

| Bridge Culvert Inspection | | | |
|---------------------------|---|---------------------|---------------|
| Bridge File Number | 75619 -1 Bridge Culvert | Form Type | CULM |
| Year Built | 1964 | Lot No. | 2 |
| Bridge or Town Name | HOBHEMA | Inspector Name | Owen Salava |
| Located Over | TRIBUTARY TO MASKWA CREEK, 5.47.4.1.3, WATERCRS-ST | Inspector Class | BR CLS A |
| Located On | 2:28 R1 23.341;2:28 L1 23.342 | Assistant Name | |
| Water Body Cl./Year | | Assistant Class | |
| Navigabil. Cl./Year | | Inspection Date | 21-Feb-2013 |
| Legal Land Location | NE SEC 13 TWP 45 RGE 26 W4M | Data Entry By | Marcia Chavez |
| Longitude, Latitude | -113:38:37, 52:53:07 | Data Entry Date | 11-Mar-2013 |
| Road Authority | Alberta Transportation (AIT) | Reviewer Name | John O'Brien |
| Contract Main. Area | CMA17 | Review Date | 27-Feb-2013 |
| Clear Roadway/Skew | 22.6 / | Dept. Reviewer Name | Chris Black |
| AADT/Year | 24,530 / 2011 (A) | Dept. Review Date | 14-Mar-2013 |
| Road Classification | RAD-412.4-120 | Follow-Up By | |
| Detour Length (km) | 1 | | |

Bridge Culvert Information

| | | | | | | | | |
|--------------------------|--------|------|----------------|------|--------|---------------|--------------------|---------|
| Number of Culverts | 3 | | | | | | | |
| Pipe # | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | Pl./Slab Thickness | Shape |
| 1 | MAIN | 2610 | 2877 | SPE | 107.3 | 152X51 | 3.0,3.0,3.0 | ELLIPSE |
| 2 | MAIN | 2610 | 2877 | SPE | 107.3 | 152X51 | 3.0,3.0,3.0 | ELLIPSE |
| 3 | MAIN | 2610 | 2877 | SPE | 107.3 | 152X51 | 3.0,3.0,3.0 | ELLIPSE |
| Special Features | | | | | | | | |
| Special Features Comment | | | | | | | | |

Utilities (Located at)

| | | | |
|---------------------|------------------|---------------|----|
| Utility Attachments | | | |
| Telephone | Yes - no marker. | Gas | |
| Power | 2 wire 50m East. | Municipal | |
| Others | | Problem (Y/N) | No |
| Remarks | | | |

Approach Road / Embankment

| | | Last | Now | Explanation of Condition |
|--|--------|----------|----------|--------------------------|
| Horizontal Alignment | | 8 | 8 | |
| Vertical Alignment | | 8 | 8 | |
| Roadway Width (m) | 22.600 | | | |
| Embankment | | 7 | 7 | |
| Sideslope (__:1) | 3.0 | | | |
| (Height of Cover(m) : 2.5) | | | | |
| Guardrail (Y/N) | Yes | | | |
| Approach Road / Embankment General Rating | | 8 | 8 | |

Upstream End

| Culvert Component | | Last | Now | Explanation of Condition |
|---|-------|------|-----|--------------------------|
| (Pipe # : 1, Span Type: Primary Span) | | | | |
| Direction | | W | | Center pipe. |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | |
| Headwall | | X | X | |
| Collar | | X | X | |

| Upstream End | | | | |
|--|-----|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Span Type: Primary Span) | | | | |
| Wingwalls | | X | X | |
| (Shape :) | | | | |
| Cutoff Wall | | X | X | |
| Bevel End | | 5 | 4 | Bevel projects from fill 0.3m. Roof at bevel damaged, torn. |
| Heaving (mm) | 200 | | | |
| Invert Above/Below Stream Bed | | | | |
| Above/Below (mm) | 0 | | | |
| Scour Protection | | 5 | N | Snow covered. |
| (Type : NATURAL) | | | | |
| (Avg. Rock Size(mm) :) | | | | |
| Scour/Erosion | | 5 | N | Snow covered. |
| Beavers (Y/N) | No | | | |
| Upstream End General Rating | | 5 | 4 | |

| Bridge Culvert Barrel | | | | |
|---|-------------|------|-----|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2610, Rise (mm): 2877, Type: SPE) | | | | |
| Barrel Last Accessible Date | 21-Feb-2013 | | | Center pipe. |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | N | 5 | Could not measure rise due to ice. 700mm bulge down @ R1 roof, outside of fill, no problem. Est. 2%. |
| Measured Rise (mm) | 2827 | | | |
| Measured At Ring No. | 9 | | | |
| Sag (mm) | 50 | | | |
| Percent Sag | 2 | | | |
| Sidewall | | N | 6 | Span @ R3 = 2625, 15mm. R13 = 2633, 23mm. R23 = 2658, 48mm. 2.5%. |
| Measured Span (mm) | 2675 | | | |
| Measured At Ring No. | 9 | | | |
| Deflection (mm) | 65 | | | |
| Percent Deflection | 3 | | | |
| Floor | | N | N | Iced over. |
| Bulge (mm) | 0 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | N | 6 | |
| Separation (mm) | 0 | | | |
| Longitudinal Seams | | N | 6 | 1N |
| 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 | | | |

| Bridge Culvert Barrel | | | | | |
|--|-------|----------|----------|---------------------------------|--|
| Culvert Component | | Last | Now | Explanation of Condition | |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2610, Rise (mm): 2877, Type: SPE) | | | | | |
| Coating | | 5 | 5 | Superficial corrosion. | |
| Corrosion By Soil (Y/N) | Yes | | | | |
| Corrosion By Water (Y/N) | Yes | | | | |
| Camber POS/ZERO/NEG | NEG | | | | |
| Ponding (Y/N) | No | | | | |
| Fish Passage Adequacy | | 7 | 7 | | |
| Baffle | | X | X | | |
| (Type :) | | | | | |
| Waterway Adequacy | | 7 | 7 | Minor drift. | |
| Icing (Y/N) | No | | | | |
| Silting (Y/N) | Yes | | | | |
| Drift (Y/N) | Yes | | | | |
| Barrel General Rating | | N | 5 | | |
| Downstream End | | | | | |
| Culvert Component | | Last | Now | Explanation of Condition | |
| (Pipe # : 1, Span Type: Primary Span) | | | | | |
| Direction | | E | | Center pipe. | |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | | |
| Headwall | | X | X | | |
| Collar | | X | X | | |
| Wingwalls | | X | X | | |
| (Shape :) | | | | | |
| Cutoff Wall | | X | X | | |
| Bevel End | | 5 | 5 | Bevel projects from fill 300mm. | |
| Heaving (mm) | 150 | | | | |
| Invert Above/Below Stream Bed | | | | | |
| Above/Below (mm) | 0 | | | | |
| Scour Protection | | 5 | N | Snow covered. | |
| (Type : NATURAL) | | | | | |
| (Avg. Rock Size(mm) :) | | | | | |
| Scour/Erosion | | 5 | N | Snow covered. | |
| Beavers (Y/N) | No | | | | |
| Downstream End General Rating | | 5 | 5 | | |
| 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 | X | | |
| Collar | | X | X | | |

| Upstream End | | | | |
|---|-------------|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Span Type: Secondary Span) | | | | |
| Wingwalls | | X | X | |
| (Shape :) | | | | |
| Cutoff Wall | | X | X | |
| Bevel End | | 5 | 4 | Damage to roof, torn. |
| Heaving (mm) | 200 | | | |
| Invert Above/Below Stream Bed | | | | |
| Above/Below (mm) | 0 | | | |
| Scour Protection | | 5 | N | Snow covered. |
| (Type : NATURAL) | | | | |
| (Avg. Rock Size(mm) :) | | | | |
| Scour/Erosion | | 5 | N | Snow covered. |
| Beavers (Y/N) | No | | | |
| Upstream End General Rating | | 5 | 4 | |
| Bridge Culvert Barrel | | | | |
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): 2610, Rise (mm): 2877, Type: SPE) | | | | |
| Barrel Last Accessible Date | 21-Feb-2013 | | | North pipe. |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | N | 5 | Damage to the roof at the U/S end outside of fill, no problem. Could not measure rise due to ice and silt. |
| Measured Rise (mm) | 2817 | | | |
| Measured At Ring No. | 9 | | | |
| Sag (mm) | 60 | | | (2.1%. 14Jan2010). |
| Percent Sag | 2 | | | |
| Sidewall | | N | 6 | Span @ R3 = 2630, 20mm. R13 = 2630, 20mm. R23 = 2655, 45mm. |
| Measured Span (mm) | 2677 | | | |
| Measured At Ring No. | 9 | | | |
| Deflection (mm) | 67 | | | 2.6%. |
| Percent Deflection | 3 | | | |
| Floor | | N | N | Ice |
| Bulge (mm) | 0 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | N | 6 | |
| Separation (mm) | 0 | | | |
| Longitudinal Seams | | N | 6 | |
| 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 | | | |

| Bridge Culvert Barrel | | | | |
|---|-----|----------|----------|--|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 2, Secondary Span, Location Code: MAIN, Span (mm): 2610, Rise (mm): 2877, Type: SPE) | | | | |
| Coating | | N | 5 | Minor superficial corrosion. (Some perforations South barrel inlet bevel. 03/05/21). |
| Corrosion By Soil (Y/N) | Yes | | | |
| Corrosion By Water (Y/N) | Yes | | | |
| Camber POS/ZERO/NEG | NEG | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 7 | 7 | |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 7 | 7 | Minor. |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | Yes | | | |
| Drift (Y/N) | Yes | | | |
| Barrel General Rating | | N | 5 | |

| Downstream End | | | | | |
|--|-------|----------|----------|---|--|
| Culvert Component | | Last | Now | Explanation of Condition | |
| (Pipe # : 2, Span Type: Secondary Span) | | | | | |
| Direction | | E | | 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 | | 5 | 5 | (Minor cut to roof at protrusion from slope. 12Jul2011) - Snow covered. | |
| Heaving (mm) | 200 | | | | |
| Invert Above/Below Stream Bed | | | | | |
| Above/Below (mm) | 0 | | | | |
| Scour Protection | | 5 | N | Snow covered. | |
| (Type : NATURAL) | | | | | |
| (Avg. Rock Size(mm) :) | | | | | |
| Scour/Erosion | | 5 | N | Snow covered. | |
| Beavers (Y/N) | No | | | | |
| Downstream End General Rating | | 5 | 5 | | |

| Upstream End | | | | |
|--|-------|------|-----|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 3, Span Type: Secondary Span) | | | | |
| Direction | | W | | South pipe. |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | |
| Headwall | | X | X | |
| Collar | | X | X | |

| Upstream End | | | | |
|--|----|----------|----------|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 3, Span Type: Secondary Span) | | | | |
| Wingwalls | | X | X | |
| (Shape :) | | | | |
| Cutoff Wall | | X | X | |
| Bevel End | | 5 | 5 | Bevel bent inwards. |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | | | | |
| Above/Below (mm) | | | | |
| Scour Protection | | 5 | N | Snow covered. |
| (Type : NATURAL) | | | | |
| (Avg. Rock Size(mm) :) | | | | |
| Scour/Erosion | | 5 | N | Snow covered. |
| Beavers (Y/N) | No | | | |
| Upstream End General Rating | | 5 | 5 | |

| Bridge Culvert Barrel | | | | |
|---|-------------|------|-----|---|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 3, Secondary Span, Location Code: MAIN, Span (mm): 2610, Rise (mm): 2877, Type: SPE) | | | | |
| Barrel Last Accessible Date | 21-Feb-2013 | | | South pipe. |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | N | 6 | Unable to measure due to ice. Minor dent at exposed inlet end. |
| Measured Rise (mm) | | | | |
| Measured At Ring No. | | | | |
| Sag (mm) | | | | Est 3.5%. |
| Percent Sag | | | | |
| Sidewall | | N | 5 | Isolated cracks in the sidewall just below the bolt line; R5, 120mm and R7, 150mm. Span @ R9 = 2686, R13 = 2675, R23 = 2688. |
| Measured Span (mm) | 2707 | | | |
| Measured At Ring No. | 3 | | | |
| Deflection (mm) | 97 | | | 3.7%. |
| Percent Deflection | 4 | | | |
| Floor | | N | N | Ice |
| Bulge (mm) | 0 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | N | 6 | |
| Separation (mm) | 0 | | | |
| Longitudinal Seams | | N | 6 | |
| 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 | | | |

| Bridge Culvert Barrel | | | | | |
|--|-------|----------|----------|---|--|
| Culvert Component | | Last | Now | Explanation of Condition | |
| (Pipe # : 3, Secondary Span, Location Code: MAIN, Span (mm): 2610, Rise (mm): 2877, Type: SPE) | | | | | |
| Coating | | N | 5 | Superficial corrosion. | |
| Corrosion By Soil (Y/N) | Yes | | | | |
| Corrosion By Water (Y/N) | Yes | | | | |
| Camber POS/ZERO/NEG | NEG | | | | |
| Ponding (Y/N) | No | | | | |
| Fish Passage Adequacy | | 7 | 7 | | |
| Baffle | | X | X | | |
| (Type :) | | | | | |
| Waterway Adequacy | | 7 | 7 | Minor. | |
| Icing (Y/N) | No | | | | |
| Silting (Y/N) | Yes | | | | |
| Drift (Y/N) | Yes | | | | |
| Barrel General Rating | | N | 5 | | |
| Downstream End | | | | | |
| Culvert Component | | Last | Now | Explanation of Condition | |
| (Pipe # : 3, Span Type: Secondary Span) | | | | | |
| Direction | | E | | South pipe. | |
| End Treatment (Concrete, Steel, Others, None) | STEEL | | | | |
| Headwall | | X | X | | |
| Collar | | X | X | | |
| Wingwalls | | X | X | | |
| (Shape :) | | | | | |
| Cutoff Wall | | X | X | | |
| Bevel End | | 5 | 5 | | |
| Heaving (mm) | 0 | | | | |
| Invert Above/Below Stream Bed | | | | | |
| Above/Below (mm) | | | | | |
| Scour Protection | | 5 | N | Snow covered. | |
| (Type : NATURAL) | | | | | |
| (Avg. Rock Size(mm) :) | | | | | |
| Scour/Erosion | | 5 | N | Snow covered. | |
| Beavers (Y/N) | No | | | | |
| Downstream End General Rating | | 5 | 5 | | |
| Structure Usage | | | | | |
| | | Last | Now | Explanation of Condition | |
| Channel (U/S and D/S) | | | | | |
| Alignment | | 4 | 4 | Outlets empty into ditch area before entering into service road inlets causing swirling currents.' N pipe poorly aligned with service road. BF81725 E of pipes. No action. | |
| Bank Stability | | 6 | 6 | | |
| HWM (m below Top of Culvert) | | | | HWM not visible. | |
| Drift (Y/N) | No | | | | |

| Structure Usage | | | | |
|--|----|----------|----------|--------------------------|
| | | Last | Now | Explanation of Condition |
| Channel Bottom Degrading/Aggrading | | | | Stable. |
| Beavers (Y/N) | No | | | |
| (Fish Compensation Measure 1 : NONE) | | | | |
| (Fish Compensation Measure 2 : NONE) | | | | |
| Channel General Rating | | 4 | 4 | |

| 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 | Jack out damaged ends & trim steel where necessary. | | | | | |
| OTHER ACTION | | | | | | | |
| OTHER ACTION | | | | | | | |
| OTHER ACTION | | | | | | | |
| Structural Condition Rating (Last/Now) (%) | 55.6/55.6 | Sufficiency Rating (Last/Now) (%) | 58.1/57.1 | Est. Repl. Yr | 2030 | Maint. Req. (Y/N) | Yes |
| Special Comments for Next Inspection | Monitor perforations. (No repair is required at this time for d/s end erosion; repair when condition worsens. 03/07/01 - D. Lam). | | 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 | 21-Nov-2014 | Previous Inspection Date | 12-Jul-2011 | | | | |
| Inspection Cycle (Default) (months) | 21 | | | | | | |
| Comment | | | | | | | |