DocuSign Envelope ID: 0467AB1B-32B1-4334-81D0-7D50B5979B14

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTOR (RF)	TONS = W X RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT					
							LIVE LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTOR (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTOR (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTOR (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93 (INVENTORY)	N/A	1	1.07	--	1.75	.916	1.52	3	ER	40.8	1.09	1.14	1	I	65.4	0.80	.874	1.07	3	I	40.8	
		HL-93 (OPERATING)	N/A		1.50	--	1.35	.916	1.97	3	ER	40.8	1.09	1.50	1	I	65.4	N/A	.874	-	-	-	-	
		HS-20 (INVENTORY)	36.00	2	1.42	36	1.75	.916	2.06	3	ER	40.8	1.09	1.51	1	I	65.4	0.80	.874	1.42	2	I	41.4	
		HS-20 (OPERATING)	36.00		1.97	36	1.35	.916	2.66	3	ER	40.8	1.09	1.97	1	I	65.4	N/A	.874	-	-	-	-	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.14	13.5	1.40	.916	5.85	3	ER	40.8	1.09	4.71	1	I	65.4	0.80	.874	3.14	2	I	41.4	
		SNGARBS2	20.000		2.37	20	1.40	.916	4.31	3	ER	40.8	1.09	3.29	1	I	65.4	0.80	.874	2.37	2	I	41.4	
		SNAGRIS2	22.000		2.26	22	1.40	.916	4.07	3	ER	40.8	1.09	3.04	1	I	65.4	0.80	.874	2.26	2	I	41.4	
		SNCOTTS3	27.250		1.57	27.25	1.40	.916	2.90	3	ER	40.8	1.09	2.27	1	I	65.4	0.80	.874	1.57	2	I	41.4	
		SNAGGRS4	34.925		1.33	34.925	1.40	.916	2.42	3	ER	40.8	1.09	1.93	1	I	65.4	0.80	.874	1.33	2	I	41.4	
		SNS5A	35.550		1.30	35.55	1.40	.916	2.38	3	ER	40.8	1.09	1.93	1	I	65.4	0.80	.874	1.30	2	I	41.4	
		SNS6A	39.950		1.19	39.95	1.40	.916	2.18	3	ER	40.8	1.09	1.77	1	I	65.4	0.80	.874	1.19	2	I	41.4	
		SNS7B	42.000		1.14	42	1.40	.916	2.07	3	ER	40.8	1.09	1.73	1	I	65.4	0.80	.874	1.14	2	I	41.4	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.46	33	1.40	.916	2.66	3	ER	40.8	1.09	2.22	1	I	65.4	0.80	.874	1.46	2	I	41.4	
		TNT4A	33.075		1.46	33.075	1.40	.916	2.67	3	ER	40.8	1.09	2.03	1	I	65.4	0.80	.874	1.46	2	I	41.4	
		TNT6A	41.600		1.20	41.6	1.40	.916	2.17	3	ER	40.8	1.09	1.81	1	I	65.4	0.80	.874	1.20	2	I	41.4	
		TNT7A	42.000		1.21	42	1.40	.916	2.18	3	ER	40.8	1.09	1.73	1	I	65.4	0.80	.874	1.21	2	I	41.4	
		TNT7B	42.000		1.24	42	1.40	.916	2.23	3	ER	40.8	1.09	1.69	1	I	65.4	0.80	.874	1.24	2	I	41.4	
		TNAGRIT4	43.000		1.19	43	1.40	.916	2.15	3	ER	40.8	1.09	1.60	1	I	65.4	0.80	.874	1.19	2	I	41.4	
		TNAGT5A	45.000		1.12	45	1.40	.916	2.04	3	ER	40.8	1.09	1.58	1	I	65.4	0.80	.874	1.12	2	I	41.4	
		TNAGT5B	45.000	3	1.11	45	1.40	.916	2.01	3	ER	40.8	1.09	1.54	1	I	65.4	0.80	.874	1.11	2	I	41.4	

LOAD FACTORS:

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

COMMENTS:

1.
2.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93) **

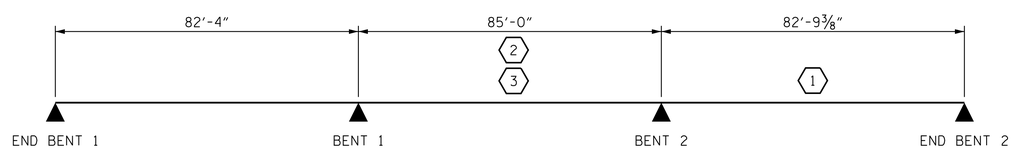
(2) DESIGN LOAD RATING (HS-20) **

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

PROJECT NO. R-0623
MONTGOMERY COUNTY
STATION: 123+82.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY

(WBL)

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-5
1			3					TOTAL SHEETS
2			4					82

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

DRAWN BY : T. N. ENNIS DATE : 03-06-14
CHECKED BY : J. T. KELVINGTON DATE : 03-11-14
DESIGN ENGINEER OF RECORD: J. T. KELVINGTON DATE : 03-11-14

NORTH CAROLINA PROFESSIONAL SEAL 13406 ENGINEER JOSEPH T. KELVINGTON
DocuSigned by: Joseph T. Kelvington 847C9D3780774AF...
5/28/2014

STR. #1

U:\Structures\Warner Creek\Drawing\WBL - Bridge 264\Drawing\Final\R-0623_SD_LRFR.dgn 5/12/2014 5:32:41PM vdoan