

| Bridge Culvert Inspection |  |                     |               |
|---------------------------|--|---------------------|---------------|
| Bridge File Number        | 73826 -1 Bridge Culvert                                    | Form Type           | CUL1          |
| Year Built                | 1989   | Lot No.             | 4             |
| Bridge or Town Name       | BROOKS   | Inspector Name      | Tom Carey     |
| Located Over              | TRIBUTARY TO LITTLE SANDHILL CREEK,<br>3.10.2, WATERCRS-ST | Inspector Class     | BR CLS A      |
| Located On                | 1:18 L1 27.168;1:18 R1 27.153                              | Assistant Name      |               |
| Water Body Cl./Year       |  | Assistant Class     |               |
| Navigabil. Cl./Year       |  | Inspection Date     | 15-Feb-2012   |
| Legal Land Location       | NE SEC 2 TWP 18 RGE 13 W4M                                 | Data Entry By       | Lauren Korte  |
| Longitude, Latitude       | -111:40:48, 50:29:47                                       | Data Entry Date     | 26-Mar-2012   |
| Road Authority            | Alberta Transportation (AIT)                               | Reviewer Name       | Garry Roberts |
| Contract Main. Area       | CMA23  | Review Date         | 26-Feb-2012   |
| Clear Roadway/Skew        | 25 / 25 deg. (RHF)   | Dept. Reviewer Name | Tim Davies    |
| AADT/Year                 | 6,650 / 2011 (A)   | Dept. Review Date   | 29-Mar-2012   |
| Road Classification       | RFD-412.4-130  | Follow-Up By        |               |
| Detour Length (km)        | 1  |                     |               |

**Bridge Culvert Information**

|                          |        |      |                |      |        |               |                    |       |
|--------------------------|--------|------|----------------|------|--------|---------------|--------------------|-------|
| Number of Culverts       | 1      |      |                |      |        |               |                    |       |
| Pipe #                   | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | Pl./Slab Thickness | Shape |
| 1                        | MAIN   | 2130 | 1400           | FP   | 78     | 68X13         | 4.2                | ARCH  |
| Special Features         |        |      |                |      |        |               |                    |       |
| Special Features Comment |        |      |                |      |        |               |                    |       |

**Utilities (Located at)**

|                     |                                 |               |    |
|---------------------|---------------------------------|---------------|----|
| Utility Attachments |                                 |               |    |
| Telephone           | South ditch.                    | Gas           |    |
| Power               | North side, 5-wire, heavy duty. | Municipal     |    |
| Others              | 40 m FROM C.L.                  | Problem (Y/N) | No |
| Remarks             | F.O. cable North R/W.           |               |    |

**Approach Road / Embankment**

|  |        | Last     | Now      | Explanation of Condition |
|--|--------|----------|----------|--------------------------|
| Horizontal Alignment                             |        | 7        | 7        | Intersection 300m East.  |
| Vertical Alignment                               |        | 9        | 9        |                          |
| Roadway Width (m)                                | 25.000 |          |          |                          |
| Embankment                                       |        | 7        | 7        |                          |
| Sideslope ( __:1)                                | 4.0    |          |          |                          |
| (Height of Cover(m) : 1.8)                       |        |          |          |                          |
| Guardrail (Y/N)                                  | Yes    |          |          |                          |
| <b>Approach Road / Embankment General Rating</b> |        | <b>7</b> | <b>7</b> |                          |

**Upstream End**

| Culvert Component                             |       | Last | Now | Explanation of Condition |
|---|-------|------|-----|--------------------------|
| Direction                                     |       | N    |     | North end.               |
| 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   |             | 5        | 5        |   |
| Heaving (mm)  | 0           |          |          |   |
| Invert Above/Below Stream Bed   | BELOW       |          |          |   |
| Above/Below (mm)  | 200         |          |          |   |
| Scour Protection  |             | 7        | 7        | Well ingrown.   |
| (Type : <b>RIP RAP</b> )  |             |          |          |   |
| (Avg. Rock Size(mm) : <b>200</b> )  |             |          |          |   |
| Scour/Erosion   |             | 7        | 7        |   |
| Beavers (Y/N)   | No          |          |          |   |
| <b>Upstream End General Rating</b>  |             | <b>5</b> | <b>5</b> |   |
| Bridge Culvert Barrel   |             |          |          |   |
| Culvert Component   |             | Last     | Now      | Explanation of Condition  |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2130, Rise (mm): 1400, Type: FP) |             |          |          |   |
| Barrel Last Accessible Date   | 15-Feb-2012 |          |          |   |
| <b>Special Features</b>   |             |          |          |   |
| Special Feature   |             |          |          |   |
| (Type : )   |             |          |          |   |
| Special Feature   |             |          |          |   |
| (Type : )   |             |          |          |   |
| Roof  |             | 6        | 7        |   |
| Measured Rise (mm)  | 1400        |          |          |   |
| Measured At Ring No.  | 8           |          |          |   |
| Sag (mm)  | 0           |          |          |   |
| Percent Sag   | 0           |          |          |   |
| Sidewall  |             | 7        | 7        | Measured @ steel @ floor.                                       |
| Measured Span (mm)  | 2180        |          |          |   |
| Measured At Ring No.  | 8           |          |          |   |
| Deflection (mm)   | 50          |          |          |   |
| Percent Deflection  | 2           |          |          |   |
| Floor   |             | N        | N        | 5090 dirt covered.<br>50mm dirt bulge isolated @ ring 9 only.   |
| Bulge (mm)  | 50          |          |          |   |
| Measured At Ring No.  | 9           |          |          |   |
| Abrasion (Y/N)  | No          |          |          |   |
| Circumferential Seams   |             | 5        | 5        | 50m Vertical gap @ 2/3 L - foam sealed @ floor.                 |
| Separation (mm)   | 50          |          |          |   |
| 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   |             | 4        | 4        | CORROSION WITH SOME PITTING along both sidewalls towards floor. |
| Corrosion By Soil (Y/N)   | No          |          |          |   |
| Corrosion By Water (Y/N)  | Yes         |          |          |   |
| Camber POS/ZERO/NEG   | ZERO        |          |          |   |
| Ponding (Y/N)   | No          |          |          |   |

| Bridge Culvert Barrel   |           |          |          |  |
|---|-----------|----------|----------|--|
| Culvert Component   |           | Last     | Now      | Explanation of Condition                         |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2130, Rise (mm): 1400, Type: FP) |           |          |          |  |
| Fish Passage Adequacy   |           | X        | X        |  |
| 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>6</b> | <b>7</b> |  |
| Downstream End  |           |          |          |  |
| Culvert Component   |           | Last     | Now      | Explanation of Condition                         |
| Direction   |           | S        |          | South end.                                       |
| End Treatment (Concrete, Steel, Others, None)   | STEEL     |          |          |  |
| Headwall  |           | X        | X        |  |
| Collar  |           | X        | X        |  |
| Wingwalls   |           | X        | X        |  |
| (Shape : )  |           |          |          |  |
| Cutoff Wall   |           | X        | X        |  |
| Bevel End   |           | 5        | 5        | MINOR SUPERFICIAL CORROSION top of bevel.        |
| Heaving (mm)  | 0         |          |          |  |
| Invert Above/Below Stream Bed   | BELOW     |          |          |  |
| Above/Below (mm)  | 200       |          |          |  |
| Scour Protection  |           | 7        | 7        | Well ingrown.                                    |
| (Type : RIP RAP)  |           |          |          |  |
| (Avg. Rock Size(mm) : 200)  |           |          |          |  |
| Scour/Erosion   |           | 7        | 7        | Ditch drainage pipe @ SE.                        |
| Beavers (Y/N)   | No        |          |          |  |
| <b>Downstream End General Rating</b>  |           | <b>5</b> | <b>5</b> |  |
| Structure Usage   |           |          |          |  |
|   |           | Last     | Now      | Explanation of Condition                         |
| <b>Channel (U/S and D/S)</b>  |           |          |          |  |
| Alignment   |           | 6        | 6        | Curves in from North.<br>HEAVY BRUSH IN CHANNEL. |
| Bank Stability  |           | 7        | 7        |  |
| HWM (m below Top of Culvert)  |           |          |          | No HWM visible.                                  |
| Drift (Y/N)   | No        |          |          |  |
| Channel Bottom Degrading/Aggrading  | AGGRADING |          |          |  |
| Beavers (Y/N)   | No        |          |          |  |
| (Fish Compensation Measure 1 : NONE)  |           |          |          |  |
| (Fish Compensation Measure 2 : NONE)  |           |          |          |  |
| <b>Channel General Rating</b>   |           | <b>6</b> | <b>6</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>66.7/77.8</b> | <b>Sufficiency Rating (Last/Now) (%)</b> | <b>66.3/71.5</b>          | Est. Repl. Yr | 2028      | 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                         | Jason Rusu       |  | Previous Assistant's Name |               |           |                   |    |
| Next Inspection Date                              | 15-Nov-2013      |  | Previous Inspection Date  | 07-Aug-2010   |           |                   |    |
| Inspection Cycle (Default) (months)               | 21               |  |                           |               |           |                   |    |
| Comment   |                  |  |                           |               |           |                   |    |