATION: 15+83.50 -L-

ENGINEER OF RECORD
4/10/2018

NORTH CAROLINA PROFESSIONAL SEAL 14091 ENGINEER BUCK CHARLES HUNT

DocuSigned by: Buck Charles Hunt
2F15C8287BA4EC...

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR 60' CORED SLAB UNIT 45° SKEW

(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			19

DRAWN BY : B.C. HUNT DATE : 3-28-17
CHECKED BY : G.M. GILLAND DATE : 3-29-17

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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