

**SANDERS DRIVEWAY**

Site Number 981905

**COUNTY ROAD 19, TOWNSEND**

5.0 km W of County Road 70

**Ontario Structure Inspection Manual - Inspection Form**

**Site Number:** 981905

Inventory Data:			
Structure Name	Sanders Driveway		
Main Hwy/Road #	NORFOLK COUNTY RD 19 EAST	<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	COUNTY ROAD 19, TOWNSEND		
Structure Location	5.0 km W of County Road 70		
Latitude	42d 59' 57"N	Longitude	80d 12' 51.7"W
Owner(s)	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	30   Southwestern	Road Class:	<input type="checkbox"/> Freeway <input type="checkbox"/> Arterial <input type="checkbox"/> Collector <input checked="" type="checkbox"/> Local
MTO District	31   London / Stratford	Posted Speed	80 No. of Lanes 1
Old County	20   Norfolk	AADT	443 % Trucks
Geographic Twp.	125   Townsend	Inspection Route Sequence	
Structure Type	11   Ellipse Culvert	Interchange Number	
Total Deck Length	8 (m)	Interchange Structure Number	
Overall Str. Width	10 (m)	Min. Vertical Clearance	2.4 (m)
Total Deck Area	80 (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	7 (m)	Detour Length Around Bridge	(km)
Skew Angle	(Degrees)	Direction of Structure	North / South
No. of Spans	2	Fill on Structure	0.5 (m)
Span Length	2 @ 3.7 (m)		

Historical Data:			
Year Built	1985	Year of Last Major Rehab.	
Last OSIM Inspection	May 26, 2014	Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	/ / (tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc.)		Load Limit By-Law #	
Last Underwater Inspection		By-Law Expiry Date	
Last Condition Survey			

Rehab History: (Date/description)

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**Site Number:**

Field Inspection Information:		
Date of Inspection:	June 29, 2016	Type of Inspection: <input checked="" type="checkbox"/> OSIM <input type="checkbox"/> Enhanced OSIM
Inspector:	Ben Buchwald M.Eng., EIT, G. Douglas Vallee Ltd.	
Others in Party:	John McMorrow	
Access Equipment Used:	Hammer, Binoculars, Measuring Tape, Camera, etc.	
Weather:	Sunny	
Temperature:	27 °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 signs or barriers, structure is a driveway.			

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:	June 1, 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                                 |

Rehabilitation Required:		Element	Priority				Estimated Construction Cost
Rehab	Replace		Urgent	Within 1 yr	1-5 yrs	6-10 yrs	
		Barrels					
		Inlet Components					
		Outlet Components					
		Wearing Surface					
						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:		1200 Culverts				Length:	10
Element Name:		1203 Barrels				Width:	3.7
Location:		Interior				Height:	3.1
Material:		14 Steel				Count:	2
Element Type:		Pipe Horizontal Ellipse				Total Quantity:	232.4 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		None				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m	0	232.4	0	0		
Comments:							
Road is asphalt driveway. Minor surface corrosion at waterline.							
Recommended Work:						Maintenance Needs:	
Rehab <input type="checkbox"/> Replace <input type="checkbox"/>						<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year	
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>							

Element Group:		1200 Culverts				Length:	3.7
Element Name:		1201 Inlet Components				Width:	
Location:						Height:	3.1
Material:		14 Steel				Count:	2
Element Type:						Total Quantity:	23.2 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		None				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m	0	23.2	0	0		
Comments:							
Recommended Work:						Maintenance Needs:	
Rehab <input type="checkbox"/> Replace <input type="checkbox"/>						<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year	
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>							

Element Group:		1200 Culverts				Length:	3.7
Element Name:		1202 Outlet Components				Width:	
Location:						Height:	3.1
Material:		14 Steel				Count:	2
Element Type:						Total Quantity:	23.2 sq.m
Environment:		Moderate				Limited Inspection:	
Protection System:		None				Perform. Deficiencies	
Condition Data:	Units	Exc.	Good	Fair	Poor		
	sq.m	0	23.2	0	0		
Comments:							
Recommended Work:						Maintenance Needs:	
Rehab <input type="checkbox"/> Replace <input type="checkbox"/>						<input type="checkbox"/> Urgent <input type="checkbox"/> 1 year <input type="checkbox"/> 2 year	
Timing: Urgent <input type="checkbox"/> < 1yr <input type="checkbox"/> 1 - 5 yr <input type="checkbox"/> 6 - 10 yr <input type="checkbox"/>							

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**Element Data**

Element Group:	100 Decks	Length:											
Element Name:	101 Wearing Surface	Width:											
Location:		Height:											
Material:	2 Asphalt	Count:	1										
Element Type:		Total Quantity:	1 Each										
Environment:	Severe	Limited Inspection:											
Protection System:	None	Perform. Deficiencies											
Condition Data:	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Units</td> <td style="width: 10%;">Exc.</td> <td style="width: 10%;">Good</td> <td style="width: 10%;">Fair</td> <td style="width: 10%;">Poor</td> </tr> <tr> <td>Each</td> <td>0</td> <td>1</td> <td>0</td> <td>0</td> </tr> </table>	Units	Exc.	Good	Fair	Poor	Each	0	1	0	0		
Units	Exc.	Good	Fair	Poor									
Each	0	1	0	0									
Comments: Surface is good. Includes riprap slopes (good). Gravel.													
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 North Approach



Figure 2 South Approach



Figure 3 East Profile, Outlet



Figure 4 West Profile, Inlet





Figure 5 Upstream



Figure 6 Downstream



Figure 7 North Barrel, Looking East



Figure 8 South Barrel, Looking West

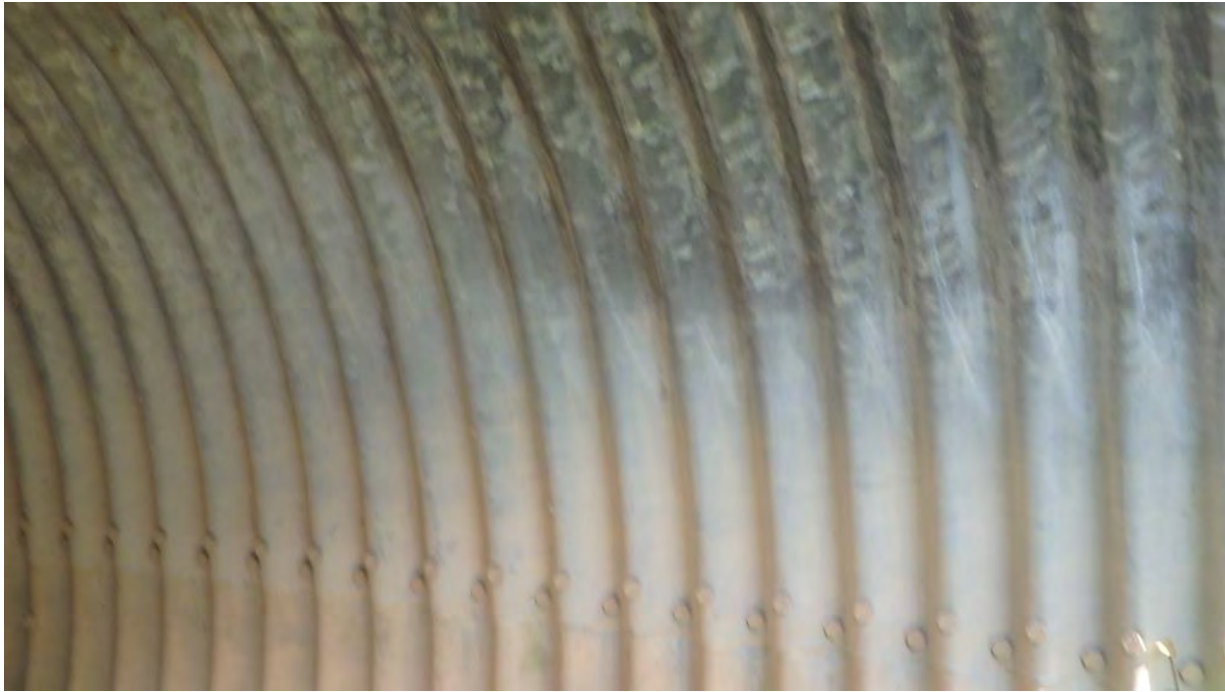


Figure 9 Minor Corrosion at Waterline



Figure 10 Minor Installation Damage