

7/12/2017 2:12:55 PM \\USPADG\dfs02\vol3\Projects\4018617\4018617_000\50_Deliverables & Submittals\U-475\Structures\Bridges_203\Ustction\Final\403_009_U475L_SML_LRFR_005_640203.dgn

LOAD AND RESISTANCE FACTOR RATING (LRFR) 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			
						LIVE-LOAD FACTORS (%LL)	MOMENT					SHEAR					LIVE-LOAD FACTORS (%LL)	MOMENT						
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (++)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (++)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (++)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.47	--	1.75	0.87	1.50	B	EL	51.4	1.00	1.48	A	I	19.2	0.80	0.87	1.47	B	EL	51.4		
	HL-93 (OPERATING)	N/A		1.94	--	1.35	0.87	1.94	B	EL	51.4	1.00	1.97	A	I	19.2	N/A	--	--	--	--	51.4		
	HS-20 (INVENTORY)	36.000	②	1.98	71.28	1.75	0.87	2.12	B	EL	51.4	1.00	1.98	A	I	19.2	0.80	0.87	2.07	B	EL	51.4		
	HS-20 (OPERATING)	36.000		2.62	94.32	1.35	0.87	2.74	B	EL	51.4	1.00	2.62	A	I	19.2	N/A	--	--	--	--	51.4		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.95	66.83	1.40	0.87	6.33	B	EL	51.4	1.00	6.47	A	I	19.2	0.80	0.87	4.95	B	EL	51.4	
		SNGARBS2	20.000		3.56	71.20	1.40	0.87	4.56	B	EL	51.4	1.00	4.48	A	I	19.2	0.80	0.87	3.56	B	EL	51.4	
		SNAGRIS2	22.000		3.32	73.04	1.40	0.87	4.24	B	EL	51.4	1.00	4.12	A	I	19.2	0.80	0.87	3.32	B	EL	51.4	
		SNCOTTS3	27.250		2.45	66.76	1.40	0.87	3.14	B	EL	51.4	1.00	3.10	A	I	19.2	0.80	0.87	2.45	B	EL	51.4	
		SNAGGRS4	34.925		2.00	69.85	1.40	0.87	2.56	B	EL	51.4	1.00	2.51	A	I	19.2	0.80	0.87	2.00	B	EL	51.4	
		SNS5A	35.550		1.96	69.68	1.40	0.87	2.51	B	EL	51.4	1.00	2.52	A	I	19.2	0.80	0.87	1.96	B	EL	51.4	
		SNS6A	39.950		1.78	71.11	1.40	0.87	2.28	B	EL	51.4	1.00	2.27	A	I	19.2	0.80	0.87	1.78	B	EL	51.4	
		SNS7B	42.000		1.70	71.40	1.40	0.87	2.17	B	EL	51.4	1.00	2.21	A	I	19.2	0.80	0.87	1.70	B	EL	51.4	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.17	71.61	1.40	0.87	2.78	B	EL	51.4	1.00	2.75	A	I	19.2	0.80	0.87	2.17	B	EL	51.4	
		TNT4A	33.075		2.17	71.77	1.40	0.87	2.78	B	EL	51.4	1.00	2.69	A	I	19.2	0.80	0.87	2.17	B	EL	51.4	
		TNT6A	41.600		1.76	73.22	1.40	0.87	2.25	B	EL	51.4	1.00	2.34	A	I	19.2	0.80	0.87	1.76	B	EL	51.4	
		TNT7A	42.000		1.76	73.92	1.40	0.87	2.25	B	EL	51.4	1.00	2.30	A	I	19.2	0.80	0.87	1.76	B	EL	51.4	
		TNT7B	42.000		1.79	75.18	1.40	0.87	2.30	B	EL	51.4	1.00	2.17	A	I	19.2	0.80	0.87	1.79	B	EL	51.4	
		TNAGRIT4	43.000		1.72	73.96	1.40	0.87	2.21	B	EL	51.4	1.00	2.10	A	I	19.2	0.80	0.87	1.72	B	EL	51.4	
		TNACT5A	45.000		1.63	73.35	1.40	0.87	2.09	B	EL	51.4	1.00	2.07	A	I	19.2	0.80	0.87	1.63	B	EL	51.4	
TNACT5B	45.000	③	1.62	72.90	1.40	0.87	2.07	B	EL	51.4	1.00	1.99	A	I	19.2	0.80	0.87	1.62	B	EL	51.4			

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)

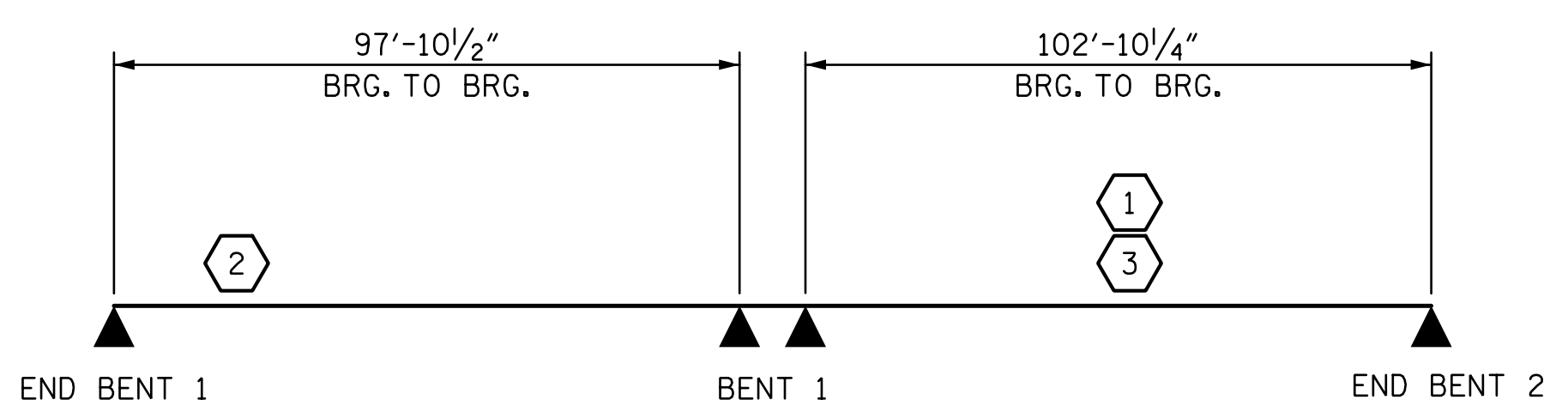
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



PROJECT NO. U-4751
NEW HANOVER COUNTY
 STATION: 225+92.26 -L-

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE GIRDERS
 (NON-INTERSTATE TRAFFIC)

REVISIONS				SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:	S3-5
1			3			TOTAL SHEETS
2			4			36

DRAWN BY : MBC DATE : 4-17
 CHECKED BY : ACA DATE : 5-17
 DESIGN ENGINEER OF RECORD: P. KELLY DATE : 5-17