December 3, 2018

Bridge Improvement Grant Selection Committee
SDDOT
700 E Broadway Ave.
Pierre, SD 57501-2586

RE: Structure 52-424-302 in Rapid City

To whom it may concern,

Structure 52-424-302 is on E Main Street N in Rapid City is a 121’ long by 42’ wide Three Span Concrete Deck on Steel Girder Bridge over Rapid Creek. This structure connects St. Joseph Street to La Crosse Street and serves both the Pennington County Fairgrounds and the South Dakota School of Mines & Technology. In addition, the bike path utilizes this structure to cross Rapid Creek and it is in close proximity to the City of Rapid City’s Street Department Maintenance Facility.

As noted in the 2018 Bridge Inspection Report (completed by Brosz Engineering, Inc.), the previous low slump concrete overlay is beginning to fail. However, the main concern with this structure is the rapid advance of deterioration of the concrete bent caps. The bottoms of both caps are either spalling or have significant delamination due to corrosion of the bottom steel. This corroded steel is in a tension zone on the bottom of the caps, and continued deterioration will likely cause a recommendation of lower load limits in the near future. There is also settlement occurring on the approach slabs and the rails are in need of re-painting and possible repair.

Anticipated repair items included the following:
- Replacement of the low slump dense concrete deck overlay or removal of existing overlay and placement of an epoxy chip seal
- Repair the spalls and severe cracking in the bents.
- Blast the bridge railing, repair if necessary, and repaint. If during design it is determined that the existing curb is in need of replacement, a new barrier system will need to be attached to meet current code. This route is a designated bike path and should have an appropriate height and type of railing.
- Repair the approach slabs to smooth out the ride and limit undermining of abutments.
- Reshape bridge berms and add riprap erosion protection
Attached to this cover letter, please find cost estimates for design, construction and construction administration. These estimated costs are summarized in the table below.

<p>| | |</p>
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<tr>
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<tr>
<td>Construction</td>
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<td>Construction Administration</td>
<td>$59,000</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$591,000</strong></td>
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Please let me know if you have any questions.

Sincerely,

Sara Odden, PE
City of Rapid City

Encl: 2019 BIG Application
    Cost Estimates
    2018 Bridge Inspection Report
    Bridge Maintenance Records
# 2019 Application for Bridge Improvement Grant (BIG) Funds

**Preservation or Rehab/Replacement**

South Dakota Department of Transportation

Submit Application To: Wade.Dahl@state.sd.us

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**Identification**

<table>
<thead>
<tr>
<th>Bridge ID #</th>
<th>52-424-302</th>
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<tbody>
<tr>
<td>Fed Aide Route Number</td>
<td>1575</td>
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<tr>
<td>Owner</td>
<td>City of Rapid City</td>
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<tr>
<td>Over</td>
<td>Rapid Creek</td>
</tr>
<tr>
<td>Location</td>
<td>W. of the intersection of E. Main St N and Brennan Ave.</td>
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<tr>
<td>Road/Street/Avenue Name</td>
<td>E. Main Street N</td>
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**Preservation Score:**

- **Grant Funds:** $411,000 (80% max. or other 75%)
  - + Local Match $150,000 (20% min. or other 25%)

**Total Project Cost:** $591,000

**Grant Breakdown:**

- $94,000 Design Cost
- $438,000 Construction Cost
- $59,000 CE Cost (not included in grant amount)

**Preservation BIG ($37,500 min. = $30,000 + $7,500 Local Match of 20% min.)**

**Major Rehab/Replacement BIG ($125,000 min. = $100,000 + $25,000 Local Match of 20% min.)**

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**Grant Eligibility**

**Select if Applicable:**

- ☑ Project involves Right of Way on Tribal Lands
- □ Bid Ready Plans Packet (Required items: final plans, final hydraulics, load rating, design calculations and check design, certifications, permits, engineer’s estimate, bid proposal, bid specifications, & construction management plan.)

**County Applicant:**

Amount of County Wheel Tax per wheel for >6000 lb classification: ____________

- ☑ True □ False - Is the structure listed in the Approved County 5-Year Plan

**All Projects:** (Attach separate sheet with explanation if any of the following are False)

- ☑ True □ False - Structure serves multiple residences, farms, ranches or a multi-lot development?
- ☑ True □ False - Structure is located on a Full Maintenance Road?
- ☑ True □ False - Roadway does not terminate into a field entrance, driveway, single residence, farm, or ranch?
- ☑ True □ False - Local Public Agency (LPA) is in full compliance with Federal and State NBIS requirements?
- ☑ True □ False - Has general maintenance been performed on the structure? (Maintenance records must be attached.)

**Note:** If a deviation from duties, as listed in section VII of the BIG Procedures, has been obtained/approved by the Secretary of Transportation, please check here and attach documentation. □

**Preservation Appl. Requirements:** Description of requested work; design and CE cost proposals in DOT format, shown separately; engineer’s estimate for construction with eligible and non-eligible items shown separately (lump sum contingency NOT ELIGIBLE and cannot be shown on estimate); and photos of existing conditions to be addressed.

**Major Rehab/Replacement Appl. Requirements:** Type, Size, & Location (T&L) report; design and CE cost proposals in DOT format, shown separately; engineer’s estimate for construction with eligible and non-eligible items shown separately (lump sum contingency NOT ELIGIBLE and cannot be shown on estimate.)

**Work Description:**

- Complete a bridge deck overlay (remove existing deteriorated overlay). Repair the spalls and severe cracking in the bents.
- Blast down to white metal, repair if necessary and repaint the bridge rail system. Replace the existing approach slabs.

**LPA Authorization**

Sara Odden

LPA Contact (print)

Contact email and phone number: sara.odden@rcgov.org (605) 394-4154

Attach resolution from Commission/Council authorizing application for grant.

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2019 BIG PR RE Appl Page 1 of 4
BRIDGE IMPROVEMENT GRANT PROGRAM
RESOLUTION AUTHORIZING SUBMISSION OF APPLICATIONS

WHEREAS, City of Rapid City wishes to submit an application(s) for consideration of award for the Bridge Improvement Grant Program:

STRUCTURE NUMBER(S) AND LOCATION(S):
Structure Number 52-424-302
East Main Street N bridge over Rapid Creek

and WHEREAS, NA certifies that the project(s) are listed in the county's Five-Year County Highway and Bridge Improvement Plan*;
and WHEREAS, City of Rapid City agrees to pay the 25% match on the Bridge Improvement Grant funds;
and WHEREAS, City of Rapid City hereby authorizes the Bridge Improvement Grant application(s) and any required funding commitments.

NOW THEREFORE BE IT RESOLVED:

That the South Dakota Department of Transportation be and hereby is requested to accept the attached Bridge Improvement Grant application(s).

Vote of Commissioners/Council: Yes ______ No ______

Dated at ______________ , SD, this __________ day of ______________ , ______.

ATTEST:

________________________________________  __________________________________________
County Auditor/City Finance Officer        Chairman/Mayor

*NOTE – not applicable for cities applying for the grant – simply mark ‘NA’ Minimum required is 20%; must match percent shown on application.
### LABOR COST

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### OVERHEAD COST

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### FIXED FEE

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Total | $81,258.66 | $12,151.31 |
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Subtotal (Rounded to nearest $1000) = $381,000

Mobilization (10%, Rounded to nearest $1000) = $38,000

Traffic Control (5%, Rounded to nearest $1000) = $19,000

Total for Grant Application = $438,000

Note: Quantities for a rehabilitation project are best estimate/guesses at this stage for grant application.
BRIDGE INSPECTION
For
CITY OF RAPID CITY
STRUCTURE NUMBER
52-424-302
2018

2309 W. 50th Street
Sioux Falls, SD 57105
Ph: 605.336.1676

Brosz
ENGINEERING, INC.
ARCHITECTURE ENGINEERING SURVEYING

109 S. Main – Box 357
Bowman, ND 58623
Ph. 701.523.3340

3561 Whitewood Rd. – Box 636
Sturgis, SD 57785
Ph. 605.347.2722

3030 Airport Rd. Ste. A – Box 23
Pierre, SD 57501
Ph. 605.224.1123
BRIDGE INSPECTION REPORT

Structure No.: 52-424-302
Feature Carried: E. Main Street
Feature Crossed: Rapid Creek
Length: 121'
Year Built: 1973
Roadway Width: 40'
Skew: 0°
County: Pennington
Maint. Proj. No.: 
Deck Width: 42'
Lat: 44.07927
Long: -103.20383
Agency Responsible for Maintenance: City of Rapid City
Location: W. of Intersection of East Main Street and Brennan Avenue
Bridge Description: Three (Simple) Span Concrete Deck on Steel Girder Bridge

POSTING RECOMMENDATIONS

<table>
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<th>SD Legal Truck</th>
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<th>SD Legal Special Haul Vehicle (SHV)</th>
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No Load Posting Required

STRUCTURE CONDITION RATINGS

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Date Inspected

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<td>B. Wilsey, R. Eberle</td>
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REPAIR RECOMMENDATIONS/CONTRACT REPAIRS

Repairs Required to Increase Load Limit

N/A

Repairs – Preservation and General Structure Maintenance

Consider an extensive rehabilitation or replacement. The deck system is deteriorating, and the bent caps have severe cracking along with some delaminating concrete and spalled concrete, exposing rebar, which is losing section.

Repair spalls and severe cracking in bents.
Blast down to white metal, repair if necessary, and repaint the bridge rail system.

Repairs – Approach and Signing

Add type 3 object marker sign at SW corner.
Overlay cast side to smooth out the ride or repair settlement and undermining of abutment.

Repairs – Channel and/or Berms

Add riprap to east abutment especially north side where channel hits.

Repairs to Improve Safety and/or Upgrade to Current FHWA Standards

None.
1. **Alignment**
   Straight to east, 90° horizontal curve to west approx. 150’. Intersection (north only) just east of bridge. Mostly level to east. Vertical curve (down) to west. Adequate sight distance for speed and volume.

2. **Condition**
   Concrete with curb and gutter to east. Asphalt with curb and gutter to west. East concrete approach is settling adjacent to bridge. Settlement of approx. 3” has caused cracking and breaking up of concrete within 3’-0” of bridge end. Cracking and spalling of concrete around SE drop inlet on approach slab. This is also causing a “bump” onto bridge. West approach is asphalt, smooth condition. Some breakup off bridge end. Mostly in WBL.

3. **Joints**
   Asphalt growth joint between concrete pavement and abutment backwall to east. Generally fair condition. Asphalt growth joint is separating from abutment and approach pavement. Bump at east end.

4. **Guard Rails**
   No guardrails.

5. **Embankment**
   Generally stable, settlement at east approach as described.

6. **Drainage**
   Curb and gutter on both ends with type “B” inlets adjacent to east end. Good condition.

7. **Signing**
   Object markers at all corners except for the southwest. Bike path signs on both sides of street on east side (Bike path crosses road just east of bridge). Curve sign at northeast corner. Good condition. Pavement marked and striped for bike trail along south side of bridge.

8. **Roadway Width**
   Approach roadway width of approximately 40.0’ wide.

9. **Existing Posting:**
   None.

10. **Other:**
    Bike path on east side.
1. **Deck Condition**
   Concrete deck. Appears to have a low slump concrete overlay on it.

   **A. Cracking**
   Transverse cracking at approx. 5'-0" intervals across entire bridge deck. Longitudinal cracks approx. 7'-0" north and south of centerline extend across full length of structure. Random longitudinal cracking in other areas of deck. All cracking is light at this point.

   **B. Scaling**
   Some scaling present. Mainly on north half to about 10% of deck surface. Surface somewhat abraded in wheel lines as well – minor.

   **C. Spalling**
   There was a 5' x 3' spall and a 5' x 4' spall that appears to be full depth of the concrete overlay at the east end. These spalls have been grout patched, but there is moderate map cracking in the patches. The ends of the deck are chipped.

   **D. Delaminations**
   None.

2. **Overlay**
   Concrete overlay is in good condition. There appears to be an overlay.

   **A. Type of Overlay**
   Low slump dense concrete.

   **B. Overlay Thickness**
   Usually about 2".

   **C. Condition**
   See item 1 comments.

3. **Joints**
   Joints are sealed. Joints at each bent. All appear to be well sealed. Silicone sealant appears intact.

4. **Drains**
   Rectangular metal diagonal drains (4 each side) adjacent to curbs, all open.

5. **Curbs and Median**
   12" x 12" concrete curbs, all interior curb faces have moderate scale. Coarse aggregate is exposed, but intact.

6. **Sidewalks**
   The structure has no existing sidewalk.

7. **Railing or Barrier**
   One 8" channel (lying flat) top rail and two 6" channel (lying flat) lower rails on W6x6 posts. Moderate rust throughout, heavier on base plates and bolts. Minor bend in middle rail at southeast corner from collision damage – 5% of green paint remaining. Rail post bolts are severely corroded.

8. **Lighting**
   Overhead power along north side with streetlight on power pole at northeast corner. Good condition.

9. **Utilities**
   None.
1. **Underside of Deck**
   Between steel girders the bottom of deck is corrugated from the construction forms used. Hairline to moderate transverse cracks at 5' spacing in all three spans pass across steel girders. Random hairline longitudinal cracks.

   **Span 1:**
   Heavy scaling and efflorescence 1.5' from abutment 1 and bent 2. Honeycomb area with delamination between G4 and G5. There is a 1" x 1" spall area exposing rebar near K-brace between G4 and G5.

   **Span 2:**
   Heavy scaling and efflorescence 1.5' from bent 2 and 3. A 1" x 1" area of concrete has been spalled off the south soffit exposing rebar near bent 3 with the rebar beginning to lose section.

   **Span 3:**
   Heavy scaling and efflorescence 3' from abutment 4 and 1.5' from bent 3. Block hairline cracks in south half of span 3.

2. **Rearing Devices**
   Masonry plates and rocker plates with anchor bolts through plates and bottom flanges of girders (both flanges). Some bolts slightly bent, and all plates and bolts are severely rusted. Bearings in fair condition. Heavy rust under open joints, particularly on exterior beams at abutments.

3. **Girders or Beams**
   5-W30x108 steel girders. Generally good condition. Spaced at 9.0'. Small amount of paint loss on ends, beginning to rust. Beams are:
   - Span Lengths: 40'-0" Not continuous
   - Web: 28-1/4" x ⅛"
   - Flanges: 10-5/8" x ¼"

4. **Diaphragms**
   W14x30 welded to girders at ends of spans and angle K-bracing welded to girders at 1/3 points. Good condition. K-braces are 5"x3 ½"x ½" angles. The abutment diaphragms are rusty on top. Bent diaphragms are beginning to rust at tops.

5. **Trusses**
   No Trusses.

6. **Rivets and Bolts**
   Superstructure anchor bolts to substructure, some bent. Rail bolts are very rusty and losing section.

7. **Welds**
   1/3-point diaphragm welds in good condition. End span diaphragm welds are rusty.

8. **Paint**
   Green paint on steel girders in fair condition. Paint is failing at beam ends at abutments and over bents. Pack rust forming at ends. No significant section loss apparent yet. Ends have spot rust over bents.

9. **Drainage System**
   Open and functional.

10. **Utilities**
    Overhead power on north side.

11. **Reaction Under Load**
    Minor vibration under truckload.

12. **Collision Damage**
    No collision damage.
SUBSTRUCTURE – ITEMS 60.00 – 60.05

1. **Abutments**
   Concrete wingwalls, backwalls and sills.

   **A. Wingwalls**
   Reinforced concrete stub wingwalls integral w/backwalls. Good condition, minor spalling on edge at southeast.

   **B. Backwalls**
   Berm type reinforced concrete with wide bearing sills. Good condition. There is a 3’ long moderate crack in the sill about 6” below the sill ledge below beam 3 on the east abutment.

   **C. Footings**
   Abutment seat on east side — Dirt in front has washed away. Bottom of seat is exposed. Gap of 3”. West abutment, dirt has washed away at the north end. Water appears to be coming from behind wall.

2. **Piers or Bents**
   There are two bents. The bents are comprised of two 2’-6” diameter octagonal reinforced concrete columns with a hammerhead reinforced concrete cap.

   **A. Caps**
   Bent 2: The cap is 32” high between columns and tapers to 1’-11” at ends. The top width is 3’-0”. There is a 1/4” to 1/2” wide crack on the west face about 6” above bottom extending 8’ each direction north and south from centerline radiates through the cap. A second 1/2” wide crack is located approx. 5” from top on east side and runs 12’ from girder 1 to 3’ south of girder 2. The entire bottom between columns is delaminated with entire section close to spalling off. A 2’ x 1’ area 4’ from north column has spalled off exposing bottom rebar (1”). At the midpoint and highest moment area under G3 there is a vertical crack that radiates completely through. On the bottom half there are multiple diagonal cracks on both faces that begin at the midpoint of a vertical crack and extend downward north and south. The SE corner has multiple cracks and is delaminated with efflorescence. A 15” x 15” area above south column is delaminated with a couple of others along the west face near top.

   Bent 3: Same dimensions as Bent 2. There is a 1/4” wide crack on the west face that runs between columns near bottom. The NE bottom corner is spalled with rebar exposed for 15’ along north half. A moderate crack is present along bottom of east face on south half. The bottom of the cap is severely delaminated between columns.

   **B. Columns and Pier Webs**
   Columns are spaced 14’ C-C. All four have minor hairline vertical cracks with efflorescence prevalent near top. The bent 2 north column has a delamination area of 2’x1’ near top of west face with the spall extending into cap.

   **C. Footings**
   No footings.

3. **Grout Pads**
   No grout pads.

4. **Anchor Bolts**
   Rusting but appear sound.

5. **Piles**
   No piles.

6. **Bracing**
   No bracing.

7. **Paint**
   No paint.
8. **Movement**  
The structure shows no detectable movement.

A. **Plumbness**  
The structure appears plumb and stable.

B. **Settlement**  
There is no detected settlement.

C. **Horizontal**  
There is no noted horizontal movement.
1. Channel
   As follows:

   A. Alignment
      Alignment is fair to poor. Flow is mostly under east and center span. Flow is directed towards east berm and turns at the inlet. Flow leaves straight out.

   B. Vegetation
      There is heavy vegetation along banks. Trees on both sides upstream and west side downstream.

   C. Scour
      Scour apparent at east bent columns, approximately 4', scour hole under bridge around east bent.

   D. Debris
      No debris.

   E. Flow Line
      Stable.

2. Embankment Erosion
   Erosion and undermining under each abutment, with bottom of footing exposed on north side. Almost all east abutment footing exposed due to erosion.

3. Waterway Adequacy
   Appears adequate for normal flows, but vegetation is reducing opening capacity.

4. Spur Dikes & Jetties
   No spur dikes or jetties.

5. Wing Dams
   No wing dams.

6. Riprap
   Small amount of riprap on east berm only in generally good condition.

7. Observed Highwater Elevation
   No observed highwater elevation.

8. Streambed
   Rocks and gravel.
Channel Depths

Water Depth
6/16/2016
6/16/2016
6/4/2014
6/16/2016

Water Depth
6/16/2016 = 4.4'

All measurements taken on inlet side of structure at top of curb.
Downstream Looking North

Upstream Looking South
Settlement and Deterioration of Concrete at East End

Settlement and Breakup of Concrete Around SE Drop Inlet on Approach
Cracking of Grout Patch at East End of Deck

Typical Longitudinal Crack on Deck
Typical Transverse Crack on Deck

Spalling and Transverse Cracking at West End Deck
Cracking on West Face Midspan Bent Cap #2

Cracking on West Face North End Bent Cap #2
Spall With Exposed Resteel on Bottom of Bent Cap #2

Cracking on East Face South End Bent Cap #2
Cracking on East Face Midspan Bent Cap #2

Cracking on West Face South End Bent Cap #3
Cracking on West Face North End Bent Cap #3

Rusted Bearings - Typical of All
Spall with Exposed Resteel South Bay Span #1

Typical Transverse Crack on Underside of Deck
Severe Spall with Exposed Resteel on Bottom Corner East Side Bent Cap #3

Cracking on East Face North End Bent Cap #3
Cracking on East Face South End Bent Cap #3

Undermining of East Abutment
Cracking, Scaling, and Efflorescence Typical on East End
Spalling and Scaling at SE Corner
(8) STR NO : 52-424-302
(7) FACILITY : E. MAIN ST.
(6) FEAT INTER : RAPID Ck.
(9) LOCATION : NW MAIN & LACROSSE - RC
INTERCHANGE : "Y
INTERSECTION(S) : 06 -1 -1 -1
TOWNSHIP(S) : 01IN -1
RANGE(S) : 01C -1
(2) REGION : Rapid City
(3) COUNTY : 52 PENNINGTON
(21) CUSTOMER : 4 City/Municipal Hwy Ag
(22) OWNER :
MAINT PROJ :
(42A) SERV TYPE ON : 1 Highway
(42B) SERV TYPE UND : 5 Waterway
(103) TEMP STRUCTURE : Not Applicable (P)
(99) BORDER BRIDGE STR NO : -1
(86A) NEIGHBOR STATE : Unknown (P)
(688) PERCENT SHARE : 2.00
Highway Carried (NBI 5)
(59) ROUTE PREFIX : S City Street
(50) LEVEL OF SERVICE : 1 Mainline
(55) ROUTE NUMBER : 0000
(88) DIRECT SURFX : 0 NA (NBI)
MRR ENGLISH : 0.30
"OSTED SPEED : 25 MPH
SCHOOL BUS RT : Y
MAIL RT : Y
(104) MRR SYSTEM : 0 Not on MRR
FA ROUTE : 1975
(26) FUNC CLASS : 17 Urban Collector
(20A) LANES : 2
(102) DIRECTION TRAFFIC : 2-2-way traffic
(105) FED LANDS HWY : 0 N/A (NBI)
(19) DETOUR : 1.24 mi
(29) ADT TOTAL : 900.00
(30) YEAR OF ADT : 2015
(102) % TRUCK : 5.50 %
(53) MIN V CIR RT : 95.99 ft
(53) MIN V CIR LT : 95.99 ft
(10) MAX V CIR RT : 99.99 ft
(10) MAX V CIR LT : 99.99 ft
(47) RHRZ V CIR RT : 40.30 ft
(47) RHRZ V CIR LT : 40.30 ft

Bridge Design

52-424-302

Model: Bridge Design

Main Span

(27) YEAR BUILT : 1973
(106) DESIGN : 02 Stl/CSG/Structor
SD STR TYPE : X331
(107) DECK STR TYPE : 1 Concrete-Deck-in-Place
(52) DECK WIDTH : 42.00 ft
(51) BRIDGE ROW WIDTH : 40.30 ft
(32) APFV RDWY WIDTH : 40.00 ft
(10A) LT SIDEWALK WIDTH : 0.00 ft
(10B) RT SIDEWALK WIDTH : 0.00 ft
(24) SWKL : 0.00 ft
SKEW DVA :
(45) NO MAIN SPANS : 2
(46) NO APPR SPANS : 0
(31) DESIGN LOAD : 6 MS18/HS20+/mod
(33) BRIDGE MEDIAN : 0 No median
(20) STR FLARED : 0 No flare

Box Culvert Data

BOX CULVERT SIZE : 0 X 0 X 0
FILL HT OVER BOX : 0.00 ft
LENGTH OF LONGEST CELL : 0.00 ft

Rail Data

(36) SAFETY FEAT : 1NIN
BRIDGE RAIL : 06 - STL DISCONT CHANNEL RAIL
RAIL TRANS : 1N - NOT APPLICABLE
APPR RAIL : 1N - NOT APPLICABLE
APPR RAIL TERM : 1N - NOT APPLICABLE

Load Rating Data

(41) OPER STATUS : A Open, no restriction
(56) INJ HS20 : 34.30 tons
(65) METHOD : 1LF Load Factor (tons)
(64) OP HS20 : 57.20 tons
(63) METHOD : 1L LF Load Factor (Tons)
TRUCK TYPE 3 : 47.00 tons
TRUCK TYPE 3 2 : 78.40 tons
ENL : 82.70 tons
SHW-4 : 47.10 tons
SHW-5 : 50.80 tons
SHW-6 : 51.50 tons
SHW-7 : 53.80 tons
EVS : tons
ENL : tons
BARS NO : HND010

Hydraulics

DRAINAGE AREA : 0.00 sq mi
OBSERV HW ELEV : 0.00 ft
YEAR : 01/01/1901
DEIGN FREQ : 0.00
DESIGN FLOW : 0.00 cfs
DESIGN VELOCITY : 0.00 ft/s
DESIGN AREA : 0.00 sq ft
DESIGN YEAR :

Steel Paint

UNDERCOAT : 
TOPCOAT :
YEAR :
COLOR :

Paint

UNDERCOAT :
TOPCOAT :
YEAR :

GIS Data

LATITUDE : 44.07827
LONGITUDE : -103.03563
DATE : 03/29/2016
COMMENT : Calculated GIS INFO

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Highway Derived (Under Record)

SA: RECORD TYPE: (54) MIN V CLR RT:
(55) ROUTE PREFIX: (54) MIN V CLR LT:
(56) LEVEL OF SERVICE: (10) MAX V CLR RT:
(57) ROUTE NUMBER: (10) MAX V CLR LT:
(58) DIRECT SUFFIX: (47) HORIZ CLR RT:
(60) MISS:
(71) ADM JUR:
(84) NHS SYSTEM:
(85) FA ROUTE:
(90) FUNC CLASS:
(99) LANES:
(111) DIRECTION OF TRAFFIC:
(113) DETOUR LENGTH:
(121) ADT:
(122) ADT YEAR:

Project Number: N/A
PCN: none
Date Done: 01/01/1973

Inspection

GENERAL COMMENT: -1
REGION COMMENT:
FREE COMMENT:

INSPECTION TYPE: LAST INSPECTION DATE REQUIRED INSPECTION FREQUENCY NEXT INSPECTION DATE
NBI 04/26/2018 NA 24 month(s) 04/28/2020
FRACTURE CRITICAL NA NA NA NA
UNDERWATER NA NA NA NA
SPECIAL NA NA NA NA
ELEMENT INSPECTION 04/26/2018 24 month(s) 04/28/2020

Condition Ratings

(59) DECK: 5
(59) SUPER: 6
(69) EUD: 5
(82) CULVERT: N
(112) SCOUR: 8
(81) CHANNEL: 9
APPROACH: 5 CRACKS AND SETTLEMENT AT WEST APPROACH

Asphaltic Ratings

STR APPR: 5 EVALUATED 2014; HS 20-44; LFD: OPERATING LOADS AT LEGAL
DECK GEM: 9 WIDTH VS ADT
UNDERCPR: N -1
WATERWAY: 7 POOR CHANNEL ALIGNMENT
APPR AUS: 7 SHARP HORIZONTAL CURVES
BR POST: 5 Evaluated 2014; No posting Required; Beam Control
SCOUR SCREENING: 8
SCOUR RATING: 8

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**Steel Opn Girder/Beam**

| Steel Opn Girder/Beam                     | MAIN 107   | 2   | 600.00   | ft    | 480.00 | 20.00 | 100.00 | 0.00  |

TSP3 element inspection comments - Paint on girders under spans in fair to good condition with some flakes rust. Bottom flanges of exterior girders are rusty.
Structure 000000052424302 -
Date 2002-06-20 -
Previous comments > RUSTED STEEL GIRDERS AND BOLTS; RUSTING OF BEAMS AT ABUTMENTS.

| Corrosion                                | MAIN 1000  | 2   | 30.00    | ft    | 0.00  | 20.00 | 10.00 | 0.00  |

| Steel Protective Coating                 | MAIN 515   | 2   | 10,753.15 | sq.ft | 10,753.15 | 0.00  | 0.00  | 0.00  |

| Lead Based Paint                         | MAIN 816   | 2   | 5,800.00  | sq.ft | 5,770.00 | 30.00 | 0.00  | 0.00  |

| Eff (Sti Protect Coat)                   | MAIN 3440  | 2   | 30.00    | sq.ft | 0.00  | 30.00 | 0.00  | 0.00  |

| Re Conc Column                           | MAIN 205   | 3   | 4.00     | each  | 2.00  | 0.00  | 2.00  | 0.00  |

TSP3 element inspection comments - Reinforced concrete in generally good condition, minor scaling near water line at east bent.
Structure 000000062424302 -
Date 2002-06-20 -
Previous comments > BENT CAP TRANSVERSE CRACKING AND LONGITUDINAL CRACKING.

<p>| Cracking (RC and Other)                  | MAIN 1130  | 3   | 2.00     | each  | 0.00  | 0.00  | 2.00  | 0.00  |</p>
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<th>Q 1</th>
<th>Q 2</th>
<th>Q 3</th>
<th>Q 4</th>
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<td>Re Conc Abutment</td>
<td>MAIN</td>
<td>210</td>
<td>3</td>
<td>85.30</td>
<td>ft</td>
<td>85.30</td>
<td>0.00</td>
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TSP3 element inspection comments - Reinforced concrete berm type backwalls with integral stub wingwalls. Good Condition.
Structure 000000052424302 -
Date 2002-06-20 -
Previous comments > BENT CAP TRANSVERSE CRACKING AND LONGITUDINAL CRACKING

| Re Conc Pier Cap                | MAIN | 234| 3   | 80.00    | ft    | 0.00| 0.00| 60.00| 20.00|

TSP3 element inspection comments - Rebar exposure and resultant rust on underside due to lack of cover during construction. Transverse cracking near midspan of both.
Structure 000000052424302 -
Date 2002-06-20 -
Previous comments > Transverse cracks and longitudinal cracking on underside that may be rebar corrosion. BENT CAP TRANSVERSE CRACKING AND LONGITUDINAL CRACKING

| - Detamination/Spall/Patched Area | MAIN | 1080| 3  | 45.00    | ft    | 0.00| 0.00| 45.00| 0.00|

| - Exposed Rebar                  | MAIN | 1090| 3  | 15.00    | ft    | 0.00| 0.00| 15.00| 0.00|

| - Cracking (RC and Other)        | MAIN | 1130| 3  | 20.00    | ft    | 0.00| 0.00| 0.00| 20.00|

| Moveable Bearing                 | MAIN | 311 | 3  | 15.00    | each  | 0.00| 15.00| 0.00| 0.00|

**RUST COVERED**

| - Corrosion                      | MAIN | 1000| 3  | 15.00    | each  | 0.00| 15.00| 0.00| 0.00|

| - Lead Based Paint               | MAIN | 816 | 3  | 60.00    | sq.ft | 0.00| 0.00| 60.00| 0.00|

| Fixed Bearing                    | MAIN | 313 | 3  | 15.00    | each  | 0.00| 0.00| 16.00| 0.00|

**RUST COVERED**

| - Lead Based Paint               | MAIN | 816 | 3  | 60.00    | sq.ft | 0.00| 0.00| 30.00| 30.00|

| Re Conc Approach Slab            | MAIN | 321 | 3  | 900.00   | sq.ft | 600.00| 0.00| 300.00| 0.00|

| - Cracking (RC and Other)        | MAIN | 1130| 3  | 300.00   | sq.ft | 0.00| 0.00| 300.00| 0.00|

| Metal Bridge Railings            | MAIN | 319 | 3  | 243.00   | ft    | 0.00| 243.00| 0.00|

TSP3 element inspection comments - Moderate rust throughout, but structurally good condition. Heavier rust on anchor bolts and base plates.
Structure 000000052424302 -
Date 2002-06-20 -
Previous comments > Freckle rust.

| - Corrosion                      | MAIN | 1000| 3  | 243.00   | ft    | 0.00| 243.00| 0.00|

| - Steel Protective Coating       | MAIN | 515 | 3  | 1,800.00 | sq.ft | 0.00| 1,200.00| 300.00| 300.00|

| 7361 Scour Smart Flag            | MAIN | 7361| 1  | 1.00     | each  | 1.00| 0.00| 0.00| 0.00|

4 ft +/- scour hole near bent 3 north side.
<table>
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<th>Agency Priority</th>
<th>Assigned to</th>
<th>Rec. Date</th>
<th>Str No</th>
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<th>Notes</th>
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**INSP003_sda_sla_sheet** 8/3/2018 3:02:58PM
FYI We did patch repairs on bridge deck. You can see the patches that were repaired. We did take the existing broken area out per recommendation. The product we used to repair was called Express Repair with a glue that was called Tammsweld Bonding Agent. The date was 9-11-2017

Repair patch done 9/11/2017