				D.	das Cul	vort Inon	t Inspection								
Bridge File Nu		age Cui	Form			CULM									
Pridge File Number 74277 -1 Bridge Culvert Year Built 1957						Lot No			1						
Bridge or Town Name WILLINGDON Located Over 2ND ORDER TRIBUTARY TO N							ctor Name		Owen Salava						
					MILION		ctor Class		BR CLS A						
Localed Over					WILLOW	· ·	ant Name		23207.						
Located On		29:04 C	1 7.092				ant Class								
Water Body Cl	./Year						ction Date		09-Nov-2012						
Navigabil. Cl./\	Year						Entry By		Marcia Chavez						
Legal Land Loc	cation	SW SE	C 30 TWP 55 R	GE 15 W4M			Entry Date		20-Nov-2012						
Longitude, Lati	itude	-112:13	:27, 53:46:24		Reviewer Name				John O'Brien						
Road Authority	/		Transportation	(AIT)		Revie	w Date		15-Nov-2012						
Contract Main.		CMA14				Dept.	Reviewer Na	ame	Andrew Smikle	es					
Clear Roadway	y/Skew	12.3 /				Dept.	Review Date	9	26-Nov-2012						
AADT/Year		960 / 20	` '			Follow	/-Up By								
Road Classification RCU-210-110						_									
Detour Length		5													
Bridge Culver			0												
Number of Cul			2	D: / D:	\ -				0 5 "	DI (CL I					
Pipe #	Barrel		Span	Rise (or Dia	.) Type		Length		Corr. Profile	PI./Slab Thickness	Shape				
1	MAIN	N 2134 1549			RPP		26.2		152X51	3.0,3.0,2.8	PIPE ARCH				
2	MAIN				FP		26.6		68X13	3.5	ARCH				
Special Features VERT TIMBER STRUTS							1000								
Special Feature	es Comr	ment													
Telephone Power 3 wire o/h, S r/w.						Gas Munic		lo.							
Others					Problem (Y/N) No										
Remarks															
	Annr	ach Po	ad / Emb	ankmont											
Horizontal Alignment							pankment	ondit	ion						
Vertical Alignment				La			pankment nation of Co	ondit	iion						
Roadway Width (m) 12.300				La	st Now			ondit	iion						
	nent		12.300	La	Now 9			ondit	ion						
Roadway Widt	nent		12.300	La	Now 9			ondit	ion						
Roadway Widt	nent h (m)		12.300	La	9 9 9	Expla	nation of C								
Roadway Widtl Embankment Sideslope (nent h (m) _:1)	1.3)		La	9 9 9	Expla		Vest (pipe.						
Roadway Widt Embankment Sideslope (_ (Height of Co	nent h (m) _:1) over(m):	1.3)		La	9 9 9	Expla	nation of Co	Vest (pipe.						
Roadway Widtl Embankment Sideslope (nent h (m) _:1) over(m):		3.0 No	La	9 9 9	Expla	nation of Co	Vest (pipe.						
Roadway Widt Embankment Sideslope (_ (Height of Co Guardrail (Y/N)	nent h (m) _:1) over(m):		3.0 No	La	St Now 9 9 9 9 8 8	Expla	cover over V	Vest (pipe.						
Roadway Widtl Embankment Sideslope (_ (Height of Co Guardrail (Y/N) Approach Roa	nent h (m) _:1) over(m):)		3.0 No	La	st Now 9 9 9 9 8 8 8 Upst	1.3m of 1.65m	cover over V	Vest ¡ East	pipe. pipe.						
Roadway Widt Embankment Sideslope ((Height of Co Guardrail (Y/N) Approach Roa Culvert Comp	nent h (m) _:1) over(m):) ad / Emb	oankmei	3.0 No nt General Rat	La 9	st Now 9 9 9 9 8 8 9 9 10 10 10 10	1.3m of 1.65m	cover over V	Vest ¡ East	pipe. pipe.						
Roadway Widt Embankment Sideslope (_ (Height of Co Guardrail (Y/N) Approach Roa Culvert Comp (Pipe # : 1, Sp	nent h (m) _:1) over(m):) ad / Emb	oankmei	3.0 No nt General Rat	La 9	st Now 9 9 9 9 8 8 9 9 10 10 10 10	1.3m of 1.65m	cover over V cover over	Vest ¡ East	pipe. pipe.						
Roadway Widt Embankment Sideslope (_:1) over(m): ad / Emb	oankmei e: Prima	3.0 No nt General Rat ry Span)	La 9 9 9 1	st Now 9 9 9 9 8 8 9 9 10 10 10 10	1.3m of 1.65m	cover over V cover over	Vest ¡ East	pipe. pipe.						
Roadway Widt Embankment Sideslope (_:1) over(m): ad / Emb	oankmei e: Prima	3.0 No nt General Rat ry Span)	ing S	st Now 9 9 9 9 8 8 9 9 10 10 10 10	1.3m of 1.65m	cover over V cover over	Vest ¡ East	pipe. pipe.						
Roadway Widt Embankment Sideslope (_ (Height of Co Guardrail (Y/N)	_:1) over(m): ad / Emb	oankmei e: Prima	3.0 No nt General Rat ry Span)	ing S	Now 9 9 9 9 9 9 9 9 9	1.3m of 1.65m	cover over V cover over	Vest ¡ East	pipe. pipe.						
Roadway Widt Embankment Sideslope (_ (Height of Co Guardrail (Y/N) Approach Roa Culvert Comp (Pipe # : 1, Sp Direction End Treatment Others, None) Headwall	_:1) over(m): ad / Emb	oankmei e: Prima	3.0 No nt General Rat ry Span)	ing S	9 9 9 Upst Now	1.3m of 1.65m	cover over V cover over	Vest ¡ East	pipe. pipe.						

			Unetro	am End
Culvert Component				Explanation of Condition
(Pipe # : 1, Span Type: Primary	/ Span)	Luot	1.1011	
Cutoff Wall		Х	X	
Cuton trun				
Bevel End		4	4	Small perforations. Rock/dirt washed into bevel floor.
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	200			
Scour Protection		7	N	Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 350)				
Scour/Erosion		7	N	
Beavers (Y/N)	No			
Upstream End General Rating		4	4	
		·	dae Gr	hort Borrol
Culvert Component				Ivert Barrel Explanation of Condition
(Pipe # : 1, Primary Span, Loca	tion Code: MAIN Sn:			•
Barrel Last Accessible Date	09-Nov-2012	<u> </u>	1). 2134	West pipe.
Barrer Last Accessible Date	09-1107-2012			west pipe.
Special Features				
Special Feature				
(Type:)				
Special Feature				
(Type:)				
Roof		4	3	Roof has numerous small perforations @ R1,2,8,9 - photo.
Measured Rise (mm)	1470			Rise @ R8, 1455 with 30mm floor bulge. Roof @ R2 is flattening - photo.
Measured At Ring No.	2			Perforations not extensive under roadway.
Sag (mm)	79			Not measured due to ice.
Percent Sag	5			
Sidewall		4	3	Ext perforations R1 and R2 in sidewall - photos. Numerous holes and
Measured Span (mm)	2180			dents from poor installation throughout.
Measured At Ring No.	2			
Deflection (mm)	46			
Percent Deflection	2			
Floor		5	N	Ice
Bulge (mm)	30			
Measured At Ring No.	8			
Abrasion (Y/N)	No			
Circumferential Seams		7	7	
Separation (mm)	0			
Longitudinal Seams		4	4	R3 bolts tipping.
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams				
Min. Remaining Steel Between Cracks (mm)				
Proper Lap (Y/N)	No			
Longitudinal Stagger (Y/N)	No			Roof seam is staggered.
Coating		4	3	Galvanized coating peeling off at dent locations. Active corrosion.
Corrosion By Soil (Y/N)	Yes			Numerous perforations @ roof and sidewall R1, 2, 8 & 9 small spots
Corrosion By Water (Y/N)	Yes			- photo.

		Brid	dae Cu	Ivert Barrel
Culvert Component				Explanation of Condition
(Pipe # : 1, Primary Span, Locat	tion Code: MAIN, Spa	ın (mm		
Camber POS/ZERO/NEG	NEG			
Ponding (Y/N)	No			
Fish Passage Adequacy		Х	Х	
Baffle		Х	Х	
(Type:)				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		4	3	
		D	ownstr	ream End
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 1, Span Type: Primary	/ Span)			
Direction		N		W pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		Х	Х	
Wingwalls		X	X	
(Shape:)				
Cutoff Wall		X	X	
Bevel End		4	4	Small perforations. Rocks/dirt washed into bevel floor.
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	150			
Scour Protection		8	N	Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 350)				
Scour/Erosion		8	N	
Beavers (Y/N)	No			
Downstream End General Ratio	ng	4	4	
				am End
Culvert Component		Last	Now	Explanation of Condition
(Pipe # : 2, Span Type: Second	ary Span)			T
Direction		S		East pipe.
End Treatment (Concrete, Steel, Others, None)	STEEL			
Headwall		X	X	
Collar		X	X	
Wingwalls		X	X	
(Shape:)				
Cutoff Wall		X	X	

74277 -1 Bridge Culvert

			Linctro	am End
Culvert Component		Last		Explanation of Condition
(Pipe # : 2, Span Type: Second	lary Snan)	Lasi	INOW	Explanation of Condition
Bevel End	iary Opari)	N	N	(Numerous dents and small perforations. Rocks/dirt washed into
Heaving (mm)	0	IN	IN	bevel floor. 14Aug2009).
	BELOW			
Above/Below (mm)	200			
Scour Protection	200	7	N	Snow covered.
(Type : RIP RAP)			IN	Show covered.
(Avg. Rock Size(mm) : 350)				
Scour/Erosion		7	N	
Beavers (Y/N)	No			
Upstream End General Rating		4	4	GR carried forward from 14Aug2009.
		Bri	dge Cu	Ivert Barrel
Culvert Component				Explanation of Condition
	cation Code: MAIN, S			829, Rise (mm): 1118, Type: FP)
Barrel Last Accessible Date	09-Nov-2012			East pipe.
Special Features				
Special Feature			7	Only in centre 4m portion of pipe.
(Type: VERT TIMBER STRUTS))			
Special Feature				
(Type:)				
Roof		3	3	Large perforation @ R4, numerous small perforations @ S end.
Measured Rise (mm)	870			
Measured At Ring No.	4			
Sag (mm)	128			
Percent Sag	11			
Sidewall		4	3	Small perforations in sidewall, 40mm diameter - photo.
Measured Span (mm)	1942			
Measured At Ring No.	4			
Deflection (mm)	113			
Percent Deflection	6			
Floor		4	4	At both end sections.
Bulge (mm)	100			
Measured At Ring No.	4			At 1/4.
Abrasion (Y/N)	No			
Circumferential Seams		6	6	
Separation (mm)	50			
Longitudinal Seams		Х	6	Older section is rivetted pipe.
Total No. of Cracked Rings	0			
Total No. of Rings with Two Cracked Seams	0			
Min. Remaining Steel Between Cracks (mm)	0			
Proper Lap (Y/N)				
Longitudinal Stagger (Y/N)				
Coating		4	3	Galvanized coating peeling off at dent locations. Active corrosion in
Corrosion By Soil (Y/N)	Yes			large perforation, Ř4 - photo. Small spots - photo. Floor scaling.
Corrosion By Water (Y/N)	Yes			Thou scaling.
Camber POS/ZERO/NEG	ZERO			

		Brid	dge Cu	Ivert Barrel
Culvert Component				Explanation of Condition
(Pipe # : 2, Secondary Span, Lo	ocation Code: MAIN, S	Span (r	nm): 18	329, Rise (mm): 1118, Type: FP)
Ponding (Y/N)	No			
Fish Passage Adequacy		Х	Х	
Baffle		Х	Х	
(Type:)				
Waterway Adequacy		8	8	
Icing (Y/N)	No			
Silting (Y/N)	No			
Drift (Y/N)	No			
Barrel General Rating		4	3	
Culvert Component			Now	eam End Explanation of Condition
(Pipe # : 2, Span Type: Second	lary Snan)	Lasi	INOW	Explanation of Condition
Direction	ary Spari)	N		Foot pine
	rection nd Treatment (Concrete, Steel, STEEL			East pipe.
Others, None)	STEEL		_	
Headwall		X	X	
Collar		Х	Х	
Wingwalls (Shape:)			Х	
(Shape :)				
Cutoff Wall		Х	X	
Bevel End		N	N	Rock/dirt washed into bevel floor.
Heaving (mm)	0			
Invert Above/Below Stream Bed	BELOW			
Above/Below (mm)	150			
Scour Protection		8	N	Snow covered.
(Type : RIP RAP)				
(Avg. Rock Size(mm) : 350)				
Scour/Erosion		8	N	
Beavers (Y/N)	No			
Downstream End General Ratio	ng	5	N	GR was 5 from 14Aug2009.
		9	Structu	re Usage
			Now	Explanation of Condition
Channel (U/S and D/S)			11011	
Alignment		7	7	
Bank Stability		7	7	
HWM (m below Top of Culvert)				HWM not visible.
Drift (Y/N)	No			
Channel Bottom Degrading/Aggrading	NONE			
Beavers (Y/N)	No			
(Fish Compensation Measure 1 :	NONE)			
(Fish Compensation Measure 2 :	NONE)			
Channel General Rating		7	7	

			Maintenance Recommendations	ommendatio	ns					
Inspector Recommendations	Year		Inspector Comments	De	Department Comments	nents	_	Target Year	Est. Cost	Cat#
SHOTCRETE REPAIRS										
PLACE ADDITIONAL RIP RAP										
REMOVE DRIFT ACCUMULATION										
INSTALL CONCRETE/STEEL LINING										
INSTALL STRUTS										
INSTALL CONCRETE COLLAR/CUTOFF)FF									
REPAIR SEAMS										
OTHER ACTION	2016	Replacement.	ment.							
OTHER ACTION										
OTHER ACTION										
OTHER ACTION										
Structural Condition Rating (Last/Now) (%)		44.4/33.3	Sufficiency Rating (Last/Now) (%)		58.6/53.5	Est. Repl. Yr	2016	Maint. Reqd. (Y/N)		Yes
Special Comments for Next Inspection				CC	Department Comments					
Maintenance Reviewed By				Date	te		Est	Estimated Total	0	
Proposed Long-Term Strategy	2003.08.19	2003.08.19 Replace culvert in 2020.	ert in 2020.							
On 3-Year Program (Y/N)										
Proposed Action										
Previous Inspector's Name	Dave Lam			Previous Assi	Previous Assistant's Name					
Next Inspection Date	09-Aug-2014	4		Previous Inspection Date	ection Date	07-Dec-2010				
Inspection Cycle (Default) (months)	21									
Comment										

					Mainte	nance R	ecommer	ndations								
Inspector Recommendations	\	Year	Inspecto	or Comme	ents			Departme	ent C	ommei	nts		Та	arget Year	Est. Cost	Cat #
SHOTCRETE REPAIRS																
PLACE ADDITIONAL RIP RAP																
REMOVE DRIFT ACCUMULATION																
INSTALL CONCRETE/STEEL LINING	G															
INSTALL STRUTS																
INSTALL CONCRETE COLLAR/CUT	OFF															
REPAIR SEAMS																
OTHER ACTION	2	2016	Replace	ment.				Programmed)22		
OTHER ACTION																
OTHER ACTION																
OTHER ACTION																
Structural Condition Rating (Last/Now) 44.4/33.3 Sufficiency (%)				ency Rati	ng (Last	/Now)	58.6/53.5		Es	t. Repl. Yr	2016		Maint. Re	qd. (Y/N)	Yes	
Special Comments for Next Inspection						Departme Commen										
Maintenance Reviewed By Andrew Smikles					Date		17-De	c-2012		Esti	imated Tota	1 0				
Proposed Long-Term Strategy	2003.08	3.19 Re _l	olace culv	vert in 202	20.				<u>'</u>							
On 3-Year Program (Y/N)																
Proposed Action																
Previous Inspector's Name	Dave La	am					Previous	s Assistant's	Assistant's Name							
Next Inspection Date	09-Aug-	-2014					Previous	s Inspection	Date		07-Dec-20	10				
Inspection Cycle (Default) (months)	21															
Comment																