

| Bridge Culvert Inspection |  |                     |                |
|---------------------------|--|---------------------|----------------|
| Bridge File Number        | 72456 -1 Bridge Culvert                      | Form Type           | CUL1           |
| Year Built                | 1982   | Lot No.             | 4              |
| Bridge or Town Name       | IRON RIVER                                   | Inspector Name      | Wade Nanninga  |
| Located Over              | TRIBUTARY TO SAND RIVER, 7.11.1, WATERCRS-ST | Inspector Class     | BR CLS A       |
| Located On                | 55:16 C1 14.260                              | Assistant Name      |                |
| Water Body Cl./Year       |  | Assistant Class     |                |
| Navigabil. Cl./Year       |  | Inspection Date     | 09-Apr-2012    |
| Legal Land Location       | SW SEC 25 TWP 63 RGE 8 W4M                   | Data Entry By       | Lisa Fairhurst |
| Longitude, Latitude       | -111:05:10, 54:28:18                         | Data Entry Date     | 25-Apr-2012    |
| Road Authority            | Alberta Transportation (AIT)                 | Reviewer Name       | Eric Carcoux   |
| Contract Main. Area       | CMA08  | Review Date         | 25-Apr-2012    |
| Clear Roadway/Skew        | 12.6 / 42 deg. (RHF)                         | Dept. Reviewer Name | Brent Herrick  |
| AADT/Year                 | 1,590 / 2011 (A)                             | Dept. Review Date   | 04-May-2012    |
| Road Classification       | RAU-211.8-110                                | Follow-Up By        |                |
| Detour Length (km)        | 40   |                     |                |

**Bridge Culvert Information**

|                          |        |      |                |      |        |               |                    |       |
|--------------------------|--------|------|----------------|------|--------|---------------|--------------------|-------|
| Number of Culverts       | 1      |      |                |      |        |               |                    |       |
| Pipe #                   | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | Pl./Slab Thickness | Shape |
| 1                        | MAIN   | -    | 1800           | MP   | 76     | 125X26        | 2.8                | ROUND |
| Special Features         |        |      |                |      |        |               |                    |       |
| Special Features Comment |        |      |                |      |        |               |                    |       |

**Utilities (Located at)**

|                     |   |                         |    |
|---------------------|---|-------------------------|----|
| Utility Attachments |   |                         |    |
| Telephone           | South r/w.  | Gas                     |    |
| Power               | 6 wires OH 30 m of c/l, 1 wire crossing 60m East. 1 wire to farm south crosses road over culvert. | Municipal Problem (Y/N) | No |
| Others              |   |                         |    |
| Remarks             | BF tag installed on top of North end roof.  |                         |    |

**Approach Road / Embankment**

|  |        | Last     | Now      | Explanation of Condition                              |
|--|--------|----------|----------|---|
| Horizontal Alignment                             |        | 9        | 7        | Intersection 200m W                                   |
| Vertical Alignment                               |        | 8        | 8        |   |
| Roadway Width (m)                                | 12.600 |          |          |   |
| Embankment                                       |        | 8        | 8        |   |
| Sideslope ( _ :1)                                | 2.5    |          |          |   |
| (Height of Cover(m) : 5.5)                       |        |          |          | SW radius turn down end damaged but still functioning |
| Guardrail (Y/N)                                  | Yes    |          |          |   |
| <b>Approach Road / Embankment General Rating</b> |        | <b>8</b> | <b>7</b> |   |

**Upstream End**

| Culvert Component                             |       | Last | Now | Explanation of Condition |
|---|-------|------|-----|--------------------------|
| Direction                                     |       | N    |     |                          |
| End Treatment (Concrete, Steel, Others, None) | STEEL |      |     |                          |
| Headwall                                      |       | X    | X   |                          |
| Collar  |       | X    | X   |                          |
| Wingwalls                                     |       | X    | X   |                          |
| (Shape : )                                    |       |      |     |                          |
| Cutoff Wall                                   |       | X    | X   |                          |

| Upstream End  |             |          |          |  |
|---|-------------|----------|----------|--|
| Culvert Component   |             | Last     | Now      | Explanation of Condition   |
| Bevel End   |             | 8        | 8        |  |
| Heaving (mm)  | 75          |          |          |  |
| Invert Above/Below Stream Bed   | BELOW       |          |          |  |
| Above/Below (mm)  | 400         |          |          |  |
| Scour Protection  |             | 8        | 8        |  |
| (Type : <b>RIP RAP</b> )  |             |          |          |  |
| (Avg. Rock Size(mm) : <b>250</b> )  |             |          |          |  |
| Scour/Erosion   |             | 8        | 8        |  |
| Beavers (Y/N)   | No          |          |          |  |
| <b>Upstream End General Rating</b>  |             | <b>8</b> | <b>8</b> |  |
| Bridge Culvert Barrel   |             |          |          |  |
| Culvert Component   |             | Last     | Now      | Explanation of Condition   |
| (Pipe # : <b>1</b> , Primary Span, Location Code: <b>MAIN</b> , Span (mm): , Rise (mm): <b>1800</b> , Type: <b>MP</b> ) |             |          |          |  |
| Barrel Last Accessible Date   | 09-Apr-2012 |          |          | Only u/s 50% of culvert accessible due to water depth in d/s half. Ratings based on accessible and visible portions. |
| <b>Special Features</b>   |             |          |          |  |
| Special Feature   |             |          |          |  |
| (Type : )   |             |          |          |  |
| Special Feature   |             |          |          |  |
| (Type : )   |             |          |          |  |
| Roof  |             | 4        | 4        | Const. damage-repaired @ 12:00 approx. 1.5m from u/s. Near c/l.  |
| Measured Rise (mm)  | 1655        |          |          |  |
| Measured At Ring No.  |             |          |          |  |
| Sag (mm)  | 145         |          |          |  |
| Percent Sag   | 8           |          |          |  |
| Sidewall  |             | 4        | 4        | Near c/l.  |
| Measured Span (mm)  | 1940        |          |          |  |
| Measured At Ring No.  |             |          |          |  |
| Deflection (mm)   | 140         |          |          |  |
| Percent Deflection  | 8           |          |          |  |
| Floor   |             | 5        | N        |  |
| Bulge (mm)  | 0           |          |          |  |
| Measured At Ring No.  |             |          |          |  |
| Abrasion (Y/N)  | No          |          |          |  |
| Circumferential Seams   |             | 7        | 6        | Based on visible seams.  |
| Separation (mm)   | 75          |          |          |  |
| Longitudinal Seams  |             | X        | X        |  |
| Total No. of Cracked Rings  |             |          |          |  |
| Total No. of Rings with Two Cracked Seams   |             |          |          |  |
| Min. Remaining Steel Between Cracks (mm)  |             |          |          |  |
| Proper Lap (Y/N)  |             |          |          |  |
| Longitudinal Stagger (Y/N)  |             |          |          |  |
| Coating   |             | 6        | 6        |  |
| Corrosion By Soil (Y/N)   | No          |          |          |  |
| Corrosion By Water (Y/N)  | Yes         |          |          |  |
| Camber POS/ZERO/NEG   | NEG         |          |          |  |

| Bridge Culvert Barrel   |       |          |          |                          |
|---|-------|----------|----------|--------------------------|
| Culvert Component   |       | Last     | Now      | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1800, Type: MP) |       |          |          |                          |
| Ponding (Y/N)   | No    |          |          |                          |
| Fish Passage Adequacy   |       | 6        | 6        |                          |
| Baffle  |       | X        | X        |                          |
| (Type : )   |       |          |          |                          |
| Waterway Adequacy   |       | 7        | 7        |                          |
| Icing (Y/N)   | No    |          |          |                          |
| Silting (Y/N)   | No    |          |          |                          |
| Drift (Y/N)   | No    |          |          |                          |
| <b>Barrel General Rating</b>  |       | <b>4</b> | <b>4</b> |                          |
| Downstream End  |       |          |          |                          |
| Culvert Component   |       | Last     | Now      | Explanation of Condition |
| Direction   |       | S        |          |                          |
| End Treatment (Concrete, Steel, Others, None)   | STEEL |          |          |                          |
| Headwall  |       | X        | X        |                          |
| Collar  |       | X        | X        |                          |
| Wingwalls   |       | X        | X        |                          |
| (Shape : )  |       |          |          |                          |
| Cutoff Wall   |       | X        | X        |                          |
| Bevel End   |       | 7        | 7        |                          |
| Heaving (mm)  | 75    |          |          |                          |
| Invert Above/Below Stream Bed   | BELOW |          |          |                          |
| Above/Below (mm)  | 600   |          |          |                          |
| Scour Protection  |       | 7        | 7        |                          |
| (Type : RIP RAP)  |       |          |          |                          |
| (Avg. Rock Size(mm) : 250)  |       |          |          |                          |
| Scour/Erosion   |       | 7        | 7        |                          |
| Beavers (Y/N)   | No    |          |          |                          |
| <b>Downstream End General Rating</b>  |       | <b>7</b> | <b>7</b> |                          |
| Structure Usage   |       |          |          |                          |
|   |       | Last     | Now      | Explanation of Condition |
| <b>Channel (U/S and D/S)</b>  |       |          |          |                          |
| Alignment   |       | 8        | 8        | Low banks.               |
| Bank Stability  |       | 8        | 8        |                          |
| HWM (m below Top of Culvert)  |       |          |          | HWM not visible.         |
| Drift (Y/N)   | Yes   |          |          |                          |
| Channel Bottom Degrading/Aggrading  | NONE  |          |          |                          |
| Beavers (Y/N)   | No    |          |          |                          |
| (Fish Compensation Measure 1 : NONE)  |       |          |          |                          |
| (Fish Compensation Measure 2 : NONE)  |       |          |          |                          |
| <b>Channel General Rating</b>   |       | <b>8</b> | <b>8</b> |                          |

| Maintenance Recommendations                       |                  |  |                           |               |           |                   |    |
|---|------------------|--|---------------------------|---------------|-----------|-------------------|----|
| Inspector Recommendations                         | Year             | Inspector Comments                       | Department Comments       | Target Year   | Est. Cost | Cat #             |    |
| SHOTCRETE REPAIRS                                 |                  |  |                           |               |           |                   |    |
| PLACE ADDITIONAL RIP RAP                          |                  |  |                           |               |           |                   |    |
| REMOVE DRIFT ACCUMULATION                         |                  |  |                           |               |           |                   |    |
| INSTALL CONCRETE/STEEL LINING                     |                  |  |                           |               |           |                   |    |
| INSTALL STRUTS                                    |                  |  |                           |               |           |                   |    |
| INSTALL CONCRETE COLLAR/CUTOFF                    |                  |  |                           |               |           |                   |    |
| REPAIR SEAMS                                      |                  |  |                           |               |           |                   |    |
| OTHER ACTION                                      |                  |  |                           |               |           |                   |    |
| OTHER ACTION                                      |                  |  |                           |               |           |                   |    |
| OTHER ACTION                                      |                  |  |                           |               |           |                   |    |
| OTHER ACTION                                      |                  |  |                           |               |           |                   |    |
| <b>Structural Condition Rating (Last/Now) (%)</b> | <b>44.4/44.4</b> | <b>Sufficiency Rating (Last/Now) (%)</b> | <b>59.6/59.5</b>          | Est. Repl. Yr | 2030      | Maint. Req. (Y/N) | No |
| Special Comments for Next Inspection              |                  |  | Department Comments       |               |           |                   |    |
| Maintenance Reviewed By                           |                  |  | Date                      |               |           | Estimated Total   | 0  |
| Proposed Long-Term Strategy                       |                  |  |                           |               |           |                   |    |
| On 3-Year Program (Y/N)                           |                  |  |                           |               |           |                   |    |
| Proposed Action                                   |                  |  |                           |               |           |                   |    |
| Previous Inspector's Name                         | Shane Hall       |  | Previous Assistant's Name |               |           |                   |    |
| Next Inspection Date                              | 09-Jan-2014      |  | Previous Inspection Date  | 14-Jul-2010   |           |                   |    |
| Inspection Cycle (Default) (months)               | 21               |  |                           |               |           |                   |    |
| Comment   |                  |  |                           |               |           |                   |    |