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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 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)	1.47	--	1.75	0.204	1.60	60'	EL	29.5	0.651	**1.47**	60'	EL	**1.77**	0.80	0.204	2.52	60'	EL	29.5	
		HL-93(Opr)	N/A	--	1.91	--	1.35	0.204	2.08	60'	EL	29.5	0.651	1.91	60'	EL	1.77	0.80	0.204	--	60'	EL	29.5	
		HS-20(Inv)	36.00	(2)	1.81	65.048	1.75	0.204	2.03	60'	EL	29.5	0.651	**1.81**	60'	EL	**1.77**	0.80	0.204	3.19	60'	EL	29.5	
		HS-20(Opr)	36.00	--	2.34	84.321	1.35	0.204	2.63	60'	EL	29.5	0.651	2.34	60'	EL	1.77	0.80	0.204	--	60'	EL	29.5	
LEGAL LOAD RATING	SV	SNSH	13.50	--	5.27	71.099	1.40	0.204	5.44	60'	EL	29.5	0.651	5.27	60'	EL	1.77	0.80	0.204	6.86	60'	EL	29.5	
		SNGARBS2	20.00	--	3.78	75.688	1.40	0.204	4.17	60'	EL	29.5	0.651	3.78	60'	EL	1.77	0.80	0.204	5.25	60'	EL	29.5	
		SNAGRIS2	22.00	--	3.53	77.601	1.40	0.204	4.02	60'	EL	29.5	0.651	3.53	60'	EL	1.77	0.80	0.204	5.04	60'	EL	29.5	
		SNCOTTS3	27.25	--	2.64	71.923	1.40	0.204	2.72	60'	EL	29.5	0.651	2.64	60'	EL	1.77	0.80	0.204	3.42	60'	EL	29.5	
		SNAGGRS4	34.93	--	2.21	77.204	1.40	0.204	2.31	60'	EL	29.5	0.651	2.21	60'	EL	1.77	0.80	0.204	2.91	60'	EL	29.5	
		SNS5A	35.55	--	2.25	79.978	1.40	0.204	2.26	60'	EL	29.5	0.651	2.25	60'	EL	1.77	0.80	0.204	2.84	60'	EL	29.5	
		SNS6A	39.95	--	2.08	83.013	1.40	0.204	2.10	60'	EL	29.5	0.651	2.08	60'	EL	1.77	0.80	0.204	2.65	60'	EL	29.5	
		SNS7B	42.00	--	1.99	83.767	1.40	0.204	1.99	60'	EL	29.5	0.651	2.04	60'	EL	1.77	0.80	0.204	2.51	60'	EL	29.5	
	TTST	TNAGRIT3	33.00	--	2.45	80.759	1.40	0.204	2.55	60'	EL	29.5	0.651	2.45	60'	EL	1.77	0.80	0.204	3.21	60'	EL	29.5	
		TNT4A	33.08	--	2.38	78.586	1.40	0.204	2.58	60'	EL	29.5	0.651	2.38	60'	EL	1.77	0.80	0.204	3.24	60'	EL	29.5	
		TNT6A	41.60	--	2.12	88.195	1.40	0.204	2.12	60'	EL	29.5	0.651	2.19	60'	EL	1.77	0.80	0.204	2.67	60'	EL	29.5	
		TNT7A	42.00	--	2.11	88.725	1.40	0.204	2.15	60'	EL	29.5	0.651	2.11	60'	EL	1.77	0.80	0.204	2.70	60'	EL	29.5	
		TNT7B	42.00	--	1.98	83.189	1.40	0.204	2.23	60'	EL	29.5	0.651	1.98	60'	EL	1.77	0.80	0.204	2.81	60'	EL	29.5	
		TNAGRIT4	43.00	--	1.91	82.316	1.40	0.204	2.11	60'	EL	29.5	0.651	1.91	60'	EL	1.77	0.80	0.204	2.66	60'	EL	29.5	
		TNAGT5A	45.00	--	1.91	86.145	1.40	0.204	1.99	60'	EL	29.5	0.651	1.91	60'	EL	1.77	0.80	0.204	2.49	60'	EL	29.5	
		TNAGT5B	45.00	(3)	1.82	81.762	1.40	0.204	1.95	60'	EL	29.5	0.651	**1.82**	60'	EL	**1.77**	0.80	0.204	2.46	60'	EL	29.5	

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'

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488
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PROJECT NO. 14SP.20561.1

MACON COUNTY

STATION: 13+25.02 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR 60' CORED SLAB UNIT 120° SKEW

(NON-INTERSTATE TRAFFIC)

ENGINEER OF RECORD: JEB
ASSEMBLED BY : MAF DATE : 7/16
CHECKED BY : HLW DATE : 7/16

DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL SEAL 20779 ENGINEER HARRY L. WILLIS
12/9/2021

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			13