New York State Department of Transportation
General Bridge Inspection Report

Inspection Date: November 03, 2021

Structure Information

BIN: **1069090**
Feature Carried: I481 SB TO I81 SB
Feature Crossed: 81I 81I33032013 SB
Orientation: 2 - NORTHEAST
Region: 03 - SYRACUSE
County: ONONDAGA
Political Unit: City of SYRACUSE
Approximate Year Built: 1980

Primary Owner: New York State Department of Transportation
Primary Maintenance Responsibility: New York State Department of Transportation
General Type Main Span: 4 - Steel (Continuous), 02 - Stringer/Multi-Beam or Girder
This Bridge is not a Ramp
Number of Spans: 5

Postings

Posted Load Matches Inventory: Yes
Posted Load in field: Not Posted
Posted Vertical Clearances Match Inventory: Yes
Inventory On: Not Posted
Inventory Under: Not Posted

Number of Flags Issued

Red PIA: 0
Red: 0
Yellow: 0
Safety PIA: 0

New York State Inspection Overview

General Recommendation: 4

Federal NBI Ratings

NBI Deck Condition: 5
NBI Superstructure Condition: 5
NBI Substructure Condition: 7
NBI Channel Condition: N
NBI Culvert Condition: N

Action Items

Non-Structural Condition Observations noted: YES
Vulnerability Reviews Recommended: NO
Diving Inspection Requested: NO
Further Investigation Requested: NO

Inspector & Reviewer Signature Information

Inspection Signature: Daniel Ghebre-Medhin, P.E. 096619-1 *Date:* December 17, 2021
Review Signature: Lawrence Mathews, P.E. 051173-1 *Date:* December 17, 2021
Processed by : Timothy Snow, P.E. 085992-1 *Date:* December 29, 2021

Report Printed: December 29, 2021 9:43:05 AM

Special Emphasis Inspection

Special Emphasis Detail	"Other" Special Emphasis Detail Description	Hands-On Insp Performed	Hands-On Inspection Note
AASHTO Category D, E, and E' welded details		Yes	Longitudinal stiffeners and welded gusset plates for the secondary to primary (tension zone) connections. No defects were found. See special emphasis section in the BIN folder.
Steel Web Bearing Area		Yes	G5 at begin abutment, G1 at the end of Span 3, G4 at the begin of Span 4 and G5 and G1 at the end of Span 5 have overall web/bearing stiffener horizontal plane section losses. See special emphasis section in the BIN folder. See also Elements 107 and 831 for details.

Additional Information

Overloads Observed

No overload vehicles observed during this inspection.

Notes to Next Inspector

BIN Plate is located at the begin left wingwall.
2021 Access - Walking, UB60, WZTC Lane Closure with Attenuator, Bucket truck

Improvements Observed

2017 Improvements: The left curb near midspan of span 4 has been repaired. The left curb near the end of span 5 has been repaired.
The right 10 feet of the pier 1 and pier 3 joints has had their headers patched since the last inspection. The concrete header at the end abutment has also been patched.
The section loss previously reported at the lower 1 foot of the web of G1 before the bearing stiffener at the beginning of span 4 over pier 3 has been repaired since the last inspection by welding a 3/8 inch thick plate to the lower 1 foot ± above the bearing. In addition, an 8 inch +/- high plate has been welded at the upper 8 inches ± of the web of G1 at the beginning of span 3.

2019 - Partial joint header repairs, Span 2 left curb repairs

2021: Since the last inspection the concrete header of the joint pier 3 appears to be repaired.

Pedestrian Fence Height

None

Snow Fence

Yes

Bin Plate Condition

OK

Scour Critical Rating

N - Bridge not over waterway.

Field Notes

Staff Present During Inspection		
Name	**Title**	**Organization**
Alex Space	WZTC	CP.WARD
Bob O Dell	Foreman	CP.WARD
Dan Stopka Newman	WZTC	CP.WARD
John Kent	WZTC	CP.WARD
Pat Mosher	Foreman	CP.WARD
Tariq Mohammad	Asst.Team Leader	CV.Associates NY
Tom Page	UBIU	N.E.Bridge

General Equipment Required for Inspection*
Access Type
13 - Walking
16 - 40 foot Under Bridge Inspection Unit (UBIU)
17 - 60 foot Under Bridge Inspection Unit (UBIU)
19 - Up to 30 Foot Lift
29 - Lane Closure With Shadow Vehicle

*** For span specific equipment requirements refer to the Active Inventory's "Access Needs" tab in BDIS.**

Detailed Time & Weather Conditions				
Field Date	**Arrival**	**Departure**	**Temp (F)**	**Weather Conditions**
10/21/2021	07:30 AM	03:00 PM	56	Sunny
11/03/2021	08:00 AM	12:00 PM	33	Cloudy

Inspection Times (hours)	
Time required for travel, inspection and report preparation	24
Lane closure usage	8
Railroad flagging time	No

Element Quantities

Element Assessment Summary Table							
Element	**Total Quantity**	**Unit**	**CS-1**	**CS-2**	**CS-3**	**CS-4**	**CS-5**
12 - Reinforced Concrete Deck	25280	SQUARE_FOOT		25180	100		0
107 - Steel Open Girder/Beam	3925	ft		3915	10		0
210 - Reinforced Concrete Pier Wall	48	ft	36	10	2		0
215 - Reinforced Concrete Abutment	70	ft	32	29	9		0
220 - Reinforced Concrete Pile Cap/Footing	309	ft					309
234 - Reinforced Concrete Pier Cap	128	ft	62	56	10		0
300 - Strip Seal Expansion Joint	96	ft		22		74	0
314 - Pot Bearing	35	each	5	30			0
321 - Reinforced Concrete Approach Slab	2027	SQUARE_FOOT		1650	377		0
330 - Metal Bridge Railing	1580	ft		1580			0
510 - Wearing Surfaces	22910	SQUARE_FOOT		12610	10300		0
515 - Steel Protective Coating	75518	SQUARE_FOOT		40826	18853	15839	0
800 - Erosion or Scour	281	ft	206	35	40		0
811 - Curb	1580	ft		1555	25		0
830 - Secondary Members	5	each		5			0
831 - Steel Beam End	20	each		14	6		0
850 - Backwall	64	ft		58	6		0
851 - Abutment Pedestal	10	each	9	1			0
852 - Pier Pedestal	25	each	18	4	3		0
853 - Wingwall	126	ft		126			0

Element Assessment by Span							
Element**	**Total Quantity**	**Unit**	**CS-1**	**CS-2**	**CS-3**	**CS-4**	**CS-5**
Span Number : 1							
BA215 - Reinforced Concrete Abutment	35	ft	32	2	1		0
BA220 - Reinforced Concrete Pile Cap/Footing	35	ft					35
BA300 - Strip Seal Expansion Joint	32	ft				32	0
BA314 - Pot Bearing	5	each		5			0
515 - Steel Protective Coating	20	SQUARE_FOOT			16	4	0
BA321 - Reinforced Concrete Approach Slab	939	SQUARE_FOOT		889	50		0
BA800 - Erosion or Scour	35	ft		25	10		0

Element**	Total Quantity	Unit	CS-1	CS-2	CS-3	CS-4	CS-5
BA831 - Steel Beam End	5	each		4	1		0
BA850 - Backwall	32	ft		29	3		0
BA851 - Abutment Pedestal	5	each	4	1			0
BW220 - Reinforced Concrete Pile Cap/Footing	74	ft					74
BW800 - Erosion or Scour	74	ft	74				0
BW853 - Wingwall	73	ft		73			0
PR210 - Reinforced Concrete Pier Wall	12	ft	12				0
PR220 - Reinforced Concrete Pile Cap/Footing	25	ft					25
PR234 - Reinforced Concrete Pier Cap	32	ft	30		2		0
PR314 - Pot Bearing	5	each	5				0
515 - Steel Protective Coating	20	SQUARE_FOOT		20			0
PR800 - Erosion or Scour	21	ft	21				0
PR852 - Pier Pedestal	5	each	5				0
12 - Reinforced Concrete Deck	4736	SQUARE_FOOT		4721	15		0
510 - Wearing Surfaces	4292	SQUARE_FOOT		2542	1750		0
107 - Steel Open Girder/Beam	721	ft		720	1		0
515 - Steel Protective Coating	12551	SQUARE_FOOT		7530	2510	2511	0
330 - Metal Bridge Railing	296	ft		296			0
515 - Steel Protective Coating	1329	SQUARE_FOOT			931	398	0
811 - Curb	296	ft		296			0
830 - Secondary Members	1	each		1			0
Span Number : 2							
PR210 - Reinforced Concrete Pier Wall	12	ft	12				0
PR220 - Reinforced Concrete Pile Cap/Footing	27	ft					27
PR234 - Reinforced Concrete Pier Cap	32	ft		24	8		0
PR314 - Pot Bearing	5	each		5			0
515 - Steel Protective Coating	15	SQUARE_FOOT			6	9	0
PR800 - Erosion or Scour	19	ft	19				0
PR852 - Pier Pedestal	5	each		2	3		0
12 - Reinforced Concrete Deck	6592	SQUARE_FOOT		6584	8		0
510 - Wearing Surfaces	5974	SQUARE_FOOT		3174	2800		0
107 - Steel Open Girder/Beam	1031	ft		1031			0
515 - Steel Protective Coating	19965	SQUARE_FOOT		11972	4000	3993	0

Element**	Total Quantity	Unit	CS-1	CS-2	CS-3	CS-4	CS-5
330 - Metal Bridge Railing	412	ft		412			0
515 - Steel Protective Coating	1873	SQUARE_FOOT			1311	562	0
811 - Curb	412	ft		412			0
830 - Secondary Members	1	each		1			0
Span Number : 3							
PR210 - Reinforced Concrete Pier Wall	12	ft		10	2		0
PR220 - Reinforced Concrete Pile Cap/Footing	24	ft					24
PR234 - Reinforced Concrete Pier Cap	32	ft		32			0
PR300 - Strip Seal Expansion Joint	32	ft		22		10	0
PR314 - Pot Bearing	10	each		10			0
515 - Steel Protective Coating	40	SQUARE_FOOT			16	24	0
PR800 - Erosion or Scour	21	ft	21				0
PR831 - Steel Beam End	5	each		4	1		0
PR852 - Pier Pedestal	10	each	9	1			0
12 - Reinforced Concrete Deck	4640	SQUARE_FOOT		4615	25		0
510 - Wearing Surfaces	4205	SQUARE_FOOT		2455	1750		0
107 - Steel Open Girder/Beam	726	ft		725	1		0
515 - Steel Protective Coating	11878	SQUARE_FOOT		7022	2480	2376	0
330 - Metal Bridge Railing	290	ft		290			0
515 - Steel Protective Coating	1305	SQUARE_FOOT			913	392	0
811 - Curb	290	ft		290			0
830 - Secondary Members	1	each		1			0
Span Number : 4							
PR210 - Reinforced Concrete Pier Wall	12	ft	12				0
PR220 - Reinforced Concrete Pile Cap/Footing	30	ft					30
PR234 - Reinforced Concrete Pier Cap	32	ft	32				0
PR314 - Pot Bearing	5	each		5			0
515 - Steel Protective Coating	15	SQUARE_FOOT			12	3	0
PR800 - Erosion or Scour	17	ft	17				0
PR831 - Steel Beam End	5	each		4	1		0
PR852 - Pier Pedestal	5	each	4	1			0
12 - Reinforced Concrete Deck	4640	SQUARE_FOOT		4628	12		0
510 - Wearing Surfaces	4205	SQUARE_FOOT		2205	2000		0

Element**	Total Quantity	Unit	CS-1	CS-2	CS-3	CS-4	CS-5
107 - Steel Open Girder/Beam	726	ft		725	1		0
515 - Steel Protective Coating	11927	SQUARE_FOOT		7141	2400	2386	0
330 - Metal Bridge Railing	290	ft		290			0
515 - Steel Protective Coating	1310	SQUARE_FOOT			917	393	0
811 - Curb	290	ft		290			0
830 - Secondary Members	1	each		1			0
Span Number : 5							
EA215 - Reinforced Concrete Abutment	35	ft		27	8		0
EA220 - Reinforced Concrete Pile Cap/Footing	40	ft					40
EA300 - Strip Seal Expansion Joint	32	ft				32	0
EA314 - Pot Bearing	5	each		5			0
515 - Steel Protective Coating	20	SQUARE_FOOT			15	5	0
EA321 - Reinforced Concrete Approach Slab	1088	SQUARE_FOOT		761	327		0
EA800 - Erosion or Scour	40	ft		10	30		0
EA831 - Steel Beam End	5	each		2	3		0
EA850 - Backwall	32	ft		29	3		0
EA851 - Abutment Pedestal	5	each	5				0
EW220 - Reinforced Concrete Pile Cap/Footing	54	ft					54
EW800 - Erosion or Scour	54	ft	54				0
EW853 - Wingwall	53	ft		53			0
12 - Reinforced Concrete Deck	4672	SQUARE_FOOT		4632	40		0
510 - Wearing Surfaces	4234	SQUARE_FOOT		2234	2000		0
107 - Steel Open Girder/Beam	721	ft		714	7		0
515 - Steel Protective Coating	11927	SQUARE_FOOT		7141	2400	2386	0
330 - Metal Bridge Railing	292	ft		292			0
515 - Steel Protective Coating	1323	SQUARE_FOOT			926	397	0
811 - Curb	292	ft		267	25		0
830 - Secondary Members	1	each		1			0

** Elements with a prefix designate the locations of BA-Begin Abutment, BW-Begin Wingwall, EA-End Abutment, EW-End Wingwall, CO-Culvert Outlet, and PR-Pier. No prefix generally indicates the element is part of the superstructure.

Inspection Notes

General Notes

No bats were observed during this inspection.
The Electrical form on file was reviewed. No changes were required.

The wingwalls are not integral with the abutments.

Element Condition Notes

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: 12 - Reinforced Concrete Deck	4736	0	4721	15	0	0
Span 2: 12 - Reinforced Concrete Deck	6592	0	6584	8	0	0
Span 3: 12 - Reinforced Concrete Deck	4640	0	4615	25	0	0
Span 4: 12 - Reinforced Concrete Deck	4640	0	4628	12	0	0
Span 5: 12 - Reinforced Concrete Deck	4672	0	4632	40	0	0

Condition State 3 Note

Referenced Photo(s): 1, 2, 3, 4, 5, 6, 7, 8, 9

Referenced Sketch(es): None

Span 1: There is a spall up to 15’ L X FH of coping X 2.5” D with exposed corroded rebars along the right fascia of the coping from the end of span between bridge rail Post 3 and 4 (Photo 1).

Span 2: There is a spall up to 8’ L X F H of coping X 2.5” D with exposed corroded rebars along the right fascia of the coping from between the bridge rail Post 3 and 4 (Photo 2). Similar condition at the right fascia coping between Post 1 and 2.

Span 3: The right fascia deck has a 10’ L X 1.2’ H X 3” D spall with exposed corroded rebars between bridge rail Post 6 and 7 (Photo 3).
At the light pole anchorage at the right the fascia is spalled FH x 3” deep with exposed corroded rebar (Photo 4).
There are spalls up to 8’ L X 1’ H X 2.5” D with exposed corroded rebars along the right fascia of the coping from the end of span between bridge rail Post 1 and 2 (Photo 5).

Span 4: There is 2’ L X FH of the coping X 3” D spall with exposed corroded rebar at the begin of span 4 Pier 3 (Photo 5).
There is also a horizontal crack with small spall up to 1” D along the right fascia of the coping from the bridge rail Post 1 to Post 3 from the end of span (pier 4) (Photo 6). At the light pole anchorage at the right the fascia coping near the end is spalled up to 3” D with exposed corroded rebar (Photo 7).

Span 5: The right fascia deck has a 10’ L X FH X 3” D spall with exposed corroded rebars between bridge rail Post 6 and 7 (Photo 8).
There is a 6’ L X 1’ H X 3” D spall with exposed corroded rebars below post 9. The right fascia deck has a 15’ L X 1’ H X 3” D spall with exposed corroded rebars between bridge railing Post 10 and 12 (Photo 9) .

There are also multiple spalls up to 8’ L X 1’ H X 2.5” D with exposed corroded rebars along the right fascia of the coping from the bridge rail Post 9 to the end in scattered locations. Loose concrete was removed during the inspection (Photo 9).

No Deck Sketch due to Stay-in-place forms. The SIP forms on the underside of the bridge are in CS-2 in all spans.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: 12 - Reinforced Concrete Deck-510 - Wearing Surfaces	4292	0	2542	1750	0	0
Span 2: 12 - Reinforced Concrete Deck-510 - Wearing Surfaces	5974	0	3174	2800	0	0
Span 3: 12 - Reinforced Concrete Deck-510 - Wearing Surfaces	4205	0	2455	1750	0	0
Span 4: 12 - Reinforced Concrete Deck-510 - Wearing Surfaces	4205	0	2205	2000	0	0
Span 5: 12 - Reinforced Concrete Deck-510 - Wearing Surfaces	4234	0	2234	2000	0	0

Condition State 3 Note

Referenced Photo(s): 10, 11, 12, 13

Referenced Sketch(es): None

The wearing surface is integral with the deck. The wearing surface is worn smooth along the wheel paths in all 5 spans (Photo 10). There are a few transverse/random cracks open up to 1/8” throughout. There are some pop-outs up to 2” dia. x 1” deep at spans 3 and 4 (Photos 12,13). There are also asphalt and concrete patched that are starting to deteriorated in spans 2 and 3 (Photo 11). 40% is assessed CS-3. The remaining is assessed CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: 107 - Steel Open Girder/Beam	721	0	720	1	0	0
Span 3: 107 - Steel Open Girder/Beam	726	0	725	1	0	0
Span 4: 107 - Steel Open Girder/Beam	726	0	725	1	0	0
Span 5: 107 - Steel Open Girder/Beam	721	0	714	7	0	0

Condition State 3 Note

Referenced Photo(s): 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24

Referenced Sketch(es): 3

There is heavy active corrosion and section loss at the girder end lower webs and stiffeners over the bearing area at the following locations:

Span 1 -Girder 5 at begin abutment - 21% (New) (Photo 14)

Span 3 – Girder 1 at Pier 3 - 29% (No change) (Photo 15).

Span 4 – Girder 4 at Pier 3 – 23% (13% in 2019) (Photo 16). There is a 4.5” long X 1.5” high perforation in the lower web tail area beyond the stiffeners.

Span 5 – Girder 5 at end abutment - 20% (No change) (Photo 17). There is a 4.5” long X 1.75” high perforation in the lower web tail area beyond the stiffeners.

Span 5 – Girder 1 at end abutment - 10% (New) (Photo 18). There is 1” Dia. perforation in the lower web. Similarly, Girder 4 at end abutment has up to 10% (Photo 19).
In addition, there is heavy active corrosion and delamination in the scattered areas along the lower web above the bottom flange in all span’s fascia girders (Photos 20-24). Overall average web section loss is less than 5% at all locations.
See Girder End Web Section Loss documentation.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: 107 - Steel Open Girder/Beam-515 - Steel Protective Coating	12551	0	7530	2510	2511	0
Span 2: 107 - Steel Open Girder/Beam-515 - Steel Protective Coating	19965	0	11972	4000	3993	0
Span 3: 107 - Steel Open Girder/Beam-515 - Steel Protective Coating	11878	0	7022	2480	2376	0
Span 4: 107 - Steel Open Girder/Beam-515 - Steel Protective Coating	11927	0	7141	2400	2386	0
Span 5: 107 - Steel Open Girder/Beam-515 - Steel Protective Coating	11927	0	7141	2400	2386	0

Common

Referenced Photo(s): 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25

Referenced Sketch(es): None

The paint system on the steel girders has failed / starting to fail allowing corrosion to occur in all spans. The worst paint failure is on the outboard faces of the fascia girders, bottom flanges and near leaking joints (Photos 14-25). 20% each assessed CS-3 and CS-4. The rest of the paint is dull and assessed CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: BA215 - Reinforced Concrete Abutment	35	32	2	1	0	0

Condition State 3 Note

Referenced Photo(s): 26

Referenced Sketch(es): None

The begin right cheek wall (included as part of the abutment) is spalled/delaminated up to 2 SF X 4” D with corroded rebars at its end face at the top 1.5’ of its height (Photo 26). 1 LF is assessed CS-3. The remaining is assessed CS-1 and CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: PR234 - Reinforced Concrete Pier Cap	32	30	0	2	0	0
Span 2: PR234 - Reinforced Concrete Pier Cap	32	0	24	8	0	0

Condition State 3 Note

Referenced Photo(s): 27, 28, 29

Referenced Sketch(es): None

Pier 1 - There is a up to 2 SF delaminated/spalled area located below G3 pedestal at begin face of Pier 1 cap beam (Photo 27). There is also a small shallow spall located below G4 pedestal at the begin face cap beam. 2 LF is assessed CS-3. The remaining is assessed CS-1.

Pier 2 – There are two up to 1 SF delaminated/spalled area located below G3 and G4 pedestals at begin face of Pier 2 cap beam (Photo 28). There are multiple small spalls up to 1 SF X 1.5” D with exposed corroded rebar near the top below G3 pedestal at the end face of Pier 2 cap beam (Photo 29). 8 LF is assessed CS-3. The remainder is in CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: BA300 - Strip Seal Expansion Joint	32	0	0	0	32	0

Condition State 4 Note

Referenced Photo(s): 30, 31

Referenced Sketch(es): None

The begin joint seal deteriorated for the entire length and is depressed up to 1” below the top of the headers (Photo 30). The right 8’ of the joint seal is missing on the right 6’ and the daylight can be seen (Photo 31). The joint leaks for the full length. The worst leakage is at the right 10’ of the abutment.
The concrete header on the backwall side is deteriorated with several cracks. The entire length is assessed CS-4.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: BA314 - Pot Bearing-515 - Steel Protective Coating	20	0	0	16	4	0

Common

Referenced Photo(s): 32

Referenced Sketch(es): None

The paint of the bearings at the begin abutment has failed allowing corrosion to occur on the surface (Photo 32). 20% is assessed CS-4. The rest of the paint on the bearings is dull and is starting to fail and is assessed CS-3.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: BA321 - Reinforced Concrete Approach Slab	939	0	889	50	0	0
Span 5: EA321 - Reinforced Concrete Approach Slab	1088	0	761	327	0	0

Condition State 3 Note

Referenced Photo(s): 37, 38

Referenced Sketch(es): None

Begin and end approach slabs have There are several random cracks open up to 1/8” at the begin and end approach slabs (Photos 37, 38). 5% is assessed CS-3. The remaining is assessed CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: 330 - Metal Bridge Railing-515 - Steel Protective Coating	1329	0	0	931	398	0
Span 2: 330 - Metal Bridge Railing-515 - Steel Protective Coating	1873	0	0	1311	562	0
Span 3: 330 - Metal Bridge Railing-515 - Steel Protective Coating	1305	0	0	913	392	0
Span 4: 330 - Metal Bridge Railing-515 - Steel Protective Coating	1310	0	0	917	393	0
Span 5: 330 - Metal Bridge Railing-515 - Steel Protective Coating	1323	0	0	926	397	0

Common

Referenced Photo(s): 39, 40

Referenced Sketch(es): None

The galvanized coating of the left and right bridge railing in all spans has failed and allowing surface corrosion to form (Photos 39, 40). 30% is assessed CS-4. The rest of the galvanized coating is dull and starting to fail and is assessed CS-3.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: BA800 - Erosion or Scour	35	0	25	10	0	0

Condition State 3 Note

Referenced Photo(s): 41

Referenced Sketch(es): None

The begin abutment slope protection has displaced/settled and deteriorated concrete pavers for the right 10’ length. Settlement is up to 1.5'. No abutment footing is exposed (Photo 41). 10 LF is assessed CS-3. The remaining is assessed CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: BA831 - Steel Beam End	5	0	4	1	0	0
Span 3: PR831 - Steel Beam End	5	0	4	1	0	0
Span 4: PR831 - Steel Beam End	5	0	4	1	0	0
Span 5: EA831 - Steel Beam End	5	0	2	3	0	0

Condition State 3 Note

Referenced Photo(s): 14, 15, 16, 17, 18, 19

Referenced Sketch(es): 3

See NBA Element 107 Note.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 1: BA850 - Backwall	32	0	29	3	0	0

Condition State 3 Note

Referenced Photo(s): 42

Referenced Sketch(es): None

The begin abutment backwall has a 2’ wide by 4’ high delaminated area in bay 3 (Photo 42). There is also a full height vertical crack up to 1/16” wide just right of G4 in Bay 4. 3 LF is assessed CS-3. The remaining is assessed CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 2: PR314 - Pot Bearing-515 - Steel Protective Coating	15	0	0	6	9	0
Span 3: PR314 - Pot Bearing-515 - Steel Protective Coating	40	0	0	16	24	0
Span 4: PR314 - Pot Bearing-515 - Steel Protective Coating	15	0	0	12	3	0

Common

Referenced Photo(s): 33, 34, 35

Referenced Sketch(es): None

The paint of the bearings at the piers 2 and 3 has failed allowing corrosion to occur on the surface (Photos 33-35). 60% is assessed CS-4. The rest of the paint on the bearings is dull and is starting to fail and is assessed CS-3. A similar 20% paint failure on the bearings at pier 4 with the remaining paint on the bearings is dull and is starting to fail and is assessed CS-3.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 2: PR852 - Pier Pedestal	5	0	2	3	0	0

Condition State 3 Note

Referenced Photo(s): 28, 29

Referenced Sketch(es): None

The end faces of G2 and G3 pedestals at Pier 2 have up to 1 SF of surface spalling up to 1.5” deep with exposed corroded rebars (Photo 29). Also, the begin right corner of the G3 pedestal at Pier 2 is spalled up to 1.5” deep X full height X 5” wide (Photo 28). The right one half of the end face of G5 pedestal is map cracked and delaminated. 3 pedestals are assessed CS-3. The remaining is assessed CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 3: PR210 - Reinforced Concrete Pier Wall	12	0	10	2	0	0

Condition State 3 Note

Referenced Photo(s): 43

Referenced Sketch(es): None

There is a 2.0’ L X 1.5’ H X 3” deep with exposed corroded reinforcing at the base of the end left corner of Pier wall (Photo 43). 2 LF is assessed CS-3. The remaining is assessed CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 3: PR300 - Strip Seal Expansion Joint	32	0	22	0	10	0

Condition State 4 Note

Referenced Photo(s): 44, 45

Referenced Sketch(es): None

The right 10’ of the joint seal is missing (Photo 44) and the daylight can bee seen from the underside joint (Photo 45). The rest joint seal remains fair. Since the last inspection the concrete header appears to be repaired with small asphalt patched. 10 LF is assessed CS-4. The remaining is assessed CS-2.

Span 5: EA215 - Reinforced Concrete Abutment	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
	35	0	27	8	0	0

Condition State 3 Note

Referenced Photo(s): 46

Referenced Sketch(es): None

At the top of the end right cheek wall (assessed as abutment) there is spalled/delaminates for up to 5' length X 4" deep with exposed corroded reinforcing (Photo 46). Also, there are a few other cracks with efflorescence and minor spalls. 8 LF is assessed CS-3. The remaining is assessed CS-2.

Span 5: EA300 - Strip Seal Expansion Joint	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
	32	0	0	0	32	0

Condition State 4 Note

Referenced Photo(s): 47, 48

Referenced Sketch(es): None

The end joint seal deteriorated for the entire length and is depressed up to 1" below the top of the headers and filled with debris. The right of the joint seal is missing on the right 6' and the daylight can be seen (Photos 47, 48). The joint leaks for the full length. The worst leakage is at the right 6' of the abutment.
The concrete header has cracks /spalls along the steel and along the concrete deck and approach slabs. The entire length is assessed CS-4.

Span 5: EA314 - Pot Bearing-515 - Steel Protective Coating	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
	20	0	0	15	5	0

Common

Referenced Photo(s): 19, 36

Referenced Sketch(es): None

The paint of the bearings at the end abutment has failed allowing corrosion to occur on the surface (Photos 19, 36). 25% is assessed CS-4. The rest of the paint on the bearings is dull and is starting to fail and is assessed CS-3.

Span 5: EA800 - Erosion or Scour	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
	40	0	10	30	0	0

Condition State 3 Note

Referenced Photo(s): 49

Referenced Sketch(es): None

There are concrete pavers and small to medium stone filling protecting the end abutment slope. Concrete pavers are heavily spalled and/or missing throughout the end abutment slope (Photo 49). 30 LF is assessed CS-3. The remaining is assessed CS-2.

Span 5: 811 - Curb	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
	292	0	267	25	0	0

Condition State 3 Note

Referenced Photo(s): 51

Referenced Sketch(es): None

Span 5 left curb is displaced from ½" to 1" towards the right for up to 25' length near the end of the span (photo 51).
25 LF is assessed CS-3. The remaining is assessed CS-2.

	TQ	CS-1	CS-2	CS-3	CS-4	CS-5
Span 5: EA850 - Backwall	32	0	29	3	0	0

Condition State 3 Note

Referenced Photo(s): 50

Referenced Sketch(es): None

At the end abutment backwall there is spalled up to 4” deep with exposed reinforcing below the right deck overhang for approximately 2' length by 1.5' of height (Photo 50). 3 LF is assessed CS-3. The remaining is assessed CS-2.

Non-Structural Condition Observations

Category: APPROACH - Railing Quantity: 25 Unit: ft

Referenced Element(s): NONE

Referenced Photo(s): 52
Referenced Sketch(es): NONE

The begin right approach transition railing has its top rail disconnected from 7 consecutive posts (Photo 52). The top rail can be moved slightly by foot at this location. The rail is still in place and is still backed up by the disconnected posts therefore no flag is issued.

Category: ATTACHMENTS - Lighting Quantity: 3 Unit: ea

Referenced Element(s): NONE

Referenced Photo(s): 4,7
Referenced Sketch(es): NONE

The right light poles in Spans 2, 3 and 4 are missing (appear to have been intentionally removed in the past). There are exposed wires at all 3 of these locations (Photos 4,7). It is unknown if the wires are live. No flag is issued since pedestrian traffic is prohibited on this roadway.

Category: CLEANING - Bridge Seat Quantity: 8 Unit: ft

Referenced Element(s): NONE

Referenced Photo(s): 53
Referenced Sketch(es): NONE

End abutment bridge seat bay 3 has a buildup of debris fallen from deteriorated joint (Photo 53) .

Inspection Photographs

Attachment Description:
Spans 1 and 2 right fascia deck near pier 1. Looking Begin Left

Photo Number: **1** Photo Filename: **DSCN7446.JPG**

Attachment Description:
Span 2 right facia deck between Post 3 and. Looking End Left

Photo Number: **2** Photo Filename: **DSCN7441.JPG**

Attachment Description:
Span 3 right fascia deck between Post 6 and 7. Looking End Left

Photo Number: **3** Photo Filename: **DSCN7424.JPG**

Attachment Description:
Span 3 right fascia old light pole base. Looking Left

Photo Number: **4** Photo Filename: **DSCN7423.JPG**

Attachment Description:
Spans 3 and 4 right facia deck near Pier 3. Looking Begin Left

Photo Number: **5** Photo Filename: **DSCN7393.JPG**

Attachment Description:
Span 4 right fascia from Post 4 to post 6. Looking Begin Left

Photo Number: **6** Photo Filename: **DSCN7376.JPG**

Attachment Description:
Span 4 right fascia old light pole. Looking End Left

Photo Number: **7** Photo Filename: **DSCN7374.JPG**

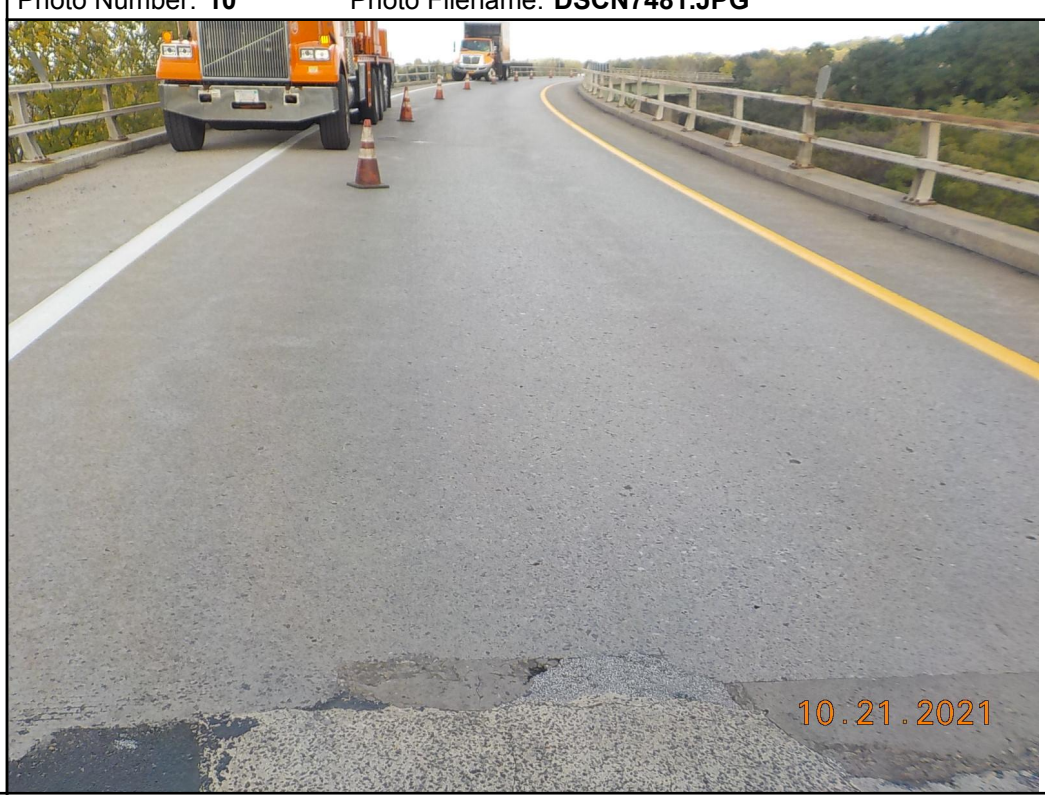
Attachment Description:
Span 5 right fascia between Post 6 and 7. Looking End Left

Photo Number: **8** Photo Filename: **DSCN7352.JPG**

Photo Number: **9** Photo Filename: **DSCN7842.JPG**

Attachment Description:
Span 5 right fascia deck between Posts 9 -12 Over I 481 NB ramp. Looking Begin Left

Photo Number: **10** Photo Filename: **DSCN7481.JPG**



Attachment Description:
Span 1 wearing surface. Looking End

Attachment Description:
Span 2 wearing surface near midspan. Looking End Right

Photo Number: **11** Photo Filename: **DSCN7498.JPG**

Attachment Description:
Span 3 wearing surface midspan. Looking End Right

Photo Number: **12** Photo Filename: **DSCN7502.JPG**

Attachment Description:
Span 4 wearing surface. Looking End Right

Photo Number: **13** Photo Filename: **DSCN7515.JPG**

Attachment Description:
Girder 5 at begin. Looking Begin Left

Photo Number: **14** Photo Filename: **DSCN7459.JPG**

Attachment Description:
Span 3 Girder 1 over Pier 3 left. Looking Right

Photo Number: **15** Photo Filename: **DSCN7410.JPG**

Attachment Description:
Span 4 Girder 4 over pier 3 left. Looking Right

Photo Number: **16** Photo Filename: **DSCN7402.JPG**

Attachment Description:
Girder 5 right at end.
Looking Left

Photo Number: **17** Photo Filename: **DSCN7312.JPG**

Attachment Description:
Girder 1 right at end.
Looking Left

Photo Number: **18** Photo Filename: **DSCN7348.JPG**

Photo Number: **19** Photo Filename: **DSCN7334.JPG**

Attachment Description:
Girder 4 left and bearing 4 at end. Looking Right

Photo Number: **20** Photo Filename: **DSCN7868.JPG**

Attachment Description:
Span 1 Girder 5 left face. Looking Begin

Attachment Description:
Span 2 Girder 5 right face.
Looking End

Photo Number: **21** Photo Filename: **DSCN7871.JPG**

Attachment Description:
Span 3 Girder 5 right face.
Looking Begin

Photo Number: **22** Photo Filename: **DSCN7384.JPG**

Attachment Description:
Span 4 Girder 5 right face .
Looking End

Photo Number: **23** Photo Filename: **DSCN7386.JPG**

Attachment Description:
Span 5 Girder 5 right face.
Looking Begin

Photo Number: **24** Photo Filename: **DSCN7305.JPG**

Photo Number: **25** Photo Filename: **DSCN7362.JPG**

Attachment Description:
Span 5 Framing. Looking End

Photo Number: **26** Photo Filename: **DSCN7496.JPG**

Attachment Description:
Begin right abutment at cheek wall. Looking Begin

Attachment Description:
Pier 1 begin face cap below Girder 3. Looking End

Photo Number: **27** Photo Filename: **DSCN7454.JPG**

Attachment Description:
Pier 2 begin face cap below G3 and pedestal 3. Looking End

Photo Number: **28** Photo Filename: **DSCN7439.JPG**

Attachment Description:
Pier 2 end face cap below G3 and pedestal 2 end face. Looking Begin

Photo Number: **29** Photo Filename: **DSCN7434.JPG**

Attachment Description:
Begin joint. Looking Right

Photo Number: **30** Photo Filename: **DSCN7475.JPG**

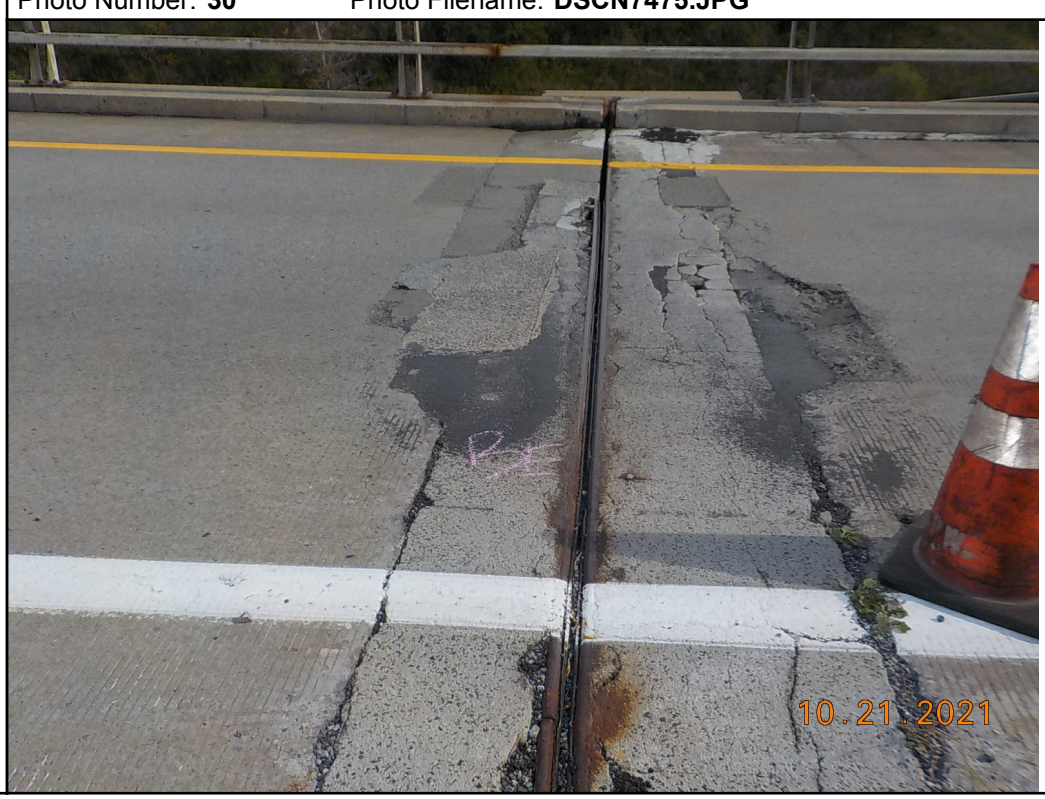


Photo Number: **31** Photo Filename: **DSCN7472.JPG**

Attachment Description:
Begin joint underside Bay 4. Looking Right

Photo Number: **32** Photo Filename: **DSCN7467.JPG**

Attachment Description:
Bearing 4 at begin abutment. Looking Begin Right

Attachment Description:
Bearing 5 over pier 2.
Looking Left

Photo Number: **33** Photo Filename: **DSCN7430.JPG**

Attachment Description:
Bearing 5 at pier 3 Looking
Begin Left

Photo Number: **34** Photo Filename: **DSCN7383.JPG**

Attachment Description:
Bearing 5 at pier 4. Looking Begin Left

Photo Number: **35** Photo Filename: **DSCN7357.JPG**

Attachment Description:
Bearing 5 at end. Looking End Right

Photo Number: **36** Photo Filename: **DSCN7327.JPG**

Photo Number: **37** Photo Filename: **DSCN7478.JPG**

Attachment Description:
Begin approach slab. Looking Begin Right

Photo Number: **38** Photo Filename: **DSCN7530.JPG**

Attachment Description:
End approach slab. Looking Begin Right

Attachment Description:
Span 2 left bridge railing.
Looking End

Photo Number: **39** Photo Filename: **DSCN7492.JPG**

Attachment Description:
Span 1 right bridge railing.
Looking End Right

Photo Number: **40** Photo Filename: **DSCN7485.JPG**

Attachment Description:
Begin abutment slope protection at right

Photo Number: **41** Photo Filename: **DSCN7456.JPG**

Attachment Description:
Begin abutment bay 3. Looking Begin

Photo Number: **42** Photo Filename: **DSCN7470.JPG**

Attachment Description:
Pier 3 end left corner.
Looking Begin Right

Photo Number: **43** Photo Filename: **DSCN7407.JPG**

Attachment Description:
Pier 3 joint. Looking Right

Photo Number: **44** Photo Filename: **DSCN7510.JPG**

Photo Number: **45** Photo Filename: **DSCN7405.JPG**

Attachment Description:
Pier 3 joint underside bays 3 and 4. Looking Right

Photo Number: **46** Photo Filename: **DSCN7317.JPG**

Attachment Description:
End right abutment. Looking Begin Left

Attachment Description:
End joint. Looking Right

Photo Number: **47** Photo Filename: **DSCN7526.JPG**

Attachment Description:
End joint underside bay 3. Looking Left

Photo Number: **48** Photo Filename: **DSCN7307.JPG**

Attachment Description:
End abutment slope protection Looking Left

Photo Number: **49** Photo Filename: **DSCN7858.JPG**

Attachment Description:
End abutment backwall at right. Looking End Left

Photo Number: **50** Photo Filename: **DSCN7303.JPG**

Photo Number: **51** Photo Filename: **DSCN7524.JPG**

Attachment Description:
Span 5 left bridge curb. Looking End

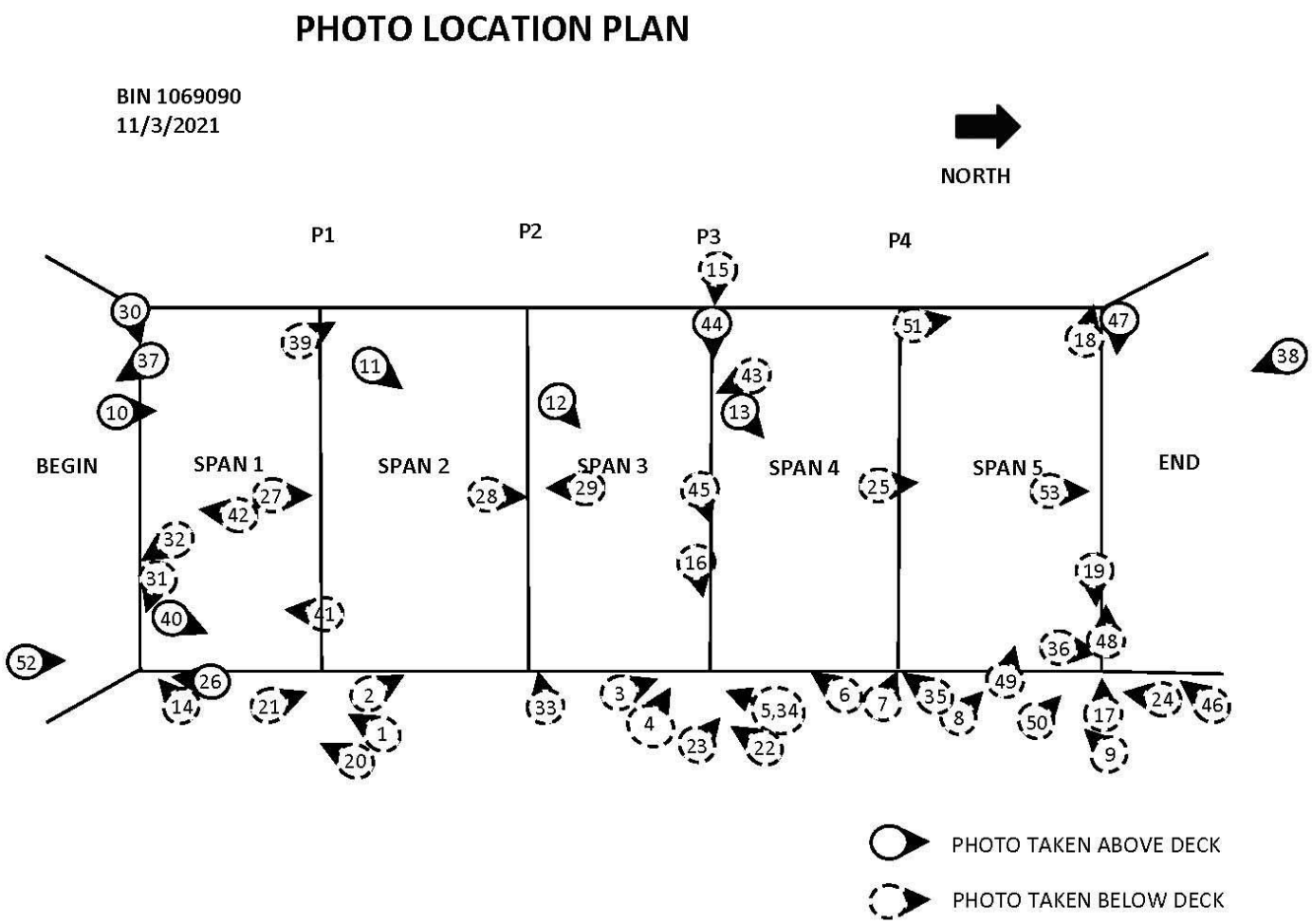
Photo Number: **52** Photo Filename: **DSCN7483.JPG**

Attachment Description:
Begin right approach guide railing. Looking End Right

Attachment Description: End abutment bridge seat bay 3. Looking End Right	Photo Number: **53** Photo Filename: **DSCN7331.JPG** 

Inspection Sketches

Sketch Number: **1** Sketch Filename: **21-1069090-PhotoLocation.jpg**

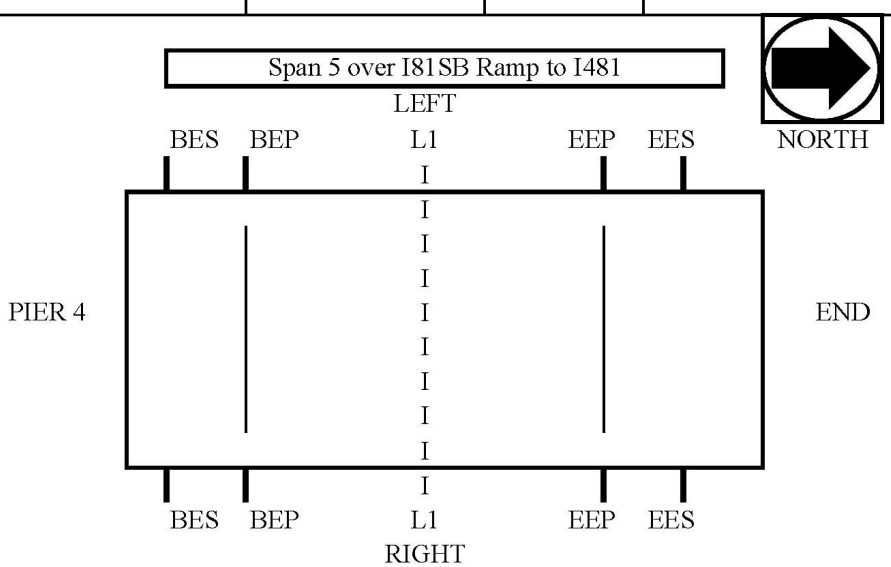


Sketch Description: 21-1069090-Photo Location

Sketch Number: **2** Sketch Filename: **21-1069090 - HighwayVerticalClearanceSpan5.jpg**

HIGHWAY VERTICAL CLEARANCES (FEET)	NYSDOL BRIDGE INSPECTION REPORT			
	SHEET	1	OF	1

INSPECTION DATE	11/3/2021	BIN	1069090



YEAR>	2017	2017	2019	2019	2021	2021
LOCATION	LEFT	RIGHT	LEFT	RIGHT	LEFT	RIGHT
BES	21'5"	18'0"	21' - 5"	18' - 0"	21' - 5"	18' - 0"
BEP	20'8"	17'0"	20' - 8"	17' - 0"	20' - 8"	17' - 0"
L1	20'8"	17'1"	20' - 8"	17' - 1"	20' - 8"	17' - 1"
EEP	20'8"	16'11"	20' - 8"	16' - 11"	20' - 8"	16' - 11"
EES	20'6"*	16'7"	20' - 6"	16' - 7"	20' - 6"	16' - 7"

*The 2015 reading at Location EES Left appears to have an input error.

Clearances not historically taken from I81 NB/SB due to height of bridge, heavy traffic and lack of traffic control

BES/EES - Begin/End Edgs of Shoulder

BEP/EEP - Begin/End Edge of Shoulder

Sketch Description: 21-1069090 - Highway Vertical Clearance Span 5

Sketch Number: **3** Sketch Filename: **21-1069090-BearingAreaSL (w_stiffeners).jpg**

BIN 1069090
11/3/2021

BEARING AREA SECTION LOSS DOCUMENTATION

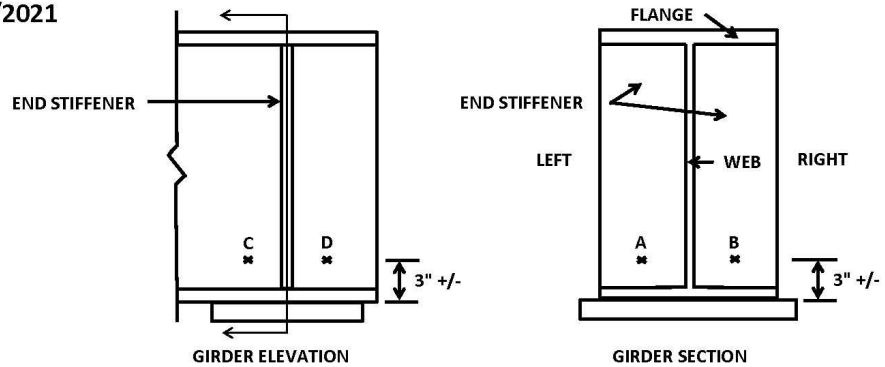


Plate Girder End Geometry:

Web Thickness (in) =	0.563	
Effective Web Length (in.) =	10.134	(18 x web thickness)
Web Area (in^2) =	5.71	
Stiffener Width (in) =	7.000	
Stiffener Thickness (in) =	1.000	
Stiffener Area (in^2) =	14.00	

Original Beam			Span 3 Pier 3 G1						
By	Date	Location	Stiffener		Web		SECTION LOSS SUMMARY		
			A	B	C	D	Stiffeners	Web	Total
MG/CU	10/25/19	Span 3 G1 Pier 3	0.875	0.7	0.4	0.188	21%	48%	29%
DGM/TM	11/03/21	Span 3 G1 Pier 3	0.850	0.7	0.425	0.188	23%	46%	29%
DGM/TM	11/03/21	G5 at Begin	0.875	0.8	0.475	0.285	16%	33%	21%

Web Thickness (in) =	0.375	
Effective Web Length (in.) =	6.750	(18 x web thickness)
Web Area (in^2) =	2.53	
Stiffener Width (in) =	7.000	
Stiffener Thickness (in) =	1.500	
Stiffener Area (in^2) =	21.00	

Original Beam			Span 4 G4 Pier 3 and Span 5 End Abutment G5						
By	Date	Location	Stiffener		Web		SECTION LOSS SUMMARY		
			A	B	C	D	Stiffeners	Web	Total
MG/CU	10/25/19	Span 4 G4 Pier 3	1.4	1.4	0.188	0.06	7%	67%	13%
MG/CU	10/25/19	G5 at End	1.375	1.25	0.1	0.05	13%	80%	20%
DGM/TM	11/03/21	Span 4 G4 Pier 3	1.4	1.11	0.169	0	16%	77%	23%
DGM/TM	11/03/21	G5 at End	1.4	1.25	0.111	0	12%	85%	20%
DGM/TM	11/03/21	G1 at End	1.38	1.45	0.208	0.174	6%	49%	10%

Sketch Description: 21-1069090-Girder End Lower Web Section Losses

Sketch Number: **4** Sketch Filename: **21-1069090-Load Rating Form.jpg**

LOAD RATING FIELD CHECK FORM

Feature Carried	I481 SB TO I81 SB	BIN	1069090
Feature Crossed	81I 81I33032013 SB	DATE	11/3/2021

Dead Load - Note changes in dead load since last inspection or state "NONE":

None

Section Loss - Note locations and amount of section loss changes on each girder or state "NONE":

Span 1 -Girder 5 at begin abutment - 21% (New)
Span 3 – Girder 1 at Pier 3 - 29% (No change).

Span 4 – Girder 4 at Pier 3 – 23% (13% in 2019). There is a 4.5" long X 1.5" high perforation in the lower web tail area beyond the stiffeners.

Span 5 – Girder 5 at end abutment - 20% (No change). There is a 4.5" long X 1.75" high perforation in the lower web tail area beyond t the stiffeners.

Span 5 – Girder 5 at end abutment - 10% (New). There is 1" Dia. perforation in the lower web. Similarly, Girder 4 at end abutment has up to 10% (Photo 19)

Overall average web section loss is less than 5% at all locations.
See Girder End Web Section Loss documentation.

Additional Notes:

None

Attachments:

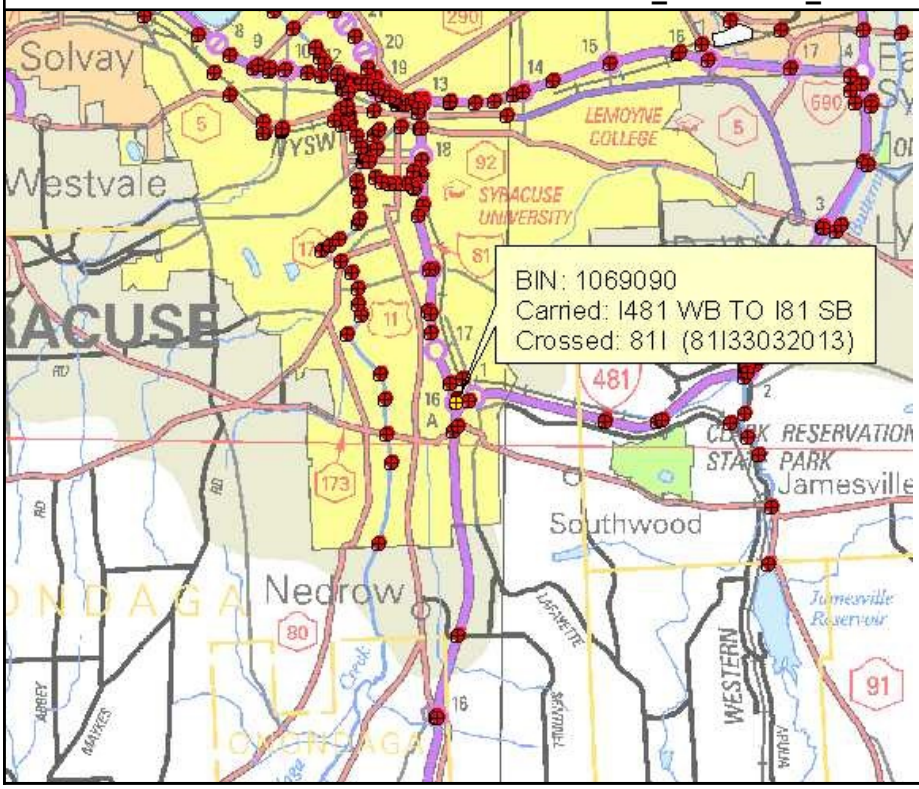
None

Team Leader: **Daniel Ghebre-medhin – PE 096619**

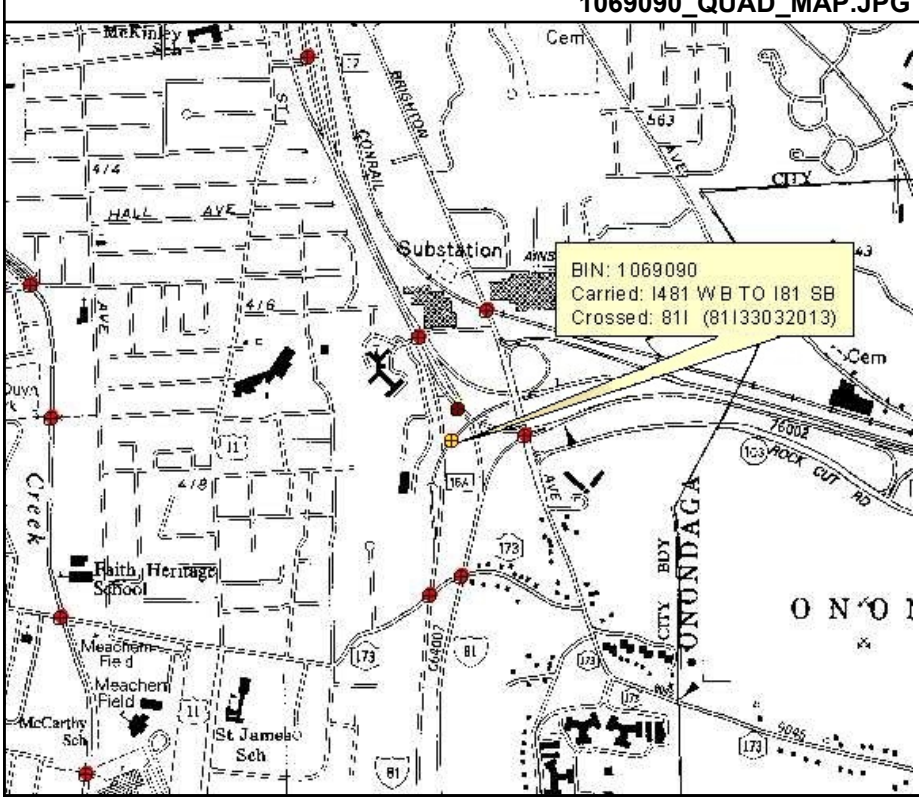
Sketch Description: 21-1069090-Load Rating Form

Standard Photographs

1069090_LOCATION_MAP.JPG



1069090_QUAD_MAP.JPG



AbutmentBegin_17.JPG

AbutmentEnd_17.JPG

ApproachBegin_17.JPG

ApproachEnd_17.JPG

ElevationLeft_17.JPG

ElevationRight_17.JPG

F2CrossedLeft(I81NB)_17.JPG

F2CrossedLeft(I81SB)_17.JPG

F2CrossedRight(I81NB)_17.JPG

F2CrossedRight(I81SB)_17.JPG

Framing_17.JPG

Pier4(typ)_17.JPG

TopOfDeck_17.JPG

WingwallBeginLeft_17.JPG

WingwallBeginRight_17.JPG

WingwallEndLeft_17.JPG

WingwallEndRight_17.JPG