DocuSign Envelope ID: AC01E457-35E2-496D-9290-6FF203F01932

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	1.35	--	1.75	0.25	1.74	50'	EL	24.423	0.656	1.35	50'	EL	9.769	0.80	0.25	1.59	50'	EL	24.423	
		HL-93(Opr)	N/A	--	1.75	--	1.35	0.25	2.25	50'	EL	24.423	0.656	1.75	50'	EL	9.769	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.586	57.108	1.75	0.25	2.15	50'	EL	24.423	0.656	1.59	50'	EL	9.769	0.80	0.25	1.97	50'	EL	24.423	
		HS-20(Opr)	36.000	--	2.056	74.028	1.35	0.25	2.79	50'	EL	24.423	0.656	2.06	50'	EL	9.769	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	4.009	54.117	1.4	0.25	5.47	50'	EL	24.423	0.656	4.31	50'	EL	9.769	0.80	0.25	4.01	50'	EL	24.423	
		SNGARBS2	20.000	--	3.168	63.352	1.4	0.25	4.32	50'	EL	24.423	0.656	3.19	50'	EL	9.769	0.80	0.25	3.17	50'	EL	24.423	
		SNAGRIS2	22.000	--	3.009	66.192	1.4	0.25	4.18	50'	EL	19.538	0.656	3.01	50'	EL	9.769	0.80	0.25	3.07	50'	EL	24.423	
		SNCOTTS3	27.250	--	2	54.493	1.4	0.25	2.73	50'	EL	24.423	0.656	2.16	50'	EL	9.769	0.80	0.25	2.00	50'	EL	24.423	
		SNAGGRS4	34.925	--	1.739	60.742	1.4	0.25	2.37	50'	EL	24.423	0.656	1.88	50'	EL	9.769	0.80	0.25	1.74	50'	EL	24.423	
		SNS5A	35.550	--	1.696	60.292	1.4	0.25	2.31	50'	EL	24.423	0.656	1.96	50'	EL	9.769	0.80	0.25	1.70	50'	EL	24.423	
		SNS6A	39.950	--	1.586	63.364	1.4	0.25	2.16	50'	EL	24.423	0.656	1.82	50'	EL	9.769	0.80	0.25	1.59	50'	EL	24.423	
		SNS7B	42.000	--	1.512	63.487	1.4	0.25	2.06	50'	EL	24.423	0.656	1.85	50'	EL	9.769	0.80	0.25	1.51	50'	EL	24.423	
	TTST	TNAGRIT3	33.000	--	1.943	64.127	1.4	0.25	2.65	50'	EL	24.423	0.656	2.14	50'	EL	9.769	0.80	0.25	1.94	50'	EL	24.423	
		TNT4A	33.075	--	1.96	64.837	1.4	0.25	2.67	50'	EL	24.423	0.656	2.04	50'	EL	9.769	0.80	0.25	1.96	50'	EL	24.423	
		TNT6A	41.600	--	1.633	67.938	1.4	0.25	2.23	50'	EL	24.423	0.656	2	50'	EL	9.769	0.80	0.25	1.63	50'	EL	24.423	
		TNT7A	42.000	--	1.658	69.634	1.4	0.25	2.26	50'	EL	24.423	0.656	1.86	50'	EL	9.769	0.80	0.25	1.66	50'	EL	24.423	
		TNT7B	42.000	--	1.728	72.595	1.4	0.25	2.36	50'	EL	24.423	0.656	1.76	50'	EL	9.769	0.80	0.25	1.73	50'	EL	24.423	
		TNAGRIT4	43.000	--	1.64	70.537	1.4	0.25	2.24	50'	EL	24.423	0.656	1.69	50'	EL	9.769	0.80	0.25	1.64	50'	EL	24.423	
		TNAGT5A	45.000	--	1.532	68.95	1.4	0.25	2.09	50'	EL	24.423	0.656	1.75	50'	EL	9.769	0.80	0.25	1.53	50'	EL	24.423	
		TNAGT5B	45.000	3	1.501	67.548	1.4	0.25	2.05	50'	EL	24.423	0.656	1.6	50'	EL	9.769	0.80	0.25	1.50	50'	EL	24.423	

LOAD FACTORS:

	LIMIT STATE	γ_{DC}	γ_{DW}
DESIGN LOAD RATING FACTORS	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)

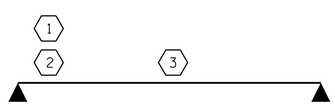
(2) DESIGN LOAD RATING (HS-20)

(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 'B'

PROJECT NO. 17BP.4.R.67

HALIFAX COUNTY

STATION: 13+40.00 -L-

PLANS PREPARED BY:

CALYX ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

THIS STANDARD DRAWING REVIEWED & ADOPTED FOR USE AT THE REFERENCED LOCATION BY THE UNDERSIGNED:

NORTH CAROLINA PROFESSIONAL SEAL 19661 ENGINEER L. KEVIN AUSTIN

DocuSigned by: L. Kevin Austin 72F7B372D0A488...

11/1/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

LRFR SUMMARY FOR 50' CORED SLAB UNIT 120° SKEW (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			18

ASSEMBLED BY : W. B. ALLEN DATE : 7/16
CHECKED BY : W. A. DAVIS DATE : 9/16

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

10/26/2016 10:03 PM R:\Structures\17BP.4.R.67_SMU_LRFR_02.dgn

STD. NO. 21LRFR1_60&120S_50L