



LRFR BRIDGE LOAD RATING SUMMARY

SECTION 1 - GENERAL BRIDGE DATA					
(8) Asset ID 04367	Route Type Interstate	(27) Year Built 1964	(90) Date of Inspection 11/2019	(411) Date Rated 3/13/2020	
(9) Bridge Location 2 MI SE OF SEVEN OAKS		(7) Facility Carried I-20	(6) Feature Intersected/Route Crossing STOOP CREEK		
(49) Length 34 ft.	(11) Milepost 62.880	(2) District 1	(3) County LEXINGTON	(22) Owner SCDOT	(418) Conditions During Rating (NBI Item 58, NBI Item 59, NBI Item 60) 7
(43, 44, 45, & 46) Bridge Description 3 Span RCCulvert		(31) Design Load H-20	(108) Existing Wearing Surface Type & Depth NOT APPLICABLE		
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 N N/A (NBI)	(59) Superstructure N N/A (NBI)	(60) Substructure N N/A (NBI)	(62) Culvert 7 Minor Deterioration	(113) Scour Critical 8 Stable Above Footing	

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	Top Slab 2	1.2	Flexure	3.081
HL-93 Truck Train + Lane (90%)	Inventory	-	-	-	-
HL-93 Tandem + Lane	Inventory	Top Slab 2	1.2	Flexure	3.471
HL-93 Truck + Lane	Operating	Top Slab 2	1.2	Flexure	3.994
HL-93 Truck Train + Lane (90%)	Operating	-	-	-	-
HL-93 Tandem + Lane	Operating	Top Slab 2	1.2	Flexure	4.500

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	3.871

SECTION 4 - REMARKS & SIGN/SEAL			
Load Rating Engineer		Quality Control Engineer	
Name: Salome Uwizerimana		Name: T. Brian Query	
Company/Title: STV Inc./ Engineering Specialist		Company/Title: STV Inc./Project Manager	
Date: 2/19/2020		Date: 3/11/2020	
<p>Remarks:</p> <p>1. As -let plans 32.443 were used for the rating.</p> <p>2. Condition factor of 1.00 was used based on inspection report dated 11/2019.</p> <p>3. Fill depth of 10' per inspection report dated 11/2019.</p> <p>4. Due to limitations in the AASHTO BrR program for entering rebar that is bent along its length, rebar "A" was broken into segments and placed on the corresponding face of the top and bottom slab. Lengths given were the true horizontal length plus the horizontal portion of the slanted length. The slanted length was assumed to be sufficient to develop the reinforcement member, and the rating model was modeled accordingly.</p> <p>5. Based on the November 2019 Inspection report, there is no measurable deterioration to warrant a deteriorated structure model in BrR.</p>		<p><input type="checkbox"/> Structure is part of QA sample set.</p> <p>Quality Assurance Engineer</p> <p><i>Evan H. Sanders</i></p> <p>92A54A44DDD8489... No. 37345</p> <p>EVAN SANDERS 3/11/2020</p>	

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

SECTION 5A - LEGAL & PERMIT RATINGS - AASHTO Legal Trucks							
(30) ADT Year	(29) ADT	(109) Truck % ADT	ADTT (ADT x Truck % ADT)				
2017	83700	12	10044				
Rating Vehicle	Rating Level	Weight (Tons)	Controlling Member	Controlling Location	Controlling Limit State	Rating Factor	Rating (Tons)
Modified AASHTO SC - Type 3	Legal	25	Top Slab 2	1.2	Flexure	4.377	109
Modified AASHTO SC - Type 3S2	Legal	36.6	Top Slab 2	1.2	Flexure	4.297	157
AASHTO - Type 3-3	Legal	40	Top Slab 2	1.2	Flexure	5.211	208
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	Top Slab 2	1.2	Flexure	6.253	156
Modified AASHTO SC - Type 3S2	Permit	36.6	Top Slab 2	1.2	Flexure	6.139	224
AASHTO - Type 3-3	Permit	40	Top Slab 2	1.2	Flexure	7.444	297
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	Top Slab 2	1.2	Flexure	3.674	119
SC-SHV1B	Legal	35	Top Slab 2	1.2	Flexure	3.412	119
SC-SHV2A	Legal	33	Top Slab 2	1.2	Flexure	3.875	127
SC-SHV2B	Legal	40	Top Slab 2	1.2	Flexure	3.197	127
SC-SHV3A	Legal	42.5	Top Slab 2	1.2	Flexure	3.884	165
SC-SHV3B	Legal	45	Top Slab 2	1.2	Flexure	3.682	165

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	Top Slab 2	1.2	Flexure	5.103	89
SC-SU2	Legal	20	Top Slab 2	1.2	Flexure	5.198	103
SU4	Legal	27	Top Slab 2	1.2	Flexure	4.736	127
SU5	Legal	31	Top Slab 2	1.2	Flexure	4.649	144
SU6	Legal	34.75	Top Slab 2	1.2	Flexure	4.630	160
SU7	Legal	38.75	Top Slab 2	1.2	Flexure	4.586	177

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	Top Slab 2	1.2	Flexure	5.273	151
EV3	Legal	43	Top Slab 2	1.2	Flexure	3.871	166

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	Top Slab 2	1.2	Flexure	5.249	170
SC-SHV1B	Permit	35	Top Slab 2	1.2	Flexure	4.874	170
SC-SHV2A	Permit	33	Top Slab 2	1.2	Flexure	5.535	182
SC-SHV2B	Permit	40	Top Slab 2	1.2	Flexure	4.567	182
SC-SHV3A	Permit	42.5	Top Slab 2	1.2	Flexure	5.549	235
SC-SHV3B	Permit	45	Top Slab 2	1.2	Flexure	5.261	236
SC Representative School Bus	Permit	17.525	Top Slab 2	1.2	Flexure	7.290	127
SC-SU2	Permit	20	Top Slab 2	1.2	Flexure	7.425	148
SU4	Permit	27	Top Slab 2	1.2	Flexure	6.765	182
SU5	Permit	31	Top Slab 2	1.2	Flexure	6.641	205
SU6	Permit	34.75	Top Slab 2	1.2	Flexure	6.614	229
SU7	Permit	38.75	Top Slab 2	1.2	Flexure	6.551	253
SC - 100k	Permit	50	Top Slab 2	1.2	Flexure	5.047	252
SC - 120k	Permit	60	Top Slab 2	1.2	Flexure	4.341	260
SC - 130k	Permit	65	Top Slab 2	1.2	Flexure	4.330	281
SC Crane #544726	Permit	80	Top Slab 2	1.2	Flexure	4.295	343
SC Crane #527568	Permit	88.85	Top Slab 2	1.2	Flexure	4.464	396

Remarks: