#3 Barron Co Trail 37 Bridge 12417

State of Wisconsin Department of Natural Resources dnr.wi.gov

Motorized Recreation Grant Application

For: (choose all that apply)

Form 8700-159 (R 02/2024) Page 1 of 5

Due Date: April 15

X ATV/UTV Trail Aid □ Snowmobile Trail Aid

Notice: Completion of this form is required under Wisconsin Statutes 23.09(26) and 23.33. Failure to complete this form will result in denial of financial assistance. Personally identifiable information found on this form is not intended to be used for any other purpose. The Department of Natural Resources (DNR) may provide this information to requesters as required by Wisconsin's Public Records law {ss. 19.31 – 19.39, Wis. Stats.}.

Instructions: Applications may combine more than one source of fu				nds. They	may DNR Use Only						
be submitted for consideration of tra Stewardship funding. Submit one co necessary attachments. Send appli	mobile a	See Page	2 for	Category				Number			
Section 1: Applicant Information	n						al sense of the	and the state			
Applicant / Organization Name											lividual to act
Jeff Wolfe/Barron County					on behalf c	•					e as applicant.
Individual Authorized to Act on Beh	alf of App	licant p	er Resol	ution C	Check Re	cipient	Name (Na	me to Ap	pear o	n Chec	k)
Jeff Wolfe					lodi Busc	ch					
Title				Г	Title						
Deputy Sheriff				I	Finance Director						
Address		-		ŀ	Address						
1420 Highway 25 N.					335 E. M	onroe	Avenue				
City		State	ZIP Code	e (City					State	ZIP Code
Barron		WI	548	12	Barron					WI	54812
Telephone Number		Email /	Address								
(715) 637-6710		jeff.w	olfe@co	b.barron	.wi.us						
Section 2: Project Information	Required	for al	Project	S						11 /15	annlinghle)
Project Title						Currei	nt Funded	Miles	New M	illes (If a	applicable)
Trail 37 Bridge Rehab						93.6					
County	Townshi	p Rang	ge ∩E	Section	1/4 1/4	1/4	GPS Co Lat.	ordinates 45.3400			
Barron	33 1	J 12	0	17	SE	SE	Long.	-91.8732	27		

Project Description Summary

In March of 2024, Barron County had this bridge inspected by CORRE Inc. The inspection stated that the support pilings had failed and needed to be replaced. The inspector also recommended replacing the bridge decking and railings as they were nearing the end of life. Barron County proposes replacing the support pilings, decking and railings. The current and future load ratings are being calculated by CORRE Inc. and the inspection report will be provided when received. This is located on a summer ATV trail and a snowmobile trail in the winter.

X I certify that all maintenance land use agreements are on file.

Estimated Cost				12 - 1 - 2			Tatal Estimated Cast
Maintenance	Acquisition	Insurance	Development	E	Bridge Rehab.	Trail Rehab.	Total Estimated Cost
					\$122,600.00		\$122,600.00
		Le	ave Blank – Dl	NR Us	e Only		
Applicant Certi	fication	d Romand States					
Printed Name of	Authorized Official			Officia	al's Title		
Jeff Wolfe				Depu	ty Sheriff		
	u di stati alla ffi alla l	Leastify that to th	o bost of my kr		lae the informatic	on in this applicatio	n is true and correct.
As the applicant	s authorized official	i, i certify that, to th	e best of my ki	IUwieu	ige, the informatio		
	1 1A					4/6/1NZ	U

Signature of Authorized Official

1910

Date Prepared

Motorized Recreation Grant Application

Jeff Wolfe/Barron	County
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Page 3 of 5 Form 8700-159 (R 02/2024)

Appendix A – Required fo	r Bridge Reha	b/Repla	ace, N	ew, or I	Reroute	e with New	Bridg	ge	
⊠ Bridge Rehab/Replace	🗌 New Brid				ith new b				
County	Township Rang	e Oe	Section	1/4 1/4	1/4	GPS Coordir Lat. 45.3	ates: 340014		
Barron	33 N 12	●W	17	SE	SE	Long91.	87327	County Invo	ntory Number
Water Body Name			Bric	lge Name	e				nory Number
Fourmile Creek								12417	ailitation funds
Funded Trail Name or Number (S	NARS if applicabl	<u>e)</u>		s this brid he past?	ge site ev			2015 \$	oilitation funds 6,816.00
37					0			φ	0,010.00
Bridge is located on: Privat 	e property			-	Culvert Siz	CO 51			
\cup	; property			-	Culvert S			Llas Agroom	ent (5 year
Landowner Where Bridge is Loca	ted			ephone N			or trail	Use Agreem	minimum)
Charles G. Carr/Brian R. Carr			`	5) 651-4		10			
Current maximum load 48,0		Age of	-		je Materia	al			
Proposed maximum load 48,0	000 lbs.	Unkno		Stee	1			lephone Num	bor
Sponsoring Club Name				Contact			lie		
Barron Bears ATV Club			Gary	Knutson	n .			(715) 20	
Do you have your trail bridges po	sted as to maxim		What	is the ma	aximum lo this bridge	ad of the othe	er bridg	jes on the sys	stern n
	Yes	⊖ No	10.00),000 lbs				
What is the weight of your puller	& drag/grading ec	uipment?	10,01		,				
24,251									
What other recreational trail uses	are planned for t	his bridge	?						
ATV/Snowmobiling) (
If there are other Recreational us	es planned, how	much of tl	ne bridg	e cost wi	ll be paid	for by non-sn	owmob	bile or non-Al	v users?
N/A									
• Yes O No Have you con	tacted your local	ONR Wate	er Mana	gement S	Specialist	(WMS) regard	ding a p	permit?	
• Yes O No Is a permit new	written	correspo	ndence fr	rom WMS.)					
• Yes O No Have you con	tacted your Coun	y Zoning	Dept. re	garding a	a floodpla	in determinati	on?		
	(hydrologic and l								
0									

Bridge Project Detailed Description

In March of 2024, Barron County had this bridge inspected by CORRE Inc. The inspection stated that the support pilings had failed and needed to be replaced. The inspector also recommended replacing the bridge decking and railings as they were nearing the end of life. Barron County proposes replacing the support pilings, decking and railings.

State of Wisconsin Department of Natural Resources PO Box 7921, Madison WI 53707-7921 dnr.wi.gov

Recreation Grant Project Cost Estimate Worksheet Form 8700-014 (R 02/23) Page 1 of 2

Form 8700-014 (R 02/23) For use with Recreation Grant Application Forms

Project Name:		Prepared By:	Date
Bridge 12417 Rehab		Jeff Wolfe	04/09/2024
County	Project Applicant:	Landowner Name	O Public
Barron	Barron County	Charles & Brian Carr	 Private

/	DEVELOPMENT PROJECT ITEMS List by individual item or break down by Use Areas (See Item List On Back Of This Form)	Quantity	Unit of Measure	Component Costs	Estimated Total Item Cost
2	Crane Mobilization Fee	1	LS	\$22,500.00	22,500.00
2	Removal of existing bridge deck, railings, and moving bridge	1	LS	\$8,400.00	8,400.00
2	Removal of piers	4	Each	\$2,200.00	8,800.00
5	New open bent timber pier installation	2	Each	\$18,000.00	36,000.00
2	Installation of new panelized timber deck with railings	1	LS	\$145,000.00	145,000.00
2	Site grading	1	LS	\$9,500.00	9,500.00
2	Erosion control	1	LS	\$10,000.00	10,000.00
2	Engineering	1	LS	\$5,000.00	5,000.00

NOTE:

For development projects, contingency and indirect costs are <u>not</u> eligible expenses.

For acquisition projects, complete the Acquisition Project Cost Estimate Section of this form.

CONSTRUCTION CO., INC.

715.723.9708

Larson Construction Co Inc

19681 - 55th Avenue Chippewa Falls WI 54729 PH 715.723.9708 FX 715.723.4515 Barron County Trail System Trail 136 Bridge Rehabilitation

	BASE BID									
Line No	Item No	Description	Quantity	Unit	Unit Price		Total			
1		Mobilization	1.00	LS	22,500.00	\$	22,500.00			
2		Removal of Existing deck	1.00	LS	8,400.00	\$	8,400.00			
3		removal of piers	4.00	EA	2,200.00	\$	8,800.00			
4		New open bent timber pier installation	2.00	EA	18,000.00	\$	36,000.00			
5		Installation of new panelized timber deck with railing	1.00	LS	145,000.00	\$ 1	145,000.00			
6		Site grading	1.00	LS	9,500.00	\$	9,500.00			
7		Erosion control	1.00	LS	10,000.00	\$	10,000.00			
						\$ 2	240,200.00			

Notes:

1 Larson Construction is a Union Contractor.

2 Utility conflicts to be resolved with help from the Prime Contractor

3 All items in Base Bid are tied unless discussed prior to bid

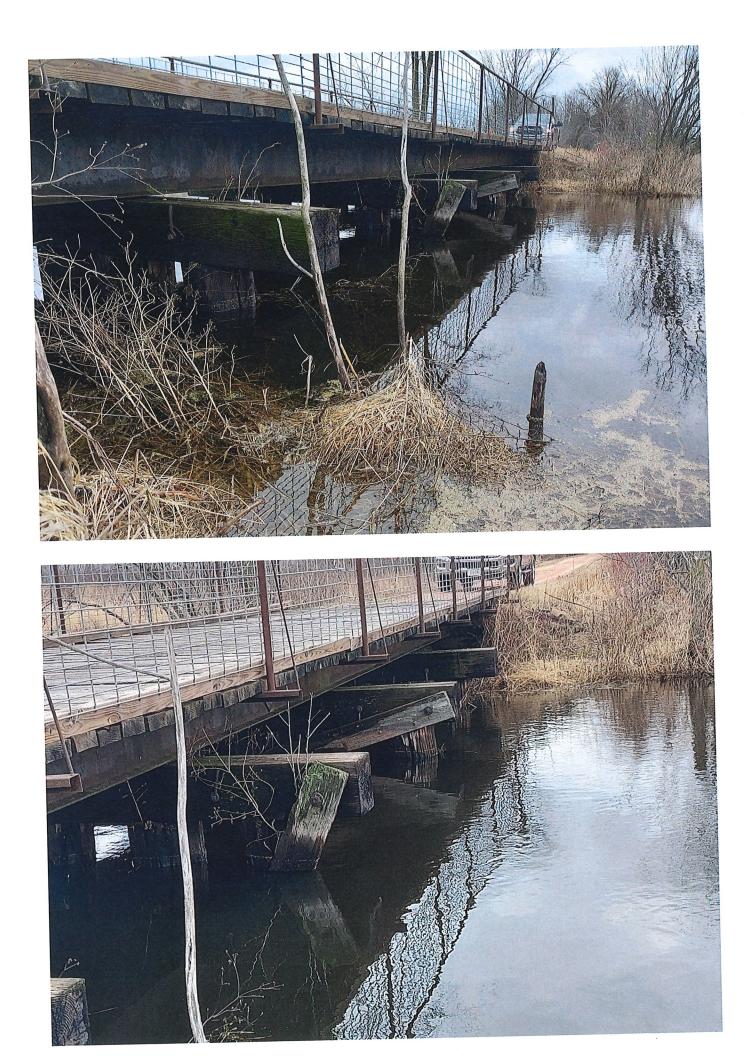
Signed:

Tim MacLaughlin-Barch, Vice President, Operations

Date: 3/20/2024

Accepted:

Date:





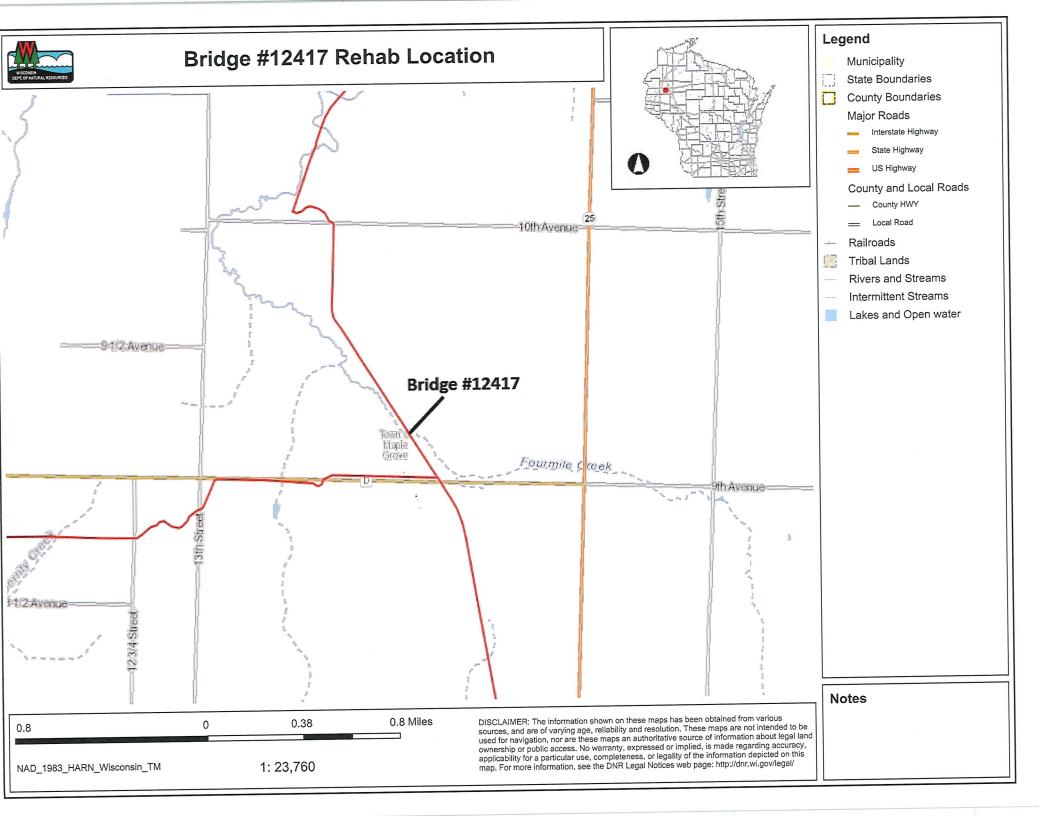


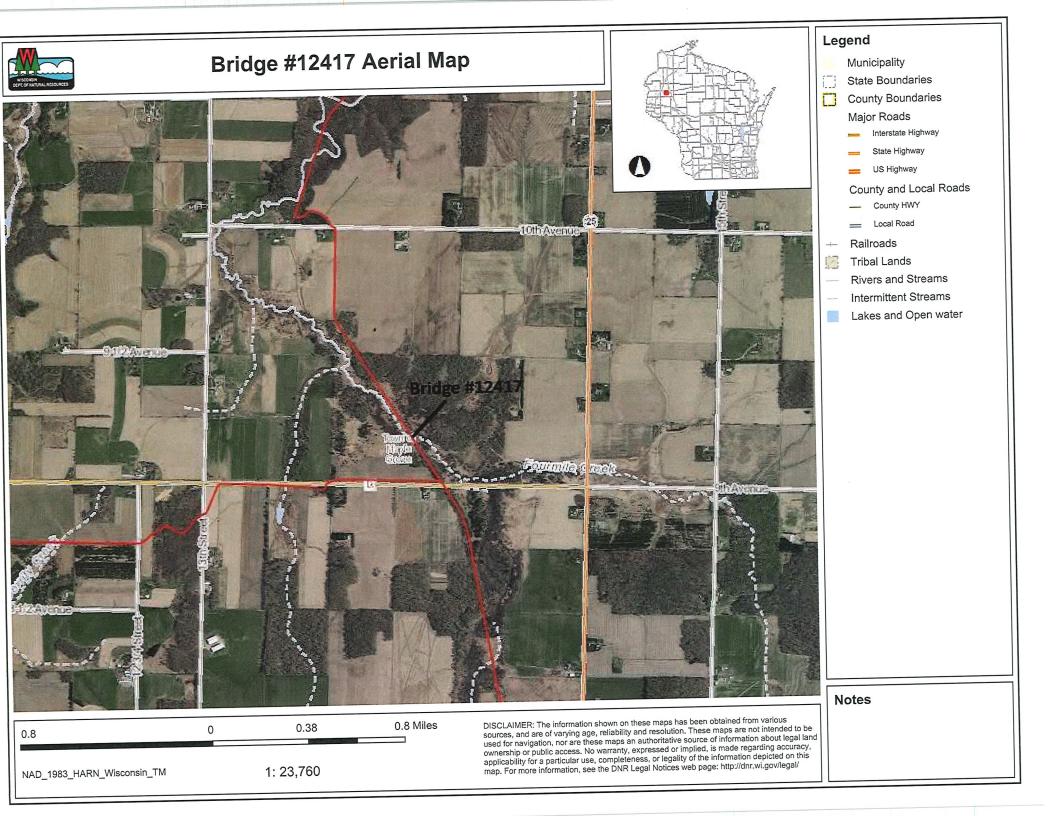


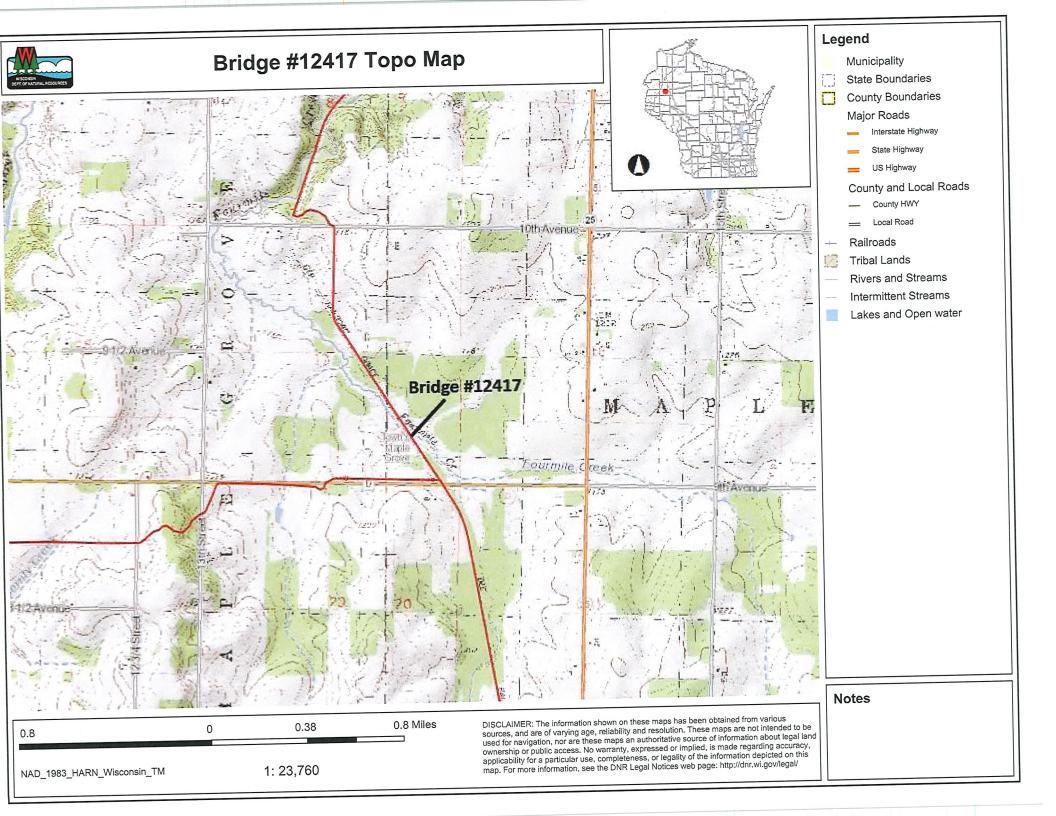


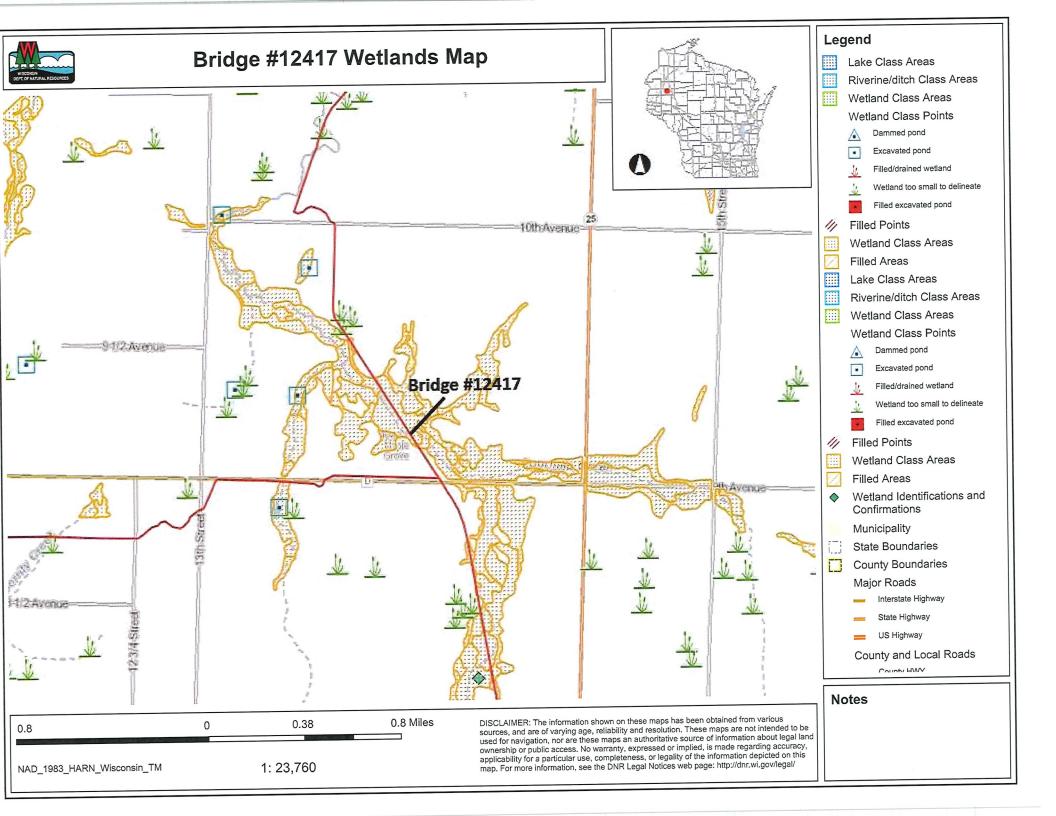












July 23, 2024



Barron County Sheriff's Department Barron County Justice Center 1420 State Hwy 25 North Room 1200 Barron, WI 54812-3007

Eau Claire Office 1802 Warden Street Eau Claire, WI 54703 608.828.1011 P

Trail Bridge #12417 Inspection and Load Rating

CORRE, Inc. (CORRE) has completed the inspection and load rating of the trail bridge over Fourmile Creek at latitude and longitude of 45.340019 N, 91.873274 W.

INSPECTION

Painted Steel Girders All paint gone with some minor pitting / corrosion but no section loss. Both rows of girders are spliced at mid-span and no sign of defects. <u>Fair condition</u>

Painted Steel Diaphragms All paint is gone with pitting / corrosion but no section loss. Fair condition

Timber Abutments: Timber only visible at 6-inches each side of bearing locations. No sign of crushing at the girder bearing. <u>Fair condition</u>

Abutment Slopes: gravel / soil, no erosion or scour. Fair condition.

Timber Deck: 3" x 8" timber plank. Timbers are aged and have minor decay / white fungus on underside throughout. Some planks are spongy and should be replaced. <u>Poor condition</u>

Timber pile: Piles at all four piers have failed. Holes through entire section of most. All have decay and crushing. <u>Poor condition / Replace</u>

Railing: light steel tubing with welded wire fence between posts. Posts are rusty; connections are anchored to timber deck plank. <u>Poor condition</u>

Recommendations:

Replace entire structure (salvage the existing steel girders).

Inspection Frequency:

Pedestrian/trail bridges that do not carry highway traffic are not under the NBIS regulations. WisDOT does recommend inspections on a 48-month cycle for these structures.

CORRE recommends this structure be inspected on a 12-month inspection cycle.

LOAD RATING

Based on our review of the structure and discussions with the client, it is desirable to salvage the existing steel girders and place them on new timber piers. All existing piers would be removed, and 2 new piers are proposed to be installed, resulting in a 3-span configuration. The proposed span lengths would be 20.0', 22.5', 20.0'. New panel decking and timber railing would be installed.

Under the proposed conditions noted above, the existing steel girders will have the capacity to handle a truck load of 24 tons. It should be noted that prior to construction, analysis of the existing steel splice in both girders should be performed to confirm adequacy, which is outside the scope of effort for this load rating.

SUMMARY

CORRE appreciates the opportunity to provide these services. If you have any questions or would like to discuss further, please feel free to contact me at 715.579.0325 or Mark Pilgrim at 715.726.9631.

Sincerely,

CORRE, Inc.

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Eric Price, PE Structural Services Director

Enc: Inspection Summary, Load Rating Calculations

nark Pilgum

Mark Pilgrim, 9501 Bridge Inspector





South Approach Looking North



West Profile



Typical Girder condition



Typical Timber abutment (W)





Typical Timber abutment (E)



Typical Timber abutment (E)



Typical pile condition at pier



Typical bearing at pier





Typical timber pier cap



Timber and girder condition at contact.

Client: Barron County Sheriff Project Description: Load Rating Structure No:: 12417 Rate Bit: SXE: Checked By: ETP Date: 7723/024 Tile Name: Backet Description: Load Carting Checked By: ETP Date: 7723/024 Tile Name: Backet Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth = Load Carting Checket Description: Load Carting Span Longth Checket Description Checket Description: Load Carting Checket Carting Checket Description: Load Carting Checket Carting Checket Description: Load Carting Checket Carti	Client: Pr	arron County S	boriff		
Structure No: 12417 Rated By: SAE Date: 723/2024 File Name: "Benefit and an analysis of the Control of the C				ANSWERS. 🗲 🕻	JRRE
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Date: 723/202 Date: 723/202 <td></td> <td></td> <td>Checked By: FTP</td> <td></td> <td># 1.</td>			Checked By: FTP		# 1.
Itel Name: tiget and account of the provided and	-		Checked by: Lin	RESULIS. A	~ []
Bane 18900- Model (201) (2011 magnages) AAASSET OF LEAR STELLAGIARDER RATING #VALUE! Introduction of the second of the			om/sites/Projects/NW Region/202403.025 2024 Ar	ncillary Bridge Inspections/300 Design/309 Structures/I	Ratings/12417/[Steel Girder-Multi
#VALUE! Span Longth = Chear With = 12.50 feet Clear With = 12.50 feet Clear With = 12.50 feet Clear With = 2 total Girder Spacing = 0.00 inches Overlang With = 0.25 feet Deck Thickness = 6.00 inches Depth Thickness = 0.00 inches Depth Thickness = Type = None Overlay Thickness = Type = None Out of Rail = 27.00 Teet L Moment @ location of M1 = 13.4 ft-kips D Moment @ location of M1 = 13.4 ft-kips <	spa	in - 3 SPAN - MIDDLE SP	PAN - Snowmobile-Rating (LFR)-12417.xlsx]program	n	•
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Top Flange: 6.00 inches Width = 6.00 inches Height = 0.44 inches Top Flange Cover Plate: 0.00 inches Width = 0.00 inches Height = 0.00 inches Transverse Stiffener Spacing = N/A					
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Width =0.00 inchesHeight =0.00 inchesTransverse Stiffener Spacing =N/A				0.44	
Height = 0.00 inches Transverse Stiffener Spacing = N/A				0.00	inchoo
Transverse Stiffener Spacing = N/A					
Longitudinal Stiffener Used = No		:			
	Longitudinal Stiffener Used =			No)

Total Depth, d =				18.00 i	nches
Web Thickness, t _w =				0.46 i	nches
Compression Flange Thickr	ness, t _f =			0.44 i	nches
Compression Flange Width	, b _f =			6.00 i	nches
Weak Axis Radius of Gyrati	ion, r _y =			1.15 i	nches
Area, A =				15.93 i	nches^2
Strong Axis Section Modulu	s, S _x =			88.40 i	nches^3
Strong Axis Moment of Iner	tia, I _x =			795.60 i	nches^4
Live Load Distribution:					
1.) Interior Girders					
a.) For Moment (AASH Distribution Factor =				1.500	
b.) For End Reaction (A				1.500	
Distribution Factor =				1.000	
2) Exterior Cirdore					
2.) Exterior Girders a.) For Moment					
(1) AASHTO 3.23.2	.3.1.2				
Distribution Factor =				1.125 (governs)
(2) AASHTO 3.23.2 Distribution Factor =				0.000	
b.) For End Reaction (A					
Distribution Factor =	=			1.125	
			Max Moment	Max Reaction	
Non-Composite Dead Loads			(ft-kips)	(kips)	
Deck =	0.135 klf =		8.54	1.52	
Haunch =	0.000 klf =		0.00	0.00	
Girders =	0.054 klf =		3.43	0.61	
Secondary Members =	0.020 klf =	<u>override</u>	1.27	0.23	
Commonite Decid Londo	0.209 klf =	10.7	10.70	2.35	
<u>Composite Dead Loads</u> Overlay =	0.000 klf =		0.00	0.00	
Rail Load =	0.000 klf =		1.71	0.30	
Snow (12" Depth) =	0.123 klf =	override	7.78	1.38	
	0.150 klf =	7.7	7.70	1.69	
Live Loads		override			
H20 Loading =		132.9	132.90	35.00	
-	QE not -	49.5	49.50		
Pedestrian Loading =	85 psf =	49.5	49.50	11.95	
Impact, I = 50/(Span + 125)) ≤ 1.30 =	3.8.2.1		1.000	<u>override</u> 1.000
Controlling Live Load (Distri	ibuted) =		74.8 ft-kips	19.7 kips	
- <u> </u>	,		•	·	
M1 =	Std Spec for Hwy	Bridges 17th 10.48.1.1	44.2 ft-kips		
Design Load Factors:		Table 3.22.1A			
Factor Applied to Dead Loa				1.3	
Factor Applied to Composit				1.3	
Factor Applied to Live Load	l, LF _I =			2.17	

COMPUTATION OF SECTION PROPERTIES

Properties of Noncomposite Section Resisting Dead Loads:	
Moment of Inertia, I =	795.60 inches^4
Distance from Bottom of Beam to N.A., Yb =	9.00 inches
Distance from Top of Beam to N.A., Yt =	9.00 inches
Section Modulus to Bottom of Beam, Sb =	88.40 inches^3
Section Modulus to Top of Beam, St =	88.40 inches^3
Properties of Composite Section Resisting Dead Loads:	
Moment of Inertia, I =	795.60 inches^4
Distance from Bottom of Beam to N.A., Yb =	9.00 inches
Distance from Top of Beam to N.A., Yt =	9.00 inches
Section Modulus to Bottom of Beam, Sb =	88.40 inches^3
Section Modulus to Top of Beam, St =	88.40 inches^3
Properties of Section Resisting Composite Dead Loads (3n):	
Moment of Inertia, I =	#VALUE! inches^4
Distance from Bottom of Beam to N.A., Yb =	#VALUE! inches
Distance from Top of Beam to N.A., Yt =	#VALUE! inches
Distance from Top of Deck to N.A., Ydeck =	#VALUE! inches
Section Modulus to Bottom of Beam, Sb =	#VALUE! inches^3
Section Modulus to Top of Beam, St =	#VALUE! inches^3
Section Modulus to Top of Deck, Sdeck =	#VALUE! inches^3
Properties of Section Resisting Live Loads (n):	
Moment of Inertia, I =	795.60 inches^4
Distance from Bottom of Beam to N.A., Yb =	9.00 inches
Distance from Top of Beam to N.A., Yt =	9.00 inches
Distance from Top of Deck to N.A., Ydeck =	15.00 inches
Section Modulus to Bottom of Beam, Sb =	88.40 inches^3
Section Modulus to Top of Beam, St =	88.40 inches^3
Section Modulus to Top of Deck, Sdeck =	0.00 inches^3

ANALYSIS OF NONCOMPOSITE SECTION

ermine Section Designation	<u>:</u>	10.48.1	10.48.2	10.48.4
			Braced	
		Compact	Noncompact	Unbraced
		Section	Section	Section
		Requirements	Requirements	Requirements
o'/t =	6.86	11.86	12.70	N/A
D/t _w =	37.23	111.02	88.91	105.37
D/t _w + 9.35(b'/t) =	101.34	N/A	N/A	N/A
_ _b =	180.00	119.65	97.22	N/A
$_{\rm yc}/{\rm I}_{\rm y} =$	0.37	N/A	N/A	0.1 to 0.9

Bracing Classification of Section =

Unbraced

Moment Capacity of Section		
$M_p = F_y Z =$	(10-92)	199.6 ft-kips
$M_y = F_y S =$	(10-98)	221.0 ft-kips
Determine M _r :		
L _p =		95.00 inches
L, =	(10-103f)	174.85 inches
L _b =		180.00 inches
$D_c/t_w =$		18.61
$\lambda/F_y^0.5 =$		88.91
18,250/F _y =		105.37
For $D_o/t_w \le \lambda/F_v^0.5$ or with Longitudinally Stiffened Webs	:	
M _r =	(10-103c)	143.1 ft-kips
For Lambda/F _y ^0.5 < D _c /t _w ≤ 18,250/F _y ^0.5:		
For $L_b \leq L_p$:		
$M_r = M_y =$	(10-103d)	N/A ft-kips
For $L_r \ge L_b > L_p$:		
M _r =	(10-103e)	N/A ft-kips
For $L_b \ge L_r$:		
M _r =	(10-103g)	104.27 ft-kips
Governing M _r =		143.1 ft-kips
Determine R _b :		
Depth of Web =		17.13 inches
Depth of Web in Compression, D_c =		8.56 inches
Area of Compression Flange, A _{fc} =		2.63 inches ²
Lateral Torsional Buckling Moment or Yield Moment, M_r =	:	1,717,049 inch-lbs.
Section Modulus for Noncomposite Section =		88.40 inches^3
$\lambda =$		15,400.00
R _b =	(10-103b)	1.00
Governing Moment Capacity of Section, M _u =		143.1 ft-kips
Shear Capacity of Section:	F _y of Web =	30 ksi
$V_u = CV_p$	(10-113)	
C =		1.00
$V_{p} = 0.58F_{y}^{*}d^{*}t_{w} =$	(10-115)	5,102.8 kips
Shear Capacity of Section, V_u =		5,102.8 kips

STRUCTURE RATINGS

<u>Ratings Based on Moment for Noncomposite Section:</u> Available M _{II+i} = M _n /1.3 - M _{dl} = Inventory Rating Factor =						91.7 ft-kips 0.74
Inventory Rating =						H 14.7
Operational Rating =						H 24.5
_	Vehicle	Weight (tons)	Operating RF	Capacity	Recommended	
	H20	20	1.23	24.5 Tons	24 Tons	
Ratings Based on Shear: Available V _{II+i} = V _n /1.3 - V _{dI} = Inventory Rating Factor =						3,921.2 kips 119.50
Inventory Rating = Operational Rating =						H 2390.1 H 3983.4

GOVERNING RATINGS

Structure shall be limited to a maximum vehicle load of =

24 Tons