## Bridge Inspection

| | | | |
|---|---|---|---|
| Bridge File Number | 75337 N-1 Bridge | Form Type | SG |
| Year Built/Year Supstr | 1962/1962 | Lot No. | 1 |
| | | Inspector Name | Randy Bredo |
| Bridge or Town Name | RED DEER | Inspector Class | BR CLS A |
| Located Over | CNR | Assistant Name | |
| Located On | 2:26 R1 2.369 | Assistant Class | |
| Water Body Cl./Year | | Inspection Date | 18-Oct-2012 |
| Navigabil. Cl./Year | | Data Entry By | Marcia Chavez |
| Legal Land Location | SE SEC 8 TWP 39 RGE 27 W4M | Data Entry Date | 05-Nov-2012 |
| Longitude, Latitude | -113:51:04, 52:20:15 | Reviewer Name | John O'Brien |
| Road Authority | Alberta Transportation (AIT) | Review Date | 01-Nov-2012 |
| Contract Main. Area | CMA19 | Dept. Reviewer Name | Chris Black |
| Clear Roadway/Skew | 12.2 / 41 deg. (RHF) | Dept. Review Date | 30-Nov-2012 |
| AADT/Year | 35,980 / 2011 (A) | Follow-Up By | |
| Road Classification | RFD-412.4-130 | | |
| Detour Length (km) | 1 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Allowable Load (t): | Single | CS1 57 GIRDER | Semi | CS2 75 GIRDER | Train | CS3 90 GIRDER | ---> On Critical Spans<br>--->Critical Member |
| Design Loading: | | HS20 | | | | | ---> Primary Span |

## Posting Information

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Required Vert. Clearance Posting (m) | | | | | | | | | | | | |
| Posted Vertical Clearance (Y/N) | | | | No | | | | | | | | |
| Posted: | Lane | NB | On Bridge (m) | | In Advance (Y/N) | No | Lane | SB | On Bridge (m) | | In Advance (Y/N) | No |
| Remarks | Not required | | | | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Required Load Posting (t) | | | Single | | Semi | | Truck Train | |
| Posted Loading (t) | | | Single | | Semi | | Truck Train | |
| Posted: | Lane | NB | At Junction (Y/N) | No | In Advance (Y/N) | No | At Bridge (Y/N) | No |
| Posted: | Lane | SB | At Junction (Y/N) | | In Advance (Y/N) | | At Bridge (Y/N) | |
| Remarks | Not required | | | | | | | |

| | |
|---|---|
| Hazard Marker At Bridge (Y/N) | No |
| Remarks | |
| Other Sign Types | |

## Utilities (Located at)

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

## Approach Road

| | | Last | Now | Explanation of Condition |
|---|---|---|---|---|
| Horizontal Alignment | | 8 | 8 | Highway crests over RR. |
| Vertical Alignment | | 7 | 7 | |
| Roadway Width (m) | 12.100 | | | |
| Approach Bump | | 7 | 7 | |
| Guardrail (Y/N) | Yes | | | No rail @ NW corner.<br>Accident damage at NW creasing transition section & shearing 2 splice bolts.<br>Not fully a PL2 standard. |
| Guardrail | | 7 | 4 | |
| Length (m) | 99.000 | | | |
| Current Standard (Y/N) | No | | | |
| Termination Type | Turn Down | | | |
| Drainage | | 5 | 4 | NW ditch has caused a shallow slide of the fill which now appears stabilized - monitor. |
| **Approach Road General Rating** | | **7** | **7** | |

| Superstructure | | | |
|---|---|---|---|
| **Bridge Component** | **Last** | **Now** | **Explanation of Condition** |
| (Primary Span : **RB, 3 Spans, Lengths(m): 17.7-22.6-17.7, A-Ident Number: A0385-02**) | | | |
| **Special Features** | | | |
| Special Feature | | X | |
| (Type : ) | | | |
| Special Feature | | X | |
| (Type : ) | | | |
| Wearing Surface/Deck Top Detail Ratings | | | |
| | N (%) / 1 (%) / 2 (%) / 3 (%) | | |
| **Last** | 0 / 0 / 0 / 0 | | |
| **Now** | 0.0 / 0.0 / 0.0 / 0.0 | | |
| Wearing Surface | 7 | 4 | Shallow rutting in wheel paths - monitor. |
| (Material Type : **ACP - CONVENTIONAL CHIP SEAL COAT**) | | | |
| (Thickness(mm) : **50**) | | | |
| Deck Top | N | N | |
| Deck Rideability | 7 | 7 | |
| Deck Joints | 6 | 6 | 7 missing plow deflectors @ S, 6 missing @ N. |
| Temperature (deg. C) 9 | | | |
| (Expansion Type : **GLAND (SILICON SEAL)**) | | | |
| (Fixed Type : ) | | | |
| Gap Size (mm) / Gap Location | | | |
| 75 / S. abut | | | |
| 69 / N. abut | | | |
| Deck Drainage | 7 | 7 | |
| Drains Clogged (Y/N) No | | | |
| Curbs/Median | 5 | 5 | 0.3mm to 0.5mm wide transverse cracks @ 0.3 to 1m spacing. |
| (Curb Type : **Standard**) | | | |
| Scaling (Percent Area) 3 | | | |
| Bridge Rail | 5 | 5 | Retrofit rail installed. Total 7 panels have minor damage.<br>SE parapet vertically cracked, initiated at old approach anchorage at S end & rail anchorage at N end - monitor. |
| (Type : **GALVANIZED STEEL VERTICAL BAR**) | | | |
| Bridge Rail Posts | 4 | 4 | Anchor bolts do not offer enough thread for 68 post nuts. 40% have approx 2 threads below top of nut. |
| (Type : **GALVANIZED POST STEEL;GALVANIZED POST STEEL**) | | | |
| Bridge Rail/Posts Coating | 7 | 7 | |
| (Type : **GALVANIZED**) | | | |
| Sidewalk | X | X | |
| **Girder/Beam** | | | |
| Cover Plate | 7 | 7 | Griders viewed from ground level. |
| Flange | 7 | 7 | |
| Web | 7 | 7 | |
| Stiffeners | 7 | 7 | |
| Splice | 7 | 7 | |
| Weld | 7 | 7 | |
| Diaphragms/Cross Frame | 6 | 7 | |

| Superstructure | | | | |
|---|---|---|---|---|
| **Bridge Component** | | **Last** | **Now** | **Explanation of Condition** |
| (Primary Span : **RB, 3 Spans, Lengths(m): 17.7-22.6-17.7, A-Ident Number: A0385-02**) | | | | |
| Paint Condition | | 6 | 5 | 1% of topcoat peeled leaving primer.<br>Yellow. |
| (Colour Description : ) | | | | |
| (Colour Code : ) | | | | |
| Touchup Required (Y/N) | No | | | |
| Bearings | | 5 | 4 | Neoprene pad bearings on curb girders are bulged partly out from under shoe plates.<br>Expansion: abutments.<br>Fixed: piers.<br>Ear retainer plates are cracked through btwn bottom flange & top of rocker at A1G3 side A, A2G1 side A, A2G2 side A & A2G3 side A.<br>Rev'd by consultant and "4" rating is recomended.<br>Bearing contact surfaces left uncoated.<br>Masonry plates pitted from previous corrosion. |
| Temperature (deg. C) | 9 | | | |
| (Expansion Type : **ROCKER BEARING**) | | | | |
| (Fixed Type : **REINFORCED PAD BEARING**) | | | | |
| Coating Adequate (Y/N) | No | | | |
| Functioning (Y/N) | Yes | | | |
| Deck Underside | | 5 | 5 | Efflorescence @ cracks & corrosion staining @ S2-3.<br>Crack in cold joint of S3.<br>Deck has many narrow flexural cracks; soffits have developed 3% delam cracks, another 10% soon to follow. |
| Stains (Percent Area) | 2 | | | |
| **Span Alignment Problems** | | | | |
| Vertical (Y/N) | No | | | |
| Horizontal (Y/N) | No | | | |
| **Superstructure General Rating** | | **5** | **4** | |

| Substructure | | | | |
|---|---|---|---|---|
| **Bridge Component** | | **Last** | **Now** | **Explanation of Condition** |
| **Abutments** | | | | |
| Bearing Seats/Caps | | 6 | 6 | Abuts have moved slightly from skew pressures. |
| (Type : **CONCRETE**) | | | | |
| Backwalls/Breastwalls | | 6 | 6 | |
| Wingwalls | | 7 | 7 | |
| Piles | | N | N | |
| Paint/Coating | | X | X | |
| Abutment Stability | | 7 | 7 | |
| Scour/Erosion | | X | X | |
| **Piers/Bents** | | | | |
| (Type : **PIER-COLUMN**) | | | | |
| Bearing Seats/Caps | | 8 | 7 | |
| (Type : **CONCRETE**) | | | | |
| (Total Number of Bearing Piles : **0:0**) | | | | 2 columns each pier. |
| Pier Shaft/Piles | | 8 | 7 | |
| Bracing/Struts/Sheathing | | X | X | |
| Nose Plate | | X | X | |
| Paint/Coating | | X | X | |
| (Colour Description : ) | | | | |
| (Colour Code : ) | | | | |
| Pier Stability | | 8 | 7 | Concrete slope protection sliding against piers. |
| Scour | | X | X | |
| Debris (Y/N) | No | | | |

| Substructure | | | |
|---|---|---|---|
| **Bridge Component** | **Last** | **Now** | **Explanation of Condition** |
| **Substructure General Rating** | **6** | **6** | |

| Structure Usage | | | |
|---|---|---|---|
| | **Last** | **Now** | **Explanation of Condition** |
| **Grade Separation** | | | |
| Road Alignment | X | X | |
| Traffic Safety Features | X | X | |
| Type | | | |
| Slope Protection | 5 | 5 | Gaps between concrete sections but ok. Several wide cracks. |
| (Type : **CONCRETE; CONCRETE**) | | | |
| Bank Stability | 7 | 7 | N fill btwn structures has slide which appears stabilized. |
| Drainage | 7 | 7 | |
| **Grade Separation General Rating** | **7** | **7** | |

## Maintenance Recommendations

| Inspector Recommendations | Year | Inspector Comments | Department Comments | Target Year | Est. Cost | Cat # |
|---|---|---|---|---|---|---|
| REPAIR/REPLACE BRIDGE RAIL | | | | | | |
| GALVANIZE/PAINT BRIDGE RAIL | | | | | | |
| RETROFIT BRIDGE RAIL | | | | | | |
| SEAL CURBS | | | | | | |
| PATCH DECK | | | | | | |
| SEAL DECK | | | | | | |
| OVERLAY DECK | | | | | | |
| REPAIR/REPLACE DECK JOINTS | | | | | | |
| RESET/ PAINT BEARINGS | | | | | | |
| REPAINT SUPERSTRUCTURE | | | | | | |
| STRAIGHTEN/REPLACE MEMBERS | | | | | | |
| WASHING | | | | | | |
| SHOTCRETE REPAIRS | | | | | | |
| REPAIR ABUTMENT SCOUR/EROSION | | | | | | |
| PLACE ADDITIONAL RIP RAP | | | | | | |
| REMOVE DRIFT ACCUMULATION | | | | | | |
| OTHER ACTION | 2013 | Replace 1 transition section & install 2 splice bolts (approach rail). | | | | |
| OTHER ACTION | | | | | | |
| OTHER ACTION | | | | | | |
| OTHER ACTION | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Structural Condition Rating (Last/Now) (%)** | **61.1/55.6** | **Sufficiency Rating (Last/Now) (%)** | **71.9/67.4** | Est. Repl. Yr | 2037 | Maint. Reqd. (Y/N) | Yes |

| | | | |
|---|---|---|---|
| Special Comments for Next Inspection | Monitor for any more cracked bearing ear plates & notify Donald Saunders with AT if found.<br>Girders deflect substantially with skew putting additional strain on deck & diaphragms. | Department Comments | |

| | | | | | |
|---|---|---|---|---|---|
| Maintenance Reviewed By | | Date | | Estimated Total | 0 |

| | | | |
|---|---|---|---|
| Proposed Long-Term Strategy | | | |
| On 3-Year Program (Y/N) | Y | | |
| Proposed Action | 2008.01.29 ACP overlay and membrane in 2008. Chip seal North Bound in 2009. | | |
| Previous Inspector's Name | Owen Salava | Previous Assistant's Name | |
| Next Inspection Date | 18-Jul-2014 | Previous Inspection Date | 14-Sep-2011 |
| Inspection Cycle (Default) (months) | 21 | | |
| Comment | Brng retainer plates are crckd at A1G3 side A, A2G1 side A, A2G2 side A and A2G3 side A. Rev'd by cnsltnt and "4" rating recomended.Monitor other retainer plates for new crcks C.Black_2012.11.05. | | |