

Bridge Culvert Inspection				
Bridge File Number	73488 -1 Bridge Culvert		Form Type	CUL1
Year Built	1960		Lot No.	1
Bridge or Town Name	NORDEGG		Inspector Name	Owen Salava
Located Over	HAVEN CREEK, 6.171, WATERCRS-ST		Inspector Class	BR CLS A
Located On	11:04 C1 37.375		Assistant Name	
Water Body Cl./Year			Assistant Class	
Navigabil. Cl./Year			Inspection Date	07-Feb-2012
Legal Land Location	NW SEC 11 TWP 40 RGE 16 W5M		Data Entry By	Marcia Chavez
Longitude, Latitude	-116:12:20, 52:25:49		Data Entry Date	01-Mar-2012
Road Authority	Alberta Transportation (AIT)		Reviewer Name	John O'Brien
Contract Main. Area	CMA18		Review Date	22-Feb-2012
Clear Roadway/Skew	13 /		Dept. Reviewer Name	Andrew Smikles
AADT/Year	840 / 2010 (A)		Dept. Review Date	21-Mar-2012
Road Classification	RAU-213.4-120		Follow-Up By	
Detour Length (km)	300			

Bridge Culvert Information								
Number of Culverts		1						
Pipe #	Barrel	Span	Rise (or Dia.)	Type	Length	Corr. Profile	PI./Slab Thickness	Shape
1	MAIN	2314	2552	SP	45.1	152X51	3.5	ELLIPSE
Special Features								
Special Features Comment								

Utilities (Located at)			
Utility Attachments			
Telephone	North r/w.		Gas
Power			Municipal
Others			Problem (Y/N) No
Remarks			

Approach Road / Embankment				
		Last	Now	Explanation of Condition
Horizontal Alignment		6	6	Recreation access 60m SW. Curve to west & crest to east within 1/2 km from pipe. No passing.
Vertical Alignment		6	6	
Roadway Width (m)	13.000			
Embankment		7	7	
Sideslope (__:1)	3.0			
(Height of Cover(m) : 2.1)				
Guardrail (Y/N)	Yes			
<b>Approach Road / Embankment General Rating</b>		<b>6</b>	<b>6</b>	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
Direction		N		
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape : )				
Cutoff Wall		X	X	

Upstream End				
Culvert Component		Last	Now	Explanation of Condition
Bevel End		6	6	
Heaving (mm)	200			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	200			
Scour Protection		4	N	(Scour along sides of bevel causing piping to R2 - photo. 04May2010). Snow covered.
(Type : <b>NONE</b> )				
(Avg. Rock Size(mm) : )				
Scour/Erosion		4	N	
Beavers (Y/N)	No			
<b>Upstream End General Rating</b>		<b>4</b>	<b>4</b>	GR carried over from 04May2010.
Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2314, Rise (mm): 2552, Type: SP)				
Barrel Last Accessible Date	07-Feb-2012			
<b>Special Features</b>				
Special Feature				
(Type : )				
Special Feature				
(Type : )				
Roof		6	6	Unable to measure due to ice.
Measured Rise (mm)	2462			
Measured At Ring No.	3			
Sag (mm)	90			
Percent Sag	3			
Sidewall		2	2	(Piping to end R2 @ W. 04May2010). Due to longitudinal seams.
Measured Span (mm)	2420			
Measured At Ring No.	3			
Deflection (mm)	106			
Percent Deflection	4			
Floor		5	N	Ice covered.
Bulge (mm)	0			
Measured At Ring No.				
Abrasion (Y/N)	Yes			
Circumferential Seams		7	7	
Separation (mm)	0			
Longitudinal Seams		2	2	12-95mm @ 9 o'clock. 13-125mm @ 9 o'clock. R3 cracked seams - 117mm @ 3 o'clock - photo, 129mm @ 9 o'clock - photo. Crack gap was 134mm on 31/May/2007. No growth of other cracks since 2007. Holes drilled at crack ends at 9 o'clock cracks not 3 o'clock.
Total No. of Cracked Rings	3			
Total No. of Rings with Two Cracked Seams	1			
Min. Remaining Steel Between Cracks (mm)	95			
Proper Lap (Y/N)	No			Stagger 1N.
Longitudinal Stagger (Y/N)	Yes			
Coating		6	6	Minor superficial rust.
Corrosion By Soil (Y/N)	No			
Corrosion By Water (Y/N)	Yes			
Camber POS/ZERO/NEG	ZERO			
Ponding (Y/N)	No			

Bridge Culvert Barrel				
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Primary Span, Location Code: MAIN, Span (mm): 2314, Rise (mm): 2552, Type: SP)				
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>2</b>	<b>2</b>	
Downstream End				
Culvert Component		Last	Now	Explanation of Condition
Direction		S		
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 slightly bent out at east side.
Heaving (mm)	0			
Invert Above/Below Stream Bed				At streambed. Bevel hanging 0.5m - photo.
Above/Below (mm)	0			
Scour Protection		4	4	Crushed.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 300)				
Scour/Erosion		4	4	7m x 10m x 1m scour - photo. Scour along shoulder.
Beavers (Y/N)	No			
<b>Downstream End General Rating</b>		<b>4</b>	<b>4</b>	
Structure Usage				
		Last	Now	Explanation of Condition
<b>Channel (U/S and D/S)</b>				
Alignment		5	5	30 degree bend 15m U/S.
Bank Stability		5	5	Erosion, slumping D/S of culvert.
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	DEGRADING			
Beavers (Y/N)	No			
(Fish Compensation Measure 1 : NONE)				
(Fish Compensation Measure 2 : NONE)				
<b>Channel General Rating</b>		<b>5</b>	<b>5</b>	

Maintenance Recommendations										
Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #				
SHOTCRETE REPAIRS										
PLACE ADDITIONAL RIP RAP	2012	15m3 @ D/S, 10m3 @ U/S, class 1.								
REMOVE DRIFT ACCUMULATION										
INSTALL CONCRETE/STEEL LINING										
INSTALL STRUTS										
INSTALL CONCRETE COLLAR/CUTOFF										
REPAIR SEAMS										
OTHER ACTION	2012	Replace U/S clay seal 15m3.								
OTHER ACTION										
OTHER ACTION										
OTHER ACTION										
<b>Structural Condition Rating (Last/Now) (%)</b>	<b>22.2/22.2</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>40.0/40.0</b>	<b>Est. Repl. Yr</b>	<b>2020</b>	<b>Maint. Req. (Y/N)</b>	<b>Yes</b>			
Special Comments for Next Inspection	There is lots of steel left & thick wall & low cover. Monitor crack growth or check capacity if in doubt.		Department Comments							
Maintenance Reviewed By		Date				Estimated Total	0			
Proposed Long-Term Strategy	Culvert should be good until at least 2020. RS									
On 3-Year Program (Y/N)	Y									
Proposed Action	Drill 10mm hole at the end of each crack to stop propagation. Continue to monitor cracks on regular BIM Cycle. CB									
Previous Inspector's Name	Owen Salava		Previous Assistant's Name							
Next Inspection Date	07-Nov-2013		Previous Inspection Date	04-May-2010						
Inspection Cycle (Default) (months)	21									
Comment										

**Maintenance Recommendations**

Inspector Recommendations	Year	Inspector Comments	Department Comments	Target Year	Est. Cost	Cat #
SHOTCRETE REPAIRS						
PLACE ADDITIONAL RIP RAP	2012	15m3 @ D/S, 10m3 @ U/S, class 1.	Defer, replacement programmed	2015		
REMOVE DRIFT ACCUMULATION						
INSTALL CONCRETE/STEEL LINING						
INSTALL STRUTS						
INSTALL CONCRETE COLLAR/CUTOFF						
REPAIR SEAMS						
OTHER ACTION	2012	Replace U/S clay seal 15m3.	Defer, replacement programmed	2015		
OTHER ACTION						
OTHER ACTION						
OTHER ACTION						

<b>Structural Condition Rating (Last/Now) (%)</b>	<b>22.2/22.2</b>	<b>Sufficiency Rating (Last/Now) (%)</b>	<b>40.0/40.0</b>	Est. Repl. Yr	2020	Maint. Req. (Y/N)	Yes
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Special Comments for Next Inspection	There is lots of steel left & thick wall & low cover. Monitor crack growth or check capacity if in doubt.	Department Comments	Replacement currently programmed for 2015.
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Maintenance Reviewed By	Andrew Smikles	Date	31-Oct-2012	Estimated Total	0
Proposed Long-Term Strategy	Culvert should be good until at least 2020. RS				
On 3-Year Program (Y/N)	Y				
Proposed Action	Drill 10mm hole at the end of each crack to stop propagation. Continue to monitor cracks on regular BIM Cycle. CB				
Previous Inspector's Name	Owen Salava	Previous Assistant's Name			
Next Inspection Date	07-Nov-2013	Previous Inspection Date	04-May-2010		
Inspection Cycle (Default) (months)	21				
Comment					