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4/3/2018 2:03:51 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
								MOMENT					SHEAR						MOMENT					
							LIVELOAD FACTORS	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)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.208	--	1.75	0.257	2.83	25'	EL	11.923	0.659	**1.21**	25'	EL	**1.192**	0.80	0.257	2.60	25'	EL	11.923	
		HL-93(Opr)	N/A	--	1.565	--	1.35	0.257	3.66	25'	EL	11.923	0.659	1.57	25'	EL	1.192	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.402	50.457	1.75	0.257	4.17	25'	EL	11.923	0.659	**1.4**	25'	EL	**1.192**	0.80	0.257	3.85	25'	EL	11.923	
		HS-20(Opr)	36.000	--	1.817	65.407	1.35	0.257	5.41	25'	EL	11.923	0.659	1.82	25'	EL	1.192	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.24	43.746	1.4	0.257	7.59	25'	EL	11.923	0.659	3.24	25'	EL	1.192	0.80	0.257	5.59	25'	EL	11.923	
		SNGARBS2	20.000	--	2.6	51.994	1.4	0.257	7.1	25'	EL	11.923	0.659	2.6	25'	EL	1.192	0.80	0.257	5.24	25'	EL	11.923	
		SNAGRIS2	22.000	--	2.548	56.063	1.4	0.257	7.59	25'	EL	11.923	0.659	2.55	25'	EL	1.192	0.80	0.257	5.59	25'	EL	11.923	
		SNCOTTS3	27.250	--	1.645	44.82	1.4	0.257	3.98	25'	EL	11.923	0.659	1.64	25'	EL	1.192	0.80	0.257	2.93	25'	EL	11.923	
		SNAGGRS4	34.925	--	1.585	55.347	1.4	0.257	3.96	25'	EL	11.923	0.659	1.58	25'	EL	1.192	0.80	0.257	2.92	25'	EL	11.923	
		SNS5A	35.550	--	1.655	58.841	1.4	0.257	3.85	25'	EL	11.923	0.659	1.66	25'	EL	1.192	0.80	0.257	2.82	25'	EL	11.923	
		SNS6A	39.950	--	1.588	63.45	1.4	0.257	3.6	25'	EL	11.923	0.659	1.59	25'	EL	1.192	0.80	0.257	2.66	25'	EL	11.923	
		SNS7B	42.000	--	1.599	67.158	1.4	0.257	3.6	25'	EL	11.923	0.659	1.6	25'	EL	1.192	0.80	0.257	2.64	25'	EL	11.923	
	TTST	TNAGRIT3	33.000	--	1.948	64.275	1.4	0.257	5.09	25'	EL	11.923	0.659	1.95	25'	EL	1.192	0.80	0.257	3.75	25'	EL	11.923	
		TNT4A	33.075	--	1.764	58.347	1.4	0.257	4.4	25'	EL	11.923	0.659	1.76	25'	EL	1.192	0.80	0.257	3.25	25'	EL	11.923	
		TNT6A	41.600	--	1.662	69.142	1.4	0.257	4.13	25'	EL	11.923	0.659	1.66	25'	EL	1.192	0.80	0.257	3.05	25'	EL	11.923	
		TNT7A	42.000	--	1.657	69.603	1.4	0.257	4.28	25'	EL	11.923	0.659	1.66	25'	EL	1.192	0.80	0.257	3.15	25'	EL	11.923	
		TNT7B	42.000	--	1.598	67.097	1.4	0.257	3.85	25'	EL	11.923	0.659	1.6	25'	EL	1.192	0.80	0.257	2.84	25'	EL	11.923	
		TNAGRIT4	43.000	--	1.595	68.603	1.4	0.257	4.14	25'	EL	11.923	0.659	1.6	25'	EL	1.192	0.80	0.257	3.04	25'	EL	11.923	
		TNAGT5A	45.000	--	1.625	73.143	1.4	0.257	4.14	25'	EL	11.923	0.659	1.63	25'	EL	1.192	0.80	0.257	3.04	25'	EL	11.923	
		TNAGT5B	45.000	3	1.476	66.434	1.4	0.257	4.08	25'	EL	9.538	0.659	**1.48**	25'	EL	**1.192**	0.80	0.257	3.02	25'	EL	9.538	

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 C

PROJECT NO. B-5687
WARREN COUNTY
STATION: 14+96.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR 25' CORED SLAB UNITS 60° SKEW

(NON-INTERSTATE TRAFFIC)

PLANS PREPARED BY:
SIMPSON ENGINEERS & ASSOCIATES
5640 Dillard Drive
Suite 200
Cary, NC 27518
(919) 852-0468
(919) 852-0598 (Fax)
www.simpsonengr.com
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-5
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