

| Bridge Culvert Inspection | | | |
|---------------------------|--|---------------------|---------------|
| Bridge File Number | 74362 -1 Bridge Culvert | Form Type | CULM |
| Year Built | 1977 | Lot No. | 1 |
| Bridge or Town Name | STETTLER | Inspector Name | Jason Saly |
| Located Over | TRIBUTARY TO REDWILLOW CREEK, 5.31.1.5, WATERCRS-ST | Inspector Class | BR CLS A |
| Located On | 56:12 C1 45.373 | Assistant Name | |
| Water Body Cl./Year | | Assistant Class | |
| Navigabil. Cl./Year | | Inspection Date | 14-Feb-2013 |
| Legal Land Location | SE SEC 6 TWP 39 RGE 19 W4M | Data Entry By | Marcia Chavez |
| Longitude, Latitude | -112:43:09, 52:19:06 | Data Entry Date | 14-Mar-2013 |
| Road Authority | Alberta Transportation (AIT) | Reviewer Name | John O'Brien |
| Contract Main. Area | CMA20 | Review Date | 26-Feb-2013 |
| Clear Roadway/Skew | 14.1 / | Dept. Reviewer Name | Chris Black |
| AADT/Year | 3,290 / 2011 (A) | Dept. Review Date | 28-Mar-2013 |
| Road Classification | RAU-209-110 | Follow-Up By | |
| Detour Length (km) | 1 | | |

Bridge Culvert Information

| | | | | | | | | |
|--------------------------|--------|------|----------------|------|--------|---------------|--------------------|-------|
| Number of Culverts | 2 | | | | | | | |
| Pipe # | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | Pl./Slab Thickness | Shape |
| 1 | MAIN | - | 1800 | MP | 300 | 65X13 | 3.5 | ROUND |
| 2 | MAIN | - | 1800 | MP | 300 | | | ROUND |
| Special Features | | | | | | | | |
| Special Features Comment | | | | | | | | |

Utilities (Located at)

| | | | |
|---------------------|---|---------------|-----------------------------------|
| Utility Attachments | | | |
| Telephone | | Gas | |
| Power | At East end over barrel. | Municipal | Street lighting & town utilities. |
| Others | | Problem (Y/N) | Yes |
| Remarks | Utility conduit drilled through both pipes near East end. | | |

Approach Road / Embankment

| | Last | Now | Explanation of Condition |
|--|----------|----------|---|
| Horizontal Alignment | 7 | 7 | In town with town intersections. Access only from West end. East side fenced off & access gates locked. Hwy 56. |
| Vertical Alignment | 9 | 9 | |
| Roadway Width (m) | 14.100 | | 33.2m was measured from West end of pipe to ditch c/l between Hwy 56 & service road (assumed AT r/w limit). |
| Embankment | 7 | N | Snow covered. |
| Sideslope (_:1) | 3.0 | | |
| (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 | E | | South pipe. |
| End Treatment (Concrete, Steel, Others, None) | CONCRETE | | |
| Headwall | 7 | 7 | |
| Collar | X | X | |

| Upstream End | | | | |
|--|-------------|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Span Type: Primary Span) | | | | |
| Wingwalls | | 7 | 7 | |
| (Shape :) | | | | |
| Cutoff Wall | | N | N | |
| Bevel End | | X | X | No bevel, square end. |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | BELOW | | | |
| Above/Below (mm) | 100 | | | |
| Scour Protection | | 7 | N | Snow covered. |
| (Type : CONCRETE) | | | | |
| (Avg. Rock Size(mm) :) | | | | |
| Scour/Erosion | | 7 | N | Snow covered. |
| Beavers (Y/N) | No | | | |
| Upstream End General Rating | | 7 | 7 | |
| Bridge Culvert Barrel | | | | |
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1800, Type: MP) | | | | |
| Barrel Last Accessible Date | 14-Feb-2013 | | | Gates open at both ends. S pipe; inspected entire 300m. |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | 2 | 2 | Top culvert buckled down @ seam approx 45m from West end on South pipe, which put it near sidewalk on service road repaired with plate over top - photo. (17.2% sag) (25mm dia perforations near East end. 28Sep2006). |
| Measured Rise (mm) | | | | |
| Measured At Ring No. | | | | |
| Sag (mm) | 305 | | | |
| Percent Sag | 17 | | | |
| Sidewall | | 2 | 2 | 17.2%. Cracked & separating below springline due to corrosion. Span 1990 under Hwy, 2105 approx 1/2 L. Multiple rings fully separated at 7 o'clock position (photos). |
| Measured Span (mm) | 1990 | | | |
| Measured At Ring No. | | | | |
| Deflection (mm) | 305 | | | |
| Percent Deflection | 17 | | | |
| Floor | | 3 | 3 | Storm drains cut into pipe at numerous locations. |
| Bulge (mm) | 50 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | 3 | 2 | Ends of pipe bent at several circumferential seams. Floor covered with silt. Circumferential seams filled with grout but grout is cracking & falling out. (Dirt infiltration @ failed circ seam South pipe. |
| Separation (mm) | 100 | | | |
| 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) | | | | |

| Bridge Culvert Barrel | | | | |
|---|----------|----------|----------|---|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1800, Type: MP) | | | | |
| Coating | | N | 2 | Perforations on roof about 25mm-75mm dia. Floor perforations throughout pipe. |
| Corrosion By Soil (Y/N) | Yes | | | |
| Corrosion By Water (Y/N) | Yes | | | |
| Camber POS/ZERO/NEG | ZERO | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 6 | 6 | |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 7 | 7 | |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| Barrel General Rating | | 2 | 2 | |
| Downstream 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 :) | | | | |
| Cutoff Wall | | X | X | |
| Bevel End | | 7 | 7 | |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | | | | (At streambed. 10May2011). |
| Above/Below (mm) | 0 | | | |
| Scour Protection | | 7 | N | Snow covered. |
| (Type : NATURAL) | | | | |
| (Avg. Rock Size(mm) :) | | | | |
| Scour/Erosion | | 7 | N | Snow covered. |
| Beavers (Y/N) | No | | | |
| Downstream End General Rating | | 7 | 7 | |
| Upstream End | | | | |
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Span Type: Secondary Span) | | | | |
| Direction | | E | | North barrel. |
| End Treatment (Concrete, Steel, Others, None) | CONCRETE | | | |
| Headwall | | 7 | 7 | |
| Collar | | X | X | |

| Upstream End | | | | |
|--|-------|----------|----------|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Span Type: Secondary Span) | | | | |
| Wingwalls | | 7 | 7 | |
| (Shape :) | | | | |
| Cutoff Wall | | N | N | |
| Bevel End | | X | X | |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | BELOW | | | |
| Above/Below (mm) | 200 | | | |
| Scour Protection | | 7 | N | Snow covered |
| (Type : CONCRETE) | | | | |
| (Avg. Rock Size(mm) :) | | | | |
| Scour/Erosion | | 7 | N | Snow covered |
| Beavers (Y/N) | No | | | |
| Upstream End General Rating | | 7 | 7 | |

| Bridge Culvert Barrel | | | | |
|--|-------------|------|-----|---|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1800, Type: MP) | | | | |
| Barrel Last Accessible Date | 14-Jun-2001 | | | North pipe. Unable to access due to ice height. Condition appears to be similar to S pipe from what was visible; this pipe is also lower than S pipe. Accessed E half fo 300m pipe, but nothing inspected under hwy 56; ice withing 850 of crown. Viewed from end; condition appears similar to S pipe. |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | N | N | (Perforations in roof. 14Jun2001). |
| Measured Rise (mm) | | | | |
| Measured At Ring No. | | | | |
| Sag (mm) | 50 | | | |
| Percent Sag | | | | |
| Sidewall | | N | N | (Span 1850 near c/l. 03/02/07) (Sag estimate. Perforations in sidewall. 14Jun2001). Perforations seen on N wall near E end. |
| Measured Span (mm) | 1850 | | | |
| Measured At Ring No. | | | | |
| Deflection (mm) | 50 | | | |
| Percent Deflection | | | | |
| Floor | | N | N | (Silt covered. 10May2011). |
| Bulge (mm) | 0 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | N | N | |
| Separation (mm) | 50 | | | |

| Bridge Culvert Barrel | | | | |
|---|--|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): , Rise (mm): 1800, Type: MP) | | | | |
| 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 | | N | N | (Perforation beginning especially 1/2 L and soil to 3/4 L. 14/June/2001). Perforations seen N sidewall near E end. |
| Corrosion By Soil (Y/N) | | Yes | | |
| Corrosion By Water (Y/N) | | Yes | | |
| Camber POS/ZERO/NEG | | NEG | | |
| Ponding (Y/N) | | No | | |
| Fish Passage Adequacy | | 5 | 5 | |
| Baffle | | X | X | (Type :) |
| Waterway Adequacy | | 6 | 6 | |
| Icing (Y/N) | | No | | |
| Siltting (Y/N) | | Yes | | |
| Drift (Y/N) | | No | | |
| Barrel General Rating | | 2 | 2 | GR carried forward since 14Jun2001. |
| Downstream 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 | X | |
| Collar | | X | X | |
| Wingwalls | | X | X | (Shape :) |
| Cutoff Wall | | X | X | |
| Bevel End | | 7 | 7 | |
| Heaving (mm) | | 0 | | |
| Invert Above/Below Stream Bed | | BELOW | | |
| Above/Below (mm) | | 300 | | Snow covered |
| Scour Protection | | 7 | N | |
| (Type : NATURAL) | | | | |
| (Avg. Rock Size(mm) :) | | | | |
| Scour/Erosion | | 7 | N | Snow covered |
| Beavers (Y/N) | | No | | |
| Downstream End General Rating | | 7 | 7 | |

| Structure Usage | | | | |
|--|-----------|----------|----------|-------------------------------|
| | | Last | Now | Explanation of Condition |
| Channel (U/S and D/S) | | | | |
| Alignment | | 8 | 8 | |
| Bank Stability | | 8 | 8 | |
| HWM (m below Top of Culvert) | | | | HWM not visible. |
| Drift (Y/N) | No | | | |
| Channel Bottom Degrading/Aggrading | AGGRADING | | | (North pipe only. 10May2011). |
| Beavers (Y/N) | No | | | |
| (Fish Compensation Measure 1 : NONE) | | | | |
| (Fish Compensation Measure 2 : NONE) | | | | |
| Channel General Rating | | 8 | 8 | |

| 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 pipe or consider options. | | | | | |
| OTHER ACTION | | | | | | | |
| OTHER ACTION | | | | | | | |
| OTHER ACTION | | | | | | | |
| Structural Condition Rating (Last/Now) (%) | 22.2/22.2 | Sufficiency Rating (Last/Now) (%) | 47.8/47.7 | Est. Repl. Yr | 2013 | Maint. Req. (Y/N) | Yes |
| Special Comments for Next Inspection | LRA sent to Donald Saunders on 21Feb2013. | | 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 | Owen Salava | | Previous Assistant's Name | | | | |
| Next Inspection Date | 14-Nov-2014 | | Previous Inspection Date | 10-May-2011 | | | |
| Inspection Cycle (Default) (months) | 21 | | | | | | |
| Comment | | | | | | | |