

Load Rating Bridge Report

Report By: NATHAN MILLER

Date: 08/21/2024

Width C-C 44.0 ' Str Length 44 Bridge Structure Type: 219 Year Built: 1905

B.SP.02: Number of Spans: 2 Total Spans: 2 B.G.04 Min. Span Length 22

B.LR.02 Design Method U B.G.03 Max. Span Length 22

STRUCTURAL INVENTORY AND APPRAISAL:

Design Load (B.LR.01): U - Unknown Lanes 2 Rating Method (B.LR.04): EJ

Inventory Rating (B.LR.05): 0.52 Tons/Rf **Operating Rating (B.LR.06):** 0.71 Tons/Rf

Inventory Rating is controlled by: FLEXURE Operating Rating is controlled by: FLEXURE

critical location 0.5L ROOF SLAB critical location 0.5L ROOF SLAB

Comment:

PLANS FOR THE CONCRETE CULVERT ARE NOT AVAILABLE AND THE DIMENSIONS DO NOT MATCH ANY AVAILABLE STANDARD DRAWINGS. THE CULVERT HAS BEEN CARRYING NORMAL TRAFFIC SINCE 1905 WITH NO SIGNS OF OVERLOAD DISTRESS, HOWEVER THE STRUCTURE DOES SHOW SIGNS OF WIDESPREAD CONCRETE DETERIORATION THROUGHOUT THE CONTROLLING ELEMENTS. AS SUCH, THE CONCRETE CULVERT WITH UNKNOWN DETAILS SHALL BE EVALUATED UTILIZING ENGINEERING JUDGEMENT AND POSTED FOR RESTRICTED LOADING IN ACCORDANCE WITH SECTION 6.1.4-BRIDGES WITH UNKNOWN STRUCTURAL COMPONENTS OF THE MBE. THE REPORTED INVENTORY AND OPERATING RATINGS ARE BASED ON AN ASSUMED 15T ENGINE DESIGN LIVE LOAD.

Calculations attached




Deck (B.C.01): N Superstructure (B.C.02): N Substructure (B.C.03): N Culvert (B.C.04): 3

Design Standard
(If applicable):

Restriction Description:
(If applicable)

Load Evaluation and Posting

[Iowa Load Rating Vehicles](#)

	B.EP.01: Legal Load Configuration	Tons - Multi lane	B.EP.02: Legal Load Rating Factor	B.EP.03: Posting Type	B.EP.04: Posting Value
Straight Trucks 	Type 4	20	0.73		20 T
	SU4 truck	20	0.74		20 T
	SU5 truck	20	0.65		20 T
	SU6 truck	20	0.58		20 T
	SU7 truck	20	0.52		20 T
Truck - Semi Trailer 	Type 3S3A	20	0.5		20 T
	Type 3S3B	20	0.44		20 T
	Type 4S3	20	0.42		20 T
Truck - Full Trailer 	Type 3-3	20	0.5		20 T
	Type 5-2	20	0.42		20 T
	Type EV2		0		T
Emergency Vehicles	Type EV3		0		
	Type NRL		0		
Implement of					

FHWA No. 008950 Bridge ID: W CHARLES ST E. Location: 000000000 90 Inspect Date 05/16/2024

Husbandry

Type IoH

B.LR.08 Routine Permit Loads C B.LR.07 Controlling Rating Factor 0.41

Permit Vehicle Adequacy: 90K No 100K Crane Axle Group No 136K A No 136K B No 156K No

All Systems Permit No

Comments

RECOMMENDED POSTING "20 TONS ALL VEHICLES" DUE TO DETERIORATED CULVERT CONDITION. CONDITION IS BEING MONITORED WITH A 12 MONTH INSPECTION FREQUENCY. CULVERT SHALL BE CLOSELY MONITORED. SIGNS OF ADDITIONAL DISTRESS, SETTLEMENT, SCOUR, OR OVERLOADING SHALL WARRANT IMMEDIATE CLOSURE.

Name NATHAN MILLER

Date 08/21/2024

License No.: 21479

License renewal date December 31, 2024

FHWA # 000000000008
950

Report By: NATHAN MILLER

Date: 08/21/2024

BRIDGE ID: W CHARLES ST E.

STRUCTURAL RATING

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and I am duly licensed Professional Engineer under the laws of the State of Iowa.

10/13/2022

Signature

Date

Printed or Typed Name NATHAN MILLER

License No.: 21479 My license renewal date is December 31,

Comments

RECOMMENDED POSTING "20 TONS ALL VEHICLES" DUE TO DETERIORATED CULVERT CONDITION. CONDITION IS BEING MONITORED WITH A 12 MONTH INSPECTION FREQUENCY. CULVERT SHALL BE CLOSELY MONITORED. SIGNS OF ADDITIONAL DISTRESS, SETTLEMENT, SCOUR, OR OVERLOADING SHALL WARRANT IMMEDIATE CLOSURE.