



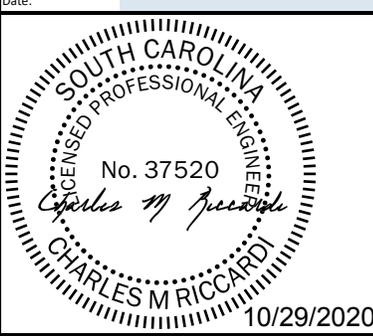
### LRFR BRIDGE LOAD RATING SUMMARY

SECTION 1 - GENERAL BRIDGE DATA					
(8) Asset ID 07272	Route Type Secondary road	(27) Year Built 1979	(90) Date of Inspection 11/2018	(411) Date Rated 10/29/2020	
(9) Bridge Location 5 MI NW of COLUMBIA		(7) Facility Carried S-32-273	(6) Feature Intersected/Route Crossing I-20		
(49) Length 248 ft.	(11) Milepost 0.854	(2) District 1	(3) County LEXINGTON	(22) Owner SCDOT	(418) Conditions During Rating (NBI Item 58, NBI Item 59, NBI Item 60) 6, 6, 6
(43, 44, 45, & 46) Bridge Description Simple 4 Span SS Bridge			(31) Design Load HS-20+Mod	(108) Existing Wearing Surface Type & Depth MONOLITHIC CONCRETE	
Rating Program & Version BrR 6.8.4 - AASHTO Engine		Rating Program & Version N/A		Rating Method LRFR	AASHTO Reference MBE 3rd Edition, w/ 2019 Interims
(58) Deck 6 Satisfactory	(59) Superstructure 6 Satisfactory	(60) Substructure 6 Satisfactory	(62) Culvert N N/A (NBI)	(113) Scour Critical N Not Over Waterway	

SECTION 2 - INVENTORY AND OPERATING LOAD RATINGS					
Rating Vehicle	Rating Level	Controlling Member	Controlling Location	Controlling Limit State	Rating Factor
HL-93 Truck + Lane	Inventory	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.627
HL-93 Truck Train + Lane (90%)	Inventory	-	-	-	-
HL-93 Tandem + Lane	Inventory	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.621
HL-93 Truck + Lane	Operating	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.115
HL-93 Truck Train + Lane (90%)	Operating	-	-	-	-
HL-93 Tandem + Lane	Operating	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.107

This LRFR Load Rating is based on:  Design Plans  Design Plans & Approved Shop Drawings  Other (Please explain in Remarks)  
 As-Built Plans

SECTION 3 - BRIDGE LOAD RATING SUMMARY		
Controlling Legal Truck	Load Posting Required? If Yes, complete Signing/Posting Form.	Controlling Legal Load Rating Factor
EV3	No	1.427

SECTION 4 - REMARKS & SIGN/SEAL			
Load Rating Engineer		Quality Control Engineer	
Name: Michael Riccardi		Name: Colt Wise	
Company/Title: HDR		Company/Title: HDR	
Date: 2/7/2020		Date: 4/2/2020	
<p>Remarks:</p> <ol style="list-style-type: none"> <li>As-built plans 32.700 were used for the rating.</li> <li>Traffic data was input into BrR using Direction % = 55% and Truck % = 3%.</li> <li>Condition factor of 1.00 was used based on the Inspection report dated 11/2018 and the site assessment dated 9/25/2019.</li> <li>Spans 1 and 4 are linked together under one superstructure definition in BrR. Results shown on the LRSF for Span 1 (i.e. Controlling Location 1.X) apply to both spans.</li> <li>Controlling member G2-G3 also includes G9-G10.</li> <li>Overhead sign not shown in plans. Dimensions and location based on Site Assessment dated 9/25/2019. Load input into BrR as a point load and applied to the first three girders as composite load. Assumed 20 psf of sign area for weight.</li> <li>Sacrificial wearing surface = 0" per LRGD Section 11.2.1.1.</li> <li>An additional 5% of self-load was applied to all steel girders to account for materials such as welds, bolts, etc.</li> <li>Diaphragm connections plates were not modeled because plates do not meet requirements of Std. Specs Section 10.34.4.6.</li> <li>Taper length of the cover plates were not considered.</li> <li>Based on the 9/25/2019 site assessment, there is no measurable deterioration to warrant a</li> </ol>		<input type="checkbox"/> Structure is part of QA sample set. Quality Assurance Engineer 	

The ADTT value listed below is to be used to establish Legal and Permit  $\gamma_{LL}$  factors.

SECTION 5A - LEGAL & PERMIT RATINGS - AASHTO Legal Trucks							
(30) ADT Year	(29) ADT	(109) Truck % ADT	ADTT (ADT x Truck % ADT)				
2017	15400	3	462				
Rating Vehicle	Rating Level	Weight (Tons)	Controlling Member	Controlling Location	Controlling Limit State	Rating Factor	Rating (Tons)
Modified AASHTO SC - Type 3	Legal	25	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.491	62
Modified AASHTO SC - Type 3S2	Legal	36.6	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.810	102
AASHTO - Type 3-3	Legal	40	G2, G3	3.5	SERVICE-II Steel Flexure Stress	3.010	120
Lane Type Loading (Neg. M only)	Legal	40	-	-	-	-	N/A
Lane Type Loading (Span > 200 ft)	Legal	40	-	-	-	-	N/A
Modified AASHTO SC - Type 3	Permit	25	G2, G3	1.5	SERVICE-II Steel Flexure Stress	3.238	80
Modified AASHTO SC - Type 3S2	Permit	36.6	G2, G3	1.5	SERVICE-II Steel Flexure Stress	3.653	133
AASHTO - Type 3-3	Permit	40	G2, G3	2.5	STRENGTH-II Steel Flexure	3.745	149
Lane Type Loading (Neg. M only)	Permit	40	-	-	-	-	N/A
Lane Type Loading (Span > 200 ft)	Permit	40	-	-	-	-	N/A



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SECTION 5B - LEGAL RATINGS - SC Specialized Hauling Vehicles (SHV) - Legal on Non-Interstate Only (Permit on Interstate)							
Rating Vehicle	Rating Level	Weight (Tons)	Controlling Member	Controlling Location	Controlling Limit State	Rating Factor	Rating (Tons)
SC-SHV1A	Legal	32.5	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.712	55
SC-SHV1B	Legal	35	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.638	57
SC-SHV2A	Legal	33	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.741	57
SC-SHV2B	Legal	40	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.521	60
SC-SHV3A	Legal	42.5	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.318	98
SC-SHV3B	Legal	45	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.189	98

SECTION 5C - LEGAL RATINGS - Two Miscellaneous SHV & AASHTO SHV							
Rating Vehicle	Rating Level	Weight (Tons)	Controlling Member	Controlling Location	Controlling Limit State	Rating Factor	Rating (Tons)
SC Representative School Bus	Legal	17.525	G2, G3	1.4	SERVICE-II Steel Flexure Stress	3.787	66
SC-SU2	Legal	20	G2, G3	1.4	SERVICE-II Steel Flexure Stress	3.164	63
SU4	Legal	27	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.177	58
SU5	Legal	31	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.047	63
SU6	Legal	34.75	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.843	64
SU7	Legal	38.75	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.723	66

SECTION 5D - LEGAL RATINGS - Emergency Vehicles (EV)							
Rating Vehicle	Rating Level	Weight (Tons)	Controlling Member	Controlling Location	Controlling Limit State	Rating Factor	Rating (Tons)
EV2	Legal	28.75	G2, G3	1.4	SERVICE-II Steel Flexure Stress	2.196	63
EV3	Legal	43	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.427	61

SECTION 6 - PERMIT RATINGS - Specialized Hauling Vehicles (SHV), Standard Permit Vehicles & Typical Cranes							
Rating Vehicle	Rating Level	Weight (Tons)	Controlling Member	Controlling Location	Controlling Limit State	Rating Factor	Rating (Tons)
SC-SHV1A	Permit	32.5	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.226	72
SC-SHV1B	Permit	35	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.130	74
SC-SHV2A	Permit	33	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.264	74
SC-SHV2B	Permit	40	G2, G3	1.5	SERVICE-II Steel Flexure Stress	1.977	79
SC-SHV3A	Permit	42.5	G2, G3	1.5	SERVICE-II Steel Flexure Stress	3.014	128
SC-SHV3B	Permit	45	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.846	128
SC Representative School Bus	Permit	17.525	G2, G3	1.4	SERVICE-II Steel Flexure Stress	4.922	86
SC-SU2	Permit	20	G2, G3	1.4	SERVICE-II Steel Flexure Stress	4.113	82
SU4	Permit	27	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.830	76
SU5	Permit	31	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.662	82
SU6	Permit	34.75	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.396	83
SU7	Permit	38.75	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.240	86
SC - 100k	Permit	50	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.535	126
SC - 120k	Permit	60	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.223	133
SC - 130k	Permit	65	G2, G3	1.5	SERVICE-II Steel Flexure Stress	2.093	136
SC Crane #544726	Permit	80	G2, G3	3.5	SERVICE-II Steel Flexure Stress	1.864	149
SC Crane #527568	Permit	88.85	G2, G3	3.5	SERVICE-II Steel Flexure Stress	1.710	151

Remarks: