## Bridge Culvert Inspection

| | | | |
|---|---|---|---|
| Bridge File Number | 74941 -1 Bridge Culvert | Form Type | CUL1 |
| Year Built | 1958 | Lot No. | 1 |
| Bridge or Town Name | ARMENA | Inspector Name | Owen Salava |
| Located Over | TRIBUTARY TO CAMROSE CREEK, 5.44.2, WATERCRS-ST | Inspector Class | BR CLS A |
| | | Assistant Name | |
| Located On | 21:24 C1 12.905 | Assistant Class | |
| Water Body Cl./Year | | Inspection Date | 20-Sep-2012 |
| Navigabil. Cl./Year | | Data Entry By | Marcia Chavez |
| Legal Land Location | NE SEC 11 TWP 48 RGE 21 W4M | Data Entry Date | 03-Oct-2012 |
| Longitude, Latitude | -112:57:32, 53:07:51 | Reviewer Name | John O'Brien |
| Road Authority | Alberta Transportation (AIT) | Review Date | 27-Sep-2012 |
| Contract Main. Area | CMA16 | Dept. Reviewer Name | Andrew Smikles |
| Clear Roadway/Skew | 11.1 / 7 deg. (RHF) | Dept. Review Date | 22-Oct-2012 |
| AADT/Year | 5,010 / 2011 (A) | Follow-Up By | |
| Road Classification | RAU-211.8-110 | | |
| 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 | 1829 | 1118 | FP | 30.5 | 68X13 | 3.5 | ARCH |
| Special Features | | CONC FLOOR | | | | | | |
| Special Features Comment | | | | | | | | |

## Utilities (Located at)

| | | | |
|---|---|---|---|
| Utility Attachments | | | |
| Telephone | East r/w. | Gas | |
| Power | | Municipal | |
| Others | Fibre optic E r/w. | Problem (Y/N) | No |
| Remarks | | | |

## Approach Road / Embankment

| | | Last | Now | Explanation of Condition |
|---|---|---|---|---|
| Horizontal Alignment | | 5 | 5 | In curve, superelevated. |
| Vertical Alignment | | 8 | 8 | |
| Roadway Width (m) | 11.100 | | | |
| Embankment | | 6 | 6 | West side measured. |
| Sideslope (__:1) | 3.0 | | | |
| (Height of Cover(m) : **2.1**) | | | | |
| Guardrail (Y/N) | No | | | |
| **Approach Road / Embankment General Rating** | | **5** | **5** | |

## Upstream End

| Culvert Component | | Last | Now | Explanation of Condition |
|---|---|---|---|---|
| Direction | | W | | |
| 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 | | 4 | 4 | Moderate rusting/pitting.<br>Bevel edge caps separated. |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | | | | |
| Above/Below (mm) | 0 | | | |
| Scour Protection | | 5 | 5 | Overgrown with vegetation. |
| (Type : **NATURAL**) | | | | |
| (Avg. Rock Size(mm) : ) | | | | |
| Scour/Erosion | | 5 | 5 | |
| Beavers (Y/N) | No | | | |
| **Upstream End General Rating** | | **4** | **4** | |

| Bridge Culvert Barrel | | | | |
|---|---|---|---|---|
| **Culvert Component** | | **Last** | **Now** | **Explanation of Condition** |
| (Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 1829, Rise (mm): 1118, Type: FP**) | | | | |
| Barrel Last Accessible Date | 20-Sep-2012 | | | |
| **Special Features** | | | | |
| Special Feature | | 4 | 4 | Numerous transverse cracks. |
| (Type : **CONC FLOOR**) | | | | |
| Special Feature | | | | |
| (Type : ) | | | | |
| Roof | | 4 | 4 | Roof to concrete floor 910mm. (Est roof sag 5%. |
| Measured Rise (mm) | | | | |
| Measured At Ring No. | | | | |
| Sag (mm) | 100 | | | |
| Percent Sag | | | | |
| Sidewall | | 3 | 3 | Some inward bulging due to corrosion & weakening of sidewall.<br>Corrosion with loss of section. |
| Measured Span (mm) | 1840 | | | |
| Measured At Ring No. | 2 | | | |
| Deflection (mm) | 11 | | | |
| Percent Deflection | | | | |
| Floor | | N | N | Concrete covered. |
| Bulge (mm) | 25 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | 4 | 4 | Minor infiltration. |
| Separation (mm) | 65 | | | |
| Longitudinal Seams | | 3 | 3 | Rivetted seams. Rivets in sidewall seams are corroding. |
| Total No. of Cracked Rings | 0 | | | |
| Total No. of Rings with Two Cracked Seams | | | | |
| Min. Remaining Steel Between Cracks (mm) | | | | |
| Proper Lap (Y/N) | Yes | | | |
| Longitudinal Stagger (Y/N) | Yes | | | |
| Coating | | 3 | 3 | Heavy sidewall corrosion & loss of section weakening sidewall at haunch area. |
| Corrosion By Soil (Y/N) | Yes | | | |
| Corrosion By Water (Y/N) | Yes | | | |
| Camber POS/ZERO/NEG | NEG | | | |
| Ponding (Y/N) | No | | | |

| Bridge Culvert Barrel | | | | |
|---|---|---|---|---|
| **Culvert Component** | | **Last** | **Now** | **Explanation of Condition** |
| (Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 1829, Rise (mm): 1118, Type: FP**) | | | | |
| Fish Passage Adequacy | | X | X | Only at high water. |
| Baffle | | X | X | |
| (Type : ) | | | | |
| Waterway Adequacy | | 5 | 5 | |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| **Barrel General Rating** | | **3** | **3** | |

| Downstream End | | | | |
|---|---|---|---|---|
| **Culvert Component** | | **Last** | **Now** | **Explanation of Condition** |
| Direction | | E | | |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | |
| Headwall | | X | X | |
| Collar | | X | X | |
| Wingwalls | | X | X | |
| (Shape : ) | | | | |
| Cutoff Wall | | X | X | |
| Bevel End | | 4 | 4 | Moderate corrosion below waterline. Bevel edge cap separated. |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | | | | |
| Above/Below (mm) | 0 | | | |
| Scour Protection | | 5 | 5 | Well vegetated. |
| (Type : **NATURAL**) | | | | |
| (Avg. Rock Size(mm) : ) | | | | |
| Scour/Erosion | | 5 | 5 | |
| Beavers (Y/N) | No | | | |
| **Downstream End General Rating** | | **4** | **4** | |

| Structure Usage | | | | |
|---|---|---|---|---|
| | | **Last** | **Now** | **Explanation of Condition** |
| **Channel (U/S and D/S)** | | | | |
| Alignment | | 6 | 6 | |
| Bank Stability | | 6 | 6 | |
| HWM (m below Top of Culvert) | | | | HWM not visible. |
| Drift (Y/N) | No | | | |
| Channel Bottom Degrading/Aggrading | | | | Unknown. |
| Beavers (Y/N) | No | | | |
| (Fish Compensation Measure 1 : **NONE**) | | | | |
| (Fish Compensation Measure 2 : **NONE**) | | | | |
| **Channel General Rating** | | **6** | **6** | |

| 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 | 2015 | Program for replacement. | | | | |
| OTHER ACTION | | | | | | |
| OTHER ACTION | | | | | | |
| OTHER ACTION | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Structural Condition Rating (Last/Now) (%)** | **33.3/33.3** | **Sufficiency Rating (Last/Now) (%)** | **40.4/40.3** | Est. Repl. Yr | 2015 | Maint. Reqd. (Y/N) | Yes |

| | | | |
|---|---|---|---|
| Special Comments for Next Inspection | Inspect at reg BIM cycle until replaced. | Department Comments | |

| | | | | | |
|---|---|---|---|---|---|
| Maintenance Reviewed By | | Date | | Estimated Total | 0 |
| Proposed Long-Term Strategy | 2004.05.30 Montior normal BIM. Culvert should be ok until 2013. | | | | |
| On 3-Year Program (Y/N) | | | | | |
| Proposed Action | | | | | |
| Previous Inspector's Name | Dave Lam | Previous Assistant's Name | | | |
| Next Inspection Date | 20-Jun-2014 | Previous Inspection Date | 08-Nov-2010 | | |
| Inspection Cycle (Default) (months) | 21 | | | | |
| Comment | | | | | |