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LOAD AND RESISTANCE FACTOR RATING (LRFD) 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
								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	1.20	--	1.75	0.28	1.82	25.65′	EL	12.32	0.58	1.20	25.65′	EL	22.58	0.80	0.28	1.46	25.65′	EL	12.32	
		HL-93 (OPERATING)	N/A		2.36	--	1.35	0.28	2.36	25.65′	EL	12.32	0.58	2.41	25.65′	EL	22.58	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	2	1.78	64.08	1.75	0.28	2.72	25.65′	EL	12.32	0.58	1.78	25.65′	EL	22.58	0.80	0.28	2.19	25.65′	EL	12.32	
		HS-20 (OPERATING)	36.000		3.14	113.04	1.35	0.28	3.53	25.65′	EL	12.32	0.58	3.14	25.65′	EL	22.58	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.18	42.93	1.40	0.28	4.95	25.65′	EL	12.32	0.58	5.66	25.65′	EL	22.58	0.80	0.28	3.18	25.65′	EL	12.32	
		SNGARBS2	20.000		2.98	59.60	1.40	0.28	4.64	25.65′	EL	12.32	0.58	4.54	25.65′	EL	22.58	0.80	0.28	2.98	25.65′	EL	12.32	
		SNAGRIS2	22.000		3.18	69.96	1.40	0.28	4.95	25.65′	EL	12.32	0.58	4.45	25.65′	EL	22.58	0.80	0.28	3.18	25.65′	EL	12.32	
		SNCOTTS3	27.250		1.65	44.96	1.40	0.28	2.57	25.65′	EL	12.32	0.58	2.70	25.65′	EL	22.58	0.80	0.28	1.65	25.65′	EL	12.32	
		SNAGGRS4	34.925		1.65	57.63	1.40	0.28	2.56	25.65′	EL	12.32	0.58	2.53	25.65′	EL	22.58	0.80	0.28	1.65	25.65′	EL	12.32	
		SNS5A	35.550		1.59	56.52	1.40	0.28	2.48	25.65′	EL	12.32	0.58	2.84	25.65′	EL	22.58	0.80	0.28	1.59	25.65′	EL	12.32	
		SNS6A	39.950		1.49	59.53	1.40	0.28	2.32	25.65′	EL	12.32	0.58	2.55	25.65′	EL	22.58	0.80	0.28	1.49	25.65′	EL	12.32	
		SNS7B	42.000	3	1.48	62.16	1.40	0.28	2.31	25.65′	EL	12.32	0.58	2.59	25.65′	EL	22.58	0.80	0.28	1.48	25.65′	EL	12.32	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.07	68.31	1.40	0.28	3.22	25.65′	EL	12.32	0.58	3.39	25.65′	EL	22.58	0.80	0.28	2.07	25.65′	EL	12.32	
		TNT4A	33.075		1.82	60.20	1.40	0.28	2.84	25.65′	EL	12.32	0.58	3.06	25.65′	EL	22.58	0.80	0.28	1.82	25.65′	EL	12.32	
		TNT6A	41.600		1.71	71.14	1.40	0.28	2.67	25.65′	EL	12.32	0.58	2.86	25.65′	EL	22.58	0.80	0.28	1.71	25.65′	EL	12.32	
		TNT7A	42.000		1.77	74.34	1.40	0.28	2.75	25.65′	EL	12.32	0.58	2.87	25.65′	EL	22.58	0.80	0.28	1.77	25.65′	EL	12.32	
		TNT7B	42.000		1.71	71.82	1.40	0.28	2.67	25.65′	EL	12.32	0.58	2.86	25.65′	EL	22.58	0.80	0.28	1.71	25.65′	EL	12.32	
		TNAGRIT4	43.000		1.70	73.10	1.40	0.28	2.65	25.65′	EL	12.32	0.58	2.70	25.65′	EL	22.58	0.80	0.28	1.70	25.65′	EL	12.32	
		TNAGT5A	45.000		1.70	76.50	1.40	0.28	2.65	25.65′	EL	12.32	0.58	2.73	25.65′	EL	22.58	0.80	0.28	1.70	25.65′	EL	12.32	
		TNAGT5B	45.000		1.69	76.05	1.40	0.28	2.60	25.65′	EL	14.89	0.58	2.07	25.65′	EL	22.58	0.80	0.28	1.69	25.65′	EL	14.89	

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)

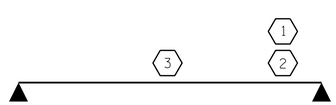
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

FOR SPAN "A"

PROJECT NO. B-5139
PASQUOTANK COUNTY
STATION: 19+44.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR 25′-7¾″ CORED SLAB UNIT 90° SKEW (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			22

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
License: F-0377

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH
3/4/2015

ASSEMBLED BY : G. WILSON		DATE : 11/2014	
CHECKED BY : J. DILWORTH		DATE : 11/2014	
DRAWN BY : MAA 1/08	REV. 11/12/08RR	MAA/GM	
CHECKED BY : GM/DI 2/08	REV. 10/1/11	MAA/GM	

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