

Bridge Inspection Report Agnico Eagle

Bridge No.	2017-2318-3.6	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
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Figure 2: Deck joint (at northwest)



Figure 4: Load Test (View from NE of bridge)



Figure 1: creek under bridge - looking east



Figure 3: Deck to ballast wall joint (NE)

Bridge Inspection Report Agnico Eagle

Bridge No.	2017-2318-3.6	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
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Figure 6: Bridge under light load (looking south)



Figure 8: Northeast ballast wall and evazote



Figure 5: Deck level - looking south



Figure 7: Northeast abutment diaphragm and footings

Bridge Inspection Report Agnico Eagle

Bridge No.	2017-2318-3.6	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
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Figure 10: South Abutment



Figure 12: Minor concrete spall, underside of deck (NW corner)



Figure 9: Minor concrete spall at NE abutment



Figure 11: Southeast abutment diaphragm and ballast wall

Bridge No.	2017-2318-3.6	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
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Figure 14: Typical bearing (NW)



Figure 16: Typical bearing guide plate at the end of its slot



Figure 13: Typical back of bearing (NW)



Figure 15: Typical bearing with keepers (southwest)

Bridge Inspection Report

Agnico Eagle

Bridge No.	2017-2318-10.7	Road Name	Meadowbank to Amaruq					Inspection Date	2017-07-15						
STA.	Forest District					Access Notes									
10.7 km															
Bridge Length	Stream Crossing					Inspected By									
14.7 o/o m						R. Smertina									
UTM Zone	Easting					Northing									
No. Spans		Installation Date		Current Load Rating		Deck Width		Project No.		Anticipated Replacement					
1		2016				7900 mm									
Span / Length (m)	1	13.88	2		3		4		5		6		7		
Comments	single span, steel girders, precast concrete deck, integral abutments														
Excellent: New or almost new condition and properly installed Good: Structurally sound, in good repair and have minimal wear Fair: Structurally sound, but show moderate wear or preliminary indications of rot or corrosion Poor: Structurally unsound, major items in need of repair or replacement, or bridge load rating should be reduced															
Abutment, spans, piers numbered from left bank, facing downstream / girders numbered from upstream to downstream.															
Approaches															
Approach Road	Good		Some gaps in road embankment approaching deck edge												
Alignment	Good		Horizontal curve in south approach												
Visibility	Good		Weather dependent												
Signage	N/A		Temporary signage installed currently												
Delineators	N/A		None												
Overall	Good														
Deck - Span 1															
Running Surface	Good		Lifting lug pockets exposed to gravel and traffic impact												
Grout Pockets	Good														
Curb Rails and Risers	Fair		Only 2 of 3 anchor bolts currently installed at each connection - fit-up problems during construction at some locations												
Hardware	Excellent														
Overall	Good														
Superstructure - Span 1															
Girders	Excellent														
Bracing	Good														
Diaphragms	Good														
Hardware	Excellent														
Overall	Good														

Bridge Inspection Report

Agnico Eagle

Bridge No.	2017-2318-10.7	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
Abutment - North					
Bearings	Poor	Some guide plates have reached or are near the limit of allowed movement. Some pillowing effects in neoprene pads is evident.			
Bracing	Good				
Ballast Wall	Good	Evazote under ballast wall appears loose and varies in thickness. Thicker pad to east of wall. Some minor spalling evident at welded embedded plate locations.			
Corrosion Protection	N/A	weathering steel			
Caps or Sills	Good	Footings appear level			
Fill	Good	Approach grading has some gaps near the ends of the deck			
Hardware	Excellent	weathering steel			
Riprap	Excellent				
Wingwall	Good				
Overall	Good				
Abutment - South					
Bearings		Bearing guide plates are near the limit of allowed movement. Some pillowing effects in neoprene pads is evident.			
Bracing	Good				
Ballast Wall	Good	Ballast wall has minor rotation, toe kicking in towards bridge. Some minor spalling evident at welded embedded plate locations.			
Corrosion Protection	Excellent	weathering steel			
Caps or Sills	Excellent	Footings appear level			
Fill	Good	Approach grading has some gaps near the ends of the deck			
Hardware	Excellent	weathering steel			
Riprap	Excellent				
Wingwall	Good				
Overall	Good				
Hazards					
High Water					
Scour					
Ice					
Debris					
Aggradation					
Channel					
Estimated Present Water Level Depth					
Estimated Present Water Level Width					
Estimated High Water Level Clearance					

Bridge Inspection Report

Agnico Eagle

Bridge No.	2017-2318-10.7	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
Repair Description and Cost Estimate					
No.	Description	Priority	Cost Estimate		
1	Confirm that all bracing and bolted connections are tightened according to project specifications	Medium	\$0.00		
2	Cut bearing slots for guide plates to allow further movement - see report for recommended amount	Medium	\$0.00		
3	Install permanent signage at bridge approaches	Low	\$0.00		
4	Grout lifting lug pockets in deck to prevent damage from gravel and traffic	Low	\$0.00		
5	Install railings meeting facility requirements - ensure all anchor bolts are installed	Low	\$0.00		
<p>High: Immediate, non-recurring repair to assure public safety</p> <p>Medium: Ongoing, regular maintenance items to protect capital investment</p> <p>Low: Minor maintenance items or improvements to extend service life</p> <p>The cost estimate for individual maintenance items reflects the cost of materials and labour for completing a task; it does not include any costs associated with mobilization, demobilization, delivery of materials, engineering or contract administration.</p>					
Monitoring Items					
No.	Description				
1	Widen road embankments to match bridge deck width or provide delineation at gap				
2	Monitor leakage due to lack of drip grooves at cast-in-place concrete deck soffit				
3	Monitor for loose or missing evazote at underside of ballast wall or joints and replace/repair as required				
4	Monitor approach fills regularly to avoid traffic damaging the precast deck panel edges				
Comments				Seal	
Partial Inspection 1:21 pm, 16 degrees C ambient temperature Overcast / Partly Cloudy Load test conducted earlier on July 15th					

Bridge No.	2017-2318-10.7	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
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Figure 2: Minor deck soffit spill (SW corner)



Figure 4: Typical railing connection (SE)



Figure 1: South abutment



Figure 3: Typical bearing (SE)

Bridge Inspection Report Agnico Eagle

Bridge No.	2017-2318-10.7	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
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Figure 6: Damaged NE bin wall



Figure 8: General view from NE



Figure 5: Approach looking south



Figure 7: Evazote under NE ballast wall

Bridge No.	2017-2318-10.7	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
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Figure 10: NW bearing - some slot length remaining



Figure 12: SE end of deck and road embankment



Figure 9: NE abutment diaphragm



Figure 11: Minor spall at NW deck soffit

Bridge Inspection Report

Agnico Eagle

Bridge No.	2017-2318-16.0	Road Name	Meadowbank to Amaruq					Inspection Date	2017-07-15						
STA.	Forest District					Access Notes									
16.0 km															
Bridge Length	Stream Crossing					Inspected By									
45.72 m						R. Smertina									
UTM Zone	Easting					Northing									
No. Spans	Installation Date			Current Load Rating			Deck Width			Project No.			Anticipated Replacement		
1	2017						7900 mm								
Span / Length (m)	1	44.88	2		3		4		5		6		7		
Comments	single span. steel girders (installed in 3 spliced components) with precast concrete deck and integral abutments														
Excellent: New or almost new condition and properly installed Good: Structurally sound, in good repair and have minimal wear Fair: Structurally sound, but show moderate wear or preliminary indications of rot or corrosion Poor: Structurally unsound, major items in need of repair or replacement, or bridge load rating should be reduced															
Abutment, spans, piers numbered from left bank, facing downstream / girders numbered from upstream to downstream.															
Approaches															
Approach Road	Excellent														
Alignment	Good			straight											
Visibility	Good			weather dependent											
Signage	N/A			temporary signage installed currently											
Delineators	N/A			none											
Overall	Good														
Deck - Span 1															
Running Surface	Good			lifting lug pockets exposed to gravel and traffic impact											
Grout Pockets	Good			Drip grooves at CIP deck joints not installed (maintenance consideration)											
Curb Rails and Risers	Fair			Only 2 of 3 anchor bolts currently installed at each connection - fit-up problems during construction at some locations											
Hardware	Good														
Overall	Good														
Superstructure - Span 1															
Girders	Good			Minor bowing observed in girder webs, particularly at splice points.											
Bracing	Good														
Diaphragms	Good														
Hardware	Excellent														
Overall	Good														

Bridge Inspection Report

Agnico Eagle

Bridge No.	2017-2318-16.0	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
Abutment - North					
Bearings	Fair	Guide plates are at or near the limit of allowed movement			
Bracing	Good				
Ballast Wall	Good	some loose evazote under ballast wall and at joint with deck. Some minor spalling evident at welded embedded plate locations			
Corrosion Protection	N/A	weathering steel			
Caps or Sills	Good	Some minimal slope observed in top of footings. 7mm movement of longitudinal movement at NW corner.			
Fill	Good				
Hardware	Excellent				
Riprap	Excellent				
Wingwall	Good				
Overall	Good				
Abutment - South					
Bearings	Fair	Guide plates are at or near the limit of allowed movement			
Bracing	Good				
Ballast Wall	Good	some loose evazote under ballast wall and at joint with deck. Some minor spalling evident at welded embedded plate locations			
Corrosion Protection	N/A	weathering steel			
Caps or Sills	Good	some minimal slope observed in footings.			
Fill	Good				
Hardware	Excellent				
Riprap	Excellent				
Wingwall	Good	minor spalling in precast concrete, likely during transport			
Overall	Good				
Hazards					
High Water					
Scour					
Ice					
Debris					
Aggradation					
Channel					
Estimated Present Water Level Depth					
Estimated Present Water Level Width					
Estimated High Water Level Clearance					

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Agnico Eagle

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Repair Description and Cost Estimate					
No.	Description	Priority	Cost Estimate		
1	Cut bearing slots for guide plates to allow further movement	Medium	\$0.00		
2	Confirm that all bracing and bolted connections are tightened according to project specifications.	Low	\$0.00		
3	Install permanent signage at bridge approaches	Low	\$0.00		
4	Grout lifting lug pockets in deck to prevent damage from gravel and traffic	Low	\$0.00		
5	Install railings meeting facility requirements - ensure all anchor bolts are installed	Low	\$0.00		
<p>High: Immediate, non-recurring repair to assure public safety</p> <p>Medium: Ongoing, regular maintenance items to protect capital investment</p> <p>Low: Minor maintenance items or improvements to extend service life</p> <p>The cost estimate for individual maintenance items reflects the cost of materials and labour for completing a task; it does not include any costs associated with mobilization, demobilization, delivery of materials, engineering or contract administration.</p>					
Monitoring Items					
No.	Description				
1	Monitor leakage due to lack of drip grooves at cast-in-place concrete deck soffit				
2	Monitor approach grading regularly to avoid traffic damaging the precast deck panel edges				
3	Monitor for loose or missing evazote at underside of ballast wall or joints and replace/repair as required				
4	Monitor leakage due to lack of drip grooves at cast-in-place concrete deck soffit				
Comments				Seal	
<p>Partial Inspection 11:50 am</p> <p>14 degrees C ambient temperature</p> <p>Load test conducted earlier on July 15th - significant noise observed</p>					

Bridge Inspection Report Agnico Eagle

Bridge No.	2017-2318-16.0	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
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Figure 2: General bridge (from SW)



Figure 4: Minor spalling and scorching at ballast wall and deck soffit (SE)



Figure 1: Exterior of west girder (looking south)



Figure 3: Girder soffit (looking north)

Bridge No.	2017-2318-16.0	Road Name	Meadowbank to Amaruq	Inspection Date	2017-07-15
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Figure 6: NE bearing rear



Figure 8: NW bearing front (fabrication imperfection)



Figure 5: NE bearing front (some protrusion of neoprene over top keeper)



Figure 7: NW abutment diaphragm bracing