

| Bridge Culvert Inspection | | | |
|---------------------------|---|---------------------|-----------------|
| Bridge File Number | 77928 -1 Bridge Culvert | Form Type | CULE |
| Year Built | 1978 | Lot No. | 4 |
| Bridge or Town Name | RAINBOW LAKE | Inspector Name | Brian Pientsch |
| Located Over | 2ND ORDER TRIBUTARY TO SOUSA CREEK, 9.21.1.2, WATERCRS-ST | Inspector Class | BR CLS A |
| Located On | 58:04 C1 16.087 | Assistant Name | Clem Guenette |
| Water Body Cl./Year | | Assistant Class | |
| Navigabil. Cl./Year | | Inspection Date | 11-Jan-2012 |
| Legal Land Location | NE SEC 36 TWP 109 RGE 8 W6M | Data Entry By | Theresa Lacusta |
| Longitude, Latitude | -119:10:59, 58:30:44 | Data Entry Date | 04-Mar-2012 |
| Road Authority | Alberta Transportation (AIT) | Reviewer Name | Eric Carcoux |
| Contract Main. Area | CMA01 | Review Date | 26-Feb-2012 |
| Clear Roadway/Skew | 15 / 28 deg. (RHF) | Dept. Reviewer Name | David Morrison |
| AADT/Year | 740 / 2011 (A) | Dept. Review Date | 30-Mar-2012 |
| Road Classification | RAU-211.8-110 | Follow-Up By | |
| Detour Length (km) | 999 | | |

Bridge Culvert Information

| Number of Culverts | 1 | | | | | | | |
|--------------------------|------------|------|----------------|------|--------|---------------|--------------------|-------|
| Pipe # | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | Pl./Slab Thickness | Shape |
| 1 | U/S | - | 2400 | MP | 3.8 | 125X26 | 7.8 | ROUND |
| 1 | MAIN | - | 2100 | MP | 35.4 | 68X13 | 4.2 | ROUND |
| 1 | D/S | - | 2700 | MP | 13.2 | 125X26 | 2.8 | ROUND |
| Special Features | CONC FLOOR | | | | | | | |
| Special Features Comment | | | | | | | | |

Utilities (Located at)

| | | | |
|---------------------|-----------|---------------|-------------------------------------|
| Utility Attachments | | | |
| Telephone | North r/w | Gas | Sour gas pipeline crosses 50m east. |
| Power | | Municipal | |
| Others | | Problem (Y/N) | No |
| Remarks | | | |

Approach Road / Embankment

| | Last | Now | Explanation of Condition |
|--|----------|----------|---|
| Horizontal Alignment | 7 | 7 | On curve no passing Eastbound, approx. 400m West, approx 250m East. |
| Vertical Alignment | 8 | 7 | |
| Roadway Width (m) | 15.000 | | |
| Embankment | 8 | 8 | |
| Sideslope (__:1) | 4.0 | | |
| (Height of Cover(m) : 3) | | | |
| Guardrail (Y/N) | No | | |
| Approach Road / Embankment General Rating | 7 | 7 | |

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 :) | | | |

| Upstream End | | | | |
|--|-------------|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| Cutoff Wall | | X | X | |
| Bevel End | | 7 | 7 | |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | BELOW | | | |
| Above/Below (mm) | 150 | | | |
| Scour Protection | | 7 | N | |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 300) | | | | |
| Scour/Erosion | | 7 | N | Snow covered |
| Beavers (Y/N) | No | | | Snow covered. |
| Upstream End General Rating | | 7 | 7 | |
| Bridge Culvert Barrel | | | | |
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): , Rise (mm): 2400, Type: MP) | | | | |
| Barrel Last Accessible Date | 11-Jan-2012 | | | |
| Special Features | | | | |
| Special Feature | | | | Under water/ice Concrete floor |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | 8 | 8 | Measured above concrete floor & ice. @ cl |
| Measured Rise (mm) | 2058 | | | |
| Measured At Ring No. | | | | |
| Sag (mm) | | | | |
| Percent Sag | | | | |
| Sidewall | | 8 | 8 | @ cl Deflection inward |
| Measured Span (mm) | 2396 | | | |
| Measured At Ring No. | | | | |
| Deflection (mm) | 4 | | | |
| Percent Deflection | | | | |
| Floor | | N | N | Under water/ice. |
| Bulge (mm) | | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | 9 | 9 | |
| Separation (mm) | | | | |
| 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 | | 8 | 8 | |
| Corrosion By Soil (Y/N) | No | | | |
| Corrosion By Water (Y/N) | Yes | | | |
| Camber POS/ZERO/NEG | ZERO | | | |

| Bridge Culvert Barrel | | | | | |
|---|-------------|----------|----------|---|--|
| Culvert Component | | Last | Now | Explanation of Condition | |
| (Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): , Rise (mm): 2400, Type: MP) | | | | | |
| Ponding (Y/N) | No | | | | |
| Fish Passage Adequacy | | 8 | 8 | | |
| Baffle | | X | X | | |
| (Type :) | | | | | |
| Waterway Adequacy | | 8 | 8 | | |
| Icing (Y/N) | No | | | | |
| Silting (Y/N) | No | | | | |
| Drift (Y/N) | No | | | | |
| Barrel Extension General Rating | | 8 | 8 | | |
| Bridge Culvert Barrel | | | | | |
| Culvert Component | | Last | Now | Explanation of Condition | |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2100, Type: MP) | | | | | |
| Barrel Last Accessible Date | 11-Jan-2012 | | | | |
| Special Features | | | | | |
| Special Feature | | 8 | 8 | Some visible | |
| (Type : CONC FLOOR) | | | | | |
| Special Feature | | | | | |
| (Type :) | | | | | |
| Roof | | 6 | 6 | Crease along top of pipe from original installation. At cl above concrete floor. -27-May-2010 | |
| Measured Rise (mm) | 1942 | | | | |
| Measured At Ring No. | | | | | |
| Sag (mm) | 158 | | | | |
| Percent Sag | 8 | | | | |
| Sidewall | | 5 | 5 | @ CL | |
| Measured Span (mm) | 1994 | | | Deflection inward. | |
| Measured At Ring No. | | | | | |
| Deflection (mm) | 106 | | | | |
| Percent Deflection | 5 | | | | |
| Floor | | N | N | Concrete floor Ice covered. | |
| Bulge (mm) | 0 | | | | |
| Measured At Ring No. | | | | | |
| Abrasion (Y/N) | No | | | | |
| Circumferential Seams | | 5 | 5 | | |
| Separation (mm) | 205 | | | | |
| 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 | | 5 | 6 | Superficial corrosion lower 1/3. | |
| Corrosion By Soil (Y/N) | No | | | | |
| Corrosion By Water (Y/N) | Yes | | | | |
| Camber POS/ZERO/NEG | ZERO | | | | |

| Bridge Culvert Barrel | | | | |
|---|-------------|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 2100, Type: MP) | | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 7 | 7 | |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 8 | 8 | |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| Barrel General Rating | | 5 | 5 | |
| Bridge Culvert Barrel | | | | |
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: D/S, Span (mm): , Rise (mm): 2700, Type: MP) | | | | |
| Barrel Last Accessible Date | 11-Jan-2012 | | | |
| Special Features | | | | |
| Special Feature | | | | Under water/ice. Concrete floor |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | 8 | 8 | After concrete floor-almost cl.-27-May-2010 Ice to crown 2.171m |
| Measured Rise (mm) | 2722 | | | |
| Measured At Ring No. | | | | |
| Sag (mm) | 22 | | | |
| Percent Sag | 1 | | | |
| Sidewall | | 8 | 8 | @ cl Deflection inward. |
| Measured Span (mm) | 2672 | | | |
| Measured At Ring No. | | | | |
| Deflection (mm) | 28 | | | |
| Percent Deflection | 1 | | | |
| Floor | | N | N | Under water/ice. Approx. half of pipe has concrete floor. |
| Bulge (mm) | | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | 8 | 8 | Rated grouted connection to centre section. |
| 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 | | 8 | 8 | |
| Corrosion By Soil (Y/N) | No | | | |
| Corrosion By Water (Y/N) | Yes | | | |
| Camber POS/ZERO/NEG | ZERO | | | |

| Bridge Culvert Barrel | | | | |
|--|-----------|----------|----------|-----------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: D/S, Span (mm): , Rise (mm): 2700, Type: MP) | | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 8 | 5 | D/S end is above streambed. |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 8 | 8 | |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| Barrel Extension General Rating | | 8 | 8 | |
| 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) | 0 | | | |
| Invert Above/Below Stream Bed | ABOVE | | | |
| Above/Below (mm) | 800 | | | |
| Scour Protection | | 7 | N | Snow covered |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 450) | | | | |
| Scour/Erosion | | 7 | N | Snow covered. |
| Beavers (Y/N) | Yes | | | |
| Downstream End General Rating | | 7 | 7 | |
| Structure Usage | | | | |
| | | Last | Now | Explanation of Condition |
| Channel (U/S and D/S) | | | | |
| Alignment | | 7 | 7 | |
| Bank Stability | | 6 | 6 | Bank sloughing D/S. |
| HWM (m below Top of Culvert) | | | | HWM not visible. |
| Drift (Y/N) | No | | | |
| Channel Bottom Degrading/Aggrading | DEGRADING | | | 20m d/s. |
| Beavers (Y/N) | No | | | |
| (Fish Compensation Measure 1 : NONE) | | | | |
| (Fish Compensation Measure 2 : NONE) | | | | |
| Channel General Rating | | 6 | 7 | |

| 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 | | | | | | | |
| Structural Condition Rating (Last/Now) (%) | 55.6/55.6 | Sufficiency Rating (Last/Now) (%) | 66.7/67.8 | Est. Repl. Yr | 2018 | 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 | Brian Pientsch | | Previous Assistant's Name | Lisbeth Medina | | | |
| Next Inspection Date | 11-Oct-2013 | | Previous Inspection Date | 27-May-2010 | | | |
| Inspection Cycle (Default) (months) | 21 | | | | | | |
| Comment | | | | | | | |