

LOT 12-13 N.L.R. HOUGHTON

Site Number 002031

5TH CONCESSION ROAD, HOUGHTON

0.55km N of County Road 42

Ontario Structure Inspection Manual - Inspection Form

Site Number:

Inventory Data:			
Structure Name	<input type="text" value="Lot 12-13 NLR Houghton"/>		
Main Hwy/Road #	<input type="text" value="5TH CON ENR"/>	<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="5TH CONCESSION ROAD, HOUGHTON"/>		
Structure Location	<input type="text" value="0.55km N of County Road 42"/>		
Latitude	<input n"="" type="text" value="42d 35' 44.3"/>	Longitude	<input type="text" value="80d 37' 56" w"=""/>
Owner(s)	<input type="text" value="Norfolk County"/>	Heritage Designation:	<input checked="" type="checkbox"/> Not Cons. <input type="checkbox"/> List/not Design. <input type="checkbox"/> Desig. & List <input type="checkbox"/> Cons./not App. <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="133"/> % Trucks <input type="text"/>
Geographic Twp.	<input type="text" value="1126"/> Houghton	Inspection Route Sequence	<input type="text"/>
Structure Type	<input type="text" value="15"/> Rigid Frame, Vertical Legs	Interchange Number	<input type="text"/>
Total Deck Length	<input type="text" value="20"/> (m)	Interchange Structure Number	<input type="text"/>
Overall Str. Width	<input type="text" value="5"/> (m)	Min. Vertical Clearance	<input type="text" value="2"/> (m)
Total Deck Area	<input type="text" value="100"/> (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="10"/> (m)	Detour Length Around Bridge	<input type="text" value="6.8"/> (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="0.6"/> (m)
Span Length	<input type="text" value="4.3"/> (m)		

Historical Data:			
Year Built	<input type="text" value="1969"/>	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 6, 2016	Type of Inspection: <input checked="" type="checkbox"/> OSIM <input type="checkbox"/> Enhanced OSIM
Inspector:	Matt Alderson, G. Douglas Vallee Ltd.	
Others in Party:	N/A	
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.	
Weather:	Sunny	
Temperature:	29 °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:	Clear overgrowth.
Date of next Inspection:	July 6, 2018

Suspected Performance Deficiencies

- | | | |
|--|---|-------------------------------------|
| 01 Load carrying capacity | 07 Bearing not uniformly loaded/unstable | 12 Slippery surfaces |
| 02 Excessive deformations (deflections & rotations) | 08 Jammed expansion joint | 13 Flooding/channel blockage |
| 03 Continuing settlement | 09 Pedestrian/vehicular hazard | 14 Undermining of foundation |
| 04 Continuing movements | 10 Rough riding surface | 15 Unstable embankments |
| 05 Seized bearings | 11 Deck drainage | 16 Other |

Maintenance Needs

- | | | |
|---|--|---|
| 01 Lift and swing bridge maintenance | 07 Repair to structural steel | 13 Erosion control at bridges |
| 02 Bridge cleaning | 08 Repair of bridge concrete | 14 Concrete sealing |
| 03 Bridge handrail maintenance | 09 Repair of bridge timber | 15 Rout and seal |
| 04 Painting steel bridge structures | 10 Bailey bridges - maintenance | 16 Bridge deck drainage |
| 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 |

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Site Number: 002031

Element Data

Element Group:		1600 Approaches				Length:		
Element Name:		1601 Wearing Surface (Approaches)				Width:		
Location:		Top of Fill				Height:		
Material:		2 Asphalt		Count:		2		
Element Type:						Total Quantity:		2 Each
Environment:		Moderate				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	0	0	2	0			
Comments:								
No signs or barriers. Transverse cracks and settlement at structure edges.								
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:				Bridge Surface Repair				
				Urgent <input type="checkbox"/>		1 year <input checked="" type="checkbox"/>		
				2 year <input type="checkbox"/>				

Element Group:		1200 Culverts				Length:		20
Element Name:		1203 Barrels				Width:		5
Location:		Inside				Height:		2
Material:		4 Cast-in-place Concrete		Count:		1		
Element Type:						Total Quantity:		180 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	sq.m	0	180	0	0			
Comments:								
Approximately 1.5m of deck top visible at each end. Vertical cracks in barrel walls throughout.								
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:				Concrete Sealing				
				Urgent <input type="checkbox"/>		1 year <input checked="" type="checkbox"/>		
				2 year <input type="checkbox"/>				

Element Group:		1200 Culverts				Length:		5
Element Name:		1201 Inlet Components				Width:		0.4
Location:						Height:		2
Material:		4 Cast-in-place Concrete		Count:		1		
Element Type:						Total Quantity:		3.2 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	sq.m	0	3.2	0	0	Flooding/channel blockage		
Comments:								
Gas underground on east side. Clear overgrowth for drainage to creek.								
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:								
				Urgent <input type="checkbox"/>		1 year <input type="checkbox"/>		
				2 year <input type="checkbox"/>				

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Element Data

Element Group:		1200 Culverts				Length:	5
Element Name:		1202 Outlet Components				Width:	0.4
Location:						Height:	2
Material:		4 Cast-in-place Concrete				Count:	1
Element Type:						Total Quantity:	3.2 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor	Flooding/channel blockage	
	sq.m	0	3.15	0	0		
Comments: Clear overgrowth for drainage to creek.							
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:		1400 Embankments & Streams				Length:	
Element Name:		1401 Streams and Waterways				Width:	
Location:						Height:	
Material:		Earth/Native Material				Count:	1
Element Type:						Total Quantity:	1 Each
Environment:		Moderate				Limited Inspection:	
Protection System:		None				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor	Flooding/channel blockage	
	Each	0	1	0	0		
Comments: Banks stable. Clear overgrowth/grub for drainage.							
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: Other - Clear Overgrowth <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> 1 year <input type="checkbox"/> 2 year		

Element Group:		1300 Foundations				Length:	
Element Name:		1301 Foundation (below ground level)				Width:	
Location:						Height:	
Material:						Count:	1
Element Type:						Total Quantity:	1 Each
Environment:						Limited Inspection:	X
Protection System:		Unknown				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	Each						
Comments: Limited inspection, not visible.							
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

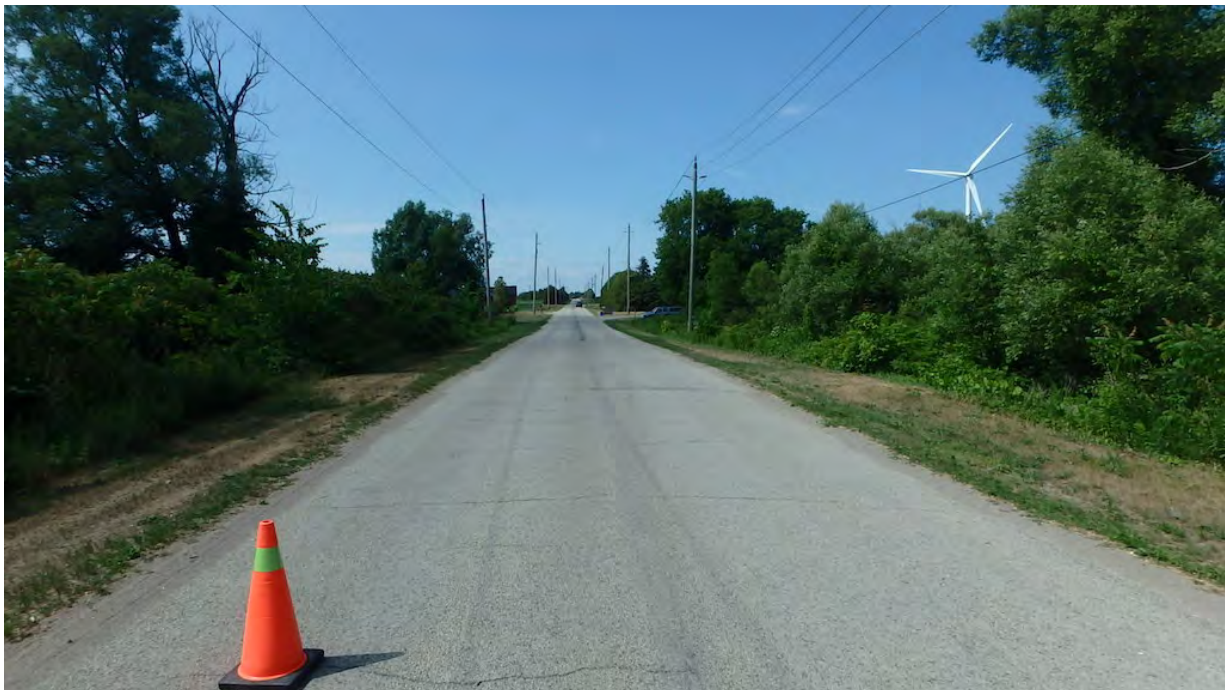


Figure 2 South Approach



Figure 3 East Profile, Outlet



Figure 4 West Culvert Top, Inlet



Figure 5 Upstream



Figure 6 Soffit



Figure 7 North Barrel Wall, Note Staining



Figure 8 South Barrel Wall, Narrow Vertical Cracks



Figure 9 Barrel



Figure 10 Settlement at Structure Edges