

| Bridge Culvert Inspection |   |                     |               |
|---------------------------|---|---------------------|---------------|
| Bridge File Number        | 78404 -1 Bridge Culvert                   | Form Type           | CUL1          |
| Year Built                | 1992                                      | Lot No.             | 4             |
| Bridge or Town Name       | ORION                                     | Inspector Name      | Jon Davies    |
| Located Over              | WOLTAN COULEE, 2.7.1.13.3,<br>WATERCRS-ST | Inspector Class     | BR CLS B      |
| Located On                | 887:04 C1 10.150                          | Assistant Name      |               |
| Water Body Cl./Year       |   | Assistant Class     |               |
| Navigabil. Cl./Year       |   | Inspection Date     | 25-Jun-2012   |
| Legal Land Location       | SW SEC 18 TWP 7 RGE 6 W4M                 | Data Entry By       | Lauren Korte  |
| Longitude, Latitude       | -110:49:03, 49:33:13                      | Data Entry Date     | 26-Jul-2012   |
| Road Authority            | Alberta Transportation (AIT)              | Reviewer Name       | Garry Roberts |
| Contract Main. Area       | CMA24                                     | Review Date         | 09-Jul-2012   |
| Clear Roadway/Skew        | 8.8 / -20 deg. (LHF)                      | Dept. Reviewer Name | Tim Davies    |
| AADT/Year                 | 230 / 2011 (A)                            | Dept. Review Date   | 30-Jul-2012   |
| Road Classification       | RCU-209-110                               | Follow-Up By        |               |
| Detour Length (km)        | 10  |                     |               |

**Bridge Culvert Information**

|                          |        |      |                |      |        |               |                    |       |
|--------------------------|--------|------|----------------|------|--------|---------------|--------------------|-------|
| Number of Culverts       | 1      |      |                |      |        |               |                    |       |
| Pipe #                   | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | Pl./Slab Thickness | Shape |
| 1                        | MAIN   | -    | 1600           | MP   | 44     | 125X26        | 2.8                | ROUND |
| Special Features         |        |      |                |      |        |               |                    |       |
| Special Features Comment |        |      |                |      |        |               |                    |       |

**Utilities (Located at)**

|                     |                                       |               |    |  |
|---------------------|---------------------------------------|---------------|----|--|
| Utility Attachments |                                       |               |    |  |
| Telephone           | West ROW.                             | Gas           |    |  |
| Power               |                                       | Municipal     |    |  |
| Others              | Fibre optic cable crossing 30m South. | Problem (Y/N) | No |  |
| Remarks             |                                       |               |    |  |

**Approach Road / Embankment**

|  | Last     | Now      | Explanation of Condition                |
|--|----------|----------|---|
| Horizontal Alignment                             | 7        | 7        | Intersection with local road 30m South. |
| Vertical Alignment                               | 7        | 7        |   |
| Roadway Width (m)                                | 8.200    |          |   |
| Embankment                                       | 7        | 7        |   |
| Sideslope ( __:1)                                | 4.0      |          |   |
| (Height of Cover(m) : 3.8)                       |          |          |   |
| Guardrail (Y/N)                                  | No       |          |   |
| <b>Approach Road / Embankment General Rating</b> | <b>7</b> | <b>7</b> |   |

**Upstream End**

| Culvert Component                             | Last  | Now | Explanation of Condition |
|---|-------|-----|--------------------------|
| Direction                                     |       |     | East.                    |
| 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        | 7        |   |
| Heaving (mm)  | 0           |          |          |   |
| Invert Above/Below Stream Bed   | BELOW       |          |          |   |
| Above/Below (mm)  | 600         |          |          |   |
| Scour Protection  |             | 7        | 7        |   |
| (Type : <b>RIP RAP</b> )  |             |          |          |   |
| (Avg. Rock Size(mm) : <b>500</b> )  |             |          |          |   |
| Scour/Erosion   |             | 7        | 7        |   |
| Beavers (Y/N)   | No          |          |          |   |
| <b>Upstream End General Rating</b>  |             | <b>8</b> | <b>7</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>1600</b> , Type: <b>MP</b> ) |             |          |          |   |
| Barrel Last Accessible Date   | 25-Jun-2012 |          |          |   |
| <b>Special Features</b>   |             |          |          |   |
| Special Feature   |             |          |          |   |
| (Type : )   |             |          |          |   |
| Special Feature   |             |          |          |   |
| (Type : )   |             |          |          |   |
| Roof  |             | 8        | 8        |   |
| Measured Rise (mm)  | 1599        |          |          |   |
| Measured At Ring No.  | 1           |          |          |   |
| Sag (mm)  | 1           |          |          |   |
| Percent Sag   | 0           |          |          |   |
| Sidewall  |             | 8        | 8        |   |
| Measured Span (mm)  | 1605        |          |          |   |
| Measured At Ring No.  | 3           |          |          |   |
| Deflection (mm)   | 5           |          |          |   |
| Percent Deflection  | 0           |          |          |   |
| Floor   |             | 8        | 8        |   |
| Bulge (mm)  | 0           |          |          |   |
| Measured At Ring No.  | 3           |          |          |   |
| Abrasion (Y/N)  | No          |          |          |   |
| Circumferential Seams   |             | 8        | 9        |   |
| Separation (mm)   | 40          |          |          |   |
| Longitudinal Seams  |             | X        | X        |   |
| Total No. of Cracked Rings  | 0           |          |          |   |
| Total No. of Rings with Two Cracked Seams   | 0           |          |          |   |
| Min. Remaining Steel Between Cracks (mm)  | 0           |          |          |   |
| Proper Lap (Y/N)  |             |          |          |   |
| Longitudinal Stagger (Y/N)  |             |          |          |   |
| Coating   |             | 7        | 7        |   |
| Corrosion By Soil (Y/N)   | No          |          |          | Minor superficial rust at water line and below. |
| Corrosion By Water (Y/N)  | No          |          |          |   |
| 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): , Rise (mm): 1600, Type: MP) |           |          |          |                                     |
| Fish Passage Adequacy   |           | 5        | 5        |                                     |
| 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>8</b> | <b>8</b> |                                     |
| Downstream End  |           |          |          |                                     |
| Culvert Component   |           | Last     | Now      | Explanation of Condition            |
| Direction   |           |          |          | West.                               |
| End Treatment (Concrete, Steel, Others, None)   | STEEL     |          |          |                                     |
| Headwall  |           | X        | X        |                                     |
| Collar  |           | X        | X        |                                     |
| Wingwalls   |           | X        | X        |                                     |
| (Shape : )  |           |          |          |                                     |
| Cutoff Wall   |           | X        | X        |                                     |
| Bevel End   |           | 8        | 7        |                                     |
| Heaving (mm)  | 100       |          |          |                                     |
| Invert Above/Below Stream Bed   | ABOVE     |          |          |                                     |
| Above/Below (mm)  | 200       |          |          |                                     |
| Scour Protection  |           | 7        | 7        |                                     |
| (Type : RIP RAP)  |           |          |          |                                     |
| (Avg. Rock Size(mm) : 300)  |           |          |          |                                     |
| Scour/Erosion   |           | 7        | 7        |                                     |
| Beavers (Y/N)   | No        |          |          |                                     |
| <b>Downstream End General Rating</b>  |           | <b>8</b> | <b>7</b> |                                     |
| Structure Usage   |           |          |          |                                     |
|   |           | Last     | Now      | Explanation of Condition            |
| Channel (U/S and D/S)   |           |          |          |                                     |
| Alignment   |           | 7        | 7        |                                     |
| Bank Stability  |           | 7        | 7        |                                     |
| HWM (m below Top of Culvert)  |           |          |          | No HWM visible.                     |
| Drift (Y/N)   | No        |          |          | (RUNS FULL DURING FLOOD) 2002/07/28 |
| Channel Bottom Degrading/Aggrading  | DEGRADING |          |          |                                     |
| Beavers (Y/N)   | No        |          |          |                                     |
| (Fish Compensation Measure 1 : NONE)  |           |          |          |                                     |
| (Fish Compensation Measure 2 : NONE)  |           |          |          |                                     |
| <b>Channel General Rating</b>   |           | <b>7</b> | <b>7</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>88.9/88.9</b> | <b>Sufficiency Rating (Last/Now) (%)</b> | <b>84.0/82.3</b>          | Est. Repl. Yr | 2040      | 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                         | Garry Roberts    |  | Previous Assistant's Name |               |           |                   |    |
| Next Inspection Date                              | 25-Sep-2015      |  | Previous Inspection Date  | 15-Jun-2009   |           |                   |    |
| Inspection Cycle (Default) (months)               | 39               |  |                           |               |           |                   |    |
| Comment   |                  |  |                           |               |           |                   |    |