

Plan Of Action

SCOUR CRITICAL BRIDGE WITH UNKNOWN FOUNDATIONS

BRIDGE DATA:

Structure #: 64-016-130	Waterway: Brule Creek	Owner:
Bridge Type & Length: 72.0' two span precast concrete panel bridge		
Location Description: 47160 310 Street		
Year Built: 1970	Facility Carried: county road	County: Union
Year re-constructed:		
Year Scheduled for replacement (if known):		
Bridge Traffic: ADT =	Year/ADT:	% Trucks

NBI CODING INFORMATION:

	CURRENT	NEXT
Maintenance Inspection Date:	8-9-12	8-9-14
Underwater Inspection Date (if applicable):	N/A	N/A

Item 113 Scour Critical	►	U: Unknown Foundation, no scour evaluation done
Item 60 Substructure	►	
Item 61 Channel & Protection	►	
Item 71 Waterway Adequacy	►	

Prepared by:

Reviewed by (DOT):

NAME Dan Johnson	NAME
CONSULTANT: Johnson Engineering	DEPARTMENT:
DATE: 8-9-12	DATE:

SCOUR SUSCEPTIBILITY:

Historical Observations:	Date (if known):
☒ Adverse stream angle with the bridge berms &/or substructure	2012
☐ Structure Settlement/Movement	
☐ Shallow foundation with respect to channel bed	
☐ Channel Bed Degradation	
☐ Highly erodible soil	
☐ Movement of existing riprap	
☐ Extensive berm erosion exposing the piling or footing	
☐ Loss of Road Embankment	
☒ Large debris accumulating on the pier columns	2012
☐ Ice Jams	
☐ Water overtopping the bridge or road	

Scour History / Description of Observations:

Channel has degraded 6.6' since 1998. Flow is from NW to S-SE and is adverse to 0° skew bridge. No scour problems. Huge amount of debris hung up @ Bent 2.

Inspected by: ☐ SDDOT ☒ Other

RECOMMENDED ACTIONS:

IMPLEMENTATION DATE

☐ Increased Inspection Frequency (routine NBIS)
☐ Increased Inspection Frequency (underwater inspection)
☐ Replace/Rehab Structure
☐ Other:

BRIDGE CLOSURE PLAN:**Scour monitoring criteria for consideration of bridge closure:**

The County Highway Superintendent/City Engineer or his/her designee is responsible for monitoring each structure, and close if necessary, in the event that a structure's integrity is in jeopardy or if any of the following situations arise, but are not limited to:

- 1) Overtopping road or structure
- 2) Observed structure movement / Settlement
- 3) Debris accumulation
- 4) Movement of erosion protection
- 5) Loss of road embankment

Before the structure may be re-opened, a visual inspection must be performed to determine if any damage has been done to the structure. If damage is observed, the county/city must have a qualified engineer perform a full inspection on the structure before it is opened to the public.

The ► Union County Highway Superintendent/City Engineer or his/her designee is responsible for closing and re-opening this bridge due to scour critical conditions. Notify Cody Axlund, SDDOT, when the bridge is closed.

Contact Person:

Cody Axlund, Bridge Inspection Engineer, 773-3390, cody.axlund@state.sd.us

REPAIR AND POSTING RECOMMENDATIONS

BRIDGES MAINTAINED BY LOCAL GOVERNMENTS

STRUCTURE NO. 64-016-130 HWY OR STREET 310th Street
 FA ROUTE NO. _____ AGENCY RESPONSIBLE FOR MAINTENANCE Union County
 LOCATION 12.0 miles south and 0.4 mile east of Beresford, SD
 BRIDGE DESCRIPTION Two span precast concrete panel bridge
Length - 72.0'; Roadway Width - 21.0'

POSTING RECOMMENDATIONS

10/19/10 No Posting Required
8-14-12 No Change

REPAIR, REHABILITATION, AND/OR REPLACEMENT RECOMMENDATIONS

10/19/10
1. Install FHWA approved approach guardrail.
2. Straighten object markers and provide (4) delineators at each bridge corner.
3. Open deck drains and clean gravel away from curbs.
4. Paint steel as necessary.
5. Tighten / replace deck unit connecting bolts as necessary.
6. Patch and seal concrete as necessary.
7. Repair west abut. berm and riprap.
8. Remove trees growing near bridge.

8-14-12

1. Install FHWA approved approach guard rail.
2. Install delineators for four at each corner.
3. Open deck drains and remove gravel from curb lines.
4. Tighten / replace deck unit stem tie bolts as necessary.
5. Patch and seal concrete as necessary.
6. Power tool clean and paint steel bent.
7. Remove debris from channel under bridge.
8. Repair abutment berm and riprap.
9. Remove trees near bridge.

EXISTING POSTING: 10-15-10 : NONE
8-9-12 None

THE SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION IS REQUIRED BY FEDERAL STATUTE TO MAINTAIN AN INVENTORY OF ALL BRIDGES ON ALL PUBLIC TRAVELED ROUTES. THEREFORE, IT IS IMPORTANT THAT COUNTY AND CITY OFFICIALS REPORT ANY CHANGES ON BRIDGES ON THEIR SYSTEM. EXAMPLES OF CHANGES WHICH SHOULD BE REPORTED ARE: REPLACEMENT OF AN EXISTING BRIDGE WITH PIPE OR NEW BRIDGE, SAFETY UPDATES, REHABILITATION OR REPAIR OF AN EXISTING BRIDGE ETC. CHANGES SHOULD BE REPORTED TO: SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION, LOCAL GOVERNMENT ASSISTANCE, PIERRE, SOUTH DAKOTA, 57501.

RECOMMENDATIONS MADE BY

Guy Slowy
Peter S. Johnson

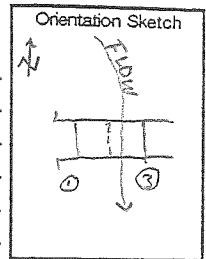
DATE 10 / 19 / 10

DATE 8 / 14 / 12

DATE / /

Bridge Inspection Report

Structure Number 64-016-130 Maint. Proj. No. _____
 Feature Carried County Road MRM _____ County Union
 Feature Crossed Brule Creek
 Location 12.0 miles south and 0.4 miles east of Beresford, SD
 Bridge Description Two span precast concrete
Length - 72.0' Roadway Width - 21.0'



Date Inspected	Inspectors	Crew Leaders Signature	Temperature
<u>6/14/04</u>	<u>MPP</u>	<u>[Signature]</u>	<u>70</u> Deg F
<u>9/5/06</u>	<u>MPP</u>	<u>[Signature]</u>	<u>72</u> Deg F
<u>7/18/08</u>	<u>DKJ & MTG</u>	<u>[Signature]</u>	<u>77</u> Deg F
<u>10/15/10</u>	<u>UT NRI</u>	<u>[Signature]</u>	<u>55</u> Deg F
<u>8/9/12</u>	<u>DKJ RTZ</u>	<u>[Signature]</u>	<u>85</u> Deg F

Region Repair Recommendations / Contract Repairs

Approach - Items 65.00 - 65.09

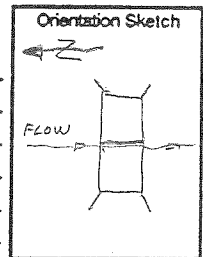
1. Alignment 6-14-04 1. STRAIGHT E+W LEVEL FROM E TO W, ACROSS BRIDGE TO SW W. OF
2. Condition BRIDGE THEN 6% GRADE TO W.
3. Joints 2 GRAVEL ROAD IN GOOD CONDITION EXCEPT ROUGH ACROSS BRIDGE
4. Guard Rails 3-4 NONE
5. Embankment 5. 4% INSLOPES TRANSITIONING TO 1:1 @ BRIDGE W/EROSION AT FRONT OF NW WING.
6. Drainage 6. DITCHES DRAIN TO CREEK
7. Signing 7. SEE SIGN SHEET.
8. 9-5-06 1.-6. No Change
9. 7. SEE SIGN SHEET
10. 7-18-08 1.-6. NO CHANGE
7. SEE SIGN SHEET

10-15-10 1-2) NO CHANGE
3-4) NONE - SEE DECK COMMENT 7 RE. WING WALL DROPOFF.
5-6) NO CHANGE
7) SEE SIGN SHEET

8-9-12 1.-6. NO CHANGE 7. SEE SIGN SHEET

Bridge Inspection Report

Structure Number 64-016-130 Maint. Proj. No. _____
 Feature Carried County Road MRM County Union
 Feature Crossed Brule Creek
 Location 12.0 miles south and 0.4 miles east of Beresford, SD
 Bridge Description Two Span Precast Concrete
Length - 72.0'; Roadway Width - 21.0'



Date Inspected	Inspectors	Crew Leaders Signature	Temperature
<u>8/16/94</u>	<u>JLL & SPW</u>	<u>John T. Leinen</u>	<u>80</u> Deg F
<u>8/5/96</u>	<u>JLL & SEW</u>	<u>John T. Leinen</u>	<u>75</u> Deg F
<u>9/21/98</u>	<u>DJH, PAS</u>	<u>Don Peterson</u>	<u>55</u> Deg F
<u>8/31/00</u>	<u>MPP + TJH</u>	<u>John T. Leinen</u>	<u>65</u> Deg F
<u>4/30/02</u>	<u>MPP + JNL</u>	<u>John T. Leinen</u>	<u>50</u> Deg F

Region Repair Recommendations / Contract Repairs

Approach - Items 65.00 - 65.09

- | | |
|----------------|---|
| 1. Alignment | <u>1. GOOD - STRAIGHT EAST & WEST WITH 1"± RISE TO BRIDGE FROM 200' E & W</u> |
| 2. Condition | <u>OF BRIDGE THAN A HILL BOTH WAYS</u> |
| 3. Joints | <u>2. GOOD - 18' WIDE GRAVEL</u> |
| 4. Guard Rails | <u>3 & 4 NONE</u> |
| 5. Embankment | <u>5. GOOD - 4"± INSLOPES WELL GRASSED</u> |
| 6. Drainage | <u>6. FAIR - ROAD DITCHES DRAIN TO CREEK THAN A 12' VERTICAL DROP</u> |
| 7. Signing | <u>AT BRIDGE CORNERS WITH NO PROTECTION</u> |
| 8. _____ | <u>7. GOOD CONDITION (1) YELLOW & BLACK OBJECT MARKER AT EACH</u> |
| 9. _____ | <u>CORNER OF BRIDGE</u> |
| 10. _____ | <u>8-5-96 1-7 NO CHANGE</u> |

9-21-98 Reinspection DJH

- 2) Smooth gravel.
5) Stable - well vegetated.
7) One object marker at each corner. (yellow/black). Functional.

8-31-00 1-6 No Change 7 SEE PAGE 1A

4-30-02 1 No Change

2 - GOOD - LOOSE GRAVEL ACROSS BRIDGE

3 & 4 NONE

5 EROSION IN FRONT OF NW WINGWALL

6 No Change

7 SEE SHEET 1A

APPROACH (Cont.)

Item No. 7 - Signing

Date 7-18-08Object Markers (1) Y & B @ EACH BRIDGE CORNER IN GOOD COND. E SIGNS
HAVE MINOR BULLET DAMAGE. NW SIGN LEANS 15°-20° N.Delineators NONEPosting NONEOther NONEDate 10-12-10Object Markers (1) Y & B @ EACH BRIDGE CORNER. NW SIGN LEANS ±20° N, SW SIGN
IS SLIGHTLY TWISTED TO THE S. + LEANS ±30° WDelineators NONEPosting NONEOther NONEDate 8-9-12Object Markers (1) Y & B @ EACH BRIDGE CORNER; Fair to good CONDITION, S.W. & N.E.
SIGNS HAVE MODERATE COLLISION DAMAGE, N.W. SIGN LEANS N. SLIGHTLYDelineators NONEPosting NONEOther NONE

Date _____

Object Markers _____

Delineators _____

Posting _____

Other _____

APPROACH (Cont.)
Item No. 7 - SigningDate - 8-31-00Object Markers - 1 YAB@ EACH CORNER IN FAIR CONDITION, E. SIGNS HAVE
MINOR BULLET DAMAGE, W. SIGNS TWISTED + LEANINGDelineators - NonePosting - NoneOther - NoneDate - 4-30-02Object Markers - No ChangeDelineators - NonePosting - NoneOther - NoneDate - 6-14-04Object Markers - No ChangeDelineators - NONEPosting - NONEOther - NONEDate - 9-5-06Object Markers - No ChangeDelineators - NonePosting - NoneOther - None

Structure Number

64 - 016 - 130

Date

10 / 17 / 2008

Page

Deck - Items 58.00 - 58.17

- | | |
|---|---|
| <p>1. Deck Condition</p> <p>-A. Cracking</p> <p>-B. Scaling</p> <p>-C. Spalling</p> <p>-D. Delaminations</p> <p>2. Overlay</p> <p>-A. Type of Overlay</p> <p>-B. Overlay Thickness</p> <p>-C. Condition</p> <p>3. Joints</p> <p>-A. Joint Openings</p> <p>4. Drains</p> <p>5. Curbs and Median</p> <p>6. Sidewalks</p> <p>7. Railing or Barrier</p> <p>-A. Railing Paint</p> <p>8. Lighting</p> <p>9. Utilities</p> <p>10. _____</p> <p>11. _____</p> <p>12. _____</p> <p>13. _____</p> | <p>1. Minor spalls at ends of precast channel sections</p> <p>2. 1"-2" of gravel covers 90% of the deck</p> <p>3. NONE</p> <p>4. Drains are blocked by a gravel windrow at the curb face. Standing water on deck</p> <p>5. Concrete curb has a few minor cracks and spalls. curb is 11" high and 10" wide</p> <p>6. NONE</p> <p>7. 12"x18" W Beam has a few minor dents. SW end section has collision damage</p> <p>Top of W Beam is 21"± above curb</p> <p>8. NONE</p> <p>9. 2 1/2" metal conduit on North side of bridge.</p> <p>10-8-10 1) NO CHANGE</p> <p>2) NO CHANGE</p> <p>3) NONE</p> <p>4) NO CHANGE</p> <p>5) NO CHANGE</p> <p>6) NONE</p> <p>7) NO CHANGE EXCEPT TO NOTE THAT WINGWALLS</p> <p>EXTEND 15' IN LINE WITH BRIDGE ALIGNMENT WITH</p> <p>STEEP DROP OFF ON OUTSIDE. (TYPICAL C&N 4 CORNERS</p> <p>SEE PHOTO) AND NO GUARD RAIL PROTECTION</p> <p>8) NONE</p> <p>9) NO CHANGE</p> <p>8-9-12 1-9 No change</p> |
|---|---|

DECK - ITEM 58

1 DECK CONDITION

- A CRACKING
- B SCALING
- C SPALLING
- D DELAMINATIONS

2 OVERLAY

- A TYPE OVERLAY
- B OVERLAY THICKNESS
- C CONDITION

3 JOINTS

- A JOINT OPENINGS

4 DRAINS

5 CURBS AND MEDIAN

6 SIDEWALKS

7 RAILING

- A RAILING PAINT

8 LIGHTING

9 UTILITIES

10

11

12

13

1. Precast Conc. Channels 5" deck
Some spalling along joints

2. 2" gravel

5. integral with channel section 11" high 10" wide

7. 12" x 1/8" Flex Beam {
16" Above Curb on {
8"x8" precast posts 6'-10" c-c

REINSP-6-12-86

N/C

RE-INSPE 10-21-88

2) 2" Gravel on East spall, scattered on West spall
4) All eight curb drains are open

- 9-4-90 1. PRECAST CHANNEL SECTIONS ON TOP HAVE MINOR SPALLS WHERE
VISIBLE 10% DECK - UNDERSIDE HAS SMOOTH SURFACE
2. 1" GRAVEL TO NONE IN WHEEL TRACKS
3. NONE
4. DECK DRAINS OPEN
5. CONC. CURBS HAVE FEW FINE CRACKS - MINOR
7. W-BEAM HAVE FEW MINOR DENTS - S.W. CORNER STANDARD END
SECTION BENT - BEEN HIT
CONC. RAILPOST HAVE CRACKS & SCALING

6-25-92 1-7 NO CHANGE

8-16-94 1-7 NO CHANGE

8-5-96 1, NO CHANGE

2A. GRAVEL 2B. 1" 2C. FAIR - GRAVEL UNEVEN CAUSING POTHOLES WITH WATER
SITTING ON TOP OF DECK

3-8 NO CHANGE

9. 2" Ø STEEL CONDUIT ATTACHED TO RAILPOST ON NORTH SIDE OF BRIDGE, LOOK
LIKE UNDERGROUND TEL. LINE CONDUIT

9-21-98 DJH Reinspection.

1) minor scaling where exposed -

2) A) Gravel

B) 1" avg.

C) loose but smooth.

4) Partially open - Gravel pushed up against curbs.

9) 2 1/2" Metal conduit on north side of structure.

All other items as previously noted.

8-31-00 1-9 No Change

4-30-02 1 MINOR SPALLS AT ENDS

2 GRAVEL 0-1" LOOSE

3 None

4 BLOCKED BY GRAVEL AT CURB FACE

5-9 No Change

1-14-04 1-9. No Change

9-5-06 1-3. No Change

4 Drains blocked by Gravel + Plants along face of curb

5-9 No Change

SUPERSTRUCTURE - ITEM 59

1. good
2. None
3. 7- 38" x 15" Deep w/ dia 6"x8" conc & precast conc channel sections out side w/ curb
- Spans W- 32'-10"
L- 34'-6"
- bolted
- REINER 6-12-86
N/C
- RE-INSPE 6-12-88
1-31 NO CHANGE
- 9-4-90 1-3 NO CHANGE
4-13 NONE
- 6-25-92 1-3 NO CHANGE
4-13 NONE
- 8-16-94 1-3 NO CHANGE
4-13 NONE
- 8-5-96 1-13 NO CHANGE

2. NEW 12" x 1/2" THICK STEEL PLATE X 24'-0" LONG ON TOP CONCRETE BACKWALL UNDER DECK STEMS ON EAST ABUTMENT
- 3-13 NO CHANGE

9-21-98 PAS

- 1) Top of 38" x 15" Double Tee Precast Beams. Good cond. 7 Beams Total
- 2) As described in 96 for Abut #3. Bent #2 has a 18"x4" Channel Iron that the beams rest on. Both Bent #2 and Abut #3 Bearing Devices are good. Beams rest directly on top of Concrete Backwall on Abut #1 except for the outside legs of Beam #1 and Beam #7 (photo) they bear on nothing fair condition.
- 3) All appear to be in good condition
- 4) In Span #2 Beams #3, 4 and 5 have some cracking to the West End Diaphragms all others are in good condition.
- 5) None
- 7)(E) Span 2 - Between Beams #1 and #2 they are missing the End tie Bolts. Between Beams #2 and #3 two Bolts are loose. Between Beams #3 and #4 two Bolts are loose. Between Beams #4 and #5 One nut & washer is missing, 3 are loose. Between Beams #5 and #6 Two Tie Bolts missing, One nut & washer missing, two loose. Between Beams #6 and #7 One Tie Bolt missing
- (W) Span 1 - Between Beams #1 and #2 One Tie Bolt missing. Between Beams #2 and #3 One Tie Bolt missing
- 8) 9) 10) 11) None
- 12) 1/2" to 1" Deflection under loaded gravel truck w/ pup.
- 13) None

8-31-00 1-13 No Change

- 4-30-02 1 MINOR VERTICAL HAIRLINE CRACKS IN STEMS - MOSTLY GOOD CONDITION
2 80% PAINTED
3 MINOR VERTICAL HAIRLINE CRACKS IN STEMS
4-13 No Change
- 6-14-04 1-6 No Change
7 MANY LOOSE OR MISSING BOLTS BETWEEN DECK UNITS. - SEE PHOTO
8-13 No Change

9-5-06 1-11 No Change
12 No Loads passed during inspection
13 No Change

7-18-08 1-6 No change 7 Several missing tie bolts and
nuts should be installed / tightened where missing / loose
8-13 No change

10-15-10 1. FAIR COND. NO DEFICIENCIES OF SIGNIFICANCE. 2. RUSTED BUT FUNCTIONING
AS INTENDED 3. HEAVILY WATER STAINED BTWN. DECK UNITS. DOES NOT APPEAR TO
BE ADVERSELY AFFECTING UNITS AT THIS TIME 4. GOOD COND. 5. NONE 7. MISSING
BOLTS AND/OR NUTS ARE MISSING FROM SPAN 2. 8. TO 11. NONE 12. NO LOADS
DURING INSP. 13. NONE

8-9-12 1 No change 2 Girder 1 bearing over Bent 2 is 6" Span 2
Girder 7 bearing over Bent 2 is 7½" Span 1 (monitor)
3 Girders remain in fair cond. 4-13 No change
Longitudinal to girder

SUBSTRUCTURE - ITEM 60

- 1 ABUTMENTS 1 Abut From old Truss structure ?
 -A WINGWALLS A A- WINGWALLS CONC 12" x 13' long
 -B BACKWALLS Good Cond.
 -C FOOTINGS
 2 PIERS OR BENTS B. Backwalls 18" x 21'-6" long 11' high
 -A CAPS Some spalling & cracking
 -B COLUMNS
 -C FOOTINGS
 3 GROUT PADS
 4 ANCHOR BOLTS
 5 PILES 2. Steel Pile Bent
 6 BRACING Cap MC 18" x 4" x 1/2" 
 7 PAINT HP 10" x 10" x 1/2"
 8 MOVEMENT btwn piles
 -A PLUMBNESS
 -B SETTLEMENT
 -C HORIZONTAL
 9 Piles 7- HP 10x10x1/2 3'-4" c-c
 10 2 diagonal braces CL "x 2" x 1/4"
 11 plumb stable

REINSP-6-12-96

- (1) HIGH WATER MODERATELY ERODED BOTH ABUTMENTS AND PARTICULARLY EAST ABUTMENT.
 OTHERWISE, N/C

RE-INSP 6-21-88

- (1) Some cracking occurring at top of east abutment
 2-81 NO CHANGE

9-4-90 1 BACK WALLS & WINGWALLS IN GOOD CONDITION EXCEPT AT N.E. CORNER LARGE CHIP UNDER DECK SECTION (SEE PHOTO)

6" x 8" x 18" LONG - MINOR SCALING ON WALLS AT BOTTOM.

BACKWALLS ARE VERTICAL 10' HIGH - NO BERMS

2. STEEL PILE BENT IN GOOD CONDITION EXCEPT AT TOP ON INLET SIDE SWAY BRACING CHANNEL BROKEN LOOSE BEEN HIT (SEE PHOTO)

6-25-92 NO CHANGE (SEE PHOTO OF N.E. CORNER OF EAST BACKWALL NO BEARING UNDER NORTH DECK SLAB)

7-16-94 1. NO CHANGE (SEE PHOTO OF NE CORNER OF EAST BACKWALL)

2. STEEL PILE BENT BEEN HIT WITH LARGE DENT & BEND IN NORTH H PILING AND SWAY BRACING ON TOP BROKEN LOOSE. TWO 12" x 12" TIMBER PILING USED FOR PROTECTION ON NORTH SIDE OF BENT LEANING OVER 45° GIVING NO PROTECTION (SEE PHOTO)

3-8 NO CHANGE

8-5-96 1. EAST ABUTMENT BEEN REPAIRED WITH A 12" x 1/2" x 22' LONG STEEL PLATE BOLTED TO TOP OF BACKWALL WITH (2) 12" x 1/2" x 30" LONG PLATES BELOW AT NE CORNER OF BRIDGE

AND ALL (3) STEEL PLATES EXTENDING 30" ALONG NE WINGWALL (SEE PHOTO)

CONCRETE FILL BEHIND PLATES WHERE ABUTMENT WAS CHIPPED OUT.

(1) 12" x 1/2" x 34" LONG PLATE BELOW AT SE CORNER OF BRIDGE ON BACKWALL

AND (2) STEEL PLATES EXTENDING 30" ALONG SE WINGWALL (SEE PHOTO).

ALL OTHER CHIPS OR SPALLS IN EAST ABUTMENT BEEN GROUT IN.

WEST ABUTMENT NO CHANGE

2. NORTH PILING BEEN REPAIR WITH A 10" x 1/2" x 9' LONG STEEL PLATE WELDED TO BOTH FLANGES OF H PILING STARTING 2' BELOW TOP OF CHANNEL CAP

WITH (2) 10" x 1/2" x 12' LONG PLATES WELDED TO H PILING AS A ICE BREAKER

- 6 (3) 10" x 4" I BEAM BRACING BETWEEN THE NORTH TWO PILING IN BENT

LOCATED 4', 7' & 10' BELOW TOP OF CHANNEL CAP AND ONE BETWEEN

2nd & 3rd Piling FROM NORTH LOCATED 7' BELOW TOP OF CHANNEL CAP (SEE PHOTO)

SWAY BRACING BEEN WELDED TIGHT ON TOP

7. ALL STEEL PAINTED SILVER.

8. ABUTMENTS & BENT LOOK STABLE AND ARE PLUMB

Back

DECK
BEAMS

AT CORNERS



9-21-98 PAS

1-8) No Change all in fair to good condition except NW and SW corner of Backwall as noted earlier.

Structure Number

□□ - □□□ - □□□

Date

□□ / □□ / □□□□

Continued from pg 41

Substructure - Items 60.00 - 60.05

1. Abutments 8-31-00 1 CONCRETE ABUTMENTS WITH SPALLING AT NW CORNER ABUT. 1
+ ALONG W END OF SE WINGWALL
2 STEEL PILE W NO PAINT ON BOTTOM 4' IN GOOD CONDITION
3 - NONE
4 - TIGHT AT REPAIRED AREAS
2. Piers or Bents 5 - SEE 2
6 CROSS BRACING HAS BEEN REPAIRED AS PER 1996 INSPECTION
+ IS IN GOOD CONDITION
7 GOOD CONDITION
8 NONE EVIDENT
3. Grout Pads
4. Anchor Bolts
5. Piles 4-30-02 1-6 No Change
7 - PAINT RUSTING THRU ON BENT 2 CAP CHANNEL
+ BENT 2 X-BRACING AND ON EAST ABUTMENT
ARMOURING
6. Bracing
7. Paint
8. Movement 8 No Change
- A. Plumbness
- B. Settlement 6-14-04 1-8 No Change
- C. Horizontal
9. 7-5-06 1-7. No Change
10. 8. No signs of movement
11. 7-18-08 1 Backwalls and wings generally solid
w/ several minor spalls and cracks, generally
stable 2 Bent in good cond. no section
loss evident on columns, bracing or cap, 100% surface
rusted near (~ 2') from w/1 3-7 No change
8 Stable and plumb
- 10-15-10 1-TO 8. NO CHANGE
- 8-9-12 1-8 No change. plumb and appear stable

Structure Number

64-016-130

Date

/ /

Channel and Channel Protection - Items 61.00 - 61.09

1. Channel

-A. Alignment

-B. Vegetation

-C. Scour

-D. Debris

-E. Flow Line

2. Embankment Erosion

3. Waterway Adequacy

4. Spur Dikes & Jetties

5. Wing Dams

6. Rip Rap

7. Observed Highwater Elev.

8. Streambed

9.

10.

1) A) Marginal - Bend in creek 200' N. Creek enters at 30° Left of perpendicular from N. flows into riprap on east berm and exits 30° Left of perp. to south

B) Heavy grasses & weeds & few trees line banks.

C) 1' under each span

D) Spill amount hung up on bent.

E) Meanders.

2) 10'-15' high vertical banks cut on banks curves both directions -

3) According to old reports - has been over road in past. Appears adequate for normal flow.

4) 5) None 6) Class II riprap protecting east berm.

7) As reported in 3.

8) Silt, sand, small stones.

8-31-00 1-8 NO CHANGE

4-30-02 1 LARGE AMOUNT OF TREE DEBRIS CAUGHT ON BENT 2
2 EMBANKMENT BELOW W. ABUTMENT ERODED & NEEDS RIPRAP
3-8 No Change

6-14-04 1-8 No Change

7-5-06 1. MODERATE DEBRIS BUILDUP ON BENT 2 - SEE PHOTO
2.-8. No Change

7-18-08 1 Large amount of debris on Bent 2 2 W about Berm continues to degrade (3) trees are growing (1) NW, (1) SE & (1) NE which should be removed to avoid obscuring view
3-8 No change

10-15-10 1. NO CHANGE 2 EMBANK. EROSION UPSTREAM AT NW CORNER IS ACTIVE. NEAR VERTICAL SLOPE W/ NO VEGETATION THREATENS STRUCTURE AT NW. 3. TO S. NO CHANGE 6. CLASS A/B RIPRAP AT E. EMBANKMENT IN GOOD COND. - 2:1 SLOPE STABLE
7. TO 8. NO CHANGE

8-9-12 1 Massive amount of tree debris on Bent 2 (photo)
2 Embankment erosion is not significantly worse - still 10'-15' high vertical banks @ outside bends of channel
3-8 No change

4-30-02 0'-11.5'
15'-13.7'
20'-16.5'
37'-18.3'
51'-16.4'
67'-8.3'

6-14-04 0'-11.4'
16'-13.8'
21'-16.5'
36'-18.0'
54'-16.4'
67'-8.4'

Bent or Abut 2

Bent or Abut 3

Top of Curb

A

B

Date

A

B

Comments

9/21/98

14.0'

18.8'

8-31-00 50'-11.0, 13'-13.5, 17'-16.4, 35'-16.6.

12 46'-19.2', 54'-17.5', 68'-7.8'

7-5-06

38'

18.5'

7-18/08

47'

19.6'

10/10

17'

18.2'

8/12

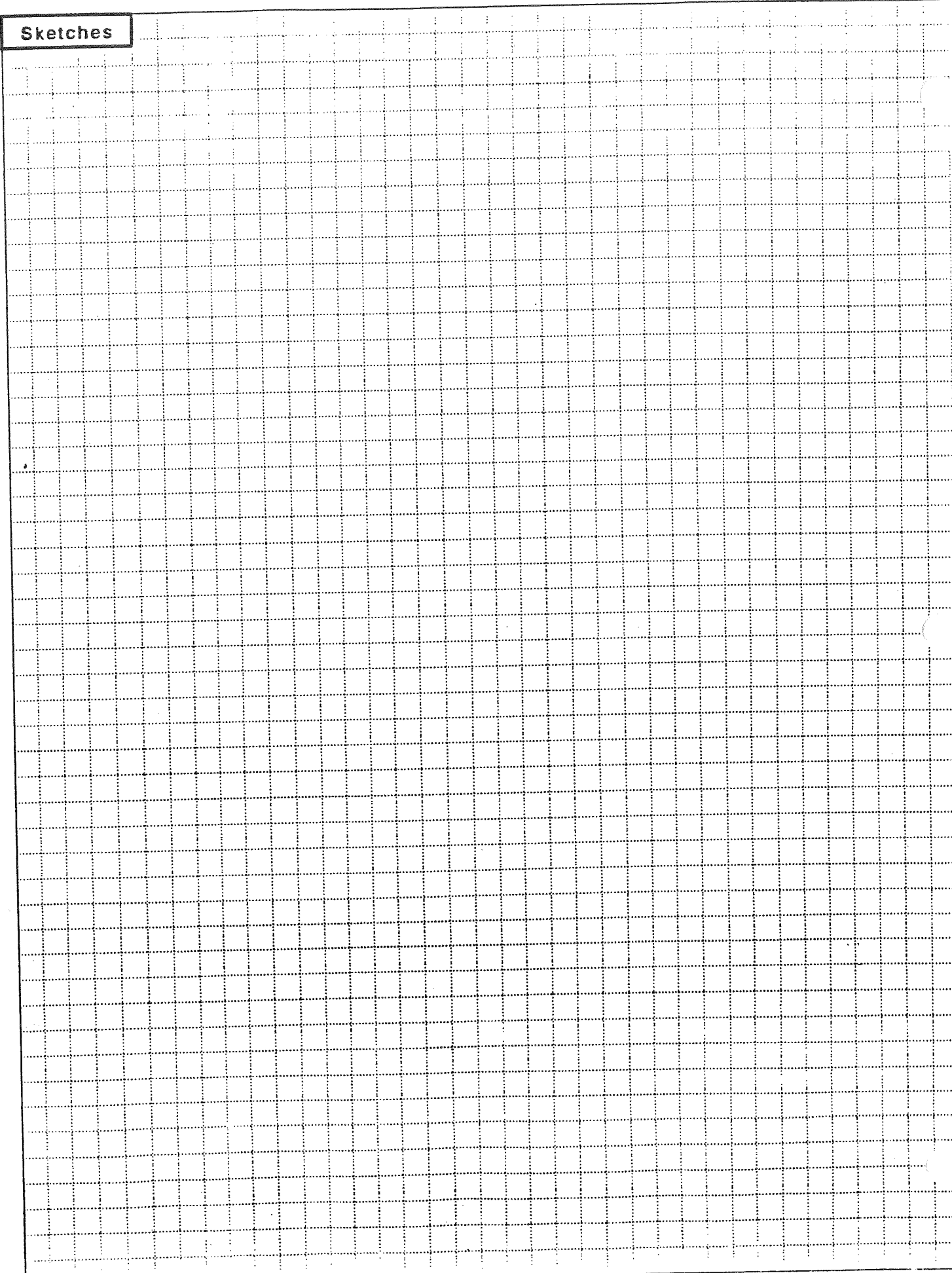
32'

19.4'

from Abut 1

All measurements shall be taken on outlet side of structure

Sketches



Structure No. 64-016-130
August 9, 2012



Roadway Facing East



Profile Facing North

Structure No. 64-016-130
August 9, 2012



Heavy Debris at Bent 2 – Facing West

