

**UNITED CHURCH ROAD CULVERT**

Site Number 030002

**UNITED CHURCH ROAD LOT 3-4, WOODHOUSE**

1.1 km W of Hwy 24

**Ontario Structure Inspection Manual - Inspection Form**

**Site Number:**

Inventory Data:			
Structure Name <input type="text" value="United Church Road Culvert"/>			
Main Hwy/Road # <input type="text" value="UNITED CHURCH RD"/>	<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="UNITED CHURCH ROAD, WOODHOUSE"/>			
Structure Location <input type="text" value="1.1km W of Hwy 24"/>			
Latitude <input n"="" type="text" value="42d 46' 51"/>	Longitude <input type="text" value="80d 17' 51" 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="44"/>	% Trucks <input type="text"/>	
Geographic Twp. <input type="text" value="215   Woodhouse"/>	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="3"/> (m)	Interchange Structure Number <input type="text"/>		
Overall Str. Width <input type="text" value="22"/> (m)	Min. Vertical Clearance <input type="text" value="2.6"/> (m)		
Total Deck Area <input type="text" value="66"/> (m <sup>2</sup> )	Special Route <input type="checkbox"/> Truck <input type="checkbox"/> Emergency <input type="checkbox"/> School <input type="checkbox"/> Bicycle		
Roadway Width <input type="text" value="10.3"/> (m)	Detour Length Around Bridge <input type="text" value="0.9"/> (km)		
Skew Angle <input type="text"/> (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="1.2"/> (m)		
Span Length <input type="text" value="3.3"/> (m)			

Historical Data:			
Year Built <input type="text" value="1970"/>	Year of Last Major Rehab. <input type="text"/>		
Last OSIM Inspection <input type="text" value="June 25, 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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**Site Number:**

Field Inspection Information:		
Date of Inspection:	July 26, 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:	20 °C	

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

Overall Structure Notes:	
Recommended Work on Structure:	<input checked="" type="checkbox"/> None <input type="checkbox"/> Minor Rehab. <input type="checkbox"/> Replace <input 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 26, 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                                 |

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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					
		Streams and Waterways					
<b>Total Cost</b>						<b>\$0</b>	

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

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:		Over Culvert				Height:		
Material:		Tar and Chip				Count:		1
Element Type:						Total Quantity:		1 Each
Environment:						Limited Inspection:		
Protection System:		None				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	0	1	0	0			
Comments:								
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>						Maintenance Needs:		
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>						<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year		

Element Group:		1200 Culverts				Length:		22
Element Name:		1203 Barrels				Width:		3.3
Location:		Inside				Height:		3.14
Material:		5 Corrugated Steel				Count:		1
Element Type:		Pipe Round				Total Quantity:		228 sq.m
Environment:		Moderate				Limited Inspection:		
Protection System:		Hot Dip Galvanized				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	sq.m	0	228	0	0			
Comments: Minor surface rust at water level. Short steel wingwalls at all quadrants.								
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>						Maintenance Needs:		
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>						<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:						Count:		45
Element Type:						Total Quantity:		4 Each
Environment:		Moderate				Limited Inspection:		
Protection System:		Unknown				Perform. Deficiencies		
Condition	Units	Exc.	Good	Fair	Poor			
Data:	Each	0	4	0	0			
Comments:								
Recommended Work: Rehab <input type="checkbox"/> Replace <input type="checkbox"/>						Maintenance Needs:		
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>						<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



Figure 4 South Profile





Figure 5 Upstream



Figure 6 Downstream





Figure 7 Barrel

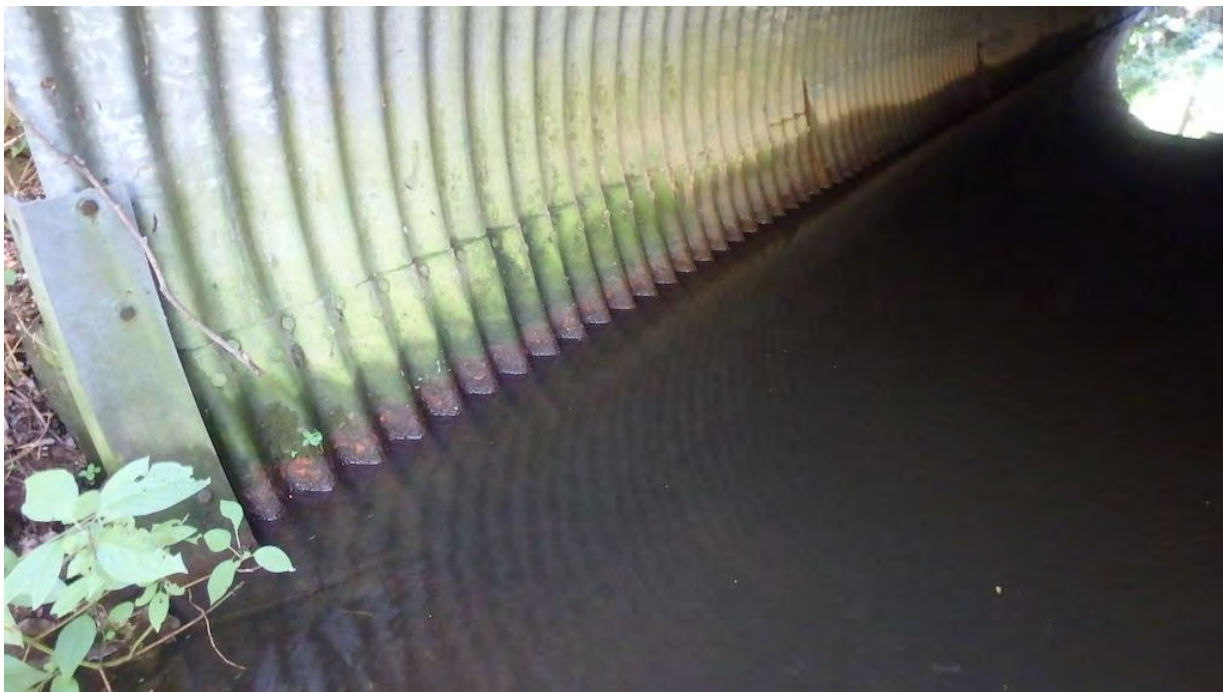


Figure 8 Corrosion at Water Line





Figure 9 Retaining Walls



Figure 10 Wearing Surface