


**Yankton County
2020 Bridge Inspections**

Presented by:
Adam Polley, PE



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Inspection Overview

- 73 bridges inspected in 2020
 - (Yankton County has a total of 73 structures)
- Average Replacement Cost = \$1,078,381
 - Average County Share (20%) = \$215,676
- Total Replacement Cost = \$35,586,600
 - Total County Share = \$7,117,320
- Sufficiency Ratings:
 - 100 – 60 (Good Condition) – 48 bridges (66%)
 - 60-40 (Fair Condition) – 19 bridge (26%)
 - < 40 (Poor Condition) – 6 bridges (8%)



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Sufficiency Rating

- Average Sufficiency Rating= 72.7



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Stone Church – 68-030-018

- 371.8' Five Span Continuous Composite Steel Girder
- Built in 1959
- 7.2 miles north and 1.0 mile east of Lesterville, SD
- Sufficiency Rating = 23.0
- Structure is nearing the end of its useful life and should be programmed for replacement.



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Stone Church - 68-030-018



Profile Facing West



Alignment Facing South



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Stone Church - 68-030-018



Typical Bearing at Bent 3



Concrete Deterioration East
End of Abutment 1

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Stone Church - 68-030-018



Corrosion of Girders over the
Bents



West End of Abutment 1

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Stone Church - 68-030-018



Tree Debris at Bent 2



Weight Limit Sign

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Stone Church - 68-030-018

Repair Recommendations:

- This structure is nearing the end of its useful life and should be programmed for replacement.
- Continue to post the structure at Single Unit: 11 Tons, Combinations: 13 Tons.
- Note: This structure is scheduled to apply for a replacement grant in January 2021.

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Jamesville – 68-076-048

- 426.5' Six Span Continuous Composite Steel Girder
- Built in 1957
- 8.1 miles north and 0.5 miles east of Utica, SD
- Sufficiency Rating = 62.2
- Structure is nearing the end of its useful life and should be programmed for replacement.



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Jamesville - 68-076-048



Profile Facing East

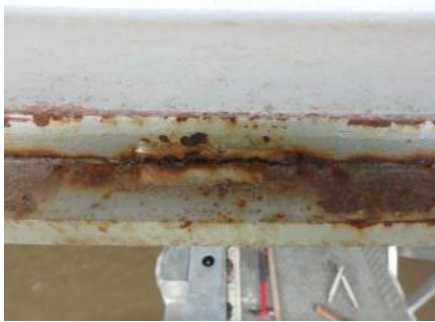


Alignment Facing North



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Jamesville - 68-076-048



Broken Weld on Girder 4 in Span 2 on Cover Plate (Typical to numerous locations)



Bent Girder 3 at End of Cover Plate in Span 3

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Jamesville - 68-076-048



Cracking on Abutment 1 Sill



West End of Bent Cap 4

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Jamesville - 68-076-048



Bent Cap Repair on Bent 5



Cracking on the South Face of Bent Cap 6

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Jamesville - 68-076-048



Crack on the Top of Bent Cap 6 East End



Condition of the West End of Bent Cap 6

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Jamesville - 68-076-048



Concrete Deterioration on the West End of Abutment 7 Sill



Weight Limit Sign

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Jamesville – 68-076-048

Repair Recommendations:

- Remove the debris from the top of the bent caps and abutment sills.
- Repair the deteriorating substructure elements.
- This structure is nearing the end of its useful life and should be programmed for replacement.
- Continue to post the structure at Single Unit: 24 Tons, Combinations: 31 Tons.

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Johnson – 68-134-120

- 454.0' Six Span Continuous Composite Steel Girder
- Built in 1962
- 6.4 miles east and 1.0 mile north of Utica, SD
- Sufficiency Rating = 62.9

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Johnson – 68-134-120



Profile Facing North



Alignment Facing West

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Johnson – 68-134-120



Typical Painted Ends of Girders



Typical Bearing at Bent 3

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Johnson – 68-134-120



Typical Bolted Splice Plate



Concrete Patching on the Underside of the Deck at Bolted Splice Locations

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Johnson – 68-134-120



Cracked Splice on Girder 3 in
Span 4 West Splice



Cracked Splice on Girder 3 in
Span 4 West Splice (Testing
and Crack Tips)

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Johnson – 68-134-120



Concrete Deterioration on
the North End of Bent Cap 2



Weight Limit Sign

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Johnson – 68-134-120

Repair Recommendations:

- Install bolted splice at the cracked weld splice location.
- Remove the tree debris around Bents 3 and 4.
- Continue to post the structure at Single Unit: 24 Tons, Combinations: 32 Tons.



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Fleegs – 68-156-182

- 426.5' Six Span Continuous Composite Steel Girder
- Built in 1952
- 1.1 miles south and 2.4 miles west of Mission Hill, SD
- Sufficiency Rating = 45.8



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Fleegs – 68-156-182



Profile Facing North



Alignment Facing West



Fleegs – 68-156-182



Typical Deterioration of the Edge of the Deck



Section Loss of Bearing Plate over Bent 2



Fleegs – 68-156-182



Typical Bearings at Bent 3



Typical Splice

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Fleegs – 68-156-182



Arrested Crack on Girder 2
Span 3



Typical Corrosion to the Exterior
Girders

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Fleegs – 68-156-182



Bulging of Diaphragms from Pack Rust over Bent 5



Cracked Weld on Girder 3 over Bent 5 on the Cover Plate



Fleegs – 68-156-182



Tree Debris at Bent 5



Weight Limit Sign



Fleegs – 68-156-182

Repair Recommendations:

- Remove the debris from the abutment sills and the bents.
- This structure is nearing the end of its useful life and should be programmed for replacement.
- Remove the tree debris from under the structure.
- Continue to post the structure at Single Unit: 24 Tons, Combinations: 33 Tons.
- Note: Preliminary Engineering grant has been awarded and is currently under design.



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68-019-015

- 36.4' Single Span Steel Girder
- Built in 1938
- 7.5 miles north and 0.1 miles west of Lesterville, SD
- Sufficiency Rating = 37.9



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68-019-015



Profile Facing North



Alignment Facing West



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68-019-015



Typical Underside of the Deck and Girders



Typical Section Loss to the Web of the Girders



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68-019-015



Concrete Deterioration in the Exterior Bays



Typical Efflorescence and Stalactites on the Underside of the Deck

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68-019-015



Cracking and Deterioration at the Corners of Abutment 2



Weight Limit Sign

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68-019-015

Repair Recommendations:

- This structure is nearing the end of its useful life and should be programmed for replacement.
- Post the structure at Single Unit: 12 Tons, Combinations: 21 Tons due to the section loss of the girders.



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68-070-158

- 36.0' Single Span Steel Girder
- Built in 1940
- 2.8 miles south of Utica, SD
- Sufficiency Rating = 29.5



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68-070-158



Profile Facing East



Alignment Facing South



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68-070-158



General Layout of the Underside of the Deck and Girders



Typical Stalactites Buildup on the Underside of the Deck



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68-070-158



Typical Section Loss on the Top Flange of the Girders



Weight Limit Sign

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68-070-158

Repair Recommendations:

- This structure is nearing the end of its useful life and should be programmed for replacement.
- Continue to post the structure at Single Unit: 17 Tons, Combinations: 29 Tons.

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Thank you for your time!

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