Ontario Stru	ucture Inspection Manual – Ins	spection Form M1	O Site Number: N/A
Inventory Data:			
Structure Name	Labrosse Road Culvert		
Main Highway #	N/A On □ Under □	_	□ □Non-Navig. Water □Rail □Ped. □Other
Location description	Labrosse Road, 2.1 km East of Hwy 575 at Cache River		· ⊠Non-Navig. Water □Rail ]Ped. □Other
Owner/Custodian	Municipality of West Nipissing	Latitude: 46.450413	Longitude: -80.095898
MTO Region	Northern	Heritage ⊠Not Cons. Designation: □Desig./notLis	□Cons./not App. □List/not Desig t □Desig. & List
MTO District	Sudbury	Road Class: Freeway□ Arte	rial□ Collector□ Local⊠
Old County		Posted Speed	No. of Lanes 2
Township	Caldwell	AADT	% Truck
Structure Type	Arch Culvert	Traffic Directional Bound	N-S
Structure Material	Steel	Inspection Route Sequence	Bottom to Top
Total Deck Length	N/A (m)	Inspection Duration	0.5 (hrs)
Overall Str. Width	18.9 (m)	Interchange Number	
Total Deck Area	N/A (sq.m)	Interchange Structure Number	
Roadway Width	6.5 (m)	Min. Vertical Clearance	
Skew Angle	(Degree)	Detour Distance	(m)
No. of Spans	1	Fill on Structure	0.6 (m)
Span Lengths	2.7 m x 1.9 m Multi Plate Pipe Arch		(m)

Historical Data:			
Year Built  Last Reg OSIM Inspection  Last Enh. OSIM Inspection	October 2019	Year of Last Minor Rehab Year of Last Major Rehab. Current Load Limit	(tonnes)
Work History (Date/Descrip	otion)		

Scheduled Improve	ements:		
Regional Priority Nun	nber	Programmed Work Year	
Nature of Program W	ork:		
Appraisal Indices:		Comments	
Fatigue			
Seismic			
Scour			
Flood			

Barrier

Load Capacity

Curb

Field Inspection Informat	tion:					
Date of Inspection:	November 10, 2021	Type of Inspection	⊠Reg. OSIM □Enh. OSIM			
Inspected By:	Michael Colton, McIntosh P	erry Consulting Engineers	Ltd.			
Others in Party:	Mahmoud Abou Niaj, EIT, M	IcIntosh Perry Consulting	Engineers Ltd.			
Enh. Access Equipment:	None					
Special Access Equipment:	None	None				
Weather:	Sunny	Temperature	7°C			
Additional Investigations	Demined		Priority			

Addi	tional Investigations Required:		Priorit	y	
		None	Normal	Urgent	
Mate	rial Condition Survey				
	Detailed Deck Condition Survey:				
	Non-destructive Delamination Survey of Asphalt-Covered Deck:				
	Concrete Substructure Condition Survey:				
	Detailed Coating Condition Survey:				
	Detailed Timber Investigation				
	Post-Tensioned Strand Investigation				
Unde	rwater Investigation:				
Fatig	ue Investigation:				
Seisn	nic Investigation:				
Struc	ture Evaluation:				
Moni	toring				
	Deformations, Settlements and Movements:				
	Crack Widths:				
	RSS Horizontal movements of face:				
	RSS Vertical movements of overall structure:				
	RSS Local movements or deterioration of facing elements:				
	RSS Horizontal movements within overall structure:				
	RSS Vertical movements within overall structure:				
	RSS Lateral earth pressure at the back of facing elements:				
Inve	stigation Notes:				

Overall Structure Notes:				
Recommended Work on Structure:	□None ⊠ſ	Minor Rehab.	□Major Rehab.	□Replace
Timing of Recommended Work:	⊠1 to 5 years	☐6 to 10 years	S	
Overall Comments:	Medium corrosion	in culvert walls at	water line. Install ad	ditional guide rail and repair
	existing guide rail.	Structure is gener	ally in good condition	ı <b>.</b>
Date of Next Inspection:	November 2023			

## **Suspected Performance Deficiencies**

Jusp.	ceteur errormance beneferrores				
-		06	Bearing not uniformly loaded/unstable	12	Slippery surfaces
01	Load carrying capacity	07	Jammed expansion joint	13	Flooding/channel blockage
02	Excessive deformations (deflections & rotations)	08	Pedestrian/vehicular hazard	14	Undermining of foundation
03	Continuing settlement	09	Rough riding surface	15	Unstable embankments
04	Continuing movements	10	Surface ponding	16	Other performance deficiencies
05	Seized bearings	11	Deck/Wall drainage		·
Main	tenance Needs				
01	Lift and Swing Bridge Maintenance	07	Structural Steel Repair	13	Erosion Control at Bridges
02	Bridge Cleaning	08	Concrete Repair	14	Concrete Sealing
03	Railing System Repair	09	Timber Repair	15	Rout and Seal
04	Painting Steel Bridge Structures	10	Works for Modular bridges	16	Works for Drainage System
05	Bridge Deck Joint Repair	11	Animal/Pest Control	17	Scaling (Loose Concrete or ACR Steel)
06	Bridge Bearing Maintenance	12	Bridge Surface Repair	18	Other Maintenance

## **Element Data**

Flomont Grou	ın:	Culverts		Longth	10	0 m	
Element Grou	-	Culverts Barrels		Length: Width:		.9 m 7 m	
Location:	e.	Dalleis		Height:		9 m	
Material:		Corrugated Steel		Count:	1	<i>9</i> m	
Element Type	••	Multi Plate Pipe Arch		Total Quar	ntity: 13	8 m <sup>2</sup>	
Environment:		<b>⊠Benign</b> □ <b>Moderat</b>		Inspected:		Yes 🗆 No 🗆	Limited ⊠
Protection Sys		Galvanized	te 🗀 Jevere	шэрссса		163 🗀 140 🗀	
Condition	T	Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
Data:	⊠m²	□ m □ each □ %		doou	1 an	F 001	
Data.	⊠m   □ all		ı	69	69		00
Comments:  Medium corr Minor deforr	rosion o	on East and West side	es at water lin	e		1	
Recommend	led Wo		□ Replace		Maintena	nnce Needs: 00	
Paint barrel a		⊠ 1-5 years	□6-10 years		□Urgent	□1 year	□2 year
Failit Mail Ci a	t water	me			Шогден	шуса	ши уса
Element Grou	ıp:	Embankments and Sti	reams	Length:	N/	Ā	
Element Nam	-	Embankments		Width:	N/		
Location:				Height:	N/		
Material:		Gravel		Count:	1		
Element Type	<del></del>	<u> </u>		Total Qua	ntity: All		
Environment:		⊠Benign □ Moderat	te 🗆 Severe	Inspected:		Yes □ No □	Limited
Protection Sys	stem:			<del>. L</del>			
Condition		Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
Data:	□m² ⊠ all	□ m □ each □ %			1		15
Comments:							
Steep embar							
Steep embar		<b>rk:</b> □Rehab	⊠ Replace	_	Maintena	nce Needs: 00	
·	led Wo	<b>rk</b> : □Rehab ⊠1-5 years	⊠ Replace □6-10 years		<b>Maintena</b> □Urgent	nce Needs: 00  □1 year	□2 year

Element Grou	ıp:	Embankments & stream	ams	Length:	N/A		
Element Nam	-	Streams and waterwa		Width:	N/A		
Location:		Under structure	,	Height:	N/A		
Material:		Native soil		Count:	1		
Element Type	:	Stream		Total Quar	ntity: 1		
Environment:		⊠Benign ☐ Modera	te 🗆 Severe	Inspected:	Y	'es □ No □	Limited ⊠
Protection Sys	stem:			•			De ferre Definitionales
Condition		Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
Data:	□m² □ all	□ m 図 each □ %		1			00
Comments:							
Water level a	at the ti	me of inspection wa	ıs 1.1 m,				
Viater in the	ac a	me or mopeous.	3 2.2				
Recommend	led Wo	r <b>k:</b> □Rehab	□Replace		Maintenanc	e Needs: 00	
		□1-5 years	□6-10 years	S			
					□Urgent	□1 year	□2 year
						<u> </u>	······································
Element Grou		Barriers		Length:	0.15 r		
Element Nam		Posts		Width:	0.15 r	m	
Element Nam Location:		Posts East Side		Width: Height:	0.15 r 0.60 r	m	
Element Nam Location: Material:	e:	Posts East Side Wood		Width: Height: Count:	0.15 r 0.60 r 12	m	
Element Nam Location: Material: Element Type	e:	Posts East Side Wood Post		Width: Height: Count: Total Quar	0.15 r 0.60 r 12 ntity: 12	m m	
Element Nam Location: Material: Element Type Environment:	e:	Posts East Side Wood Post  Benign Modera	te ⊠ Severe	Width: Height: Count:	0.15 r 0.60 r 12 ntity: 12	m	Limited
Element Nam Location: Material: Element Type Environment: Protection Sys	e:	Posts East Side Wood Post  Benign Modera Pressure Treated		Width: Height: Count: Total Quar Inspected:	0.15 r 0.60 r 12 ntity: 12	n n ′es ⊠ No □	
Element Nam Location: Material: Element Type Environment: Protection Sys	stem:	Posts East Side Wood Post Benign Modera Pressure Treated Units	te 🛭 Severe	Width: Height: Count: Total Quar	0.15 r 0.60 r 12 ntity: 12	m m	Limited □ Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys	stem:	Posts East Side Wood Post  Benign Modera Pressure Treated		Width: Height: Count: Total Quar Inspected:	0.15 r 0.60 r 12 ntity: 12	n n ′es ⊠ No □	
Element Nam Location: Material: Element Type Environment: Protection Sys	stem:	Posts East Side Wood Post Benign Modera Pressure Treated Units		Width: Height: Count: Total Quar Inspected:	0.15 r 0.60 r 12 ntity: 12	n n ′es ⊠ No □	Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	stem:	Posts East Side Wood Post □Benign □ Modera Pressure Treated Units □ m 図 each □ %		Width: Height: Count: Total Quar Inspected:	0.15 r 0.60 r 12 ntity: 12	n n ′es ⊠ No □	Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data:	stem:	Posts East Side Wood Post □Benign □ Modera Pressure Treated Units □ m 図 each □ %		Width: Height: Count: Total Quar Inspected:	0.15 r 0.60 r 12 ntity: 12	n n ′es ⊠ No □	Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	stem:	Posts East Side Wood Post □Benign □ Modera Pressure Treated Units □ m 図 each □ %		Width: Height: Count: Total Quar Inspected:	0.15 r 0.60 r 12 ntity: 12	n n ′es ⊠ No □	Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	stem:	Posts East Side Wood Post □Benign □ Modera Pressure Treated Units □ m 図 each □ %		Width: Height: Count: Total Quar Inspected:	0.15 r 0.60 r 12 ntity: 12	n n ′es ⊠ No □	Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	stem:	Posts East Side Wood Post  Benign Modera Pressure Treated Units m each %		Width: Height: Count: Total Quar Inspected:	0.15 r 0.60 r 12 ntity: 12 Y	res 🗵 No 🗆 Poor*	Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	stem:  m² all	Posts East Side Wood Post  Benign Modera Pressure Treated Units m each %		Width: Height: Count: Total Quar Inspected:	0.15 r 0.60 r 12 ntity: 12	res 🗵 No 🗆 Poor*	Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments: Generally in	stem:  m² all	Posts East Side Wood Post  Benign Modera Pressure Treated Units m each %	Exc.	Width: Height: Count: Total Quar Inspected: Good	0.15 r 0.60 r 12 ntity: 12 Y	res 🗵 No 🗆 Poor*	Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments: Generally in	stem:  m² all	Posts East Side Wood Post Benign Modera Pressure Treated Units m each %  Ondition.	Exc.	Width: Height: Count: Total Quar Inspected: Good	0.15 r 0.60 r 12 ntity: 12 Y	res 🗵 No 🗆 Poor*	Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments: Generally in	stem:  m² all	Posts East Side Wood Post Benign Modera Pressure Treated Units m each %  Ondition.	Exc.	Width: Height: Count: Total Quar Inspected: Good	0.15 r 0.60 r 12 ntity: 12  Y  Fair  Maintenance	res 🖾 No 🗆 Poor*  e Needs: 00	Perform. Deficiencies  00

Element Grou	ıp:	Barriers		Length:	0.15 r	n	
Element Nam	e:	Posts		Width:	0.15 r	n	
Location:		West Side		Height:	0.60 r	n	
Material:		Wood		Count:	13		
Element Type	:	Post		Total Quar	ntity: 13		
Environment:		☐Benign ☐ Modera	te 🛛 Severe	Inspected:		es ⊠ No □	Limited
Protection Sys	stem:	Pressure Treated		· ·			
Condition		Units	Exc.	Good	Fair	Poor*	Perform. Deficiencies
Data:	□m²	□ m 🛛 each 🗆 %	-				
	□all			13			00
Comments:							
Generally in	good co	ondition.					
						N 1 00	
Recommend	led Wo		□Replace		Maintenance	e Needs: 00	
		□1-5 years	□6-10 year	`S			
					□Urgent	□1 year	□2 year
Flement Grou	ın:	Barriers		Length:	36 m	West 39.6 m.l	-act
Element Grou	-	Barriers		Length:		West, 39.6 m l	East
Element Nam	-	Railing System		Width:	N/A	West, 39.6 m l	East
Element Nam Location:	-	Railing System East and West Sides		Width: Height:	N/A N/A	West, 39.6 m l	East
Element Nam Location: Material:	e:	Railing System East and West Sides Steel		Width: Height: Count:	N/A N/A 1		East
Element Nam Location: Material: Element Type	e:	Railing System East and West Sides Steel Cable	te⊠ Severe	Width: Height: Count: Total Quar	N/A N/A 1 ntity: 75.6 r	n	
Element Nam Location: Material: Element Type Environment:	e: :	Railing System East and West Sides Steel Cable  Benign Modera	te ⊠ Severe	Width: Height: Count:	N/A N/A 1 ntity: 75.6 r		East  Limited □
Element Nam Location: Material: Element Type Environment: Protection Sys	e: :	Railing System East and West Sides Steel Cable  Benign Modera Galvanized		Width: Height: Count: Total Quar Inspected:	N/A N/A 1 ntity: 75.6 r	n es ⊠ No □	
Element Nam Location: Material: Element Type Environment: Protection Sys	e: : stem:	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units	te 🛭 Severe	Width: Height: Count: Total Quar	N/A N/A 1 ntity: 75.6 r	n	Limited □
Element Nam Location: Material: Element Type Environment: Protection Sys	e: stem:	Railing System East and West Sides Steel Cable  Benign Modera Galvanized		Width: Height: Count: Total Quar Inspected:	N/A N/A 1 ntity: 75.6 r	n es ⊠ No □	Limited □
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data:	e: : stem:	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units		Width: Height: Count: Total Quar Inspected:	N/A N/A 1 ntity: 75.6 r	n es ⊠ No □	Limited □ Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys	e: stem:	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units		Width: Height: Count: Total Quar Inspected:	N/A N/A 1 ntity: 75.6 r	n es ⊠ No □	Limited □ Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	e: stem: m²	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units M m each M	Exc.	Width: Height: Count: Total Quar Inspected:	N/A N/A 1 ntity: 75.6 r	n es ⊠ No □	Limited □ Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	stem:  m² all	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units M m each %	<b>Exc.</b> ' quadrant.	Width: Height: Count: Total Quar Inspected: Good 75.6	N/A N/A 1 ntity: 75.6 r Y	n es ⊠ No □ Poor*	Limited □ Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	stem:  m² all	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units M m each M	<b>Exc.</b> ' quadrant.	Width: Height: Count: Total Quar Inspected: Good 75.6	N/A N/A 1 ntity: 75.6 r Y	n es ⊠ No □ Poor*	Limited □ Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	stem:  m² all	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units M m each %	<b>Exc.</b> ' quadrant.	Width: Height: Count: Total Quar Inspected: Good 75.6	N/A N/A 1 ntity: 75.6 r Y	n es ⊠ No □ Poor*	Limited □ Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sy: Condition Data:  Comments: Cable guide if Guide rail mi	stem:  m² all  rail is tw	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units M m each %	Exc.  ' quadrant. rant creating	Width: Height: Count: Total Quar Inspected: Good 75.6	N/A N/A 1 ntity: 75.6 r Y Fair	n es 🗵 No 🗆 Poor* ard.	Limited □ Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data: Comments:	stem:  m² all  rail is tw	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units Meach %  Yo posts short at SW section at SW quadr	Exc.  / quadrant. rant creating	Width: Height: Count: Total Quar Inspected: Good 75.6	N/A N/A 1 ntity: 75.6 r Y	n es 🗵 No 🗆 Poor* ard.	Limited □ Perform. Deficiencies
Element Nam Location: Material: Element Type Environment: Protection Sys Condition Data:  Comments: Cable guide is Guide rail mi	e: stem: m² all rail is tw	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units M m each %  /o posts short at SW section at SW quadr	Exc.  ' quadrant. rant creating	Width: Height: Count: Total Quar Inspected: Good 75.6	N/A N/A 1 ntity: 75.6 r Y  Fair  vehicular haza	Poor*  ard.	Limited  Perform. Deficiencies  08
Element Nam Location: Material: Element Type Environment: Protection Sy: Condition Data:  Comments: Cable guide if Guide rail mi	e: stem: m² all rail is tw	Railing System East and West Sides Steel Cable Benign Modera Galvanized Units M m each %  /o posts short at SW section at SW quadr	Exc.  / quadrant. rant creating	Width: Height: Count: Total Quar Inspected: Good 75.6	N/A N/A 1 ntity: 75.6 r Y Fair	Poor*  es No D  Poor*  ard.  e Needs: 18	Limited □ Perform. Deficiencies



Photo 1: Structure Looking East



**Photo 2: Structure Looking West** 



Photo 3: Inlet Top



Photo 4: Outlet Top



Photo 5: Outlet - South Elevation



Photo 6: Inlet - North Elevation



Photo 7: Barrel Looking North

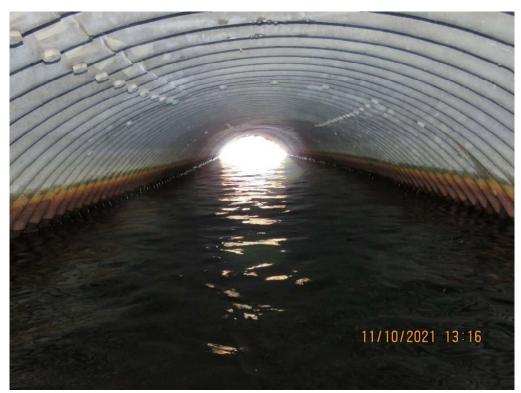


Photo 8: Barrel Looking South



Photo 9: East Wall Corrosion at Waterline



Photo 10: West Wall Corrosion at Waterline