S-55 Forest USFS Otter Creek Bridge

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

Due Date: April 15

Motorized Recreation Grant Application

For: (choose all that apply)

☐ ATV/UTV Trail Aid
☒ Snowmobile Trail Aid

Form 8700-159 (R 02/2024)

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 funds. They may be submitted for consideration of traditional ATV, UTV, Snowmobile and Motorized Stewardship funding. Submit one copy of all forms and attachments. See Page 2 for necessary attachments. Send applications to your Community Services Specialist.

DNR Use Only	
Category	Number

Section 1: Applicant Information

Applicant / Organization Name	Check Recipient: Individual other than authorized individual to act on behalf of the applicant. ☐ Select if the same as applicant.
Forest County Forestry and Recreation	
Individual Authorized to Act on Behalf of Applicant per Resolution	**Check Recipient Name** (Name to Appear on Check)
Travis Wollenberg	Forest County Forestry and Recreation Department
Title	Title
Forest Administrator	
Address	Address
200 E Madison Street	200 E Madison Street

City	State	ZIP Code	City	State	ZIP Code
Crandon	WI	54520	Crandon	WI	54520

Telephone Number	Email Address
(715) 478-3475	travis@co.forest.wi.us

Section 2: Project Information Required for all Projects

Project Title	Current Funded Miles	New Miles (if applicable)
United States Forest Service Otter Creek Bridge Development		

County	Township	Range	Section	¼ ¼	¼	GPS Coordinates:
Forest	35 N	15 ◉E ○W	35			Lat. 45.2818 Long. -88.5921

Project Description Summary

United States Forest Service has requested that Forest County Forestry and Recreation Department apply for funding to develop a bridge over Otter Creek. This trail is part of Forest County state funded snowmobile miles. Through USFS Cost-Share Agreement Forest County has to maintain/develop bridges on USFS property. Currently, the creek does not have any existing bridges or culverts in place and a bridge is needed to protect the water quality, and bank erosion. Existing trail is used only for snowmobile season but constant wear from snowmobiles have developed the need for a bridge. USFS is providing engineering plans, on site over view and cost estimates for this project.

RTP = $100,000
Snow = $159,747

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

Estimated Cost

Maintenance	Acquisition	Insurance	Development	Bridge Rehab.	Trail Rehab.	Total Estimated Cost
			$259,747.00			$259,747.00

Leave Blank – DNR Use Only

Applicant Certification

Printed Name of Authorized Official	Official's Title
Travis Wollenberg	Forest Administrator

As the applicant's authorized official, I certify that, to the best of my knowledge, the information in this application is true and correct.

Signature of Authorized Official

4/1/25
Date Prepared

Appendix A – Required for Bridge Rehab/Replace, New, or Reroute with New Bridge

☐ Bridge Rehab/Replace ☒ New Bridge ☐ Reroute with new bridge

County	Township	Range	Section	¼ ¼	¼	GPS Coordinates:
Forest	35 N	15 ◉E ○W	35			Lat. 45.2818 Long. -88.5921

Water Body Name	Bridge Name	County Inventory Number
Otter Creek	Otter Creek Bridge	FC-10

Funded Trail Name or Number (SNARS if applicable)	Has this bridge site ever received development or rehabilitation funds in the past?
8A 30, 100 Miler Trail System	○ Yes ◉ No Year:_____ $_____

Bridge is located on:	Old Bridge/Culvert Size
○ Private property ◉ Public property	New Bridge/Culvert Size 57'x12'

Landowner Where Bridge is Located	Telephone Number	Length of Trail Use Agreement (5 year minimum)
United States Forest Service	(715) 674-4481	5 years with renewal agreement

Current maximum load	Proposed maximum load	Age of Bridge	Bridge Material
0 lbs.	25,000 lbs.	0	Wood

Sponsoring Club Name	Club Contact	Telephone Number
N/A	N/A	

Do you have your trail bridges posted as to maximum load? ◉ Yes ○ No

What is the maximum load of the other bridges on the system if groomed with this bridge?
25,000 Lbs

What is the weight of your puller & drag/grading equipment?
20000

What other recreational trail uses are planned for this bridge?
None-Trail is designated for snowmobiles for motorized use. All non-motorized use of the bridge is allowed

If there are other Recreational uses planned, how much of the bridge cost will be paid for by non-snowmobile or non-ATV users?
N/A

○ Yes ◉ No Have you contacted your local DNR Water Management Specialist (WMS) regarding a permit?
◉ Yes ○ No Is a permit needed? (Please provide any written correspondence from WMS.)
◉ Yes ○ No Have you contacted your County Zoning Dept. regarding a floodplain determination?
◉ Yes ○ No Will an H & H (hydrologic and hydraulic) study be required?

Bridge Project Detailed Description

USFS has approached Forest County Forestry and Recreation Department to apply for funding to install a bridge over Otter Creek located in the Town of Wabeno. This bridge would support an existing state funded snowmobile trail system. Without installation of a bridge this trail section could be subjected to closure losing numerous miles and connections. Currently, there is no culvert or bridge at this location and snowmobiles have been going through the creek to continue on the trail. To prevent any further erosion and protect water quality a bridge is needed. USFS is providing all the engineering, permitting, hydraulic studies for this project. This bridge will be made out of all wood timbers along with abutments. Forest County is applying for funding and contracting with contractor through bidding services to develop a new bridge in this location.

Appendix A (continued)

Summarize Costs in Appropriate Categories:

Bridge Structure

		Quote 1	Quote 2
		○ Steel ◉ Wooden	○ Steel ◉ Wooden
Bridge Dimensions:		57'x12'	57'x12'
Bridge Manufacturer:		Wheeler	UP Engineers & Architects, Inc.
Design Weight Load		25,000 lbs.	25,000 lbs.
Cost of Structure:	1. Engineering	$	$
	2. Structure	$ 90,000	$ 110,000
	Subtotal	$ 90,000	$ 110,000

Installation Costs:	Quote 1 ○ Contractor or ◉ Sponsor Estimate	Quote 2 ○ Contractor or ◉ Sponsor Estimate
1. Engineering	$	$
2. Site Preparation	$ 20,000	$ 13,845
3. Abutments	$ 25,000	$
4. Pilings/Piers	$ 25,000	$ 71,602
5. Approaches	$ 10,000	$ 4,065
6. Riprap	$ 4,000	$ 11,466
7. Labor	$ 54,000	$ 23,769
8. Equipment Rental	$	$
9. Culverts	$	$
10. H & H Study	$	$
11. Wetland Delineation	$	$
12. Other Mobilization	$ 34,000	$ 25,000
Subtotal	$ 172,000	$ **149,747**
Total Cost	$ **262,000**	$ **259,747**

For the application grant, you must take the lowest of the two quotes.

Entire Deck and Railing Projects ○ Contractor ○ Sponsor ○ Club

Bridge Dimensions:	
Design Weight Load	lbs.
1. Materials	$
2. Labor	$
Total	$

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)

For use with Recreation Grant Application Forms

Project Name:		Prepared By:	Date
USFS Otter Creek Bridge		Travis Wollenberg	03/19/2025
County	Project Applicant:	Landowner Name	◉ Public ○ Private
Forest	Forest County Forestry and Recreation	United States Forest Service	

Indicate - (C) Contract , (F) Force Acct., (D) Donated

	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
C	Mobilization	1	LPSM	$25,000.00	25,000.00
C	Construction Survey and Staking, Method 1, Tolerance Class C	1	LPSM	$10,000.00	10,000.00
C	Silt Fence	170	LNFT	$3.50	595.00
C	Structure Excavation	9	CUYD	$250.00	2,250.00
C	Riprap, Class I, Machine Placed	25	CUYD	$375.00	9,375.00
C	GeoTextile, Type III, Class 1	30	SQYD	$25.00	750.00
C	Aggregated Base, Grading D, Compaction Method B	4	CUYD	$380.00	1,520.00
C	Furnish Pile Drilling Equipment	1	LPSM	$26,000.00	26,000.00
C	Helical Piles, Furn	320	LNFT	$85.00	27,200.00
C	Helical Piles, Driven	320	LNFT	$10.00	3,200.00
C	Structural Steel Plate, Fabricated, Furn, and Erect	1,031	LBS	$7.50	7,732.50
C	Treated Structural Timber, Substructure	1	LPSM	$9,500.00	9,500.00
C	Treated Structural Timber, Superstructure	1	LPSM	$110,000.00	110,000.00
C	Signs, Type III Sheeting	10	SFT	$19.50	195.00
C	Post, Wood, 4-inch X 4-inch	60	LNFT	$20.00	1,200.00
C	Object Markers, Type 3	4	Each	$115.00	460.00
C	Temporary Traffic Control	1	LPSM	$1,000.00	1,000.00
C	Labor	1		$23,769.00	23,769.00
				TOTAL $	$259,746.50

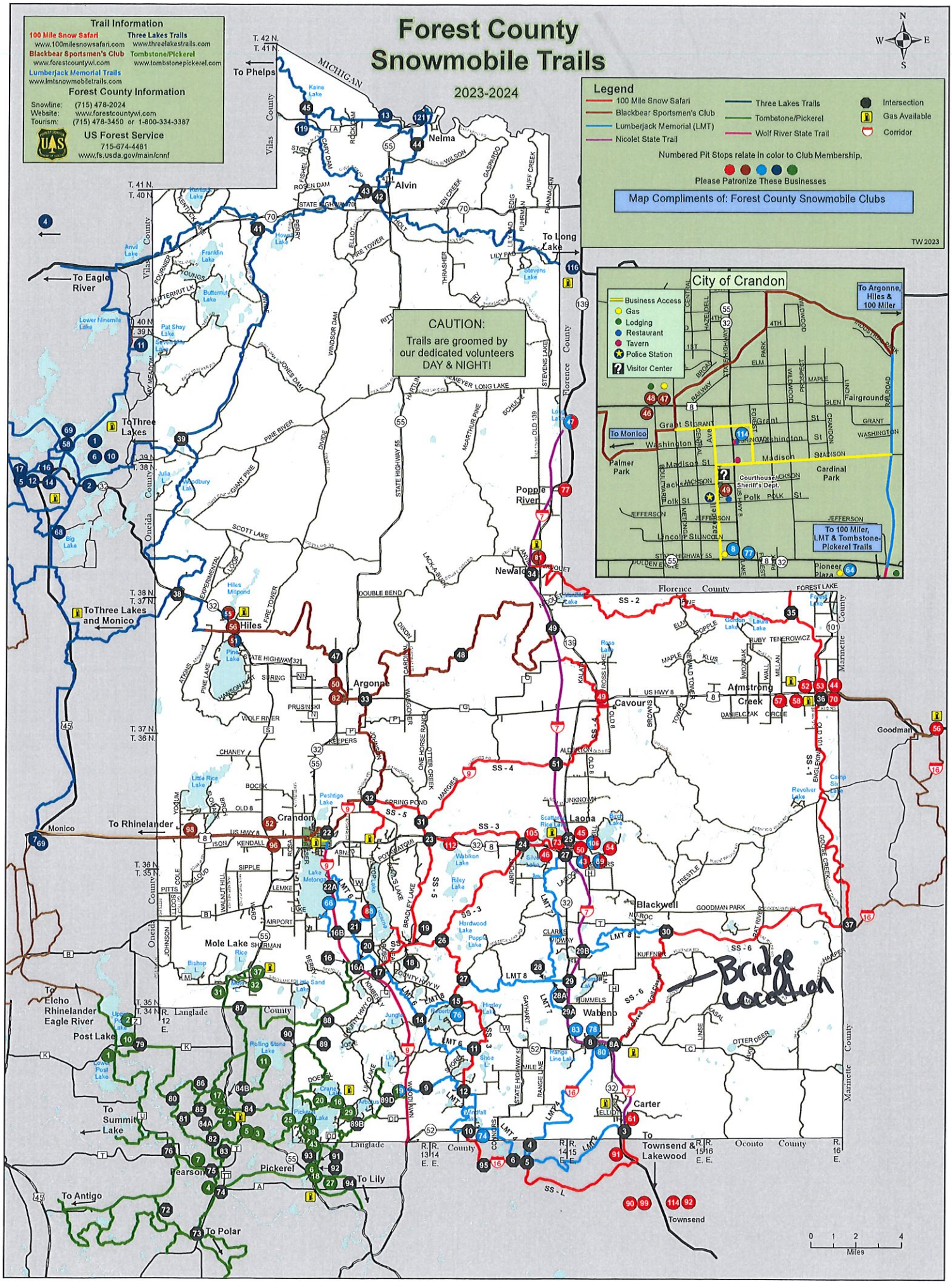
NOTE:

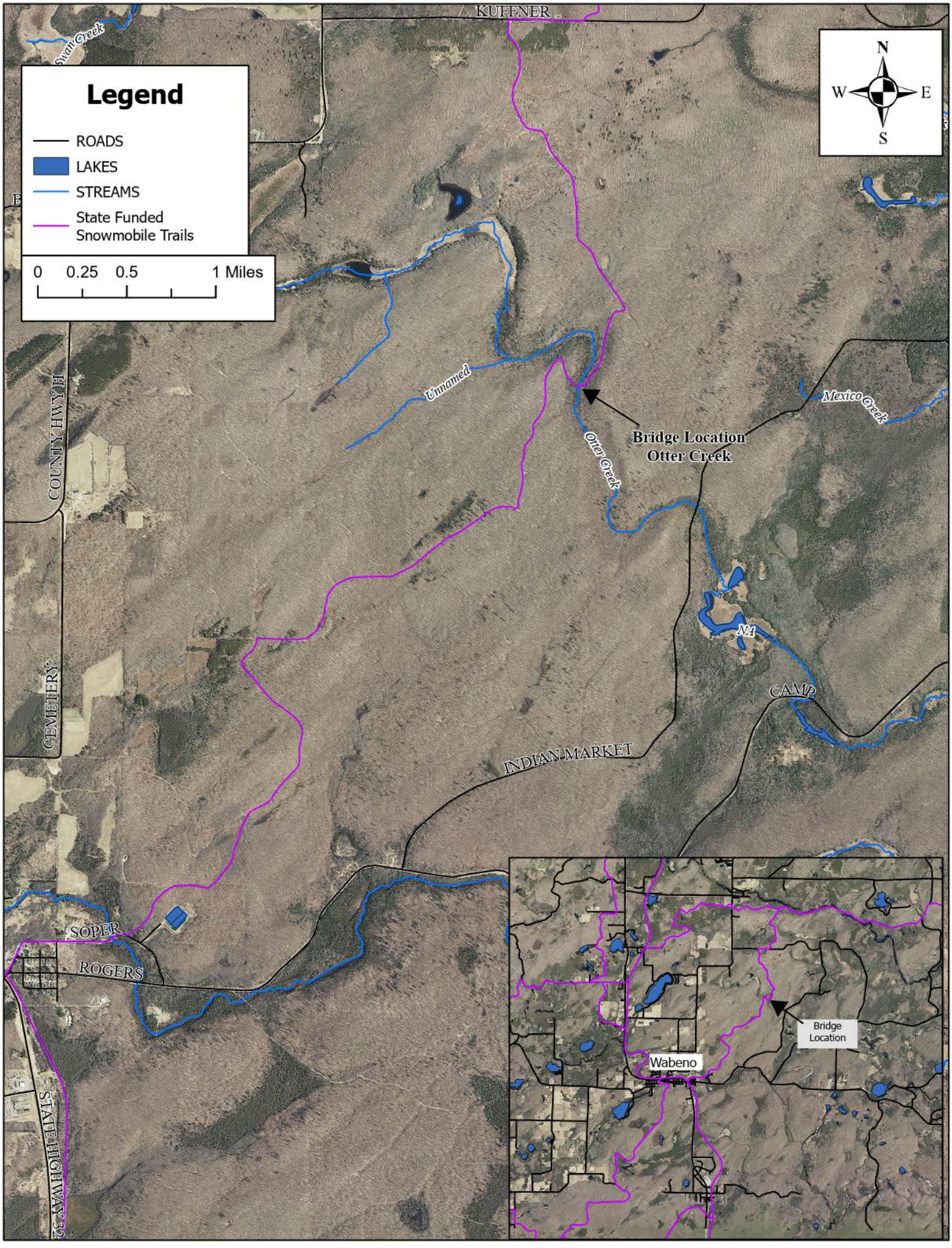
- **For development projects, contingency and indirect costs are not eligible expenses.**
- **For acquisition projects, complete the Acquisition Project Cost Estimate Section of this form.**

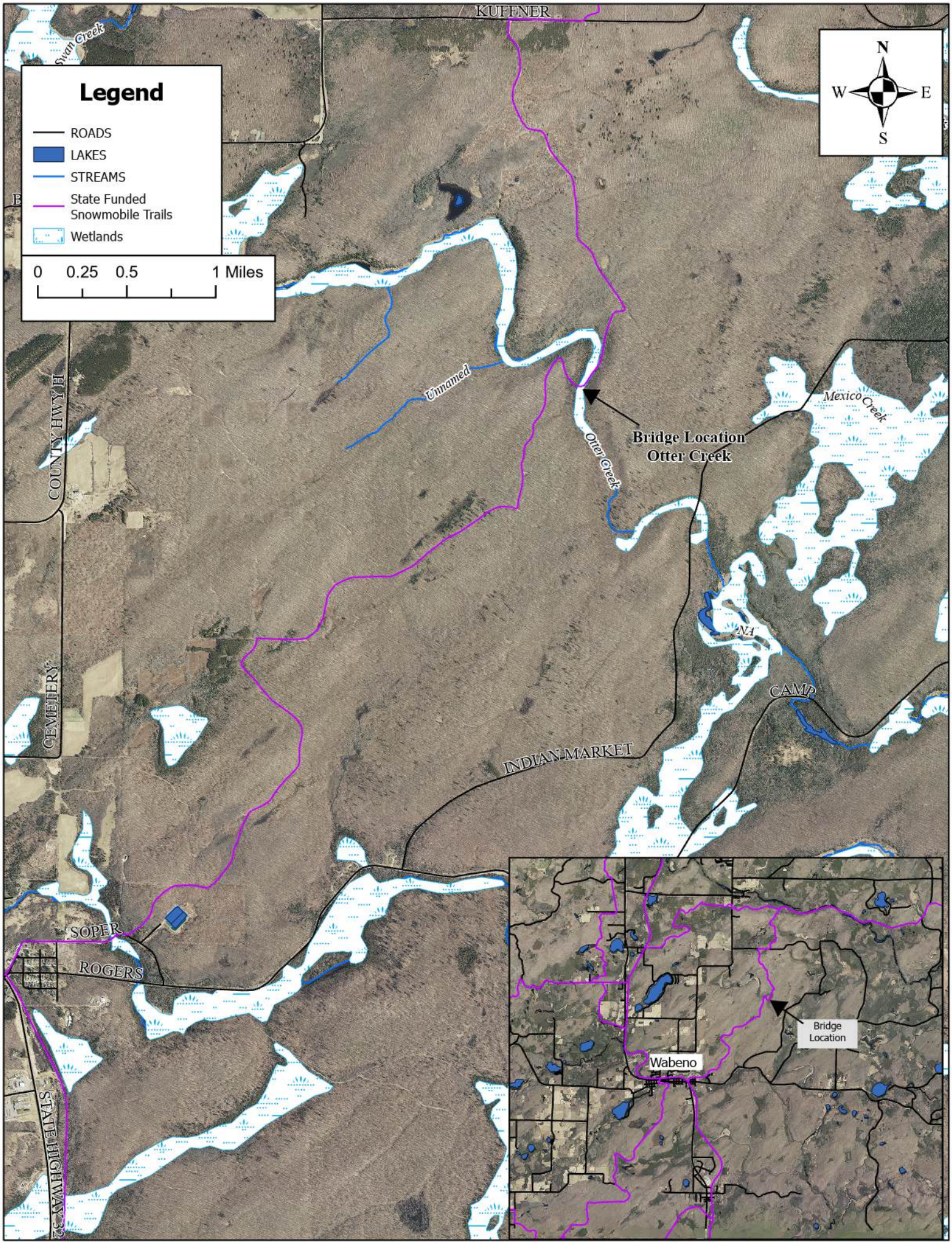
Guidelines for Applicant

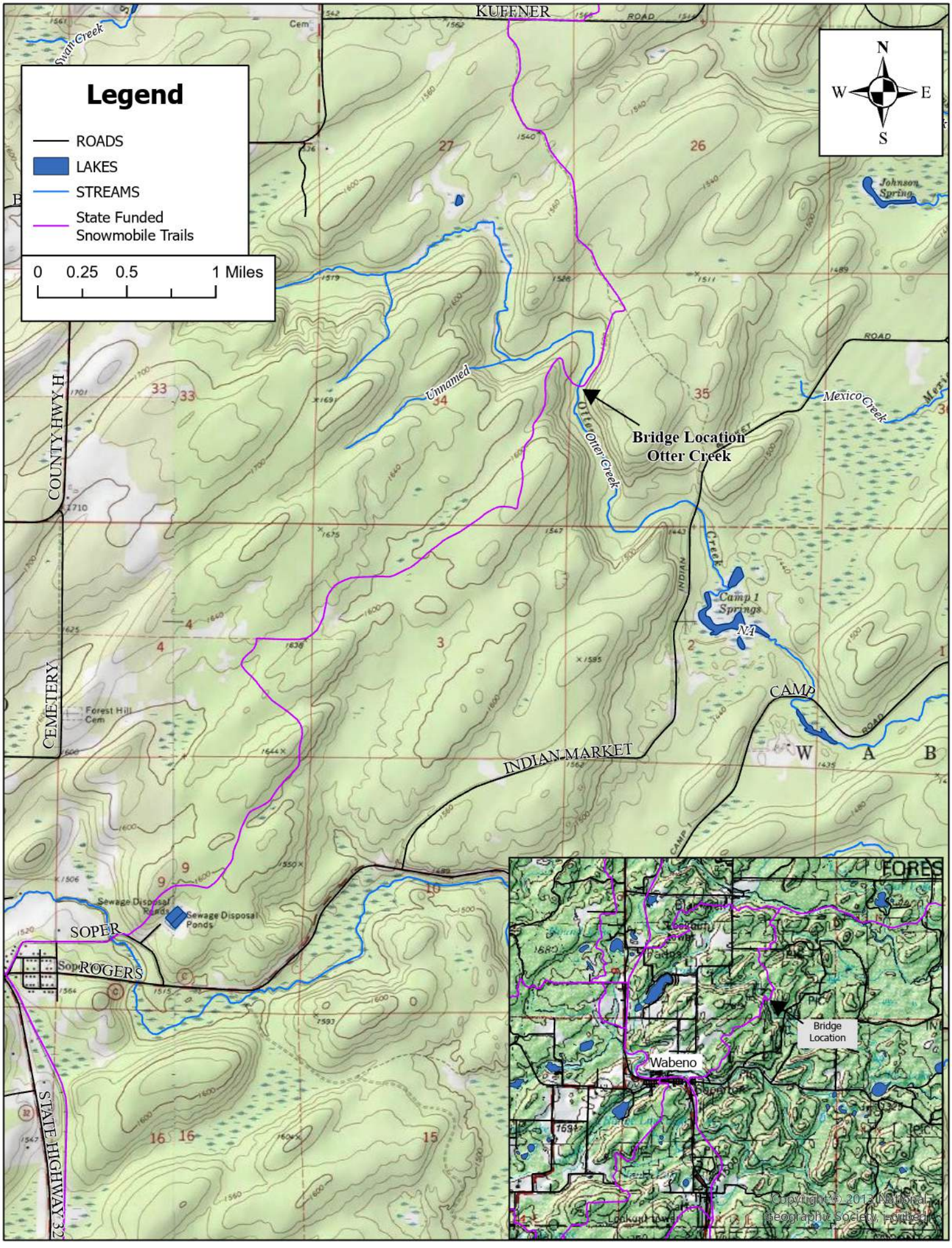
Complete this form for each new bridge structure you are submitting a grant application for. Provide any additional documents not requested on application checklist to substantiate your points other than the actual easements.

	Category	Possible Points	Actual Points
1	**Permits** (maximum points 10)		
	Consultation with DNR Water Mgmt Specialist has occurred and permit is likely	5	5
2	**Project Location** (maximum points 10)		
	Project is located on public land	10	10
	Project is located on private land	5	
3	**Funding** (maximum points 5) Are other funds already committed?		
	50% or greater from other funding source(s)?	5	–
	11% - 49% from other funding source(s)?	3	–
4	**Length of Written Easements** (max points 17)(ch. 23.09(26)(am)1 WI Stats)		
	On public land (County, State, Federal) (with a written agreement)	17	17
	20 years or more on private land or other public land	15	
	10-19 years on private land or other public land	12	
	6-9 years on private land or other public land	10	
	3-5 years on private land or other public land	5	
5	**Type of Trail** (maximum points – 10)		
	Corridor trail	10	
	Non-corridor trail	8	8
6	**Miles Impacted** – How many miles will need to be rerouted if the structure is not replaced? (maximum points – 20)		
	1-5 miles	5	
	6-10 miles	10	
	Over 10 miles	15	
	Unable to Reroute. Explain: Trail would end up closed, losing 7.75 miles of funded trail. No Reroute is possible without crossing some creek.	20	20
7	**Long term Cost of Structure** (maximum points - 25) Calculate total application cost / number of miles impacted = cost per mile.		
	$1,000 - $2,500/mile	25	
	$2,501 - $5,000/mile	20	
	$5,001 - $10,000/mile	15	
	$10,001 - $20,000/mile	10	
	$20,000 and over	5	5
	DEDUCTIONS		
8	**County Active Project Deduction** (maximum deductions 10 points) A snowmobile active project is one that has exceeded it's initial grant period.		
	One active project - deduct 5 points	-5	
	More than one active project - deduct 10 points	-10	
9	**Incomplete Application Deduction (Identified by CSS)**	-10	
	Optional Additional Points		
10	County Coordinator Priority Points (10 pts per **County**)	10	10
	GRAND TOTAL		75


Forest County
Snowmobile Trails
2023-2024
Trail Information
100 Mile Snow Safari
www.100milesnowsafari.com
Three Lakes Trails
www.threelakestrails.com
Blackbear Sportsmen's Club
www.forestcountywi.com
Tombstone/Pickerel
www.tombstonepickerel.com
Lumberjack Memorial Trails
www.lmtsnowmobiletrails.com
Forest County Information
Snowline: (715) 478-2024
Website: www.forestcountywi.com
Tourism: (715) 478-3450 or 1-800-334-3387
US Forest Service
715-674-4481
www.fs.usda.gov/main/cnnf
Legend
100 Mile Snow Safari
Blackbear Sportsmen's Club
Lumberjack Memorial (LMT)
Nicolet State Trail
Three Lakes Trails
Tombstone/Pickerel
Wolf River State Trail
Intersection
Gas Available
Corridor
Numbered Pit Stops relate in color to Club Membership.
Please Patronize These Businesses
Map Compliments of: Forest County Snowmobile Clubs
TW 2023
CAUTION:
Trails are groomed by our dedicated volunteers DAY & NIGHT!
City of Crandon
Business Access
Gas
Lodging
Restaurant
Tavern
Police Station
Visitor Center
To Argonne, Hiles & 100 Miler
To Monico
To 100 Miler, LMT & Tombstone-Pickerel Trails
Courthouse Sheriff's Dept.
Fairgrounds
Palmer Park
Cardinal Park
Pioneer Plaza
Bridge Location
To Phelps
To Eagle River
To Three Lakes
To Three Lakes and Monico
To Long Lake
To Rhinelander
To Monico
To Elcho Rhinelander Eagle River
To Summit Lake
To Antigo
To Polar
To Lily
To Townsend & Lakewood
Townsend
Nelma
Alvin
Hiles
Argonne
Crandon
Laona
Wabeno
Carter
Pickerel
Pearson
Mole Lake
Post Lake
Blackwell
Armstrong Creek
Cavour
Goodman
Newald
Popple River
Florence County
Forest County
Langlade County
Oconto County
Marinette County
Oneida County
Vilas County
MICHIGAN
0 1 2 4
Miles


Legend
ROADS
LAKES
STREAMS
State Funded Snowmobile Trails
0 0.25 0.5 1 Miles
N
W
E
S
KUFFNER
Swan Creek
COUNTY HWY H
Unnamed
Bridge Location
Otter Creek
Mexico Creek
Otter Creek
NA
CAMP
CEMETERY
INDIAN MARKET
SOPER
ROGERS
STATE HIGHWAY 32
Bridge Location
Wabeno


Legend
ROADS
LAKES
STREAMS
State Funded Snowmobile Trails
Wetlands
0 0.25 0.5 1 Miles
N
W
E
S
KUFFNER
Swan Creek
COUNTY HWY H
Unnamed
Otter Creek
Bridge Location
Otter Creek
Mexico Creek
CEMETERY
INDIAN MARKET
CAMP
SOPER
ROGERS
STATE HIGHWAY 32
Wabeno
Bridge Location


Legend
ROADS
LAKES
STREAMS
State Funded Snowmobile Trails
0 0.25 0.5 1 Miles
N
W
E
S
KUEENER
ROAD
Swan Creek
Cem
Johnson Spring
Unnamed
Otter Creek
Bridge Location
Otter Creek
Mexico Creek
COUNTY HWY H
CEMETERY
Forest Hill Cem
INDIAN MARKET
INDIAN Creek
Camp 1 Springs
NA
CAMP
Sewage Disposal Ponds
SOPER
ROGERS
STATE HIGHWAY 32
Bridge Location
Wabeno
Copyright © 2013 National Geographic Society, i-cubed

Otter Creek @ Snowmobile Trail

From: Richardson, Nicole - FS, WI
To: Pennucci, Jeff F - DNR
Cc: Travis Wollenberg
Subject: RE: Follow-up from the Preliminary Council Meetings
Date: Tuesday, July 30, 2024 1:27:54 PM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png
image007.png
image008.png
image009.png
image010.png

Hi Jeff-

I reached out to the bridge engineer, and he provided this information regarding your questions, on the Otter Creek Bridge:

Regarding hydraulic capacity, a bridge is pretty much needed at this site over a culvert. This is a site with large peak floods. Screenshot at the bottom of this email shows the Q100 water elevation at the bridge deck. This is tighter than we normally allow, meaning the floods really are big (relative to crossing size), and providing a lot of freeboard would mean an unrealistically large bridge. All that to say, it would be tough to achieve our design criteria for floods with a culvert.

The site is also in the middle of a wetland and we need to minimize new wetland fill in our projects. A culvert in place of a bridge here would mean very large quantities of road raising and road fill on the approaches to achieve the necessary cover over the culvert. We'd get a hump in the trail with wide side slopes lots of new fill brought in and placed over the wetland, which likely would not hold up as well as a bridge in these wetland soils. The proposed three span bridge option has very minimal fill needed. The 57' length is ~2/3 due to the approach spans which are almost certainly in place to prevent ramping road fill to the center span of the bridge. Not to mention all that new fill and dewatering would be its own substantial cost. Bridge construction here will be easier, though with more expensive materials.

There's a couple other rules of thumb potentially at play here as well. We'll avoid culverts on remote crossings where getting equipment in for replacement/maintenance is hard during parts or all of the year - bridge maintenance is easier for a hand crew or clubs. Reasonably at a certain size, a culvert becomes impractical relative to a bridge for accommodating bankfull width.

Hopefully that answers your questions, but feel free to reach out if you need anything else.

Sincerely,

Nikki Richardson
Natural Resource Specialist
Forest Service
Chequamegon-Nicolet National Forest
P: 715-674-4481 x. 6229
4978 US Highway 8 W
Laona, WI 54541
www.fs.usda.gov
Caring for the land and serving people

From: Pennucci, Jeff F - DNR <Jeff.Pennucci@wisconsin.gov>
Sent: Monday, July 29, 2024 12:15 PM
To: Richardson, Nicole - FS, WI <Nicole.Richardson@usda.gov>
Cc: Travis Wollenberg <Travis@co.forest.wi.us>
Subject: FW: Follow-up from the Preliminary Council Meetings

Hi Nikki,

I am the DNR Grant Specialist processing this application request for the new bridge at Otter Creek. Recently, the Wisconsin Snowmobile Council's Infrastructure Subcommittee met to review all the projects and ask for any additional information that may be needed in order to make a funding decision at their full committee meeting at the end of August.

They had a question regarding this project: For the new bridge at Otter Creek, why does this need to be 57 feet in length? Would a culvert be sufficient?

I asked Forest County, but they indicated that USFS initiated the project request and the design. Are you able to provide any additional information about how this design was determined?

Thank you very much for your time!

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Jeff Pennucci
Phone: (715) 499-1424
Fax: (715) 365-8932
Jeff.Pennucci@Wisconsin.gov

From: Travis Wollenberg <Travis@co.forest.wi.us>

Sent: Monday, July 29, 2024 11:21 AM
To: Pennucci, Jeff F - DNR <Jeff.Pennucci@wisconsin.gov>
Cc: Erin Lane <forestryadmin@co.forest.wi.us>
Subject: RE: Follow-up from the Preliminary Council Meetings

Jeff,

USFS initiated the project. The person I work with through the FS is:

Nikki Richardson
Recreation Management Specialist
Forest Service
Chequamegon-Nicolet National Forest
P: 715-674-4481 x. 6229
4978 US Highway 8 W
Laona, WI 54541
www.fs.usda.gov
Caring for the land and serving people

The other one is the engineer if you have questions for him. Like I said if grant is not funded we would more than likely lose miles.

Travis Wollenberg
County Forest Administrator
Forest County
200 E Madison Street
Crandon, WI 54520
Email: travis@co.forest.wi.us
Phone: 715-478-3475
Cell: 715-784-0068

From: Pennucci, Jeff F - DNR <Jeff.Pennucci@wisconsin.gov>
Sent: Monday, July 29, 2024 11:16 AM

To: Travis Wollenberg <Travis@co.forest.wi.us>
Cc: Erin Lane <forestryadmin@co.forest.wi.us>
Subject: RE: Follow-up from the Preliminary Council Meetings

> **Caution:** This is an external email and may be malicious. Please take care when clicking links or opening attachments.

Hi Travis,

Just a couple more questions for you on this. Are you working with someone at USFS? Who initiated this project (you or them)? Is there someone who can advocate for the project in the USFS if needed?

For instance, I have 2 bridges in Price County and maybe 2 in Ashland that are also on USFS property and there is a USFS trail person that is helping to advocate the applications and answer questions. Is there a counterpart for this project?

Thank you!

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

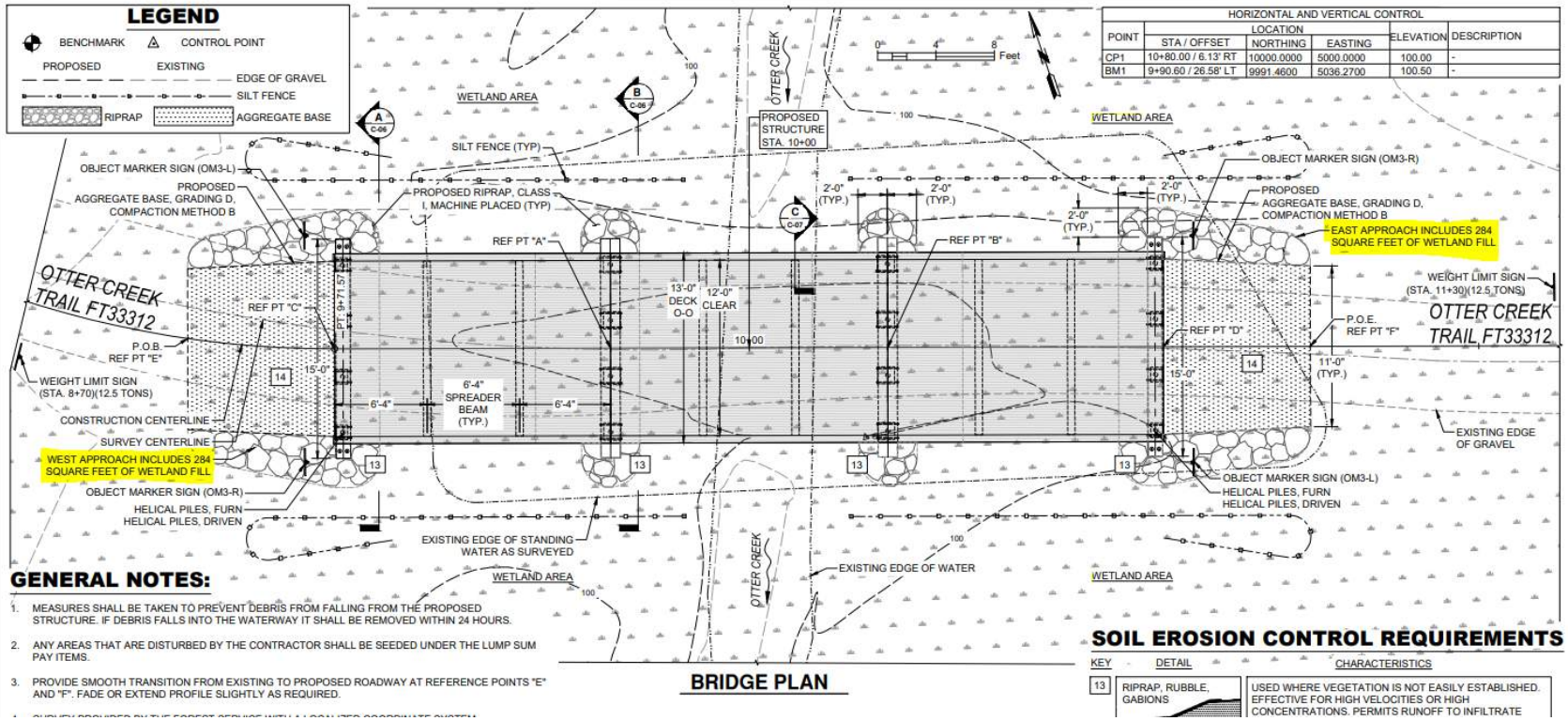
Jeff Pennucci
Phone: (715) 499-1424
Fax: (715) 365-8932
Jeff.Pennucci@Wisconsin.gov

From: Travis Wollenberg <Travis@co.forest.wi.us>
Sent: Monday, July 29, 2024 7:15 AM
To: Pennucci, Jeff F - DNR <Jeff.Pennucci@wisconsin.gov>
Cc: Erin Lane <forestryadmin@co.forest.wi.us>
Subject: RE: Follow-up from the Preliminary Council Meetings

CAUTION: This email originated from outside the organization.
Do not click links or open attachments unless you recognize the sender and know the content is safe.

Jeff,

1. For the new bridge at Otter Creek, this is USFS property, and this is what they requested. USFS engineering deemed a bridge was necessary and never gave any options other than a bridge. It is a trout stream as well, so special culvert would have been needed. I can email the engineering plan I



HORIZONTAL AND VERTICAL CONTROL					
POINT	LOCATION			ELEVATION	DESCRIPTION
	STA / OFFSET	NORTHING	EASTING		
CP1	10+80.00 / 6.13' RT	10000.0000	5000.0000	100.00	-
BM1	9+90.60 / 26.58' LT	9991.4600	5036.2700	100.50	-

GENERAL NOTES:

1. MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE PROPOSED STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY IT SHALL BE REMOVED WITHIN 24 HOURS.
2. ANY AREAS THAT ARE DISTURBED BY THE CONTRACTOR SHALL BE SEEDED UNDER THE LUMP SUM PAY ITEMS.
3. PROVIDE SMOOTH TRANSITION FROM EXISTING TO PROPOSED ROADWAY AT REFERENCE POINTS "E" AND "F". FADE OR EXTEND PROFILE SLIGHTLY AS REQUIRED.

BRIDGE PLAN

SOIL EROSION CONTROL REQUIREMENTS

KEY	DETAIL	CHARACTERISTICS
13	RIPRAP, RUBBLE, GABIONS	USED WHERE VEGETATION IS NOT EASILY ESTABLISHED. EFFECTIVE FOR HIGH VELOCITIES OR HIGH CONCENTRATIONS. PERMITS RUNOFF TO INFILTRATE

United States Department of Agriculture
Forest Service

EASTERN REGION

PROJECT NAME

OTTER CREEK TRAIL BRIDGE FT33312

CHEQUAMEGON - NICOLET NATIONAL FOREST

LAKEWOOD-LAONA RANGER DISTRICT

DRAWING TITLE

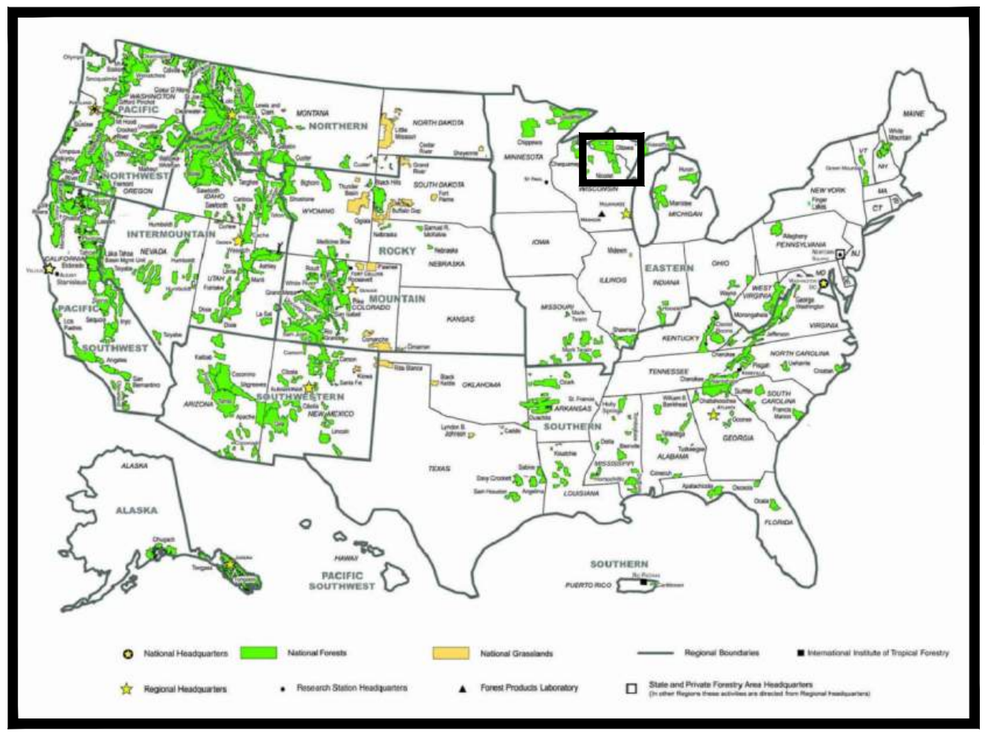
PLAN & PROFILE

- OTTER CREEK\OTTER CREEK TRAIL BRIDGE FT33312.DWG;

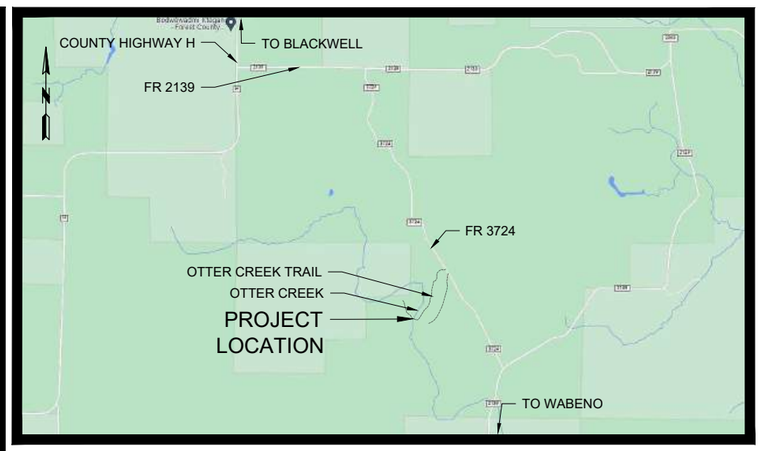
United States Department of Agriculture
Forest Service

EASTERN REGION
CHEQUAMEGON - NICOLET NATIONAL FOREST - LAKEWOOD-LAONA RANGER DISTRICT
FOREST COUNTY
WISCONSIN

OTTER CREEK TRAIL BRIDGE FT33312



PROJECT LOCATION



PROJECT SITE

PROJECT LOCATION: FROM THE FOREST COUNTY HWY T / FOREST COUNTY HWY H INTERSECTION IN BLACKWELL, WISCONSIN, HEAD SOUTH ON FOREST COUNTY HWY H FOR 1.5 MILES, THEN TURN LEFT ONTO FR 2139 (KUFFNER ROAD). CONTINUE ON FR 2139 FOR 0.7 MILES, THEN TURN RIGHT ON TO FR 3724. CONTINUE ON FR 3724 FOR 1.3 MILES, THEN TURN RIGHT ON TO FR 833431 (SNOWMOBILE TRAIL), CONTINUE TO POB OF PROJECT.

STRUCTURE NUMBER:091303-33312-24.0000 (LAT 45.2818, LONG -88.5921)

PROPOSED PROJECT DESCRIPTION:

57 FOOT THREE SPAN, DOWEL-LAM SLAB BRIDGE WITH HELICAL PILE FOUNDATIONS.

DESIGN SPEED: N/A

AADT: N/A

INDEX OF SHEETS

U.P. ENGINEERS & ARCHITECTS, INC.
ENGINEERING ARCHITECTURE PLANNING SURVEYING ENVIRONMENTAL

RECOMMENDED BY:

FOREST ENGINEER _____ DATE _____

DISTRICT RANGER _____ DATE _____

FOREST SUPERVISOR _____ DATE _____

R9 BRIDGE PROGRAM MANAGER _____ DATE _____

APPROVED:

R9 DIRECTOR OF ENGINEERING _____ DATE _____

DESIGN DATA:

LIVE LOAD DEFLECTION DOES NOT EXCEED 1/360 OF THE SPAN LENGTH.

LOAD RATING (RATING FACTORS):

H-12.5

INVENTORY RATING (STRENGTH 1, DECK, MOMENT).....1.49

OPERATING RATING (STRENGTH 1, DECK, MOMENT).....1.93

DEAD LOAD:

THE DESIGN UNIT WEIGHT FOR ALL TIMBERS.....50 PCF

THE BRIDGE CURB LOAD.....28 PLF (PER SIDE)

HYDRAULIC DATA:

100 YEAR FREQUENCY

DRAINAGE AREA.....2.96 SQ MI

Q100.....315 CFS

VELOCITY THRU STRUCTURE.....7.07 FPS

BRIDGE OPEN AREA THRU STRUCTURE.....65.91 SQ FT

FLOW AREA THRU STRUCTURE.....65.91 SQ FT

HIGH WATER ELEVATION.....101.98 FT

SCOUR CRITICAL CODE.....8

GENERAL NOTES:

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE SUPPLEMENTAL SPECIFICATIONS, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE FHWA STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL HIGHWAY PROJECTS, FP-14.

THE PROPOSED IMPROVEMENTS COVERED BY THESE PLANS ARE IN ACCORDANCE WITH:

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020
AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, DEC 2009
AASHTO FOR GEOMETRIC DESIGN OF LOW-VOLUME ROADS, 2ND EDITION, 2019
FSH 7709.56b TRANSPORTATION STRUCTURES HANDBOOK (USDA FOREST SERVICE)
TIMBER BRIDGES: DESIGN, CONSTRUCTION, INSPECTION, AND MAINTENACE (USDA FOREST SERVICE)
NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION 2018

THE EXISTING CONDITIONS SHALL BE CHECKED AT THE TIME OF STARTING CONSTRUCTION TO SEE THAT ITS RELATIONSHIP TO THE PROPOSED WORK IS AS SHOWN ON THESE PLANS AND ANY DIFFERENCES REQUIRING CHANGES IN THE NEW WORK SHALL BE REPORTED TO THE FOREST SERVICE CONTRACTING OFFICER REPRESENTATIVE.

THE WORK COVERED BY THESE PLANS INCLUDES INSTALLATION OF THE NEW BRIDGE AS SHOWN HEREIN AND PER THE MANUFACTURER'S DRAWINGS AND SPECIFICATIONS, MINOR APPROACH GRAVEL, AND SLOPE RESTORATION.

THE STATIONING AS SHOWN ON THESE PLANS FOR REFERENCE POINTS "A, B, C" AND "D" ARE BELIEVED TO BE CORRECT. IT SHALL, HOWEVER, BE CHECKED AT THE TIME OF STARTING CONSTRUCTION, AND IF THE STATIONING SHOWN ON THE PLANS IS INCORRECT, IT SHALL BE REPORTED TO THE ENGINEER.

THE CONTRACTOR SHALL COORDINATE ALL OF THEIR WORK AND ANY UTILITY COMPANIES RELOCATION WORK AT NO ADDITIONAL COST TO THE PROJECT.

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, THE CONTRACTOR SHALL DIAL "811" A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "DIGGERS HOTLINE" ALERT SYSTEM.

WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXPECTED WATER LEVELS DURING CONSTRUCTION.

NO MATERIAL SHALL BE ALLOWED TO ERODE INTO THE WATER COURSE, NOR SHALL MATERIAL BE PLACED INTO THE WATER COURSE EXCEPT AS SHOWN ON THESE PLANS.

ALL EQUIPMENT SHALL BE CLEANED ACCORDING TO THE SPECIFICATIONS PRIOR TO USE ON THIS PROJECT. CONTRACTOR SHALL MAKE EQUIPMENT AVAILABLE FOR INSPECTION PRIOR TO MOBILIZATION ONTO FS LANDS.

THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE FOREST SERVICE CONTRACTING OFFICER REPRESENTATIVE IF HERITAGE RESOURCES OR HUMAN REMAINS ARE ENCOUNTERED.

ACCESS TO THE SITE IS DIFFICULT AND MAY REQUIRE SPOT FILLING OR FROZEN GROUND DEPENDING ON CONTRACTORS MEANS AND METHODS TO ACCOMPLISH THE WORK. CONTRACTOR MUST MAINTAIN ACCESS ROUTES TO THEIR CURRENT CONDITION OR BETTER. NO FILL MAY BE PLACED IN WETLANDS OUTSIDE OF WHAT IS SHOWN IN THESE PLANS. ANY ACCESS IMPROVEMENT WORK IS CONSIDERED INCIDENTAL TO THE PROJECT AND NO ADDITIONAL PAYMENT WILL BE MADE.

NO WORK SHALL BE PERFORMED ON FEDERAL HOLIDAYS OR WEEKENDS WITHOUT PRIOR APPROVAL FROM THE FOREST SERVICE CONTRACTING OFFICER REPRESENTATIVE.

THE CONTRACTOR SHALL PERFORM ALL IN-STREAM WORK BETWEEN MAY 15TH AND SEPTEMBER 15TH.

NO TREE CUTTING SHALL OCCUR FROM APRIL 15TH THROUGH JULY 15TH.

SPECIFICATIONS:

ALL GRADING COMBINATIONS, AND SIZE REFER TO DOUGLAS FIR UNLESS SHOWN OTHERWISE ON THE PLANS. THE DESIGN VALUES FOLLOW LRFD BRIDGE DESIGN SPECIFICATIONS. THESE ARE THE MINIMUM REQUIREMENTS. OTHER SPECIES MAY BE USED WITH APPROVAL FROM THE FOREST SERVICE CONTRACTING OFFICER REPRESENTATIVE AND AT NO ADDITIONAL COST TO THE GOVERNMENT.

GRADING:
ALL DOUGLAS FIR-LARCH TO BE GRADED PER WCLIB STANDARD GRADING RULES. SOUTHERN PINE TO BE GRADED PER SPIB.

MATERIAL & TREATMENT:
TIMBER PRESERVATION TREATMENT SHALL BE IN ACCORDANCE WITH CURRENT STATE AND/ OR AASHTO SPECIFICATIONS. ALL TIMBER SHALL BE COPPER NAPHTHENATE, UC4C (MINIMUM).

REFERENCE DESIGN VALUES SHOWN ARE PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020 (U.N.O.)

DECK TO BE 10" DOUGLAS FIR-LARCH, NO.1 & BETTER (> 2 INCH WIDE) S1S. REFERENCE DESIGN VALUES (KSI): Fbo = 1.20, Fvo = 0.18, Eo = 1,800

SPREADER BEAMS TO BE DOUGLAS FIR-LARCH, NO.1 (BEAMS AND STRINGERS). REFERENCE DESIGN VALUES (KSI): Fbo = 1.35, Fvo = 0.17, Eo = 1,600

CURBS & SCUPPERS TO BE DOUGLAS FIR-LARCH NO.1 (POSTS AND TIMBERS) S1S1E. REFERENCE DESIGN VALUES (KSI): Fbo = 1.20, Fvo = 0.17, Eo = 1,600

ALL TIMBER IS ROUGH UNLESS OTHERWISE NOTED.

DECK SLAB RAMP ENDS AND PIER CAPS SHALL BE CHAMFERED PRIOR TO TREATMENT.

MISCELLANEOUS:
ALL TIMBER TO BE CUT EXACT LENGTH, DRESSED TO SIZE REQUIRED AND ALL PRACTICAL FRAMING TO BE DONE PRIOR TO TREATMENT.

ALL DECK PLANKS SHALL BE PREDRILLED PRIOR TO TREATMENT.

ALL PLANK FOR DECK PANELS SHALL BE PRECISION END TRIMMED TO LENGTH WITH 1/4" UNDERLENGTH & NO OVERLENGTH TOLERANCE PERMITTED.

DECK PANELS SHALL BE ASSEMBLED WITH 3/8" DIAMETER RING SHANK DOWELS. ALL DOWELS ARE TO BE SIMULTANEOUSLY DRIVEN WITH EQUAL FORCE USING A MECHANICAL PRESS THE FULL LENGTH OF THE DECK. ENSURING ALL HEADS ARE FLUSH WITH THE SURFACE OF THE TIMBER PLANK. MULTIPLE IMPACT TOOLS ARE NOT TO BE USED TO SET DOWELS BECAUSE OF POTENTIAL FOR WOOD FIBER RUPTURE.

SUBMIT SHOP DRAWINGS FOR BRIDGE DECK.

DECK PANELS WILL BE DELIVERED TO JOBSITE AFTER BEING FULLY ASSEMBLED AT FABRICATION PLANT.

ALL HARDWARE FOR TIMBER CONNECTIONS TO MEET ASTM A307-97 GALVANIZED TO F2329 (A153). ALL HIGH STRENGTH HARDWARE FOR CURB CONNECTIONS, SPREADER BEAM CONNECTIONS, CAP SADDLE PLATE, AND PILE CAP PLATES TO MEET ASTM F3125 GRADE A325 OR GRADE A449 GALVANIZED TO A153.

CONSTRUCTION NOTES:

THE CONTRACTOR SHALL SUBMIT A RIPRAP GRADATION TEST RESULT ACCORDING TO ASTM D5519 PRIOR TO PLACING ROCK.

ALL HOLES DRILLED IN THE FIELD WHERE SPIKES ARE USED ARE TO BE 1/16" SMALL THAN THE SPIKE SIZE.

ALL HOLES DRILLED FOR BOLTS ARE TO BE 1/16" LARGER THAN BOLT SIZE.

HOLES DRILLED FOR 3/4" LAG BOLTS ARE TO BE 9/16" IN DIAMETER FOR THE THREADED PORTION OF THE BOLT AND 13/16" FOR THE SHANK.

ANY NUT OR MACHINE BOLT HEAD IN DIRECT CONTACT WITH TIMBER TO HAVE ONE PLATE WASHER BETWEEN NUT & TIMBER, AND BOLT HEAD & TIMBER.

ANY NUT OR MACHINE BOLT HEAD IN DIRECT CONTACT WITH STEEL TO HAVE ONE CUT WASHER BETWEEN NUT & STEEL, OR BOLT HEAD & STEEL.

SET THREADS ON ALL BOLTS AT NUT WITH A CENTER PUNCH AFTER TIGHTENING.

ALL TIMBER CUT OR DRILLED IN THE FIELD SHALL BE TREATED WITH COPPER NAPHTHENATE (OR MATCH PROVIDED TREATMENT TYPE).

ALTHOUGH ALL PRACTICAL PRE-FRAMING WILL BE DONE PRIOR TO TREATING, SOME CUTTING & DRILLING WILL BE REQUIRED IN THE FIELD.

IF GALVANIZED FASTENERS ARE CUT OR DAMAGED IN THE FIELD, THEY SHALL BE REPLACED OR TOUCHED UP WITH COLD GALVANIZING COMPOUND AT THE DISCRETION OF THE FOREST SERVICE CONTRACTING OFFICER REPRESENTATIVE.

SUMMARY OF PROJECT QUANTITIES

ITEM NO.	DESCRIPTION	UNITS	QUANTITY
15101	MOBILIZATION	LPSM	1
15201	CONSTRUCTION SURVEY AND STAKING, METHOD 1, TOLERANCE CLASS C	LPSM	1
15702	SILT FENCE	LNFT	170
20801	STRUCTURE EXCAVATION	CUYD	9
25101	RIPRAP, CLASS I, MACHINE PLACED	CUYD	25
25116	GEOTEXTILE, TYPE III, CLASS I	SQYD	30
30103	AGGREGATE BASE, GRADING D, COMPACTION METHOD B	CUYD	4
55151	FURNISH PILE DRILLING EQUIPMENT	LPSM	1
55101	HELICAL PILES, FURN	LNFT	320
55101	HELICAL PILES, DRIVEN	LNFT	320
55501	STRUCTURAL STEEL PLATE, FABRICATE, FURN, AND ERECT	LBS	1031
55704	TREATED STRUCTURAL TIMBER, SUBSTRUCTURE	LPSM	1
55706	TREATED STRUCTURAL TIMBER, SUPERSTRUCTURE	LPSM	1
63301	SIGNS, TYPE III SHEETING	SQFT	10
63306	POST, WOOD, 4-INCH X 4-INCH	LNFT	60
63307	OBJECT MARKERS, TYPE 3	EACH	4
63501	TEMPORARY TRAFFIC CONTROL	LPSM	1

USDA FOREST SERVICE

United States Department of Agriculture
Forest Service

EASTERN REGION

PROJECT NAME

OTTER CREEK TRAIL BRIDGE FT33312

CHEQUAMEGON - NICOLET NATIONAL FOREST

LAKEWOOD-LAONA RANGER DISTRICT

DRAWING TITLE

QUANTITIES, DESIGN DATA, & GENERAL NOTES

DATE
7/10/2023

ARCHIVE NO.

DESIGNER
D.CARTER

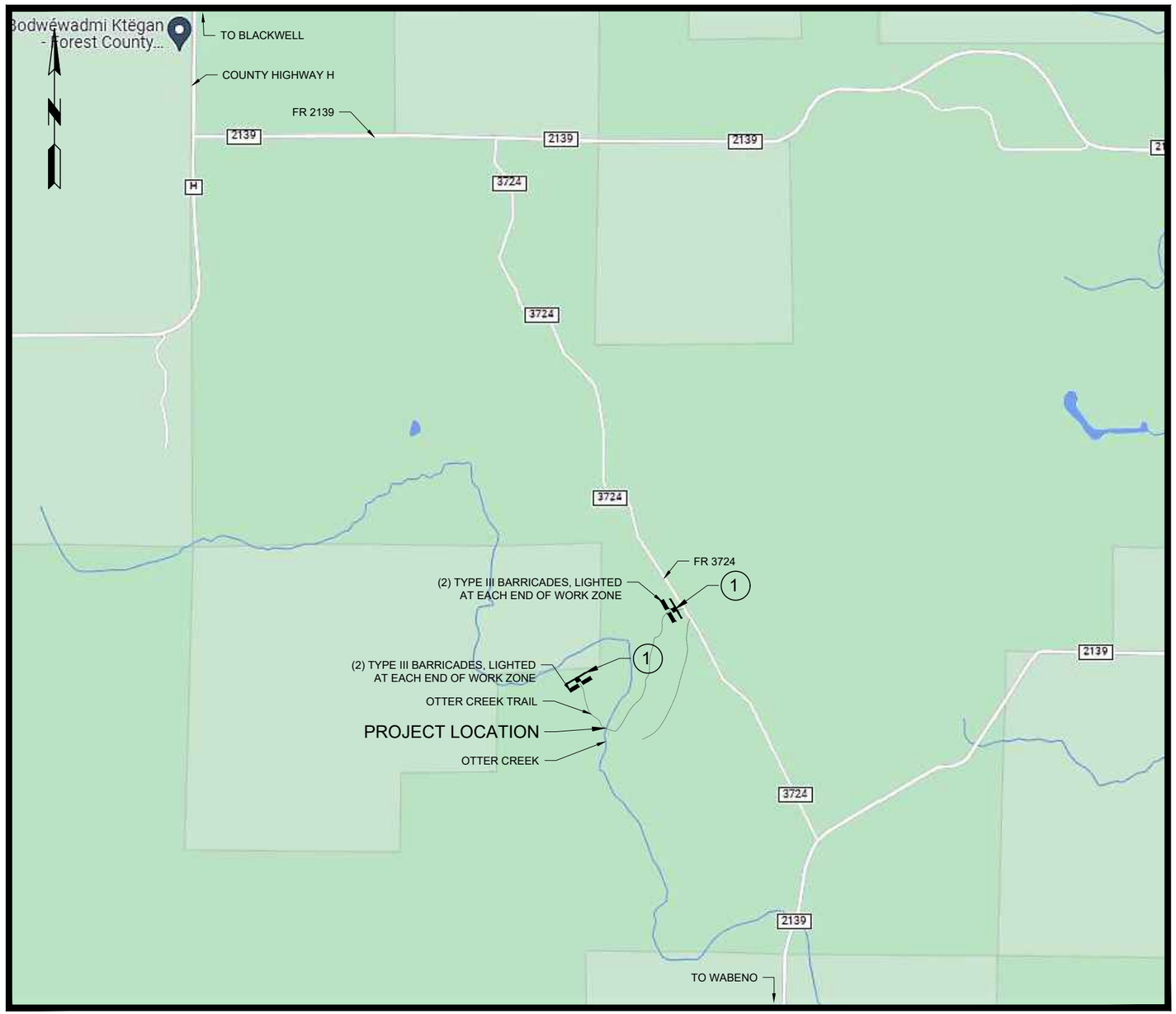
DRAWN
J.ALLEN

CHECKED
G.JUNTTILA

PROJECT NO.
U28-02592

DWG SHEET NO.
C-02

SHEET 2 OF 8



TRAFFIC CONTROL PLAN - ROAD CLOSURE

1

TRAIL CLOSED

MOUNTED ON BARRICADE

R11-2

TRAFFIC CONTROL PLAN KEY

- SIGN
- TYPE III BARRICADE

ALL SIGNS, EXCEPT THOSE MOUNTED ON TYPE III BARRICADES SHALL BE MOUNTED ON DRIVEN POSTS AT A 7 FOOT BOTTOM HEIGHT.

DETOUR NOTES:

A DETOUR ROUTE IS NOT AVAILABLE FOR THE PROJECT LOCATION.

USDA FOREST SERVICE

United States Department of Agriculture
Forest Service

EASTERN REGION

PROJECT NAME

OTTER CREEK TRAIL BRIDGE FT33312

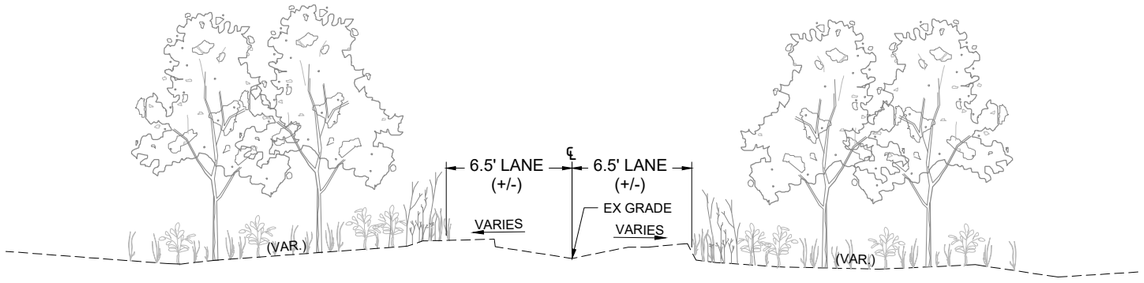
CHEQUAMEGON - NICOLET NATIONAL FOREST

LAKEWOOD-LAONA RANGER DISTRICT

DRAWING TITLE

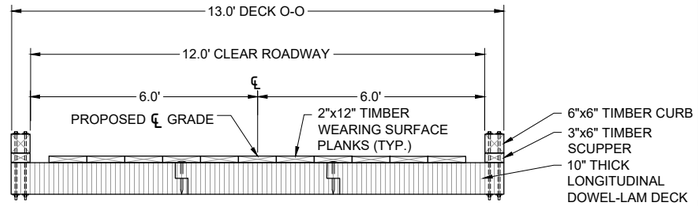
TEMPORARY TRAFFIC CONTROL

DATE: 7/10/2023	
ARCHIVE NO.	
DESIGNER: D.CARTER	DWG SHEET NO.: C-03
DRAWN: J.ALLEN	
CHECKED: G.JUNTTILA	SHEET 3 OF 8
PROJECT NO.: U28-02592	



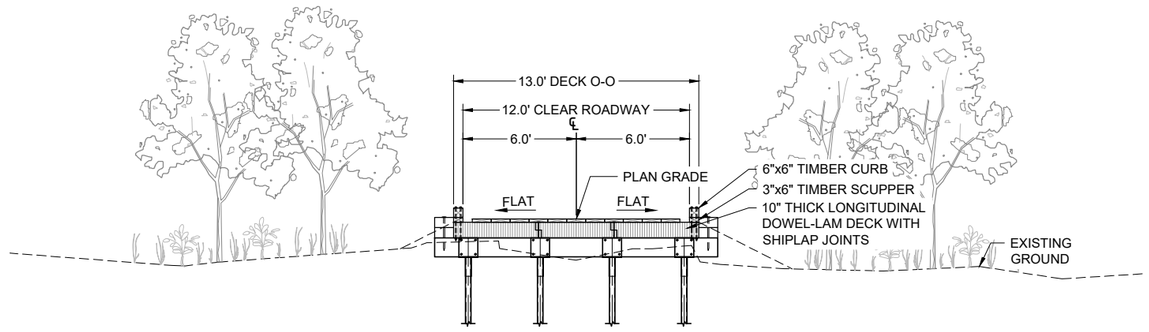
EXISTING TYPICAL TRAIL SECTION

SCALE: NTS



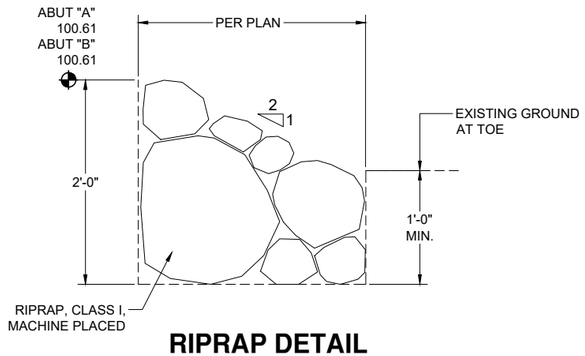
PROPOSED BRIDGE AND RAMP SECTION

SCALE: NTS



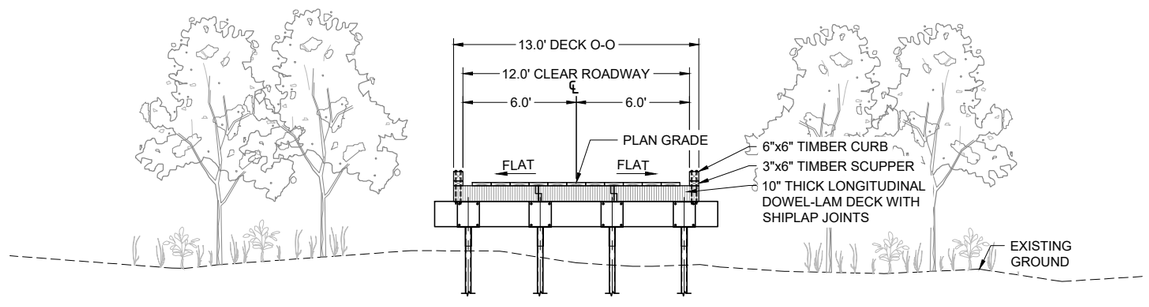
PROPOSED TYPICAL SECTION @ ABUTMENT

SCALE: NTS



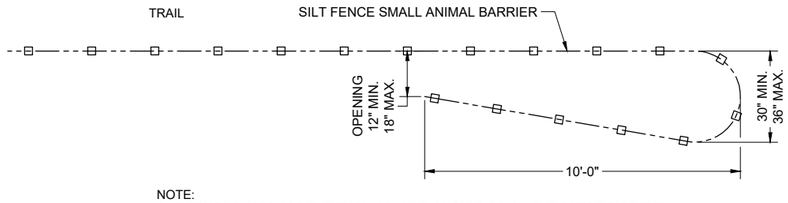
RIPRAP DETAIL

SCALE: NTS



PROPOSED TYPICAL SECTION @ PIER

SCALE: NTS



NOTE:
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.

SILT FENCE DETAIL

SCALE: NTS

United States Department of Agriculture
Forest Service

EASTERN REGION

PROJECT NAME

OTTER CREEK TRAIL BRIDGE FT33312

CHEQUAMEGON - NICOLET NATIONAL FOREST

LAKEWOOD-LAONA RANGER DISTRICT

DRAWING TITLE

TYPICAL SECTIONS

DATE
7/24/2023

ARCHIVE NO.

DESIGNER
D.CARTER

DRAWN
J.ALLEN

CHECKED
G.JUNTTILA

PROJECT NO.
U28-02592

DWG SHEET NO.
C-04

SHEET 4 OF 8

LEGEND

BENCHMARK CONTROL POINT

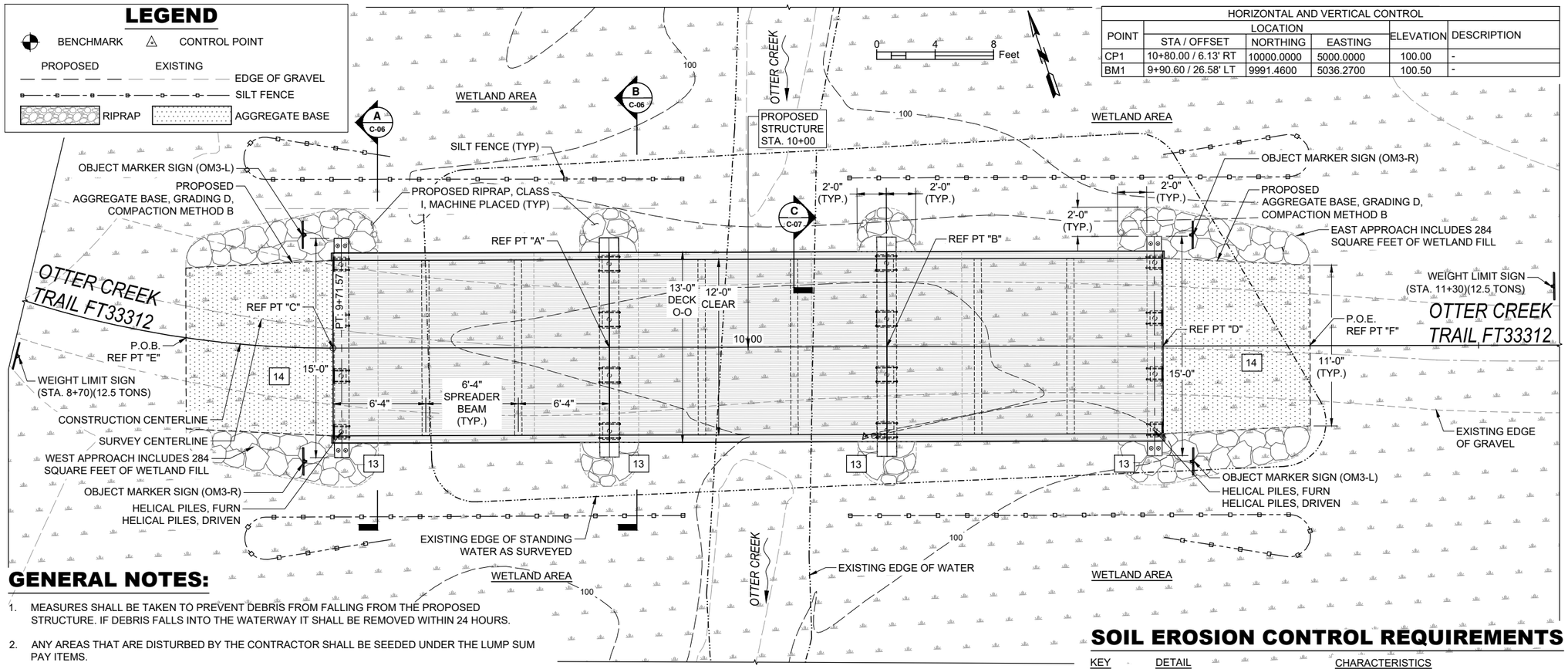
PROPOSED EXISTING

EDGE OF GRAVEL

SILT FENCE

RIPRAP AGGREGATE BASE

HORIZONTAL AND VERTICAL CONTROL					
POINT	LOCATION			ELEVATION	DESCRIPTION
	STA / OFFSET	NORTHING	EASTING		
CP1	10+80.00 / 6.13' RT	10000.0000	5000.0000	100.00	-
BM1	9+90.60 / 26.58' LT	9991.4600	5036.2700	100.50	-



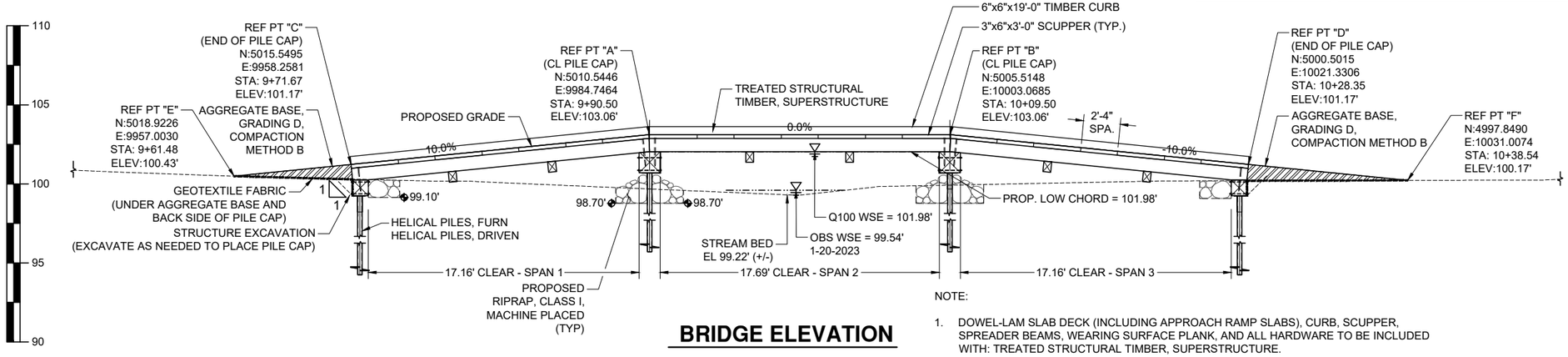
BRIDGE PLAN

GENERAL NOTES:

1. MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE PROPOSED STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY IT SHALL BE REMOVED WITHIN 24 HOURS.
2. ANY AREAS THAT ARE DISTURBED BY THE CONTRACTOR SHALL BE SEEDED UNDER THE LUMP SUM PAY ITEMS.
3. PROVIDE SMOOTH TRANSITION FROM EXISTING TO PROPOSED ROADWAY AT REFERENCE POINTS "E" AND "F". FADE OR EXTEND PROFILE SLIGHTLY AS REQUIRED.
4. SURVEY PROVIDED BY THE FOREST SERVICE WITH A LOCALIZED COORDINATE SYSTEM.
5. EQUIPMENT OPERATION IN WETLANDS MUST BE OPERATED ON TIMBER MATS OR FROZEN GROUND.
6. SILT FENCE INSTALLATION MUST FOLLOW AMPHIBIAN AND TURTLE EXCLUSION FENCING PROTOCOLS PER WISCONSIN DEPARTMENT OF NATURAL RESOURCES ENDANGERED RESOURCES REVIEW PROGRAM (SEE DETAIL ON SHEET C-04).

SOIL EROSION CONTROL REQUIREMENTS

KEY	DETAIL	CHARACTERISTICS
13	RIPRAP, RUBBLE, GABIONS	USED WHERE VEGETATION IS NOT EASILY ESTABLISHED. EFFECTIVE FOR HIGH VELOCITIES OR HIGH CONCENTRATIONS. PERMITS RUNOFF TO INFILTRATE SOIL. DISSIPATES ENERGY FLOW AT SYSTEM OUTLETS.
14	AGGREGATE COVER	STABILIZES SOIL SURFACE THUS MINIMIZING EROSION. PERMITS CONSTRUCTION TRAFFIC IN ADVERSE WEATHER. MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS.



BRIDGE ELEVATION

NOTE:

1. DOWEL-LAM SLAB DECK (INCLUDING APPROACH RAMP SLABS), CURB, SCUPPER, SPREADER BEAMS, WEARING SURFACE PLANK, AND ALL HARDWARE TO BE INCLUDED WITH: TREATED STRUCTURAL TIMBER, SUPERSTRUCTURE.

United States Department of Agriculture
Forest Service

EASTERN REGION

PROJECT NAME

OTTER CREEK TRAIL BRIDGE FT33312

CHEQUAMEGON - NICOLET NATIONAL FOREST

LAKEWOOD-LAONA RANGER DISTRICT

DRAWING TITLE

PLAN & PROFILE

DATE: 7/10/2023

ARCHIVE NO.

DESIGNER: D.CARTER

DRAWN: J.ALLEN

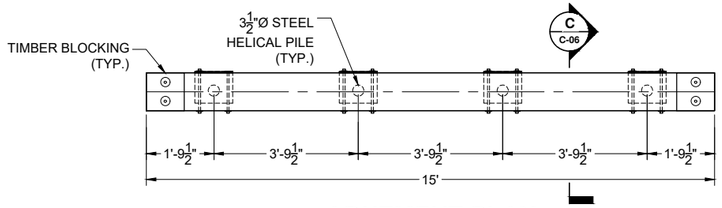
CHECKED: G.JUNTTILA

PROJECT NO.: U28-02592

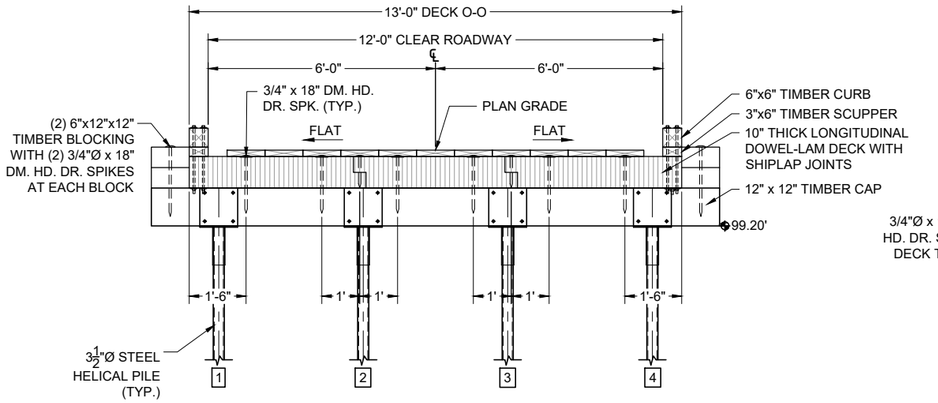
DWG SHEET NO.: C-05

SHEET 5 OF 8

7/10/23 11:20 JALLEN Z:\U28-02592 USDA FS R9 TST-USFS BRIDGE IDIQ - 21 BRIDGES\DWGS\TASK 103 - CNNF - OTTER CREEK\OTTER CREEK TRAIL BRIDGE FT33312.DWG;



ABUTMENT PLAN
SCALE: NTS



A ABUTMENT ELEVATION (FRONT FACE)
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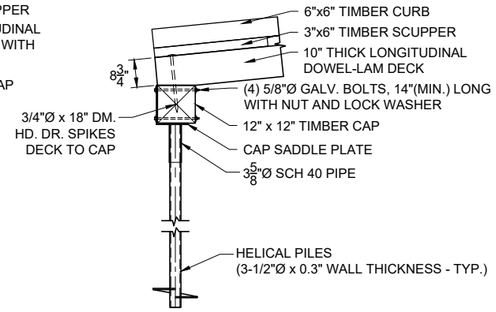


C ABUTMENT SECTION
SCALE: NTS

HELICAL PILE INFORMATION

ABUTMENT C

PILE NO.	NORTHING (CL PILE)	EASTING (CL PILE)	CUTOFF ELEV.	EST. PILE PEN. ELEV. (BOT. HELIX)	ESTIMATED LENGTH (FT)	MINIMUM INSTALLATION TORQUE(FT-KIPS)	MINIMUM VERTICAL CAPACITY (KIPS)		MINIMUM LATERAL PILE CAPACITY (KIPS)	
							UNFACTORED	FACTORED	UNFACTORED	FACTORED
1	5009.8886	9965.5337	99.15	79.15	20	2.85	10.45	18.00	0.31	0.31
2	5013.5650	9966.5430	99.15	79.15	20	2.85	10.45	18.00	0.31	0.31
3	5017.2414	9967.5522	99.15	79.15	20	2.85	10.45	18.00	0.31	0.31
4	5020.9178	9968.5615	99.15	79.15	20	2.85	10.45	18.00	0.31	0.31
STEEL PILE EST. LENGTH =					80					

ABUTMENT D

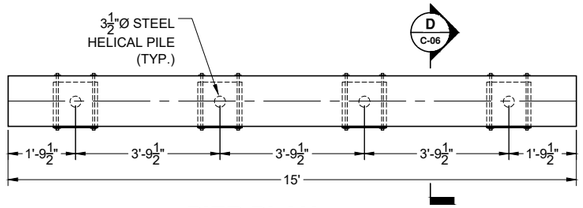
PILE NO.	NORTHING (CL PILE)	EASTING (CL PILE)	CUTOFF ELEV.	EST. PILE PEN. ELEV. (BOT. HELIX)	ESTIMATED LENGTH (FT)	MINIMUM INSTALLATION TORQUE(FT-KIPS)	MINIMUM VERTICAL CAPACITY (KIPS)		MINIMUM LATERAL PILE CAPACITY (KIPS)	
							UNFACTORED	FACTORED	UNFACTORED	FACTORED
1	5006.1707	10022.2812	99.15	79.15	20	2.85	10.45	18.00	0.31	0.31
2	5002.4943	10021.2719	99.15	79.15	20	2.85	10.45	18.00	0.31	0.31
3	4998.8179	10020.2627	99.15	79.15	20	2.85	10.45	18.00	0.31	0.31
4	4995.1415	10019.2534	99.15	79.15	20	2.85	10.45	18.00	0.31	0.31
STEEL PILE EST. LENGTH =					80					
TOTAL STEEL PILE EST., BOTH ABUTMENTS =					160					

GENERAL NOTES:

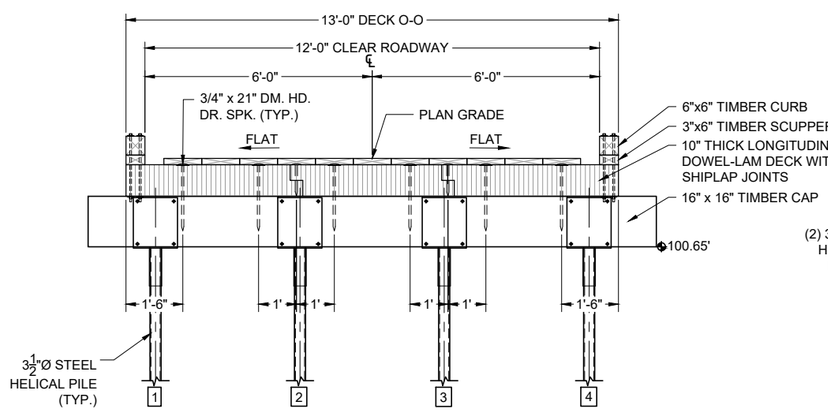
1. SEE SHEET C-02 FOR A LIST OF ALL MATERIAL GRADES.
2. STEEL PILE CAP PLATES, WELDING AND HARDWARE TO BE INCLUDED WITH: STRUCTURAL STEEL PLATE, FABRICATE, FURNISH AND ERECT.
3. TIMBER PILE CAPS, TIMBER BLOCKING, AND DRIVE SPIKE HARDWARE TO BE INCLUDED WITH TREATED STRUCTURAL TIMBER, SUBSTRUCTURE.
4. THE CONTRACTOR SHALL NOT INSTALL PILING WITHOUT AN INSPECTOR PRESENT.
5. DECK SLAB RAMP ENDS AND PIER CAPS SHALL BE CHAMFERED PRIOR TO TREATMENT

PILE NOTES:

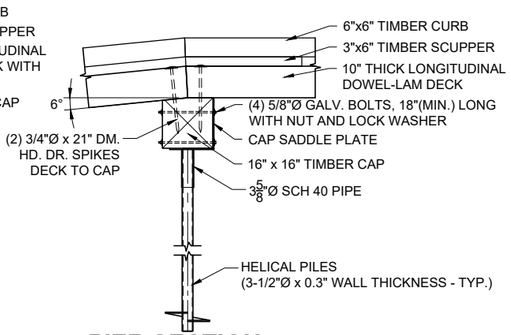
1. PILE SUPPLIER MAY ELECT TO REDESIGN PILES USING ASD OR LRFD METHODS. FOR ASD METHODS, A FACTOR OF SAFETY OF 2.0 SHALL BE USED WITH DESIGN LOADS. FOR THE LRFD OPTION, THE CONTRACTOR SHALL FOLLOW THE 9TH EDITION AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.
2. USE (1)12" DIA HELICAL ANCHOR PLATE AND (1) 10" HELICAL ANCHOR PLATE SPACED 3'-0" APART. HELICAL PLATES ARE 5/8" THICK. ASSUME Fu=40 KIPS. STEEL PILES ARE 3-1/2" DIAMETER.



PIER PLAN
SCALE: NTS



B PIER ELEVATION (FRONT FACE)
SCALE: NTS



D PIER SECTION
SCALE: NTS

HELICAL PILE INFORMATION

PIER A

PILE NO.	NORTHING (CL PILE)	EASTING (CL PILE)	CUTOFF ELEV.	EST. PILE PEN. ELEV. (BOT. HELIX)	ESTIMATED LENGTH (FT)	MINIMUM INSTALLATION TORQUE(FT-KIPS)	MINIMUM VERTICAL CAPACITY (KIPS)		MINIMUM LATERAL PILE CAPACITY (KIPS)	
							UNFACTORED	FACTORED	UNFACTORED	FACTORED
1	5005.0301	9983.2325	100.60	80.60	20	2.85	10.45	18.00	0.31	0.31
2	5008.7065	9984.2418	100.60	80.60	20	2.85	10.45	18.00	0.31	0.31
3	5012.3829	9985.2510	100.60	80.60	20	2.85	10.45	18.00	0.31	0.31
4	5016.0593	9986.2603	100.60	80.60	20	2.85	10.45	18.00	0.31	0.31
STEEL PILE EST. LENGTH =					80					

PIER B

PILE NO.	NORTHING (CL PILE)	EASTING (CL PILE)	CUTOFF ELEV.	EST. PILE PEN. ELEV. (BOT. HELIX)	ESTIMATED LENGTH (FT)	MINIMUM INSTALLATION TORQUE(FT-KIPS)	MINIMUM VERTICAL CAPACITY (KIPS)		MINIMUM LATERAL PILE CAPACITY (KIPS)	
							UNFACTORED	FACTORED	UNFACTORED	FACTORED
1	5011.0295	10004.5824	100.60	80.60	20	2.85	10.45	18.00	0.31	0.31
2	5007.3531	10003.5732	100.60	80.60	20	2.85	10.45	18.00	0.31	0.31
3	5003.6767	10002.5639	100.60	80.60	20	2.85	10.45	18.00	0.31	0.31
4	5000.0003	10001.5547	100.60	80.60	20	2.85	10.45	18.00	0.31	0.31
STEEL PILE EST. LENGTH =					80					
TOTAL STEEL PILE EST., BOTH PIERS =					160					

USDA FOREST SERVICE

United States Department of Agriculture
Forest Service

EASTERN REGION

PROJECT NAME

OTTER CREEK TRAIL BRIDGE FT33312

CHEQUAMEGON - NICOLET NATIONAL FOREST

LAKEWOOD-LAONA RANGER DISTRICT

DRAWING TITLE

STRUCTURE DETAILS

DATE
7/24/2023

ARCHIVE NO.

DESIGNER
D.CARTER

DRAWN
J.ALLEN

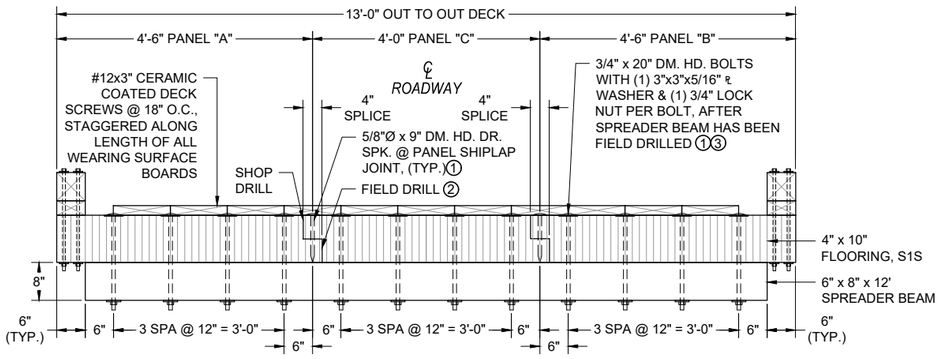
CHECKED
G.JUNTTILA

PROJECT NO.
U28-02592

DWG SHEET NO.
C-06

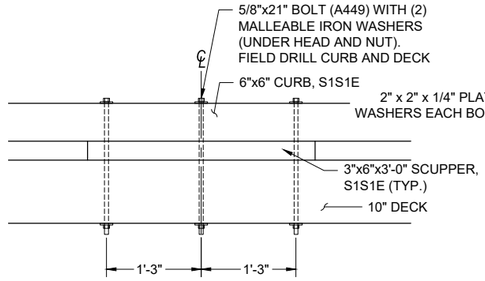
SHEET 6 OF 8

7/24/23 15:34 JALLEN Z:\U28-02592 USDA FS R9 TST-USFS BRIDGE IDIQ - 21 BRIDGES\BIDSET\TASK 103 - CNNF OTTER CREEK\100 PERCENT DOCS - FINAL\UPDATED 7-24-2023\OTTER CREEK TRAIL BRIDGE FT33312.DWG;



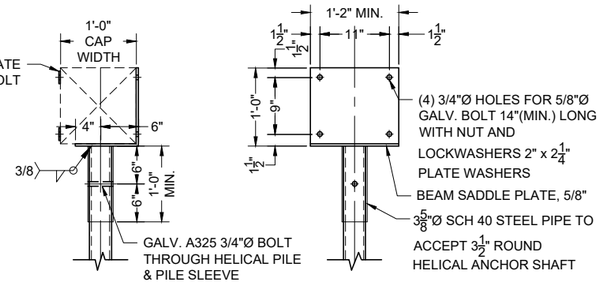
SECTION THRU DECK AT SPREADER BEAM

SCALE: NTS



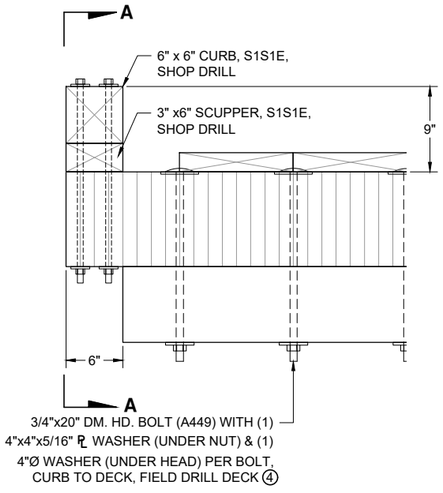
CURB & SCUPPER ASSEMBLY (A-A)

SCALE: NTS



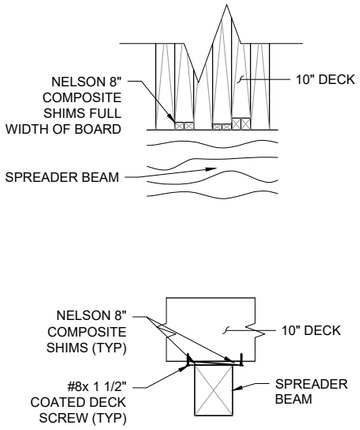
ABUTMENT CAP SADDLE

SCALE: NTS



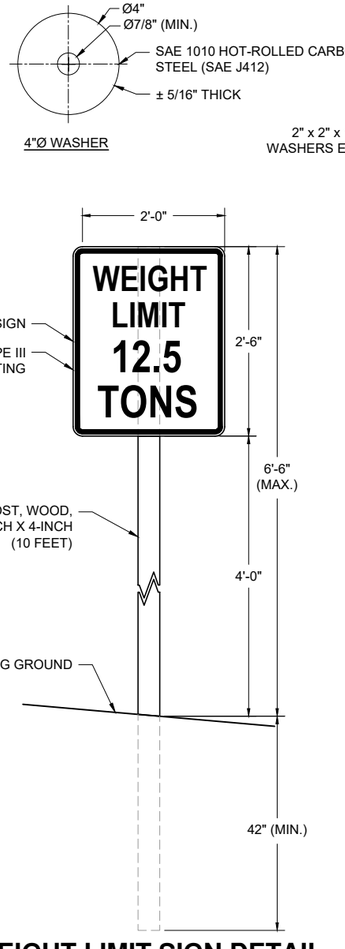
B **SECTION AT CURB**

SCALE: NTS



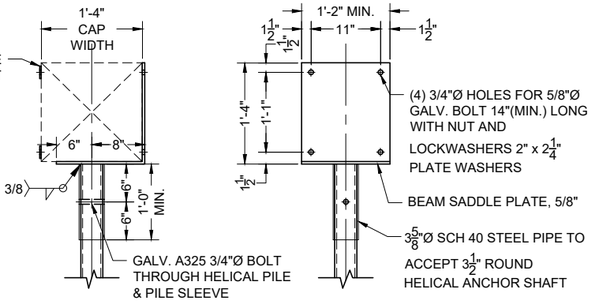
SHIMMING DETAIL

SCALE: NTS



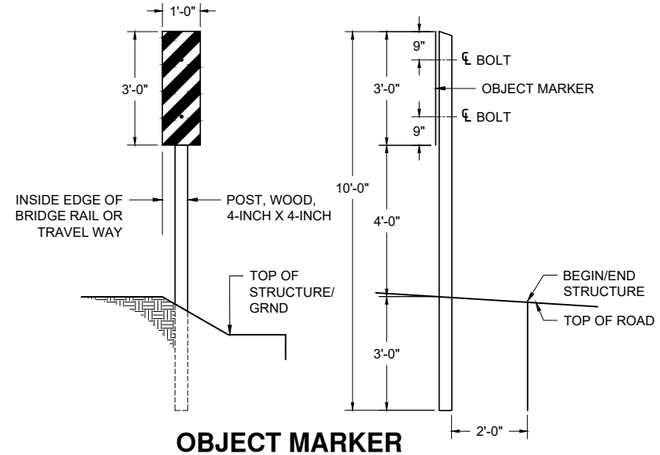
WEIGHT LIMIT SIGN DETAIL

SCALE: NTS



PIER CAP SADDLE

SCALE: NTS



OBJECT MARKER

SCALE: NTS

NOTES:

1. ALL HARDWARE PENETRATING THE TOP OR BOTTOM EDGE OF THE DECK PLANK SHALL PASS THROUGH THE CENTER OF THAT DIMENSION.
2. FIELD DRILLED HOLES IN THE LOWER SPLICE BLOCK OF EACH PANEL ARE TO BE DRILLED COMPLETELY THROUGH THE BLOCK TO PREVENT SPLITTING WHEN INSTALLING THE 5/8" DRIVE SPIKES.
3. THE CONTRACTOR SHALL INSTALL NELSON 8" COMPOSITE SHIMS OR EQUAL (SUPPLIED BY BRIDGE MANUFACTURER) IN ALL LOCATIONS WHERE THE TOP OF THE SPREADER BEAM DOES NOT CONTACT THE BOTTOM OF THE DECK PANEL UPON TIGHTENING TO ENSURE SNUG FIT ACROSS ENTIRE DECK WIDTH. THE CONTRACTOR SHALL RE-TIGHTEN ALL NUTS ON THE LAST DAY OF CONSTRUCTION IN THE PRESENCE OF THE ENGINEER TO ENSURE ALL NUTS ARE PROPERLY TIGHTENED. SET THREADS ON ALL BOLTS AT NUT WITH A CENTER PUNCH AFTER TIGHTENING.
4. HIGH STRENGTH (A449) DOME HEAD BOLTS DO NOT HAVE FINS UNDER THE HEAD AT THE SHANK.

ALL TIMBER AND HARDWARE SHOWN SHALL BE PAID FOR AS: TREATED STRUCTURAL TIMBER, SUPERSTRUCTURE (EXCEPT FOR THE CAP SADDLE).

CONTRACTOR MAY ELECT TO SUPPLY THE DECK PANELS IN FEWER THAN THREE PANELS.

USDA FOREST SERVICE

United States Department of Agriculture
Forest Service

EASTERN REGION

PROJECT NAME

OTTER CREEK TRAIL BRIDGE FT33312

CHEQUAMEGON - NICOLET NATIONAL FOREST

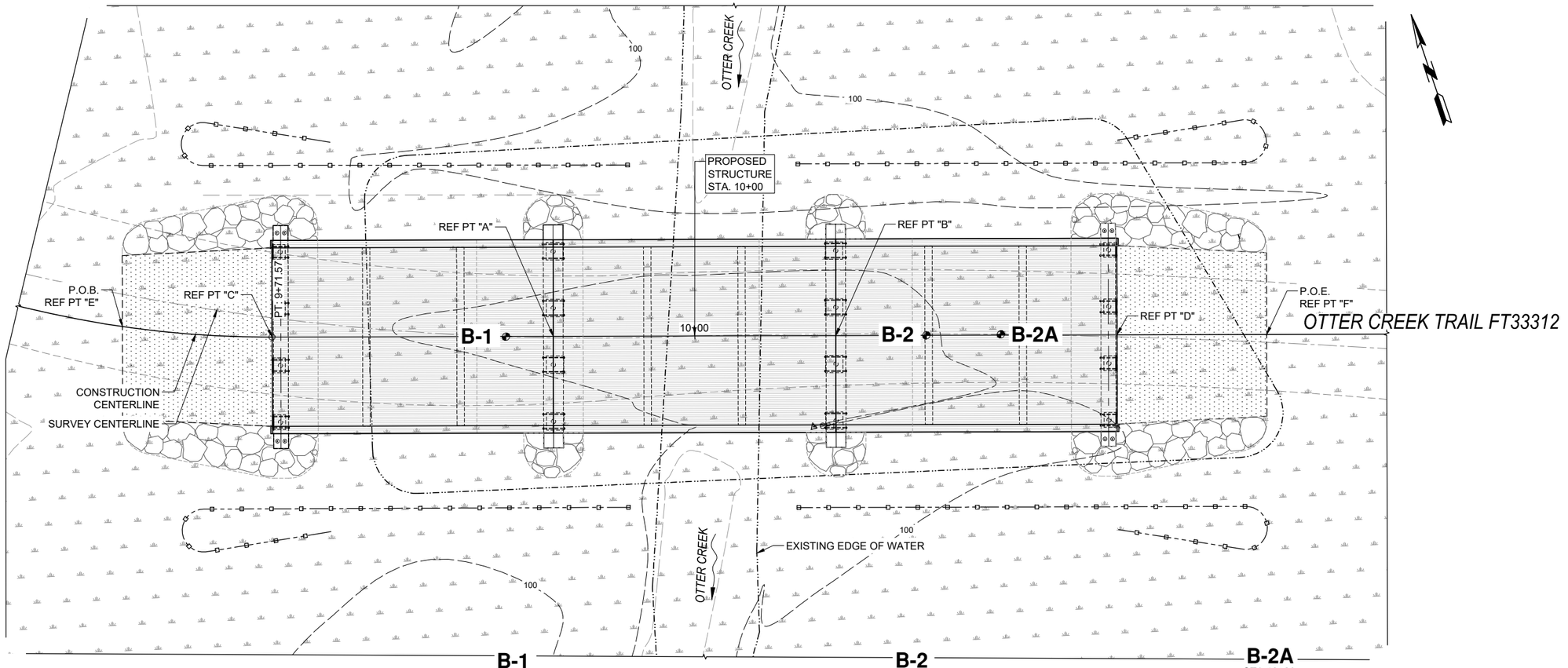
LAKEWOOD-LAONA RANGER DISTRICT

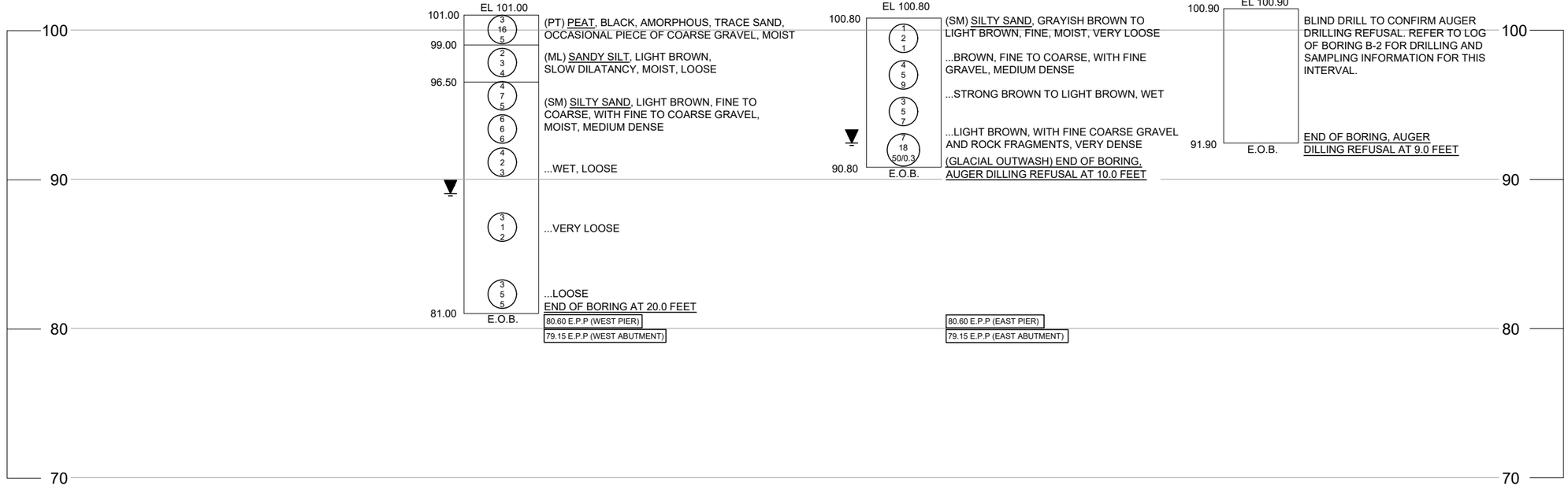
DRAWING TITLE

STRUCTURE DETAILS

DATE: 7/24/2023	
ARCHIVE NO.	
DESIGNER: D.CARTER	DWG SHEET NO.: C-07
DRAWN: J.ALLEN	
CHECKED: G.JUNTTILA	
PROJECT NO.: U28-02592	SHEET 7 OF 8

7/24/23 15:34 JALLEN Z:\U28-02592 USDA FS R9 TST-USFS BRIDGE IDIQ - 21 BRIDGES\BIDSET\TASK 103 - CNNF OTTER CREEK\100 PERCENT DOCS - FINAL\UPDATED 7-24-2023\OTTER CREEK TRAIL BRIDGE FT33312.DWG;





United States Department of Agriculture
Forest Service

EASTERN REGION

PROJECT NAME

OTTER CREEK TRAIL BRIDGE FT33312

CHEQUAMEGON - NICOLET NATIONAL FOREST

GREAT DIVIDE RANGER DISTRICT

DRAWING TITLE

SOIL BORINGS

DATE
7/10/2023

ARCHIVE NO.

DESIGNER
D.CARTER

DRAWN
J.ALLEN

CHECKED
G.JUNTTILA

PROJECT NO.
U28-02592

DWG SHEET NO.
C-08

SHEET 8 OF 8

7/10/23 11:20 JALLEN Z:\U28-02592 USDA FS R9 TST-USFS BRIDGE IDIQ - 21 BRIDGES\DWGS\TASK 103 - CNNF - OTTER CREEK\OTTER CREEK TRAIL BRIDGE FT33312.DWG;