

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 \bar{C} BEARING.
 RATINGS INCLUDE GIRDERS FOR BOTH WIDENINGS AND THE EXISTING ROLLED BEAMS.

LEVEL	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING #	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE II LIMIT STATE					COMMENT NUMBER		
						MOMENT					SHEAR					MOMENT							
						LIVE-LOAD FACTORS (γ_{LL})	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)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.38	--	1.75	0.650	1.38	B/C	ERT	37.4	0.767	1.76	B/C	ILT	0	1.30	0.620	1.59	B/C	IEXIST	37.4	
	HL-93 (OPERATING)	N/A		1.79	--	1.35	0.650	1.79	B/C	ERT	37.4	0.767	2.28	B/C	ILT	0	1.00	0.620	2.07	B/C	IEXIST	37.4	
	HS-20 (INVENTORY)	36.00	②	2.09	75.2	1.75	0.650	2.45	B/C	ERT	37.4	0.767	3.04	B/C	ILT	0	1.30	0.620	2.09	B/C	IEXIST	37.4	
	HS-20 (OPERATING)	36.00		3.18	114.5	1.35	0.650	3.18	B/C	ERT	37.4	0.767	3.94	B/C	ILT	0	1.00	0.620	2.72	B/C	IEXIST	37.4	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		4.75	64.1	1.40	0.650	5.56	B/C	ERT	37.4	0.767	7.35	B/C	ILT	0	1.30	0.620	4.75	B/C	IEXIST	37.4
		SNGARBS2	20.000		3.53	70.6	1.40	0.650	4.13	B/C	ERT	37.4	0.767	5.19	B/C	ILT	0	1.30	0.620	3.53	B/C	IEXIST	37.4
		SNAGRIS2	22.000		3.34	73.5	1.40	0.650	3.91	B/C	ERT	37.4	0.767	4.80	B/C	ILT	0	1.30	0.620	3.34	B/C	IEXIST	37.4
		SNCOTTS3	27.250		2.36	64.3	1.40	0.650	2.77	B/C	ERT	37.4	0.767	3.67	B/C	ILT	0	1.30	0.620	2.36	B/C	IEXIST	37.4
		SNAGGRS4	34.925		1.97	68.8	1.40	0.650	2.31	B/C	ERT	37.4	0.767	3.02	B/C	ILT	0	1.30	0.620	1.97	B/C	IEXIST	37.4
		SNS5A	35.550		1.93	68.6	1.40	0.650	2.26	B/C	ERT	37.4	0.767	3.04	B/C	ILT	0	1.30	0.620	1.93	B/C	IEXIST	37.4
		SNS6A	39.950		1.77	70.7	1.40	0.650	2.07	B/C	ERT	37.4	0.767	2.77	B/C	ILT	0	1.30	0.620	1.77	B/C	IEXIST	37.4
		SNS7B	42.000		1.68	70.6	1.40	0.650	1.97	B/C	ERT	37.4	0.767	2.70	B/C	ILT	0	1.30	0.620	1.68	B/C	IEXIST	37.4
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		2.15	71.0	1.40	0.650	2.52	B/C	ERT	37.4	0.767	3.30	B/C	ILT	0	1.30	0.620	2.15	B/C	IEXIST	37.4
		TNT4A	33.075		2.16	71.4	1.40	0.650	2.53	B/C	ERT	37.4	0.767	3.23	B/C	ILT	0	1.30	0.620	2.16	B/C	IEXIST	37.4
		TNT6A	41.600		1.77	73.6	1.40	0.650	2.07	B/C	ERT	37.4	0.767	2.86	B/C	ILT	0	1.30	0.620	1.77	B/C	IEXIST	37.4
		TNT7A	42.000		1.78	74.8	1.40	0.650	2.08	B/C	ERT	37.4	0.767	2.80	B/C	ILT	0	1.30	0.620	1.78	B/C	IEXIST	37.4
		TNT7B	42.000		1.83	76.9	1.40	0.650	2.15	B/C	ERT	37.4	0.767	2.65	B/C	ILT	0	1.30	0.620	1.83	B/C	IEXIST	37.4
		TNAGRIT4	43.000		1.75	75.3	1.40	0.650	2.04	B/C	ERT	37.4	0.767	2.57	B/C	ILT	0	1.30	0.620	1.75	B/C	IEXIST	37.4
TNAGT5A	45.000		1.65	74.3	1.40	0.650	1.93	B/C	ERT	37.4	0.767	2.54	B/C	ILT	0	1.30	0.620	1.65	B/C	IEXIST	37.4		
TNAGT5B	45.000		③	1.63	73.4	1.40	0.650	1.91	B/C	ERT	37.4	0.767	2.44	B/C	ILT	0	1.30	0.620	1.63	B/C	IEXIST	37.4	
FATIGUE	HL-93 (INVENTORY)	$\gamma_{LL}=0.75$		3.05																			

③ CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

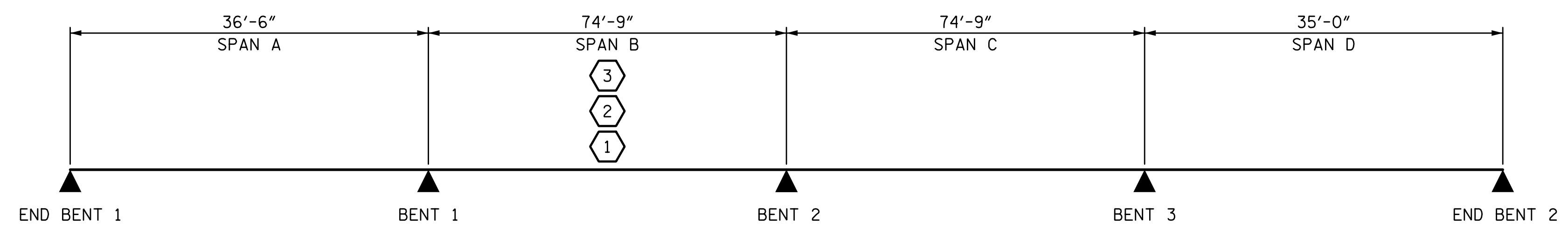
② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

ERT - EXTERIOR GIRDER RT. WIDENING
 ILT - INTERIOR GIRDER LT. WIDENING
 IEXIST - EXISTING INTERIOR BEAM



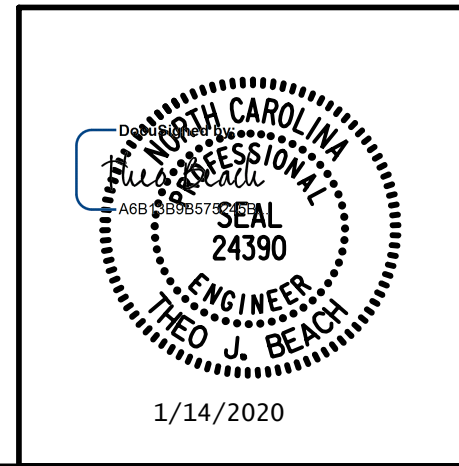
LRFR SUMMARY

PROJECT NO. I-5711
ALAMANCE COUNTY
 STATION: STA. 27+02.26 -L-

1/14/2020 10:06:14 AM G:\Projects\2017\I-5711\Structures\Drawings\Final\401-I5711-SML_LRFR_000177.dgn

DRAWN BY: S.D. COOPER DATE: 1-20
 CHECKED BY: T. BEACH DATE: 1-20
 DESIGN ENGINEER OF RECORD: T. BEACH DATE: 1-20

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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

LRFR SUMMARY FOR
 STEEL GIRDERS
 (NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			89

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**