

| Bridge Culvert Inspection |                              |  |                     |               |
|---------------------------|------------------------------|--|---------------------|---------------|
| Bridge File Number        | 77106 -1 Bridge Culvert      |  | Form Type           | CUL1          |
| Year Built                | 1970                         |  | Lot No.             | 3             |
| Bridge or Town Name       | MORLEY                       |  | Inspector Name      | Garry Roberts |
| Located Over              | TRAIL-ANIMAL, OVER SP        |  | Inspector Class     | BR CLS A      |
| Located On                | 1A:04 C1 16.823              |  | Assistant Name      |               |
| Water Body Cl./Year       |                              |  | Assistant Class     |               |
| Navigabil. Cl./Year       |                              |  | Inspection Date     | 31-Aug-2012   |
| Legal Land Location       | NW SEC 27 TWP 25 RGE 7 W5M   |  | Data Entry By       | Lauren Korte  |
| Longitude, Latitude       | -114:54:13, 51:09:51         |  | Data Entry Date     | 03-Oct-2012   |
| Road Authority            | Alberta Transportation (AIT) |  | Reviewer Name       | Joel Wozney   |
| Contract Main. Area       | CMA28                        |  | Review Date         | 20-Sep-2012   |
| Clear Roadway/Skew        | 6.7 /                        |  | Dept. Reviewer Name | Tim Davies    |
| AADT/Year                 | 1,710 / 2011 (A)             |  | Dept. Review Date   | 11-Oct-2012   |
| Road Classification       | RAU-209-110                  |  | Follow-Up By        |               |
| Detour Length (km)        | 3                            |  |                     |               |

| Bridge Culvert Information |        |            |                |      |        |               |                    |           |
|----------------------------|--------|------------|----------------|------|--------|---------------|--------------------|-----------|
| Number of Culverts         |        | 1          |                |      |        |               |                    |           |
| Pipe #                     | Barrel | Span       | Rise (or Dia.) | Type | Length | Corr. Profile | Pl./Slab Thickness | Shape     |
| 1                          | MAIN   | 1760       | 2280           | RPP  | 20.1   | 152X51        | 3.5                | PIPE ARCH |
| Special Features           |        | CONC FLOOR |                |      |        |               |                    |           |
| Special Features Comment   |        |            |                |      |        |               |                    |           |

| Posting Information                  |               |    |               |                  |      |    |               |                  |  |
|--------------------------------------|---------------|----|---------------|------------------|------|----|---------------|------------------|--|
| Required Vert. Clearance Posting (m) |               |    |               |                  |      |    |               |                  |  |
| Posted Vertical Clearance (Y/N)      |               |    |               |                  |      |    |               |                  |  |
| Posted:                              | Lane          | NB | On Bridge (m) | In Advance (Y/N) | Lane | SB | On Bridge (m) | In Advance (Y/N) |  |
| Remarks                              | Not required. |    |               |                  |      |    |               |                  |  |

| Utilities (Located at) |                        |  |                   |
|------------------------|------------------------|--|-------------------|
| Utility Attachments    |                        |  |                   |
| Telephone              | North & South ditch.   |  | Gas               |
| Power                  |                        |  | Municipal         |
| Others                 |                        |  | Problem (Y/N) Yes |
| Remarks                | Loose cable @ D/S end. |  |                   |

| Approach Road / Embankment                       |       |          |          |  |
|--|-------|----------|----------|--|
|  |       | Last     | Now      | Explanation of Condition                                     |
| Horizontal Alignment                             |       | 5        | 5        | On curve. Posted speed 80 km/hr.                             |
| Vertical Alignment                               |       | 6        | 6        | On gradual grade.  |
| Roadway Width (m)                                | 6.700 |          |          |  |
| Embankment                                       |       | 6        | 6        |  |
| Sideslope (___:1)                                | 3.0   |          |          |  |
| (Height of Cover(m) : 0.6)                       |       |          |          |  |
| Guardrail (Y/N)                                  | Yes   |          |          | Total 4 broken posts @ both sides & NW turndown end damaged. |
| <b>Approach Road / Embankment General Rating</b> |       | <b>5</b> | <b>5</b> |  |

| Upstream End                                  |  |          |     |  |
|---|--|----------|-----|--|
| Culvert Component                             |  | Last     | Now | Explanation of Condition                               |
| Direction                                     |  |          |     | North end.   |
| End Treatment (Concrete, Steel, Others, None) |  | CONCRETE |     |  |
| Headwall                                      |  | X        | X   |  |
| Collar  |  | 6        | 6   | Left over concrete on sideslope to form a semi-collar. |

| Upstream End   |             |          |          |  |
|--|-------------|----------|----------|--|
| Culvert Component  |             | Last     | Now      | Explanation of Condition   |
| Wingwalls<br>(Shape : )  |             | X        | X        |  |
| Cutoff Wall  |             | X        | X        |  |
| Bevel End  |             | X        | X        |  |
| Heaving (mm)   |             |          |          |  |
| Invert Above/Below Stream Bed  | BELOW       |          |          |  |
| Above/Below (mm)   | 200         |          |          |  |
| Scour Protection<br>(Type : <b>NATURAL</b> )<br>(Avg. Rock Size(mm) : )                      |             | 6        | 6        |  |
| Scour/Erosion  |             | 6        | 6        |  |
| Beavers (Y/N)  | No          |          |          |  |
| <b>Upstream End General Rating</b>   |             | <b>6</b> | <b>6</b> |  |
| Bridge Culvert Barrel  |             |          |          |  |
| Culvert Component  |             | Last     | Now      | Explanation of Condition   |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1760, Rise (mm): 2280, Type: RPP) |             |          |          |  |
| Barrel Last Accessible Date  | 31-Aug-2012 |          |          |  |
| <b>Special Features</b>  |             |          |          |  |
| Special Feature<br>(Type : <b>CONC FLOOR</b> )   |             | 7        | 7        |  |
| Special Feature<br>(Type : )   |             |          |          |  |
| Roof   |             | 7        | 7        |  |
| Measured Rise (mm)   |             |          |          | Estimate.  |
| Measured At Ring No.   |             |          |          |  |
| Sag (mm)   | 40          |          |          |  |
| Percent Sag  | 2           |          |          |  |
| Sidewall   |             | 7        | 7        | Inward.  |
| Measured Span (mm)   | 1720        |          |          |  |
| Measured At Ring No.   | 4           |          |          |  |
| Deflection (mm)  | 40          |          |          |  |
| Percent Deflection   | 2           |          |          |  |
| Floor  |             | N        | N        | Covered with concrete.   |
| Bulge (mm)   | 0           |          |          |  |
| Measured At Ring No.   |             |          |          |  |
| Abrasion (Y/N)   | No          |          |          |  |
| Circumferential Seams  |             | 7        | 7        |  |
| Separation (mm)  | 0           |          |          |  |
| Longitudinal Seams   |             | 7        | 7        |  |
| Total No. of Cracked Rings   | 0           |          |          |  |
| Total No. of Rings with Two Cracked Seams  | 0           |          |          |  |
| Min. Remaining Steel Between Cracks (mm)   |             |          |          |  |
| Proper Lap (Y/N)   | No          |          |          |  |
| Longitudinal Stagger (Y/N)   | No          |          |          |  |
| Coating  |             | 6        | 6        | Minor superficial rust on sidewall near outlet & @ exterior of roof @ North. |
| Corrosion By Soil (Y/N)  | No          |          |          |  |
| Corrosion By Water (Y/N)   | Yes         |          |          |  |

| Bridge Culvert Barrel   |      |          |          |                          |
|---|------|----------|----------|--------------------------|
| Culvert Component   |      | Last     | Now      | Explanation of Condition |
| <b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1760, Rise (mm): 2280, Type: RPP)</b> |      |          |          |                          |
| Camber POS/ZERO/NEG   | ZERO |          |          |                          |
| Ponding (Y/N)   | No   |          |          |                          |
| Fish Passage Adequacy   |      | X        | X        |                          |
| Baffle  |      | X        | X        |                          |
| (Type : )   |      |          |          |                          |
| Waterway Adequacy   |      | X        | X        |                          |
| Icing (Y/N)   | No   |          |          |                          |
| Siltng (Y/N)  | No   |          |          |                          |
| Drift (Y/N)   | No   |          |          |                          |
| <b>Barrel General Rating</b>  |      | <b>7</b> | <b>7</b> |                          |

| Downstream End                                |       |          |          |   |
|---|-------|----------|----------|---|
| Culvert Component                             |       | Last     | Now      | Explanation of Condition                                      |
| Direction                                     |       |          |          | South end.  |
| End Treatment (Concrete, Steel, Others, None) | NONE  |          |          |   |
| Headwall                                      |       | X        | X        |   |
| Collar  |       | X        | X        |   |
| Wingwalls                                     |       | X        | X        |   |
| (Shape : )                                    |       |          |          |   |
| Cutoff Wall                                   |       | X        | X        |   |
| Bevel End                                     |       | X        | X        |   |
| Heaving (mm)                                  |       |          |          |   |
| Invert Above/Below Stream Bed                 | BELOW |          |          |   |
| Above/Below (mm)                              | 300   |          |          |   |
| Scour Protection                              |       | 5        | 5        |   |
| (Type : <b>NATURAL</b> )                      |       |          |          |   |
| (Avg. Rock Size(mm) : )                       |       |          |          |   |
| Scour/Erosion                                 |       | 5        | 5        | 2m diameter erosion 300mm deep @ end of pipe - OK for cattle. |
| Beavers (Y/N)                                 | No    |          |          |   |
| <b>Downstream End General Rating</b>          |       | <b>5</b> | <b>5</b> |   |

| Structure Usage                          |      |      |     |                          |
|--|------|------|-----|--------------------------|
|  |      | Last | Now | Explanation of Condition |
| <b>Grade Separation</b>                  |      |      |     |                          |
| Road Alignment                           |      | X    | X   |                          |
| Roadway Surface                          |      | 6    | 6   |                          |
| (Type : <b>CONCRETE</b> )                |      |      |     |                          |
| Concrete floor with 50mm dirt @ D/S 1/4. |      |      |     |                          |
| Icing (Y/N)                              | No   |      |     |                          |
| Traffic Safety Features                  |      | X    | X   |                          |
| Type                                     | NONE |      |     |                          |
| Lighting                                 |      | X    | X   |                          |
| Barrel Leakage (Y/N)                     | No   |      |     |                          |

| <b>Structure Usage</b>                 |     |             |            |                                 |
|--|-----|-------------|------------|---------------------------------|
|  |     | <b>Last</b> | <b>Now</b> | <b>Explanation of Condition</b> |
| Drainage                               |     | 6           | 6          |                                 |
| Structure In Use (Y/N)                 | Yes |             |            |                                 |
| <b>Grade Separation 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                                      | 2013             | Ditch in D/S phone cable.                                      |                           |               |           |                   |     |
| OTHER ACTION                                      | 2013             | Replace 4 posts @ North & South, Replace one turndown end @ NW |                           |               |           |                   |     |
| OTHER ACTION                                      |                  |  |                           |               |           |                   |     |
| OTHER ACTION                                      |                  |  |                           |               |           |                   |     |
| <b>Structural Condition Rating (Last/Now) (%)</b> | <b>77.8/77.8</b> | <b>Sufficiency Rating (Last/Now) (%)</b>                       | <b>78.8/78.9</b>          | Est. Repl. Yr | 2028      | Maint. Req. (Y/N) | Yes |
| 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                         | Garry Roberts    |  | Previous Assistant's Name |               |           |                   |     |
| Next Inspection Date                              | 31-May-2014      |  | Previous Inspection Date  | 07-Dec-2010   |           |                   |     |
| Inspection Cycle (Default) (months)               | 21               |  |                           |               |           |                   |     |
| Comment   |                  |  |                           |               |           |                   |     |