

Bridge 05600 Inspection Report



Latitude:35.39032, Longitude:-93.53016

Route:109 Section:03 Log:7.849

Arnold Road ID:42x109x3xA, Arnold Log mile:7.785

District 08, 83 - Logan County

Owner: 1 - State Highway Agency

Inspection Direction: 2 - S to N

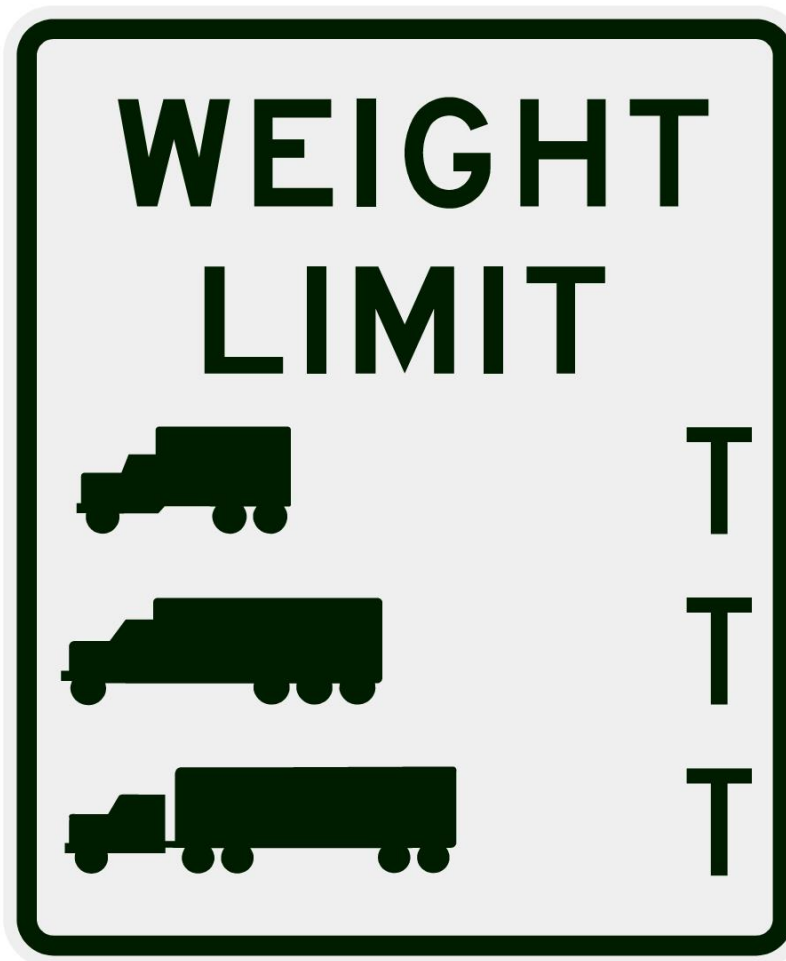
Bridge Posting Information

41 - Structure Open/Posted/Closed: A - Open, no restriction

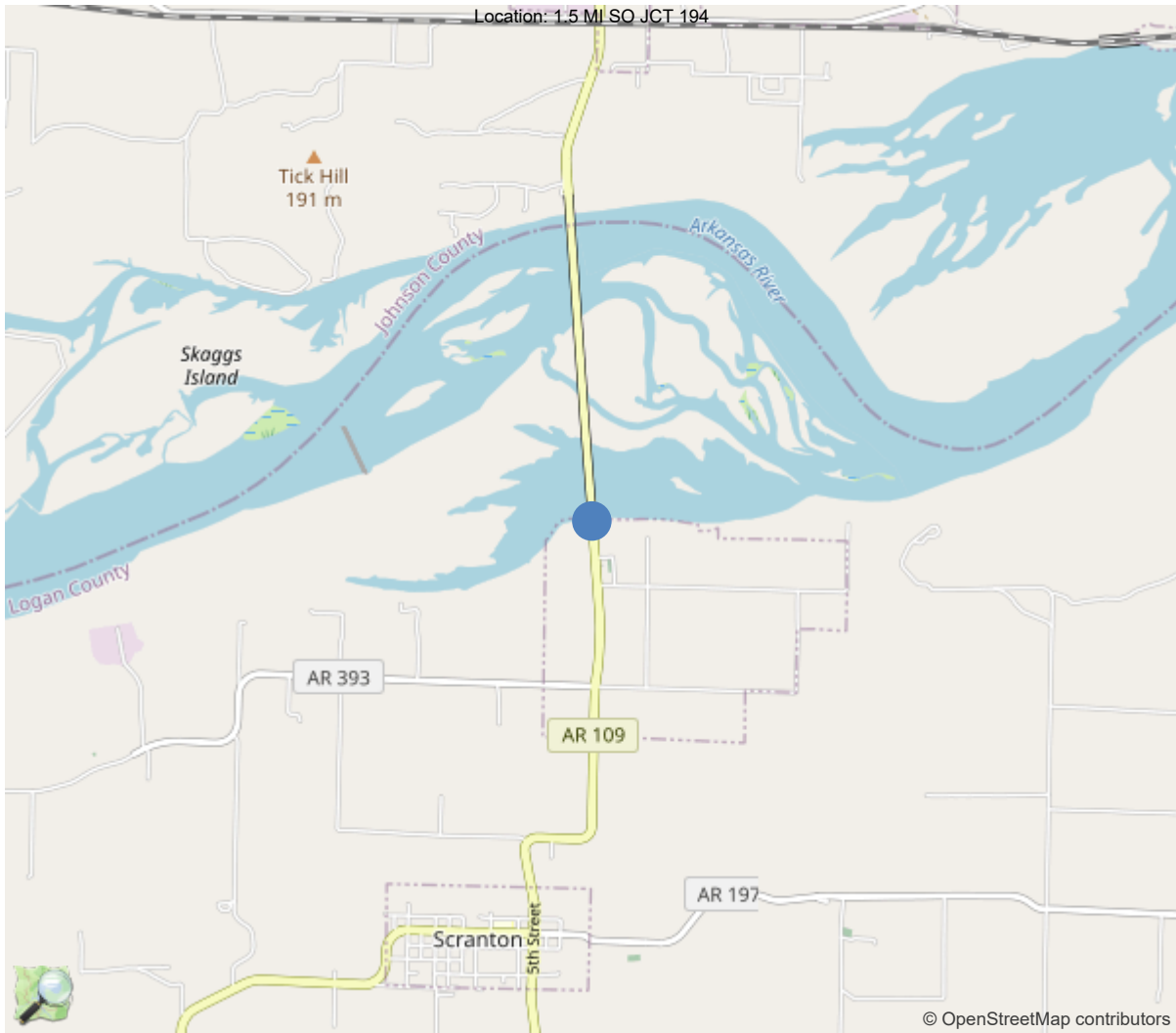
70 - Bridge Posting: 5 - Equal to or above legal loads

| Legal Load | Calculated Capacity | Beginning of Bridge Sign Current Value | End of Bridge Sign Current Value |
|------------------|---------------------|--|----------------------------------|
| Code 4 (22 Tons) | 40 | | |
| Code 9 (31 Tons) | 50 | | |
| Code 5 (40 Tons) | 60 | | |

If calculated capacity is less than the Legal Load Listed, the Bridge Legally Requires Posting Signs to be installed by the Bridge Owner.



30"x36" AR



35.39032, -93.53016

National Bridge Inventory Data Sheet

| IDENTIFICATION | |
|---|-----------------------------------|
| (1) State Names | 5 - Arkansas |
| (8) Structure Number | 05600 |
| (5) Inventory Route | 1 |
| (2) Highway Agency District | 08 - District 08 |
| (3) County Code | 83 - Logan County |
| (4) Place Code | 14140 |
| (6) Features Intersected | ARKANSAS RIVER |
| (7) Facility Carried | SH 109 |
| (9) Location | 1.5 MI SO JCT 194 |
| (11) Mile Point | 7.849 mi |
| (12) Base Highway Network | No |
| (13) LRS Inventory Rte & Subrte | 00000000 |
| (16) Latitude | 35.3903163023167 |
| (17) Longitude | -93.5301648452301 |
| (98) Border Bridge State Code | |
| (99) Border Bridge Structure No. | |
| STRUCTURE TYPE AND MATERIAL | |
| (43) Main Structure Type | 43 |
| Material | 4 - Steel continuous |
| Type | 3 - Girder and floorbeam system |
| (44) Approach Structure Type | 42 |
| Material | 4 - Steel continuous |
| Type | 2 - Stringer/Multi-beam or girder |
| (45) No. of Spans in Main Unit | 3 |
| (46) No. of Approach Spans | 57 |
| (107) Deck Structure Type | 1 - Concrete Cast-in-Place |
| (108) Wearing Surface/Protective System | |
| Type of Wearing Surface | 5 - Epoxy Overlay |
| Type of Membrane | 0 - None |
| Type of Deck Protection | 0 - None |
| AGE AND SERVICE | |
| (27) Year Built | 1980 |
| (106) Year Reconstructed | 0 |
| (42) Type of Service | 15 |
| On | 1 - Highway |
| Under | 5 - Waterway |
| (28) Lane | |
| On | 2 |
| Under | 0 |
| (29) Average Daily Traffic | 3800 |
| (30) Year of ADT | 2018 |
| (109) Truck ADT | 17 % |
| (19) Bypass, Detour Length | 40 mi |
| GEOMETRIC DATA | |
| (48) Length of Maximum Span | 410 ft |
| (49) Structure Length | 8537 ft |
| (50) Curb or Sidewalk Width | |
| Left | 0 ft |
| Right | 0 ft |
| (51) Bridge Roadway Width Curb to Curb | 30 ft |
| (52) Deck Width Out to Out | 32.7 ft |
| (32) Approach Roadway Width (W/Shoulders) | 40 ft |
| (33) Bridge Median | 0 - No median |
| (34) Skew | 0 Deg |
| (35) Structure Flared | 0 - No flare |
| (10) Inventory Route Min Vert Clear | 99.99 ft |
| (47) Inventory Route Total Horiz Clear | 31.5 ft |
| (53) Min Vert Clear Over Bridge Rdwy | 99.99 ft |
| (54) Min Vert Underclear | 0 ft |
| Ref: | |
| (55) Min Lat Underclear RT | 0 ft |
| Ref: | |
| (56) Min Lat Underclear LT | 0 ft |
| NAVIGATION DATA | |
| (38) Navigation Control | 1 - Navigation control on wate |
| (111) Pier Protection | 5 - None present but re-evalua |
| (39) Navigation Vertical Clearance | 51.8 ft |
| (116) Vert-Lift Bridge Nav Min Vert Clear | 0 ft |
| (40) Navigation Horizontal Clearance | 250 ft |

| CLASSIFICATION | |
|--|-------------------------------------|
| (112) NBIS Bridge Length | Y |
| (104) Highway System | 0 |
| (26) Functional Class | 6 - Rural Minor Arterial |
| (100) Defense Highway | 0 - The inventory route is not |
| (101) Parallel Structure | N - No parallel structure exists |
| (102) Direction of Traffic | 2 - way traffic |
| (103) Temporary Structure | |
| (105) Federal Lands Highways | 0 - N/A |
| (110) Designated National Network | 0 - The inventory route is not |
| (20) Toll | 3 - On free road. The structu |
| (21) Maintain | 1 - State Highway Agency |
| (22) Owner | 1 - State Highway Agency |
| (37) Historical Significance | 5 - Bridge is not eligible for |
| CONDITION | |
| (58) Deck | 7 |
| (59) Superstructure | 6 |
| (60) Substructure | 7 |
| (61) Channel & Channel Protection | 7 |
| (62) Culverts | N |
| LOAD RATING AND POSTING | |
| (31) Design Load | 5 - MS 18 / HS 20 |
| (63) Operating Rating Method | 1 |
| (64) Operating Rating | |
| Type | 1 - Load Factor(LF) |
| Rating | 60 |
| (65) Inventory Rating Method | 1 - Load Factor(LF) |
| (66) Inventory Rating | |
| Type | |
| Rating | 36 |
| (70) Bridge Posting | 5 - Equal to or above legal loads |
| (41) Structure Open/Posted/Closed | A - Open, no restriction |
| APPRAISAL | |
| (67) Structural Evaluation | |
| (68) Deck Geometry | 4 |
| (69) Clearances, Vertical/Horizontal | N |
| (71) Waterway Adequacy | 8 |
| (72) Approach Roadway Alignment | 8 |
| (36A) Bridge Railings | 1 - Inspected feature meets current |
| (36B) Transitions | 1 - Inspected feature meets current |
| (36C) Approach Guardrail | 1 - Inspected feature meets current |
| (36D) Approach Guardrail Ends | 1 - Inspected feature meets current |
| (113) Scour Critical Bridges | 5 - Bridge foundations determined t |
| PROPOSED IMPROVEMENTS | |
| (75) Type of Work | |
| (76) Length of Structure Improvement | 0 ft |
| (94) Bridge Improvement Cost | \$ 0 |
| (95) Roadway Improvement Cost | \$ 0 |
| (96) Total Project Cost | \$ 0 |
| (97) Year of Improvement Cost Estimate | |
| (114) Future ADT | 5101 |
| (115) Year of Future ADT | 2028 |

| INSPECTIONS * | | | |
|--|------------|-------------|------------|
| (90) Inspection Date | 04/15/2024 | | |
| (91) Frequency | 24 | | |
| (92) Critical Feature Inspection | Done | Freq. (Mon) | Date |
| A: Fracture Critical Detail | Yes | 12 | 04/09/2025 |
| B: Underwater Inspection | Yes | 60 | 11/17/2023 |
| C: Other Special Inspection | No | | |
| * The inspection date and frequency information in this box contains the current NBI date and frequency information. Please refer to the report header for the date this inspection was conducted. | | | |

Team Lead: Anthony Caudel, Inspection Date: 04/09/2025

Specifications for National Bridge Inventory Sheets

| IDENTIFICATION | |
|-----------------------------|---------------------|
| B.ID.01 Bridge Number | 05600 |
| B.ID.02 Bridge Name | MILLS - AHNE Bridge |
| B.ID.03 Previous Bridge No. | |
| B.W.01 Year Built | 1980 |

| LOCATION | |
|--|---------------------|
| B.L.01 State Code | 5 - Arkansas |
| B.L.02 County Code | 83 - Logan County |
| B.L.03 Place Code | 14140 - Clarksville |
| B.L.04 Highway Agency District | 08 - District 08 |
| B.L.05 Latitude | 35.3903163023167 |
| B.L.06 Longitude | -93.5301648452301 |
| B.L.07 Border Bridge Number | |
| B.L.08 Border Bridge State or Country Code | |
| B.L.09 Border Bridge Insp. Resp. | |
| B.L.10 Border Bridge Designated Lead State | |
| B.L.11 Bridge Location | 1.5 MI SO JCT 194 |
| B.L.12 Metropolitan Planning Organization | |

| CLASSIFICATION | |
|--|-------------------------------------|
| B.CL.01 Owner | S01 - State transportation departme |
| B.CL.02 Maint. Responsibility | S01 - State transportation departme |
| B.CL.03 Federal or Tribal Land Access | N - Not Applicable |
| B.CL.04 Historic Significance | N - Bridge is not eligible for the |
| B.CL.05 Toll | N - Bridge does not carry a toll ro |
| B.CL.06 Emergency Evacuation Designation | |

| ROADSIDE HARDWARE | |
|------------------------------------|--|
| B.RH.01A Bridge Railing Type | |
| B.RH.01B Bridge Railing Year (YY) | |
| B.RH.01C Bridge Railing Test Level | |
| B.RH.02A Transition Type | |
| B.RH.02B Transition Year (YY) | |
| B.RH.02C Transition Test Level | |

| BRIDGE GEOMETRY | |
|-------------------------------------|--------|
| B.G.01 NBIS Bridge Length | 8537.1 |
| B.G.02 Total Bridge Length | 8537.1 |
| B.G.03 Max Span Length | 410.1 |
| B.G.04 Min Span Length | 121 |
| B.G.05 Bridge Width Out-to-Out | 32.8 |
| B.G.06 Bridge Width Curb-to-Curb | 29.9 |
| B.G.07 Left Curb or Sidewalk Width | 0 |
| B.G.08 Right Curb or Sidewalk Width | 0 |
| B.G.09 Approach Roadway Width | 40 |

| | |
|-----------------------------|---------------------------|
| B.G.10 Bridge Median | 0 - No median |
| B.G.11 Skew | 0 |
| B.G.12 Curved Bridge | N - Not curved |
| B.G.13 Max Bridge Height | 74 |
| B.G.14 Sidehill Bridge | N - Not a sidehill bridge |
| B.G.15 Irregular Deck Area | |
| B.G.16 Calculated Deck Area | 280087.7 |

| LOADS AND LOAD RATING | |
|--|--------------------------|
| B.LR.01 Design Load | HS20 - HS-20 |
| B.LR.02 Design Method | |
| B.LR.03 Load Rating Date | |
| B.LR.04 Load Rating Method | LFR - Load Factor Rating |
| B.LR.05 Inventory Load Rating Factor | 1 |
| B.LR.06 Operating Load Rating Factor | 1.67 |
| B.LR.07 Controlling Legal Load Rating Factor | |
| B.LR.08 Routine Permit Loads | |

| INSPECTION REQUIREMENTS | |
|----------------------------------|-------------------------------------|
| B.IR.01 NSTM Inspection Required | Y - NSTM inspection required. |
| B.IR.02 Fatigue Details | Y - E/E' details are present |
| B.IR.03 UW Inspection Required | Y - Underwater inspection required |
| B.IR.04 Complex Feature | N - Bridge does not have complex fe |

| COMPONENT CONDITION RATINGS | |
|---|--------------------------------|
| B.C.01 Deck Condition Rating | 7 - GOOD - Some minor defects. |
| B.C.02 Superstructure Condition | 6 - SATISFACTORY - Widespread |
| B.C.03 Substructure Condition | 7 - GOOD - Some minor defects. |
| B.C.04 Culvert Condition | N - NOT APPLICABLE - Component |
| B.C.05 Bridge Railing Condition | 6 - SATISFACTORY - Widespread |
| B.C.06 Bridge Railing Transitions Condition | 4 - POOR - Widespread moderate |
| B.C.07 Bridge Bearings Cond. | 7 - GOOD - Some minor defects. |
| B.C.08 Bridge Joints Condition | 4 - POOR - Widespread moderate |
| B.C.09 Channel Condition Rating | 7 - GOOD - Some minor defects. |
| B.C.10 Channel Protection Condition | |
| B.C.11 Scour Condition Rating | 6 - Widespread minor or isolat |
| B.C.12 Bridge Condition Classification | F - Fair |
| B.C.13 Lowest Condition Rating | 6 - SATISFACTORY - Widespread |
| B.C.14 NSTM Insp. Condition | 6 - SATISFACTORY - Widespread |
| B.C.15 UW Inspection Condition | 6 - SATISFACTORY - Widespread |

| APPRAISAL | |
|------------------------------------|-------------------------------------|
| B.AP.01 Approach Roadway Alignment | G - Good |
| B.AP.02 Overtopping Likelihood | 1 - Remote - once every 100 years o |
| B.AP.03 Scour Vulnerability | 0 - Scour appraisal has not been co |
| B.AP.04 Scour Plan of Action | 0 - A scour POA is not required. |
| B.AP.05 Seismic Vulnerability | 0 - Seismic evaluation not complete |

Team Lead: Anthony Caudel, Inspection Date: 04/09/2025

| SPAN SETS | | | |
|-----------------------------------|--------------------------------|--|--------------------------------|
| M1 | | | |
| B.SP.02 # of Spans | 3 | B.SP.08 Deck Interaction | CU - Composite - unshored cons |
| B.SP.03 # of Beam Lines | 2 | B.SP.09 Deck Material and Type | C01 - Reinforced concrete - ca |
| B.SP.04 Span Material | S02 - Steel - welded | B.SP.10 Wearing Surface | 0 - None |
| B.SP.05 Span Continuity | 2 - Continuous | B.SP.11 Deck Protective System | 0 - None |
| B.SP.06 Span Type | G09 - Girder/beam - girder & f | B.SP.12 Deck Reinforcing Protective System | 0 - None |
| B.SP.07 Span Protective System | C01 - Coating - paint | B.SP.13 Deck Stay-In-Place Forms | M01 - Metal |
| A1 | | | |
| B.SP.02 # of Spans | 57 | B.SP.08 Deck Interaction | CU - Composite - unshored cons |
| B.SP.03 # of Beam Lines | 4 | B.SP.09 Deck Material and Type | C01 - Reinforced concrete - ca |
| B.SP.04 Span Material | S02 - Steel - welded | B.SP.10 Wearing Surface | 0 - None |
| B.SP.05 Span Continuity | 2 - Continuous | B.SP.11 Deck Protective System | 0 - None |
| B.SP.06 Span Type | G02 - Girder/beam - I-shaped s | B.SP.12 Deck Reinforcing Protective System | 0 - None |
| B.SP.07 Span Protective System | C01 - Coating - paint | B.SP.13 Deck Stay-In-Place Forms | 0 - None |
| SUBSTRUCTURE SETS | | | |
| A1 | | | |
| B.SB.02 No. of Substructure Units | 1 | B.SB.05 Substructure Protective System | 0 - None |
| B.SB.03 Substructure Material | C01 - Reinforced concrete - ca | B.SB.06 Foundation Type | P01 - Pile - steel H-shape |
| B.SB.04 Substructure Type | A02 - Abutment - stub | B.SB.07 Foundation Protective System | 0 - None |
| A2 | | | |
| B.SB.02 No. of Substructure Units | 1 | B.SB.05 Substructure Protective System | 0 - None |
| B.SB.03 Substructure Material | C01 - Reinforced concrete - ca | B.SB.06 Foundation Type | F02 - Footing - on rock |
| B.SB.04 Substructure Type | A03 - Abutment - open/spill th | B.SB.07 Foundation Protective System | 0 - None |
| P1 | | | |
| B.SB.02 No. of Substructure Units | 41 | B.SB.05 Substructure Protective System | 0 - None |
| B.SB.03 Substructure Material | C01 - Reinforced concrete - ca | B.SB.06 Foundation Type | P01 - Pile - steel H-shape |
| B.SB.04 Substructure Type | P02 - Pier - single column | B.SB.07 Foundation Protective System | 0 - None |
| P2 | | | |
| B.SB.02 No. of Substructure Units | 18 | B.SB.05 Substructure Protective System | 0 - None |
| B.SB.03 Substructure Material | C01 - Reinforced concrete - ca | B.SB.06 Foundation Type | F02 - Footing - on rock |
| B.SB.04 Substructure Type | P02 - Pier - single column | B.SB.07 Foundation Protective System | 0 - None |

Team Lead: Anthony Caudel, Inspection Date: 04/09/2025

HIGHWAY FEATURES

| H1 | | | |
|---|--------------------------|--|------|
| B.F.02 Feature Location | C - Carried on bridge | B.H.09 Annual ADT | 3800 |
| B.F.03 Feature Name | SH 109 | B.H.10 Annual ADTT | 646 |
| B.H.01 Functional Classification | 4 - Minor Arterial | B.H.11 Year of Annual ADT | 2018 |
| B.H.02 Urban Code | 99999 | B.H.12 Highway Max Usable Vertical Clearance | 99.9 |
| B.H.03 NHS Designation | N - Non-NHS | B.H.13 Highway Min Vertical Clearance | 99.9 |
| B.H.04 National Highway Freight Network | N - Not on the NHFN | B.H.14 Highway Min Horizontal Clearance, Left | |
| B.H.05 STRAHNET Designation | N - Not a STRAHNET route | B.H.15 Highway Min Horizontal Clearance, Right | |
| B.H.06 LRS Route ID | | B.H.16 Highway Max Usable Surface Width | 31.4 |
| B.H.07 LRS Mile Point | 7.849 | B.H.17 Bypass Detour Length | 40 |
| B.H.08 Lanes On Highway | 2 | B.H.18 Crossing Bridge Number | |

HIGHWAY ROUTES

| Highway Parent | B.RT.01 Route Designation | B.RT.02 Route Number | B.RT.03 Route Direction | B.RT.04 Route Type | B.RT.05 Service Type |
|----------------|---------------------------|----------------------|---|--------------------|----------------------|
| H1 | 1 | 109 | 2-T - TEMP - Two-way traffic - NS or EW | 3 - State route | 1 - Mainline |

WATERWAY FEATURES

| W1 | | | |
|--|----------------------|---|--------------------------------|
| B.F.02 Feature Location | B - Below bridge | B.N.03 Movable Bridge Max Navigation Vertical Clearance | |
| B.F.03 Feature Name | Arkansas River | B.N.04 Navigation Channel Width | 250 |
| B.N.01 Navigable Waterway | Y - Navigable waters | B.N.05 Navigation Channel Min Horizontal Clearance | 0 |
| B.N.02 Navigation Min Vertical Clearance | 51.8 | B.N.06 Substructure Navigation Protection | 5 - No protective system in pl |

POSTING STATUS DATA

| | |
|-----------------------------|------------------------------------|
| B.PS.01 Load Posting Status | B.PS.02 Posting Status Change Date |
| PO - Permanent and Open | |

LOAD EVALUATION AND POSTING

| | | | |
|----------------------------------|----------------------------------|----------------------|-----------------------|
| B.EP.01 Legal Load Configuration | B.EP.02 Legal Load Rating Factor | B.EP.03 Posting Type | B.EP.04 Posting Value |
|----------------------------------|----------------------------------|----------------------|-----------------------|

Inspection Notes

General Observation

NSTM inspections of 05600 were conducted on these dates, from South to North, utilizing the Aspen A 62-t under-bridge inspection unit in spans 56-58.

Traffic control is handled by signs and cones, a flagger on both ends of the bridge. The lane closure method used for this inspection is attached to the asset.

58 - Deck (7 - GOOD CONDITION - some minor problems.)

Overall, the deck was found to be in good condition. Driving surface defects are virtually absent due to the polymer overlay. The undersurface has transverse cracking throughout with CS2 efflorescence, but no structural defects were uncovered. As a result, the deck was rated a 7.

Undersurface:

Span 56, left, Overhang: has cracking at 3' spacing with heavy spalls. 2 SF CS3

Approach spans: have an average of 7' spacing for efflorescence. 17226 SF CS2

59 - Superstructure (6 - SATISFACTORY CONDITION - structural elements show some minor deterioration.)

Overall, the superstructure was found to be in satisfactory condition. Minor surface corrosion is common throughout, and isolated instances of section loss up to 1/4" are present. Out-of-plane bending is also present in girders 1 and 2 in span 56. Due to these findings, the superstructure was rated 6.

60 - Substructure (7 - GOOD CONDITION - some minor problems.)

Overall, the substructure was found to be in good condition. Minor spalls are present in isolated locations and hairline cracks are common, but no structural defects were identified. The substructure was rated a 7 as a result.

61 - Channel/Channel Protection (7 - Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.)

Overall, the channel was found to be in good condition. The channel is well aligned and vegetated, with a few scour holes on the islands in the approach spans, and some minor scour at the abutments.

Span 20: Has a large scour hole.

A-55 - Deck Washing Needed (Y)

Bridge Rail Drains: The drains have debris in them, allowing for water to pond in the gutters

A-60 - Full Girder Painting Needed (Y)

Surface rust on the webs and bottom flanges of the exterior girders. Pack rust has formed at the field splices. The paint system is failing. Primer coat and bare metal are exposed in many areas. The paint has failed at the expansion joints. Debris and pigeon dung on bottom flanges. This condition is typical in the approach spans.

Span 24, 25: Girders have smoke stains.

Span 32, Girder 2, 1st Field splice: The bottom flange of the girder is bent. (Minor)

Span 44, Girder 1: The bottom flange of the girder is bent. (Minor)

Span 52, Girder 4: The bottom flange of the girder is bent.

Bent 61: (North Abutment) Girders have graffiti.

A-64 - Vegetation Removal Requested (Y)

Spans 29 - 40: Have overgrowth, limiting the access of the snooper.

Span 41: Has debris and cutting of the channel bank.

A-114 - Underwater Inspection General Observation

Engineer of Record: Samuel Williams, PE

Team Leader: Samuel Williams, PE

Team Members: KD, CD, AC

Total Substructure Units: 61

Substructure Units in Water: Bents 25-28, 42-58

Inventory Direction: S to N

Direction of Flow: W to E

Deepest Water Depth: 35.5 ft

Water Velocity: 0.0 FPS

Attachments: Channel Profile/Contour Map, Soundings Table, Inspection Procedures, Stamped Final Report.

A-115 - Underwater Inspection Channel/Channel Protection (7 - Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.)

Overall, the channel is in good condition. The main channel is on the north end of the bridge and is well aligned with the substructure units. There is timber debris scattered throughout the waterway that does not significantly affect flow through the channel. The banks are stable and well vegetated.

A-116 - Underwater Inspection Substructure Condition (B.C.15) (6 - SATISFACTORY CONDITION - structural elements show some minor deterioration.)

Overall, the substructure units are in satisfactory condition. There are minor to moderate spalls on many of the columns and there is significant scour at Bents 25 through 28. These defects are quantified in the element level portion of this report.

A-117 - Underwater Scour Condition (5 - Moderate scour; strength and stability of the bridge are not affected.)

According to the available drawings (Drawing No. 18941-18947 and 18954-18956) dated 1974, Bents 25 through 28 and Bent 42 are supported by steel H-piles, and Bents 43 through 58 are supported by spread footings. Based on a comparison to the drawings to the inspection findings, up to 22 ft of scour has occurred at Bents 26 and 28 that has undermined the seals and exposed the steel piles up to 9 ft high. At Bents 25, 27, and 42, there has been up to 13 ft of scour that has exposed the pile caps and seals, with no undermining of the seals.

It is recommended to install engineered scour countermeasures at Bents 25 through 28 to mitigate additional scour and to monitor these locations after high flow events until the countermeasures are in place. It is also recommended to perform a structural analysis to determine if the scour has affected the overall load bearing capacity of the structure.

B.ID.02 Bridge Name (MILLS - AHNE Bridge)

Bridge name is, Mills - AHNE Bridge.

B.IR.02 - Fatigue Prone Details (Y)

E details were identified at the welded lateral brace to girder connections and at the termination of all longitudinal stiffeners. Longitudinal stiffener terminations near vertical stiffeners were checked to ensure adequate distance between the welds was maintained during construction to eliminate these details as CIF susceptible. No CIF-susceptible details were identified at this inspection.

E details main span. Lateral brace to girder welds. Main spans. These details were checked for CIF susceptibility. They are fully welded all the way around, eliminating the crack-like detail that would put them in a CIF category.

E details on the Main span.

E details. Longitudinal stiffener terminations. Sufficient gap between the longitudinal and vertical stiffeners.

E details: lateral bracing to girder web welds approach spans.

B.C.05 Bridge Railing Condition Rating (6 - SATISFACTORY - Widespread minor or isolated moderate defects.)

Vertical cracks throughout with exposed rebar are typical.

Span 48, left side: large spall. CS3

Span 53, right side: large spall. CS3

Span 57, left side: large spall. CS3

B.C.06 Bridge Railing Transitions Condition Rating (4 - POOR - Widespread moderate or isolated major defects; strength and/or performance of the component is affected.)

Approach Railing, right side, beginning of structure: has minor collision damage. CS2

B.C.07 Bridge Bearings Condition Rating (7 - GOOD - Some minor defects.)

Abutments: Have corrosion in bearings. CS3

B.C.08 Bridge Joints Condition Rating (4 - POOR - Widespread moderate or isolated major defects.)

Joints have debris build up and impaction.

B.C.14 - NSTM Inspection Condition (6 - SATISFACTORY - Widespread minor or isolated moderate defects.)

Overall, the NSTM members were found to be in satisfactory to good condition. The steel girders have minor surface corrosion and diminishingly effective paint throughout. The main factor determining the rating of these members is out-of-plane bending in span 56. The girders were rated a 6 as a result. The floor beams have similar corrosion and paint as the girders and were rated a 7

B.C.15 Underwater Inspection Condition (6 - SATISFACTORY - Widespread minor or isolated moderate defects.)

Underwater bridge inspection report dated 10/4/2018.

A-B.C.11 - B.C.11 Scour Condition Rating (New NBIS) (6 - Widespread minor or isolated moderate scour.)

Abutment 1, left: Scour exposing 3' of the cap face vertically. Scour begins at the left edge and travels toward the center for 8'.

Abutment 1: has a scour hole on the right side that exposes the entire abutment face for 10', beginning at the right edge and traveling toward the center.

Abutment 2: has minor erosion. No exposure of the face.

Team Lead: Anthony Caudel **Inspection Date:** 04/09/2025

National Bridge Element Quantities and Notes

| ELEMENTS | DESCRIPTION | UNITS | TOTAL | CS1 | CS2 | CS3 | CS4 |
|---|---|-------|--------|--------|--------|--------|------|
| 12 | Reinforced Concrete Deck | SF | 278803 | 260495 | 18305 | 3 | 0 |
| 1080 | Delamination/Spall/Patched Area | SF | 329 | 0 | 329 | 0 | 0 |
| 1090 | Exposed Rebar | SF | 3 | 0 | 0 | 3 | 0 |
| 1120 | Efflorescence/Rust Staining | SF | 17976 | 0 | 17976 | 0 | 0 |
| 1130 | Cracking (RC and Other) | SF | 9757 | 9757 | 0 | 0 | 0 |
| <p>(12) A polymer overlay has been applied since the last inspection. All driving surface cracks and spalls have been repaired and sealed.</p> <p>Cracks with efflorescence are present throughout the undersurface overhangs at a spacing of 2' apart. A total of 17226SF CS2 is present.</p> <p>Span 33, bay 1, Diaphragm 4: There is a spall to the undersurface with exposed rebar. 1LF CS3</p> <p>Span 39, bay 1, 1st splice: Has spalls with exposed rebar. 2SF CS3 There are delaminations adjacent to it. 2SF CS2</p> <p>A polymer overlay has been completed, and all driving surface cracks and spalls have been repaired/sealed.</p> <p>Cracks with efflorescence are present in the undersurface overhangs, spaced 5 feet apart, for a total of 750SF CS2.</p> | | | | | | | |
| 107 | Steel Open Girder/Beam | LF | 32279 | 13252 | 18940 | 87 | 0 |
| 1000 | Corrosion | LF | 19006 | 0 | 18923 | 83 | 0 |
| 1010 | Cracking | LF | 2 | 0 | 0 | 2 | 0 |
| 1020 | Connection | LF | 2 | 0 | 0 | 2 | 0 |
| 1900 | Distortion | LF | 16 | 0 | 16 | 0 | 0 |
| 7000 | Damage | LF | 1 | 0 | 1 | 0 | 0 |
| 515 | Steel Protective Coating | SF | 496360 | 72941 | 275669 | 145101 | 2649 |
| 3410 | Chalking (Steel Protective Coatings) | SF | 83536 | 0 | 49158 | 34378 | 0 |
| 3440 | Effectiveness (Steel Protective Coatings) | SF | 339883 | 0 | 226511 | 110723 | 2649 |
| <p>(107) Girders have minor corrosion throughout.</p> <p>Minor pack rust is present at isolated splice connections. 17LF CS3</p> <p>Abutment 1, girder 2, right: Has section loss over the bearing at the diaphragm connection, up to 1/16". Girder 3: Has a similar defect. 2LF CS3.</p> <p>Span 21, girder 2, right, first connection back of bent 22: The weld to the lateral bracing is cracked.</p> <p>Span 25, girder 3, ahead of diaphragm 4: out of plane bending up to 3/4". 2LF CS2</p> <p>Span 46, girder 4, splice 1: Has distortion and pack rust between the splice plates. 1LF CS3</p> <p>Span 60, bay 2, diaphragm 5, back, right: has distortion. 1LF CS2</p> <p>Minor surface corrosion throughout due to failing paint. 651LF CS2.</p> <p>3LF CS3 corrosion for each splice plate in span 57 & 58</p> <p>Span 56, girder 1, 1st splice plate connection, left side: active corrosion, 10LF CS2 .</p> <p>Span 56, girder 1, 1st splice plate connection, right side: active corrosion, 1/16" section loss 1LF CS2.</p> <p>Span 56, girder 2, 1st splice connection: out of plane bending 10LF CS2</p> <p>Span 56, floorbeam 3, girder 1, bottom, back side, diagonal connection plate: crack on both sides of plate, cracks are 1/4", CS3.</p> <p>Span 56, girder 1, left side, floorbeam 6, top flange: corrosion with section loss 15LF CS3. Up to 1/8 section loss.</p> <p>Span 56, girder 2, right side, top flange, between floorbeams 6 and 7: active corrosion with section loss up to 1/8" 7LF CS3.</p> <p>Span 56, girder 1, right side, 2nd splice plate connection: active corrosion with section loss, 1LF CS3. Up to 1/16" section loss, this typical at girder 2.</p> | | | | | | | |

Team Lead: Anthony Caudel **Inspection Date:** 04/09/2025

[illegible]

Team Lead: Anthony Caudel **Inspection Date:** 04/09/2025

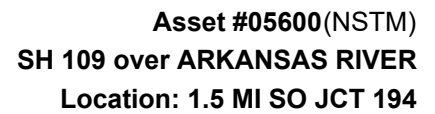
| ELEMENTS | DESCRIPTION | UNITS | TOTAL | CS1 | CS2 | CS3 | CS4 |
|--|--------------------------------------|-------|-------|------|-----|-----|-----|
| Bent 56, column 2: Spall with exposed rebar on the northeast corner, 25% section loss to the reinforcing steel. 2SF CS3 Bent 56, column 2: Spall on the southeast corner 2SF CS3 | | | | | | | |
| 215 | Reinforced Concrete Abutment | LF | 104 | 79 | 6 | 19 | 0 |
| 1130 | Cracking (RC and Other) | LF | 7 | 0 | 6 | 1 | 0 |
| 6000 | Scour | LF | 18 | 0 | 0 | 18 | 0 |
| (215) Abutment 1, left: Scour exposing 3' of the cap face vertically. Scour begins at the left edge and travels toward the center for 8'. Abutment 1, Right: has a scour hole that exposes the entire abutment face for 10', beginning at the right edge and traveling toward the center. No undermining was identified at either abutment at this time. Abutment 2: has minor erosion. No exposure of the face. Hairline cracks are found in isolated locations in both abutments. | | | | | | | |
| 220 | Reinforced Concrete Pile Cap/Footing | LF | 68 | 6 | 41 | 21 | 0 |
| 1080 | Delamination/Spall/Patched Area | LF | 2 | 0 | 0 | 2 | 0 |
| 6000 | Scour | LF | 60 | 0 | 41 | 19 | 0 |
| (220) 2023 Underwater: (1080) -Bent 42: Spall, 5"H x 10"W x 1"D, on the northeast corner at the top of the footing. (1LF, CS3) -Bent 42: Spall, 4"H x 12"W x 2"D, on the northwest corner at the top of the footing. (1LF, CS3) (6000) -Bent 25: Since construction, up to 13' of scour has occurred that has exposed the southeast corner of the pile cap and seal. The seal is exposed up to 2'H, with no undermining. (4LF, CS2) -Bent 26: Since construction, up to 20' of scour has occurred that has undermined 100% of the seal up to 9'H and exposed 8 steel piles. (10LF, CS3) -Bent 27: Since construction, up to 11' of scour has occurred that has fully exposed the pile cap and exposed the seal up to 3'H on the west, south and east faces. (15LF, CS2) -Bent 28: Since construction, up to 22' of scour has occurred that has undermined east/downstream half of the seal up to 7'H and exposed 6 steel piles. (9LF, CS3; 9LF, CS2) -Bent 42: Since construction, up to 8' of scour has occurred that has exposed the pile cap up to 3'H around the full perimeter. (13LF, CS2) (INCIDENTAL) -Bent 26: Spalls, up to 3'Dia x 1.5'D, at all four corners on the bottom of the seal. | | | | | | | |
| 225 | Steel Pile | EA | 14 | 0 | 0 | 14 | 0 |
| 1000 | Corrosion | EA | 14 | 0 | 0 | 14 | 0 |
| (225) 2023 Underwater: (1000) -Bent 26: Corrosion with pitting up to 1/8"D. (8EA, CS3) -Bent 28: Corrosion with pitting up to 1/8"D. (6EA, CS3) | | | | | | | |
| 234 | Reinforced Concrete Pier Cap | LF | 1654 | 1378 | 272 | 4 | 0 |
| 1080 | Delamination/Spall/Patched Area | LF | 10 | 0 | 8 | 2 | 0 |
| 1120 | Efflorescence/Rust Staining | LF | 2 | 0 | 0 | 2 | 0 |
| 1130 | Cracking (RC and Other) | LF | 264 | 0 | 264 | 0 | 0 |
| (234) Cracks common in all caps. Spalls, delamination and patches at various locations. | | | | | | | |



Asset #05600(NSTM)
SH 109 over ARKANSAS RIVER
Location: 1.5 MI SO JCT 194

Team Lead: Anthony Caudel Inspection Date: 04/09/2025

| ELEMENTS | DESCRIPTION | UNITS | TOTAL | CS1 | CS2 | CS3 | CS4 |
|--|------------------------------------|-------|-------|-------|------|-----|-----|
| Cracks with efflorescence in bents 57. Cracks in all caps. Bent 59: Has a small spall. | | | | | | | |
| 301 | Pourable Joint Seal | LF | 64 | 29 | 17 | 12 | 6 |
| 2310 | Leakage | LF | 9 | 0 | 0 | 3 | 6 |
| 2320 | Seal Adhesion | LF | 18 | 0 | 9 | 9 | 0 |
| 2350 | Debris Impaction | LF | 8 | 0 | 8 | 0 | 0 |
| (301) 04/18/2022 - RLS & ADC The joints at both abutments have holes, debris impaction and loss of adhesion. | | | | | | | |
| 303 | Assembly Joint with Seal | LF | 300 | 125 | 175 | 0 | 0 |
| 2350 | Debris Impaction | LF | 175 | 0 | 175 | 0 | 0 |
| (303) Joints have debris impaction, and most are filled with dirt and debris. | | | | | | | |
| 305 | Assembly Joint without Seal | LF | 60 | 15 | 45 | 0 | 0 |
| 2350 | Debris Impaction | LF | 45 | 0 | 45 | 0 | 0 |
| (305) Joints have debris impaction. | | | | | | | |
| 311 | Movable Bearing | EA | 188 | 147 | 34 | 7 | 0 |
| 1000 | Corrosion | EA | 35 | 0 | 34 | 1 | 0 |
| 1020 | Connection | EA | 2 | 0 | 0 | 2 | 0 |
| 2220 | Alignment | EA | 4 | 0 | 0 | 4 | 0 |
| (311) Bent 1, bearing 1: has severe corrosion; otherwise, minor corrosion at the expansion joints. Bent 12, bearings 1 and 2: are leaning in the opposite direction. Bent 52, girder 3: has a missing nut. Bent 46 bearing 1 on the ahead side has a sheared anchor bolt. Bent 61: all bearings are at full expansion. Abutment 1, bearings: Corrosion is present at the sole plate and in the rocker area at all bearings at this abutment. 4EA CS3 Abutment 2: All bearings fully extended to the north. 4EA CS3 Bearings: have minor corrosion. Bent 52, girder 3, bearing 3, right: The east anchor nut is missing. 1EA CS3 Bent 50, bearing 1: Is near full rotation at 69 degrees. 1EA CS3 | | | | | | | |
| 313 | Fixed Bearing | EA | 96 | 92 | 4 | 0 | 0 |
| 1000 | Corrosion | EA | 4 | 0 | 4 | 0 | 0 |
| (313) Span 28, bent 29, back: Bearing 2 has its right nut missing. 1EA CS3 Bearings have minor corrosion. | | | | | | | |
| 331 | Reinforced Concrete Bridge Railing | LF | 17074 | 12609 | 4461 | 4 | 0 |
| 1080 | Delamination/Spall/Patched Area | LF | 3 | 0 | 0 | 3 | 0 |
| 1090 | Exposed Rebar | LF | 3330 | 0 | 3330 | 0 | 0 |
| 1130 | Cracking (RC and Other) | LF | 1131 | 0 | 1131 | 0 | 0 |
| 7000 | Damage | LF | 1 | 0 | 0 | 1 | 0 |



| ELEMENTS | DESCRIPTION | UNITS | TOTAL | CS1 | CS2 | CS3 | CS4 |
|----------|---|-------|-------|-----|-----|-----|-----|
| (331) | Vertical cracks throughout with exposed rebar are typical. Spans 48, Left, and Span 53, Right, Have large spalls. Bent 61: Has collision damage on the left side where the approach guardrail attaches to the bridge. Vertical cracks and exposed rebar are typical throughout. Span 57, left rail, outside by green navigation light: has a large spill. | | | | | | |

Inspection Photos and Notes



Elevation.



Navigation lights on the left/upstream side: first red light is out. We put out a lane closure and replaced this bulb. Corrosion had caused a short.



Elevation view.



Inspection direction



Two Girder System



Typical connection area.



Typical Floor Beam



Span 58, girder 2, right side, at 3rd splice connection:
surface corrosion, 20LF CS2



Span 57, girder 2, left, floorbeam 26, ahead side, diagonal connection plate: not a crack.



Span 57, girder 2, left side, 2nd splice plate: up to 1/8" section loss, 15LF CS3. Girder 1, left side, 3rd splice connection: 1/16" section loss, 12LF CS3 3LF CS3 for the rest of the splice connections in this span and span 58



Span 57, floorbeam 20, bottom transverse member: out of plane bending, 10LF CS2.



Span 57, girder 1, left, floorbeam 15, vertical stiffener: out of plane bending, 1LF CS2..



04/10/2025

Span 57, girder 1, outside, between floorbeam 13 & 14: 1/8" section loss, 2LF CS3.



04/10/2025

Span 56, girder 2, right side, 3rd splice plate connection: active corrosion, 10LF CS2.



04/10/2025

Span 56, girder 1, left side, 3rd splice connection: up to 3/16" old section loss, 1LF CS3. 2"x10" area.



04/10/2025

Span 56, girder 1, left side, 3rd splice plate connection: active corrosion, 10LF CS3.



04/10/2025

Span 56, girder 2, right side, top flange, between floorbeams 6 and 7: active corrosion with section loss up to 1/8" 7LF CS3.



04/10/2025

Span 56, girder 1, right side, 2nd splice plate connection: active corrosion with section loss, 1LF CS3. Up to 1/16" section loss, this typical at girder 2.



04/10/2025

Span 56, girder 1, left side, floorbeam 6, top flange: corrosion with section loss 15LF CS3. Up to 1/8 section loss.



04/10/2025

Span 56, girder 2, 1st splice connection: out of plane bending, 13LF CS3



Span 56, floorbeam 3, girder 1, bottom, back side, diagonal connection plate: crack on both sides of plate, cracks are 1/4", CS3.



Span 56, girder 1, 1st splice plate connection, right side: active corrosion, 1/16" section loss, 1LF CS2.



Span 56, girder 1, 1st splice plate connection, left side: active corrosion, 10LF CS2.



Span 56, typical condition of protective coating.



Asset #05600(NSTM)
SH 109 over ARKANSAS RIVER
Location: 1.5 MI SO JCT 194

Team Lead: Anthony Caudel Inspection Date: 04/09/2025

Maintenance Needs

Date Reported: 11/17/2023

Priority: B - Pressing

Status: Assigned

Type of Work: Channel Work/Drift Removal

Component: Substructure

Deficiency Description

It is recommended to install engineered scour countermeasures at Bents 25 through 28 to mitigate additional scour and to monitor these locations after high flow events until the countermeasures are in place. It is also recommended to perform a structural analysis to determine if the scour has affected the overall load bearing capacity of the structure.

Remarks

Working on getting this incorporated into Scour Repair Project 2024. KAW 12/19/2023

Garver has been assigned to repair scour issue January 2024. Will be included in scour repair job to let in 2024.

Maintenance Needs

Date Reported: 05/10/2023

Priority: C - Important

Status: Assigned

Type of Work: Approach Leveling/Maintenance

Component: Approach

Deficiency Description

Approach Railing left side beginning of structure has collision damage first 25'. Railing is torn apart and detached in this area with missing, and bent post.

Remarks

Approach Railing left side beginning of structure has collision damage first 25'. Railing is torn apart and detached in this area with missing, and bent post.



05/10/2023

Approach Railing left side beginning of structure has collision damage first 25'. Railing is torn apart and detached in this area with missing, and bent post.

Maintenance Needs

Date Reported: 04/17/2025

Priority: C - Important

Type of Work: Superstructure Repair

Status: Open

Component: Superstructure

Deficiency Description

Crack in diagonal bracing connection plate.

Span 56, floorbeam 3, girder 1, bottom, back side, diagonal connection plate: crack on both sides of plate, cracks are 1/4", CS3.

Remarks

null



Span 56, floorbeam 3, girder 1, bottom, back side,
diagonal connection plate: crack on both sides of plate,
cracks are 1/4", CS3.

Maintenance Needs

Date Reported: 04/19/2012

Priority: D- Routine

Type of Work: Repair (General)

Status: Assigned

Component: Miscellaneous

Deficiency Description

Catwalk

Span 52, Girder 4: Two Inspection handrail brackets are loose. The bolts are missing.

Remarks

Inspectors - coordinate with Sam during next inspection to have a couple of maintenance guys on site to show and repair the location. KAW 5/24/2024



Maintenance Needs

Date Reported: 04/17/2025

Priority: D- Routine

Type of Work: Repair (General)

Status: Open

Component: Miscellaneous

Deficiency Description

Utility, Water Pipe:

Span 58, girder 2, floorbeam 32, right side, utility connection: diagonal bracing on water pipe is no longer connected

Remarks



04/10/2025
Span 58, girder 2, floorbeam 32, right side, utility
connection: diagonal bracing on water pipe is no longer
connected

Maintenance Needs

Date Reported: 04/17/2025

Priority: D- Routine

Type of Work: Repair (General)

Status: Open

Component: Miscellaneous

Deficiency Description

Navigation lighting.

Span 57, left blue navigation light has a broken fixture, which allows moisture inside.

Span 57, left side, 3rd nav light: The electrical junction box is completely rusted through, typical at all other nav lights.

Remarks



Span 57, left side, 3rd nav light: electrical junction box is completely rusted through, typical at all other nav lights



Span 57, left blue navigation light has broken fixture which allows moisture inside .

Routine Maintenance

Check Box Maintenance Items

| Type of Maintenance | Is Recommended? |
|---|-----------------|
| A-54 - Sealable Deck Cracks | No |
| A-55 - Deck Washing Needed | Yes |
| A-56 - Joint Cleaning/Flushing Needed | Yes |
| A-57 - Beam End and Bearing Paint Needed | Yes |
| A-58 - Cap Cleaning/Flushing Needed | No |
| A-59 - Joint Repair Needed | Yes |
| A-60 - Full Beam Painting Needed | Yes |
| A-61 - Polymer Overlay Advised | No |
| A-62 - Hydro and LMC Advised | No |
| A-63 - Missing/Incorrect Log Mile Signage | No |
| A-64 - Vegetation Removal Requested | Yes |
| A-65 - Clogged deck drains? | |
| A-66 - Approach minor pothole/leveling needed | |

A-54 - Sealable Deck Cracks (No)

A-55 - Deck Washing Needed (Yes)

Bridge Rail Drains: The drains have debris in them, allowing for water to pond in the gutters

A-56 - Joint Cleaning/Flushing Needed (Yes)

A-57 - Girder End and Bearing Painting Needed (Yes)

A-58 - Cap Cleaning/Flushing Needed (No)

A-59 - Joint Repair Needed (Yes)

A-60 - Full Girder Painting Needed (Yes)

Surface rust on the webs and bottom flanges of the exterior girders. Pack rust has formed at the field splices. The paint system is failing. Primer coat and bare metal are exposed in many areas. The paint has failed at the expansion joints. Debris and pigeon dung on bottom flanges. This condition is typical in the approach spans.

Span 24, 25: Girders have smoke stains.

Span 32, Girder 2, 1st Field splice: The bottom flange of the girder is bent. (Minor)

Span 44, Girder 1: The bottom flange of the girder is bent. (Minor)

Span 52, Girder 4: The bottom flange of the girder is bent.

Bent 61: (North Abutment) Girders have graffiti.

A-61 - Polymer Overlay Advised (No)

A-62 - Hydro and LMC Advised (No)

A-63 - Missing/Incorrect Log Mile Signage (No)

A-64 - Vegetation Removal Requested (Yes)

Spans 29 - 40: Have overgrowth, limiting the access of the snooper.

Span 41: Has debris and cutting of the channel bank.



Asset #05600(NSTM)
SH 109 over ARKANSAS RIVER
Location: 1.5 MI SO JCT 194

Team Lead: Anthony Caudel Inspection Date: 04/09/2025

A-65 - Clogged deck drains?

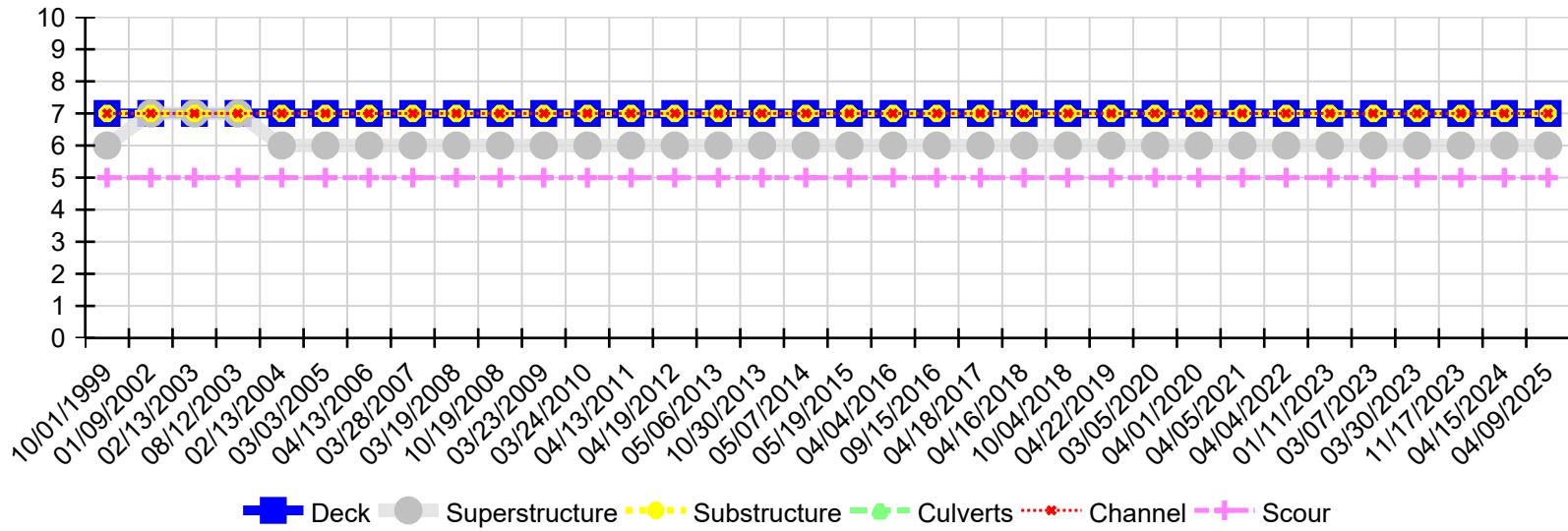
A-66 - Approach minor pothole/leveling needed



Asset #05600(NSTM)
SH 109 over ARKANSAS RIVER
Location: 1.5 MI SO JCT 194

Team Lead: Anthony Caudel Inspection Date: 04/09/2025

Condition History



| Inspection Date | Deck | Superstructure | Substructure | Culverts | Channel | Scour |
|-----------------|------|----------------|--------------|----------|---------|-------|
| 04/09/2025 | 7 | 6 | 7 | N | 7 | 5 |
| 04/15/2024 | 7 | 6 | 7 | N | 7 | 5 |
| 11/17/2023 | 7 | 6 | 7 | N | 7 | 5 |
| 03/30/2023 | 7 | 6 | 7 | N | 7 | 5 |
| 03/07/2023 | 7 | 6 | 7 | N | 7 | 5 |
| 01/11/2023 | 7 | 6 | 7 | N | 7 | 5 |
| 04/04/2022 | 7 | 6 | 7 | N | 7 | 5 |
| 04/05/2021 | 7 | 6 | 7 | N | 7 | 5 |
| 04/01/2020 | 7 | 6 | 7 | N | 7 | 5 |
| 03/05/2020 | 7 | 6 | 7 | N | 7 | 5 |
| 04/22/2019 | 7 | 6 | 7 | N | 7 | 5 |
| 10/04/2018 | 7 | 6 | 7 | N | 7 | 5 |
| 04/16/2018 | 7 | 6 | 7 | N | 7 | 5 |
| 04/18/2017 | 7 | 6 | 7 | N | 7 | 5 |
| 09/15/2016 | 7 | 6 | 7 | N | 7 | 5 |
| 04/04/2016 | 7 | 6 | 7 | N | 7 | 5 |
| 05/19/2015 | 7 | 6 | 7 | N | 7 | 5 |
| 05/07/2014 | 7 | 6 | 7 | N | 7 | 5 |
| 10/30/2013 | 7 | 6 | 7 | N | 7 | 5 |
| 05/06/2013 | 7 | 6 | 7 | N | 7 | 5 |
| 04/19/2012 | 7 | 6 | 7 | N | 7 | 5 |
| 04/13/2011 | 7 | 6 | 7 | N | 7 | 5 |
| 03/24/2010 | 7 | 6 | 7 | N | 7 | 5 |
| 03/23/2009 | 7 | 6 | 7 | N | 7 | 5 |
| 10/19/2008 | 7 | 6 | 7 | N | 7 | 5 |
| 03/19/2008 | 7 | 6 | 7 | N | 7 | 5 |
| 03/28/2007 | 7 | 6 | 7 | N | 7 | 5 |



Asset #05600(NSTM)
SH 109 over ARKANSAS RIVER
Location: 1.5 MI SO JCT 194

Team Lead: Anthony Caudel **Inspection Date:** 04/09/2025

| Inspection Date | Deck | Superstructure | Substructure | Culverts | Channel | Scour |
|-----------------|------|----------------|--------------|----------|---------|-------|
| 04/13/2006 | 7 | 6 | 7 | N | 7 | 5 |
| 03/03/2005 | 7 | 6 | 7 | N | 7 | 5 |
| 02/13/2004 | 7 | 6 | 7 | N | 7 | 5 |
| 08/12/2003 | 7 | 7 | 7 | N | 7 | 5 |
| 02/13/2003 | 7 | 7 | 7 | N | 7 | 5 |
| 01/09/2002 | 7 | 7 | 7 | N | 7 | 5 |
| 10/01/1999 | 7 | 6 | 7 | N | 7 | 5 |



NSTM Inspection Report and Procedure **Bridge No. 05600 1.5 MI SO JCT 194**

A-128 - Description of Structure

Bridge 05600 was built in 1980 and carries Highway 109 over the Arkansas River. The plans indicate that the structure is laid out from south to north. The structure's total length is 8,537' with an out-to-out width of 32.7'. The approach spans 1-55 and 59-60 are made of a concrete deck cast over continuous welded plate girders with 4 beamlines. The main spans 56-58 are made of a concrete deck cast over continuous welded plate girders with only 2 beamlines and a floor beam system. The main spans are considered NSTM due to having only 2 beamlines. The girders and floor beams in these spans are all considered NSTM and are inspected hands-on within arms reach during each inspection.

A-129 - Range Of Dates, Personnel and Responsibilities

04/09/2025 and 04/10/2025: Anthony Caudel (State-Wide Bridge Inspector) (Team Lead); Responsibilities: Hands-on visual inspection of continuous welded plate girders and floor beams in spans 56-58.

04/09/2025 and 04/10/2025: Caleb Coppock (Bridge Inspector); Responsibilities: Hands-on visual inspection of continuous welded plate girders and floor beams in spans 56-58.

A-130 - Access Equipment

05600 was inspected using the Aspen A 62-t under-bridge inspection unit for spans 56 -58. Traffic control is handled by signs and cones, a flagger on both ends of the bridge. The lane closure method used for this inspection is attached to the asset.

B.IR.02 - Fatigue Prone Details

Y - E/E' details are present

E details were identified at the welded lateral brace to girder connections and at the termination of all longitudinal stiffeners. Longitudinal stiffener terminations near vertical stiffeners were checked to ensure adequate distance between the welds was maintained during construction to eliminate these details as CIF susceptible. No CIF-susceptible details were identified at this inspection.

E details main span. Lateral brace to girder welds. Main spans. These details were checked for CIF susceptibility. They are fully welded all the way around, eliminating the crack-like detail that would put them in a CIF category.

E details on the Main span.

E details. Longitudinal stiffener terminations. Sufficient gap between the longitudinal and vertical stiffeners.

E details: lateral bracing to girder web welds approach spans.

B.C.14 - NSTM Inspection Condition

6 - SATISFACTORY - Widespread minor or isolated moderate defects.

Overall, the NSTM members were found to be in satisfactory to good condition. The steel girders have minor surface corrosion and diminishingly effective paint throughout. The main factor determining the rating of these members is out-of-plane bending in span 56. The girders were rated a 6 as a result. The floor beams have similar corrosion and paint as the girders and were rated a 7

B.IR.04 - Complex Feature

N - Bridge does not have complex feature

Reference Photos:



Two Girder System



Typical connection area.



Typical Floor Beam

Team Lead: Anthony Caudel **Inspection Date:** 04/09/2025

| Bridge #05600 NSTM Member Inspection Log | | | |
|--|------------------|------------------|--|
| Member or Element (NSTM) | Access Equipment | Condition Rating | General Condition Notes |
| 107 Steel Open Girder/Beam | Aspen A 62-T | 6 | Overall, the steel girders show minor surface corrosion and increasingly ineffective paint throughout. The primary factor determining the rating of these members is out-of-plane bending in span 56. As a result, the girders were rated a 6. |
| 152 Steel Floor Beam | Aspen A 62-T | 7 | Overall, The floor beams have minor surface corrosion throughout and were rated a 7 |

NSTM specific defect notes

| ELEMENTS | DESCRIPTION | UNITS | TOTAL | CS1 | CS2 | CS3 | CS4 |
|----------|---|-------|-------|-------|-------|-----|-----|
| 107 | Steel Open Girder/Beam | LF | 32279 | 13252 | 18940 | 87 | 0 |
| | <p>(107) Girders have minor corrosion throughout.</p> <p>Minor pack rust is present at isolated splice connections. 17LF CS3</p> <p>Abutment 1, girder 2, right: Has section loss over the bearing at the diaphragm connection, up to 1/16". Girder 3: Has a similar defect. 2LF CS3.</p> <p>Span 21, girder 2, right, first connection back of bent 22: The weld to the lateral bracing is cracked.</p> <p>Span 25, girder 3, ahead of diaphragm 4: out of plane bending up to 3/4". 2LF CS2</p> <p>Span 46, girder 4, splice 1: Has distortion and pack rust between the splice plates. 1LF CS3</p> <p>Span 60, bay 2, diaphragm 5, back, right: has distortion. 1LF CS2</p> <p>Minor surface corrosion throughout due to failing paint. 651LF CS2.</p> <p>3LF CS3 corrosion for each splice plate in span 57 & 58</p> <p>Span 56, girder 1, 1st splice plate connection, left side: active corrosion, 10LF CS2 .</p> <p>Span 56, girder 1, 1st splice plate connection, right side: active corrosion, 1/16" section loss 1LF CS2.</p> <p>Span 56, girder 2, 1st splice connection: out of plane bending 10LF CS2</p> <p>Span 56, floorbeam 3, girder 1, bottom, back side, diagonal connection plate: crack on both sides of plate, cracks are 1/4", CS3.</p> <p>Span 56, girder 1, left side, floorbeam 6, top flange: corrosion with section loss 15LF CS3. Up to 1/8 section loss.</p> <p>Span 56, girder 2, right side, top flange, between floorbeams 6 and 7: active corrosion with section loss up to 1/8" 7LF CS3.</p> <p>Span 56, girder 1, right side, 2nd splice plate connection: active corrosion with section loss, 1LF CS3. Up to 1/16" section loss, this typical at girder 2.</p> <p>Span 56, girder 1, left side, 3rd splice plate connection: active corrosion, 10LF CS3.</p> <p>Span 56, girder 1, left side, 3rd splice connection: up to 3/16" old section loss, 1LF CS3. 2"x10" area.</p> <p>Span 56, girder 2, right side, 3rd splice plate connection: active corrosion, 10LF CS2.</p> <p>Span 57, girder 2, left, floorbeam 26, ahead side, diagonal connection plate: not a crack.</p> <p>Span 57, girder 2, left side, 2nd splice plate: up to 1/8" section loss, 15LF CS3.</p> <p>Span 57, girder 1, left side, 3rd splice connection: 1/16" section loss, 12LF CS3.</p> <p>Span 57, girder 1, outside, between floorbeam 13 & 14: 1/8" section loss, 2LF CS3</p> <p>Span 57, girder 1, left, floorbeam 15, vertical stiffener: out of plane bending, 1LF CS2</p> | | | | | | |
| 152 | Steel Floor Beam | LF | 990 | 738 | 252 | 0 | 0 |
| | <p>(152) The floor beams have scattered areas of surface corrosion, no areas of measurable section loss was found at this inspection.</p> <p>Span 57, floor beam 20, bottom transverse member: out of plane bending, 10LF CS2.</p> | | | | | | |



Asset #05600(NSTM)
SH 109 over ARKANSAS RIVER
Location: 1.5 MI SO JCT 194

Team Lead: Anthony Caudel Inspection Date: 04/09/2025

Signatures

Signature

Printed Name

Date

Caleb Coppock

Caleb Coppock

05/27/2025

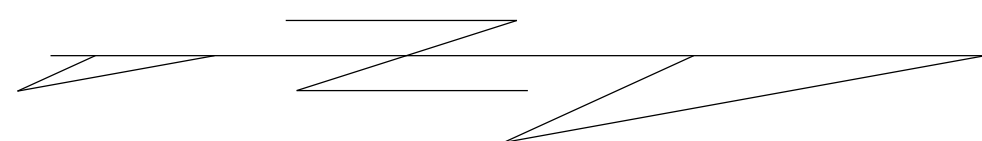
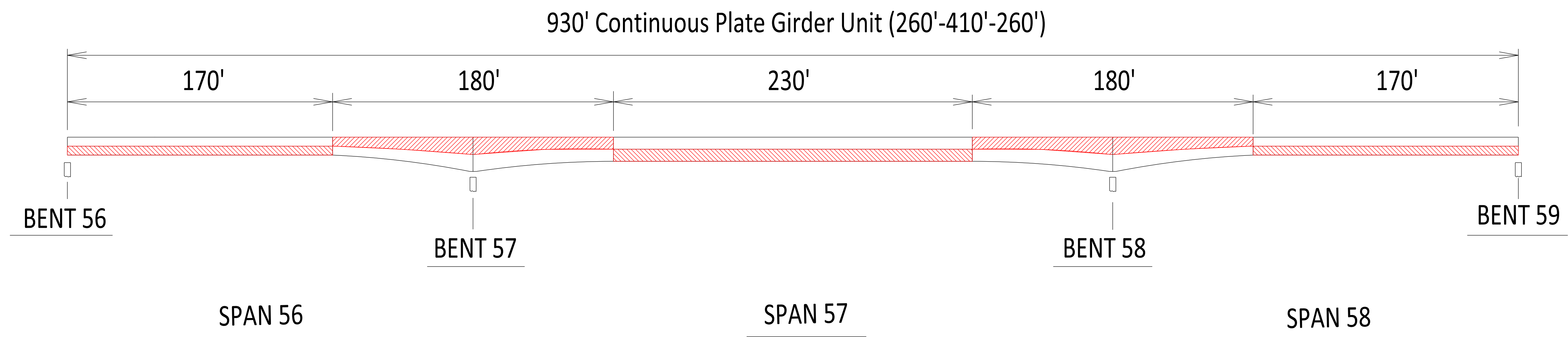
Anthony Caudel

(Team Lead) Anthony Caudel

05/27/2025

ARKANSAS RIVER BRIDGE NO. 05600

NSTM TENSION AREAS SHADED IN RED



ARKANSAS STATE HIGHWAY COMMISSION
Little Rock, ARK.



Scale: 1"=160'

Inspection Dir: S to N

Channel Flow: W to E

BRIDGE NO.

05600

Drawn By: CFC

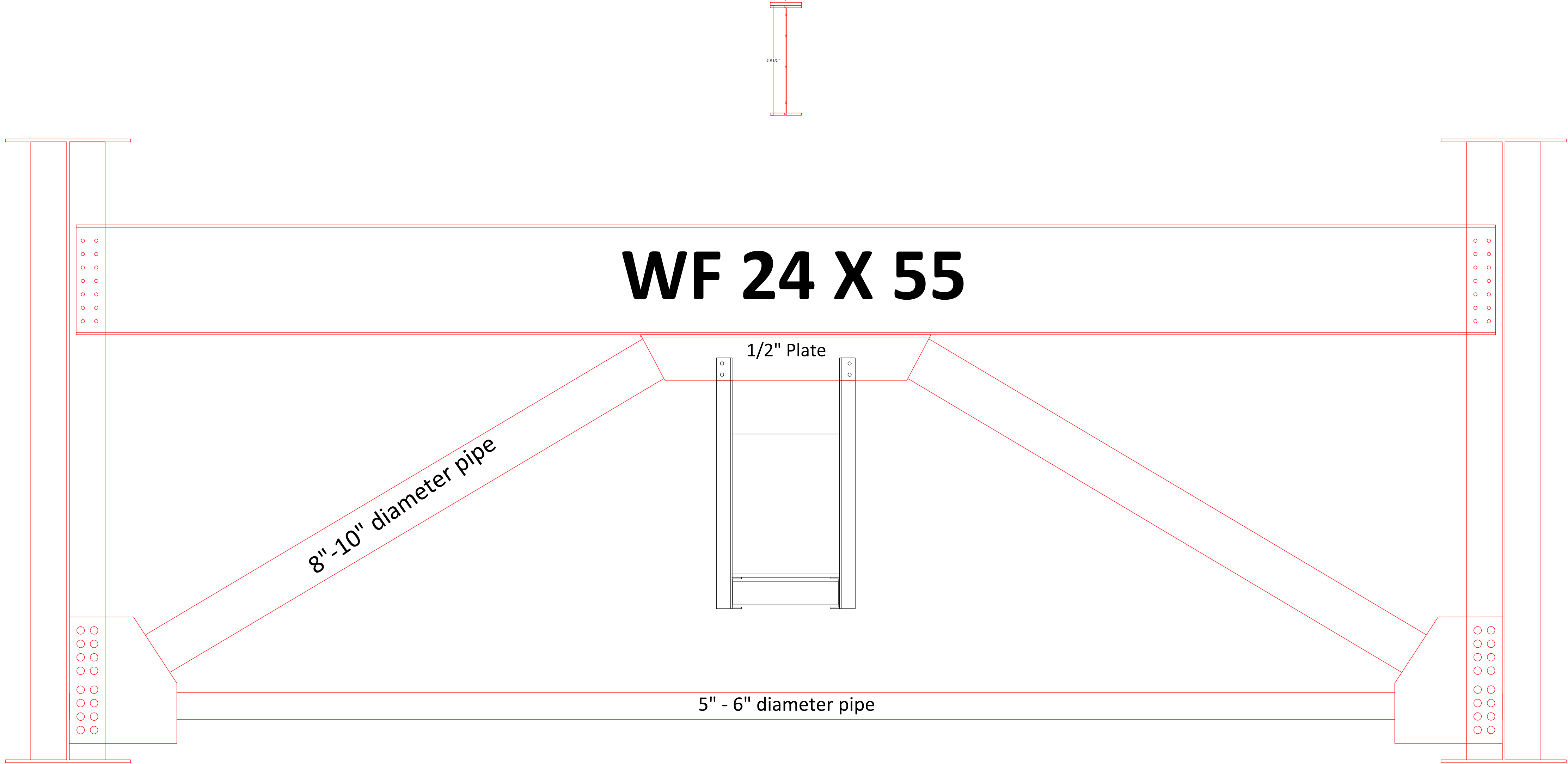
Project: NSTM Plans

Checked By: ADC

Date: 04/17/2025



Typical Floorbeam



The spacing between floorbeams 1 and 2 in span 56 and floorbeams 11 and 12 in span 58 is 24'0".

The spacing for all other floorbeams in spans 56 and 58 is 23' 6".

The spacing for all floorbeams in span 57 is 24' 1.5".

| | | | | | |
|--|------------------------|----------------------|------------------|---------------------|--|
| ARKANSAS STATE HIGHWAY COMMISSION Little Rock, ARK. | | | BRIDGE NO. 05600 | | |
| | Scale 1"=2.5' | | Drawn By: CFC | Project: NSTM Plans | |
| | Inspection Dir: S to N | Channel Flow: W to E | Checked By: ADC | Date: 04/21/2025 | |