

| Bridge Culvert Inspection | | | | |
|---------------------------|------------------------------|--|---------------------|-----------------|
| Bridge File Number | 86171 -1 Bridge Culvert | | Form Type | CULM |
| Year Built | 1988 | | Lot No. | 1 |
| Bridge or Town Name | | | Inspector Name | Brian Pientsch |
| Located Over | WATERCOURSE, WATERCRS-NI | | Inspector Class | BR CLS A |
| Located On | 741:02 C1 14.072 | | Assistant Name | Clem Guenette |
| Water Body Cl./Year | | | Assistant Class | BR CLS B |
| Navigabil. Cl./Year | | | Inspection Date | 19-Mar-2013 |
| Legal Land Location | NW SEC 5 TWP 93 RGE 21 W5M | | Data Entry By | Theresa Lacusta |
| Longitude, Latitude | -117:21:23, 57:02:21 | | Data Entry Date | 09-Apr-2013 |
| Road Authority | Alberta Transportation (AIT) | | Reviewer Name | Eric Carcoux |
| Contract Main. Area | CMA04 | | Review Date | 08-Apr-2013 |
| Clear Roadway/Skew | 8 / 0 deg. | | Dept. Reviewer Name | |
| AADT/Year | 120 / 2012 (A) | | Dept. Review Date | |
| Road Classification | RCU-208G-90 | | Follow-Up By | |
| Detour Length (km) | 999 | | | |

| Bridge Culvert Information | | | | | | | | |
|----------------------------|--------|------|----------------|------|--------|---------------|--------------------|-------|
| Number of Culverts | | 2 | | | | | | |
| Pipe # | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | Pl./Slab Thickness | Shape |
| 1 | MAIN | - | 1200 | MP | 33 | 68X13 | 2.8 | ROUND |
| 2 | MAIN | - | 1200 | MP | 33 | 68X13 | 2.8 | ROUND |
| Special Features | | | | | | | | |
| Special Features Comment | | | | | | | | |

| Utilities (Located at) | | | |
|------------------------|---------------------|--|------------------|
| Utility Attachments | | | |
| Telephone | W. r of w | | Gas |
| Power | 2 wire OH W. r of w | | Municipal |
| Others | | | Problem (Y/N) No |
| Remarks | | | |

| Approach Road / Embankment | | | | |
|--|-------|----------|----------|--------------------------|
| | | Last | Now | Explanation of Condition |
| Horizontal Alignment | | 7 | 7 | Approach 30m North |
| Vertical Alignment | | 8 | 8 | |
| Roadway Width (m) | 8.000 | | | |
| Embankment | | 7 | 7 | |
| Sideslope (__:1) | 4.0 | | | |
| (Height of Cover(m) : 2) | | | | |
| Guardrail (Y/N) | No | | | |
| Approach Road / Embankment General Rating | | 7 | 7 | |

| Upstream End | | | | |
|---|-------|------|-----|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Span Type: Primary Span) | | | | |
| Direction | | W | | South barrel |
| 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 |
| (Pipe # : 1, Span Type: Primary Span) | | | | |
| Cutoff Wall | | X | X | |
| Bevel End | | 5 | N | Snow covered. |
| Heaving (mm) | 50 | | | |
| Invert Above/Below Stream Bed | BELOW | | | |
| Above/Below (mm) | 300 | | | |
| Scour Protection | | 5 | N | Snow covered. |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 250) | | | | |
| Scour/Erosion | | 5 | N | Snow covered. |
| Beavers (Y/N) | No | | | |
| Upstream End General Rating | | 5 | 5 | GR carried fwd. |
| Bridge Culvert Barrel | | | | |
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1200, Type: MP) | | | | |
| Barrel Last Accessible Date | 19-Mar-2013 | | | South Pipe. |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | 4 | 2 | 200mm dent in crown at inlet. |
| Measured Rise (mm) | 931 | | | |
| Measured At Ring No. | | | | near cl |
| Sag (mm) | 269 | | | |
| Percent Sag | 22 | | | |
| Sidewall | | 4 | 2 | Center ring onlt ring with major deflection. |
| Measured Span (mm) | 1433 | | | |
| Measured At Ring No. | | | | near cl |
| Deflection (mm) | 233 | | | |
| Percent Deflection | 19 | | | |
| Floor | | 6 | 6 | |
| Bulge (mm) | | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | | | | |
| Circumferential Seams | | 6 | 5 | |
| Separation (mm) | 170 | | | |
| 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 | | 6 | 6 | Minor superficial rust 3-9 o'clock. |
| Corrosion By Soil (Y/N) | No | | | |
| Corrosion By Water (Y/N) | Yes | | | |

| Bridge Culvert Barrel | | | | |
|---|------|----------|----------|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1200, Type: MP) | | | | |
| Camber POS/ZERO/NEG | ZERO | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 5 | 5 | |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 5 | 5 | |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| Barrel General Rating | | 4 | 2 | |

| Downstream End | | | | |
|--|-------|------|----------|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Span Type: Primary Span) | | | | |
| Direction | | E | | South pipe |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | |
| Headwall | | | X | |
| Collar | | | X | |
| Wingwalls (Shape :) | | | X | |
| Cutoff Wall | | | X | |
| Bevel End | | | N | Snow covered. |
| Heaving (mm) | 50 | | | |
| Invert Above/Below Stream Bed | BELOW | | | |
| Above/Below (mm) | 300 | | | |
| Scour Protection (Type : RIP RAP) (Avg. Rock Size(mm) : 250) | | | N | Snow covered. |
| Scour/Erosion | | | N | Snow covered. |
| Beavers (Y/N) | No | | | |
| Downstream End General Rating | | | N | |

| Upstream End | | | | |
|---|-------|------|-----|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Span Type: Secondary Span) | | | | |
| Direction | | W | | North pipe |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | |
| Headwall | | | X | |
| Collar | | | X | |
| Wingwalls (Shape :) | | | X | |
| Cutoff Wall | | | X | |

| Upstream End | | | | |
|--|-------------|------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Span Type: Secondary Span) | | | | |
| Bevel End | | | N | Snow covered. |
| Heaving (mm) | 50 | | | |
| Invert Above/Below Stream Bed | BELOW | | | |
| Above/Below (mm) | 300 | | | |
| Scour Protection | | | N | Snow covered. |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 250) | | | | |
| Scour/Erosion | | | N | Snow covered. |
| Beavers (Y/N) | No | | | |
| Upstream End General Rating | | | N | |
| Bridge Culvert Barrel | | | | |
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1200, Type: MP) | | | | |
| Barrel Last Accessible Date | 19-Mar-2013 | | | North pipe. |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | 4 | 2 | |
| Measured Rise (mm) | 860 | | | near cl |
| Measured At Ring No. | | | | |
| Sag (mm) | 340 | | | |
| Percent Sag | 28 | | | |
| Sidewall | | 4 | 2 | |
| Measured Span (mm) | 1475 | | | near cl |
| Measured At Ring No. | | | | |
| Deflection (mm) | 275 | | | Rings 2,3, & 4 have major deflections. |
| Percent Deflection | 23 | | | |
| Floor | | 6 | 6 | |
| Bulge (mm) | | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | 6 | 5 | |
| Separation (mm) | 140 | | | |
| 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 | | 6 | 6 | Minor superficial rust 3-9 o'clock. |
| 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 # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1200, Type: MP) | | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 5 | 5 | |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 5 | 5 | |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| Barrel General Rating | | 4 | 2 | |

| Downstream End | | | | |
|---|-------|----------|----------|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Span Type: Secondary Span) | | | | |
| 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 | | 5 | N | Snow covered. |
| Heaving (mm) | 50 | | | |
| Invert Above/Below Stream Bed | BELOW | | | |
| Above/Below (mm) | 300 | | | |
| Scour Protection | | 5 | N | Snow covered. |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 250) | | | | |
| Scour/Erosion | | 5 | N | |
| Beavers (Y/N) | No | | | |
| Downstream End General Rating | | 5 | 5 | GR carried fwd. |

| Structure Usage | | | | |
|--------------------------------------|-----|------|-----|-----------------------------------|
| | | Last | Now | Explanation of Condition |
| Channel (U/S and D/S) | | | | |
| Alignment | | 7 | 5 | Water turns 90 degrees @ u/s end. |
| Bank Stability | | 7 | 7 | |
| HWM (m below Top of Culvert) | 0.5 | | | 0.5m above crown.-21-Oct-2009 |
| Drift (Y/N) | No | | | |
| Channel Bottom Degrading/Aggrading | | | | |
| Beavers (Y/N) | No | | | |
| (Fish Compensation Measure 1 : NONE) | | | | |
| (Fish Compensation Measure 2 : NONE) | | | | |

| Structure Usage | | | | |
|-------------------------------|--|------|-----|--------------------------|
| | | Last | Now | Explanation of Condition |
| Channel General Rating | | 7 | 5 | |

| 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 | Replace pipes. | | | | | |
| OTHER ACTION | | | | | | | |
| OTHER ACTION | | | | | | | |
| OTHER ACTION | | | | | | | |
| Structural Condition Rating (Last/Now) (%) | 44.4/22.2 | Sufficiency Rating (Last/Now) (%) | 48.3/36.7 | Est. Repl. Yr | 2013 | Maint. Reqd. (Y/N) | Yes |
| Special Comments for Next Inspection | Low rating advisory sent to Alan Saunders and David Morrison by email on March 27, 2013. Recommend reducing inspection cycle to 6 months until replaced. | | 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 | Eric Carcoux | | Previous Assistant's Name | | | | |
| Next Inspection Date | 19-Jun-2016 | | Previous Inspection Date | 21-Oct-2009 | | | |
| Inspection Cycle (Default) (months) | 39 | | | | | | |
| Comment | | | | | | | |