

Bridge Culvert Inspection				
Bridge File Number	74309 -1 Bridge Culvert		Form Type	CULE
Year Built	1954		Lot No.	2
Bridge or Town Name	CARSTAIRS		Inspector Name	Owen Salava
Located Over	SHEEP COULEE, 3.33.22, WATERCRS-ST		Inspector Class	BR CLS A
Located On	2:20 L1 8.208;2:20 R1 8.209		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	11-Mar-2013
Legal Land Location	SW SEC 12 TWP 30 RGE 1 W5M		Data Entry By	Marcia Chavez
Longitude, Latitude	-114:01:30, 51:32:55		Data Entry Date	26-Mar-2013
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA29		Review Date	16-Mar-2013
Clear Roadway/Skew	40 /		Dept. Reviewer Name	Chris Black
AADT/Year	27,530 / 2011 (A)		Dept. Review Date	28-Mar-2013
Road Classification	RFD-412.4-130		Follow-Up By	
Detour Length (km)	1			

**Bridge Culvert Information**

Number of Culverts	1							
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	Pl./Slab Thickness	Shape
1	U/S	2610	2877	SPE	1	152X51	4.0	ELLIPSE
1	MAIN	3960	1980	BP	104.8			RECTANGLE
1	D/S	2610	2877	SPE	1	152X51		ELLIPSE
Special Features								
Special Features Comment								

**Utilities (Located at)**

Utility Attachments				
Telephone	West ditch.		Gas	
Power	3 wire 70 m east of c.l.		Municipal	
Others	FIBRE OPTICS E SIDE W SERV RD.		Problem (Y/N)	No
Remarks				

**Approach Road / Embankment**

		Last	Now	Explanation of Condition
Horizontal Alignment		9	9	Hwy 2 N , S , E & W service roads.
Vertical Alignment		7	7	
Roadway Width (m)	40.000			
Embankment		7	7	
Sideslope ( __:1)	2.0			
(Height of Cover(m) : 3.4)				
Guardrail (Y/N)	No			
<b>Approach Road / Embankment General Rating</b>		<b>7</b>	<b>7</b>	

**Upstream 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 : )				

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
Cutoff Wall		X	X	
Bevel End		7	7	
Heaving (mm)	0			
Invert Above/Below Stream Bed				
Above/Below (mm)	0			
Scour Protection		7	7	
(Type : <b>RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>300</b> )				
Scour/Erosion		7	7	
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>7</b>	<b>7</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2610, Rise (mm): 2877, Type: SPE)</b>				
Barrel Last Accessible Date	26-Oct-2011			U/S & D/S SP pipes. Water/slush over water/ice viewed from ends, OK.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	N	
Measured Rise (mm)	2830			
Measured At Ring No.	10			
Sag (mm)	47			(26Oct2011)
Percent Sag	2			
Sidewall		4	N	
Measured Span (mm)	2680			(R8 at u/s SP at S, 250mm tear. Misaligned plates at R10-12 at long. seam at N side at u/s SP. 26Oct2011).
Measured At Ring No.	11			
Deflection (mm)	70			(26Oct2011)
Percent Deflection	2			
Floor		5	N	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	No			
Circumferential Seams		4	N	
Separation (mm)	0			(Circ. seams misaligned at R10-12 at u/s SP. Not fully torqued at roof at 1st seam at d/s. 26Oct2011).
Longitudinal Seams		4	N	
Total No. of Cracked Rings	0			(10mm gap at poor nesting plates at 3rd ring at d/s SP at N & 5th ring at S. R5 at N at u/s SP cusping 50mm & 20mm gap at poor nesting plates. 26Oct2011).
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	Yes			
Coating		5	N	
Corrosion By Soil (Y/N)	Yes			(Corrosion staining at bolts at SP & damage at R8 tear at u/s at S. 26Oct2011).
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: U/S, Span (mm): 2610, Rise (mm): 2877, Type: SPE)				
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			
<b>Barrel Extension General Rating</b>		<b>4</b>	<b>N</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1980, Rise (mm): 1980, Type: BP, Cell Sequence: 1)				
Barrel Last Accessible Date	26-Oct-2011			Concrete box culvert 2 cell. S cell. Water/slush over water/ice; viewed from ends, OK.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		7	N	(Minor cracks. 26Oct2011).
Measured Rise (mm)	1980			
Measured At Ring No.				
Sag (mm)				(26Oct2011)
Percent Sag	0			
Sidewall		6	N	(Minor vertical cracks. Scaling up to 50mm dp @ sidewall @ W 1st & 2nd joints @ bottom. Scaling @ floor up to 25mm dp. 25% of floor seen, avg 200mm dp water on remainder of floor. Minor vertical cracks. 26Oct2011).
Measured Span (mm)	1990			
Measured At Ring No.				
Deflection (mm)	0			
Percent Deflection	0			(26Oct2011)
Floor		5	N	
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		4	N	(Water coming through construction joints @ roof. Still gapped at 65mm at centre & middle wall. 26Oct2011).
Separation (mm)	65			
Longitudinal Seams		X	N	
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		X	X	
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	No			
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1980, Rise (mm): 1980, Type: BP, Cell Sequence: 1)</b>				
Ponding (Y/N)	No			
Fish Passage Adequacy		5	5	
Baffle		X	X	
(Type : )				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>6</b>	<b>N</b>	
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
<b>(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1980, Rise (mm): 1980, Type: BP, Cell Sequence: 2)</b>				
Barrel Last Accessible Date	26-Oct-2011			N cell. Water/slush over water/ice; viewed from ends, OK.
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	N	(Minor cracks. 26Oct2011).
Measured Rise (mm)	1980			
Measured At Ring No.				
Sag (mm)	0			
Percent Sag	0			
Sidewall		6	N	
Measured Span (mm)	1990			
Measured At Ring No.				
Deflection (mm)				
Percent Deflection				
Floor		N	N	(See cell 1 for scaling at floor & lower sidewall comments. Floor water & silt covered. 26Oct2011).
Bulge (mm)				
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		4	N	(40mm gap at N sidewall at W seam. 65mm gap at middle wall at W seam. 100mm void in fill at W seam at N side at roof. 26Oct2011).
Separation (mm)	65			
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)	No			
Longitudinal Stagger (Y/N)	No			
Coating		X	X	
Corrosion By Soil (Y/N)				
Corrosion By Water (Y/N)				
Camber POS/ZERO/NEG	ZERO			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 1980, Rise (mm): 1980, Type: BP, Cell Sequence: 2)				
Ponding (Y/N)	No			
Fish Passage Adequacy		5	5	
Baffle		X	X	
(Type : )				
Waterway Adequacy		7	7	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
<b>Barrel General Rating</b>		<b>6</b>	<b>N</b>	GR was 6 from 26Oct2011.
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
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		7	7	
Heaving (mm)	0			
Invert Above/Below Stream Bed				
Above/Below (mm)	0			
Scour Protection		6	6	
(Type : <b>RIP RAP</b> )				
(Avg. Rock Size(mm) : <b>300</b> )				
Scour/Erosion		6	6	
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>6</b>	<b>6</b>	
Structure Usage				
		Last	Now	Explanation of Condition
<b>Channel (U/S and D/S)</b>				
Alignment		4	4	Meandering stream. Channel bends sharply at both ends of culvert. Erosion at d/s at north.
Bank Stability		5	5	
HWM (m below Top of Culvert)	1.5			HWM not visible. Is well vegetated.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	DEGRADING			
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : <b>NONE</b> )				
(Fish Compensation Measure 2 : <b>NONE</b> )				
<b>Channel General Rating</b>		<b>4</b>	<b>4</b>	

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	2013	Foam seal circumferential seams, if not yet done.					
OTHER ACTION							
OTHER ACTION							
OTHER ACTION							
OTHER ACTION							
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>44.4/55.6</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>55.5/61.0</b>	Est. Repl. Yr	2020	Maint. Req. (Y/N)	Yes
Special Comments for Next Inspection	No action for d/s erosion. Assess u/s barrel (r=4's) when barrel accessed.		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	11-Dec-2014		Previous Inspection Date	26-Oct-2011			
Inspection Cycle (Default) (months)	21						
Comment							