

LOT 15-16 CONCESSION 2 N.T.R. MIDDLETON

Site Number 002423

JACKSON SIDE ROAD, MIDDLETON

2.0 km N of County Road 38

Ontario Structure Inspection Manual - Inspection Form

Site Number:

Inventory Data:			
Structure Name	<input type="text" value="Lot 15-16 Concession 2 NTR Middleton"/>		
Main Hwy/Road #	<input type="text" value="JACKSON SDRD"/>	<input checked="" type="checkbox"/> On <input type="checkbox"/> Under	Crossing Type: <input type="checkbox"/> Rail <input type="checkbox"/> Road <input type="checkbox"/> Navig. Water <input type="checkbox"/> Ped. <input type="checkbox"/> Other <input checked="" type="checkbox"/> Non-Navig. Water
Hwy/Road Name	<input type="text" value="JACKSON SIDE ROAD, MIDDLETON"/>		
Structure Location	<input type="text" value="2.0km N of County Road 38"/>		
Latitude	<input n"="" type="text" value="42d 49' 55"/>	Longitude	<input type="text" value="80d 39' 52" w"=""/>
Owner(s)	<input type="text" value="Norfolk County"/>	Heritage Designation:	<input checked="" type="checkbox"/> Not Cons. <input type="checkbox"/> Cons./not App. <input type="checkbox"/> List/not Design. <input type="checkbox"/> Design. & List <input type="checkbox"/> Desig./not List
MTO Region	<input type="text" value="30"/> Southwestern	Road Class:	<input type="checkbox"/> Freeway <input type="checkbox"/> Arterial <input type="checkbox"/> Collector <input checked="" type="checkbox"/> Local
MTO District	<input type="text" value="31"/> London / Stratford	Posted Speed	<input type="text" value="80"/> No. of Lanes <input type="text" value="2"/>
Old County	<input type="text" value="20"/> Norfolk	AADT	<input type="text" value="289"/> % Trucks <input type="text"/>
Geographic Twp.	<input type="text" value="123"/> Middleton	Inspection Route Sequence	<input type="text"/>
Structure Type	<input type="text" value="13"/> Round Culvert	Interchange Number	<input type="text"/>
Total Deck Length	<input type="text" value="4.2"/> (m)	Interchange Structure Number	<input type="text"/>
Overall Str. Width	<input type="text" value="30"/> (m)	Min. Vertical Clearance	<input type="text" value="3.5"/> (m)
Total Deck Area	<input type="text" value="126"/> (m ²)	Special Route	<input type="checkbox"/> Truck <input type="checkbox"/> Emergency <input checked="" type="checkbox"/> School <input type="checkbox"/> Bicycle
Roadway Width	<input type="text" value="13"/> (m)	Detour Length Around Bridge	<input type="text" value="7.5"/> (km)
Skew Angle	<input type="text"/> (Degrees)	Direction of Structure	<input type="text" value="East / West"/>
No. of Spans	<input type="text" value="1"/>	Fill on Structure	<input type="text" value="5"/> (m)
Span Length	<input type="text" value="4.2"/> (m)		

Historical Data:			
Year Built	<input type="text" value="1965"/>	Year of Last Major Rehab.	<input type="text"/>
Last OSIM Inspection	<input type="text" value="June 18, 2014"/>	Last Evaluation	<input type="text"/>
Last Enhanced OSIM Inspection	<input type="text"/>	Current Load Limit	<input type="text" value="/ /"/> (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)	<input type="text"/>	Load Limit By-Law #	<input type="text"/>
Last Underwater Inspection	<input type="text"/>	By-Law Expiry Date	<input type="text"/>
Last Condition Survey	<input type="text"/>		
Rehab History: (Date/description)			

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Field Inspection Information:		
Date of Inspection:	July 21, 2016	Type of Inspection: <input checked="" type="checkbox"/> OSIM <input type="checkbox"/> Enhanced OSIM
Inspector:	Jason Timmermans, B.Eng., EIT, G. Douglas Vallee Ltd.	
Others in Party:	N/A	
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.	
Weather:	Sunny	
Temperature:	17 °C	

Additional Investigation Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
<input checked="" type="checkbox"/> Detailed Deck Condition Survey:	X		
<input checked="" type="checkbox"/> Non-destructive Delamination Survey of Asphalt-Covered Deck:	X		
<input checked="" type="checkbox"/> Concrete Substructure Condition Survey:	X		
<input checked="" type="checkbox"/> Detailed Coating Condition Survey:	X		
<input checked="" type="checkbox"/> Detailed Timber Investigation	X		
<input checked="" type="checkbox"/> Post-Tensioned Strand Investigation	X		
Underwater Investigation:	X		
Fatigue Investigation:	X		
Seismic Investigation:	X		
Structure Evaluation:	X		
Monitoring			
<input checked="" type="checkbox"/> Monitoring of Deformations, Settlements and Movements:	X		
<input checked="" type="checkbox"/> Monitoring Crack Widths:	X		
Investigation Notes: No signs or barriers.			

Overall Structure Notes:	
Recommended Work on Structure:	<input type="checkbox"/> None <input type="checkbox"/> Minor Rehab. <input type="checkbox"/> Replace <input checked="" type="checkbox"/> Maintenance <input type="checkbox"/> Major Rehab.
Timing of Recommended Work:	<input type="checkbox"/> 1 to 5 years <input type="checkbox"/> 6 to 10 years
Overall Comments:	
Date of next Inspection:	July 21, 2018

Suspected Performance Deficiencies

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> 01 Load carrying capacity 02 Excessive deformations (deflections & rotations) 03 Continuing settlement 04 Continuing movements 05 Seized bearings | <ul style="list-style-type: none"> 07 Bearing not uniformly loaded/unstable 08 Jammed expansion joint 09 Pedestrian/vehicular hazard 10 Rough riding surface 11 Deck drainage | <ul style="list-style-type: none"> 12 Slippery surfaces 13 Flooding/channel blockage 14 Undermining of foundation 15 Unstable embankments 16 Other |
|---|--|---|

Maintenance Needs

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> 01 Lift and swing bridge maintenance 02 Bridge cleaning 03 Bridge handrail maintenance 04 Painting steel bridge structures 05 Bridge deck joint repair 06 Bridge bearing maintenance | <ul style="list-style-type: none"> 07 Repair to structural steel 08 Repair of bridge concrete 09 Repair of bridge timber 10 Bailey bridges - maintenance 11 Animal/pest control 12 Bridge surface repair | <ul style="list-style-type: none"> 13 Erosion control at bridges 14 Concrete sealing 15 Rout and seal 16 Bridge deck drainage 17 Scaling (Loose concrete or ACR steel) 18 Other |
|---|--|---|

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Rehabilitation Required:		Element	Priority				Estimated Construction Cost
Rehab	Replace		Urgent	Within 1 yr	1-5 yrs	6-10 yrs	
		Wearing Surface (Approaches)					
		Barrels					
		Inlet Components					
		Outlet Components					
		Streams and Waterways					
Total Cost							\$0

Associated Work:	Comments	Estimated Construction Cost
Additional Investigations		
Traffic Management		
Utilities		
Road Allowance		
Environmental Assessment		
Engineering		
Other		
Contingencies		
Total Cost		\$0

Justification:		
Notes:	Construction Cost:	\$0
	Associated Work Cost:	\$0
	TOTAL Estimated Cost:	\$0

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Element Data

Element Group:		1600 Approaches				Length:		
Element Name:		1601 Wearing Surface (Approaches)				Width:		
Location:		Top of Fill				Height:		
Material:		2 Asphalt				Count:		1
Element Type:						Total Quantity:		1 Each
Environment:		Severe				Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	0	0	1	0			
Comments:								
Includes: Signs - no signs, Barriers - no barriers. Minor transverse cracks in asphalt and alligator cracks along west edge of road.								
Recommended Work:				Rehab <input type="checkbox"/>		Replace <input type="checkbox"/>		
Timing:				Urgent <input type="checkbox"/>		< 1yr <input type="checkbox"/>		
				1 - 5 yr <input type="checkbox"/>		6 - 10 yr <input type="checkbox"/>		
Maintenance Needs:				Rout and Seal				
				<input type="checkbox"/> Urgent		<input checked="" type="checkbox"/> 1 year		
						<input type="checkbox"/> 2 year		

Element Group:		1200 Culverts				Length:		30
Element Name:		1203 Barrels				Width:		4.2
Location:		Inside				Height:		4.2
Material:						Count:		1
Element Type:						Total Quantity:		395.8 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	sq.m	0	342.8	53	0			
Comments:								
Barrel mis-aligned. Minor rusting and water staining at bolt line above water level.								
Recommended Work:				Rehab <input type="checkbox"/>		Replace <input type="checkbox"/>		
Timing:				Urgent <input type="checkbox"/>		< 1yr <input type="checkbox"/>		
				1 - 5 yr <input type="checkbox"/>		6 - 10 yr <input type="checkbox"/>		
Maintenance Needs:								
				<input type="checkbox"/> Urgent		<input type="checkbox"/> 1 year		
						<input type="checkbox"/> 2 year		

Element Group:		1200 Culverts				Length:		4.2
Element Name:		1201 Inlet Components				Width:		
Location:						Height:		4.2
Material:		4 Cast-in-place Concrete				Count:		1
Element Type:						Total Quantity:		13.9 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	sq.m	0	13.9	0	0			
Comments:								
CSP cut diagonally to suit embankment slope, minor undermining.								
Recommended Work:				Rehab <input type="checkbox"/>		Replace <input type="checkbox"/>		
Timing:				Urgent <input type="checkbox"/>		< 1yr <input type="checkbox"/>		
				1 - 5 yr <input type="checkbox"/>		6 - 10 yr <input type="checkbox"/>		
Maintenance Needs:				Erosion Control				
				<input type="checkbox"/> Urgent		<input checked="" type="checkbox"/> 1 year		
						<input type="checkbox"/> 2 year		

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Element Data

Element Group:		1200 Culverts				Length:		4.2
Element Name:		1202 Outlet Components				Width:		
Location:						Height:		4.2
Material:		4 Cast-in-place Concrete				Count:		1
Element Type:						Total Quantity:		13.9 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition Data:	Units	Exc.	Good	Fair	Poor			
	sq.m	0	13.9	0	0			
Comments: CSP cut diagonally to suit embankment slope, minor undermining.								
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/> Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>				Maintenance Needs: Erosion Control <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 year <input type="checkbox"/> 2 year				

Element Group:		1400 Embankments & Streams				Length:		
Element Name:		1401 Streams and Waterways				Width:		
Location:						Height:		
Material:						Count:		2
Element Type:						Total Quantity:		2 Each
Environment:		Moderate				Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition Data:	Units	Exc.	Good	Fair	Poor			
	Each	0	2	0	0			
Comments: Banks are stable but steep, protected with riprap.								
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/> Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>				Maintenance Needs: <input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year				



Figure 1 North Approach



Figure 2 South Approach



Figure 3 East Profile



Figure 4 West Profile



Figure 5 Upstream



Figure 6 Downstream



Figure 7 Barrel, Looking West, Note Culvert Out of Alignment

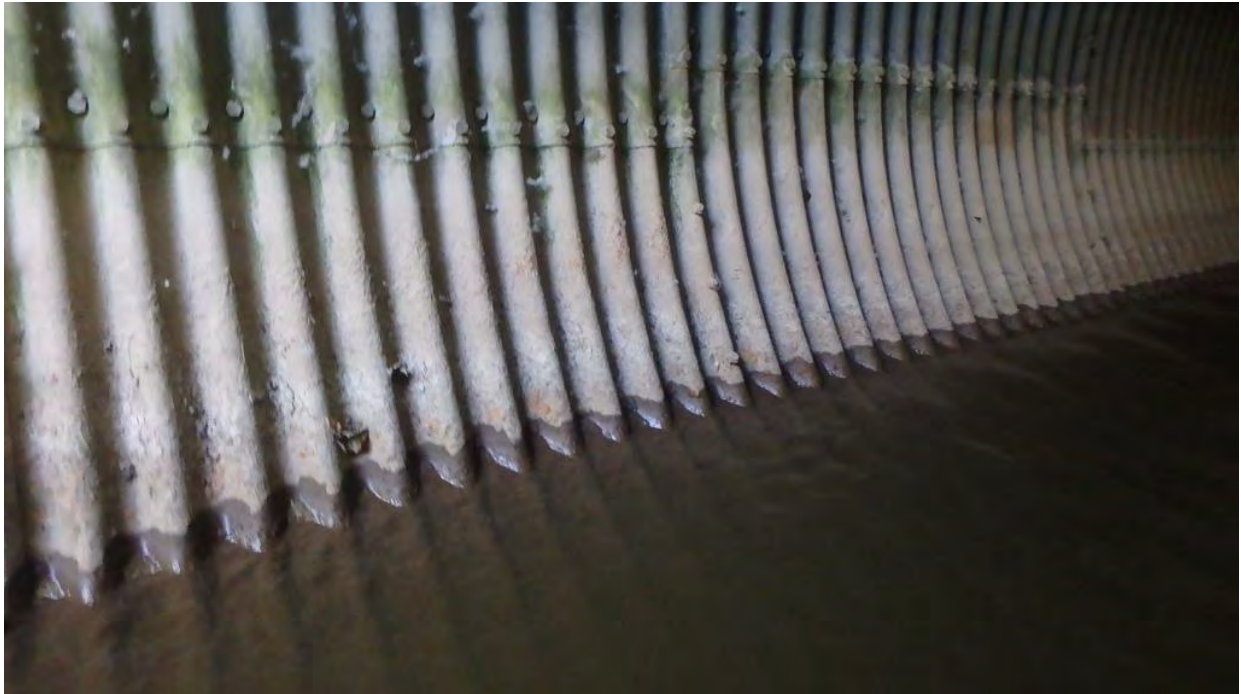


Figure 8 Corrosion and Staining at Water Line



Figure 9 Minor Undermining at All Quadrants



Figure 10 Asphalt Wearing Surface, Note Cracking