

Photo Number: 35

Photo Filename: 35_Begin Face of Left Sidewalk

Attachment Description:
Begin Face of Left Sidewalk
Cantilever_Angle Welded to
Outer Fascia Channel for
Sidewalk at L05



Photo Number: 36

Photo Filename: 36_Left Fascia Channel between L05 and L06

Attachment Description:
Left Fascia Channel
between L05 and L06 from
Begin



Photo Number: 37 Photo Filename: 37_Bottom Lateral Bracing Connection to Left

Attachment Description:
Bottom Lateral Bracing
Connection to Left Truss at
End Face of Floorbeam 5



Photo Number: 38 Photo Filename: 38_Bottom Lateral Bracing Connection to Left

Attachment Description:
Bottom Lateral Bracing
Connection to Left Truss at
End Face of Floorbeam 6



Photo Number: 39 Photo Filename: 39_Begin Abutment Backwall in Bay

Attachment Description:
Begin Abutment Backwall in Bay 1



Photo Number: 40 Photo Filename: 40_End Abutment Backwall from

Attachment Description:
End Abutment Backwall from Right



Photo Number: 41 Photo Filename: 41_Left_Downstream Channel_21_DSCN4849.

Attachment Description:
Left_Downstream Channel



Photo Number: 42 Photo Filename: 42_Right_Upstream Channel_21_DSCN4850.

Attachment Description:
Right_Upstream Channel



Photo Number: 43

Photo Filename: 43_Right Truss at L04 from Right_21_

Attachment Description:
Right Truss at L04 from
Right



Photo Number: 44

Photo Filename: 44_Lower Portion of Right Truss Vertical

Attachment Description:
Lower Portion of Right
Truss Vertical
L04_U04_from Begin



Photo Number: 45 Photo Filename: 45_Right Face of Inner Gusset Plate at Begin

Attachment Description:
Right Face of Inner Gusset
Plate at Begin of Right
Truss L04



Photo Number: 46 Photo Filename: 46_Right Face of Inner Gusset Plate at End of

Attachment Description:
Right Face of Inner Gusset
Plate at End of Right Truss
L04



Photo Number: 47 Photo Filename: 47_Left Face of Begin Inner Gusset Plate at

Attachment Description:
Left Face of Begin Inner
Gusset Plate at Right Truss
L04



Photo Number: 48 Photo Filename: 48_Left Face of End Inner Gusset Plate at

Attachment Description:
Left Face of End Inner
Gusset Plate at Right Truss
L04



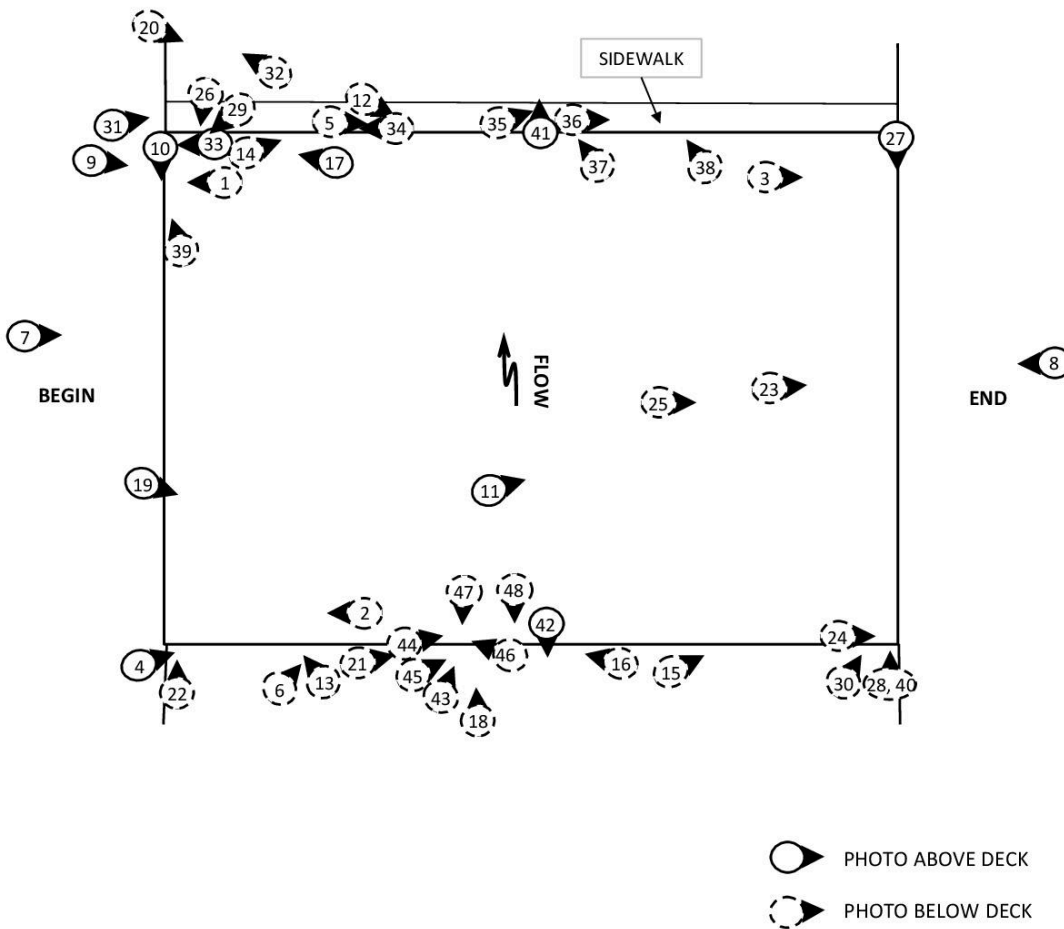
Inspection Sketches

Sketch Number: 1

Sketch Filename: 01_21_Photo Location Plan R1.jpg

Feature Carried: 971HX	BIN: 3338900
Feature Crossed: BLACK RIVER	Date: 12/3/2021

PHOTO LOCATION PLAN



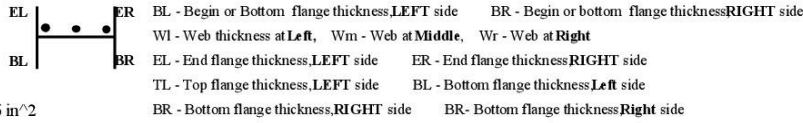
Sketch Description: Photo Location Plan

Sketch Number: 2

Sketch Filename: 02_21_Truss SLR1.jpg

BIN 3338900

SECTION LOSS DOCUMENTATION:



A = 15.6 in²
 Section Size: W12 x 53 Flg. Width: 9.995 Flg. thickness: 0.575 Beam hgt. 12.060 Web thick.: 0.345

Location		L1-U1 Left Truss @ 2" above curb										SECTION LOSS SUMMARY			
Date	By	LEFT Flange			Web				RIGHT Flange			LEFT Flange	RIGHT Flange	Web	Total
		BL	holes	EL	WL	Wm	Wr	holes	BR	holes	ER				
11/17/21	RPD	0.510	0.000	0.300	0.200	0.345	0.345	0.000	0.40	0.00	0.38	30%	32%	14%	27%

A = 15.6 in²
 Section Size: W12 x 53 Flg. Width: 9.995 Flg. thickness: 0.575 Beam hgt. 12.060 Web thick.: 0.345

Location		**L06-U06 Right Truss @ Top of Curb										SECTION LOSS SUMMARY			
Date	By	LEFT Flange			Web				RIGHT Flange			LEFT Flange	RIGHT Flange	Web	Total
		BL	holes	EL	WL	Wm	Wr	holes	BR	holes	ER				
11/17/21	RPD	0.540	0.000	0.560	0.180	0.226	0.226	0.000	0.39	0.00	0.54	4%	19%	39%	19%

A = 11.2 in²
 Section Size: W12 x 45 Flg. Width: 8.045 Flg. thickness: 0.575 **Beam hgt. 6.060 Web thick.: 0.335

Location		L01-L02 Left Truss @ 2/3 Member Length										SECTION LOSS SUMMARY			
Date	By	LEFT Flange			Web				RIGHT Flange			LEFT Flange	RIGHT Flange	Web	Total
		TL	holes	BL	WL	Wm	Wr	holes	TR	holes	BR				
11/17/21	RPD	0.330	0.000	0.500	0.250	0.250	0.250	0.000	0.33	0.00	0.44	28%	33%	25%	30%
		No flag is issued for this condition due to the presence of the steel tension rods that were added in the past and since the bridge is posted for "No Trucks with R Permits".													

A = 15.6 in²
 Section Size: W12 x 53 Flg. Width: 9.995 Flg. thickness: 0.575 Beam hgt. 12.060 Web thick.: 0.345

Location		L05-U05 Right Truss @ Top of Floorbeam										SECTION LOSS SUMMARY			
Date	By	LEFT Flange			Web				RIGHT Flange			LEFT Flange	RIGHT Flange	Web	Total
		BL	holes	TL	WL	Wm	Wr	holes	BR	holes	TR				
11/17/21	RPD	0.400	0.000	0.420	0.120	0.180	0.120	0.000	0.450	0.000	0.430	29%	23%	59%	34%

** - Accounts for 6 inch wide cutout in Web of bottom chord
 *** - Minor Compression Member

Sketch Description: Truss SL

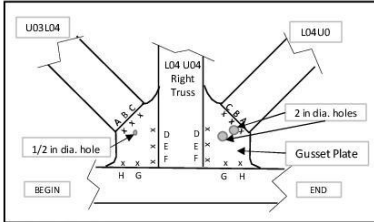
Sketch Number: 3

Sketch Filename: 03_21_Gusset Plate Section Loss.jpg

BIN: 3338900

DATE: 11/16/2021

GUSSET PLATE SECTION LOSS:



Original Gusset Plate Thickness = 5/16"
 Original Area Along Plane Perpendicular to Diagonal Mbr:
 $15 \times 0.313 = 4.695 \text{ in}^2$
 Remaining Area Perpendicular to Diagonal Mbr:
 Begin: $(15 - 0.5) \times 0.156 = 2.262 \text{ in}^2$
 End: $(15 - 2) \times 0.142 = 1.846 \text{ in}^2$

Begin Outer Gusset Plate @L04									
LOCATION	A	B	C	D	E	F	G	H	Section Loss
Plane Perpendicular to Diagonal Member	0.144	0.201	0.123						52% including 1/2" hole
Plane along Vertical Member			0.123	0.196	0.269	0.29			30%
Plane along Top of Bottom Chord						0.29	0.188	0.189	29%

End Outer Gusset Plate @L04									
LOCATION	A	B	C	D	E	F	G	H	Section Loss
Plane Perpendicular to Diagonal Member	0.233	0.06	0.133						61% including 2" holes
Plane along Vertical Member			0.133	0.225	0.227	0.252			33%
Plane along Top of Bottom Chord						0.252	0.282	0.283	13%

Sketch Description: Gusset Plate Section Loss

Sketch Number: 4

Sketch Filename: 04_21_Stream Hydraulics Defect History Form_Automated.

**Agency Defined Element 801 - Stream Hydraulics
 Defect History**

BIN: 3338900

ADE 801 DEFECTS		CONDITION STATES (CS)				
		Baseline	Previous Inspections			Current Inspection
			Last			
			N/A	mm/dd/yyyy	mm/dd/yyyy	
6120	Channel Alignment	1			1	1
6130	Channel Scour	1			1	1
6140	Waterway Opening	1			1	1
6150	Scour Protection	NA			NA	NA
6160	Bank Protection	1			1	1
6165	Bank Erosion	2			2	2
6180	Debris Near Bridge	1			1	1
6190	Countermeasures	NA			NA	NA
ADE 801 - Controlling Condition State =						2

Inspector's Comment (comment required for each defect assessed CS-3 or CS-4):

2021 – Channel Scour – The Stream Channel consists of bedrock and water is flowing fast in the Black River. Channel cross-section readings along the fascia were not taken.

Also see photos 41 and 42 and for the general configuration of the stream.

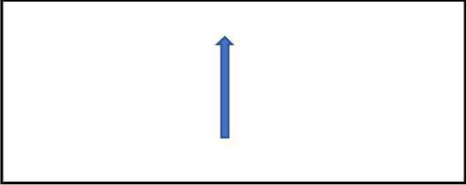

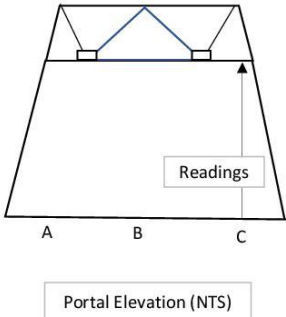
Team Leader: Russell P Dunderdale, PE #074648

Date: 11/17/2021

Sketch Description: Stream Hydraulics Defect History Form

Sketch Number: 5

Sketch Filename: 05_21_Vertical Clearances.jpg

NYS DOT BRIDGE INSPECTION REPORT					Truss Vertical Clearances				
SHEET	1	OF	1						
Carried:	971HX				BIN:	3338900			
Crossed:	BLACK RIVER				Inspection Date:	11/16/2021			
Begin					End				
REFERENCE					NOTES				
					Readings taken to lowest edge of the lower cross channel @ the travel lane paint lines.				
					2021 Readings initiated.				
Year	2021				Year	2021			
Location	ft.	ft.	ft.	ft.	Location	ft.	ft.	ft.	ft.
PORTAL 1 (Begin)					PORTAL 2				
A	15.1				A	15.1			
B	15.0				B	15.1			
C	15.2				C	15.1			
PORTAL 3					PORTAL 4 (End)				
A	15.0				A	15.1			
B	15.0				B	15.1			
C	15.2				C	15.2			

Sketch Description: Vertical Clearances

Sketch Number: 6

Sketch Filename: 21_Load Rating Form R2.jpg

LOAD RATING FIELD CHECK FORM

Feature Carried	971HX	BIN	3338900
Feature Crossed	BLACK RIVER	DATE	12/3/2021

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

Dead Load - 2021 – 2.5-inch-thick asphalt wearing surface on 5 inch thick concrete filled steel grate decking. No change since last inspection.

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

Left Truss bottom chord member L01-L02 has 28% section loss to the left flange, 33% section loss to the right flange and 25% section loss to the web. The total section loss for the member is 30% (photo 14). The previous inspection indicates that bottom chord section loss was estimated at 30%. No flag is issued for this condition due to the presence of the steel tension rods that were added in the past and since the bridge is posted for "No Trucks with R Permits". See Truss Member Section Loss Sketch. Bottom truss section loss is similar throughout the full length of both bottom chords.

Right truss vertical member compression member L06-U06 has 4% left flange section loss, 19% right flange section loss and 39% web section loss. The total section loss for the member is 19% (photo 15). The previous inspection indicates that section loss for this member was approximately 9%. See Truss Member Section Loss Sketch.

Yellow Flag 7B21N6W019 was issued due to heavy section losses of Right truss vertical member L05-U05 and Left Truss vertical member L01-U01:

Right truss vertical member L05-U05 has 29% left flange section loss, 23% right flange section loss, and 59% web loss. The total section loss for the member is 34% (photo 16). The previous inspection indicates that section loss of flanges was 5% and 17%. See Truss Member Section Loss Sketch.

Left Truss L01-U01 vertical member section loss readings were taken just above the sidewalk. The left flange has approximately 30% section loss; the right flange has approximately 32% section loss, the web has approximately 14% section loss. The total section loss for the member is 27% (photo 17). Deterioration for this member was previously estimated to have 10% section loss. See Truss Member Section Loss Sketch.

Also See Yellow Flag Yellow Flag 7B21N6W019 for additional information.

Yellow Flag 7B21N6W021 was issued due to heavy section loss of right truss member L04-U04 below the elevation of the top of the floorbeam. This flag was issued after discussion with the Region and the QC Engineer.

Right truss vertical member L04-U04 has 10% (estimated) left flange section loss, 30% right flange section loss, and up to 100% web loss below the elevation of the top of the floorbeam. The total section loss for the member below the top of the floorbeam is 41% (photos 43 and 44). Deterioration for this member was previously estimated to have 10% section loss. Also, See Right Truss L04-U04 Section Loss Sketch and Yellow Flag 7B21N6W021.

The remaining truss verticals have up to 15% +/- overall section loss (previously reported as 10%) mostly between the top of the floorbeam and top of curb on the right side and between the top of the floorbeam and top of the sidewalk and the left side (photos 19 through 21).

Truss diagonals also have up to 15% +/- overall section (not previously reported) loss near their connections to the bottom chord (photos 18 to 21).

Red Flag 7B21N6W016 (new flag) was issued during this inspection due to heavy section loss with perforations to the outer gusset plates at right truss L04 (not previously reported). See Red Flag 7B21N6W016, the Gusset Plate Section Loss Sketch and photo 18. The outer gusset plates for the right truss at L04 were repaired (certified by NYSPE) and Red Flag 7B21N6W016 was removed on 12/2/21 (photo 43). The inner gusset plates at L04 have 10% to 15% section loss (photos 45 through 48).

All floorbeams have some degree of visible section loss or pitting to lower web (5%-10% section loss) over most of their lengths (photos 22 and 23) (no change since last inspection). Section loss is mostly arrested by current paint coating.

Team Leader: Russell P. Dunderdale – PE 074648

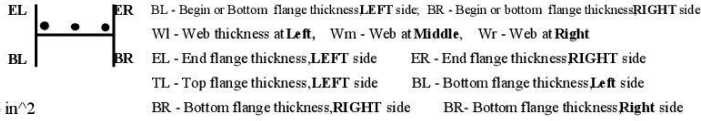
Sketch Description: Load Rating Form

Sketch Number: 7

Sketch Filename: **Flag 08_21_ Right Truss L04-U04 Section Loss Sketch.jpg**

BIN 3338900

SECTION LOSS DOCUMENTATION:



Section Size: W12 x 53 Flg. Width: 9.995 Flg. thickness: 0.575 Beam hgt. 12.060 Web thick.: 0.345

Location ***L04-U04 Right Truss Below T/Floorbeam Elevation											SECTION LOSS SUMMARY				
Date	By	LEFT Flange			Web				RIGHT Flange			LEFT Flange	RIGHT Flange	Web	Total
		BL	holes	EL	WL	Wm	Wr	holes	BR	holes	ER				
12/3/21	RPD	---	0.000	---	0.000	0.000	0.000	12.06	0.40	0.00	0.40	EST 10%	30%	100%	41%

Section Size: _____ Flg. Width: _____ Flg. thickness: _____ Beam hgt. _____ Web thick.: _____

Location											SECTION LOSS SUMMARY				
Date	By	LEFT Flange			Web				RIGHT Flange			LEFT Flange	RIGHT Flange	Web	Total
		BL	holes	EL	WL	Wm	Wr	holes	BR	holes	ER				

Section Size: _____ Flg. Width: _____ Flg. thickness: _____ **Beam hgt. _____ Web thick.: _____

Location											SECTION LOSS SUMMARY				
Date	By	LEFT Flange			Web				RIGHT Flange			LEFT Flange	RIGHT Flange	Web	Total
		TL	holes	BL	WL	Wm	Wr	holes	TR	holes	BR				

Section Size: _____ Flg. Width: _____ Flg. thickness: _____ Beam hgt. _____ Web thick.: _____

Location											SECTION LOSS SUMMARY				
Date	By	LEFT Flange			Web				RIGHT Flange			LEFT Flange	RIGHT Flange	Web	Total
		BL	holes	TL	WL	Wm	Wr	holes	BR	holes	TR				

*** - Minor Compression or "Zero Force Member"

Sketch Description: Right Truss L04-U04 Section Loss Sketch

New York State Department of Transportation Red Flag 7B21N6W016

By: Russell P. Dunderdale
Flag Date: November 16, 2021

Superseding Information:
No Flags Superseded

Structure Information

BIN: 3338900

Feature Carried: 971HX

Feature Crossed: BLACK RIVER

Orientation: 2 - NORTHEAST

Posted Load Matches Inventory: Yes

Posted Load in field : Code 88 - No Vehicles with R Permits

Primary Owner: New York State Department of Transportation

Primary Maintenance Responsibility: New York State Department of Transportation

Typical or Main Span Type: 3 - Steel, 10 - Truss - Thru

This Bridge is not a Ramp

Number of Spans: 1

Region: 07 - WATERTOWN

County: JEFFERSON

Political Unit: Town of HOUNSFIELD

Approximate Year Built: 1954

Verbal Notification Information

Person Notified: Jeffrey Grill

Date: November 16, 2021 11:45:00 AM

Of: NYSDOT

Signature Information

Signature: Russell P. Dunderdale, P.E. 074648-1

Date: November 17, 2021

Reviewed By: William Dritz

Date: November 17, 2021

Attachments: 4

Red Flag 7B21N6W016

BIN 3338900

Flag Date: November 16, 2021

Flagged Elements

Parent Element	Element	Total Quantity	Unit
<i>Span Number : 1</i>			
	162 - Steel Gusset Plate	22	each

Flagged Condition Description

Background: The superstructure consists of a welded steel truss with overhead bracing (flag photo 1). The bottom chords of both trusses were retrofitted in the past with a steel tension rod system. The concrete filled steel deck is supported by stringers and floorbeams (flag photo 2). Floorbeams and truss nodes are numbered starting with 0 at the begin abutment bearings and ending with 8 at the end abutment bearings. The span length is 180 feet. The width of the deck from curb to curb is 24 feet. There is a sidewalk on the outside of the left truss.

2021 Flag Conditions: The right truss outer gusset plates at L04 have heavy section loss with perforations. This is a new flag with no flags superseded.

NOTE: The vertical and bottom chord truss members at L04 are directly connected to each other via welds with individual plates welded BETWEEN the members (as compared to traditional gusset plate design which JOINS truss members). The diagonal truss members, are, however, welded to the separate "gusset plates" in a traditional manner.

Begin Outer Gusset Plate at L04:

The begin outer gusset plate at L04 (Right Truss) has approximately 52% section loss including a 1/2 inch perforation in a plane perpendicular to diagonal member U03-L04 located approximately 5 inches from the bottom of the diagonal member (flag photo 3).

The begin outer gusset plate at L04 has approximately 30% section loss in the plane along the begin side of vertical member L04-U04.

The begin outer gusset plate at L04 has approximately 29% section loss in the plane along the top of the bottom chord.

End Outer Gusset Plate at L04:

The end outer gusset plate at L04 (Right Truss) has approximately 61% section loss including a 2-inch diameter perforation in a plane perpendicular to diagonal member L04-U05 located approximately 5 inches from the bottom of the diagonal member (flag photo 3).

The end outer gusset plate at L04 has approximately 33% section loss in the plane along the end side of vertical member L04-U04.

See Gusset Plate Section Loss Sketch.

Significance: The affected gusset plates serve to connect the diagonal members of the truss with the bottom chord. Should the plates fail along the band of section loss in tension (tear-out) or compression (buckling) the integrity of the panel point will be compromised.

Mitigating Conditions: The begin inner gusset plate at L04 on the right truss has estimated general section loss of up to 5%.

The end inner gusset plate at L04 on the right truss has estimated general section loss of 10%.

Additional Information: The end outer gusset plate at L04 has approximately 13% section loss in the plane along the top of the bottom chord.

Flag Photographs

Photo Number: 1

Photo Filename: 01_Left Elevation from Beginning_21_DSCN5549.



Attachment Description: Left Elevation from Begin

Red Flag 7B21N6W016

BIN 3338900

Flag Date: November 16, 2021

Photo Number: 2

Photo Filename: 02_Underside of Superstructure from



Attachment Description: Underside of Superstructure from Begin

Photo Number: 3

Photo Filename: 03_Right Truss at L04_21_DSCN5573.JPG



Attachment Description: Right Truss at L04 from Right

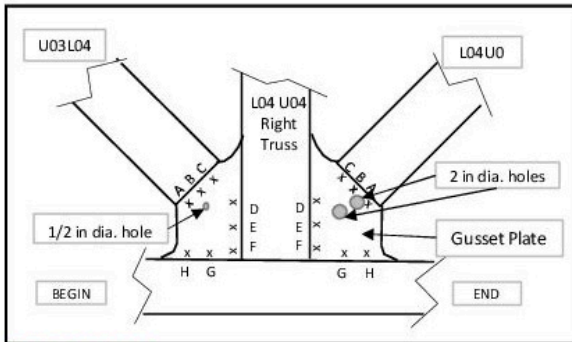
Photo Number: 4

Photo Filename: 21_Gusset Plate Section Loss.jpg

BIN: 3338900

DATE: 11/16/2021

GUSSET PLATE SECTION LOSS:



NOT TO SCALE

Original Gusset Plate Thickness = 5/16"

Original Area Along Plane Perpendicular to Diagonal Mbr:
 $15 \times 0.313 = 4.695 \text{ in}^2$

Remaining Area Perpendicular to Diagonal Mbr:

Begin: $(15 - 0.5) \times 0.156 = 2.262 \text{ in}^2$

End: $(15 - 2) \times 0.142 = 1.846 \text{ in}^2$

Begin Outer Gusset Plate @L04									
LOCATION	A	B	C	D	E	F	G	H	Section Loss
Plane Perpendicular to Diagonal Member	0.144	0.201	0.123						52% including 1/2" hole
Plane along Vertical Member			0.123	0.196	0.269	0.29			30%
Plane along Top of Bottom Chord						0.29	0.188	0.189	29%

End Outer Gusset Plate @L04									
LOCATION	A	B	C	D	E	F	G	H	Section Loss
Plane Perpendicular to Diagonal Member	0.233	0.06	0.133						61% including 2" holes
Plane along Vertical Member			0.133	0.225	0.227	0.252			33%
Plane along Top of Bottom Chord						0.252	0.282	0.283	13%

Attachment Description: Gusset Plate Section Loss Sketch

New York State Department of Transportation Yellow Flag 7B21N6W017

By: Russell P. Dunderdale
Flag Date: November 16, 2021

Superseding Information:
This flag supersedes: YF 7B20M8W028

Structure Information

BIN: 3338900

Feature Carried: 971HX

Feature Crossed: BLACK RIVER

Orientation: 2 - NORTHEAST

Posted Load Matches Inventory: Yes

Posted Load in field : Code 88 - No Vehicles with R Permits

Primary Owner: New York State Department of Transportation

Primary Maintenance Responsibility: New York State Department of Transportation

Typical or Main Span Type: 3 - Steel, 10 - Truss - Thru

This Bridge is not a Ramp

Number of Spans: 1

Region: 07 - WATERTOWN

County: JEFFERSON

Political Unit: Town of HOUNSFIELD

Approximate Year Built: 1954

Verbal Notification Information

Person Notified: Jeffrey Grill

Date: November 16, 2021 11:45:00 AM

Of: NYSDOT

Signature Information

Signature: Russell P. Dunderdale, P.E. 074648-1

Date: November 16, 2021

Reviewed By: William Dritz

Date: November 17, 2021

Attachments: 3

Yellow Flag 7B21N6W017

BIN 3338900

Flag Date: November 16, 2021

Flagged Elements

Parent Element	Element	Total Quantity	Unit
<i>Span Number : 1</i>			
	BW800 - Erosion or Scour	20	ft
	BW853 - Wingwall	20	ft

Flagged Condition Description

Background: The superstructure consists of a welded steel truss with overhead bracing (flag photo 1). The concrete filled steel deck is supported by stringers and floorbeams (flag photo 2). The span length is 180 feet. The width of the deck from curb to curb is 24 feet. There is a sidewalk on the outside of the left truss. This is a repeat flag.

2021 Flag Conditions: The begin left concrete wingwall was originally founded on a rock outcropping. The rock outcropping has been undermined up to 4 feet horizontally for a length of approximately 18 feet (flag photo 3). The wingwall exhibits cracking/spalling above the undermined area because of loss of material supporting the wall. There is no evidence of loss of backfill from behind the wall. The condition has not changed significantly since the previous inspection.

Significance: The wingwall is adjacent to the shoulder of the roadway. Failure of the wingwall may compromise the shoulder/roadway.

Flag Photographs

Photo Number: 1

Photo Filename: 01_Left Elevation from Beginning_21_DSCN5549.



Attachment Description: Left Elevation from Beginning

Yellow Flag 7B21N6W017

BIN 3338900

Flag Date: November 16, 2021

Photo Number: 2

Photo Filename: 02_Underside of Superstructure from



Attachment Description: Underside of Superstructure from Begin