

# APPENDIX B - OSIM INSPECTION REPORT, 2019

# Ontario Structure Inspection Manual - Summary Report

AEID: 20195369000

Structure Name **NIAGARA STREET BRIDGE**

Site Number:

Element Group	Element Name	Unit	Quantity				Unit Cost	Estimated Cost	Time Period
			Good (5%Unit)	Fair (25%Unit)	Poor (75%Unit)	Total (Weighted)			
<b>Abutments</b>	<b>Abutment Walls</b>	<b>Sq.m.</b>	<b>32</b>	<b>5</b>	<b>3</b>	<b>5.1</b>	<b>\$300.00</b>	<b>\$1,530.00</b>	
Comments	South abutment at east corner has a large spall under bearing pedestal. Light to medium scaling along waterline of abutment walls.								
<b>Abutments</b>	<b>Bearings</b>	<b>Each</b>	<b>13</b>	<b>1</b>	<b>0</b>	<b>0.9</b>	<b>\$500.00</b>	<b>\$450.00</b>	
Comments	Abutment bearings are in good condition								
<b>Abutments</b>	<b>Wingwalls</b>	<b>Sq.m.</b>	<b>18</b>	<b>3</b>	<b>0</b>	<b>1.65</b>	<b>\$300.00</b>	<b>\$495.00</b>	
Comments	Wingwalls are in good condition. Light scaling at north wingwalls								
<b>Barriers</b>	<b>Barrier / Parapet Walls</b>	<b>Sq.m.</b>	<b>75</b>	<b>7</b>	<b>1</b>	<b>6.25</b>	<b>\$1,000.00</b>	<b>\$6,250.00</b>	
Comments	Barrier parapet walls are in good condition. Some areas of localized light delamination with cracking along the bottom sidewalk/barrier interface on east side								
<b>Barriers</b>	<b>Hand Railings</b>	<b>m</b>	<b>130</b>	<b>6</b>	<b>0</b>	<b>8</b>	<b>\$300.00</b>	<b>\$2,400.00</b>	
Comments	Steel hand railings are in good condition								
<b>Beams / Main Longitudinal EI</b>	<b>Girders</b>	<b>Sq.m.</b>	<b>1002</b>	<b>48</b>	<b>2</b>	<b>63.6</b>	<b>\$750.00</b>	<b>\$47,700.00</b>	
Comments	Medium cracking of exterior girder near Pier 2 on east side. At South abutment medium to wide cracking on girder near ends.								
<b>Decks</b>	<b>Deck Top</b>	<b>Sq.m.</b>	<b>790</b>	<b>22</b>	<b>0</b>	<b>45</b>	<b>\$300.00</b>	<b>\$13,500.00</b>	
Comments	Based on the condition of the wearing surface, the majority of the bridge deck is assumed to be in good condition. Bottom up defects may occur at some localized areas.								
<b>Decks</b>	<b>Drainage System</b>	<b>Each</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>\$200.00</b>	<b>\$400.00</b>	
Comments	Steel deck drains are have light to medium corrosion throughout								
<b>Decks</b>	<b>Soffit - thin slab</b>	<b>Sq.m.</b>	<b>709</b>	<b>185</b>	<b>150</b>	<b>194.2</b>	<b>\$300.00</b>	<b>\$58,260.00</b>	
Comments	Several areas of severe spalling with exposed reinforcing steel. Areas of active wet patches with signs of delamination. These occur near the middle spans in between interior girders								
<b>Decks</b>	<b>Wearing Surface</b>	<b>Sq.m.</b>	<b>750</b>	<b>50</b>	<b>12</b>	<b>59</b>	<b>\$200.00</b>	<b>\$11,800.00</b>	
Comments	Wearing surface has localized areas of alligator/map cracking.								
<b>Embankments &amp; Streams</b>	<b>Embankments</b>	<b>Each</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0.2</b>	<b>\$2,500.00</b>	<b>\$500.00</b>	
Comments	Embankments are well vegetated and no signs of erosion								

# Ontario Structure Inspection Manual - Summary Report

AEID: 20195369000

Structure Name **NIAGARA STREET BRIDGE**

Site Number:

Element Group	Element Name	Unit	Quantity				Unit Cost	Estimated Cost	Time Period
			Good (5%Unit)	Fair (25%Unit)	Poor (75%Unit)	Total (Weighted)			
<b>Embankments &amp; Streams</b>	<b>Streams and Waterways</b>	<b>All</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0.05</b>	<b>\$2,500.00</b>	<b>\$125.00</b>	
Comments									
<b>Joints</b>	<b>Armouring / Retaining Devices</b>	<b>m</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>1.5</b>	<b>\$2,500.00</b>	<b>\$3,750.00</b>	
Comments									
<b>Piers</b>	<b>Bearings</b>	<b>Each</b>	<b>42</b>	<b>0</b>	<b>0</b>	<b>2.1</b>	<b>\$1,500.00</b>	<b>\$3,150.00</b>	
Comments	Pier bearings are in good condition								
<b>Piers</b>	<b>Caps</b>	<b>Sq.m.</b>	<b>95</b>	<b>8</b>	<b>4</b>	<b>9.75</b>	<b>\$1,000.00</b>	<b>\$9,750.00</b>	
Comments	Piers 2 and 3 have medium to wide cracking propagating from the east side near the top.								
<b>Piers</b>	<b>Shafts / Columns / Pile Bents</b>	<b>Sq.m.</b>	<b>140</b>	<b>15</b>	<b>6</b>	<b>15.25</b>	<b>\$1,000.00</b>	<b>\$15,250.00</b>	
Comments	Pier shafts are in good condition. Localized areas of concrete scaling and delamination. Some cracking noted near the top portion of Piers 2 and 3								
<b>Sidewalks / Curbs</b>	<b>Curbs</b>	<b>m</b>	<b>100</b>	<b>20</b>	<b>16</b>	<b>22</b>	<b>\$200.00</b>	<b>\$4,400.00</b>	
Comments	Areas of concrete spalling along curbs which have been repaired. Cracking at localized areas. Recommend repairing areas where severe concrete deterioration occurs								
<b>Sidewalks / Curbs</b>	<b>Sidewalks and Medians</b>	<b>Sq.m.</b>	<b>185</b>	<b>85</b>	<b>20</b>	<b>45.5</b>	<b>\$200.00</b>	<b>\$9,100.00</b>	
Comments	Areas of delamination with the first layer of concrete scaling off. Asphalt has been used to patch up some areas of the sidewalk. Several longitudinal cracks run along east and west sidewalks. Recommend casting new sidewalk sections in areas of severe deterioration.								

Inventory Data:

Structure Name	NIAGARA STREET BRIDGE		
Main Hwy/Road #	Niagara Street	On <input checked="" type="checkbox"/> Under <input type="checkbox"/>	Crossing Type: Nav Water <input type="checkbox"/> Non Nav Water <input type="checkbox"/>
Hwy/Road Name	Niagara Street	Rail <input type="checkbox"/> Road <input type="checkbox"/> Ped <input type="checkbox"/> Other <input type="checkbox"/>	
Structure Location			
Latitude	42.993482	Longitude	-79.252673
		Northing(Y)	0.000
		Easting(X)	0.000
Owner(s)	City of Welland	Heritage Designation	Not Cons <input type="checkbox"/> Cons Not/App <input type="checkbox"/> List/Not Desig <input type="checkbox"/>
Region	Niagara		Desig Not List <input type="checkbox"/> Desig List <input type="checkbox"/>
MTO District		Road Class:	Freeway <input type="checkbox"/> Arterial <input type="checkbox"/> Collector <input type="checkbox"/> Local <input checked="" type="checkbox"/>
Old County		No. of Lanes	0
		Posted Speed	50 (km/h)
Geographic Twp		AADT	19510
		Trucks	0 (%)
Structure Type		Insp. Route Sequence	
Total Deck Length	68 (m)	Interchange No.	0
Overall Str Width	14 (m)	Inter. Structure No.	0
Total Deck Area	952 (sq. m)	Min. Vertical Clearance	0 (m)
Roadway Width	0 (m)	Special Routes:	Transit <input type="checkbox"/> Truck <input type="checkbox"/> School <input type="checkbox"/> Bicycle <input type="checkbox"/>
Skew Angle	0 (deg)	Detour Length around bridge	0 (km)
No. of Spans	4	Direction of Structure	North/South
		Fill on Structure	0 (m)
Span Lengths	14.3, 14.8, 14.7, 4.3 (m)		

Year Built	1931	Year of Last Major Rehab	1973
Last OSIM Inspection		Last Evaluation	
Last Enhanced OSIM Inspection		Current Load Limit	(tonnes)
Enhanced Access Equipment (ladder, boat, lift, etc)		Load Limit By Law	
		By Law expiry Date	
Last Condition Survey		Last underwater Inspection	

Rehabilitation History

Field Inspection Information:

Date of Inspection:  InspectionType:

Inspector:

Others in Party:

Access Equipment Used:

Weather:

Temperature:

Additional Investigations Required:

Material Condition Survey	Priority (None, Normal, Urgent)
Detailed Deck Condition Survey:	<input type="text" value="None"/>
Non-Destructive Delamination Survey of Asphalt Covered Deck:	<input type="text" value="None"/>
Concrete Substructure Condition Survey:	<input type="text" value="None"/>
Detailed Coating Condition Survey:	<input type="text" value="None"/>
Detailed Timber Investigation:	<input type="text" value="None"/>
Post-Tension Strand Investigation:	<input type="text" value="None"/>
Underwater Survey:	<input type="text" value="None"/>
Fatigue Investigation:	<input type="text" value="None"/>
Seismic Investigation:	<input type="text" value="None"/>
Structure Investigation:	<input type="text" value="Normal"/>
Monitoring	
Monitoring of Deformations, Settlements and Movements:	<input type="text" value="None"/>
Monitoring of Crack Widths:	<input type="text" value="None"/>
Investigation Notes:	

Overall Structure Notes:

Recommended Work on Structure:

Timing:

Overall Comments:

Next Inspection:

Condition Index:

Scheduled Improvements:

Regional Priority:

Programmed Work Year:

Nature of Programmed Work:

Appraisal Indices:	Comment:	
Fatigue:		
Seismic:		
Scour:		
Flood:		
Geom:		
Barrier:		
Curb:		
Load:		

OSIM Performance Deficiencies Table	OSIM Maintenance Needs Table
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- 0 None
- 1 Load carrying capacity
- 2 Excessive deformations (deflections and rotations)
- 3 Continuing settlement
- 4 Continuing movements
- 5 Seized bearings
- 6 Bearing not uniformly loaded/unstable
- 7 Jammed expansion joint
- 8 Pedestrian/vehicular hazard
- 9 Rough riding surface
- 10 Surface ponding
- 11 Deck drainage
- 12 Slippery surfaces
- 13 Flooding/channel blockage
- 14 Undermining of foundation
- 15 Unstable embankments
- 16 Other

- 0 None
- 1 Lift and Swing Bridge Maintenance
- 2 Bridge Cleaning
- 3 Bridge Handrail Maintenance
- 4 Painting Steel Bridge Structures
- 5 Bridge Deck Joint Repair
- 6 Bridge Bearing Maintenance
- 7 Repair to Structural Steel
- 8 Repair to Bridge Concrete
- 9 Repair to Bridge Timber
- 10 Bailey Bridges - Maintenance
- 11 Animal/Pest Control
- 12 Bridge Surface Repair
- 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

Element Group:	Abutments	Length:	0
Element Name:	Abutment Walls	Width:	15.2
Location:	North and South	Height:	1.3
Material:	Cast-in-Place	Count:	2
Element Type:		Total Quantity:	40.00
Element Sub Type:		Environment:	Benign
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	32.00	5.00	3.00	None

Comments: South abutment at east corner has a large spall under bearing pedestal. Light to medium scaling along waterline of abutment walls.

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	Repair to Bridge Concrete	Maintenance Priority:	None

Element Group:	Abutments	Length:	0
Element Name:	Bearings	Width:	0
Location:	North and South Abutments	Height:	0
Material:	Other	Count:	14
Element Type:		Total Quantity:	14.00
Element Sub Type:		Environment:	Benign
Protection System:		Limited Inspection	<input checked="" type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Each	0.00	13.00	1.00	0.00	None

Comments: Abutment bearings are in good condition

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Abutments	Length:	4
Element Name:	Wingwalls	Width:	0
Location:		Height:	1.3
Material:	Cast-in-Place	Count:	4
Element Type:		Total Quantity:	21.00
Element Sub Type:		Environment:	Benign
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	18.00	3.00	0.00	None

Comments: Wingwalls are in good condition. Light scaling at north wingwalls

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Barriers	Length:	68
Element Name:	Barrier / Parapet Walls	Width:	0
Location:	East and West	Height:	0.6
Material:	Cast-in-Place	Count:	2
Element Type:		Total Quantity:	83.00
Element Sub Type:		Environment:	Moderate
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	75.00	7.00	1.00	None

Comments: Barrier parapet walls are in good condition. Some areas of localized light delamination with cracking along the bottom sidewalk/barrier interface on east side

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Barriers	Length:	68
Element Name:	Hand Railings	Width:	0
Location:	East and West	Height:	0
Material:	Aluminum	Count:	2
Element Type:		Total Quantity:	136.00
Element Sub Type:		Environment:	Moderate
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	m	0.00	130.00	6.00	0.00	None

Comments: Steel hand railings are in good condition

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Beams / Main Longitudinal Elements	Length:	58
Element Name:	Girders	Width:	0
Location:	Under Bridge	Height:	0
Material:	Precast Concrete	Count:	28
Element Type:		Total Quantity:	1052.00
Element Sub Type:		Environment:	Benign
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	1002.00	48.00	2.00	None

Comments: Medium cracking of exterior girder near Pier 2 on east side. At South abutment medium to wide cracking on girder near ends.

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Decks	Length:	58
Element Name:	Deck Top	Width:	14
Location:		Height:	0
Material:	Cast-in-Place	Count:	1
Element Type:		Total Quantity:	812.00
Element Sub Type:		Environment:	Moderate
Protection System:		Limited Inspection	<input checked="" type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	790.00	22.00	0.00	None

Comments: Based on the condition of the wearing surface, the majority of the bridge deck is assumed to be in good condition. Bottom up defects may occur at some localized areas.

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Decks	Length:	0
Element Name:	Drainage System	Width:	0
Location:		Height:	0
Material:	Steel	Count:	8
Element Type:		Total Quantity:	8.00
Element Sub Type:		Environment:	Severe
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Each	0.00	0.00	8.00	0.00	None

Comments: Steel deck drains are have light to medium corrosion throughout

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Decks	Length:	58
Element Name:	Soffit - thin slab	Width:	18
Location:		Height:	0
Material:	Cast-in-Place	Count:	1
Element Type:		Total Quantity:	1044.00
Element Sub Type:		Environment:	Benign
Protection System:		Limited Inspection	<input checked="" type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	709.00	185.00	150.00	None

Comments: Several areas of severe spalling with exposed reinforcing steel. Areas of active wet patches with signs of delamination. These occur near the middle spans in between interior girders

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Decks	Length:	58
Element Name:	Wearing Surface	Width:	14
Location:		Height:	0
Material:	Asphalt	Count:	1
Element Type:		Total Quantity:	812.00
Element Sub Type:		Environment:	Severe
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	750.00	50.00	12.00	None

Comments: Wearing surface has localized areas of alligator/map cracking.

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Embankments & Streams	Length:	0
Element Name:	Embankments	Width:	0
Location:		Height:	0
Material:	Other	Count:	4
Element Type:		Total Quantity:	4.00
Element Sub Type:		Environment:	Benign
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Each	0.00	4.00	0.00	0.00	None

Comments: Embankments are well vegetated and no signs of erosion

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Embankments & Streams	Length:	0
Element Name:	Streams and Waterways	Width:	0
Location:		Height:	0
Material:	Other	Count:	1
Element Type:		Total Quantity:	1.00
Element Sub Type:		Environment:	Benign
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	All	0.00	1.00	0.00	0.00	None

Comments:

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

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Element Group:	Joints	Length:	15
Element Name:	Armouring / Retaining Devices	Width:	0
Location:	North and South	Height:	0
Material:	Steel	Count:	2
Element Type:		Total Quantity:	30.00
Element Sub Type:		Environment:	Severe
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	m	0.00	30.00	0.00	0.00	None

Comments: Expansion joints are in good condition, clear from debris

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Piers	Length:	0
Element Name:	Bearings	Width:	0
Location:		Height:	0
Material:	Other	Count:	42
Element Type:		Total Quantity:	42.00
Element Sub Type:		Environment:	Moderate
Protection System:		Limited Inspection	<input checked="" type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Each	0.00	42.00	0.00	0.00	None

Comments: Pier bearings are in good condition

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Piers	Length:	14.9
Element Name:	Caps	Width:	2.4
Location:		Height:	0
Material:	Cast-in-Place	Count:	3
Element Type:		Total Quantity:	107.00
Element Sub Type:		Environment:	Moderate
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	95.00	8.00	4.00	None

Comments: Piers 2 and 3 have medium to wide cracking propagating from the east side near the top.

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

# Ontario Structure Inspection Manual - Inspection Form

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Element Group:	Piers	Length:	1.47
Element Name:	Shafts / Columns / Pile Bents	Width:	11.8
Location:		Height:	2
Material:	Cast-in-Place	Count:	3
Element Type:		Total Quantity:	161.00
Element Sub Type:		Environment:	Moderate
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	140.00	15.00	6.00	None

Comments: Pier shafts are in good condition. Localized areas of concrete scaling and delamination. Some cracking noted near the top portion of Piers 2 and 3

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	None	Maintenance Priority:	None

Element Group:	Sidewalks / Curbs	Length:	68
Element Name:	Curbs	Width:	0
Location:		Height:	0
Material:	Cast-in-Place	Count:	2
Element Type:		Total Quantity:	136.00
Element Sub Type:		Environment:	Severe
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	m	0.00	100.00	20.00	16.00	None

Comments: Areas of concrete spalling along curbs which have been repaired. Cracking at localized areas. Recommend repairing areas where severe concrete deterioration occurs

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	Repair to Bridge Concrete	Maintenance Priority:	None

Element Group:	Sidewalks / Curbs	Length:	68
Element Name:	Sidewalks and Medians	Width:	2.13
Location:	West and East	Height:	0
Material:	Cast-in-Place	Count:	2
Element Type:		Total Quantity:	290.00
Element Sub Type:		Environment:	Moderate
Protection System:		Limited Inspection	<input type="checkbox"/>

Condition Data:	Units:	Exc.	Good:	Fair:	Poor:	PerformDeficiencies:
	Sq.m.	0.00	185.00	85.00	20.00	None

Comments: Areas of delamination with the first layer of concrete scaling off. Asphalt has been used to patch up some areas of the sidewalk. Several longitudinal cracks run along east and west sidewalks. Recommend casting new sidewalk sections in areas of severe deterioration.

Repair/Rehab Comments:		Recommended Work:	
Maintenance Needs:	Repair to Bridge Concrete	Maintenance Priority:	None



View of structure looking north



View of structure looking south



Upstream view



Downstream view



Asphalt patch repairs on west sidewalk. With some localized cracking



Delaminated concrete and asphalt patch repairs on sidewalk near northwest corner of bridge



Bridge parapet wall and handrailing, typical



Deck drain, typical



Map cracking on wearing surface with potholes



Bridge parapet wall, light scaling typical



Concrete delamination on sidewalk on east side



North expansion joint



South expansion joint



Severe deterioration on west curb which has been patch repaired with asphalt



Bridge plaques



Minor settlement and wet spot on bridge deck at southeast corner



South abutment at east corner. Severe spalling and concrete disintegration with steel repair



Exterior girder and bridge deck drain, typical



Large spall and wide crack at southeast corner of abutment diaphragm



Bridge pier wall, typical



Large spall at deck soffit between interior girders with exposed reinforcing steel



South abutment wall, concrete scaling



South abutment bearing, typical



West elevation view



Bridge pier wall, typical



Concrete spall and delaminatio with exposed reinforcing steel at bridge soffit



Wide cracking near top of pier wall with concrete spalling



Active wet spot at bridge soffit with signs of delamination



North abutment wall, typical



Bearing pedestal with cracking of girder at north abutment interior



East elevation view