

9/14/2022 8:05:54 AM P:\Raleigh\Projects\2018\Division 3 (SEA)\B-5652 (Onslow 33 US17 NBL over Wolf Swamp)\Structures\Drawings\Final\401\_B5652\_SMU\_CD\_660033.dgn

**LOAD FACTORS:**

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

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 ( $\gamma_{LL}$ )	MOMENT					SHEAR					LIVE-LOAD FACTORS ( $\gamma_{LL}$ )	MOMENT						
							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)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (FT)		
DESIGN LOAD RATING	HL-93 (INVENTORY)	N/A	①	1.10	--	1.75	0.753	1.60	A	EL	48.25	0.861	1.10	A	I	9.65	0.80	0.707	1.40	A	I	48.25		
	HL-93 (OPERATING)	N/A		1.62	--	1.35	0.753	2.07	A	EL	48.25	0.861	1.62	A	I	9.65	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	②	1.67	60.1	1.75	0.753	2.21	A	EL	48.25	0.861	1.67	A	I	9.65	0.80	0.707	1.94	A	I	48.25		
	HS-20 (OPERATING)	36.000		2.31	83.2	1.35	0.753	2.87	A	EL	48.25	0.861	2.31	A	I	9.65	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SINGLE VEHICLE (SV)	SNSH	13.500		3.67	49.5	1.40	0.753	6.54	A	EL	48.25	0.861	5.73	A	I	9.65	0.80	0.707	3.67	A	I	48.25	
		SNGARBS2	20.000		2.66	53.2	1.40	0.753	4.74	A	EL	48.25	0.861	3.96	A	I	9.65	0.80	0.707	2.66	A	I	48.25	
		SNAGRIS2	22.000		2.49	54.8	1.40	0.753	4.44	A	EL	48.25	0.861	3.64	A	I	9.65	0.80	0.707	2.49	A	I	48.25	
		SNCOTTS3	27.250		1.82	49.6	1.40	0.753	3.25	A	EL	48.25	0.861	2.76	A	I	9.65	0.80	0.707	1.82	A	I	48.25	
		SNAGGRS4	34.925		1.50	52.4	1.40	0.753	2.67	A	EL	48.25	0.861	2.22	A	I	9.65	0.80	0.707	1.50	A	I	48.25	
		SNS5A	35.550		1.47	52.3	1.40	0.753	2.61	A	EL	48.25	0.861	2.23	A	I	9.65	0.80	0.707	1.47	A	I	48.25	
		SNS6A	39.950		1.33	53.1	1.40	0.753	2.37	A	EL	48.25	0.861	2.00	A	I	9.65	0.80	0.707	1.33	A	I	48.25	
		SNS7B	42.000		1.27	53.3	1.40	0.753	2.26	A	EL	48.25	0.861	1.92	A	I	9.65	0.80	0.707	1.27	A	I	48.25	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.62	53.5	1.40	0.753	2.89	A	EL	48.25	0.861	2.43	A	I	9.65	0.80	0.707	1.62	A	I	48.25	
		TNT4A	33.075		1.63	53.9	1.40	0.753	2.90	A	EL	48.25	0.861	2.38	A	I	9.65	0.80	0.707	1.63	A	I	48.25	
		TNT6A	41.600		1.32	54.9	1.40	0.753	2.35	A	EL	48.25	0.861	2.05	A	I	9.65	0.80	0.707	1.32	A	I	48.25	
		TNT7A	42.000		1.32	55.4	1.40	0.753	2.35	A	EL	48.25	0.861	2.01	A	I	9.65	0.80	0.707	1.32	A	I	48.25	
		TNT7B	42.000		1.35	56.7	1.40	0.753	2.41	A	EL	48.25	0.861	1.88	A	I	9.65	0.80	0.707	1.35	A	I	48.25	
		TNAGRIT4	43.000		1.30	55.9	1.40	0.753	2.31	A	EL	48.25	0.861	1.80	A	I	9.65	0.80	0.707	1.30	A	I	48.25	
TNAGT5A	45.000		1.23	55.4	1.40	0.753	2.19	A	EL	48.25	0.861	1.76	A	I	9.65	0.80	0.707	1.23	A	I	48.25			
TNAGT5B	45.000	③	1.22	54.9	1.40	0.753	2.17	A	EL	48.25	0.861	1.68	A	I	9.65	0.80	0.707	1.22	A	I	48.25			

**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:**

- DISTANCE FROM LEFT END OF SPAN IS MEASURED FROM  $\ominus$  BEARING.
- BEARING TO BEARING LENGTH OF ALL GIRDERS = 96'-6"

# CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

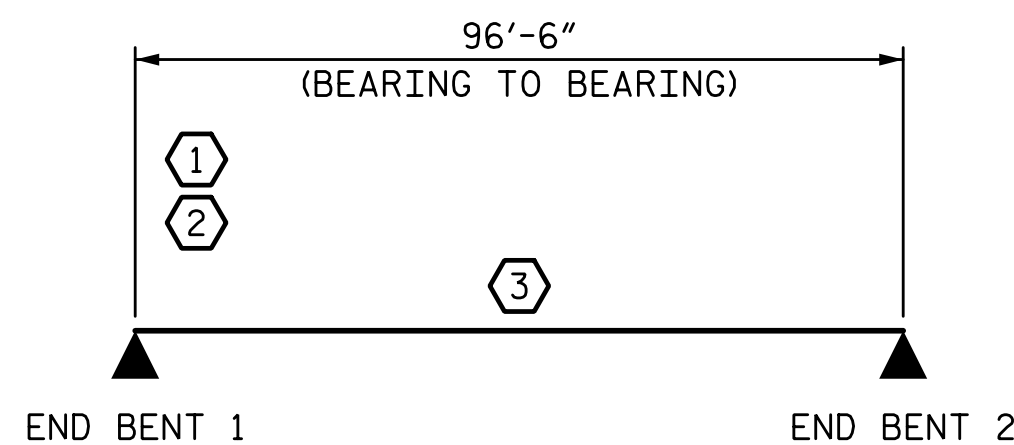
③ LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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GIRDER LOCATION

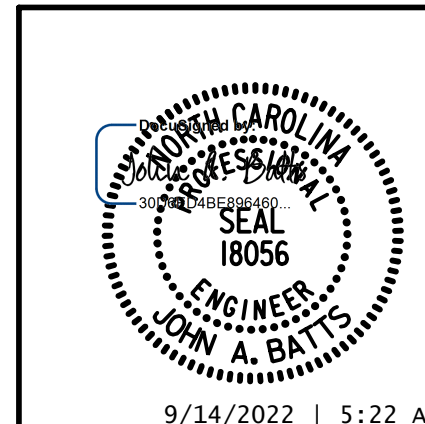
I - INTERIOR GIRDER  
EL - EXTERIOR LEFT GIRDER  
ER - EXTERIOR RIGHT GIRDER



SPAN A  
LRFR SUMMARY

PROJECT NO. B-5652  
ONLOW COUNTY  
STATION: 20+64.00 -L-RT-

SHEET 4 OF 4



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**GENERAL DRAWING  
LRFR SUMMARY FOR  
PRESTRESSED  
CONCRETE GIRDERS  
(NON-INTERSTATE TRAFFIC)**

DRAWN BY: T. BANKOVICH	DATE: 5-22
CHECKED BY: J.A. BATTS	DATE: 5-22
DESIGN ENGINEER OF RECORD: J.A. BATTS	DATE: 5-22

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			26

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

LICENSURE NO. C-4434

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