

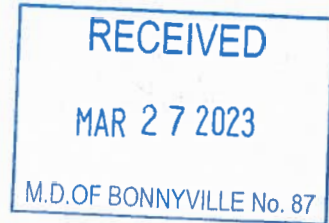
APPENDIX A



March 22, 2023

Our File: 221 – B0

M.D. OF BONNYVILLE NO.87
4905-50 Ave.
Bag 1010
Bonnyville, AB
T9N 2J7



To Whom it May Concern

We are enclosing herewith 1 copy of the following bridge inspections undertaken in MD of Bonnyville, which have been inspected, reviewed and entered into the BIM system. Please review and note any comments on the forms.

Bridge File Numbers
Lot 1 –
Lot 2 –
Lot 3 – 72515-1
Lot 4 –
Lot 1 - Bridges requiring assessment for maintenance beyond minor and routine maintenance. Lot 2 - Bridges requiring maintenance for which AT normally provides funding assistance. Lot 3 - Bridges requiring maintenance for which the Municipality is responsible to fund. Lot 4 - Bridges that require no maintenance.

Sincerely,

MPA Engineering Ltd.
per;

for

Eric Carcoux, P. Eng

2023 APR. 27
JH

M

Bridge Inspection

Bridge File Number	72515 -1 Bridge	Form Type	TH
Year Built/Year Supstr	1946/1946	Lot No.	3
Bridge or Town Name	GOODRIDGE	Inspector Name	MARIO AMERO
Located Over	BEAVER RIVER, 7, WATERCRS-ST	Inspector Class	
Located On	LOCAL ROAD	Assistant Name	
Water Body Cl./Year		Assistant Class	
Navigabil. Cl./Year		Inspection Date	OCT 25 - 2022
Legal Land Location	NE SEC 6 TWP 63 RGE 8 W4M	Arrive Time	16:55
Longitude, Latitude	-111:11:32, 54:25:23	Depart Time	18:20
Road Authority	M.D. OF BONNYVILLE NO. 87	Data Entry By	Theresa Lacusta DEC 0 1 2022
Contract Main. Area	UNDEFINED CMA	Data Entry Date	
Clear Roadway/Skew	4.9 /	Reviewer Name	Wade Nanninga 3 0 NOV 2022
AADT/Year	150 / 2021 (E)	Review Date	
Road Classification	RLU-208G-90	Dept. Reviewer Name	
Detour Length (km)	2	Dept. Review Date	
Follow-Up By			
Allowable Load (t):	Single H 20 FLOOR BEAM	Semi HS 27 U2L3	Train CS3 32 U2L3
			---> On Critical Spans --->Critical Member
Design Loading:	HS20		---> Primary Span

Posting Information

Required Vert. Clearance Posting (m)												
Posted Vertical Clearance (Y/N)	Yes											
Posted:	Lane	NB	On Bridge (m)	4.7	In Advance (Y/N)	Yes	Lane	SB	On Bridge (m)	4.7	In Advance (Y/N)	No
Remarks	Measured 4.83m.											
Required Load Posting (t)	Single	21	Semi	28	Truck Train	32						
Posted Loading (t)	Single	15.0	Semi		Truck Train							
Posted:	Lane	NB	At Junction (Y/N)	Yes	In Advance (Y/N)	No	At Bridge (Y/N)	Yes				
Posted:	Lane	SB	At Junction (Y/N)	Yes No	In Advance (Y/N)	No	At Bridge (Y/N)	Yes				
Remarks	Required. Posted @ 15 t.											

Hazard Marker At Bridge (Y/N)	Yes
Remarks	HM low @ SE/SW.
Other Sign Types	Narrow Road, Curve, No trucks, 60kph

Utilities (Located at)

Utility Attachments			
Telephone	In conduit on east side.	Gas	
Power		Municipal	
Others		Problem (Y/N)	No
Remarks			

Approach Road

	Last	Now	Explanation of Condition
Horizontal Alignment	4	4	Large quarry operation @ NE.
Vertical Alignment	5	5	Sharp curve in both directions. Grade/curve in both directions. Slowed down to 60 km/hr to navigate curves-likely needs to be 30kph.
Roadway Width (m)	8.000		
Approach Bump	4	4	Potholes
Guardrail (Y/N)	Yes		
Guardrail	3	3	Insufficient posts and length. Not thrie beam. 2 TT posts at NE broken.
Length (m)	11.400		
Current Standard (Y/N)	No		
Termination Type	Turned Down		
Drainage	6	6	
Approach Road General Rating	4	4	

RECEIVED
NOV 18 2022

Superstructure				
Bridge Component	Last	Now	Explanation of Condition	
(Primary Span : TH, 1 Spans, Lengths(m): 45.7, A-Ident Number: A0066-01)				
Special Features				
Special Feature		X		
(Type :)				
Special Feature		X		
(Type :)				
Wearing Surface/Deck Top Detail Ratings				
	N (%)	1 (%)	2 (%)	3 (%)
Last	20	0	0	0
Now	20	0	0	0
Wearing Surface/Deck Top		4	4	Strip deck wearing rot in wheel paths. ✓
(Material Type : UNTREATED TIMBER) ✓				
(Plank Thickness(mm) : 75) ✓				
(Plank Width(mm) : 300) ✓				
Deck Rideability		5	5	
Deck Joints		X	X	
Temperature (deg. C)	25	3		
(Expansion Type :)				
(Fixed Type :)				
Gap Size (mm)	Gap Location			
Curbs/Wheel Guards		4	4	10 wheelguard blocking are either twisted, split or missing. ✓ NE damaged - photo. ✓
(Curb Type : Standard) ✓				
(Type : TREATED TIMBER) ✓				
(Thickness(mm) : 100) ✓				
(Width(mm) : 300) ✓				
Bridge Rail		5	5	Triple layer flexbeam. ✓
(Type : GALVANIZED STEEL FLEX BEAM) ✓				
Bridge Rail Posts/Blocking		7	7	
(Type : GALVANIZED POST STEEL; GALVANIZED POST STEEL) ✓				
Bridge Rail/Posts Coating		7	7	
(Type : GALVANIZED) ✓				
Sidewalk		X	X	

Superstructure						
Bridge Component			Last	Now	Explanation of Condition	
(Primary Span : TH, 1 Spans, Lengths(m): 45.7, A-Ident Number: A0066-01)						
Wide Load Damage (Y/N)	Yes				Bullet hole NW batter post. ✓ (U8U8 crack @ lower weld @ W end. 11-Jun-07) ← All top bracing welded @ mid length ✓ U3L4W-30mm kink @ mid length. (U1U1-2 nicks & dents on lower flange. U9U9-5 x 150 dent. U1L1W headless rivet @ L1W. U9L9W-2 malform rivets @ U9W. L8L9E-3 headless rivets @ L8E. L4L5W-6 headless rivets @ L5W. L0L1W-11 x 350 dent o/s flange near L0W.-Nov, 2018) Scaling up to 2mm deep on lower flange only @ ends of beams. ✓ Rust scaling bottom flanges. Scaling lower flanges at abutments, minor. (U1L2W viewed from deck & U1 outside has possibility of crack. 17-Apr-18) (Headless rivet L8L9W @ L9.-Nov, 2018) Recent accident damage to U2L3W with rail bolt pulling through bolt hole & overall kink of ~50mm. ✓	
High Load Damage (Y/N)	Yes					
Top Chord			7	7		
Batter Posts			7	7		
Sway Bracings			4	4		
Diagonals			3	3		
Verticals			4	4		
Portals			6	6		
Connections			4	4		
Floor Beams			4	4		
Bottom Chord			5	5		
(No. of Stringers : 80)						
Stringer Detail Ratings						
	N (count)	1 (count)	2 (count)	3 (count)		
Last						
Now						
Stringers			4	4		
(Type : STEEL) ✓						
(Width(mm) : 120) ✓						
(Depth(mm) : 200) ✓						
(Spacing(mm) : 710) ✓						
Paint Condition			4	4	U0L1E, U2L2W & U3L3W are scraped from accident. ✓ Bullet hole in floor beam 2nd from South abutment - midspan. ✓ Dented sway brace - underside bay 2. ✓	
(Colour Description :)						
(Colour Code :)						
Touchup Required (Y/N)	No				Portions recently straightened have been primed only with red-lead. ✓ Pitting & scaling on floor beam and stringers. Scaling lower flange of stringers at abutments, minor. ✓ Silver. ✓	
Bearings			4	4	Gravel & moss growth at all bearings. ✓ Fixed on S end. ✓ Truss jammed against abutment. ✓	
Temperature (deg. C)	25	3				
(Expansion Type : ROLLER NEST BEARING) ✓						
(Fixed Type : PINNED BEARING) ✓						
Functioning (Y/N)	No					
Sub Deck/Deck Underside			5	5		
(Material Type : TREATED TIMBER) ✓						
(Plank Thickness(mm) : 100) ✓						
(Plank Width(mm) : 300) ✓						
Defects (Percent Area)	5					
Span Alignment Problems						
Vertical (Y/N)	No					
Horizontal (Y/N)	No					
Superstructure General Rating			4	4		
Substructure						
Bridge Component			Last	Now	Explanation of Condition	
Abutments						
(Extended Backwall Piles (Y/N) : N) ✓						
(Extended Backwall Piles Spacing(mm) :)						
HP 305 weld corbels on 300 TT caps. ✓ Timber subcaps. 1 - 300 TT backwall cap, 2 total ✓ North backwall rotating counter clockwise. ✓						

COULD NOT LOCATE / VIEW CRACK

Substructure					
Bridge Component		Last	Now	Explanation of Condition	
(Total Number of Caps/Corbels : 10:10)				Corbels are steel HP. ✓	
Bearing Seats/Caps/Corbels Detail Ratings					
	N (count)	1 (count)	2 (count)	3 (count)	
Last	0	0	0	0	
Now	0	0	0	0	
Bearing Seats/Caps/Corbels			5	5	
(Type : TREATED TIMBER)					
(Depth(mm) : 300)					
(Width(mm) : 300)					
Backwalls/Breastwalls			5	5	
Greatest Height (m)		3.30 ✓			
Wingwalls			5	5	Top plank not attached NW. ✓
(Total Number of Bearing Piles : 16:16)					
Piles Detail Ratings					
	N (count)	1 (count)	2 (count)	3 (count)	
Last	2	0	0	0	
Now	2	0	0	0	
Piles			6	6	
Paint/Coating			X	X	
Abutment Stability			7	7	
Scour/Erosion			7	7	
Piers/Bents					
(Type :)					
(Total Number of Caps/Corbels :)					
Bearing Seats/Caps/Corbels Detail Ratings					
	N (count)	1 (count)	2 (count)	3 (count)	
Last					
Now	0	0	0	0	
Bearing Seats/Caps/Corbels			X	X	
(Type :)					
(Total Number of Bearing Piles :)					
Piles Detail Ratings					
	N (count)	1 (count)	2 (count)	3 (count)	
Last					
Now	0	0	0	0	
Pier Shaft/Piles			X	X	
Greatest Height (m)					
Bracing/Struts/Sheathing			X	X	
Nose Plate			X	X	
Paint/Coating			X	X	
(Colour Description :)					
(Colour Code :)					
Pier Stability			X	X	
Scour			X	X	
Debris (Y/N)		Yes ✓		Timber debris piled at SE corner. ✓ Old piles @ A. S abut.-cut at ground line. ✓	

Substructure				
Bridge Component		Last	Now	Explanation of Condition
Substructure General Rating		5	5	
Structure Usage				
		Last	Now	Explanation of Condition
Channel				
(U/S Direction : W)				Meandering at both U/S and D/S. ✓
(D/S Direction : E)				
Alignment		7	7	
Bank Stability		6	6	No potential erosion visible ✓
HWM (m below Top of Curb)				HWM not visible. ✓
Drift (Y/N)	No ✓			
Slope Protection		7	7	
(Type : NATURAL; NATURAL)				
Guidebank/Spurs		X	X	
Adequacy of Opening		8	8	
(Fish Compensation Measure 1 : NONE)				
(Fish Compensation Measure 2 : NONE)				
Channel General Rating		7	7	

Maintenance Recommendations

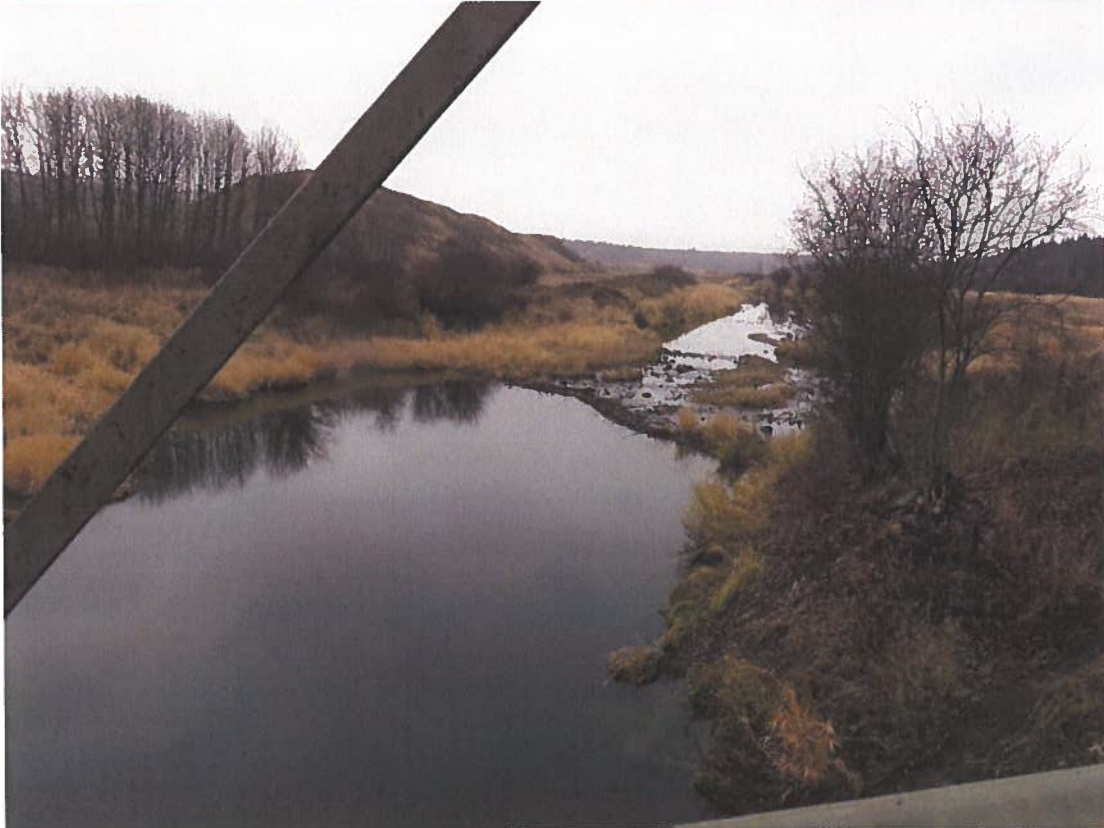
Completed Work						
Planned Work						
Work Type	Status	Rec. Year	Target Year	Inspector Comments	Department Comments	
REPAIR/REPLACE BRIDGE RAIL	PRIORITY REQUIRED	2021 2022		Replace 2 TT guardrail posts and straighten.		
SEAL CURBS	PRIORITY ASSIGNED	2021 2022		Replace 10 wheelguard blocking and 1 WB plank 20' long.		
PATCH DECK	PRIORITY REQUIRED	2023 ✓		Strip deck in wheel path ~100m, patch/grade potholes.		
STRAIGHTEN/REPLACE MEMBERS	PRIORITY ASSIGNED	2021 2022		Drill out & install bolt @ NW batter post & floor beam. Replace U2L3W, and dented sway brace(1).		
OTHER ACTION	PRIORITY REQUIRED	2021 2022		Grind and touch up vehicle scrapes on U0L1E, U2L2W and U3L3W, & WLD/HLD nicks~10 total.		
OTHER ACTION	PRIORITY REQUIRED	2021 2022		Reset Hazard markers.		
OTHER ACTION	PRIORITY REQUIRED	2021 ✓ 2022		Install speed limit 30 kph, Stop if Oncoming Vehicle on Bridge Signs. ✓		
OTHER ACTION	PRIORITY REQUIRED	2021 2022		Sandblast/paint stringers/floor beams @ abutments ~150m2.		
ULTRASONIC TRUSS INSPECTION						
SEAL DECK						
OVERLAY DECK						
REPAIR/REPLACE DECK JOINTS						
REPLACE STRIP DECK						
REPLACE SUB DECK						
RESET/ PAINT BEARINGS						
WASHING						
CORE TIMBER CAPS/CORBELS						
REPAIR/REPLACE TIMBER CAPS						
REPAIR ABUTMENT SCOUR/EROSION						
PLACE ADDITIONAL RIP RAP						
REMOVE DRIFT ACCUMULATION						

Structural Condition Rating (Last/Now) (%)		50.0/	Sufficiency Rating (Last/Now) (%)		33.5/	Est. Repl. Yr	2030 /	Maint. Req. (Y/N)	Y
Special Comments for Next Inspection	Monitor lower weld on U8WU8E. (Local residence stated that heavy gravel trucks are crossing bridge load on regular basis - Feb 19, 2015). No repair for jammed beams at this time.				Department Comments	HUC6 BOUNDARY: UPPER BEAVER RIVER; RISK ZONE: WHITE			
Previous Inspector's Name		Wade Nanninga			Previous Assistant's Name				
Next Inspection Date		31-Aug-2024			Previous Inspection Date		31-May-2021		
Inspection Cycle (Default) (months)		39							
Comment									

Bridge File:	72515-1
Date:	October 25, 2022
Photos by:	Mario Amero
Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge



North



East

Bridge File:	72515-1
Date:	October 25, 2022
Photos by:	Mario Amero
Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge

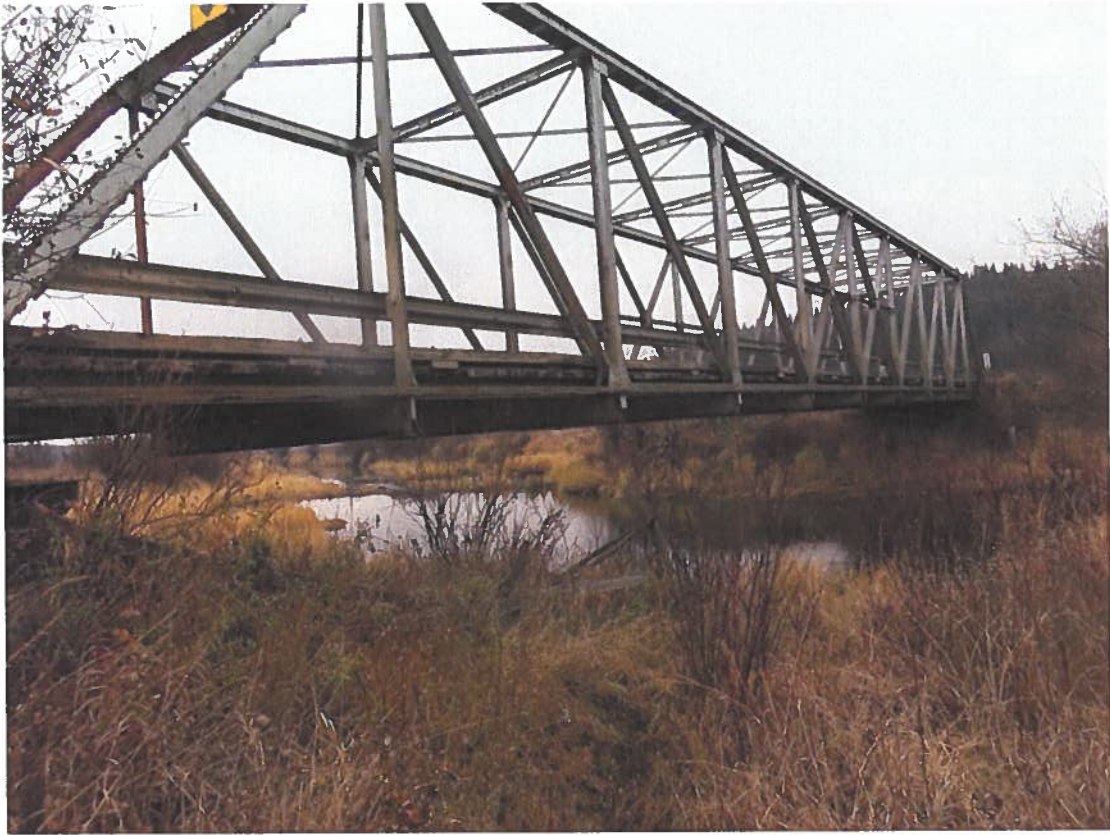


South



West

Bridge File:	72515-1
Date:	October 25, 2022
Photos by:	Mario Amero
Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge



Profile



Broken guardrail post at n/e

Bridge File:	72515-1
Date:	October 25, 2022
Photos by:	Mario Amero
Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge



Damaged wheel guard at n/e

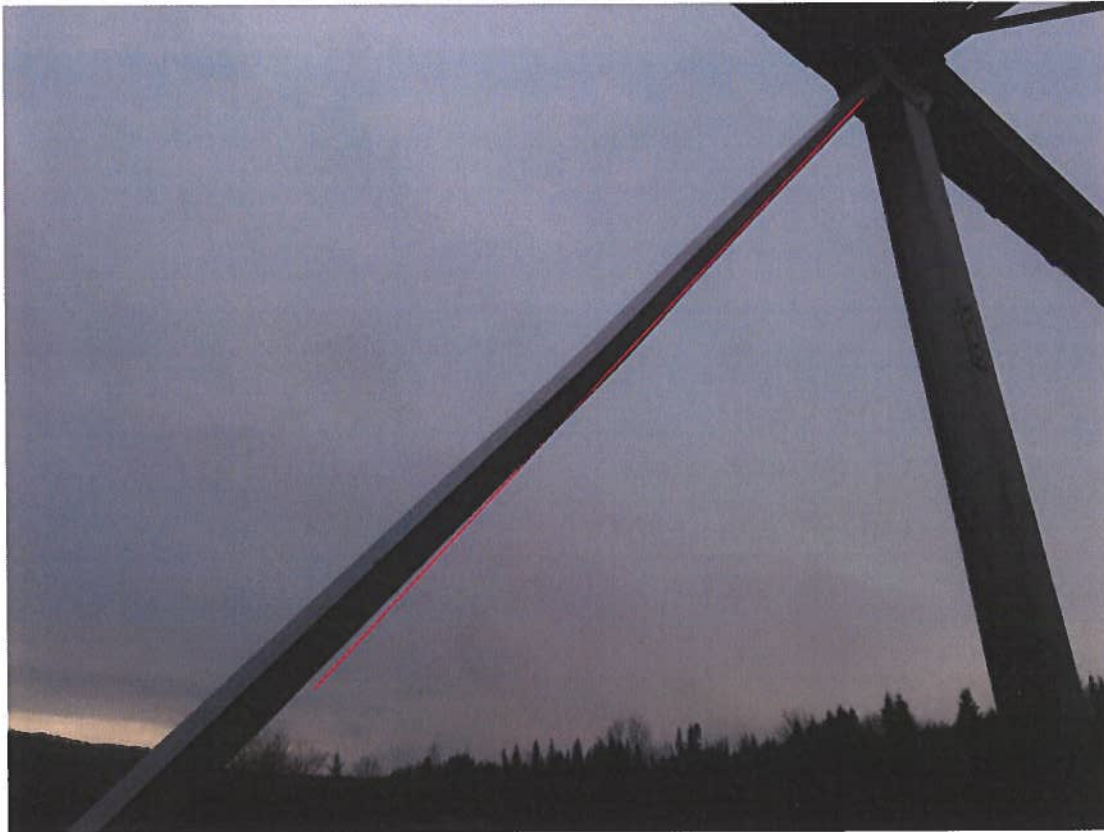


Bullet hole in n/w batter post

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Date:	October 25, 2022
Photos by:	Mario Amero
Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge

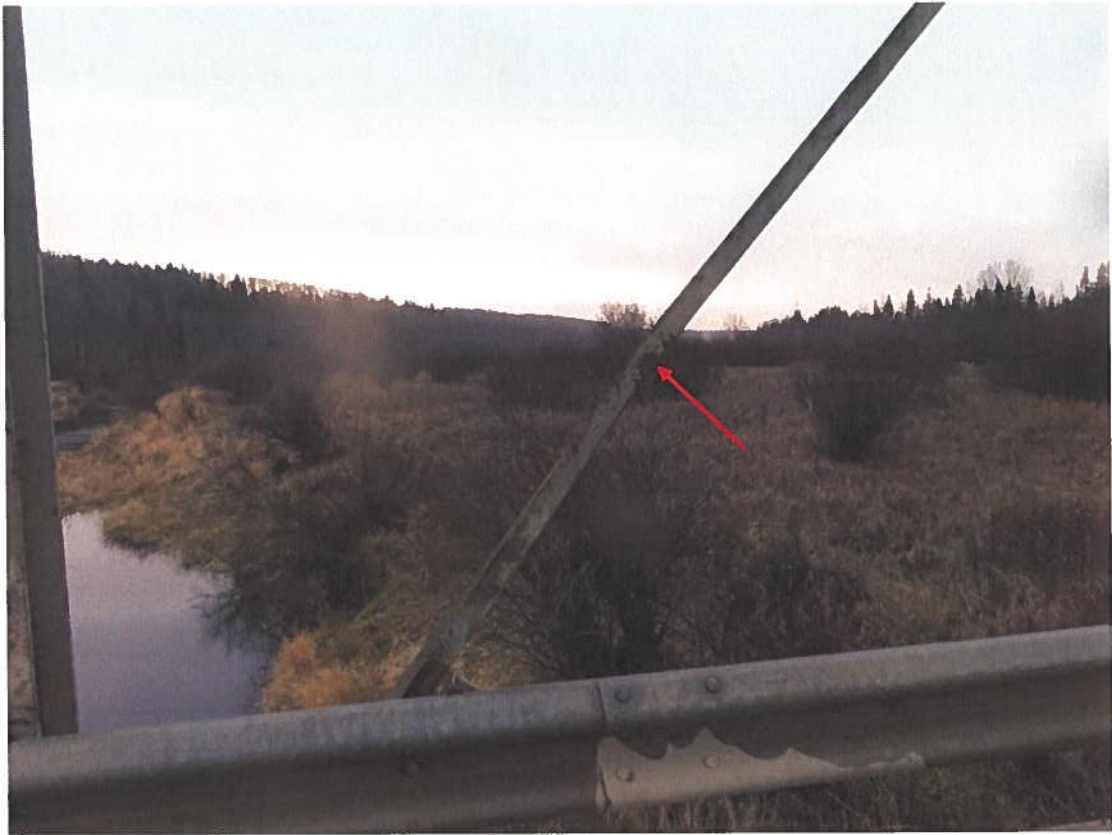


U2L3W- slight bend



U3L4W- bend/twist

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Date:	October 25, 2022
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Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge

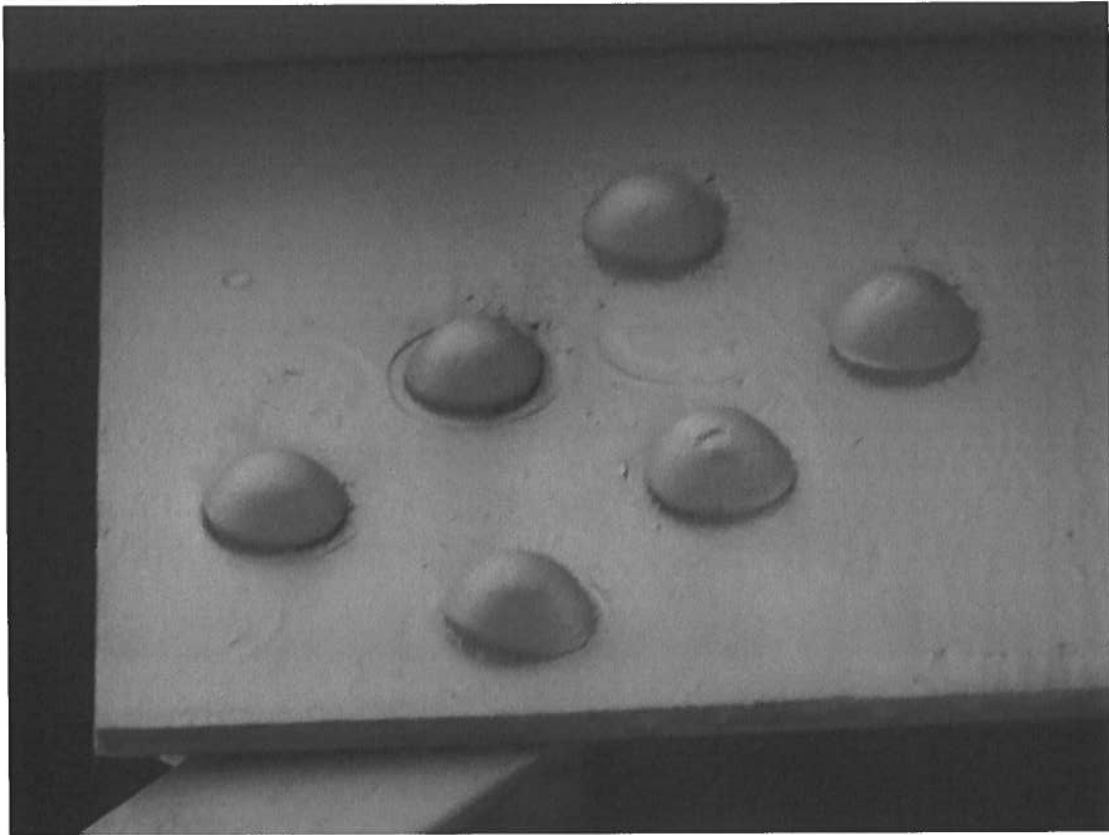


U2L3W- bent diagonal



U2L3W- broken bolt connection

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Date:	October 25, 2022
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Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge



U2L3W connection



U2L3 bottom connection exterior

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Date:	October 25, 2022
Photos by:	Mario Amero
Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge

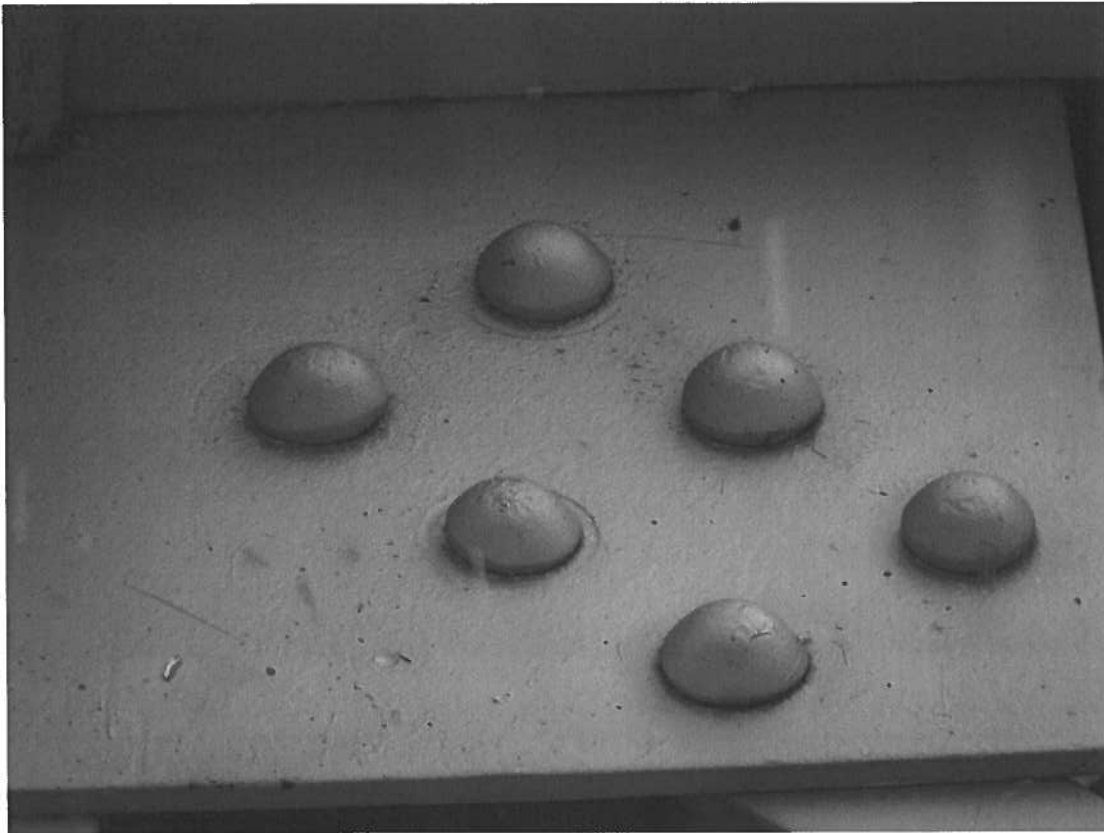


U2L3 bottom connection



U2L3 upper connection

Bridge File:	72515-1
Date:	October 25, 2022
Photos by:	Mario Amero
Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge



U8U8WConnection



U8U8W welded connection, south view

Bridge File:	72515-1
Date:	October 25, 2022
Photos by:	Mario Amero
Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge

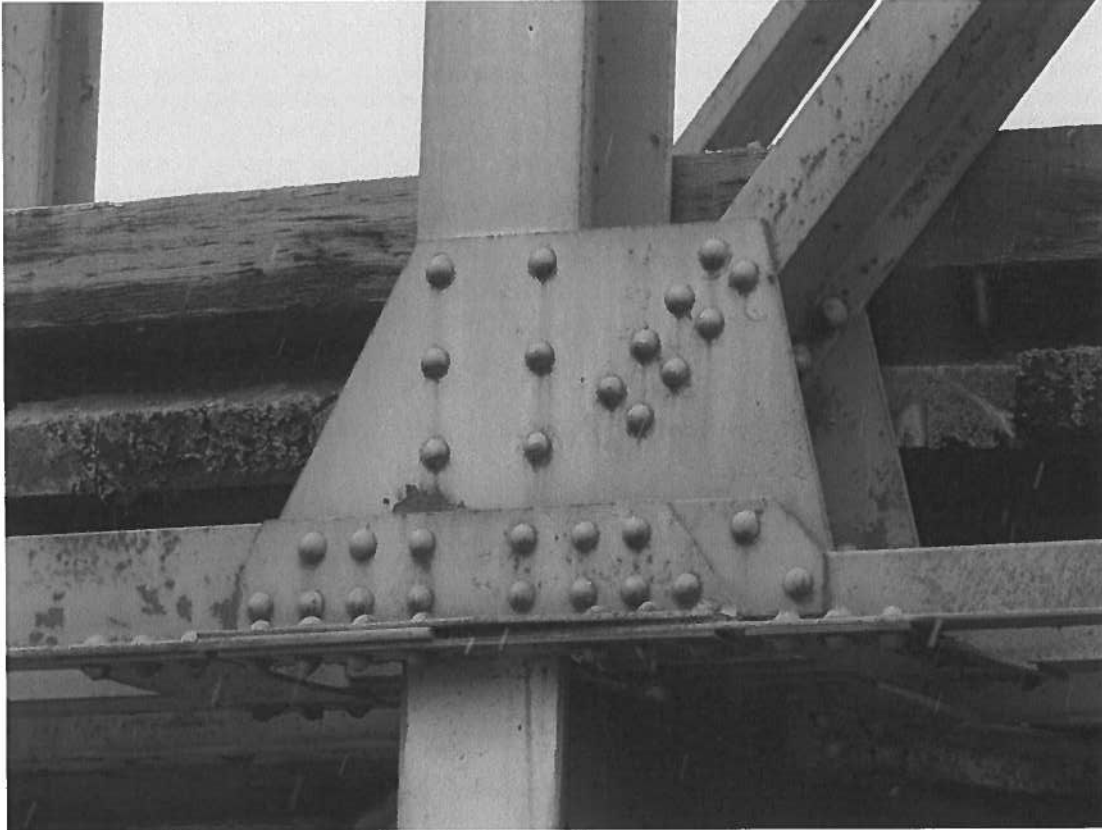


U8U8W welded
connection-north view



U8U8W exterior
connection

Bridge File:	72515-1
Date:	October 25, 2022
Photos by:	Mario Amero
Stream Name / Highway Location:	Beaver River / Highway Local Road, Goodridge



L8W lower connection