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4/3/2018 2:03:50 PM G:\Projects\2016\Division 5 (Mott Macdonald)\B-5687 Warren #43 (60 212421CS VCBR)\Structures\Drawings\Final\401_B5687_SMU_lrfr.dgn

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	0.248	1.14	75'	EL	36.923	0.655	**1.06**	75'	EL	**7.385**	0.80	0.248	1.11	75'	EL	36.923	
		HL-93(Opr)	N/A	--	1.374	--	1.35	0.248	1.48	75'	EL	36.923	0.655	1.37	75'	EL	7.385	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	**2**	1.32	47.508	1.75	0.248	1.48	75'	EL	36.923	0.655	**1.32**	75'	EL	**7.385**	0.80	0.248	1.44	75'	EL	36.923	
		HS-20(Opr)	36.000	--	1.711	61.585	1.35	0.248	1.91	75'	EL	36.923	0.655	1.71	75'	EL	7.385	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.204	43.258	1.4	0.248	4.12	75'	EL	36.923	0.655	3.9	75'	EL	7.385	0.80	0.248	3.20	75'	EL	36.923	
		SNGARBS2	20.000	--	2.403	48.063	1.4	0.248	3.09	75'	EL	36.923	0.655	2.78	75'	EL	7.385	0.80	0.248	2.40	75'	EL	36.923	
		SNAGRIS2	22.000	--	2.282	50.21	1.4	0.248	2.94	75'	EL	36.923	0.655	2.58	75'	EL	7.385	0.80	0.248	2.28	75'	EL	36.923	
		SNCOTTS3	27.250	--	1.595	43.463	1.4	0.248	2.05	75'	EL	36.923	0.655	1.95	75'	EL	7.385	0.80	0.248	1.59	75'	EL	36.923	
		SNAGGRS4	34.925	--	1.339	46.755	1.4	0.248	1.72	75'	EL	36.923	0.655	1.62	75'	EL	7.385	0.80	0.248	1.34	75'	EL	36.923	
		SNS5A	35.550	--	1.309	46.526	1.4	0.248	1.68	75'	EL	36.923	0.655	1.65	75'	EL	7.385	0.80	0.248	1.31	75'	EL	36.923	
		SNS6A	39.950	--	1.203	48.069	1.4	0.248	1.55	75'	EL	36.923	0.655	1.5	75'	EL	7.385	0.80	0.248	1.20	75'	EL	36.923	
		SNS7B	42.000	--	1.146	48.129	1.4	0.248	1.47	75'	EL	36.923	0.655	1.48	75'	EL	7.385	0.80	0.248	1.15	75'	EL	36.923	
	TTST	TNAGRIT3	33.000	--	1.468	48.444	1.4	0.248	1.89	75'	EL	36.923	0.655	1.79	75'	EL	7.385	0.80	0.248	1.47	75'	EL	36.923	
		TNT4A	33.075	--	1.475	48.79	1.4	0.248	1.9	75'	EL	36.923	0.655	1.74	75'	EL	7.385	0.80	0.248	1.48	75'	EL	36.923	
		TNT6A	41.600	--	1.208	50.272	1.4	0.248	1.55	75'	EL	36.923	0.655	1.58	75'	EL	7.385	0.80	0.248	1.21	75'	EL	36.923	
		TNT7A	42.000	--	1.216	51.061	1.4	0.248	1.56	75'	EL	36.923	0.655	1.55	75'	EL	7.385	0.80	0.248	1.22	75'	EL	36.923	
		TNT7B	42.000	--	1.261	52.955	1.4	0.248	1.62	75'	EL	36.923	0.655	1.44	75'	EL	7.385	0.80	0.248	1.26	75'	EL	36.923	
		TNAGRIT4	43.000	--	1.197	51.476	1.4	0.248	1.54	75'	EL	36.923	0.655	1.4	75'	EL	7.385	0.80	0.248	1.20	75'	EL	36.923	
		TNAGT5A	45.000	--	1.128	50.745	1.4	0.248	1.45	75'	EL	36.923	0.655	1.39	75'	EL	7.385	0.80	0.248	1.13	75'	EL	36.923	
		TNAGT5B	45.000	**3**	1.113	50.088	1.4	0.248	1.43	75'	EL	36.923	0.655	1.33	75'	EL	7.385	0.80	0.248	**1.11**	75'	EL	**36.923**	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE II	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE II LIMIT STATES.

ALLOWABLE STRESS FOR SERVICE II LIMIT STATE ARE AS REQUIRED FOR DESIGN.

DISTANCE FROM LEFT END OF SPAN IS MEASURED FROM ℄ BEARING.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

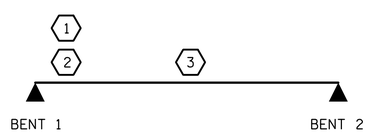
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

SPAN B

PROJECT NO. B-5687

WARREN COUNTY

STATION: 14+96.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR 75' CORED SLAB UNITS 60° SKEW

(NON-INTERSTATE TRAFFIC)

PLANS PREPARED BY:

SIMPSON ENGINEERS & ASSOCIATES
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LICENSURE NO. C-2521

NORTH CAROLINA PROFESSIONAL SEAL 11268 ENGINEER BETSY S. COX
4/3/2018

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REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

SHEET NO. S-4

TOTAL SHEETS 24

DRAWN BY: S.D. COOPER DATE: 4-18
CHECKED BY: B.S. COX DATE: 4-18
DESIGN ENGINEER OF RECORD: B.S. COX DATE: 4-18