

**LOT 1 CONCESSION 3 HOUGHTON**

Site Number 002024

**LOWER SIDE ROAD, HOUGHTON**

1.3km E of County Rd. 28

**Ontario Structure Inspection Manual - Inspection Form**

**Site Number:**

Inventory Data:			
Structure Name <input type="text" value="Lot 1 Concession 3 Houghton"/>			
Main Hwy/Road # <input type="text" value="LOWER SIDE ROAD"/>	<input checked="" type="checkbox"/> On <input type="checkbox"/> Under	Crossing Type: <input type="checkbox"/> Rail <input type="checkbox"/> Ped. <input type="checkbox"/> Road <input type="checkbox"/> Other <input type="checkbox"/> Navig. Water <input checked="" type="checkbox"/> Non-Navig. Water	
Hwy/Road Name <input type="text" value="LOWER SIDE ROAD, HOUGHTON"/>			
Structure Location <input type="text" value="1.3km E of County Rd. 28"/>			
Latitude <input n"="" type="text" value="42d 36' 29.2"/>	Longitude <input type="text" value="80d 38' 44.7" 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./not List	<input type="checkbox"/> Desig. & 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="149"/>	% 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="23"/> (m)	Interchange Structure Number <input type="text"/>		
Overall Str. Width <input type="text" value="15.5"/> (m)	Min. Vertical Clearance <input type="text" value="2.2"/> (m)		
Total Deck Area <input type="text" value="356.5"/> (m <sup>2</sup> )	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="11.5"/> (m)	Detour Length Around Bridge <input type="text" value="7.5"/> (km)		
Skew Angle <input type="text" value="20"/> (Degrees)	Direction of Structure <input type="text" value="North / South"/>		
No. of Spans <input type="text" value="1"/>	Fill on Structure <input type="text" value="0.4"/> (m)		
Span Length <input type="text" value="4.4"/> (m)			

Historical Data:			
Year Built <input type="text" value="1966"/>	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)			

**Ontario Structure Inspection Manual - Inspection Form**

**Site Number:**

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:	28 °C	

Additional Investigation Required:	Priority		
	None	Normal	Urgent
Material Condition Survey			
<input checked="" type="checkbox"/> Detailed Deck Condition Survey:		<b>X</b>	
<input checked="" type="checkbox"/> Non-destructive Delamination Survey of Asphalt-Covered Deck:	<b>X</b>		
<input checked="" type="checkbox"/> Concrete Substructure Condition Survey:	<b>X</b>		
<input checked="" type="checkbox"/> Detailed Coating Condition Survey:	<b>X</b>		
<input checked="" type="checkbox"/> Detailed Timber Investigation	<b>X</b>		
<input checked="" type="checkbox"/> Post-Tensioned Strand Investigation	<b>X</b>		
Underwater Investigation:	<b>X</b>		
Fatigue Investigation:	<b>X</b>		
Seismic Investigation:	<b>X</b>		
Structure Evaluation:	<b>X</b>		
Monitoring			
<input checked="" type="checkbox"/> Monitoring of Deformations, Settlements and Movements:	<b>X</b>		
<input checked="" type="checkbox"/> Monitoring Crack Widths:	<b>X</b>		
Investigation Notes: Wearing Surface - Rout and Seal, Bridge Cleaning - Bridge Surface Repair			

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 6, 2018

**Suspected Performance Deficiencies**

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

**Maintenance Needs**

- |   |  |   |
|---|--|---|
| <b>01</b> Lift and swing bridge maintenance | <b>07</b> Repair to structural steel   | <b>13</b> Erosion control at bridges            |
| <b>02</b> Bridge cleaning                   | <b>08</b> Repair of bridge concrete    | <b>14</b> Concrete sealing                      |
| <b>03</b> Bridge handrail maintenance       | <b>09</b> Repair of bridge timber      | <b>15</b> Rout and seal                         |
| <b>04</b> Painting steel bridge structures  | <b>10</b> Bailey bridges - maintenance | <b>16</b> Bridge deck drainage                  |
| <b>05</b> Bridge deck joint repair          | <b>11</b> Animal/pest control          | <b>17</b> Scaling (Loose concrete or ACR steel) |
| <b>06</b> Bridge bearing maintenance        | <b>12</b> Bridge surface repair        | <b>18</b> Other                                 |

Ontario Structure Inspection Manual - Inspection Form

Site Number: 002024

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					
		Embankments					
		Foundation (below ground level)					
						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 <hr/> TOTAL Estimated Cost: \$0

**Ontario Structure Inspection Manual - Inspection Form**

**Site Number:** 002024

**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. Drainage is open ditch. Settlement at road edges has been patched.								
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"/>		
				<input type="checkbox"/>		1 year <input type="checkbox"/>		
				<input type="checkbox"/>		2 year <input type="checkbox"/>		

Element Group:		1200 Culverts				Length:		23
Element Name:		1203 Barrels				Width:		4.4
Location:		Inside				Height:		2.2
Material:		4 Cast-in-place Concrete		Count:		1		
Element Type:						Total Quantity:		202.4 sq.m
Environment:		Benign				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	sq.m	0	202.4	0	0			
Comments:								
Approximately 1.5m of deck top visible at each end. Partially covered with vegetation. Build-up of silt along east wall.								
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"/>		
				<input type="checkbox"/>		1 year <input type="checkbox"/>		
				<input type="checkbox"/>		2 year <input type="checkbox"/>		

Element Group:		1200 Culverts				Length:		4.4
Element Name:		1201 Inlet Components				Width:		0.3
Location:						Height:		2.2
Material:		4 Cast-in-place Concrete		Count:		1		
Element Type:						Total Quantity:		2.6 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	sq.m	0	2.6	0	0	Flooding/channel blockage		
Comments:								
Clear vegetation. Gas attached to north face. Includes outlet.								
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"/>		
				<input type="checkbox"/>		1 year <input type="checkbox"/>		
				<input type="checkbox"/>		2 year <input type="checkbox"/>		
						Bridge Cleaning		

**Ontario Structure Inspection Manual - Inspection Form**

**Site Number:** 002024

**Element Data**

Element Group:		1400 Embankments & Streams				Length:		
Element Name:		1402 Embankments				Width:		
Location:						Height:		
Material:		Earth/Native Material				Count:		1
Element Type:						Total Quantity:		1 Each
Environment:		Moderate				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition Data:	Units	Exc.	Good	Fair	Poor			
	Each	0	1	0	0			
Comments: Banks stable.								
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:		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:		<b>X</b>
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 East Approach



Figure 2 West Approach



Figure 3 North Profile, Inlet



Figure 4 South Profile, Outlet





Figure 5      Upstream



Figure 6      Downstream



Figure 7 Barrel, Looking South



Figure 8 Barrel, Note Buildup of Material Along East Wall



Figure 9 Gas Line on Fascia



Figure 10 Gas Line Marker



Figure 11      Wearing Surface, Patched