




# BRIDGE LOAD RATING SUMMARY REPORT

## OFFICE OF STRUCTURAL ENGINEERING

### OHIO DEPARTMENT OF TRANSPORTATION

SFN (SNBI Bridge Number)	Ohio Bridge Number (Bridge Asset Name)	District	GPS Coordinates																																																																																																																																																																																																							
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3431790	HAS-BRDGE-00.045	11	40.425675	-81.1871667																																																																																																																																																																																																						
Original Year Built	Year Re-built	Total length	Structure Type XXX	Feature Intersected																																																																																																																																																																																																						
Proposed	N/A	86 ft	505	CONOTTON CREEK																																																																																																																																																																																																						
SPECIAL ASSUMPTIONS & COMMENTS	Rated by: AI 01/28/2025 Checked by: TDA 02/10/2025																																																																																																																																																																																																									
	Single span (83'-0" C/C Bearings) prestressed adjacent box beams (CB33-48) with 6" minimum composite reinforced concrete deck including 1" monolithic wearing surface; Skew = 0 degrees; 32'-0" O/O deck width; 6'-0" non-raised sidewalk on west side and Modified TST-1-99 railing on both sides; FWS = 60 psf; Deck f'c = 4.5 ksi (Class QC2 Concrete); Prestressed Box Beam concrete f'c initial = 5.0 ksi, f'c final = 7.0 ksi; Prestressing strands (Low Relaxation) As = 0.167 sq in; Ultimate Strength = 270 ksi																																																																																																																																																																																																									
Please type or select on right using drop down arrow																																																																																																																																																																																																										
Load Rating Purpose:	1 - Initial Load Rating																																																																																																																																																																																																									
Bridge Appraisal Rating (0-9):	9																																																																																																																																																																																																									
Load rating Software:	3 - AASHTO BrR																																																																																																																																																																																																									
Software version:	7.4.1.3001																																																																																																																																																																																																									
Rating Source:	1 - Plan information available for load rating analysis																																																																																																																																																																																																									
Load Rating Method:	LRFR - Load & Resistance Factor Rating (RF) - Code 8																																																																																																																																																																																																									
Design Loading:	A - HL93																																																																																																																																																																																																									
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<table><tr><th colspan="5">OHIO &amp; AASHTO LEGAL VEHICLES</th><th colspan="4">DESIGN AND OPERATING RATINGS</th></tr><tr><th rowspan="2">Legal Load</th><th rowspan="2">GVW (Tons)</th><th rowspan="2">No of Axles</th><th rowspan="2">Rating Factor RF</th><th rowspan="2">Safe Weight (Tons)</th><th rowspan="2">Loading Type</th><th colspan="2">Rating by RF</th></tr><tr><th>Inventory</th><th>Operating</th></tr><tr><td>2F1</td><td>15</td><td>2</td><td>5.747</td><td>15.00</td><td>HL93 Loading</td><td>1.489</td><td>1.942</td></tr><tr><td>3F1</td><td>23</td><td>3</td><td>3.842</td><td>23.00</td><td>Recommendation</td><td colspan="2">No Load Posting is Recommended</td></tr><tr><td>5C1</td><td>40</td><td>5</td><td>3.008</td><td>40.00</td><td rowspan="5">Sign Posting Recommendation:</td><td colspan="2"></td></tr><tr><td>Type 3</td><td>25</td><td>3</td><td>3.652</td><td>25.00</td><td colspan="2"></td></tr><tr><td>Type 3-3</td><td>40</td><td>6</td><td>2.990</td><td>40.00</td><td colspan="2"></td></tr><tr><td>Type 3S2</td><td>36</td><td>5</td><td>3.021</td><td>36.00</td><td colspan="2"></td></tr><tr><td colspan="5">SPECIALIZED HAULING VEHICLES (SHV)</td><td colspan="2"></td></tr><tr><td>SU4/4F1</td><td>27</td><td>4</td><td>3.333</td><td>27.00</td><td colspan="2"></td></tr><tr><td>SU5</td><td>31</td><td>5</td><td>2.966</td><td>31.00</td><td colspan="2"></td></tr><tr><td>SU6</td><td>34.75</td><td>6</td><td>2.746</td><td>34.75</td><td colspan="2"></td></tr><tr><td>SU7</td><td>38.75</td><td>7</td><td>2.559</td><td>38.75</td><td colspan="2"></td></tr><tr><td colspan="5">EMERGENCY VEHICLES (EV) Check box if rating for EV3 <input checked="" type="checkbox"/></td><td colspan="3">Permit Load (PL) Analysis **</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>Loading Type</td><td>GVW (Tons)</td><td>No of Axles</td><td>Rating Factor</td><td>Calculated Load (Tons)</td></tr><tr><td>EV2</td><td>28.75</td><td>2</td><td>3.122</td><td>28.75</td><td>PL 60T</td><td>60</td><td>6</td><td>2.906</td><td>174.36</td></tr><tr><td>EV3</td><td>43</td><td>3</td><td>2.484</td><td>43.00</td><td>PL 65T</td><td>65</td><td>7</td><td>2.317</td><td>150.61</td></tr><tr><td colspan="5">Controlling Legal Load RF</td><td colspan="2">150%</td><td colspan="2">1.50</td><td colspan="2">PL Analysis Method</td><td colspan="2">Load &amp; Resistance Factor Rating (LRFR)</td></tr><tr><td colspan="2">AGENCY/FIRM/OFFICE</td><td colspan="10">EMH&amp;T</td></tr><tr><td></td><td>Name</td><td>PE Number</td><td colspan="2">Phone Number</td><td colspan="2">Email</td><td>Report Date:</td><td colspan="4">2025-02-25</td></tr><tr><td>Rated By</td><td>Abdul Saboor Ibrahim Khail</td><td>90769</td><td colspan="2">614-775-4631</td><td colspan="2">aibrahimkhail@emht.com</td><td colspan="5"></td></tr><tr><td>Reviewed By</td><td>Tyler D. Adams</td><td>80227</td><td colspan="2">614-775-4602</td><td colspan="2">tadams@emht.com</td><td colspan="5"></td></tr></table>					OHIO & AASHTO LEGAL VEHICLES					DESIGN AND OPERATING RATINGS				Legal Load	GVW (Tons)	No of Axles	Rating Factor RF	Safe Weight (Tons)	Loading Type	Rating by RF		Inventory	Operating	2F1	15	2	5.747	15.00	HL93 Loading	1.489	1.942	3F1	23	3	3.842	23.00	Recommendation	No Load Posting is Recommended		5C1	40	5	3.008	40.00	Sign Posting Recommendation:			Type 3	25	3	3.652	25.00			Type 3-3	40	6	2.990	40.00			Type 3S2	36	5	3.021	36.00			SPECIALIZED HAULING VEHICLES (SHV)							SU4/4F1	27	4	3.333	27.00			SU5	31	5	2.966	31.00			SU6	34.75	6	2.746	34.75			SU7	38.75	7	2.559	38.75			EMERGENCY VEHICLES (EV) Check box if rating for EV3 <input checked="" type="checkbox"/>					Permit Load (PL) Analysis **								Loading Type	GVW (Tons)	No of Axles	Rating Factor	Calculated Load (Tons)	EV2	28.75	2	3.122	28.75	PL 60T	60	6	2.906	174.36	EV3	43	3	2.484	43.00	PL 65T	65	7	2.317	150.61	Controlling Legal Load RF					150%		1.50		PL Analysis Method		Load & Resistance Factor Rating (LRFR)		AGENCY/FIRM/OFFICE		EMH&T											Name	PE Number	Phone Number		Email		Report Date:	2025-02-25				Rated By	Abdul Saboor Ibrahim Khail	90769	614-775-4631		aibrahimkhail@emht.com							Reviewed By	Tyler D. Adams	80227	614-775-4602		tadams@emht.com						
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\*\* ODOT bridges to be analyzed for permit trucks by policy.

Analysis for permit trucks is optional for non-ODOT bridges and at owner's discretion.

BR-100 (01/2024)

Rating Results Summary Report

Name: Bridge Street over Conotton Creek  
Struct-Def: Single Span PS Box Beams

Bridge ID: 3431790  
Member: G1

NBI: 3431790  
Member alt: Exterior Beam

Live Load	Live Load Type	Rating Method	Rating Level	Load Rating (Ton)	Rating Factor	Location (ft)	Location Span-(%)	Limit State	Impact	Lane
EV2	Axle Load	LRFR	Legal	89.77	3.122	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
EV3	Axle Load	LRFR	Legal	106.82	2.484	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
HL-93 (US)	Truck + Lane	LRFR	Inventory	53.60	1.489	41.50	1 - (50.0)	SERVICE-III PS Tensile Stress	As Requested	As Requested
HL-93 (US)	Truck + Lane	LRFR	Operating	69.90	1.942	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
HL-93 (US)	Tandem + Lane	LRFR	Inventory	62.26	1.729	41.50	1 - (50.0)	SERVICE-III PS Tensile Stress	As Requested	As Requested
HL-93 (US)	Tandem + Lane	LRFR	Operating	85.05	2.363	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
OH-2F1~1	Axle Load	LRFR	Legal	86.20	5.747	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
OH-3F1~1	Axle Load	LRFR	Legal	88.36	3.842	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
OH-5C1	Axle Load	LRFR	Legal	120.33	3.008	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
RPL 60T	Axle Load	LRFR	Permit	174.36	2.906	6.00	1 - (7.2)	STRENGTH-II Concrete Shear	As Requested	As Requested
RPL 65T	Axle Load	LRFR	Permit	150.60	2.317	6.00	1 - (7.2)	STRENGTH-II Concrete Shear	As Requested	As Requested
SU4	Axle Load	LRFR	Legal	90.00	3.333	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
SU5	Axle Load	LRFR	Legal	91.95	2.966	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
SU6	Axle Load	LRFR	Legal	95.44	2.746	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
SU7	Axle Load	LRFR	Legal	99.17	2.559	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
Type 3	Axle Load	LRFR	Legal	91.29	3.652	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
Type 3-3	Axle Load	LRFR	Legal	119.59	2.990	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
Type 3S2	Axle Load	LRFR	Legal	108.76	3.021	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested

Rating Results Summary Report

Name: Bridge Street over Conotton Creek  
Struct-Def: Single Span PS Box Beams

Bridge ID: 3431790  
Member: G2

NBI: 3431790  
Member alt: Interior Beam

Live Load	Live Load Type	Rating Method	Rating Level	Load Rating (Ton)	Rating Factor	Location (ft)	Location Span-(%)	Limit State	Impact	Lane
EV2	Axle Load	LRFR	Legal	110.06	3.828	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
EV3	Axle Load	LRFR	Legal	130.97	3.046	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
HL-93 (US)	Truck + Lane	LRFR	Inventory	53.81	1.495	41.50	1 - (50.0)	SERVICE-III PS Tensile Stress	As Requested	As Requested
HL-93 (US)	Truck + Lane	LRFR	Operating	85.71	2.381	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
HL-93 (US)	Tandem + Lane	LRFR	Inventory	62.50	1.736	41.50	1 - (50.0)	SERVICE-III PS Tensile Stress	As Requested	As Requested
HL-93 (US)	Tandem + Lane	LRFR	Operating	104.28	2.897	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
OH-2F1~1	Axle Load	LRFR	Legal	105.69	7.046	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
OH-3F1~1	Axle Load	LRFR	Legal	108.33	4.710	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
OH-5C1	Axle Load	LRFR	Legal	147.53	3.688	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
RPL 60T	Axle Load	LRFR	Permit	218.16	3.636	6.00	1 - (7.2)	STRENGTH-II Concrete Shear	As Requested	As Requested
RPL 65T	Axle Load	LRFR	Permit	188.44	2.899	6.00	1 - (7.2)	STRENGTH-II Concrete Shear	As Requested	As Requested
SU4	Axle Load	LRFR	Legal	110.35	4.087	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
SU5	Axle Load	LRFR	Legal	112.73	3.637	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
SU6	Axle Load	LRFR	Legal	117.01	3.367	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
SU7	Axle Load	LRFR	Legal	121.59	3.138	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
Type 3	Axle Load	LRFR	Legal	111.93	4.477	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
Type 3-3	Axle Load	LRFR	Legal	146.63	3.666	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested
Type 3S2	Axle Load	LRFR	Legal	133.34	3.704	6.00	1 - (7.2)	STRENGTH-I Concrete Shear	As Requested	As Requested

## MODIFIED TST-1-99 RAILING:

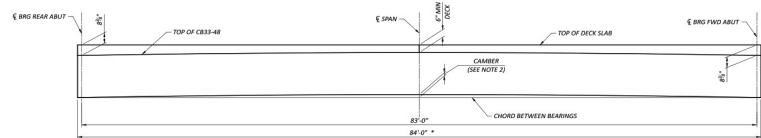
Steel Rail Weight = 0.13 klf (steel rail components and 10% for bolts)

Total Weight 0.13 klf

## ADDITIONAL LOADS:

### INCREASED DECK THICKNESS DUE TO CAMBER:

Extra thickness due to camber = 2.16 in  
 Beam width = 48.00 in  
 Concrete Unit Wt. = 0.150 kips/ft<sup>3</sup>  
 Precast DC = 0.11 klf



### INTERMEDIATE DIAPHRAGM LOADS

Width = 37.00 in  
 Depth = 22.00 in  
 Thickness = 1.50 ft  
 Concrete Unit Wt. = 0.150 kips/ft<sup>3</sup>  
 Precast DC = 1.27 klf

### END DIAPHRAGM LOADS

Width = 37.00 in  
 Depth = 22.00 in  
 Thickness = 3.25 ft  
 Concrete Unit Wt. = 0.150 kips/ft<sup>3</sup>  
 Precast DC = 2.76 klf