

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE BEAMS																								
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								
						LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	BEAM LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	BEAM LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ_{LL})	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	BEAM LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.07	--	1.75	0.789	1.59	A	1	49.78	1.021	1.09	A	8	80.05	1.00	0.738	1.07	A	8	49.78	1, 2	
	HL-93 (OPERATING)	N/A		1.45	--	1.35	0.789	2.06	A	1	49.78	1.021	1.45	A	8	19.51	N/A	-	-	-	-	-	2	
	HS-20 (INVENTORY)	36.000	②	1.45	52.20	1.75	0.789	2.21	A	1	49.78	1.021	1.45	A	8	80.05	1.00	0.789	1.50	A	1	49.78	1, 2	
	HS-20 (OPERATING)	36.000		1.93	69.48	1.35	0.789	2.87	A	1	49.78	1.021	1.93	A	8	80.05	N/A	-	-	-	-	-	2	
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SH	12.500		3.86	48.25	1.40	0.789	7.12	A	1	49.78	1.021	5.13	A	8	80.05	1.00	0.738	3.86	A	8	49.78	1, 2
		S3C	21.500		2.25	48.38	1.40	0.789	4.16	A	1	49.78	1.021	2.95	A	8	80.05	1.00	0.738	2.25	A	8	49.78	1, 2
		S3A	22.750		2.14	48.69	1.40	0.789	3.94	A	1	49.78	1.021	2.79	A	8	19.51	1.00	0.789	2.14	A	1	49.78	1, 2
		S4A	26.750		1.87	50.02	1.40	0.789	3.45	A	1	49.78	1.021	2.41	A	8	19.51	1.00	0.738	1.87	A	8	49.78	1, 2
		S5A	30.500		1.65	50.33	1.40	0.789	3.05	A	1	49.78	1.021	2.19	A	8	19.51	1.00	0.789	1.65	A	1	49.78	1, 2
		S6A	34.500		1.49	51.41	1.40	0.789	2.75	A	1	49.78	1.021	1.96	A	8	80.05	1.00	0.738	1.49	A	8	49.78	1, 2
		S7B	38.500		1.35	51.98	1.40	0.789	2.50	A	1	49.78	1.021	1.82	A	8	19.51	1.00	0.738	1.35	A	8	49.78	1, 2
		S7A	40.000	③	1.33	53.20	1.40	0.789	2.46	A	1	49.78	1.021	1.85	A	8	19.51	1.00	0.738	1.33	A	8	49.78	1, 2
	TRUCK TRACTOR SEMI-TRAILER (TTST)	T4A	28.250		1.83	51.70	1.40	0.789	3.38	A	1	49.78	1.021	2.33	A	8	19.51	1.00	0.738	1.83	A	8	49.78	1, 2
		T5B	32.000		1.61	51.52	1.40	0.789	2.97	A	1	49.78	1.021	2.20	A	8	19.51	1.00	0.738	1.61	A	8	49.78	1, 2
		T6A	36.000		1.47	52.92	1.40	0.789	2.71	A	1	49.78	1.021	2.00	A	8	80.05	1.00	0.738	1.47	A	8	49.78	1, 2
		T7A	40.000		1.36	54.40	1.40	0.789	2.51	A	1	49.78	1.021	1.85	A	8	19.51	1.00	0.789	1.36	A	1	49.78	1, 2
	T7B	40.000		1.43	57.20	1.40	0.789	2.65	A	1	49.78	1.021	1.74	A	8	80.05	1.00	0.738	1.43	A	8	49.78	1, 2	

NOTES:

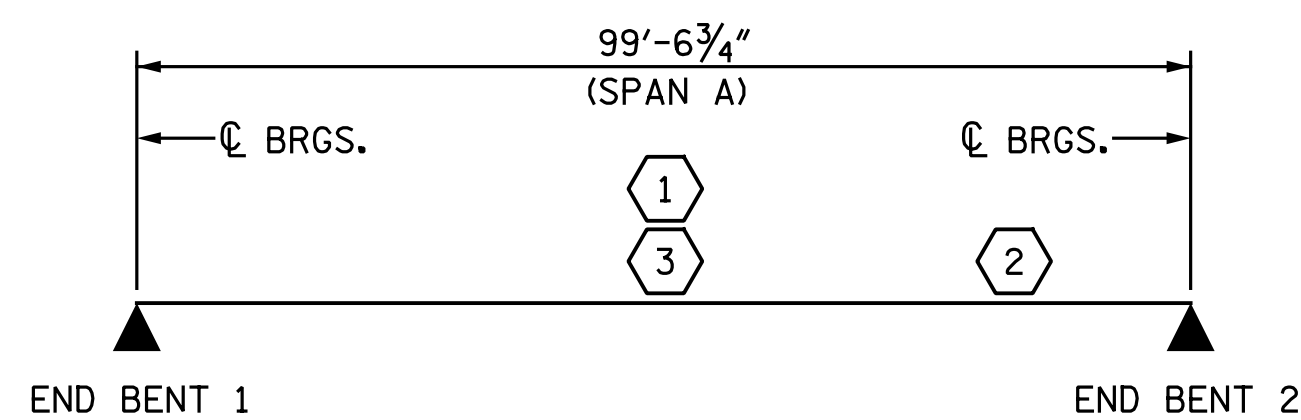
MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

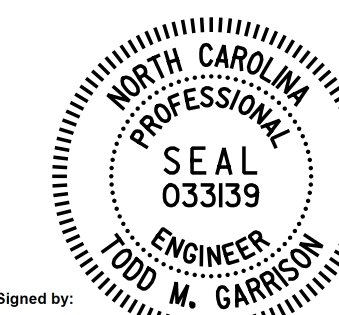
COMMENTS:

- A SERVICE III LIVE LOAD FACTOR OF 1.0 WAS USED TO BE CONSISTENT WITH THE VALUE USED DURING DESIGN.
- DISTANCE FROM LEFT END OF SPAN IS GIVEN WITH RESPECT TO THE CENTERLINE OF BEARING AND IS MEASURED ALONG THE CONTROLLING BEAM.

#	CONTROLLING LOAD RATING
①	DESIGN LOAD RATING (HL-93)
②	DESIGN LOAD RATING (HS-20)
③	LEGAL LOAD RATING **
**	SEE CHART FOR VEHICLE TYPE
BEAM LOCATION	
BEAM LOCATION PROVIDED UTILIZES BEAM NUMBER, WHERE BEAM 1 IS THE LEFT EXTERIOR BEAM LOOKING AHEAD STATION. SEE "BEAM LAYOUT" SHEET FOR ALL BEAM LOCATIONS.	



PROJECT NO. I-5986B
JOHNSTON COUNTY
 STATION: 1391+19.65 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 LRFR SUMMARY FOR
 PRESTRESSED
 CONCRETE BEAMS
 (INTERSTATE TRAFFIC)

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

Michael Baker INTERNATIONAL
 Michael Baker Engineering
 8000 Regency Parkway, Suite 600
 Cary, North Carolina 27518
 NC License No.: F-1084

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			44

ASSEMBLED BY : N. B. SPEAKS	DATE : 2-14-20
CHECKED BY : T. M. GARRISON	DATE : 2-14-20
DRAWN BY : MAA 1/08	REV. 11/12/08RR MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11 MAA/GM
	REV. 12/17 MAA/THC