



Inspection Report for

B-20-081

BROOKE ST over E BR FOND DU LAC RIVER

Oct 27,2020



Type	Prior	Team Leader	Frequency (mos)	Performed
Routine	10-16-18	Conto, Thomas J (3531)	24	X
Uw-Dive	10-29-16	Hogden, Eric J (9556)	60	
Action				X
SIA Review	10-16-18	Conto, Thomas J (3531)	48	
Uw-Profile	10-16-18	Conto, Thomas J (3531)	60	X

Start Coordinates

Latitude

Longitude

Owner

End Coordinates (optional)

Latitude

Longitude

Maintainer

Team members

Time Log	Hours 1	Minutes 40	Thomas Conto - Team Leader Brian Schmidt - Team Member
Weather	Temperature (f) 28	Condition Partly Cloudy	

Inspector	Name	Number	Signature	Signature Date
	Conto, Thomas J	3531	<i>Thomas J Conto</i> E-signed by Thomas J Conto(Tconto)	12-19-20

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Identification & Location

Feature On: BROOKE ST	Section Town Range: S10 T15N R17E	Structure Number: B-20-081
Feature Under: E BR FOND DU LAC RIVER	County: FOND DU LAC	
Location 0.1M S JCT STH 23	Municipality: FOND DU LAC	Structure Name:

Geometry

measurements in feet, except where noted

Approach Roadway Width: 44	Bridge Roadway Width: 44.0	Total Length: 139.5
Approach Pavement Width: 44	Deck Width: 55.5	Deck Area (sq ft): 7742

Traffic

Lanes	ADT	ADT year	Traffic Pattern
2	4347	2015	TWO WAY TRAFFIC

Capacity

Load Rating

Inventory rating: HS22	Overburden depth (in): 1.5	Last rating date: 03-03-14	Controlling:
Operating rating: HS38	Deck surface material: LOW SLUMP CONCRETE	Re-rate for capacity (Y/N):	Control location:
Posting:	Re-rate notes:		

Hydraulic

Classification

Scour Critical Code(113): (8) STABLE-ABOVE TOP FOOTING	Q100 (ft3/sec): 3630	
High water elevation (ft): 752.7	Velocity (ft/sec): 5.5	Sufficiency #: 98.8

Span(s)

Span #	Material	Configuration	Depth (in)	Length (ft)	Main
1	PREST CONCRETE	BOX SECTIONS		68.3	Y
2	PREST CONCRETE	BOX SECTIONS		68.3	

Expansion joint(s)

Temperature:

Joint #	Location	Type	Last inspection date	File:	New:28
1	PIER	COMPSEAL		Last measure (in)	New measure (in)

Clearance

Item	File Measurement (ft)	File Date	New Measurement (ft)
Highway Min Vertical On Cardinal			
Horizontal On Cardinal			

Construction History

Year	Work Performed	FOS id
2017	OVERLAY - CONCRETE	
1978	NEW STRUCTURE	4986-00-01

Maintenance Items History

Item	Recommended by	Status	Status change	Year completed
Deck - Surface Repair Spalls	Lang, Anthony (2505)	COMPLETE	11/29/18	2018
Mill and replacing of existing concrete deck scheduled for 2017.				
Deck - Patching	Lang, Anthony (2505)	COMPLETE	11/29/18	2018
Approach - Seal Approach to Paving Block	Conto, Thomas J (3531)	COMPLETE	11/19/20	2019
Hot tar sealant required at bridge deck at approach. Route and seal.				
Deck - Repair Sidewalk	Lang, Anthony (2505)	COMPLETE	11/29/18	2018

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Deck - Mill Top of Backwall / Edge of Deck	Lang, Anthony (2505)	COMPLETE	11/29/18	2018
Follow patching and edge milling with 1/4" epoxy overlay				

Maintenance Items

Item	Priority	Recommended by	Status	Status change
Expansion Joints - Repair	MEDIUM	Conto, Thomas J (3531)	IDENTIFIED	11/19/20
Clean EM-Seal expansion joint and then repair damaged edge that has debonded from deck				



Drainage - Repair Washouts / Erosion	LOW	Conto, Thomas J (3531)	IDENTIFIED	11/19/20
Repair washout or settled area along back of walk and along wing wall. Install fill or riprap in NW and SE corners				





Expansion Joints - Seal	LOW	Conto, Thomas J (3531)	IDENTIFIED	11/19/20
Clean and paint the expansion joint sidewalk plate				



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Approach - Seal Cracks	LOW	Conto, Thomas J (3531)	IDENTIFIED	11/19/20
Route and seal approach asphalt cracks and along curblines				
Misc - Remove Graffiti	LOW	Conto, Thomas J (3531)	IDENTIFIED	11/19/20
Remove graffiti from pier and abutments				

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Elements

Chk	Element	Defect	Description	UOM	Total	Quantity in Condition State			
						1	2	3	4
X	15		Prestressed Concrete Top Flange	SF	7,742	7,742	0	0	0
			Top of prestressed box beams not visible due to concrete overlay.						
		8514	Concrete Overlay	SF	5,984	5,904	80	0	0
			New concrete overlay 2017						
		3220	Crack (Wearing Surface)	SF		235	80	0	0
			Cracks in the concrete overlay were sealed with TK9030 epoxy in 2019 but narrow crack were not sealed. Sealed crack about 235 SF (CS1) or cracking and about 80 SF of narrow but unsealed cracks.						
X	104		Prestressed Concrete Closed Web / Box Girder	LF	2,377	2,334	0	30	13
			Efflorescence between beams both spans, some rust colored.						
			Delamination - Spall - Patched Area	LF		0	0	15	13
			Exposed and broken prestressing and corroded rebar stirrups (CS3 and CS4):						
		1080	Girders (G#) numbered from east to west per each span: North span at Pier (Spall): G2, G10, G12 and G13 (1' EA, or Total = 4' CS3) North span at Pier (Exposed Stirrup and Broke Stand): G3, G5 and G9 (1' EA, G8= 3' or Total = 6' CS4) South span at Pier (Spall): G1 and G14 (1' EA, or Total = 2' CS3) South span at Pier (Exposed Stirrup and Broke Stand): G2 and G3 (1' EA, G4= 2' or Total = 4' CS4) At Abutment: North at Abutment (Spall): G5, G6, G7 and G8 (1' EA, or Total = 4' CS3) South at Abutment (Spall): G9, G11, G12, G16 and G17 (1' EA, or Total = 5' CS3) South at Abutment (Exposed Stirrup and Broke Stand): G2, G6 and G7 (1' EA or Total = 3' CS4)						
			Cracking (PSC)	LF		0	0	15	0
			Cracking at Pier and Abutments w/Rust staining (CS3):						
		1110	Girders (G#) numbered from east to west per each span: North span at Pier (Crack): G1, G6, G7, G14 and G15 (1' EA, or Total = 5' CS3) South span at Pier (Crack): G5, G6, G7, G9, G13, G16 and G17 (1' EA, or Total = 7' CS3) At Abutment: North at Abutment (Crack): G6 (1' EA, or Total = 1' CS3) South at Abutment (Crack): G8 and G13 (1' EA, or Total = 2' CS3)						
X	210		Reinforced Concrete Pier Wall	LF	255	235	11	9	0
			Delamination - Spall - Patched Area	LF		0	0	3	0
		1080	Spall 3'x1'x2" deep spall at top of wall under 5th Girder from west						
			Cracking (RC)	LF		0	11	6	0
		1130	Several vertical hairline cracks, <.05" - 5' horizontal and 6' vertical narrow cracks (CS2) - 4' narrow cracks with efflorescence and rust staining (CS3) 2' wide crack with rust staining at west nose of pier (CS3)						
X	215		Reinforced Concrete Abutment	LF	336	309	13	14	0
			Delamination - Spall - Patched Area	LF		0	0	5	0
		1080	Spalling at NW corner with exposed rebar 5'x2.5'x3" above watermain utility.						
			Cracking (RC)	LF		0	13	9	0
		1130	North Abutment: 5 CS2 and 3 CS3 cracks South Abutment: 8 CS2 and 6 CS3 cracks						

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X	302		Compression Joint Seal	LF	96	66	0	30	0
			Mid span joint replaced in 2017 (BEJS System- Joint Sealer). End joints replaced d through walk as well.						
		2310	Leakage, Seal Adhesion, Damage, Cracking	LF		0	0	10	0
			Comp Seal about 10' CS3 seal adhesive failing						
		2350	Debris Impaction	LF		0	0	20	0
			Comp Seal about 20' CS3 debris impacting the seal						
X	331		Reinforced Concrete Bridge Rail	LF	269	246	17	6	0
			Several HL cracks in parapet; East railing includes 1.6 foot wide adjacent curb/median.						
		1080	Delamination - Spall - Patched Area	LF		0	0	4	0
			Delamination and spall at corners: - SW 12"x20"x5" w/ exposed rebar - SE 12"x2"x2" (approach railing) - SW 30"x10"x1" back side of rail, overlapping other spall (above) - SE 6" diameter spall at curbline						
		1130	Cracking (RC)	LF		0	17	2	0
			Cracking Narrow (CS2) and medium with rust staining (CS3): - East Rail: 11' CS2 Map cracking and 2 CS3 w/rust staining - West Rail: 6' CS2 Map cracking						
X	8400		Integral Wingwall	EA	4	3	1	0	0
		8902	Wall Movement	EA		3	1	0	0
			SE wing wall at top has exposed rebar and cracked concrete at abutment						

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Assessments

Chk	Element	Defect	Description	UOM	Total	Quantity in Condition State			
						1	2	3	4
X	9001		Drainage - Ends of Structure NW and SW quadrant settling where fill and/or riprap is required	EA	4	2	2	0	0
X	9009		Sidewalk Sidewalk delam. repaired 2015 and joints over pier repaired in 2017. West sidewalk overhang has 16 SF of CS3 cracking with heavy efflorescence.	EA	2	1	0	1	0
X	9011		Utilities 12" insulated water and 8" gas hanging on west sidewalk, insulation deteriorating, brick and concrete spalling at connection to NW abutment. Unknown utility east side between bridge and railroad bridge.	EA	3	1	1	1	0
X	9047		Slope Protection- Other Vegetation over some small stone northwest and southwest, adjacent old railroad structure NE and SE, B-20-247 .	EA	2	2	0	0	0
X	9248		Culvert End Treatment 12" RCP located in NW abutment	EA	1	1	0	0	0
X	9323		Approach Roadway - Asphalt Concrete approach milled and paved with asphalt	EA	2	2	0	0	0
X	9335		Decorative Rail Corroded nuts on east rail midspan. Missing nut on approach rail corner.	EA	2	0	2	0	0

NBI Ratings

	File	New
Deck	9	8
Superstructure	6	6
Substructure	6	6
Culvert	N	N
Channel	8	8
Waterway	8	8

Structure Specific Notes

Inspection Specific Notes

Inspector Site-Specific Safety Considerations

Routine Specific Procedures

Top: Park on street inspect on foot
 Under: Access via boat, inspect girders and probing substructures

Special Requirements

Other	Chk	Hours	Cost	Comments
	X			Boat for inspection of box girders

Action

Action Plan: Structural Review	Created: 19-Nov-2020	Due: 28-Dec-2020
Overall Notes: Box girder defects along the pier and the abutments are progressing from seepage of road chlorides through deck seals. The pier compression joint seals were replaced (BEJS EMseal) in 2017 along with a new overlay and the approaches were hot tar sealed in 2019. However, the defects are evident and noted on this inspection report.		
Reviewer: Pence, Alex	Reviewer PE Number: 40925-6	Review Method: engineering judgement

Element	Required Reason	Note
Prestressed Concrete Closed Web / Box Girder	increase in CS4 quantity	See comments above. These defects were reviewed with WisDOT BOS Alex Pence and determined a structural review isn't warranted. Defects will be monitored during routine inspections.

Final Action

No Action Required	
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Final Action(s) Complete: 18-Dec-2020 B-20-081-27-Oct-2020 inspection as of 19-Dec-2020	Late Reason:	Late Reason Status Notes:
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18-Dec-2020		
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Underwater Probe Form B-20-081

General Site Conditions - Scour

No scour problem, probing indicates isolated area of water depth greater than four feet along northeast side of pier.

General Site Conditions - Embankment Erosion/Conditions

No erosion.

Substructure Notes

Chk	Unit	Max Water Depth(ft)	Mode	Notes
X	Cardinal	3.0	Boat	North. West 0' (2' of silt), middle 2' (1' of silt), east 3.0' (1' of silt) Water elevation is 9.9' below BM (West walk) or 747.23
X	Pier 1	6.5	Boat	Diver scheduled to check pier greater than 4' deep. Center Pier dove 2016 see report. Probing 6.5' on north end and 3' on south w/1' Silt
X	Non Cardinal	4.0	Boat	South. West 1', middle 4', East 4'.

UW Profile Item 1

Streambed profile East	b20-081_20_xpd1.pdf (included)
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UW Profile Item 2

Streambed profile West	b20-081_20_xpd2.pdf (included)
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Routine Item 1

West elevation	 <p>b20-081_20_Rd16.jpg</p>
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Routine Item 2

West elevation	 <p>b20-081_20_Rd21.jpg</p>
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Routine Item 3

East elevation	 <p>b20-081_20_Rd17.jpg</p>
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Routine Item 4

Downstream west



b20-081_20_Rd22.jpg

Routine Item 5

Upstream east



b20-081_20_Rd20.jpg

Routine Item 6

Roadway looking north



b20-081_20_Rd18.jpg

Routine Item 7

Roadway looking south



b20-081_20_Rd19.jpg

Routine Item 8

Cracking, spalling and exposed prestressing and stirrups at end of box girder at abutments (Typ.) (CS4)



b20-081_20_Rd2.jpg

Linked Element(s):
Prestressed Concrete Closed Web / Box Girder

Routine Item 9

Cracking and delamination at end of box girder (CS3) at pier and pier cracking (CS2)



b20-081_20_Rd3.jpg

Linked Element(s):
Prestressed Concrete Closed Web / Box Girder
Reinforced Concrete Pier Wall

Routine Item 10

Spalling, exposed, corroded and broken stands/stirrups (C4)



b20-081_20_Rd13.jpg

Linked Element(s):
Prestressed Concrete Closed Web / Box Girder

Routine Item 11

Cracking and staining of pier wall (CS3)



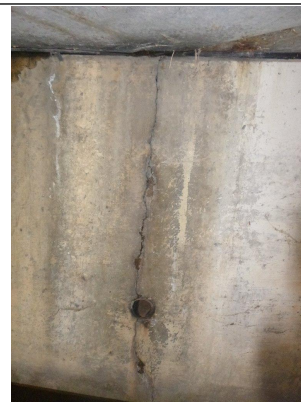
b20-081_20_Rd4.jpg

Linked Element(s):

Reinforced Concrete Pier Wall

Routine Item 12

Cracking and staining of abutment (CS3)



b20-081_20_Rd12.jpg

Linked Element(s):

Reinforced Concrete Abutment

Routine Item 13

Abutment cracking, staining and water leaking from approach (Typ.) CS2



b20-081_20_Rd1.jpg

Linked Element(s):

Reinforced Concrete Abutment

Routine Item 14

Cracking of topside of pier (west end) (CS3) and staining end of box girders as pier. Corroded abandoned watermain, water level indicator at center pier (west) damaged



b20-081_20_Rd7.jpg

Linked Element(s):
Prestressed Concrete Closed Web / Box Girder
Reinforced Concrete Pier Wall
Sidewalk
Utilities

Routine Item 15

Missing railing nut SW corner



b20-081_20_Rd8.jpg

Linked Element(s):
Decorative Rail

Routine Item 16


Spall and exposed rebar end of parapet at center pier expansion joint (CS3)



b20-081_20_Rd9.jpg


Linked Element(s):
Reinforced Concrete Bridge Rail

Routine Item 17

Spalling of back side of bridge railing SW end of deck (CS3)	 <p>b20-081_20_Rd15.jpg</p>
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Linked Element(s):
Reinforced Concrete Bridge Rail

Routine Item 18

Abandoned water main and spalling of abutment above, NW quadrant. Exposed rebar with section loss (CS3)	 <p>b20-081_20_Rd10.jpg</p>
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Linked Element(s):
Reinforced Concrete Abutment
Utilities

Routine Item 19

Abandoned water main and existing gas main utility, NW quadrant.	 <p>b20-081_20_Rd11.jpg</p>
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Linked Element(s):
Utilities

Routine Item 20

Damaged compression seal (CS3) at pier west end	 <p data-bbox="1066 600 1252 622">b20-081_20_Rd14.jpg</p>
<p data-bbox="82 622 245 645">Linked Element(s):</p> <p data-bbox="82 645 344 674">Compression Joint Seal</p>	

