

| Bridge Culvert Inspection | | | | |
|---------------------------|--------------------------------------|--|---------------------|----------------|
| Bridge File Number | 76002 S-1 Bridge Culvert | | Form Type | CULE |
| Year Built | 1982 | | Lot No. | 1 |
| Bridge or Town Name | FT MCMURRAY | | Inspector Name | Wade Nanninga |
| Located Over | HALFWAY CK, 8.11.39.1.3, WATERCRS-ST | | Inspector Class | BR CLS A |
| Located On | 63:10 L1 38.277 | | Assistant Name | |
| Water Body Cl./Year | | | Assistant Class | |
| Navigabil. Cl./Year | | | Inspection Date | 16-Nov-2011 |
| Legal Land Location | NE SEC 26 TWP 87 RGE 9 W4M | | Data Entry By | Lisa Fairhurst |
| Longitude, Latitude | -111:18:58, 56:34:47 | | Data Entry Date | 12-Dec-2011 |
| Road Authority | Alberta Transportation (AIT) | | Reviewer Name | Eric Carcoux |
| Contract Main. Area | CMA07 | | Review Date | 23-Nov-2011 |
| Clear Roadway/Skew | 13.4 / -40 deg. (LHF) | | Dept. Reviewer Name | Brent Herrick |
| AADT/Year | 6,900 / 2010 (A) | | Dept. Review Date | 19-Dec-2011 |
| Road Classification | RAD-412.4-120 | | Follow-Up By | |
| Detour Length (km) | 1 | | | |

Bridge Culvert Information

| Number of Culverts | 1 | | | | | | | |
|--------------------------|--------|------|----------------|------|--------|---------------|--------------------|---------|
| Pipe # | Barrel | Span | Rise (or Dia.) | Type | Length | Corr. Profile | PI./Slab Thickness | Shape |
| 1 | U/S | - | 3050 | SP | 8.534 | 152X51 | 3.0 | ROUND |
| 1 | MAIN | 2314 | 2552 | SPE | 60.518 | 152X51 | 3.0 | ELLIPSE |
| 1 | D/S | - | 3050 | SP | 9.144 | 152X51 | 3.0 | ROUND |
| Special Features | | | | | | | | |
| Special Features Comment | | | | | | | | |

Utilities (Located at)

| | | | |
|---------------------|------------------------------|---------------|----|
| Utility Attachments | | | |
| Telephone | E and W ROW | Gas | |
| Power | 3 wire E ROW, 5 wire 100m N. | Municipal | |
| Others | | Problem (Y/N) | No |
| Remarks | | | |

Approach Road / Embankment

| | | Last | Now | Explanation of Condition |
|--|--------|----------|----------|--------------------------|
| Horizontal Alignment | | 7 | 7 | Curve 200m North |
| Vertical Alignment | | 8 | 8 | |
| Roadway Width (m) | 13.400 | | | |
| Embankment | | 7 | 7 | |
| Sideslope (__:1) | 6.0 | | | |
| (Height of Cover(m) : 3.9) | | | | |
| Guardrail (Y/N) | No | | | |
| Approach Road / Embankment General Rating | | 7 | 7 | |

Upstream End

| Culvert Component | | Last | Now | Explanation of Condition |
|---|----------|------|-----|--------------------------|
| Direction | | E | | |
| End Treatment (Concrete, Steel, Others, None) | CONCRETE | | | |
| Headwall | | 9 | 9 | |
| Collar | | 9 | 9 | |
| Wingwalls | | X | X | |
| (Shape :) | | | | |

| Upstream End | | | | |
|--|-------------|----------|----------|---|
| Culvert Component | | Last | Now | Explanation of Condition |
| Cutoff Wall | | N | N | |
| Bevel End | | 9 | 9 | |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | BELOW | | | |
| Above/Below (mm) | 100 | | | |
| Scour Protection | | 7 | 7 | |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 400) | | | | |
| Scour/Erosion | | 7 | 7 | |
| 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: U/S, Span (mm): , Rise (mm): 3050, Type: SP) | | | | |
| Barrel Last Accessible Date | 16-Nov-2011 | | | |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | 5 | 5 | |
| Measured Rise (mm) | | | | |
| Measured At Ring No. | | | | |
| Sag (mm) | | | | |
| Percent Sag | 5 | | | est. 5% |
| Sidewall | | N | 3 | 3 cracked rings.- |
| Measured Span (mm) | 2420 | | | |
| Measured At Ring No. | 12 | | | |
| Deflection (mm) | 106 | | | |
| Percent Deflection | 5 | | | |
| Floor | | N | 3 | Loss of section at R 8, 9, 12 - 4:30 @ 6 o'clock |
| Bulge (mm) | 0 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | Yes | | | |
| Circumferential Seams | | 5 | 5 | |
| Separation (mm) | 0 | | | |
| Longitudinal Seams | | N | 3 | R 8, 9, 12 - No change from 2004 |
| Total No. of Cracked Rings | 3 | | | |
| Total No. of Rings with Two Cracked Seams | | | | |
| Min. Remaining Steel Between Cracks (mm) | 80 | | | |
| Proper Lap (Y/N) | No | | | |
| Longitudinal Stagger (Y/N) | No | | | |
| Coating | | N | 3 | Isolated perforations in sidewall. Extensive perforations in floor.- Loss of section from 4:30 - 5 o'clock at R 8,9,12. pitting lower half. |
| Corrosion By Soil (Y/N) | Yes | | | |
| Corrosion By Water (Y/N) | Yes | | | |

| Bridge Culvert Barrel | | | | |
|--|------|----------|----------|--------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): , Rise (mm): 3050, Type: SP) | | | | |
| Camber POS/ZERO/NEG | ZERO | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 6 | 6 | |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 6 | 6 | |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| Barrel Extension General Rating | | 3 | 3 | |

| Bridge Culvert Barrel | | | | |
|--|-------------|------|-----|---------------------------|
| Culvert Component | | Last | Now | Explanation of Condition |
| (Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2314, Rise (mm): 2552, Type: SPE) | | | | |
| Barrel Last Accessible Date | 16-Nov-2011 | | | Ice/silt along floor |
| Special Features | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Special Feature | | | | |
| (Type :) | | | | |
| Roof | | 9 | 9 | estimated |
| Measured Rise (mm) | | | | |
| Measured At Ring No. | | | | |
| Sag (mm) | | | | |
| Percent Sag | 1 | | | |
| Sidewall | | 9 | 9 | At c/l of East extension. |
| Measured Span (mm) | 3060 | | | |
| Measured At Ring No. | | | | |
| Deflection (mm) | 10 | | | |
| Percent Deflection | 1 | | | |
| Floor | | N | N | |
| Bulge (mm) | 0 | | | |
| Measured At Ring No. | | | | |
| Abrasion (Y/N) | No | | | |
| Circumferential Seams | | 9 | 9 | |
| Separation (mm) | 0 | | | |
| Longitudinal Seams | | 9 | 9 | |
| 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): 2314, Rise (mm): 2552, Type: SPE) | | | | |
| Coating | | 9 | 8 | |
| Corrosion By Soil (Y/N) | No | | | |
| Corrosion By Water (Y/N) | No | | | |
| Camber POS/ZERO/NEG | ZERO | | | |
| Ponding (Y/N) | No | | | |
| Fish Passage Adequacy | | 7 | 7 | |
| Baffle | | X | X | |
| (Type :) | | | | |
| Waterway Adequacy | | 7 | 7 | |
| Icing (Y/N) | No | | | |
| Silting (Y/N) | No | | | |
| Drift (Y/N) | No | | | |
| Barrel General Rating | | 9 | 9 | |
| Downstream 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 | |
| Bevel End | | 9 | 9 | |
| Heaving (mm) | 0 | | | |
| Invert Above/Below Stream Bed | ABOVE | | | |
| Above/Below (mm) | 200 | | | |
| Scour Protection | | 8 | 7 | |
| (Type : RIP RAP) | | | | |
| (Avg. Rock Size(mm) : 300) | | | | |
| Scour/Erosion | | 8 | 7 | |
| Beavers (Y/N) | No | | | |
| Downstream End General Rating | | 8 | 7 | |
| Structure Usage | | | | |
| | | Last | Now | Explanation of Condition |
| Channel (U/S and D/S) | | | | |
| Alignment | | 8 | 8 | |
| Bank Stability | | 7 | 7 | |
| HWM (m below Top of Culvert) | | | | HWM not visible. |
| Drift (Y/N) | No | | | |
| Channel Bottom Degrading/Aggrading | | | | |
| Beavers (Y/N) | No | | | |

| Structure Usage | | | | |
|--|--|----------|----------|--------------------------|
| | | Last | Now | Explanation of Condition |
| (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 | | | | | | | |
| REMOVE DRIFT ACCUMULATION | | | | | | | |
| INSTALL CONCRETE/STEEL LINING | | | | | | | |
| INSTALL STRUTS | | | | | | | |
| INSTALL CONCRETE COLLAR/CUTOFF | | | | | | | |
| REPAIR SEAMS | | | | | | | |
| OTHER ACTION | 2015 | Install liner. | | | | | |
| OTHER ACTION | | | | | | | |
| OTHER ACTION | | | | | | | |
| OTHER ACTION | | | | | | | |
| Structural Condition Rating (Last/Now) (%) | 33.3/33.3 | Sufficiency Rating (Last/Now) (%) | 51.3/50.6 | Est. Repl. Yr | 2015 | Maint. Req. (Y/N) | Yes |
| Special Comments for Next Inspection | Monitor cracking in longitudinal seams and corrosion | | 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 | Wade Nanninga | | Previous Assistant's Name | | | | |
| Next Inspection Date | 16-Aug-2013 | | Previous Inspection Date | 10-Mar-2010 | | | |
| Inspection Cycle (Default) (months) | 21 | | | | | | |
| Comment | | | | | | | |