



Latitude:46.10259, Longitude:-97.83147

Route:00011 Log:118.838

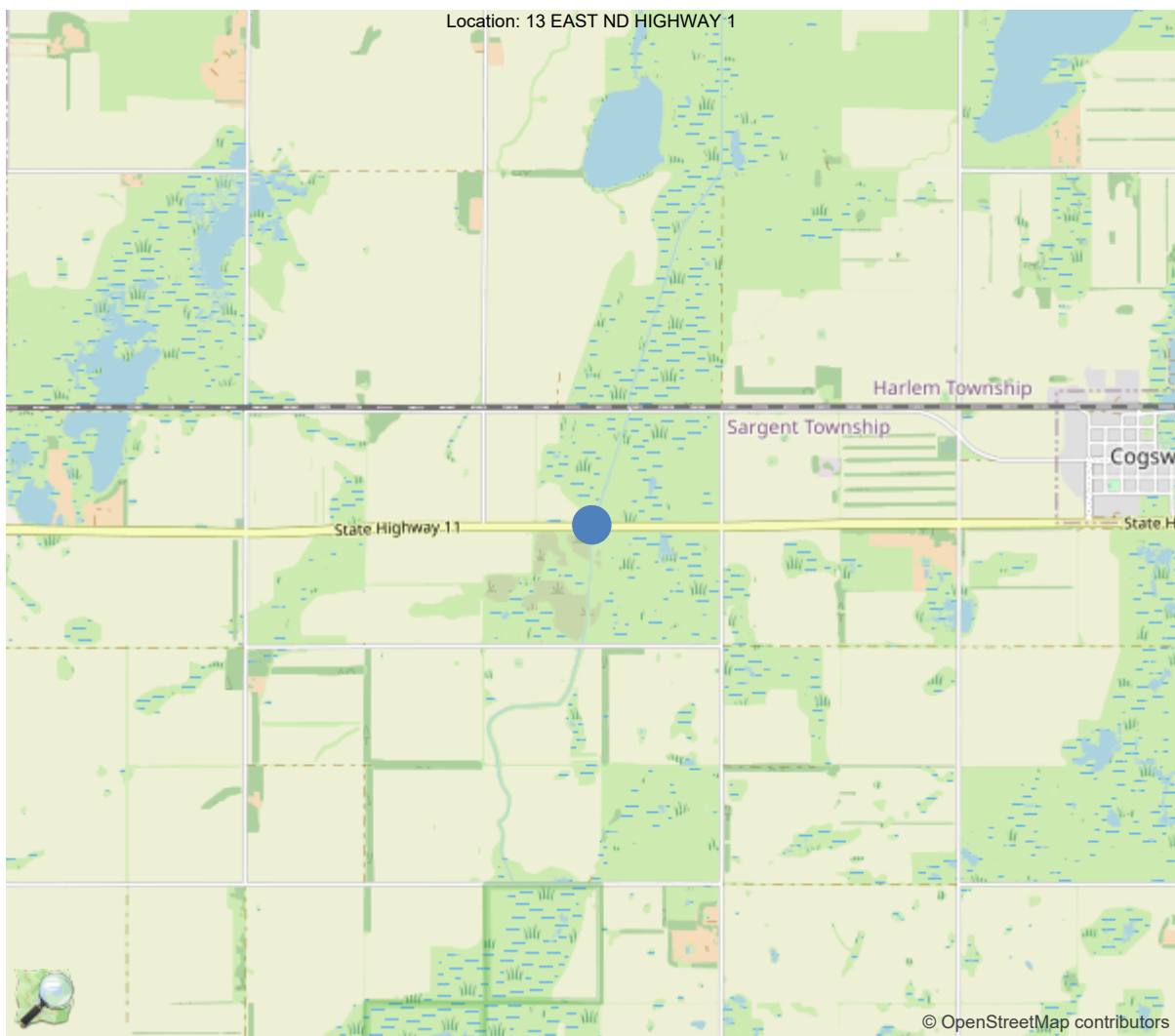
District 68, County 41 - Sargent

Owner: 1 - State Highway Agency

Place Code: 0

Team Leader: Andrew Nefstead

Approved By: Jake Mertz



46.10259, -97.83147

**ND HIGHWAY 11 over DRAINAGE DITCH**

**Location: 13 EAST ND HIGHWAY 1**

**Inspection Date: 06/17/2025**

| IDENTIFICATION                            |                                          |
|-------------------------------------------|------------------------------------------|
| (1) State Name                            | 38 - North Dakota                        |
| (8) Structure Number                      | 0011-118.863                             |
| (5) Inventory Route                       | 1                                        |
| (2) Highway Agency District               | 8 - Fargo                                |
| (3) County Code                           | 41 - Sargent                             |
| (4) Place Code                            | 0                                        |
| (6) Features Intersected                  | DRAINAGE DITCH                           |
| (7) Facility Carried                      | ND HIGHWAY 11                            |
| (9) Location                              | 13 EAST ND HIGHWAY 1                     |
| (11) Mile Point                           | 118.838 mi                               |
| (12) Base Highway Network                 | Yes                                      |
| (13) LRS Inventory Rte & Subrte           | 0000000000                               |
| (16) Latitude                             | 46.102592                                |
| (17) Longitude                            | -97.831466                               |
| (A-5) GPS X                               | 5106108.5                                |
| (A-6) GPS Y                               | 590321.6                                 |
| (98) Border Bridge State Code             |                                          |
| (99) Border Bridge Structure No.          |                                          |
| STRUCTURE TYPE AND MATERIAL               |                                          |
| (43) Main Structure Type                  |                                          |
| Material                                  | 3 - Steel                                |
| Type                                      | 19 - Culvert                             |
| (44) Approach Structure Type              |                                          |
| Material                                  | 0 - Other                                |
| Type                                      | 0 - Other                                |
| (45) No. of Spans in Main Unit            | 1                                        |
| (46) No. of Approach Spans                | 0                                        |
| (A-20) Culvert Description                | SINGLE 13X8X41' SPPA                     |
| (107) Deck Structure Type                 | N - Not applicable                       |
| (108) Wearing Surface/Protective System   |                                          |
| Type of Wearing Surface                   | N - Not applicable (applies only to stru |
| Type of Membrane                          | N - Not applicable (applies only to stru |
| Type of Deck Protection                   | N - Not applicable (applies only to stru |
| (A-18) Deck Overburden                    | N                                        |
| AGE AND SERVICE                           |                                          |
| (27) Year Built                           | 1954                                     |
| (106) Year Reconstructed                  |                                          |
| (42) Type of Service                      |                                          |
| On                                        | 1 - Highway                              |
| Under                                     | 5 - Waterway                             |
| (28) Number of Lanes                      |                                          |
| On                                        | 2                                        |
| Under                                     | 0                                        |
| (29) Average Daily Traffic                | 540                                      |
| (30) Year of ADT                          | 2019                                     |
| (109) Truck ADT                           | 15 %                                     |
| (19) Bypass, Detour Length                | 17 mi                                    |
| GEOMETRIC DATA                            |                                          |
| (48) Length of Maximum Span               | 13.1 ft                                  |
| (49) Structure Length                     | 13.1 ft                                  |
| (50) Curb or Sidewalk Width               |                                          |
| Left                                      | 0 ft                                     |
| Right                                     | 0 ft                                     |
| (51) Bridge Roadway Width Curb to Curb    | 0 ft                                     |
| (52) Deck Width Out to Out                | 0 ft                                     |
| (32) Approach Roadway Width (W/Shoulders) | 27.9 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    | 27.9 ft                                  |
| (53) Min Vert Clear Over Bridge Rdwy      | 99.99 ft                                 |
| (54) Min Vert Underclear                  | 0 ft                                     |
| Ref:                                      |                                          |
| (55) Min Lat Underclear RT                | 99.9 ft                                  |
| Ref:                                      |                                          |
| (56) Min Lat Underclear LT                | 0 ft                                     |

| CLASSIFICATION                       |                                     |
|--------------------------------------|-------------------------------------|
| (112) NBIS Bridge Length             | N                                   |
| (104) Highway System                 | 0                                   |
| (26) Functional Class                | 6 - Rural Minor Arterial            |
| (100) Defense Highway                | 0 - Not a STRAHNET route            |
| (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 - Not part of the national n      |
| (20) Toll                            | 3 - On toll free road               |
| (21) Maintain                        | 1 - State Highway Agency            |
| (22) Owner                           | 1 - State Highway Agency            |
| (37) Historical Significance         | 5 - Bridge is not eligible for      |
| CONDITION                            |                                     |
| (58) Deck                            | N                                   |
| (59) Superstructure                  | N                                   |
| (60) Substructure                    | N                                   |
| (61) Channel & Channel Protection    | 6                                   |
| (62) Culverts                        | 5                                   |
| (B.C.11) Scour Condition Rating      | 9                                   |
| LOAD RATING AND POSTING              |                                     |
| (31) Design Load                     | 5 - MS 18 / HS 20                   |
| (63) Operating Rating Method         | 2 - Allowable Stress(AS)            |
| (64) Operating Rating                | 48.6                                |
| (65) Inventory Rating Method         | 2 - Allowable Stress(AS)            |
| (66) Inventory Rating                | 35.7                                |
| (41) Structure Open/Posted/Closed    | A - Open, no restriction            |
| (A-19) Posting Tons                  | 00                                  |
| (A-33) Max Posting Tons              |                                     |
| (A-2) Rating Date                    | 3/23/1960 12:00:00 AM               |
| APPRAISAL                            |                                     |
| (68) Deck Geometry                   | N                                   |
| (69) Clearances, Vertical/Horizontal | N                                   |
| (71) Waterway Adequacy               | 7                                   |
| (72) Approach Roadway Alignment      | 8                                   |
| (36) Traffic Safety Features         |                                     |
| A Bridge Railings                    | N - N/A or not required.*           |
| B Transitions                        | N - Not applicable or a safety feat |
| C Approach Guardrail                 | 0 - Inspected feature does not meet |
| D Approach Guardrail Ends            | 0 - Inspected feature does not meet |
| (113) Scour Critical Bridges         | 8 - Bridge foundations determined t |
| APPROVED INSPECTIONS                 |                                     |
| (90) Inspection Date                 | 06/2025                             |
| (91) Frequency                       | Y24                                 |
| (92) Critical Feature Inspection     | Req Freq. (Mon) Date                |
| A: Fracture Critical Detail          | Yes 24 12/19/2019                   |
| B: Underwater Inspection             | No                                  |
| C: Other Special Inspection          |                                     |
| AGENCY ITEMS                         |                                     |
| (A-21) Fedaid Project No.            | F-8-011(00)115                      |
| (A-14) Chaining Date                 |                                     |
| (A-15) Delamination Pct              |                                     |
| (A-32) On/Off System                 | 1                                   |
| (A-34) NLEB Range                    | N                                   |
| (A-35) Uncoated Weathering Steel     |                                     |

| ELEMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DESCRIPTION                               | UNITS | TOTAL | CS1 | CS2 | CS3 | CS4 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------|-------|-----|-----|-----|-----|
| 240                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Steel Culvert                             | LF    | 41    | 0   | 0   | 41  | 0   |
| 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Corrosion                                 | LF    | 41    | 0   | 0   | 41  | 0   |
| 515                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Steel Protective Coating                  | SF    | 1353  | 745 | 0   | 67  | 541 |
| 3440                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Effectiveness (Steel Protective Coatings) | LF    | 608   | 0   | 0   | 67  | 541 |
| (1000-240) Slightly corrosion at the water line. - 12/19/2019<br>6/9/2021 - Rusting to lower 1/3 of culvert throughout entire length beginning around the lower connection to the floor. See Photos.<br>6/21/2023 - Areas of CS 2 Rusting to Lower Portion of Pipe from above Connection Seam to Floor.<br>Moderate CS 3 Rusting with flaking and section loss up to 1/16" beginning to occur along East Wall near Mid Length. See Photos.<br>6/17/2025 - Advancement of Moderate CS 3 Rusting with Flaking and Section Loss continuing along water line and Lower connection seam throughout. Estimated Section Loss 1/16". See Photos.                                                                                                                                         |                                           |       |       |     |     |     |     |
| (515-240) 6/21/2023 - Estimated 33 SF per 1 LF.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                           |       |       |     |     |     |     |
| (3440-515-240) No effectiveness under water line. - 12/19/2019<br>6/9/2021 - Areas of Moderate CS 3 Limited Effectiveness above the lower connection seal through pip length. Estimated 5%.<br>Areas of Severe CS 4 Loss of Effectiveness of coating to lower portion of the pipe throughout beginning along the lower connection to the pipe floor. Estimated 33%. See Photos.<br>6/21/2023 - No Change to Condition State or Quantity. See Photos.<br>6/17/2025 - Areas of Moderate CS 3 Limited Effectiveness above the lower connection seal through pip length. Estimated 5%.<br>Continued Areas of Severe CS 4 Loss of Effectiveness of coating to lower portion of the pipe throughout beginning along the lower connection to the pipe floor. Estimated 40%. See Photos. |                                           |       |       |     |     |     |     |

### General Observation

Structure Inventoried with Inspection beginning at the South End.  
Weather: 73°F, Mostly Sunny Skies, Wind NW 7 MPH

B&A end markers all 4 corners. No railing. Settlement evidence on driving surface ( cracked ). - 12/19/2019

Incomplete Element Inspection 08/19/2019 - 12/19/2019

6/9/2021 - No Settlement observed over the Pipe. Transverse Cracks are at both ends of Pipe.

Loose Rip Rap around Flared End Sections.

The following was removed from Significant Finding: Minor rusting of pipe at waterline. Minor erosion above the ends of the pipe. Erosion at the north end of the pipe starts 6' off the edge of the driving lane, then drops off 1.5' to the top of the pipe. - 12/19/2019

6/21/2023 - Some Transverse Cracking to HMA Pavement across Pipe.

Some Lower Connection Seam Nuts with no threads exposed.

Both Flared End Sections Rusting to Lower Portion.

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### B.C.09 Channel Condition Rating (IX) (6 - SATISFACTORY CONDITION)

6/21/2023, 6/17/2025 - Channel Banks sloughing with some erosion Upstream and Downstream

+2' of flowing water in Culvert.

Rip Rap being displaced with some erosion occurring around all Flared End Section Corners.

Channel is +2' Deeper Downstream then Pipe Bottom.

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### Significant Findings

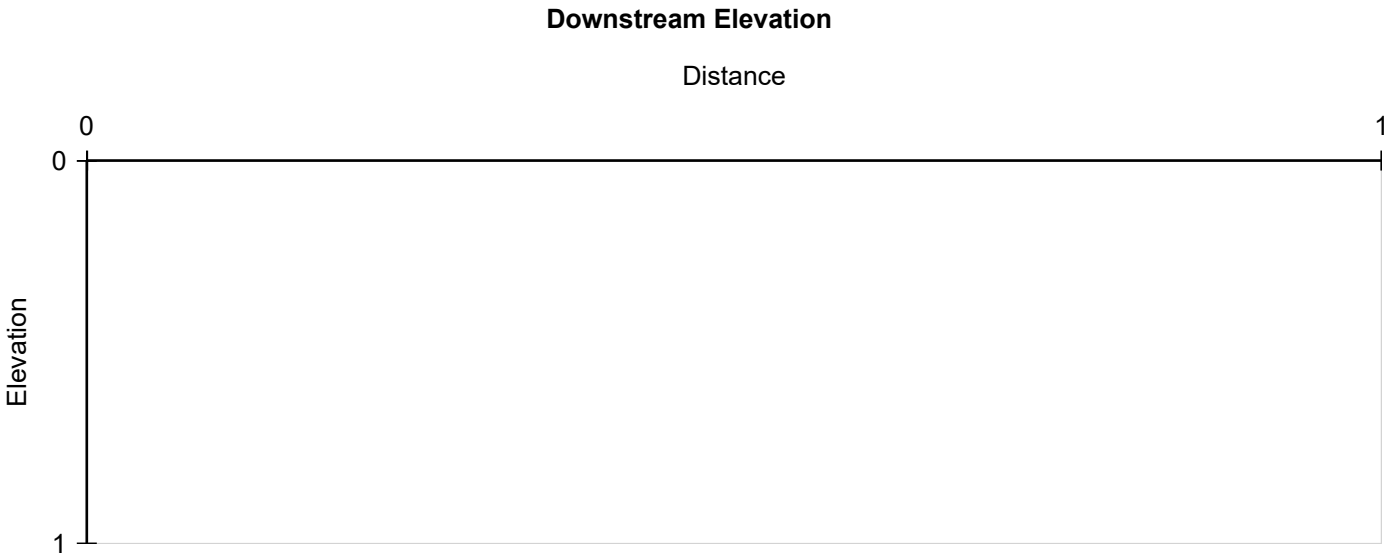
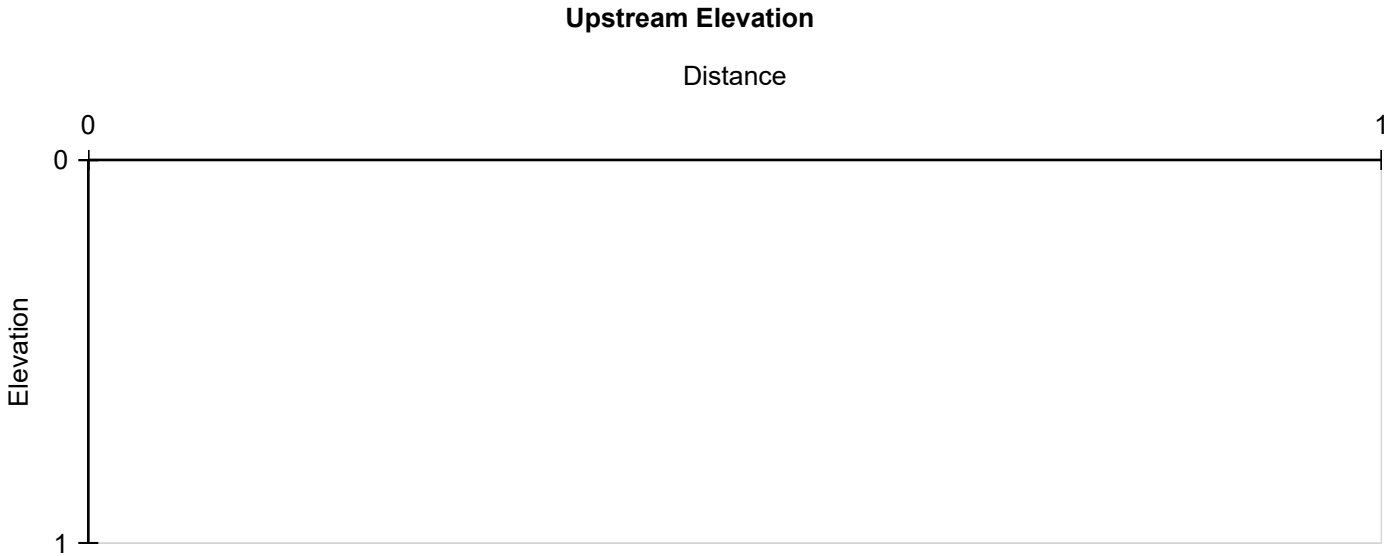
6/21/2023, 6/17/2025 - Continued Flaking of Coating and Pipe beginning to occur along both sides of Pipe throughout.  
Estimated section loss 1/16'.

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### Critical Finding

Channel Profile

| Station | Distance | Upstream | Downstream |
|---------|----------|----------|------------|
|---------|----------|----------|------------|



### SPPA Measurements.





Facing North. Attempted Side View.



Facing East. Approach View.



Facing SW. Rusting to South Flared End Section. Typical all Corners.



Facing South. Side View.



Facing North. Cracking to HMA Pavement over Pipe.



Facing North. Rusting to NW Flared End Section. Typical



Facing NE. Moderate Rusting with Flaking and Section Loss to Pipe.



Facing North. Minor Erosion around SW Flared end Section. Typical all corners.



Facing North. Approach View.



Facing South. Approach View.



Facing South. Channel View South End.



Facing North. Channel View near North End.



Facing East. Rip Rap placed behind NE Flared End Section. Typical all corners.



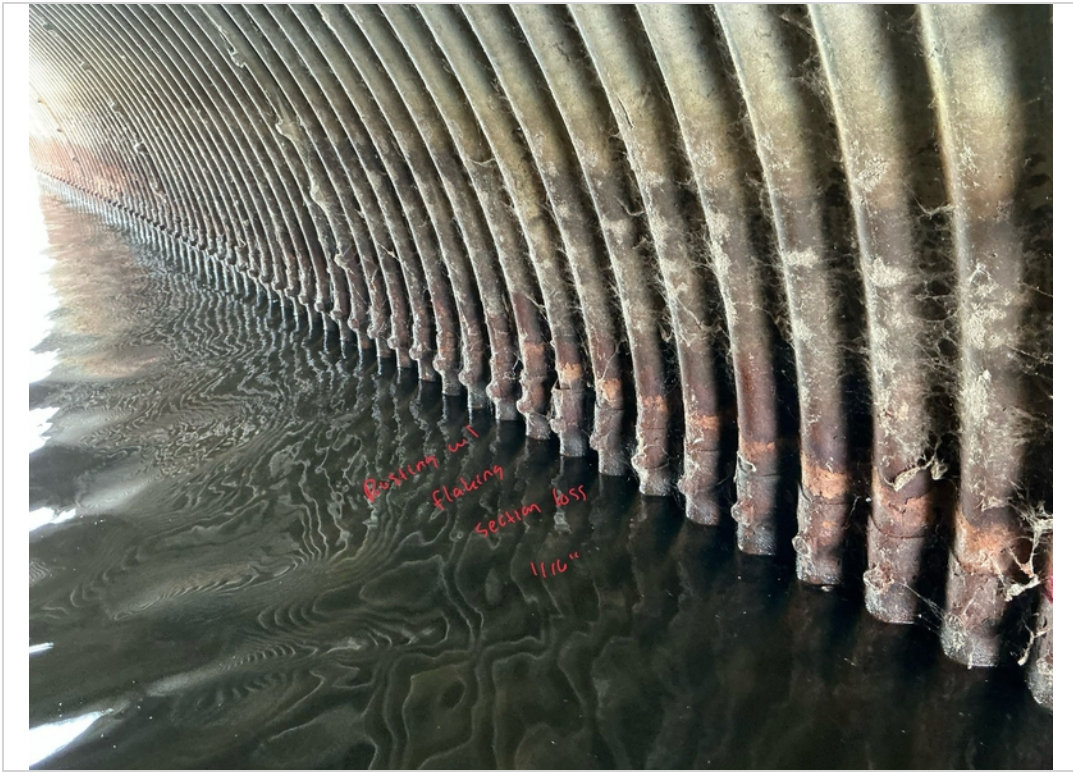
Facing North. General of Pipe.



Facing NW. Rusting with Flaking and Section Loss to Pipe Sides.



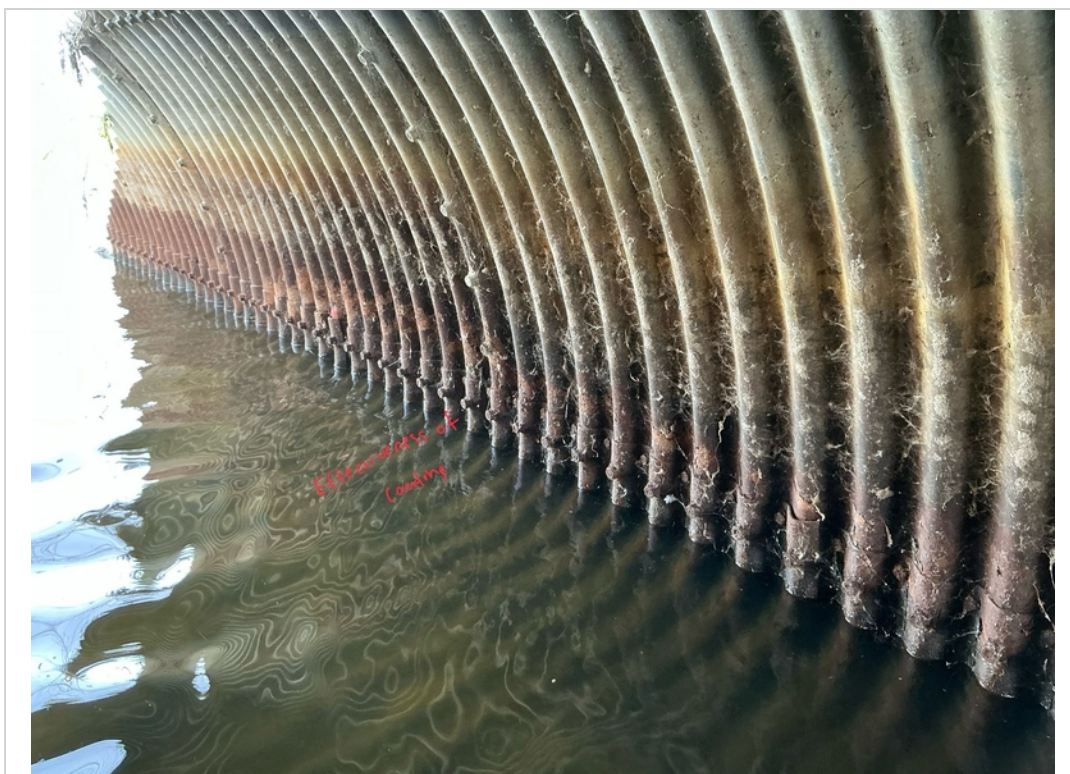
Facing NW. Rusting with Flaking and Section Loss to Lower Portion of Pipe along Connection Seam.



Facing NE. Rusting with Flaking and Section Loss along Connection Seam to Lower Portion of Pipe.



Facing NW. Loss of Effectiveness of coating



Facing NE. Effectiveness of coating to Pipe East Side.



Facing South. Effectiveness of coating throughout Pipe.