## Bridge Culvert Inspection

| | | | |
|---|---|---|---|
| Bridge File Number | 74682 -1 Bridge Culvert | Form Type | CUL1 |
| Year Built | 1957 | Lot No. | 3 |
| Bridge or Town Name | CARBON | Inspector Name | Owen Salava |
| Located Over | TRIBUTARY TO KNEEHILLS CREEK, 3.46.9, WATERCRS-ST | Inspector Class | BR CLS A |
| | | Assistant Name | |
| Located On | 21:14 C1 17.666 | Assistant Class | |
| Water Body Cl./Year | | Inspection Date | 18-Sep-2012 |
| Navigabil. Cl./Year | | Data Entry By | Marcia Chavez |
| Legal Land Location | NW SEC 6 TWP 30 RGE 23 W4M | Data Entry Date | 03-Oct-2012 |
| Longitude, Latitude | -113:14:20, 51:32:31 | Reviewer Name | John O'Brien |
| Road Authority | Alberta Transportation (AIT) | Review Date | 27-Sep-2012 |
| Contract Main. Area | CMA20 | Dept. Reviewer Name | Andrew Smikles |
| Clear Roadway/Skew | 9.9 / 0 deg. | Dept. Review Date | 16-Oct-2012 |
| AADT/Year | 2,490 / 2011 (A) | Follow-Up By | |
| Road Classification | RAU-210-110 | | |
| Detour Length (km) | 5 | | |

### Bridge Culvert Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Number of Culverts | | 1 | | | | | | |
| Pipe # | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | Pl./Slab Thickness | Shape |
| 1 | MAIN | 1724 | 1901 | SPE | 53.6 | 152X51 | 2.8 | ELLIPSE |
| Special Features | | | | | | | | |
| Special Features Comment | | | | | | | | |

## Utilities (Located at)

| | | | |
|---|---|---|---|
| Utility Attachments | | | |
| Telephone | West 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 | | 6 | 6 | Curves both ends - good sight distance. No passing SB. |
| Vertical Alignment | | 7 | 7 | |
| Roadway Width (m) | 9.900 | | | |
| Embankment | | 7 | 7 | Wide transverse cracks 5m North & South of pipe - sealed. |
| Sideslope (__:1) | 3.0 | | | |
| (Height of Cover(m) : **5.1**) | | | | |
| Guardrail (Y/N) | No | | | |
| **Approach Road / Embankment General Rating** | | **6** | **6** | |

## 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 | | 6 | 6 | |
| Heaving (mm) | 150 | | | |
| Invert Above/Below Stream Bed | BELOW | | | |
| Above/Below (mm) | 100 | | | |
| Scour Protection | | 4 | 4 | 430 mm of bevel exposed, piping evident (photo). Well vegetated but insufficient under pipe to prevent piping. |
| (Type : **RIP RAP**) | | | | |
| (Avg. Rock Size(mm) : **300**) | | | | |
| Scour/Erosion | | 4 | 4 | |
| 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): 1724, Rise (mm): 1901, Type: SPE**) | | | | |
| Barrel Last Accessible Date | 18-Sep-2012 | | | |
| **Special Features** | | | | |
| Special Feature | | | | |
| (Type : ) | | | | |
| Special Feature | | | | |
| (Type : ) | | | | |
| Roof | | 7 | 7 | |
| Measured Rise (mm) | 1860 | | | |
| Measured At Ring No. | 8 | | | |
| Sag (mm) | 41 | | | |
| Percent Sag | 2 | | | |
| Sidewall | | 7 | 7 | |
| Measured Span (mm) | 1755 | | | |
| Measured At Ring No. | 8 | | | |
| Deflection (mm) | 31 | | | 1.8% |
| Percent Deflection | 1 | | | |
| Floor | | N | N | Under water. |
| Bulge (mm) | 0 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | 5 | 5 | Missing bolt on 9th circumferential seam at floor North side bolt does not line up between plates - minor. |
| 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) | Yes | | | |
| Coating | | N | 5 | Pitting on floor. |
| Corrosion By Soil (Y/N) | Yes | | | |
| Corrosion By Water (Y/N) | Yes | | | |
| Camber POS/ZERO/NEG | POS | | | |
| Ponding (Y/N) | No | | | |

| Bridge Culvert Barrel | | | | |
|---|---|---|---|---|
| **Culvert Component** | | **Last** | **Now** | **Explanation of Condition** |
| (Pipe # : **1, Primary Span, Location Code: MAIN, Span (mm): 1724, Rise (mm): 1901, Type: SPE**) | | | | |
| Fish Passage Adequacy | | 4 | 4 | Hanging D/S end (photo). |
| Baffle | | X | X | |
| (Type : ) | | | | |
| Waterway Adequacy | | 7 | 7 | |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| **Barrel General Rating** | | **7** | **7** | |

| 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 | | 6 | 6 | Showing signs of superficial rust. |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | ABOVE | | | |
| Above/Below (mm) | 600 | | | |
| Scour Protection | | 3 | 3 | All riprap washed out of scour hole d/s creating rock dam (photo). |
| (Type : **RIP RAP**) | | | | |
| (Avg. Rock Size(mm) : **300**) | | | | |
| Scour/Erosion | | 3 | 3 | 5 m dia x 1.0 m dp scour hole - photo. Some undermining of bevel for 1m. |
| Beavers (Y/N) | No | | | |
| **Downstream End General Rating** | | **3** | **3** | |

| Structure Usage | | | | |
|---|---|---|---|---|
| | | **Last** | **Now** | **Explanation of Condition** |
| **Channel (U/S and D/S)** | | | | |
| Alignment | | 7 | 7 | Vertical shallow banks D/S degraded at s/b.<br>Cut banks. |
| Bank Stability | | 5 | 5 | |
| HWM (m below Top of Culvert) | | | | HWM not visible. |
| Drift (Y/N) | No | | | |
| Channel Bottom Degrading/Aggrading | DEGRADING | | | |
| Beavers (Y/N) | No | | | |
| (Fish Compensation Measure 1 : **NONE**) | | | | |
| (Fish Compensation Measure 2 : **NONE**) | | | | |
| **Channel General Rating** | | **7** | **7** | |

**Maintenance Recommendations**

| Inspector Recommendations | Year | Inspector Comments | Department Comments | Target Year | Est. Cost | Cat # |
|---|---|---|---|---|---|---|
| SHOTCRETE REPAIRS | | | | | | |
| PLACE ADDITIONAL RIP RAP | 2012 | 10m3 @ D/S. Class 1, redistribute existing rock into scour hole. | | | | |
| 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) (%)** | **77.8/77.8** | **Sufficiency Rating (Last/Now) (%)** | **61.0/61.1** | Est. Repl. Yr | 2023 | Maint. Reqd. (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 | Dave Lam | Previous Assistant's Name | |
| Next Inspection Date | 18-Jun-2014 | Previous Inspection Date | 10-Nov-2010 |
| Inspection Cycle (Default) (months) | 21 | | |
| Comment | | | |