

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL	VEHICLE	WEIGHT (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								
						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	HL-93 (INVENTORY)	N/A	①	1.04	--	1.75	0.778	1.40	B	EL	59.3	1.178	1.06	B	I	11.3	0.80	0.778	1.04	B	EL	59.3		
	HL-93 (OPERATING)	N/A		1.40	--	1.35	0.778	1.81	B	EL	59.3	1.178	1.40	B	I	11.3	N/A	-	-	-	-	-		
	HS-20 (INVENTORY)	36.000	②	1.51	54.4	1.75	0.778	2.03	B	EL	59.3	1.178	1.51	B	I	11.3	0.80	0.778	1.52	B	EL	59.3		
	HS-20 OPERATING	36.000		1.98	71.3	1.35	0.757	2.64	A	EL	44.7	1.178	1.98	B	I	11.3	N/A	-	-	-	-	-		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH	12.500		3.19	39.9	1.40	0.738	6.36	C	EL	30.8	1.178	5.31	B	I	11.3	0.80	0.778	3.19	B	EL	59.3	
		S3C	21.500		1.86	40.0	1.40	0.738	3.73	C	EL	30.8	1.178	3.07	B	I	11.3	0.80	0.778	1.86	B	EL	59.3	
		S3A	22.750		1.76	40.0	1.40	0.738	3.54	C	EL	30.8	1.178	2.90	B	I	11.3	0.80	0.778	1.76	B	EL	59.3	
		S4A	26.750		1.54	41.2	1.40	0.757	3.15	A	EL	44.7	1.178	2.50	B	I	11.3	0.80	0.778	1.54	B	EL	59.3	
		S5A	30.500		1.36	41.5	1.40	0.757	2.78	A	EL	44.7	1.178	2.25	B	I	11.3	0.80	0.778	1.36	B	EL	59.3	
		S6A	34.500		1.22	42.1	1.40	0.757	2.52	A	EL	44.7	1.178	2.00	B	I	11.3	0.80	0.778	1.22	B	EL	59.3	
		S7B	38.500		1.11	42.7	1.40	0.757	2.29	A	EL	44.7	1.178	1.84	B	I	11.3	0.80	0.778	1.11	B	EL	59.3	
		S7B	40.000	③	1.08	43.2	1.40	0.757	2.26	A	EL	44.7	1.178	1.85	B	I	11.3	0.80	0.778	1.08	B	EL	59.3	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250		1.50	42.4	1.40	0.757	3.10	A	EL	44.7	1.178	2.40	B	I	11.3	0.80	0.778	1.50	B	EL	59.3	
		T5B	32.000		1.32	42.2	1.40	0.757	2.73	A	EL	44.7	1.178	2.22	B	I	11.3	0.80	0.778	1.32	B	EL	59.3	
EMERGENCY VEHICLE (EV)	T6A	36.000		1.20	43.2	1.40	0.778	2.50	B	EL	59.3	1.178	2.01	B	I	11.3	0.80	0.778	1.20	B	EL	59.3		
	T7A	40.000		1.10	44.0	1.40	0.778	2.30	B	EL	59.3	1.178	1.84	B	I	11.3	0.80	0.778	1.10	B	EL	59.3		
	T7B	40.000		1.15	46.0	1.40	0.778	2.40	B	EL	59.3	1.178	1.76	B	I	11.3	0.80	0.778	1.15	B	EL	59.3		
EMERGENCY VEHICLE (EV)	EV2	28.750		1.85	53.2	1.30	0.757	3.30	A	EL	44.7	1.178	2.52	B	I	11.3	0.80	0.778	1.85	B	EL	59.3		
	EV3	43.000		1.22	52.5	1.30	0.757	2.17	A	EL	44.7	1.178	1.66	B	I	11.3	0.80	0.778	1.22	B	EL	59.3		

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.

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

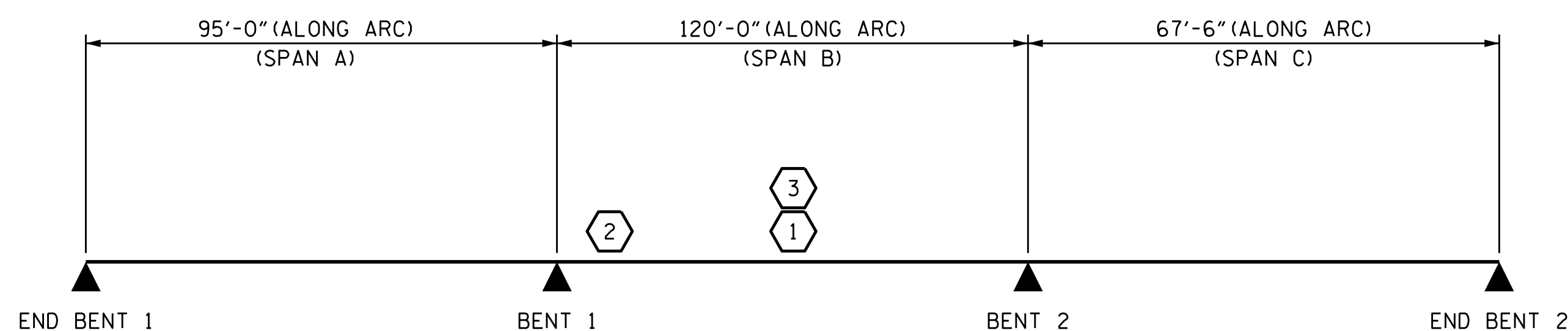
② DESIGN LOAD RATING (HS-20)

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. I-2513AA/AB
BUNCOMBE COUNTY
 STATION: 20+16.70 -Y5RPA-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

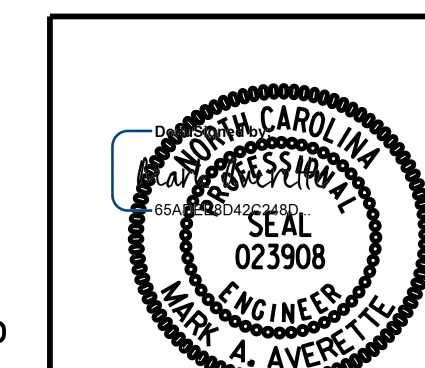
SUPERSTRUCTURE

LRFR SUMMARY
 FOR PRESTRESSED
 CONCRETE GIRDERS

(INTERSTATE TRAFFIC)

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

TOTAL SHEETS: 49



DRAWN BY : S.D. COOPER DATE : 12-23
 CHECKED BY : M.A. AVERETTE DATE : 12-23
 DESIGN ENGINEER OF RECORD: M.A. AVERETTE DATE : 12-23

DOCUMENT NOT CONSIDERED FINAL
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