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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**	1.06	--	1.75	0.229	**1.06**	70'	ER	**34.346**	0.685	1.11	70'	ER	61.824	0.80	0.229	1.56	70'	ER	34.346	
		HL-93(Opr)	N/A	--	1.38	--	1.35	0.229	1.38	70'	ER	34.346	0.685	1.51	70'	ER	61.824	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	**2**	1.38	49.70	1.75	0.229	**1.38**	70'	ER	**34.346**	0.685	1.45	70'	ER	61.824	0.80	0.229	2.03	70'	ER	34.346	
		HS-20(Opr)	36.000	--	1.79	64.42	1.35	0.229	1.79	70'	ER	34.346	0.685	1.92	70'	ER	61.824	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.85	52.03	1.4	0.229	3.85	70'	ER	34.346	0.685	4.60	70'	ER	61.824	0.80	0.229	4.52	70'	ER	34.346	
		SNGARBS2	20.000	--	2.89	57.79	1.4	0.229	2.89	70'	ER	34.346	0.685	3.23	70'	ER	61.824	0.80	0.229	3.39	70'	ER	34.346	
		SNAGRIS2	22.000	--	2.74	60.37	1.4	0.229	2.74	70'	ER	34.346	0.685	2.99	70'	ER	61.824	0.80	0.229	3.22	70'	ER	34.346	
		SNCOTTS3	27.250	--	1.92	52.27	1.4	0.229	1.92	70'	ER	34.346	0.685	2.23	70'	ER	61.824	0.80	0.229	2.25	70'	ER	34.346	
		SNAGGRS4	34.925	--	1.61	56.22	1.4	0.229	1.61	70'	ER	34.346	0.685	1.83	70'	ER	61.824	0.80	0.229	1.89	70'	ER	34.346	
		SNS5A	35.550	--	1.57	55.95	1.4	0.229	1.57	70'	ER	34.346	0.685	1.85	70'	ER	61.824	0.80	0.229	1.85	70'	ER	34.346	
		SNS6A	39.950	--	1.45	57.80	1.4	0.229	1.45	70'	ER	34.346	0.685	1.68	70'	ER	61.824	0.80	0.229	1.70	70'	ER	34.346	
		SNS7B	42.000	--	1.38	57.87	1.4	0.229	1.38	70'	ER	34.346	0.685	1.66	70'	ER	61.824	0.80	0.229	1.62	70'	ER	34.346	
	TTST	TNAGRIT3	33.000	--	1.77	58.25	1.4	0.229	1.77	70'	ER	34.346	0.685	2.03	70'	ER	61.824	0.80	0.229	2.07	70'	ER	34.346	
		TNT4A	33.075	--	1.77	58.66	1.4	0.229	1.77	70'	ER	34.346	0.685	1.97	70'	ER	61.824	0.80	0.229	2.08	70'	ER	34.346	
		TNT6A	41.600	--	1.45	60.44	1.4	0.229	1.45	70'	ER	34.346	0.685	1.77	70'	ER	61.824	0.80	0.229	1.71	70'	ER	34.346	
		TNT7A	42.000	--	1.46	61.39	1.4	0.229	1.46	70'	ER	34.346	0.685	1.72	70'	ER	61.824	0.80	0.229	1.72	70'	ER	34.346	
		TNT7B	42.000	--	1.52	63.66	1.4	0.229	1.52	70'	ER	34.346	0.685	1.60	70'	ER	61.824	0.80	0.229	1.78	70'	ER	34.346	
		TNAGRIT4	43.000	--	1.44	61.88	1.4	0.229	1.44	70'	ER	34.346	0.685	1.55	70'	ER	61.824	0.80	0.229	1.69	70'	ER	34.346	
		TNAGT5A	45.000	--	1.36	61.01	1.4	0.229	1.36	70'	ER	34.346	0.685	1.55	70'	ER	61.824	0.80	0.229	1.59	70'	ER	34.346	
		TNAGT5B	45.000	**3**	1.34	60.22	1.4	0.229	**1.34**	70'	ER	**34.346**	0.685	1.47	70'	ER	61.824	0.80	0.229	1.57	70'	ER	34.346	

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:

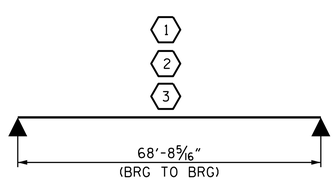
1.
2.
3.
4.

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. 17BP.11.R.153
WILKES COUNTY
STATION: 15+23.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR 70' CORED SLAB UNIT 130° SKEW
(NON-INTERSTATE TRAFFIC)

ms consultants, inc.
5444 Wade Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

NORTH CAROLINA PROFESSIONAL SEAL 037903 ENGINEER JEFFREY M. KEPICH
DocuSigned by: Jeffrey Kepich 5/26/2021
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-4
1			3					TOTAL SHEETS
2			4					16

DRAWN BY : J.M. KEPICH DATE : 02/21
CHECKED BY : L.M. SAMPLES DATE : 05/21
DESIGN ENGINEER OF RECORD : J.M. KEPICH DATE : 05/21

$$$$$$$SYSTIME$$$$$$
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$$$$USERNAME$$$$