New York State Department of Transportation
Yellow Flag 3B190TW046

By: Thomas Barrell
Flag Date: September 12, 2019

Superseding Information:

This flag supersedes: YF 3B18WQW037

Structure Information

BIN: **3209800**
Feature Carried: FREESE ROAD
Feature Crossed: FALL CREEK
Orientation: 8 - NORTHWEST

Region: 03 - SYRACUSE
County: TOMPKINS
Political Unit: Town of DRYDEN
Approximate Year Built: 1920

Posted Load Matches Inventory : Yes
Bridge Load Posting (Tons) : 15

Primary Owner: 30 - County
Primary Maintenance Responsibility: 30 - County
Typical or Main Span Type: 3 - Steel, 10 - Truss - Thru
This Bridge is not a Ramp
Number of Spans: 2

Verbal Notification Information

Person Notified: Not Contacted
Date:

Of:

Signature Information

Signature: Thomas Barrell, P.E. 087058-1
Date: September 17, 2019

Reviewed By: Glenn Klein
Date: September 18, 2019

Attachments: 7

Flagged Elements

Parent Element	Element	Total Quantity	Unit
	Span Number : 1		
	113 - Steel Stringer	331	ft
	Span Number : 2		
	113 - Steel Stringer	331	ft

Flagged Condition Description

Subject: Heavy Section Loss to the Stringer Flanges

Structure Information:
This structure is a two span continuous pony truss with a floorbeam and stringer floor system supporting an open steel grate deck (photo 1). The stringers are noted to be 12”27#WF in the plans in the BIN folder (tw=0.24” and tf=0.4”).

2019 Conditions:
The stringer flanges in span 1 exhibit heavy section losses at several locations. There are several other locations with section losses greater than 1/3 of the flange thickness but they are adjacent stringers and are therefore included in a separate Red Flag. Section losses were taken at either midspan or where the lower cross bracing intersects the stringers (approx. 6 ft from the floorbeams). Where the cross bracing intersects, that is considered to be around midspan (stringer span lengths range from 13’-4”+-/ to 14’-0”+/- long). Locations are as follows:

SPAN 1:
Stringer 2 in Panel 5: This stringer was reported to have 43% section loss to the bottom flange approx. 6 ft+/- from floorbeam 4 in 2016. Prior to 2017, a 1/4" thick steel plate was welded to the bottom flange. The plate is approx. 18” long. In 2017 and 2018 the section loss was noted to be 44% to the bottom flange and the plate was not mentioned. There are no plans or calculations for this plate in the BIN folder and it is unknown if it was designed. Therefore, this stringer is still included in this flag. Section loss to the bottom flange neglecting the plate is 32%. The average thickness to the bottom flange including the plate is 0.523” (original flange thickness is 0.4”). Top flange loss is approx. 5% (was 5%) (photos 2 and 3)

Stringer 3 in Panel 2 at midspan: Top flange loss is 5% and bottom flange loss is 55% (there were no previous losses) (photo 4). The stringer 2 losses in panel 2 are included for information purposes (see attached sketch).

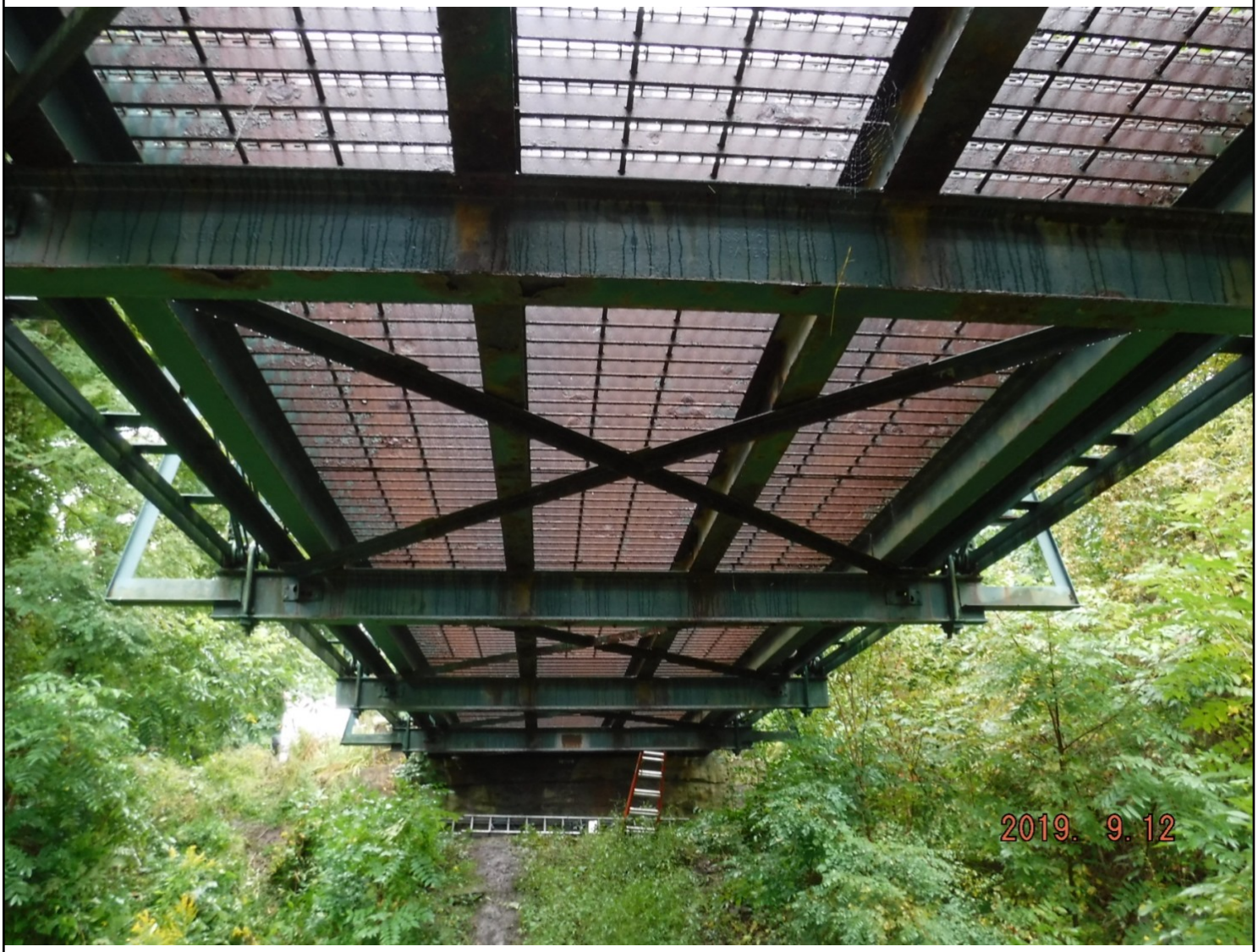
SPAN 2:
Stringer 2 in Panel 4 at midspan: Top flange loss is 5% and bottom flange loss is 48% (there were no previous losses reported at midspan).

Stringer 2 in Panel 4 at 5-6 ft from floorbeam 4: Top flange loss is 24% (was 37%) and bottom flange loss is 39% (was 48%). (photo 5)

Note:
Two apparent overloads crossed the bridge during this inspection (large box trucks).

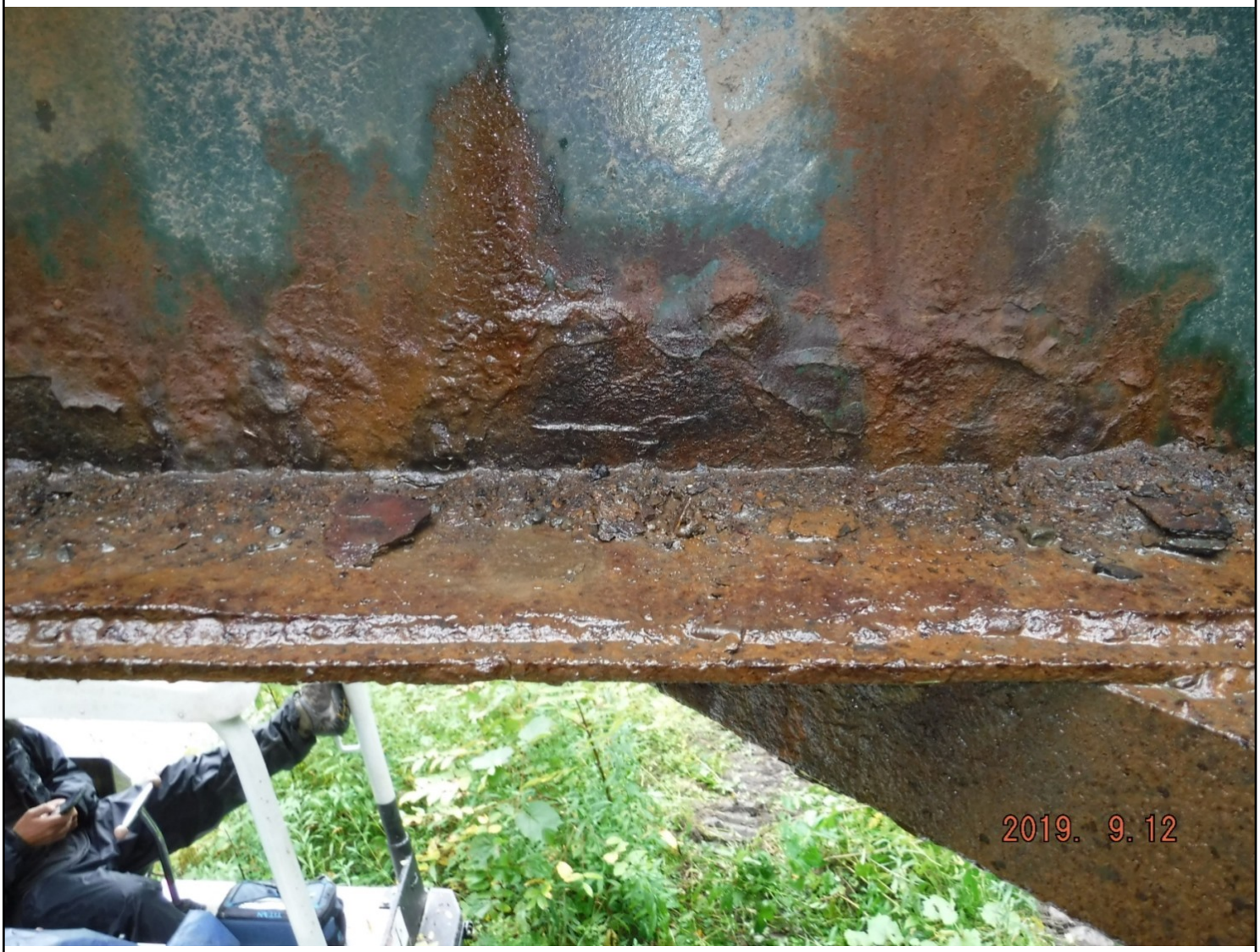
Flag Photographs

Photo Number: **1** Photo Filename: **19-3209800-DSCF0288.JPG**



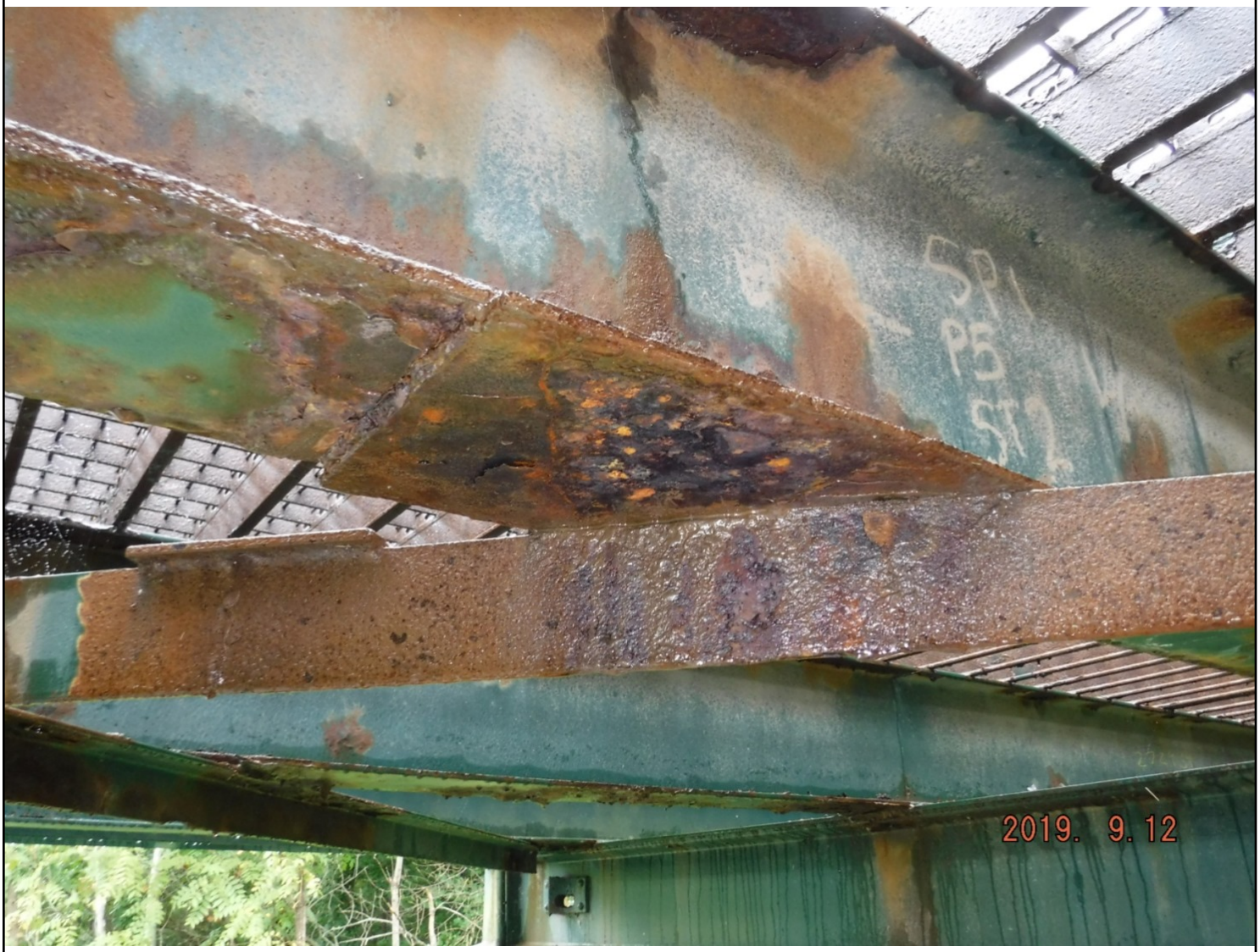
Attachment Description: **General View of Underside of Span 1, Looking Back**

Photo Number: **2** Photo Filename: **19-3209800-DSCF0294.JPG**



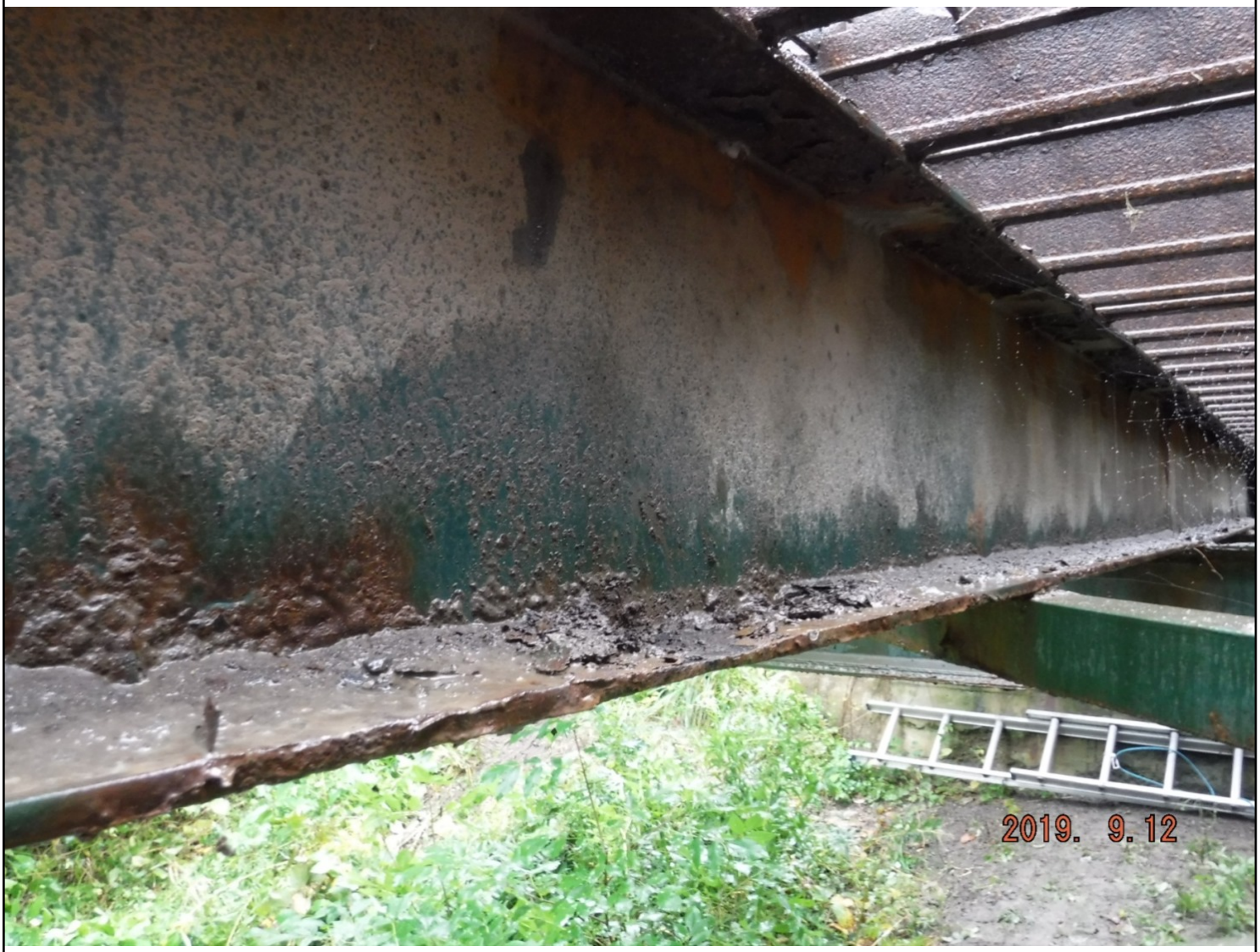
Attachment Description: **Span 1, Stringer 2 in Panel 5 near Midspan, Looking Right at Bottom Flange – 1**

Photo Number: **3** Photo Filename: **19-3209800-DSCF0295.JPG**



Attachment Description: **Span 1, Stringer 2 in Panel 5 near Midspan, Looking Right at Bottom Flange – 2**

Photo Number: **4** Photo Filename: **19-3209800-DSCF0289.JPG**



Attachment Description: **Span 1, Stringer 3 in Panel 2 at Midspan, Looking Back**

Photo Number: **5** Photo Filename: **19-3209800-DSCF0308.JPG**

Attachment Description: **Span 2, Stringer 2 in Panel 4 near Midspan, Looking Right and Back**

Photo Number: **6** Photo Filename: **19_StringerSL_Span 1.png**

R/C 3/6 **BIN** 3209800

SECTION LOSS DOCUMENTATION:

TL - Top flange thickness, **LEFT** side TR - Top flange thickness, **RIGHT** side
Wt - Web thickness at top, Wm - Web at mid height, Wb - Web at bottom
BL - Bottom flange thickness, **LEFT** side BR - Bottom flange thickness, **RIGHT** side

Section Size: 12" 27#WF Flg. Width: 6.500 Flg. thickness: 0.400 Beam hgt. 11.400 Web thick.: 0.237

Location		Span 1, Stringer 2, Panel 2, near midpsan (assume full length)										SECTION LOSS SUMMARY			
Date	By	Top Flange			Web				Bottom Flange			Top Flange	Bottom Flange	Web	Total
		TL	holes	TR	Wt	Wm	Wb	holes	BL	holes	BR				
9/12/19	ND	0.296	0.000	0.380					0.283	0.000	0.300	16%	27%		

Section Size: 12" 27#WF Flg. Width: 6.500 Flg. thickness: 0.400 Beam hgt. 11.400 Web thick.: 0.237

Location		Span 1, Stringer 3, Panel 2, near midpsan (assume full length)										SECTION LOSS SUMMARY			
Date	By	Top Flange			Web				Bottom Flange			Top Flange	Bottom Flange	Web	Total
		TL	holes	TR	Wt	Wm	Wb	holes	BL	holes	BR				
9/12/19	ND	0.380	0.000	0.380					0.136	0.000	0.226	5%	55%		

Section Size: 12" 27#WF Flg. Width: 6.500 Flg. thickness: 0.400 Beam hgt. 11.400 Web thick.: 0.237

Location		Span 1, Stringer 2, Panel 2, near midpsan (assume full length)										SECTION LOSS SUMMARY			
Date	By	Top Flange			Web				Bottom Flange			Top Flange	Bottom Flange	Web	Total
		TL	holes	TR	Wt	Wm	Wb	holes	BL	holes	BR				
9/12/19	TB	0.380	0.000	0.380					0.213	0.000	0.333	5%	32%		

Section Size: 12" 27#WF Flg. Width: 6.500 Flg. thickness: 0.400 Beam hgt. 11.400 Web thick.: 0.237

Location												SECTION LOSS SUMMARY			
Date	By	Top Flange			Web				Bottom Flange			Top Flange	Bottom Flange	Web	Total
		TL	holes	TR	Wt	Wm	Wb	holes	BL	holes	BR				

Attachment Description: **19_StringerSL_Span 1**

Photo Number: **7** Photo Filename: **19_StringerSL_Span 2.png**

R/C 3/6 **BIN** 3209800

SECTION LOSS DOCUMENTATION:

TL - Top flange thickness, **LEFT** side TR - Top flange thickness, **RIGHT** side
Wt - Web thickness at top, Wm - Web at mid height, Wb - Web at bottom
BL - Bottom flange thickness, **LEFT** side BR - Bottom flange thickness, **RIGHT** side

Section Size: 12" 27#WF Flg. Width: 6.500 Flg. thickness: 0.400 Beam hgt. 11.400 Web thick.: 0.240

Location		Span 2, Stringer 2, Panel 4 @ 5' from FB 4 (assume first 1/3 length)										SECTION LOSS SUMMARY			
Date	By	Top Flange			Web				Bottom Flange			Top Flange	Bottom Flange	Web	Total
		TL	holes	TR	Wt	Wm	Wb	holes	BL	holes	BR				
9/12/19	ND	0.380	0.000	0.380					0.196	0.000	0.220	5%	48%		

Section Size: 12" 27#WF Flg. Width: 6.500 Flg. thickness: 0.400 Beam hgt. 11.400 Web thick.: 0.240

Location		Span 2, Stringer 2, Panel 4 @ midspan (assume last 2/3 length)										SECTION LOSS SUMMARY			
Date	By	Top Flange			Web				Bottom Flange			Top Flange	Bottom Flange	Web	Total
		TL	holes	TR	Wt	Wm	Wb	holes	BL	holes	BR				
9/12/19	ND	0.286	0.000	0.320					0.216	0.000	0.273	24%	39%		

Section Size: 12" 27#WF Flg. Width: 6.500 Flg. thickness: 0.400 Beam hgt. 11.400 Web thick.: 0.240

Location												SECTION LOSS SUMMARY			
Date	By	Top Flange			Web				Bottom Flange			Top Flange	Bottom Flange	Web	Total
		TL	holes	TR	Wt	Wm	Wb	holes	BL	holes	BR				

Section Size: 12" 27#WF Flg. Width: 6.500 Flg. thickness: 0.400 Beam hgt. 11.400 Web thick.: 0.240

Location												SECTION LOSS SUMMARY			
Date	By	Top Flange			Web				Bottom Flange			Top Flange	Bottom Flange	Web	Total
		TL	holes	TR	Wt	Wm	Wb	holes	BL	holes	BR				

Attachment Description: **19_StringerSL_Span 2**