



MEMORANDUM

TO: BCWD Board of Managers
 FROM: Karen Kill
 RE: 2024 Annual Business Meeting
 DATE: January 8, 2024

Annual Meeting. The regular meeting of the Board in January each year will be the annual business meeting. In addition to any other business which may come before this meeting, the Board will designate the depository or depositories for District funds and financial assurance instruments submitted to the District, adopt a schedule of regular meetings for the year, and select officers. The schedule of regular meetings will be filed in the records of the District.

b) Election of Officers

The Board will, at the District's annual meeting, elect from among its members the following officers: President, Vice President, Treasurer and Secretary. An officer will serve until replaced by the election of a successor. No board member may hold more than one office at a time, but the Board may, at its discretion, name a Second Vice President.

Existing slate of Officers:

- Klay Eckles – President
- Celia Wirth – Vice President
- Gerald Johnson – Treasurer
- Chuck LeRoux – Secretary
- Debra Sahulka – Manager

c) Board Subcommittee Appointments (Per Diems Approved for Attendance)

- Citizen Advisory Committee Liaisons – Celia Wirth (Charles LeRoux as alternate)
- Technical Advisory Committee Liaison – Klayton Eckles
- East Metro Water Resources Education Program Liaison – Administrator primary, Board Manager Gerald Johnson as necessary
- Best Management Practices Program Subcommittee – Gerald Johnson
- Bylaws and Policies – Celia Wirth
- Minnesota Watersheds Board Liaison – Vacant
- Metro Minnesota Watersheds Liaison – Celia Wirth; alternate Charles LeRoux
- Lower St Croix One Watershed One Plan – Klayton Eckles; alternate Gerald Johnson

d) Annual Selection of Bank and Location of Financial Assurance Instruments

Current bank is US Bank for checking and selected as official bank in 2023. Have held investment funds in 4M fund in 2023. Recommend designating US Bank and 4M Fund as depositories in 2024.

Managers:

Klay Eckles, President • Celia Wirth, Vice-President • Gerald Johnson, Treasurer • Chuck LeRoux, Secretary • Debra Sahulka



Permit Deposit Fees and Cash Escrows were held in a separate account in 4M Fund. Other financial assurance instruments (such as letters of credit or performance bonds) were held at the BCWD office in a fireproof safe.

e) Annual Selection of Official Newspaper

In 2023, White Bear Lake Press and the Stillwater Gazette were selected as the official newspapers..

f) Regular Meeting Dates

Second Wednesday of the Month at 6:30 PM

Meetings will take place, unless noticed otherwise, at Family Means, 1875 Northwest Ave S, Stillwater in the large conference room:

Dates:

January 10, 2024

February 14, 2024

March 20, 2024 – NOTE – Third Wednesday of Month

April 10, 2024

May 8, 2024

June 12, 2024

July 10, 2024 - 2024 Budget Workshop 5-6:30pm *and Regular Meeting*

August 14, 2024 - 2024 Budget Workshop 5-6:30pm *and Regular Meeting*

September 11, 2024

September 14, 2024 –2024 Community Event at Brown’s Creek Park in Stillwater 10am-1pm

October 9, 2024

November 13, 2024

December 11, 2024

g) Citizens Advisory Committee

- *Citizens Advisory Committee. There is established, in accordance with Minnesota Statutes section 103D.331, a citizens advisory committee to the Board of Managers. The committee will be known as the Citizens Advisory Committee (CAC). The CAC will advise the Board of Managers on water-related community concerns and issues, and assist with the development and implementation of the education and outreach activities of the District. The CAC will meet according to a schedule set annually by the members of the CAC, and at such other times as may be determined by a majority of the members. All meetings of the CAC are open to the public.*

Residents seeking re-appointment in 2024:

Anne Maule-Miller – Co-Chair

George Vania – Co-Chair

Jyneen Thatcher

Yihong Gao

Steven Merchant

Managers:

Klay Eckles, President • Celia Wirth, Vice-President • Gerald Johnson, Treasurer • Chuck LeRoux, Secretary • Debra Sahulka



Aimee Eberle
Hallie Chasensky

Tentative 2024 CAC meeting dates (2nd Monday of even months 6:30-8PM)

Feb 12, 2024
Apr 8, 2024
June 10, 2024
Aug 12, 2024
Oct 14, 2024
Dec 9, 2024

h) BCWD Board Training – discuss possible training topics & and whether eligible for per diem/expenses

- Washington County Water Consortium monthly meetings
- Legislative Water Commission monthly Meetings
- MN Watersheds Day at the Capitol (Feb), Summer Tour (June), and Annual Meeting (Dec)
- Metro Minnesota Watersheds quarterly meetings
- Water Resources Conference (Oct)
- Internal Trainings
 - Private Data – natural heritage data, archeological data, endangered/threatened species data
 - Diversity, Equity, and Inclusion
 - Others?

i) Annual Review of BCWD Bylaws and Policies – Will discuss with board at meeting

Managers:

Klay Eckles, President • Celia Wirth, Vice-President • Gerald Johnson, Treasurer • Chuck LeRoux, Secretary • Debra Sahulka



REGULAR & ANNUAL MEETING OF THE BOARD OF MANAGERS
Wednesday, January 10, 2024 at 6:30 PM

NOTE MEETING LOCATION
 Regular Board Meeting will be held at
 Family Means
 1875 Northwestern Ave, Stillwater, MN 55082

- 1) Call Annual Business Meeting to order @ 6:30PM
 - a) Approve Annual Meeting Agenda - **Board Action**
 - b) Election of Officers - **Board Action**
 - c) Board Subcommittee Appointments - **Board Action**
 - d) Annual Selection of permit security depository for bonds and letters of credit - - **Board Action**
 - e) Annual Selection of Official Newspaper(s) - **Board Action**
 - f) Schedule of Regular and Special 2024 meetings - - **Board Action**
 - g) Citizen Advisory Committee Membership - - **Board Action**
 - h) Board Training Plan - - **Board Action**
 - i) Bylaws and Policies Review - **Board Action**
 - j) Adjourn Annual Meeting

- 2) Call Regular Meeting to order

- 3) Approve Regular Meeting Agenda and Discussion Agenda -**Board Action**

- 4) Public Comments

- 5) Consent Agenda – **Board Action** *(all items listed under the consent agenda are considered to be routine by the Board of Managers and will be enacted by one motion. There will be no separate discussion on these items unless a Manager removes an item from the consent agenda for discussion or there is a request to remove the item from the consent agenda, in which event the board will consider whether to remove the item from the consent agenda and consider it separately.)*
 - a) Approve Board Meeting Minutes of the December 13, 2023 Regular Meeting
 - b) Accept Permit Fee Statement
 - c) Approve water monitoring equipment repair scope

- 6) Treasurer’s Report
 - a) Review Authorized Funds Spreadsheet
 - b) Current Items Payable-**Board Action (Roll Call Vote)**

- 7) Permitting
 - a) BCWD Permit #23-02 Tweden Residence – Permit amendment variance request – **Board Action**

- 8) Projects
 - a) Brown’s Creek Restoration Project

- (1) Environment Review Resolution 24-01 Adopting a record of decision for the environmental review and making a negative declaration of need for an environmental impact statement– **Board Action**
- (2) Van Tassel Agreement – **Board Action**

9) Planning

- a) Enhanced Stakeholder Engagement – updates and per diems – **Board Action**
- b) Initial Planning Meeting potential dates – **Board Action**

10) Discussion Agenda - No Action Required

- a) Updates
 - (1) Administrator – US Bank signatories
 - (2) Legal
 - (3) Engineer
 - (4) Managers
- b) February 2024 Regular Meeting BCWD Board Agenda

11) Adjournment



1
2 DRAFT Minutes of the regular meeting of the Brown’s Creek Watershed District Board of
3 Managers, Wednesday December 13, 2023
4

5 ROLL CALL

Managers Present:	Others Present:
Klayton Eckles, President	Karen Kill, BCWD administrator
Celia Wirth, Vice President	Camilla Correll, EOR, BCWD engineer
Gerald Johnson, Treasurer	Michael Welch, Smith Partners, BCWD counsel
Debra Sahulka, Manager	Cameron Blake, BCWD staff
Charles LeRoux, Secretary	John Sarafolean, EOR, BCWD engineer
	Ryan Fleming, EOR, BCWD Engineer
	Mike Majeski, EOR, BCWD Engineer
	Roger Tomten, Sustainable Stillwater
	Chris and Pam Wells, Residents
	Sam Eaton, Timberland Partners
	Dan Sjololom, Alliant Engineering

- 6
7 **1) Call to Order**
8 Manager Klayton Eckles called the regular meeting to order at 6:32 p.m.
9
10 **2) Approve Agenda**
11 **Manager Wirth moved, seconded by Manager LeRoux, to approve the agenda as**
12 **presented. Motion carried, vote 5/0.**
13
14 **3) Public Comments**
15 None.
16
17 **4) Consent Agenda**
18 **Manager Wirth moved, seconded by Manager Johnson, to approve the consent**
19 **agenda:**
20 **a) Approve board meeting minutes of the November 8, 2023 regular meeting**
21 **b) Accept permit fee statement**
22 **c) Approve the Lower St. Croix Partnership's 2024 Annual Work Plan**
23 **d) Appoint Hallie Chasensky to the citizen advisory committee**
24 **e) Approve Oak Glen Golf Course reuse project operation and maintenance**
25 **scope for 2024**
26 **Motion carried, vote 5/0.**

Regarding the scope for additional work by the engineer on the reuse system at Oak Glen Golf Course, Administrator Karen Kill clarified that although the golf course is responsible for the long-term operation and maintenance of the reuse project, the district is continuing to be involved in startup work as troubleshooting is still occurring.

5) Treasurer’s Report

a) Review Authorized Funds Spreadsheet

Ms. Kill explained the spreadsheet has been updated to reflect the authorized items from the last board meeting. Manager Jerry Johnson noted that BCWD had received its levy payment from the county.

b) Current Items Payable

Manager Johnson moved, seconded by Manager Wirth, to accept the authorized funds spreadsheet and approve payment of bills as presented in the amount of \$286,758.45.

	<u>Yea</u>	<u>Nay</u>	<u>Abstain</u>	<u>Absent</u>
<u>Manager Eckles</u>	<u>X</u>			
<u>Manager LeRoux</u>	<u>X</u>			
<u>Manager Wirth</u>	<u>X</u>			
<u>Manager Sahulka</u>	<u>X</u>			
<u>Manager LeRoux</u>	<u>X</u>			
<u>Motion carried 5/0.</u>				

6) Permits

a) BCWD Permit #23-17 Sundance Townhomes

Camilla Correll presented the engineer’s report on this permit; no variances are being requested and the engineer’s recommendation is to approve the permit with the conditions outlined in the report. Manager Eckles asked if the recent plumbing-code decision restricting design of stormwater features will be an issue for the applicant’s proposed stormwater-management plan. Dan Sjololom, the engineer for this project, noted that it is his understanding the plumbing board has been authorizing design even when they include discharge into stormwater features below the 100-year flood elevation, contrary to the prior decision of the board.

Mr. Sjololom and Sam Eaton, the developer, said they would be able to meet the proposed conditions of the permit. The managers noted the significant investment the applicant will make in the reuse system it will use to meet district standards. Manager Eckles recommended the developer invest in a high-quality components to make future operations and maintenance more effective. Ms. Kill noted the project is unique in the area in that the housing will be rental with one underlying property owner and manager. Mike Majeski suggested the developer look into native trees for the buffer planting area to help ensure their future survival. The board discussed the proposed size of the trees that will be planted and Manager Eckles recommended the applicant talk to the City of Stillwater to see what size of trees they would recommend using in this setting.

1 Michael Welch suggested the board delegate authority to the administrator in case there
2 is a recommendation to adjust the permit conditions based on the conversation with the
3 City of Stillwater on the tree size and number, as long as the stormwater performance
4 requirements are still met.
5

6 **Manager Wirth moved, seconded by Manager LeRoux to approve Permit #23-17**
7 **Sundance Townhomes with the conditions and stipulations in the engineer's report,**
8 **and with the additional condition of the buffer plantings being native species, and to**
9 **delegate authority to the administrator to adjust the permit conditions if needed as**
10 **they relate to the size and number of trees while meeting the same stormwater**
11 **performance aspect of the permit. Motion carried, vote 5/0.**
12

13 7) **Projects**

14 a) **Brown's Creek Restoration Project**

15 **(1) Public Hearing – Environmental Assessment Worksheet**

16 Manager Eckles opened the public hearing at 7:28pm. No members of the public
17 were present and the hearing was closed at 7:30pm. Administrator Kill updated
18 the board that no substantial comments have been received yet, but the comment
19 period closes December 21. Mike Majeski commented that as the Responsible
20 Governmental Unit for this project, the board would consider and decide whether
21 an Environmental Impact Statement is necessary. He does not believe an EIS will
22 be necessary and this would complete the environmental-review process.
23

24 **(2) Signage Scope**

25 The managers review the proposed scope of work from the engineer for signage
26 for the project. The signage will address questions the public may have about the
27 project, and is expected to be needed given the very public and high traffic in the
28 location of the project. Project information will be added to the district website
29 and signage on site will have a description of the project and a QR code directed
30 to this webpage which will be updated frequently as to what is currently occurring
31 on site.
32

33 **Manager Johnson moved, seconded by Manager LeRoux to approve this**
34 **scope of services for an estimated cost of \$2,675.00 from account 910-0000.**
35 **Motion carried 5/0.**
36

37 **(3) Agreements: Van Tassel, City of Stillwater, Department of Natural**
38 **Resources**

39 Ms. Kill noted that agreements with the project-site landowners are in the works,
40 and will come to the board for authorization in January.
41

42 **b) Resolution 23-06 Adopting the Washington County All Hazard Mitigation Plan**

43 Ms. Kill explained that adopting this plan will allow the county to be considered eligible
44 for federal flood-mitigation funding.
45

Manager Wirth moved, seconded by Manager Johnson, to approve Resolution 23-06 Adopting the Washington County All Hazard Mitigation Plan:

	Yea	Nay	Abstain	Absent
<u>Manager Eckles</u>	X			
<u>Manager Johnson</u>	X			
<u>Manager LeRoux</u>	X			
<u>Manager Sahulka</u>	X			
<u>Manager Wirth</u>	X			
<u>Motion carried 4/0.</u>				

8) Planning

a) 2027-2036 Watershed Management Plan – 60-day initial notice and initial meeting

The district is required to have an initial meeting as part of the management plan update. Valley Branch Watershed District is also beginning this process and had an open house this month. The board agreed that they liked the idea of an open house and suggested a weekday in March that doesn't conflict with local spring breaks. Ms. Kill suggested the location be the Lakes of Stillwater, which has a large meeting space and parking lot.

Manager Wirth moved, seconded by Manager Sahulka to approve the 60-day initial notice and meeting for the 2027-36 Watershed Management Plan. Motion carried 5/0.

b) Enhanced Stakeholder Engagement

Camilla Correll reviewed the list of stakeholders. Staff will perform some interviews to finalize the interview questions before distributing them to board managers. Contact information will be sent out with the final interview questions, and data will be entered in a shared Google form. Managers suggested they join staff or staff accompany them at the start until managers feel comfortable conducting them alone. Ms. Kill noted that she is not expecting everyone on the list to be interviewed and expects the response rate to vary. She suggested managers pick five organizations to interview. Staff can also assign organizations to managers. The group noted that as well as the management plan process, this will also have the benefit of introducing the district to organizations that may not know about it.

- (1) The list will be emailed to managers to select from and staff will assign interviews.

The managers reviewed a proposed engineer scope of work for a handout with details about the district would be beneficial to bring to interviews and to send to organizations active in the watershed.

Manager Wirth moved, seconded by Manager Johnson to approve the scope of services for Educational 'Leave-Behind' Flyer for not to exceed \$2,329 from account number 910-0000.

1 **9) Budget**

2 **a) Public Meeting regarding 2024 Budget and Levy**

3 Manager Eckles opened the public meeting for the 2024 budget and levy. No members of
4 the public were present to comment.

5
6 **b) Resolution 23-07 Final 2024 Budget and Levy**

7 **Manager Wirth moved, seconded by Manager Johnson, to approve Resolution 23-07**
8 **2024 Final Budget & Certified 2024 Tax Levy Resolution: All Funds.**

	<u>Yea</u>	<u>Nay</u>	<u>Abstain</u>	<u>Absent</u>
9 <u>Manager Eckles</u>	X			
10 <u>Manager Johnson</u>	X			
11 <u>Manager LeRoux</u>	X			
12 <u>Manager Sahulka</u>	X			
13 <u>Manager Wirth</u>	X			
14 <u>Motion carried 5/0.</u>				

15
16
17 **10) Training**

18 **a) Homeowners Associations**

19 Mr. Welch gave an overview of homeowners' associations. He explained that HOAs are
20 important because the district requires recorded declarations for maintenance of
21 stormwater features, and often those features are located on properties owned by the
22 HOA for a development. Ms. Kill explained that HOAs tend to be decentralized, with
23 unreliable record keeping, with short-term boards and offsite property management
24 companies. She noted Stillwater has HOAs with stormwater features that are reaching the
25 age at which costly maintenance procedures are going to start to be necessary for their
26 continued function. Staff are developing HOA engagement and education materials.

27
28 The role of the district is to ensure the stormwater-treatment capacity in the watershed is
29 maintained.

30
31 **11) Discussion Agenda**

32 **a) Updates**

33 **(1) Administrator**

34 Ms. Kill updated the board that the state has released a draft updated Impaired
35 Waters list was released and no new impairments were listed in the watershed.

36
37 Manager Debra Sahulka and Ms. Kill needed new BCWD nametags and this
38 order will be placed. The board was supportive of a BCWD apparel order in light
39 of the new board manager and new Citizen Advisory Committee member. Lastly,
40 Ms. Kill reminded managers that they are required by law to fill out the form they
41 will be sent by the Campaign Finance Board.

42
43 **(2) Legal**

44 Mr. Welch updated the board that the Minnesota Watersheds organization passed
45 resolutions at its annual conference, none of which pertain particularly to the
46 district.

1 **(3) Engineers**
2 No update.

3
4 **(4) Managers**
5 Manager LeRoux will not be able to attend the January board meeting.

6
7 **11) Adjournment**
8 **Manager Johnson moved, seconded by Manager Wirth, to adjourn the regular meeting at**
9 **9:15 p.m. Motion carried 5/0.**

10
11 Respectfully submitted by
12 Cameron Blake, BCWD Staff and Charles LeRoux, Recording Secretary

BROWN'S CREEK WATERSHED DISTRICT														
	1/5/2024	RULES							TYPE				FEES OWED	
APPLICANT/PERMIT NO.	PERMIT DATE	2	3	4	5	6	7	Decompaction	GOV	SF RES	RES DEV	COM	EXEMPT	AMT DUE
Bergmann Development/Sanctuary Permit No. 05-12	10/14/2005	X	X	X			X					X		\$ -
Stillwater Medical Center Parking Permit 13-26		X	X				X					X		\$3,039.10
Brown's Creek Cove Permit 15-07		X	X	X			X					X		\$8,238.52
Heifort Hills Permit 16-03		X	X	X	X		X					X		\$1,158.59
Farms of Grant/White Oaks Savannah Permit 17-01		X	X	X			X					X		\$18,272.02
The Lakes of Stillwater Permit 17-04		X	X	X			X					X		\$3,368.08
West Ridge Permit 17-17		X	X	X			X	X				X		\$701.51
Heifort Hills Estates Permit 18-02		X	X	X			X	X				X		\$41,206.46
Boutwell Farms Permit 18-04A		X	X	X			X	X				X		\$0.79
Hazel Place/Hertiage Ridge Permit 18-05 (Was 17-09)		X	X	X			X	X				X		(\$2,445.17)
Nottingham Village Permit 18-06		X	X	X			X					X		\$650.03
Ridgecrest Permit 18-11		X	X				X	X				X		\$16.68
St Croix Valley Recreation Center Expansion Permit 18-14			X				X	X	X					\$6,970.28
Central Commons Permit 19-05	11/11/2025	X	X	X			X	X				X		(\$5,000.00)
Neal Ave Road Reconstruction Permit 20-05	6/1/2020	X	X						X					\$19,088.31
CSAH 15-36 Interchange	3/24/2021		X			X	X		X					\$19,233.85

APPLICANT/PERMIT NO.	PERMIT DATE	RULES							Dec omp acti on	TYPE				FEES OWED	
		2	3	4	5	6	7	GOV		SF RES	RES DEV	COM	EXEMPT	AMT DUE	
Permit 20-08	3 year approval														
White Pine Ridge	6/7/2021		X					X			X			(\$631.32)	
Permit 20-12	surety redution request 1/12/23														
Westridge Block 1 Lot 1	8/6/2021		X					x		x				\$2,851.61	
Permit 21-09 - NOPV, no permit received	stable/closable when maintenance is determined														
Maryland Gateway Addition	9/29/2021	x	x					x			x			(\$854.61)	
Permit 21-13															
Schwartz Residence	5/6/2021 erosion control only	x	x							x				(\$319.38)	
Permit 21-15															
Millbrook Park- City of Stillwater	8/25/2021	x	x	x						x			\$6,970.18		
Permit 21-21															
Fahey	11/4/2021		x							x				(\$743.78)	
Permit 21-34															
Norell Ave N Improvements	(Fall 2022 BMP still needs to be finalized fall 2023)	x	x					x		x			\$10,458.63		
Permit 21-45															
Gonyea (8 lots)- White Pine Ridge			x								x			(\$746.26)	
Permit 22-02															
Wetridge (12 lots) - Sharkey/GreenHalo	3/25/2022		x								x			(\$513.73)	
Permit 22-03 (Transferred 21-30 and 21-31)															
13290 Boutwell Road N - Sharkey/GreenHalo	3/25/2022		x								x			(\$590.51)	
Permit 22-05															
7125 Lone Oak Trail (WOS L106)-weichman	9/25/2022		x							x				\$7,257.42	
Permit 22-11															
13199 Dellwood Rd	???		x							x				\$217.83	
Permit 22-15															
Read Residence	11/7/2022	x	x							x				\$1,246.52	
Permit 22-17															
Stillwater Oaks	conditional approval	x	x								x			\$4,293.00	
Permit 22-18															
Miller Flood Protection	10/20/2022							x			x			\$2,836.25	
Permit 22-19															
Popeyes OPH	11/9/2022		x									x		(\$266.26)	
Permit 22-20															
Fanberg Residence - Manning Estates L4B3	10/21/2022		x							x				(\$729.36)	
Permi 22-22															
7138 Lone Oak Trl N (WOS L109)	12/6/2022		x							x				(\$125.40)	
Permit 22-24															
7164 Lone Oak Trl (WOS L113)	12/6/2022		x							x				(\$175.03)	
Permit 22-25															
Wash Co. CSAH 5 Phase II	1/19/2023								x					\$820.28	

APPLICANT/PERMIT NO.	PERMIT DATE	RULES							Dec omp acti on	TYPE				FEES OWED	
		2	3	4	5	6	7	GOV		SF RES	RES DEV	COM	EXEMPT	AMT DUE	
Permit 22-30			x												
Wash Co. CSAH 57 culverts Permit 22-31	2/2/2023		x							x				\$0.00	
City Rd 61 Re-alignment Permit 23-01	4/12/2023 not yet closable	x	x							x				\$8,073.47	
WOS L114 - Cates (7211 Lone Oak Trail Tweden) Permit 23-02	9/26/2023 submittal		x	x						x				\$5,849.12	
Boutwell Farm Lot 1 (2545 Boutwell Farm Rd) Permit 23-03	5/3/2023 NOPV Board Order Items		x							x				\$3,472.66	
Westridge B1L4 (986 Creekside) Permit 23-04	5/3/2023		x							x				(\$693.54)	
Rocket Carwash Permit 23-05	conditional approval 4/12/2023	x	x									x		\$4,824.00	
7239 Lone Oak Trail (WOS L118) Permit 23-07	5/3/2023		x							x				\$416.38	
72nd St Road and Trail Improvements Permit 23-08	5/26/2023									x				\$3,254.41	
Kirn Residence (McLafferty 8000 Neal Ave) Permit 23-09	ready to permit upon ownership verification 6/7/23		x							x				(\$693.29)	
Curio Dance Studio Permit 23-10	10/2/2023	x	x									x		\$5,267.50	
7273 Lone Oak Trail- WOS Lot 122 - Freiroy Residence Permit 23-11	Conditions not met but started construction 7/27/2023		x							x				\$371.16	
CSAH 9 -Keystone Ave - Culvert Replacement Permit 23-12	6/7/2023									x				\$1,525.04	
The Lakes - Phase III/Sandhill Shores Permit 23-13	6/8/2023		x									x		(\$365.44)	
Wiskow Berm Permit 23-14	6/28/2023		x							x				(\$868.54)	
7085 Lone Oak Trail- WOS L102- Mensah Res/Cates Permit 23-15	App recieved 7/10 John reviewing/conditions 7/27/2023		x							x				\$973.16	
13294 Boutwell Rd. N Permit 23-16	need erosion control revisions 10/2023		x							x				(\$833.29)	
Sundance Townhomes Permit 23-17	submittal 11/15/2023 completeness due											x		\$6,639.25	
7285 Lone Oak Trl- WOS L124 Permit 23-18	erosion control revisions needed									x				(\$78.20)	

APPLICANT/PERMIT NO.	PERMIT DATE	RULES						Dec omp acti on	TYPE				FEES OWED	
		2	3	4	5	6	7		GOV	SF RES	RES DEV	COM	EXEMPT	AMT DUE
Liberty Classical Academy Expansion Permit 23-19	Plans submitted 12-13-2023 Fee received 12-21-2023											x		\$671.00
Settler's Glen Pond Excavation Permit 23-20									x				\$351.38	
TOTAL NON-EXEMPT DUE BCWD:		90	326	34	15	27	160		71	153	13	119		\$121,002.39
Total due back to applicants if closed:														(\$212,346.91)



MEMORANDUM

TO: BCWD Board of Managers

FROM: Aaron DeRusha, WCD

DATE: 12/28/2023

RE: BCWD YSI Sonde Maintenance Request

The watershed district currently owns and operates three YSI EXO 3 sondes in a continuous deployment mode during non-freezing conditions to monitor temperature, dissolved oxygen, turbidity, pH, and specific conductivity. These sondes are deployed on Brown's Creek at the McKusick Road, Stonebridge, and Outlet monitoring stations, and the data is used to assess conditions in the creek by comparison to state standards and the impairment stressors described in the Brown's Creek Biota TMDL.

Two sondes are in need of regular maintenance for components that have exceeded their service life, specifically two pH sensor modules and two optical dissolved oxygen sensor caps. The total cost for these user-replaceable parts according to the manufacturer's website is \$800 plus shipping. The parts will be ordered from YSI and installed by Washington Conservation District staff.

Requested board action: Approve sonde maintenance request as described, and payment not to exceed \$1,100 to Washington Conservation District for reimbursement.

Brown's Creek Watershed District
2024 Approved Budget- Final Certified Levy
1-10-2024

		Estimated 2023 Carry Forward	2024 Grants	2024 Levy	2024 Total Budget	Allocated	Available
100-2910	Designated Funds - Management Plan Projects	\$ 1,003,777			\$ 1,003,777		\$ 1,003,777
					\$ -		\$ -
Revenue					\$ -		\$ -
100-3700	Interest Income				\$ -		\$ -
100-3601	Metropolitan Council Outlet Monitoring Grant		\$ 5,000		\$ 5,000		\$ 5,000
100-3630	Washington County Cost-share Applewood Reuse	\$ 66,800			\$ 66,800		\$ 66,800
100-3631	MPCA Small Watershed Grant 2023-2026	\$ 320,706			\$ 320,706		\$ 320,706
100-3100	Tax Levy			\$ 1,180,803	\$ 1,180,803		\$ 1,180,803
TOTAL, ESTIMATED Sources of Funding		\$ 1,391,283	\$ 5,000	\$ 1,180,803	\$ 2,577,086		\$ 2,577,086

ACCT. #	General Expenses	Estimated 2023 Carry Forward	2023 Grants	2023 Levy	2023 Total Budget	Allocated	Available
200-4000	Manager Per Diem and Expense			\$ 10,000	\$ 10,000		\$ 10,000
200-4220	Secretarial Services	\$ 4,000		\$ (4,000)	\$ -		\$ -
200-4250	Dues & Subscriptions (MAWD 6500 and LMCIT 2500)			\$ 9,000	\$ 9,000		\$ 9,000
200-4270	Bonding & Insurance			\$ 6,000	\$ 6,000		\$ 6,000
200-4280	Postage & Delivery			\$ 1,000	\$ 1,000		\$ 1,000
200-4290	Printing & Notices			\$ 1,000	\$ 1,000		\$ 1,000
200-4330	Accounting			\$ 4,560	\$ 4,560		\$ 4,560
200-4331	Audit			\$ 10,300	\$ 10,300		\$ 10,300
200-4949	Misc., Other Expense			\$ 2,000	\$ 2,000		\$ 2,000
200-4320	Wash. Conservation District--Admin			\$ 58,670	\$ 58,670		\$ 58,670
200-4265	Admin Conference Registrations			\$ 2,000	\$ 2,000		\$ 2,000
200-4410	Legal Fees - General			\$ 25,800	\$ 25,800		\$ 25,800
200-4500	Staff Engineer			\$ 28,445	\$ 28,445		\$ 28,445
	Diversity, Equity and Inclusion Training			\$ 5,000	\$ 5,000		\$ 5,000
	Contingency Reserve	\$ 50,000		\$ -	\$ 50,000		\$ 50,000
TOTAL GENERAL FUND EXPENSES:		\$ 54,000	\$ -	\$ 159,775	\$ 213,775		\$ 213,775

ACCT. #	MANAGEMENT PLAN EXPENSES	Estimated 2023 Carry Forward	2023 Grants	2023 Levy	2023 Total Budget	Allocated	Available
300-4320	Wash. Conservation District--Administrator			\$ 176,005	\$ 176,005		\$ 176,005
300-4410	Legal Fees - Mgmt Plan			\$ 60,000	\$ 60,000		\$ 60,000
300-4501	Staff Engineer			\$ 90,474	\$ 90,474		\$ 90,474
300-4702	Permitting, Legal Review			\$ 15,000	\$ 15,000		\$ 15,000
300-4703	Permitting, Engineering Review			\$ 55,000	\$ 55,000		\$ 55,000
300-4704	Permitting, Inspection Database			\$ 1,000	\$ 1,000		\$ 1,000
300-4710-1	Baseline Monitoring		\$ 5,000	\$ 136,420	\$ 141,420		\$ 141,420
300-4640	Equip. Maint. and Upgrades	\$ 15,000		\$ 10,000	\$ 25,000		\$ 25,000
300-4810	Shared Educator Position			\$ 20,500	\$ 20,500		\$ 20,500
300-4950	Management Plan Implementation -future projects			\$ -	\$ -		\$ -
903-0001	Trout Habitat Preservation Project: Monitoring,			\$ 6,500	\$ 6,500		\$ 6,500
909-0000	Rules Review/Evaluation	\$ 27,000		\$ 3,000	\$ 30,000		\$ 30,000
909-0001	Groundwater Dep Nat Resource Inventory update	\$ 10,000		\$ (10,000)	\$ -		\$ -
909-0002	Permitting Program Internal Procedure updates	\$ 25,000		\$ -	\$ 25,000		\$ 25,000
910-0000	Education & Outreach			\$ 15,000	\$ 15,000	\$ 5,004	\$ 9,996
911-0000	Volunteer Stream Monitoring			\$ 4,045	\$ 4,045		\$ 4,045
912-0000	Grant Preparation			\$ -	\$ -		\$ -
914-0000	Homeowner BMP Program			\$ 50,000	\$ 50,000		\$ 50,000
922-0000	Plan Reviews - LGU/LWMP			\$ -	\$ -		\$ -
923-0000	H & H Model Maintenance	\$ 10,250		\$ 141,030	\$ 151,280		\$ 151,280
923-0002	Flood Risk Assessment	\$ 89,316		\$ (73,566)	\$ 15,750		\$ 15,750
927-0000	Management Plan Update	\$ 127,000		\$ 90,000	\$ 217,000		\$ 217,000
929-0000	Long Lake Plan Implementation-shoreline management	\$ -		\$ -	\$ -		\$ -
929-0010	Long Lake -Implementation - regional treatment	\$ 75,000		\$ (75,000)	\$ -		\$ -
929-0011	Long Lake - 62nd Street Pond Retrofit Feasibility	\$ 15,000		\$ -	\$ 15,000		\$ 15,000
929-0012	Long Lake - Marketplace Reuse Feasibility	\$ 164,900		\$ 60,220	\$ 225,120		\$ 225,120
931-0001	Benz Lake Management Plan Implementation	\$ 15,500		\$ (15,500)	\$ -		\$ -
932-0004	Iron Enhanced Sand Filter/Performance Monitoring			\$ -	\$ -		\$ -
935-0000	Land Conservation Program	\$ 100,000		\$ 50,000	\$ 150,000		\$ 150,000
935-0002	110th Street Property Implementation	\$ 48,457		\$ 25,000	\$ 73,457		\$ 73,457
935-0003	Develop Land Conservation Priorities	\$ 20,000		\$ -	\$ 20,000		\$ 20,000
940-0000	BMP Program - LGU/Community Demonstration Projects	\$ 10,000		\$ -	\$ 10,000		\$ 10,000
940-0001	Flood Prevention Grant Program	\$ -		\$ -	\$ -		\$ -
942-0004	Measuring Trends in GW Elevations & Flow	\$ 4,000		\$ -	\$ 4,000		\$ 4,000
942-0007	Groundwater - Browns Creek piezometers	\$ 8,960		\$ -	\$ 8,960		\$ 8,960
942-0011	Groundwater - Coordination with users			\$ 24,000	\$ 24,000		\$ 24,000
942-0012	Groundwater - Install Monitoring Wells	\$ 58,000		\$ (58,000)	\$ -		\$ -
942-0013	Groundwater - Pump Test	\$ 15,000		\$ (15,000)	\$ -		\$ -
947-0011	Countryside Auto BMP-performance monitoring			\$ -	\$ -		\$ -
947-0016	Brown's Creek - BC Trails Park Parking Lot Perfm Mon			\$ -	\$ -		\$ -
947-0017	Brown's Creek Implementation - Ecoli site visits/cost-share	\$ 10,000		\$ -	\$ 10,000		\$ 10,000
947-0018	Brown's Creek - Biological Survey (Macroinvert & Fish)	\$ 4,000		\$ -	\$ 4,000		\$ 4,000
947-0022	Brown's Creek - Buffer and Stream Restoration	\$ 330,000		\$ 133,000	\$ 463,000		\$ 463,000
947-0023	Brown's Creek - Golf Course Reuse - Oak Glen	\$ -		\$ -	\$ -		\$ -
947-0025	Brown's Creek - Golf Course Reuse - SCC			\$ -	\$ -		\$ -
947-0026	Brown's Creek - Brown's Creek Cove Reach			\$ 20,000	\$ 20,000		\$ 20,000
948-0000	CIP Maintenance	\$ 30,900		\$ 135,000	\$ 165,900		\$ 165,900
950-0001	South School Curly Leaf Treatment	\$ 1,000		\$ (1,000)	\$ -		\$ -
950-0002	Lynch Lake Fish/Veg Management	\$ -		\$ -	\$ -		\$ -
951-0001	Woodpile Lake Management Plan Implementation	\$ 10,000		\$ (10,000)	\$ -		\$ -
953-0000	Fen Management Plan Implementation	\$ -		\$ -	\$ -		\$ -
956-0000	Bass East & West Management Plan	\$ -		\$ -	\$ -		\$ -
957-0000	Weather Station	\$ -		\$ 3,700	\$ 3,700		\$ 3,700
959-0001	Resource Assessment - upstream 110th/Drone flight	\$ -		\$ 4,700	\$ 4,700		\$ 4,700
959-0002	Resource Assessment - Diversion Tribs - Head cut Repairs	\$ 60,000		\$ (60,000)	\$ -		\$ -
959-0003	Resource Assessment - Brown's Creek Gorge Bluff	\$ -		\$ -	\$ -		\$ -
960-0000	St Croix Phosphorus Reduction	\$ 10,000		\$ -	\$ 10,000		\$ 10,000
961-0000	Mendel Wetland Restoration Feasibility	\$ 20,000		\$ 15,000	\$ 35,000		\$ 35,000
962-0000	District-Wide Pond Management Planning/Implementation	\$ 10,500		\$ 4,500	\$ 15,000		\$ 15,000
963-0000	District-Wide Vegetation Surveys	\$ 10,000		\$ (10,000)	\$ -		\$ -
964-0000	District-Wide Chloride Source Assessment	\$ 2,500		\$ -	\$ 2,500		\$ 2,500
TOTAL MANAGEMENT PLAN PROJECT EXPENSES:		\$ 1,337,283	\$ 5,000	\$ 1,021,028	\$ 2,363,311		\$ 2,358,307
TOTAL, OPERATING EXP. & MGMT. PLAN PROJECTS:		\$ 1,391,283	\$ 5,000	\$ 1,180,803	\$ 2,577,086		\$ 2,572,082

BROWN'S CREEK WATERSHED DISTRICT
 1/10/2024
 CURRENT ITEMS PAYABLE-PAGE 1 of 2

	YES	NO	ABSTAIN	ABSENT
ECKLES	_____	_____	_____	_____
JOHNSON	_____	_____	_____	_____
LEROUX	_____	_____	_____	_____
WIRTH	_____	_____	_____	_____
SAHULKA	_____	_____	_____	_____

VENDOR

Emmons & Olivier Resources, Inc Invoices December 2023

	ACCOUNT #	ITEMS	TOTAL	CK NO
Inv. 41-0000-217 Retainer	300-4500	\$ 7,078.50		
Inv. 41-0000-217 Retainer	200-4500	\$ 2,359.50		
Inv. 41-0001-220 Permits 2000-2007	300-4703	\$ 5,055.00		
Inv. 41-0307-82 Permits 2017				
Permitting #17-01 Grant Holdings Subd	300-4703	\$ 37.21		
Inv. 41-0330-71 Permits 2018				
Permitting #18-04 Boutwell Farm	300-4703	\$ 547.63		
Inv. 41-0365-44 Permits 2020				
Permitting #20-12 White Pine Ridge	300-4703	\$ 20.46		
Inv. 41-0402-23 Permits 2022				
Permitting #22-17 Read Residence	300-4703	\$ 117.00		
Inv. 41-0420-12 Permits 2023				
Permitting #23-02 WOS Lot 114	300-4703	\$ 2,349.00		
Permitting #23-08 72nd Street	300-4703	\$ 20.46		
Permitting #23-12 CSAH 9 Culvert Replacement	300-4703	\$ 20.46		
Permitting #23-13 Sandhill Shores	300-4703	\$ 107.11		
Permitting #23-14 Wiskow Berm	300-4703	\$ 20.46		
Permitting #23-16 Brock Residence	300-4703	\$ 20.46		
Permitting #23-17 Sundance Stillwater	300-4703	\$ 5,574.75		
Permitting #23-19 Liberty Classical Academy Expansion	300-4703	\$ 6,171.00		
Permitting #23-20 Settler Glen Pond Excav	300-4703	\$ 351.38		
Inv. 41-0421-12 IESF OM 2023	948-4500	\$ 1,399.50		
Inv. 41-0418-13 Brown's Ck Pk Restoration	947-0022	\$ 5,925.75		
Inv. 41-0433-3 2024 H&H Model Update	923-0000	\$ 11,062.50		
Inv. 41-0437-1 2024 OGGC Reuse Maintenance and Monitoring	948-0000	\$ 543.00		
Inv. 41-0432-4 Enhanced Stakeholder Engagement	927-0000	\$ 2,993.24		
Inv. 41-0284-28 BCWD Education and Outreach	910-0000	\$ 661.75		
Inv. 41-0424-6 BCWD 2023 Weather Station	957-4500	\$ 519.00		
Inv. 41-0425-5 2023 THPP	903-0001	\$ 49.50		
Inv. 41-0426-5 Rare Plant Survey- Lynch Lake	950-0002	\$ 337.08		
Inv. 41-0434-1 Mendel Wetland Landowner Engagement	961-0000	\$ 499.50		
Inv. 41-0436-1 Engagement Handout	910-0000	\$ 2,329.00	\$ 56,170.20	

Washington Conservation District Inv. 6314 November 2023- Water Monitoring
 Baseline Water Monitoring- labor

300-4710	\$ 10,133.33
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WCD Continued.	Baseline Water Monitoring- equipment	300-4640	\$	14.57			
	Metropolitan Council- Lab	300-4710	\$	1,319.75			
	Inv. 6320 November 2023- BMP Program	914-0000	\$	1,348.00	\$	12,815.65	
Smith Partners	December Invoices						
	Inv. 44530 Retainer - Meetings, Preparation	200-4410	\$	2,072.82			
	Inv. 44531 General Legal Services	300-4410	\$	161.40			
	Inv. 44532 Planning	300-4410	\$	113.54			
	Inv. 44533 Personnel	300-4410	\$	53.80			
	Inv. 44534 Permits	300-4703	\$	2,319.43			
	Inv. 44535 Policy Issues	300-4410	\$	188.66			
	Inv. 44536 Oak Glen Golf Club Project	300-4410	\$	134.68			
	Inv. 44537 Brown's Creek Restoration	300-4410	\$	2,405.53	\$	7,449.86	
Xcel Energy	Inv. 858156968- Iron Enhanced Sand Filter pump operation	948-4500	\$	22.29	\$	22.29	
Washington County	Brown's Creek Restoration Project: Access Permit Application Fee	947-0022	\$	150.00			
	Brown's Creek Restoration Project: Access Permit Security Deposit	947-0022	\$	500.00	\$	650.00	
Domain Listings	Annual Website Domain Listing	910-0000	\$	(288.00)	\$	(288.00)	4594 VOID
Metro Watershed Partners	2024 Membership: Clean Water MN and Adopt-a-Drain	910-0000	\$	1,000.00	\$	1,000.00	
Dave McCord	Inv. 4155 November 2023 Accounting Services	200-4330	\$	380.00	\$	380.00	
Manager Sahulka	Quarter IV 2023 Per Diem	200-4000	\$	200.00	\$	200.00	
Manager Wirth	Quarter IV 2023 Per Diem	200-4000	\$	800.00	\$	800.00	
Manager Johnson	Quarter IV 2023 Per Diem	200-4000	\$	400.00	\$	400.00	
Manager LeRoux	Quarter IV 2023 Per Diem	200-4000	\$	200.00	\$	200.00	
Manager Eckles	Quarter IV 2023 Per Diem	200-4000	\$	400.00	\$	400.00	
Total Amount Disbursed					\$	80,200.00	

BROWN'S CREEK WATERSHED DISTRICT

1/10/2024

MONTHLY ITEMS DEPOSITED - Page 1 of 1

VENDOR	INVOICE/DESCRIPTION	ACCOUNT #	CK NO	DEPOSIT DATE	TOTAL
Liberty Classical Academy	#23-19 Permit Deposit	300-4703	20937	12/21/2023	\$ 5,500.00
MN Management &	MV Credit - Agricultural	100-3100	direct deposit	12/26/2023	\$ 820.78
Metropolitan Council	2022-2023 Final 10% WOMP Grant SG-17536	100-3601	2050596	1/4/2024	\$ 1,000.00
4M Fund	Dividend	100-3700	Direct Deposit	12/31/2023	\$ 1,402.04
TOTAL AMOUNT DEPOSITED:					\$ 8,722.82

Brown's Creek Watershed District			
Treasurer's Report			
1/10/24			
	US Bank Accounts		
		Checking 9903	\$ 962,947.47
		Checking 6671	
		Checking 6614- Permitting	
	4M Fund		\$ 513,057.35
Total Bank Balance			\$ 1,476,004.82
Less Accounts Payable			\$ 80,200.00
Plus Unrecored Deposits since			\$ 1,000.00
Total Balance			\$ 1,396,804.82

Project Name	BCWD Permit 23-02, Tweden Residence “White Oak Savanna Block 2 Lot 7”	Date	01/08/2024
To / Contact info	Karen Kill / BCWD Administrator		
Cc / Contact info	Jennifer Cates / Cates Fine Homes, Inc.		
Cc / Contact info	Randal Tweden		
From / Contact info	Ryan Fleming, PE / EOR John Sarafolean, EOR		
Regarding	Permit Amendment Engineer’s Report		

The following review of an application for a modification of the above-noted permit was conducted to determine compliance with applicable BCWD rules for purposes of the engineer’s recommendation to the Board of Managers on the permit application.

- Applicant:** Randal Tweden
- Permit-modification Application Submittal Date:** November 27th, 2023
- Completeness Determination:** November 27th, 2023
- Board Action Required By:** January 29th, 2024
- Review based on BCWD Rules effective April 1, 2020**
- Recommendation: Consider approval based on the variance analysis herein**

BACKGROUND AND GENERAL COMMENTS

The applicant, property owner Randal Tweden, applied for permit 23-02 for construction of a single-family home on Block 2 Lot 7 of the White Oaks Savanna development (7211 Lone Oak Trail in Grant). The application included an erosion control plan that met BCWD Rule 3.0 requirement and construction of a rain garden, consistent with the stormwater-management plan that was a significant component of the basis for approval of White Oak Savanna subdivision permit 17-01, allowing the applicant to benefit from subsection 2.8.1, which provides that a single-family home project that is constructed consistently with a stormwater-management plan implement in accordance with a BCWD permit is exempt from further stormwater-management requirements under BCWD Rule 2.0. In addition, plans submitted were found to be consistent with the 2-foot low-floor from the 100-year high water level of nearby waterbodies freeboard separation requirement in subsection 7.3.2 of the BCWD rules.

As shown in Figure 1, Wetland #7 and the associated wetland buffer cover 2.3 acres of this lot. This area includes the buffer that is protected by a maintenance declaration that was recorded on the property in compliance with Permit 17-01; the buffer area is shown in green. All permit conditions were met prior to construction and the permit is in good standing. Construction of the home and rain garden is complete with only the final landscaping and turf establishment remaining to be completed. The BCWD permit 23-02 is active and the district is currently holding \$19,995 in financial assurance associated with the grading alteration and stormwater facility construction.

The applicant is requesting an amendment to the permit for installation of three ground-mounted solar panels totaling 665 square feet of impervious area southwest of the house in the wetland buffer as shown in Figure 2. The applicant is requesting a variance from compliance with subsection 4.4.2, which prohibits the creation of impervious cover within a wetland buffer.

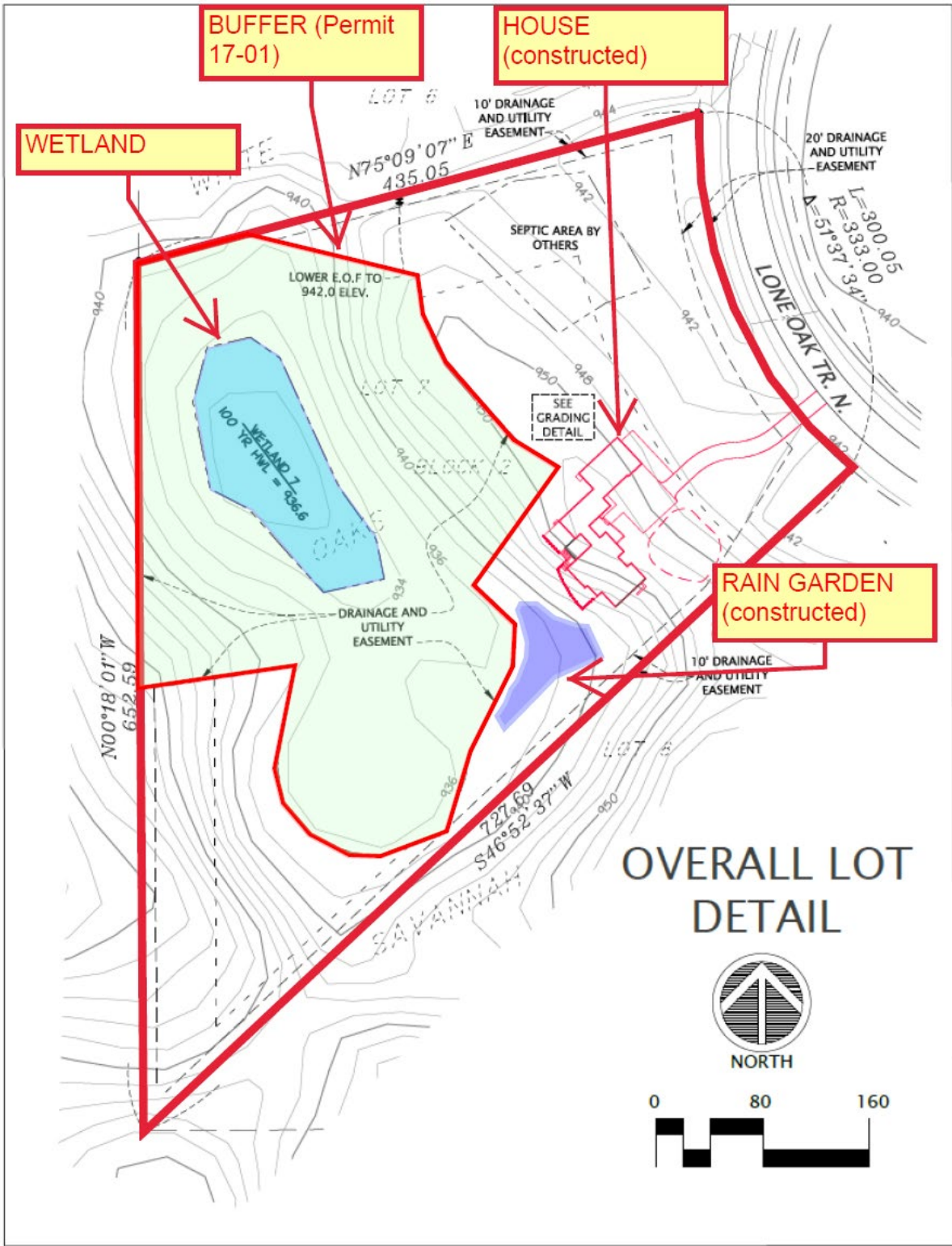


Figure 1: Annotated schematic of Block 2 Lot 7 from Permit 17-01 approved plan

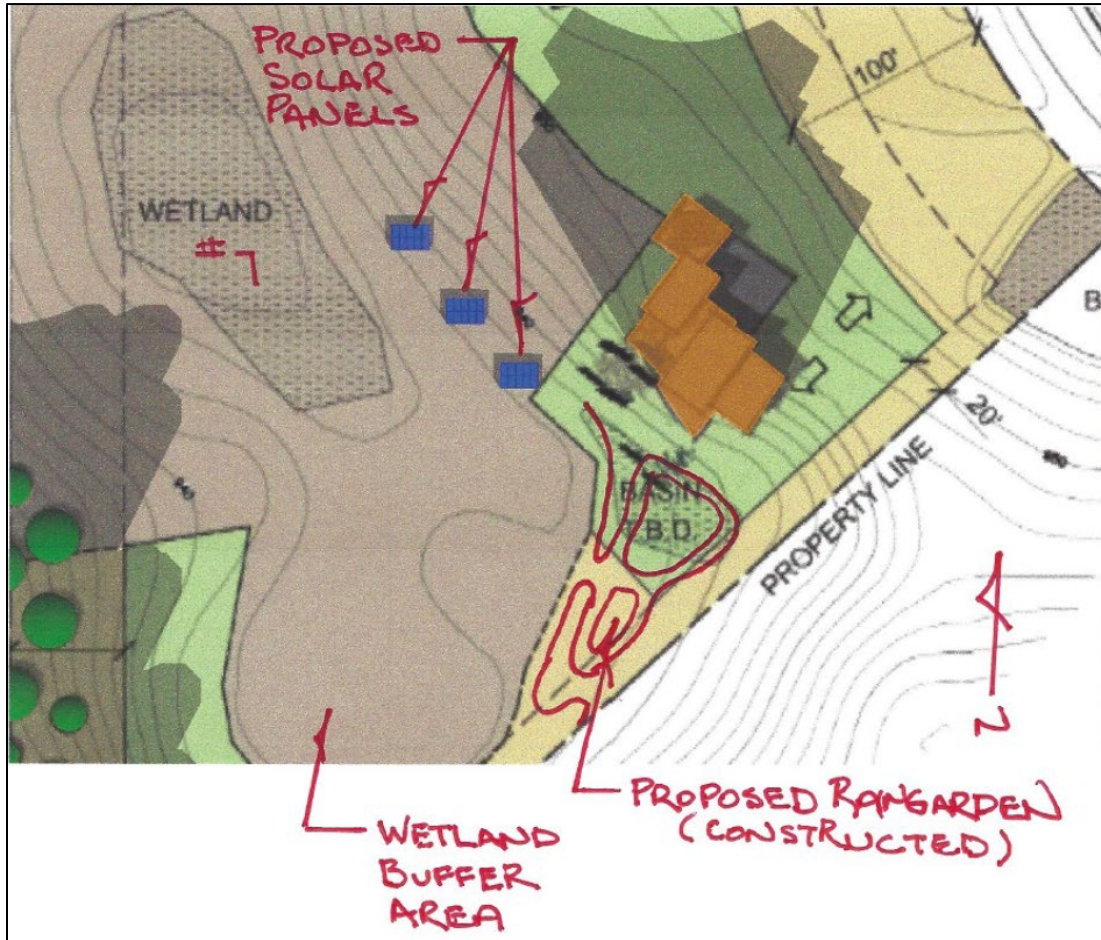


Figure 2: Proposed solar panel layout

Rule 2.0—STORMWATER MANAGEMENT

As noted, plans submitted for the Tweden home construction under application 23-02 were found by the engineer to be consistent with stormwater management approved for the White Oaks Savanna development under BCWD permit 17-01. The 23-02 applicant therefore was exempt from further stormwater-management requirements under subsection 2.8.1 of the BCWD rules.

- Rule Not Applicable to Permit.

Rule 3.0—EROSION CONTROL

According to BCWD Rule 3.2, all persons undertaking any grading, filling, or other land-altering activities which involve movement of more than fifty (50) cubic yards of earth or removal of vegetative cover on five thousand (5,000) square feet or more of land must submit an erosion control plan to the District, and secure a permit from the District approving the erosion control plan.

- Rule requirements met with conditions for the modification.

The installation of the solar panels involves additional disturbance of surface area beyond the home construction, requiring additional erosion- and sediment-control measures discussed below in the

variance section. The applicant must submit an amendment to the erosion- and sediment-control plan that was the basis for approval under the rule for permit 23-02 to address disturbances from the solar-panel installation for the administrator's approval.

Rule 3.0 Conditions:

- 3-1. Submit an amended erosion control site plan for the property including any erosion control and restoration measures needed for the installation of the solar panels. (BCWD 3.2.2).

Rule 4.0—LAKE, STREAM, AND WETLAND BUFFER REQUIREMENTS

The permit for the White Oaks Savanna development (17-01) triggered wetland-buffer requirements, including the delineation and establishment of the buffer area on the Tweden property. BCWD determined that the buffer required by permit 17-01 on the Tweden property had been established as required 07/26/2018. As required by subsection 4.2.2 of the BCWD rules, a maintenance declaration was recorded in the Washington County Recorder's office on the Tweden property June 4, 2018. Section 4.4.2 and the declaration prohibit creation of impervious cover or location of utilities within a wetland buffer. (BCWD Rules 4.4.2(a) and (e).)

- Rule Requirements Not Met - *See Variance Rule 10.0*

The proposed location of the solar panels on the property is within wetland buffer protected by a recorded declaration under permit 17-01. Per the declaration, the proposed activity of installing solar panels is prohibited in the buffer as it does not comply with 4.4.2 subsections a and e of the rule.

Rule 5.0—SHORELINE AND STREAMBANK ALTERATIONS

According to BCWD Rule 5.2, no person may disturb the natural shoreline or streambank partially or wholly below the ordinary high water mark of a waterbody, without first securing a permit from the District.

- Rule Not Applicable to Permit. *There are no proposed shoreline or streambank alterations.*

Rule 6.0—WATERCOURSE AND BASIN CROSSINGS

According to Rule 6.2, no person shall use the beds of any waterbody within the District for the placement of roads, highways and utilities without first securing a permit from the District.

- Rule Not Applicable to Permit. *There are no proposed watercourse or basin crossings.*

Rule 7.0—FLOODPLAIN AND DRAINAGE ALTERATIONS

According to Rule 7.2, no person may alter or fill land below the 100-year flood elevation of any waterbody, wetland, or stormwater management basin, or place fill in a landlocked basin, without first obtaining a permit from the District. No person may alter stormwater flows at a property boundary by changing land contours, diverting or obstructing surface or channel flow, or creating a basin outlet, without first obtaining a permit from the District.

- Rule Not Applicable to Permit. *There are no proposed alterations below the 100-year flood elevation of the wetland. Stormwater flows are not altered at property boundaries.*

Rule 8.0—FEES

Fees for this project as outlined below:

- **TOTAL FEES** **\$0**

Rule 9.0—FINANCIAL ASSURANCES

Financial assurances for this project are as outlined below:

1. Grading or Alteration (0.1 acres disturbed x \$2,000/acre) \$0

- **TOTAL FINANCIAL ASSURANCES**
(\$5,000 Minimum Performance Financial Assurance) **\$0**

**As noted in the Background and General Comments, the District is currently holding \$19,995 in financial assurance associated with the grading alteration and stormwater facility construction.*

Rule 10.0—VARIANCES

According to BCWD Rule 10.0, the Board of Managers may hear requests for variances from the literal provisions of these rules in instances where their strict enforcement would cause undue hardship because of circumstances unique to the property under consideration. The Board of Managers may grant variances where it is demonstrated that such action will be in keeping with the spirit and intent of these rules. Variance approval may be conditioned on an applicant’s preventing or mitigating adverse impacts from the activity.

In order to grant a variance, the Board of Managers must determine that the special conditions that apply to the structure or land in question do not apply generally to other land or structures in the District, that the granting of the variance will not merely serve as a convenience to the applicant, and that the variance will not impair or be contrary to the intent of these rules. A hardship cannot be created by the landowner, the landowner’s agent or representative, or a contractor, and must be unique to the property. Economic hardship alone is not grounds for issuing a variance.

The Permit Applicant is requesting a variance from compliance with the following requirement, as articulated and applied to the property through the recorded maintenance declaration, for placement of 665 square feet of solar panels within the buffer:

- Rule 4.4.2(a) Wetland Buffers; The following activities are prohibited within a lake or wetland buffer, and within the streamside zone of a stream buffer:
 - (a) Creating impervious cover.
 - (e) Locating roads or utilities, except pursuant to a crossing of the associated watercourse in accordance with section 4.7.

Rule 4.4.2(a) & (e) Limitations in Buffer Zones: Wetland #7 is located on the Tweden Residence at 7211 Lone Oak Trail in Grant. The property is a part of the White Oaks Savanna development and the wetland buffer on the property in review was recorded in the maintenance declaration with the development in 2018. The applicant is proposing to install a solar system consisting of three ground mounted solar panel arrays (groups) on the property within the recorded wetland buffer area. The solar panel groups constitute a utility, and their installation will create 665 square feet of impervious

cover within the 86,792 square foot buffer, which is prohibited by the declaration (BCWD Rule 4.4.2). The panel location is shown in Figure 2, just west of the wetland positioned outside of the 100-yr HWL of the wetland.

The proposed solar panel location was based on findings by solar siting software (HelioScope) submitted by the applicant that the location inside buffer is the most solar efficient location on the property. Other areas on the property, including the roof of the home, were explored but are not proposed due to shading from the mature trees that existed prior to lot development and shading from the house (Figure 3). Other constraints on the lot include the septic drain fields, septic tanks, the drinking water well location, and stormwater facilities along the roadside that were constructed by the developer on both sides of the driveway.



Figure 3: Lot 7 image of mature trees and proposed solar panel location (red oval)

According to the BCWD Rule Statement of Rule Need and Reasonableness (SONAR), wetland buffers serve an important purpose and provide benefit to the natural environment and resources. Buffers surrounding wetlands protect wetlands and serve as riparian areas. Buffer functions and values include water quality protection, hydrologic event modification, ground water interaction, aquatic and terrestrial wildlife habitat, minimization of human impact, and environmental education. Stated in the BCWD Rule SONAR, “For a buffer’s greatest long-term effectiveness, sheet flow must be maintained, vegetation must be kept healthy, and incursions from urbanization must be kept to a minimum”.

The installation of solar panels in the wetland buffer will have the following impacts: creating concentrated flow of stormwater runoff at the driplines of the solar panels, increased shading underneath the panels, and temporary impacts during installation of the panels. Following is an analysis of the impacts to the buffer functions stated in the SONAR.

Water quality protection – The panels will have negligible impact to the buffer’s ability to filter pollutants to protect the wetland. No pollutants will be produced by the solar panels or structural posts

in the buffer and the shading from the panels and the racking posts will not hinder the vegetation from filtering and using the available water for evapotranspiration. Due to the design of the panels sitting on posts off the ground, there will be no disconnection between the vegetation allowing it to function as it would without the panels there.

Hydrologic event modification (Flow rate and volume alteration) – Concentrated flow from the panels will be created where water runs off at the drip line of the panels, however, the area of impact from this flow represents less than 1 percent of the 86,792 square foot buffer area. According to the Minnesota Stormwater Manual Fact Sheet on stormwater guidance for solar farm projects, the MPCA strongly recommends that the lowest vertical clearance of any solar array be no greater than 10 feet in order to prevent/control erosion and scour along the dripline. This recommendation will be followed as the plan calls for the racking to be 6'6" where it meets the middle of the underside of the panel shown in Figure 4. With respect to volume of runoff from the impervious in the buffer, the applicant oversized the rain garden capturing runoff from the house and yard to account for the additional impervious area of the solar panels. While the panels do not drain to the rain garden, the additional capacity in the rain garden will result in more volume retention and pollutant treatment from the home site annually since discharge from the rain garden to the wetland will be less frequent than if the rain garden were to have been sized to just meet the stormwater standard.

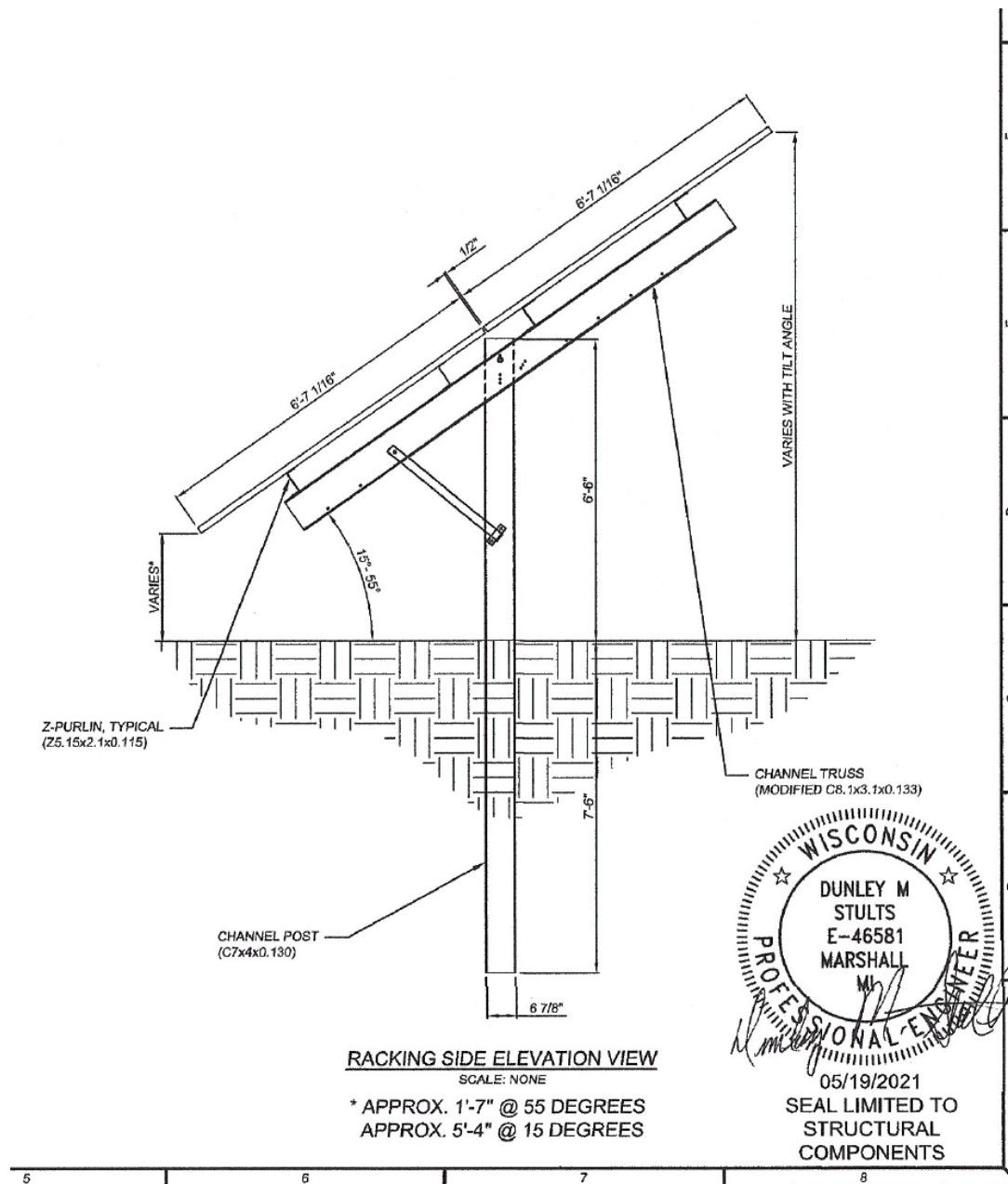


Figure 4: Solar panel design and dimensions.

Aquatic and terrestrial wildlife habitat – The habitat of the buffer vegetation will not be affected by the installation of the solar panels because of the nature of the design. The solar panels are going to be off the ground on posts and will offer an alternative habitat to wildlife such as birds and insects in the shade of the panels and the existing vegetation will remain. Increased shading will not hinder buffer vegetation robustness –a solar study finds that vegetation growth is not hindered and is often helped beneath solar panels (Nordberg, E. J., Julian Caley, M., & Schwarzkopf, L. (2021). Designing solar farms for synergistic commercial and conservation outcomes.). In another finding, the Shell company partnered with groups in the Netherlands to achieve energy transition and climate agreement rules.

The study found that solar parks can be suitable habitat for pollinators and that the average plant coverage, height, and number of species did not differ significantly between the sun and shaded areas. Also, the three sets of panels will be spaced sufficiently allowing for animal passage between panel groups.

Temporary impacts during installation – The posts for the panels to sit upon will be installed using a rubber tracked skid steer with a post driver. This method will cause little to no ground disturbance as there will be no excavation needed for the installation. The applicant will mitigate any disturbances to buffer vegetation during the installation with bio-logs until the vegetation is re-established.

Based on the above analysis, the District Engineer finds that the proposed installation of solar panels in the buffer zone of Wetland #7 will not adversely affect the functions and values of the wetland and is in the spirit and intent of the BCWD rules.

RECOMMENDED CONDITIONS OF THE PERMIT:

The following is a summary of the remaining tasks necessary to bring the project into compliance with the BCWD Rules in all respects other than where variances are requested as discussed above:

1. Address all erosion control requirements (Condition 3-1).

STIPULATIONS OF APPROVAL:

1. Note that the permit, if issued, will require that the applicant notify the District in writing at least three business days prior to commencing land disturbance. (BCWD Rule 3.3.1)

Resolution No. 24-XX
Brown's Creek Watershed District
Board of Managers

Adopting a record of decision for the environmental review of the Brown's Creek Restoration Project and making a negative declaration on the need for an environmental impact statement

Manager _____ offered the following resolution and moved its adoption, seconded by Manager _____:

Whereas Brown's Creek Watershed District has an approved and adopted watershed resources management plan in fulfillment of Minnesota Statutes section 103B.231 including policies committing BCWD to the improvement of the water quality and ecological integrity of Brown's Creek and its tributaries, including maintaining a viable cold-water fishery and maintaining the hydrology and geomorphology of Brown's Creek and its tributaries required for stream equilibrium and health, and the capital improvements program in the plan includes creek-restoration projects addressing impairments of Brown's Creek for turbidity and fish-bioassessments identified in the Brown's Creek Total Maximum Daily Load Plan (2012) and the Brown's Creek Thermal Study (2016), including improvement of reaches categorized as having degraded stream channel geomorphology by addressing lack of buffer, stream width, overhanging banks, and profile and alignment;

Whereas at its November 2022 meeting, the BCWD Board of Managers directed BCWD staff and the engineer to assess the feasibility of the capital improvements in the plan to address the impairments and restore water quality and habitat in Brown's Creek, and staff and the engineer conducted necessary surveys and worked with the Department of Natural Resources and the City of Stillwater to develop a conceptual design for restoration of 2,000 feet of the creek from McKusick Road just upstream of Brown's Creek Park to just downstream of the Brown's Creek State Trail in Stillwater, and the concept includes:

- reconnection of cutoff meanders, pattern adjustments to increase stream sinuosity, and grade control to reconnect the floodplain adjacent to the creek;
- remove invasive species from the bank and upstream areas along the reach;
- bank shaping and selective tree thinning to promote herbaceous understory growth;
- restoration of fish habitat with rock riffles and pools to increase spawning opportunities and provide stable refuge for macroinvertebrates;
- improved access to the creek from Brown's Creek State Trail.

(The work described here is collectively referred to hereafter as "the Project.")

Whereas at its July 2023 regular meeting, the BCWD Board of Managers authorized and directed the BCWD engineer to complete an Environmental Assessment Worksheet for the Project pursuant to Minnesota Statutes chapter 116D for presentation to the managers, sitting as the Responsible Governmental Unit as agreed to by representatives of the Department of Natural Resources pursuant to Minnesota Rules 4410.4300, subpart 27A, to make a determination on whether the Project has the potential to have significant negative environmental effects pursuant to Minnesota Statutes section 116D.04, subdivision 2a;

Whereas at its November 8, 2023, regular meeting, the BCWD Board of Managers approved the EAW for the Project and directed the BCWD administrator to provide the EAW to the state Environmental Quality Board for publication of a notice of availability in the *EQB Monitor*, which occurred on November 21, 2023, and the EAW was distributed as required by Minnesota Rules 4410.1500, and a 30-day public comment period was provided as required by the rules, ending December 21, 2023, and BCWD received written comments from several state agency representatives, Washington County and Metropolitan Council during the comment period;

Whereas on December 13, 2023, BCWD Board of Managers held a noticed public hearing at which interested members of the public and others were afforded the further opportunity to comment on potential impacts examined in the EAW, and no comments were offered;

Whereas the BCWD engineer and staff have carefully reviewed the written comments received, and prepared substantive written responses, in accordance with the terms of Minnesota Rules 4410.1700, and a compilation of the comments and responses is included as part of the record of decision attached hereto;

Whereas on the basis of comments provided, the analysis of the engineer and BCWD staff as presented in the findings of fact included in the record of decision attached to this resolution, and its own deliberations, the BCWD Board of Managers, sitting as the Responsible Governmental Unit, concludes as a matter of law that an environmental impact statement for the Project is not necessary because: (1) the Project does not fall within a mandatory EIS category in Minnesota Rules 4410.4400; and (2) the Project does not have the potential for significant negative environmental effects, as specified at Minnesota Rules 4410.1700, subpart 6, and (3) the Project will effectively achieve the BCWD's water-quality improvement goals in improve in-stream and creek corridor conditions with the least possible impact on environmental and other public interests; and

Whereas the final EAW and the findings of fact, including the written comments and responses prepared by the engineer and staff as well as the original comment communications, are attached hereto to serve as the record of decision in the matter.

NOW, THEREFORE, BE IT RESOLVED that the BCWD Board of Managers, sitting as the responsible government unit in the matter, adopts the attached record of decision,

and makes a negative declaration, determining that preparation of an environmental impact statement is not necessary, and directs staff to distribute this resolution and the record of decision in the matter within five days per Minnesota Rules 4410.1700, subpart 5.

The question was on the adoption of the resolution and there were __ yeas and __ nays as follows:

	<u>Yea</u>	<u>Nay</u>	<u>Abstain</u>	<u>Absent</u>
Eckles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Johnson	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LeRoux	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sahulka	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wirth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Upon vote, the president declared the resolution adopted January 13, 2024.

* * * * *

I, Chuck LeRoux, secretary of the Brown's Creek Watershed District, do hereby certify that I have compared the above resolution with the original thereof as the same appears of record and on file with BCWD and find the same to be a true and correct transcription thereof.

IN TESTIMONY WHEREOF, I set my hand this ___day of January, 2024.

 Chuck LeRoux, Secretary

**Brown's Creek Restoration Project
Environmental Assessment Worksheet
Record of Decision**

DRAFT

Brown's Creek Restoration Project

Environmental Assessment Worksheet – Findings of Fact

January 10, 2024

Background

The Brown's Creek Watershed District Board of Managers is the Responsible Governmental Unit for environmental review of the Brown's Creek Restoration Project, an effort to be undertaken by BCWD to restore 2,000 feet of the creek from McKusick Road just upstream of Brown's Creek Park to just downstream of the Brown's Creek State Trail in Stillwater.

An Environmental Assessment Worksheet was completed for the project pursuant to Minnesota Rules 4410.4300, subpart 27A. The Project is expected to change the course or cross-section of more than 1 acre Brown's Creek, a public water of the state as defined in Minnesota Statutes section 103G.005, subdivision 15. Further details on the design of the project can be found in the attached final Environmental Assessment Worksheet.

The EAW was filed with the state Environmental Quality Board and circulated for review and comment in accordance with Minnesota Rules 4410.1500. Notice of the availability of the EAW was published in the *EQB Monitor* on November 21, 2023, announcing a 30-day comment period which ended on December 21, 2023. A news release was issued informing the public that the EAW was available on the BCWD website and at the BCWD office at the Washington Conservation District. The news release directed people wishing to make comments to file them with the president of the BCWD board. In addition, BCWD held a public hearing to receive comments on the EAW on December 13, 2023, as part of the board of managers' regular meeting.

Brief Project Description

Brown's Creek Watershed District proposes to enhance 2,000 feet of the creek from McKusick Road just upstream of Brown's Creek Park to just downstream of the Brown's Creek State Trail in Stillwater. BCWD will reconnect several cutoff oxbow channels, and will include earthwork to reconnect the creek with the floodplain. Several new stream meanders will also be constructed to increase stream length and sinuosity to reestablish a natural meandering stream channel. The project will also include invasive tree and shrub harvest and installation of tree trunks, brush bundles, and rock riffles for fish and macroinvertebrate habitat. Grade-control riffles will emulate natural rock riffles and will be installed in the creek to increase the baseflow water elevation to restore riparian hydrology that has been impacted by channel incision. In general, earthwork and selective tree harvest will occur within 50 feet of the creek, but invasive shrub harvest is proposed up to 200 feet from the stream where dense stands of common and glossy buckthorn occur. Many of the trees and shrubs proposed to be harvested will be reincorporated into the project for bank stability and habitat features. The project will also include the creation of an American Disabilities Act-compliant connection to the Brown's Creek

State Trail to improve public access to the creek. Construction site access will occur off McKusick Road and Neal Avenue. No alterations to existing infrastructure are proposed.

Erosion control measures that will be implemented during construction include installation of temporary sediment best-management practices such as biologs and soil berms to capture surface soil erosion, and installation of both hydromulch and crimped straw mulch on all disturbed soils. All disturbed soils will be seeded with a cover crop (oats and winter wheat) and native state seed mixes based on land cover type. Erosion control measures will be installed prior to construction, and hydromulch and native seeding will occur immediately after final grading in accordance with the project stormwater pollution prevention plan.

Construction phasing:

1. Installation of erosion control BMPs;
2. Initiate selective tree harvest and temporary stockpile of harvested wood;
3. Bank grading and installation of grade control riffles and instream habitat;
4. Installation of hydromulch and native seed to establish permanent vegetation;
5. Removal of erosion control BMPs following establishment of native vegetation.

The project will have a net-positive impact on fish, wildlife, and the plant communities within the stream reach and will have a long-term positive benefit to the natural resources in the project area through the following:

- Creation of rock riffles will improve and increase macroinvertebrate habitat and fish spawning opportunities and will also help maintain deep-pool habitat.
- The project will increase the number and depth of pools for thermal refugia during the summer months and provide overwintering habitat for fish and other aquatic biota.
- The reconnected floodplain will improve riparian hydrology, benefit native hydrophytic vegetation, and support wetland habitat adjacent to the stream.
- Reducing sediment and nutrient loading within the project reach will improve downstream resources (Brown's Creek and St. Croix River).
- Native seeding will increase the diversity and extent of native vegetation, and the project will target populations of invasive species documented in the project reach including common buckthorn, glossy buckthorn, exotic bush honeysuckles, black locust, reed canary grass, creeping Charlie, and garlic mustard.
- Seeding native forbs will also improve habitat for pollinators including the federally listed rusty patched bumblebee and monarch butterfly.
- Establishment of brush piles will provide refugia for terrestrial fauna.

The project will have net positive effects on soils and vegetation in the riparian corridor as a result of restored hydrology in the reconnected floodplain and through removal of invasive species and reestablishment of native species. The project will also have a net positive effect on downstream water resources by improving water quality and expanding habitat for aquatic biota.

Temporary negative impacts the project construction will be mitigated as follows:

- No instream work will occur between September 1 to April 1 per Minnesota Department of Natural Resources work-exclusion dates to allow for fish spawning and migration.
- Tree harvest will occur in the winter months between January and early March to minimize impacts to migratory species and tree-nesting/roosting species such as the northern long-eared bat and tricolored bat. If tree harvest activities cannot be completed by early March, the BCWD will coordinate with the United States Fish & Wildlife Service to conduct a bat habitat assessment and/or other steps to determine tree harvest options after March 31.
- Work is only proposed on degraded stream banks and will bypass stream banks that are stable or that are currently providing quality near-stream/ instream habitat.
- Significant native trees and stable root masses adjacent to the creek will be preserved for bank stability and habitat diversity.
- Implementation of appropriate sediment BMPs, including rapid soil stabilization, to minimize soil erosion during project construction.
- Upon completion of the project, all disturbed soils will be seeded with native species and stabilized with hydromulch and crimped straw.

Project Schedule

The Minnesota Department of Natural Resources has established work exclusion dates for work in public waters to protect fish spawning and migration. Brown's Creek is classified as a trout stream with work exclusion dates from September 1 to April 1. Construction of the project will occur outside the work exclusion dates, ideally between June 1 and August 1. Work during this construction window will allow for proper grading and materials installation and provide a sufficient growing season for establishment of perennial vegetative cover.

With this in mind, the Brown's Creek Restoration Project is anticipated to start in the spring/summer of 2024 and will be substantially complete by September 1, 2024.

Summary of EAW Comments Received and Associated Responses

The 30-day EAW review and comment period began November 22, 2023, and terminated December 21, 2023. A public hearing was held as part of the regular meeting of the Brown's Creek Watershed District Board of Managers on December 13, 2023. Written comments were received from individuals representing several governmental organizations during the public comment period, listed below. BCWD board also received a comment from an individual representing the State Archaeologist's office well after the close of the comment period.

Comments were received from:

- Minnesota Indian Affairs Council
- Minnesota Pollution Control Agency
- State Historic Preservation Office
- Metropolitan Council
- Minnesota Trout Unlimited

- Minnesota Department of Natural Resources
- Washington County

Exhibit A is a table of summaries of the comments and responses to them. The original comment communications are collected as **Exhibit B**.

Issue Summary

The EAW and the comments on it support a determination that the Brown's Creek Restoration Project will not cause significant negative environmental impacts. Adverse impacts to the environment from the project will be temporary and BCWD will be able to substantially mitigate any adverse impacts in construction design and specification, as well as maintenance of the project. The project will provide significant environmental improvements and public-resource benefits to both the natural and human environments.

Analysis of Potential Impacts Against Evaluation Criteria in Minnesota Rules

In deciding whether a project has the potential for significant environmental effects and whether an Environmental Impact Statement is needed, an RGU must consider the impacts that may be reasonably expected to occur from the project under four criteria by which potential impacts must be evaluated (Minnesota R. 4410.1700, subp. 7A-7D).

A. Type, extent, and reversibility of environmental impacts

Based upon information provided in the EAW and the responses to review comments, the RGU concludes that the potential environmental effects of the project will be short-term and effectively counteracted by specifying mitigation measures in the contract and post-project maintenance regime. Generally, long-term project effects are beneficial both to the resource (Brown's Creek and the creek-corridor habitats) and humans who interact with it.

The project will result in partial conversion of disturbed forest habitat to open prairie and wetlands with a net improvement in habitats for fish, macroinvertebrates, herptiles, mammals, and pollinators. In general, the project will mitigate the cumulative effects of climate change and future land development in the area. The project will have net positive effects on soils and vegetation in the riparian corridor as a result of restored hydrology in the reconnected floodplain and through removal of invasive species and reestablishment of native species. The project will also have a net positive effect on downstream water resources by improving water quality and expanding habitat for aquatic biota.

The temporary negative impacts the project will create during construction (e.g., land disturbance, disturbance in the creek) will be mitigated as described in Table 12 in the EAW.

B. Cumulative potential effects.

The Brown's Creek Restoration Project is not dependent on the initiation or development of any other project, and BCWD does not expect that further restoration work will be necessary in the near term in this reach of the creek. To the extent that cumulative effects will occur, they will be improvements to water quality and habitat in the creek corridor from the project and other natural-resources improvements BCWD has undertaken in the creek since the late 1990s. The

project will aid in building resiliency in the stream channel to buffer potential effects of further urbanization and specific effects of climate change such as increased rain events.

Cumulative effects resulting from the proposed project are largely environmentally protective and beneficial in nature. There are no related projects affecting the proposed project area at this time that would result in significant cumulative impacts when combined with the proposed project.

C. The extent to which environmental effects are subject to mitigation by ongoing public regulatory authority.

As noted above and in Table 12 in the EAW, mitigation of any impacts from the project will be achieved through design and inclusion of best management practices and compliance with all applicable regulations, including permit requirements and other programs, as detailed in Table 7 in the EAW.

D. The extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies undertaken by public agencies or the project proposer, including other EISs.

No other environmental effects are anticipated. Environmental effects related to project activities, including stormwater management and invasive species control, can be controlled in accordance with the results of the following studies:

Minnesota Pollution Control Agency. State of Minnesota Stormwater Manual. 2024 Minnesota Pollution Control Agency. *Available at*
https://stormwater.pca.state.mn.us/index.php?title=Main_Page

Minnesota Invasive Species Advisory Council. 2009. A Minnesota State Management Plan for Invasive Species. State of Minnesota, St. Paul, MN.

Minnesota Department of Natural Resources. Best Practices for Meeting General Public Waters Work Permit GP 2004-0001 (reference for work exclusion dates) *Available at*
https://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_chapter1.pdf

Exhibit A

Table of Summaries of Comments and Responses

DRAFT

Exhibit B
EAW Comments

DRAFT

Brown's Creek Park EAW Comments and Responses to Comments

Dated completed: 01/03/2024

Organization / Person	Comment	Response to Comment
Minnesota Indian Affairs Council	The Minnesota Indian Affairs Council (MIAC) has completed the EAW for the proposed - Brown's Creek Restoration Project. Following review, the proposed project does not seem in any way to potentially damage or alter known cultural resources within the area. MIAC does not have any specific recommendations. For any questions or concerns regarding this review, please reply back to MIAC's cultural resource personnel.	Comment noted, no response needed.
Minnesota Pollution Control Agency	MPCA staff has reviewed the EAW and have no comments at this time. Requested that a notice of decision on the need for an Environmental Impact Statement.	Comment noted, notice of decision on need for an EIS forthcoming.
State Historic Preservation Office	We previously provided comments on this project in a letter dated November 3, 2023, to Mike Magner of the Minnesota Department of Natural Resources. We have reviewed the cultural resources survey letter report, Phase I Archaeological Survey for proposed trout stream habitat improvements on Brown's Creek, Washington County, Minnesota (August 19, 2023) as prepared by Mississippi Valley Archaeology Center. Based on the results of the survey, we conclude that there are no properties listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties in the area that will be affected by this project. (SHPO also noted the potential need for historic-resource review under federal law.)	Comment noted. As noted in the EAW, the project will be supported by federal grant funds provided through the Minnesota Pollution Control Agency, and all applicable regulatory requirements will be addressed in obtaining permits for the project.
Metropolitan Council	Item 6. Project Summary: The EAW states "The project will also include the creation of an American Disability Act-compliant 'spur' off Brown's Creek State Trail to improve public access to the creek." No additional expansion of the existing fixed route transit network is planned given the current transit investments and surrounding development patterns. Increasing the availability of existing (non-fixed route) public transportation services within Stillwater may be an option.	Comment noted. The BCWD is working with the Minnesota Department of Natural Resources Parks & Trails to incorporate ADA-site access from Brown's Creek State Trail, and will note the opportunity for transit connections in working with the City of Stillwater on the project as well.
Metropolitan Council	Item 7. Climate Adaptation and Resilience: The EAW adequately addresses climate adaptation and resilience, including disclosure of potential climate hazards and impacts, with proposed on-site adaptations. The project will include reconnecting the creek with the floodplain, installing grade control riffles to limit channel incision, installing woody material and boulders for instream habitat, removing woody invasive species, and reestablishing native riparian vegetation. The project would restore stream pattern and dimension to better accommodate flood events. The project proposes planting native vegetation to provide deep rooted vegetation to stabilize the creek, which would improve resiliency of the creek. Reconnecting the floodplain will slow flood waters and allow the water to spread out over a wider area, thereby decreasing flood energy and bank scour. These are all best management practices for stormwater management over the long-term. The project's nature and scale appears to reduce on-site vulnerabilities related to potential climate hazards (extreme heat and localized flooding).	Comment noted. No response needed.
Metropolitan Council	Item 10. Land Use: The EAW does not acknowledge the future land use guidance of the parcels. It should note that the western parcel has a future land use guidance of "Park, Rec, or Open Space" and that the eastern two parcels have a future land use guidance of "Medium Density Residential." Additionally, the parcel owned by the DNR (PIN 2003020320020) has a future land use guidance of Medium Density Residential; however, on page 14, the EAW indicates that this area will remain as open space. The City will need to submit a comprehensive plan amendment in the future to reflect that change in the City's 2040 Plan. Similarly, the noted RA zoning for the eastern two parcels does not align with the parcels' Medium Density Residential land use guidance. Minn. Stat § 473.865 requires that planned land use and zoning be reconciled.	Comments noted. EAW text will be updated to reflect the future land use guidance as specified in the comment provided. BCWD also will work with the City of Stillwater on the project under terms that will be captured in a cooperative agreement between the parties. While BCWD will confirm that the project is consistent with the city's long-term land-use planning and zoning, Stillwater will retain decisionmaking authority and responsibility for compliance with applicable statutory requirements.

Metropolitan Council	Item 18. Greenhouse Gas (GHG) Emissions/Carbon Footprint: The GHG emission sources for this project include the operation of construction equipment, and tree and brush removal during the conversion of forest to prairie/wetland. Total emissions from construction equipment were estimated at 37.01 tons of carbon dioxide equivalents (CO2e) which were calculated using the appropriate global warming potential for each GHG and the appropriate unit conversion factor. Land use conversion from forest to grassland is the second category of emissions from the project. It is estimated that select tree harvest proposed for the project will remove approximately 80% of the trees from a 2.02-acre area, which is equivalent to 1.62 acres of forest converted to grassland. The average carbon loss per acre for conversion from forest to grassland would be an estimated loss of 14.81 tons of CO2e per acre converted, which equates to 24.00 tons for the proposed land conversion. However, all harvested trees and brush will be reincorporated into the project for stream and floodplain habitat enhancements, which is assumed to be a carbon sink. As a result, the total potential project-related emissions are estimated at 37.01 tons of CO2e. In summary, the project will reduce the potential for bank erosion through bank reshaping and reconnection of the floodplain. Establishment of diverse, native vegetation will increase sequestration of carbon through the dense growth of plants and subsequent storage of carbon in the soil through the root systems. The project, as proposed, does not have the potential for significant environmental effects based on the type, extent and reversibility of impacts related to emissions of greenhouse gasses which are reasonably expected to occur.	Comment noted. No response needed.
Minnesota Trout Unlimited	No specific comment on EAW; statement of support for the proposed project.	Comment noted, no response needed.
Washington County	Ensure traffic control for access off the County Road; access should be via Neal Ave if possible. If not, possible access should meet the county road at a 90-degree angle.	Proposed access to project area west of Neal will be off McKusick Road to limit impacts to existing wetlands. Access to the project area east of Neal Ave will be off Neal Ave.
Washington County	There is the possibility of a future pedestrian underpass under the county road. This is an area that pedestrians want to cross to reach Brown's Creek Trail, and the steam culvert is a promising location elevation-wise. Would a trail along the creek ever be plausible, and is it compatible with the work being done?	A trail along the creek from an underpass under the county road is not compatible with soft soils associated with seepage wetland in the area.
Washington County	The project will need to protect the existing curb and gutter, storm sewer outlets, and guardrail.	Comment noted. Construction plan notes and contract requirements will ensure all existing infrastructure is protected.
Washington County	While the disposal site is located on the City of Stillwater property, this location would make for a good stormwater management basin for a future project.	Comment noted. The proposed spoils area is a disturbed upland meadow that appears have been filled previously, based on notes from members of the Technical Advisory Committee for the project. Hauling soil off the project site would incur significant cost to the project. This site would have limitations as a stormwater management basin given the proximity to a cold-water trout stream. BCWD would be willing to discuss project specific ideas to determine feasibility.
Washington County	We find the Brown's Creek Restoration Project EAW in general alignment with the Washington County Groundwater Plan. In particular note, we appreciate considerations taken for habitat protection/securement at various trophic levels and for planning efforts to increase long-term native species' and floodplain resilience.	Comment noted, no response needed.
Washington County	This project is within the Browns Creek Central High Priority Area of the Washington County Land and Water Legacy Program Top Ten Priority Areas. The county appreciates the effort to restore critical water resources in this area. This project is aligned with the goals of the Land and Water Legacy Program and has taken the necessary precautions to maintain best stewardship practices.	Comment noted, no response needed.
Minnesota Department of Natural Resources	Page 7, Project Description. We support the Brown's Creek Restoration Project that connects the incised channel with the floodplain and reconnects several oxbows.	Comment noted, no response needed.
Minnesota Department of Natural Resources	Page 12, Permits and Approvals. Please submit the floodway no-rise certificate to the DNR as part of the public waters work permit application.	Comment noted. The no-rise certificate is in development and will be provided once complete (expected by January 15, 2024).
Minnesota Department of Natural Resources	Page 14, Geology. This section states that there are no susceptible geologic features in the project area. Please be aware that a portion of the project area is mapped as a region prone to surface karst feature development, and that natural springs and seeps have been documented extensively throughout the project area. Great care should be taken if karst features are encountered during construction to avoid contamination groundwater.	Comment noted. We will preserve any surface karst features encountered including spring seeps and springs. There are construction plan call outs that depict the locations of springs and seeps identified in the project area.
Minnesota Department of Natural Resources	Page 17, Stormwater. Please be sure that all requirements regarding state-listed species from the Natural Heritage letter are incorporated into the SWPPP and construction plans. Please use only appropriate BWSR-approved native seed mixes, and do not apply fertilizer. Wildlife-friendly erosion control materials are required.	Comment noted. Requirements regarding state-listed species from the Natural Heritage Review Letter will be incorporated into the stormwater pollution prevention plan and construction plans as noted. In addition, the project specifications include state-approved seed mixes, and no fertilizers are proposed. The existing construction plan includes requirements for wildlife-friendly erosion control materials.

Minnesota Department of Natural Resources	Page 19, Rare Features. This section should discuss that a Natural Heritage letter was issued on May 9, 2023 and include it in the appendix. Please see the attached Natural Heritage letter and include it with DNR comments in the Record of Decision. It contains required avoidance measures for the state-threatened Blanding's turtle. The Natural Heritage letter also recommends a rare plant survey be conducted. This section of the EAW does not mention that state-threatened Tubercled rein orchid (<i>Platanthera flava</i> var. <i>herbiola</i>), has also been documented in the vicinity. Please refer to the Natural Heritage letter for further direction on the rare plant survey process.	The May 9, 2023 letter addressed to Aaron DeRusha was in response to a potential Conservation Partners Legacy Program grant for a larger project area than is proposed under the EAW for Brown's Creek stream restoration. Removal of invasive species from City of Stillwater property may be undertaken in the future, under a separate scope of work. As stated in the EAW, "A review of rare features for a one-mile search area around this project boundary was conducted using the Natural Heritage Information System database. No state-listed endangered, threatened, or special concern species were identified within the project site, but three state-listed species were identified within one mile of the project boundary, including Louisiana waterthrush (<i>Parkesia motacilla</i>), Blanding's turtle (<i>Emydoidea blandingii</i>), and water-willow (<i>Decodon veticillatus</i> var. <i>laevigatus</i>)." The difference between these reviews was that for our smaller project area, tubercled rein orchid and Goldie's fern were not found within one mile. It should be noted that the BCWD engineer has a NHIS license (LA-1068) and submitted a project-specific MCE (2023-00785) for review on October 13, 2023; no response has been provided to date. Blanding's turtle avoidance measures will be required in the construction plans and specifications.
Minnesota Department of Natural Resources	Section 14.c. Impacts to Ecological Resources. The project proposes increases in floodplain connectivity and infiltration in the riparian and upland habitats. Some questions still remain that should be addressed in this section: a. What method will be used to limit compaction or remedy areas of soil compaction following construction? b. Where any considerations made regarding aquatic organism passage through the box culvert? c. What method will be used to remove black locust to prevent a flush of black locust sprouts or seedlings? d. What method(s) will be taken to remove common buckthorn, glossy buckthorn, and exotic bush honeysuckle to limit resprouting and subsequent ongoing maintenance? e. We recommend that vegetation management include control of Sandbar Willow (<i>Salix interior</i>) migrating into the project area.	a: Soil compaction to be addressed through soil scarification/decompaction methods after construction and before seeding and final soil stabilization. b: Yes, the proposed project includes installation of constructed riffles downstream of the box culverts to raise the creek bed and increase the baseflow water elevation specifically to allow fish passage through the culverts. c: Cut stump treatment will be used on black locust and any other woody invasive species, and the project will include a post-construction vegetation-maintenance plan that will include followup treatments of resprouts. d: Same method as described under c. e: We will add sandbar willow to the list of species to manage as part of the vegetation-management plan.
Minnesota Department of Natural Resources	Project Design. As the project designs are finalized, DNR would like more information on how key features were determined in the design of the new stream channel, and offers the following questions and comments: a. What are the general stream widths and bankfull height in the design? b. Are all the constructed riffles grade control? Will some riffle material be mobile at bankfull to migrate downstream to the next riffle? This application may be limited by the sediments migrating in from upstream. Hopefully, the efficient channel will recruit some gravels into the project area. c. Will the project consider additional roughness across channel plugs to limit cutoffs occurring in the near term? Consider using remaining woody material that can be placed/partially buried onto the newly created floodplain. d. There may be an opportunity/benefit for BCWD and DNR Fisheries to coordinate management of the Aquatic Management Area (AMA) so the subsequent handoff of project and benefits can continue within the Brown's Creek AMA. e. With the added sunlight herbaceous wetland vegetation should do well in this area.	a: general stream width (minimum toe to toe width) is 9 feet (refer to Sheet 26, detail 1/26), bankfull height above baseflow water elevation is 1.8 feet per multiple details on Sheet 24. These dimensions are based off reference reach data collected upstream and downstream of the project area. b: Yes, all constructed riffles will act as grade control, but note the details shown on Sheet 26 (detail 2/26) call out the use of existing native gravel within the void spaces of the constructed riffle and over the riffle surface to emulate natural conditions. Some of these gravels are anticipated to be carried downstream to the next riffle during bankfull or greater flows. The reduced channel width should improve fine sediment transport and minimize embeddedness of coarse substrates in the channel. c: Yes, all channel plugs are being protected by woody material and toewood to prevent cutoff of oxbow channels. However, the project is located in a Zone AE floodplain which means certification of no-rise of the 100-year flood will be required. This will limit the ability to manipulate floodplain roughness. d: Comment noted; BCWD will work with DNR staff to coordinate long-term management of the Aquatic Management Area. e: Agreed.

Prepared by Emmons & Olivier Resources, Inc.
Prepared for Brown's Creek Watershed District

Brown's Creek Restoration Project

Environmental Assessment Worksheet



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ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the EQB Monitor. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. PROJECT TITLE

The project is called Brown’s Creek Restoration Project. This will be referred to as “the project” in the EAW.

2. PROPOSER

Proposer: Brown’s Creek Watershed District

Contact Person: Karen Kill

Title: Administrator

Address: 455 Hayward Ave North

City, State, Zip: Oakdale, MN 55128

Phone: 651-330-8220

Email: kkill@mnwcd.org

3. RESPONSIBLE GOVERNMENT UNIT (RGU)

RGU: Brown’s Creek Watershed District

Contact Person: Karen Kill

Title: Administrator

Address: 455 Hayward Ave North

City, State, Zip: Oakdale, MN 55128

Phone: 651-330-8220

Email: kkill@mnwcd.org

4. REASON FOR EAW PREPARATION

Required

Discretionary

EIS Scoping

Citizen petition

Mandatory EAW

RGU discretion

Proposer initiated

The project requires a mandatory EAW since the proposed project design will disturb more than 500 linear feet of stream and will reconnect several oxbow channels that occur within the project site. Brown’s Creek is a public water of the state and designated trout stream.

5. PROJECT LOCATION

County: Washington

City/Township: Stillwater

Table 1. PLS Location (¼, ¼, Section, Township, Range).

¼, ¼	Section	Township	Range
NE ¼, SE ¼	19	30 N	20 W
NW ¼, SW ¼	20	30 N	20 W

Watershed (81 major watershed scale): 37 St. Croix River - Stillwater

GPS Coordinates: (45.07067, -92.84368)

Table 2. Tax Parcel Numbers.

Parcel ID	Section	Township	Range	Owner
1903020410001	19	30N	20W	City of Stillwater
2003020320020	20	30N	20W	State of MN DNR
2003020320015	20	30N	20W	Beltram H Van Tassel TRS

The project site is located along Brown’s Creek approximately between McKusick Road and the Brown’s Creek State Trail in Stillwater, Washington County, Minnesota (Figure 1). Figure 2 shows the project site overlaid with 2-foot topographic contours.

6. PROJECT DESCRIPTION

a. Project Summary

BCWD proposes to conduct a stream habitat enhancement project in Brown’s Creek to address floodplain abandonment, accelerated bank erosion, invasive species, and degraded instream habitat to restore the ecological and hydrologic functions of the creek and adjacent floodplain. The project will include reconnecting the creek with the floodplain, installing grade control riffles to limit channel incision, installing woody material and boulders for instream habitat, removing woody invasive species, and reestablishing native riparian vegetation. The project will be funded by a federal 319 grant

administered by the Minnesota Pollution Control Agency and funds levied on property within the jurisdiction of the Brown's Creek Watershed District.

b. Description

BCWD proposes to enhance approximately 2,500 feet of stream along Brown's Creek and reconnect several cutoff oxbow channels. The existing reach begins immediately south of McKusick Road and ends just downstream of the Brown's Creek State Trail (Figure 3). The project will include earthwork to reconnect the creek with the floodplain (approximately 1 to 2.7 feet of cut depending on existing creek bank heights) and to reconnect several cutoff oxbow channels. Several new stream meanders will also be implemented to increase stream length and sinuosity to reestablish a natural meandering stream channel. The project will also include invasive tree and shrub harvest and installation of tree trunks, brush bundles, and rock riffles for fish and macroinvertebrate habitat. Figure 4 shows the proposed project elements. Grade-control riffles will emulate natural rock riffles and will be installed in the creek to increase the baseflow water elevation to restore riparian hydrology that has been impacted by channel incision. In general, earthwork and selective tree harvest will occur within 50 feet of the creek, but invasive shrub harvest is proposed up to 200 feet from the stream where dense stands of common and glossy buckthorn occur. Many of the trees and shrubs proposed to be harvested will be reincorporated into the project for bank stability and habitat features. The project will also include the creation of an American Disabilities Act-compliant "spur" off Brown's Creek State Trail to improve public access to the creek. Construction site access will occur off McKusick Road and Neal Avenue. No alterations to existing infrastructure are proposed.

Erosion control measures that will be implemented during project construction include installation of temporary sediment BMPs such as biologs and soil berms to capture surface soil erosion, and installation of both hydromulch and crimped straw mulch on all disturbed soils. All disturbed soils will be seeded with a cover crop (oats and winter wheat) and native state seed mixes based on land cover type. Erosion control measures will be installed prior to construction, and hydromulch and native seeding will occur immediately after final grading per the project Stormwater Pollution Prevention Plan.

Construction Phasing:

1. Installation of erosion control BMPs
2. Initiate selective tree harvest and temporary stockpile of harvested wood
3. Bank grading and installation of grade control riffles and instream habitat
4. Installation of hydromulch and native seed to establish permanent vegetation
5. Removal of erosion control BMPs following establishment of native vegetation

c. Project Magnitude

Table 3. Project Quantities.

Project Feature	Quantity
Total Project Acreage	11.06 acres
Stream Corridor Length	2,500 ft
Number of Housing Units	N/A
Residential Building Area	N/A
Commercial Building Area	N/A
Industrial Building Area	N/A
Institutional Building Area	N/A
Other Uses	none
Structure Heights	N/A

d. Purpose

Rapid stream assessments and geomorphic surveys have identified floodplain abandonment (channel incision), bank erosion, invasive species, and degraded instream and riparian habitat throughout the project reach. The BCWD engineer estimates that the reach contributes 25.4 tons of sediment and 22.9 pounds of phosphorus per year to Brown’s Creek. One of the primary purposes for this project is to address the biotic impairments identified in Brown’s Creek, which is impaired for both aquatic life and aquatic recreation uses due to low fish and macroinvertebrate bioassessment scores, dissolved oxygen, thermal loads, and *E. coli*. The main water quality concerns for Brown’s Creek and its tributaries are total suspended solids, total phosphorus, *E. coli*, and thermal loads. In addition to the impairments of Brown’s Creek, the Brown’s Creek watershed is a part of the St. Croix River and Lake St. Croix watersheds. As such, Brown’s Creek was assigned a phosphorus load reduction target of 848 pounds per year in the Lake St. Croix Nutrient Total Maximum Daily Load implementation plan. Stream stressors identified for Brown’s Creek include excess sediment and elevated stream temperatures; therefore, a project that reduces bank erosion and channel incision would directly benefit the biotic community of the creek and downstream aquatic resources by reducing sediment contributions to the creek. Stream channel narrowing proposed for the project will reduce the channel width and create deeper water through the reach that will help mitigate thermal impacts to the creek. The overarching goal of this project is to reestablish a connected floodplain that will minimize stream bank erosion and reduce sediment and nutrient loading to the creek and downstream waterbodies.

e. Future Stages

Are future stages of this development including development on any other property planned or likely to happen? Yes No

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

f. Prior Stages

Is this project a subsequent stage of an earlier project? Yes No

If yes, briefly describe past development, timeline and any past environmental review.

7. CLIMATE ADAPTATION AND RESILIENCE

a. Climate Trends

Climate change will cause Minnesota to become warmer and wetter, and already there have been dramatic increases in the intensity and frequency of rainstorms on an annual basis (MNDNR, 2023a). In the Lower St. Croix River Watershed where the project is located, the average annual precipitation has increased by 4.01 inches since 1895 (MNDNR, 2023b). The average annual temperature has increased by 2.75° F since 1895, with the most dramatic increases being in the average minimum temperature (increase of 3.86° F since 1895) and modest increases in the average maximum temperature (increase of 1.66° F since 1895).

Climate change will result in more frequent and intense rainstorms that are expected to result in increased flood events through the riparian corridor. However, the post-project riparian corridor will be more resilient to climate change due to a larger floodplain that will reduce overall flood energy in the floodplain. Reconnecting the floodplain will slow flood waters and allow the water to spread out over a wider area, thereby decreasing flood energy and bank scour.

b. Design Adaptations

Table 4. Climate Trends and Adaptations.

Resource Category	Climate Considerations	Project Information	Adaptations
Project Design	Increase in annual precipitation, increase in frequency and intensity of rainstorms	Increase in rainstorm intensity may increase the severity of flooding along the stream channel	The project is designed to allow dissipation of flood energy over the reconnected floodplain

Resource Category	Climate Considerations	Project Information	Adaptations
Land Use	Increase in average annual temperature	Removal of some of the riparian canopy may increase ground and water temperatures	All disturbed soil will be revegetated with native species that will also provide near-stream shade of the creek Installation of rock riffles will maintain deep pools, and narrowing the stream channel in select areas will help counteract the increase in solar radiation
Water Resources	Addressed in section 12	Addressed in section 12	Addressed in section 12
Contamination/ Hazardous Materials/Wastes	Addressed in section 13	Temporary increased risk of fuel contamination from construction vehicles working in the floodplain	Construction will not occur during storms and vehicles will not be parked or refueled in the floodplain
Fish, wildlife, plant communities, and sensitive ecological resources (rare features)	Addressed in section 14	Addressed in section 14	Addressed in section 14

8. COVER TYPES

Table 5 describes the land cover features pre-project and post-project. The pre-project land cover consists of a disturbed floodplain forest dominated by boxelder, alder, and woody invasive species with scattered black willow, silver maple, elm, and cottonwood. The upland areas contain boxelder, aspen, bur oak, pin oak, and black cherry with an understory dominated by common buckthorn. The post-

project land cover will still consist of a wet meadow/ shrub carr adjacent to the creek with a semi-open canopy floodplain forest. All woody invasive species including common buckthorn, exotic bush honeysuckles, amur maple, and black locust will be removed within the construction limits. No impervious surfaces are proposed for the project. The project will open the canopy above the stream banks to promote the growth of deep-rooted herbaceous vegetation to help stabilize the soil long-term. See Figure 5 and Figure 6 for existing and proposed land cover maps, and Table 6 for a summary of proposed tree harvest within the project boundary.

Table 5. Land Cover Before and After.

Project Feature	Before (acres)	After (acres)
Wetlands (wet meadow/ floodplain/ shrub carr)	8.58	8.58
Streams	1,960 linear ft	2,500 linear ft
Upland Woodland/Forest	1.78	0.43
Oak savanna	0	0.34
Grassland/Prairie	0.40	1.41
Impervious Surfaces	0.30	0.30
Total Acreage	11.06	11.06

Table 6. Proposed Tree Harvest.

Trees	Percent	Number
Percent tree canopy removed or number of trees >6" DBH removed for the project	N/A	212 (184 are boxelder)
Number of new trees planted	N/A	TBD

9. PERMITS AND APPROVALS REQUIRED

Table 7. Permits and Approvals Required.

Unit of Government	Type of Application	Status
City of Stillwater	Land Alteration Permit	To Be Applied For
City of Stillwater	Floodplain Permit/No-Rise Certificate	To Be Applied For
City of Stillwater	Grading Permit	To Be Applied For

Unit of Government	Type of Application	Status
Local Government Unit/Board of Water and Soil Resources/U.S. Army Corps of Engineers	Joint Permit Application (Wetland Delineation Review / Wetland Impacts) Section 401 Water Quality Certification	To Be Applied For
Brown's Creek Watershed District	Floodplain and Drainage Alterations Wetlands Management Erosion and Sediment Control Shoreline and Streambank Improvements	To be assessed during project design
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System/State Disposal System permit	To Be Applied For
Minnesota Department of Natural Resources	Public Waters Work Permit Special Use Permit (State Trail)	To Be Applied For

10. LAND USE

a. Land Use Descriptions

i. Existing Land Use

The project area consists of a disturbed floodplain forest with adjacent upland woodlands on an elevated terrace. The project area occurs within Brown's Creek Nature Preserve (owned by the City of Stillwater) and the Brown's Creek Aquatic Management Area managed by the MNDNR. A small portion of the project occurs on a private parcel. Brown's Creek State Trail occurs along the southern edge of the project boundary. No building structures occur within the project site.

ii. Planned Land Use

Land use within the project boundary will not change as a result of the project.

The Brown's Creek Restoration Project is part of BCWD's Nine Key Element (NKE) Plan. The Environmental Protection Agency approved the NKE plan which provides a list of best management practices that when implemented will yield the estimated reductions needed to meet water quality standards and improve habitat quality in the creek. The strategies listed in the NKE plan are intended to provide the flexibility to BCWD to choose the best practice with the available implementation opportunity, taking into account landowner outreach and permission along with coordinating efforts with multiple public entities that work within the watershed. The milestone strategies found in table 7

of the NKE plan include the planned years for the activities and the completed years for the activities if the activities have been completed. This project is Phase 1 in the implementation of the NKE plan to restore and protect the water quality of surface water resources in the watershed. The design for the project will include BMPs identified in the NKE that will address reducing phosphorus, total suspended solids, thermal stressors, and E. coli.

iii. Zoning

The project reach contains two zoning districts designated by the City of Stillwater. Brown's Creek Nature Preserve is zoned PROS (Park, Recreation, or Open Space) and the two parcels east of Brown's Creek Nature Preserve are zoned RA (One-Family Residential). Most of the project reach is within Federal Emergency Management Agency Regulatory Floodway Zone AE (Figure 7).

iv. Critical Facilities

No critical facilities are proposed within the project area.

b. Land Use Compatibility

The project is compatible with applicable land use, zoning, and watershed plans, though the City of Stillwater will be alerted to the advisability of addressing the inconsistency of current land-use guidance calling for medium-density residential development of the project parcel designated by property identification number 20 0303 20 32 0020 (owned by the State of Minnesota), given the incompatibility of the parcel's condition (largely floodplain) and features (the creek runs through it) with development.

The proposed project will help enhance the native vegetation within the stream corridor, improve water quality, and enhance fish and wildlife habitat, consistent with goals set out in BCWD NKE plan.

Although a large proportion of the project area is within the FEMA floodplain, no structures or fill will be added that might change the flood elevations within or upstream of the project area.

c. Mitigation Measures

No mitigation measures are required for project compatibility with local land use code.

11. GEOLOGY, SOILS, AND TOPOGRAPHY

a. Geology

Precambrian bedrock is exposed along the St. Croix River, and the depth of glacial drift over bedrock is generally less than 100 feet but can be close to 200 feet in depth. Ordovician and Devonian dolomite with some limestone, sandstone, and shale occur locally in the area, particularly in dissected stream valleys near the St. Croix River valley (MNDNR, 2023c).

There are no susceptible geologic features in the project area. The geology will not limit any aspect of the project, and the project will not have a significant effect on any geologic features.

b. Soils and Topography

The Web Soil Survey mapped 3 unique soil units within the project area. The soils consist of a range of soil types and textures common to floodplains and uplands. Two of the three mapped upland areas are considered prime farmland while the entire floodplain is not considered prime farmland. Table 8 lists the soils identified in the project area.

Table 8. Soils Data from the Web Soil Survey.

Soil Unit	Parent Material	Farmland Class	Hydric Classification	Drainage Class
49B – Antigo silt loam, 2 to 6 percent slopes	Loess and/or silty glaciofluvial deposits over loamy glaciofluvial deposits over stratified sandy and gravelly outwash	Prime farmland	Not hydric	Well drained
189 – Auburndale silt loam, 0 to 2 percent slopes	Loess and/or silty alluvium over dense loamy till	Not prime farmland	Primarily hydric	Poorly drained
454D – Mahtomedi loamy sand, 12 to 25 percent slopes	Outwash	Not prime farmland	Not hydric	Excessively drained

The mapped soils along the stream corridor are susceptible to erosion due to floodplain abandonment and channel incision that concentrate flood energy within the stream channel. Reconnecting the creek to the floodplain will allow flood flows to spread out and slow down to limit erosive stream bank scour. Increasing native herbaceous vegetation will promote further soil stabilization along the stream banks and in floodplain through establishment of deep-rooted plants. Additional measures to stabilize soils during project construction are listed in #6 Project Description.

12. WATER RESOURCES

a. Surface Water and Groundwater Features

i. Surface Water

Brown's Creek is a state-designated Public Water watercourse (AUID 07030005-520) and designated trout stream. From the downstream end of the project reach, Brown's Creek flows east for approximately 2.3 miles until it empties into the St. Croix River near the northern extent of Lake St. Croix. Brown's Creek is the primary drainage for the watershed. Nearby Public Waters basins include Twin Lakes located one-quarter mile north of the project area and Lake McKusick which is located a one-half mile southeast of the project area. Twin Lakes is in an adjoining watershed that does not discharge into Brown's Creek. An unnamed Public Water Wetland located 0.23 miles northeast of the project area is within the Brown's Creek watershed, but it lacks a definable surface water connection to Brown's Creek.

The upper Brown's Creek watershed contains a mosaic of riparian wetlands. Emergent marshes, shrub swamps, and floodplain forests border the creek from the headwaters downstream to the project reach. Most of the project area is mapped as emergent marsh and shrub swamp by the National Wetland Inventory.

Two disjunct reaches of Brown's Creek are protected by the MNDNR as part of the Brown's Creek Aquatic Management Area. The AMA includes a short section of creek within the project area located immediately downstream of Neal Avenue, and another section of creek that measures approximately 4,500 feet in length within the Brown's Creek gorge. Permitted activities in these areas include angling and wildlife observation.

Brown's Creek is listed as impaired for aquatic life and aquatic recreation. According to the MPCA, the creek may not be suitable for swimming or wading due to high bacteria levels and is also impacted by low dissolved oxygen content, lack of coldwater assemblage, and turbidity. Lake St. Croix, which is the receiving water of Brown's Creek, is listed as impaired for aquatic consumption for high levels of mercury, PCBs, and perfluorooctane sulfonate in fish tissue. The St. Croix River, which flows through Lake St. Croix, is designated as an Outstanding Resource Value Water by the MPCA and is also designated by Minnesota and the National Park Service as a Wild and Scenic River.

ii. Groundwater

Groundwater is expected to be at or near the elevation of Brown's Creek through the project area. Outside the immediate stream corridor, the depth to groundwater is generally less than 20 feet.

The project site is located within the Drinking Water Supply Management Area for Stillwater that has a moderate vulnerability rating. The project site is located just outside the Wellhead Protection Zone for Stillwater, with the boundary of the wellhead protection zone located approximately 600 feet east of the project site.

Three MNDNR observation wells are located within the project site and are clustered near the southwest corner of McKusick Road and Neal Avenue. The nearest wells outside the project site are private domestic wells located at the residences along McKusick Road northeast of the project site. Well locations were identified from the Minnesota Well Index which is maintained by the Minnesota Department of Health (MDH, 2023). Well logs are included in Appendix B.

b. Impacts and Mitigation

i. Wastewater

No wastewater will be stored onsite or produced during or after this project.

ii. Stormwater

Pre-Construction Site Runoff

The project area is naturally vegetated which helps filter and trap runoff from the surrounding roads and developed areas. There are several stormwater outfalls within the project area, but these will not be altered by the proposed project.

Post-Construction Site Runoff

One of the primary goals of this project is to reduce bank erosion and instream sedimentation by reconnecting the floodplain, reshaping stream banks to a stable slope, and promoting the growth of native herbaceous vegetation to help stabilize floodplain soils. This will reduce sediment and nutrient loading to downstream resources. The filtering capacity of the floodplain will be enhanced through reconnection to the creek and establishment of diverse, native riparian species. Runoff from the surrounding land will not be altered.

Stormwater and Erosion Control BMPs

The project will disturb of more than one acre of land; therefore, the construction contractor will be required to apply for coverage under the National Pollutant Discharge Elimination System/State Disposal System General Permit to the MPCA prior to the start of construction. A Stormwater Pollution Prevention Plan will be required and will include erosion prevention and sediment control best management practices to comply with the requirements of the permit. BMPs will be employed during construction, and inspection of BMPs will be required after each rainfall event that exceeds one-half inch in 24 hours. Sediment-control BMPs will be installed to prevent runoff to the creek while earthwork is in progress. Immediately after the earthwork is complete, all disturbed areas will be seeded and stabilized with hydromulch, crimped straw mulch, and other BMPs as necessary.

iii. Water Appropriations

No water appropriations will be required during or after construction. No dewatering or well abandonment will occur for the project.

iv. Wetlands

The National Wetlands Inventory indicates that most of the project reach is mapped as either PEMA1 (freshwater emergent wetland), PSS1A/ PSS1C (freshwater shrub wetland), and PSS1/EM1Ad (freshwater shrub/emergent wetland). A level 2 wetland delineation completed for the project delineated several wetlands above the ordinary high water level (OHWL) of Brown's Creek. Below the OHWL, in-channel wetlands and small floodplain benches were documented adjacent to the creek and within disconnected oxbow channels. This project may change the type and extent of wetlands by

reducing the tree canopy and increasing the inundation period in the reconnected floodplain, but it will not convert wetlands to non-wetlands, so no loss of wetlands is anticipated from construction of the project.

v. *Other Surface Waters*

Downstream receiving waterbodies including the lower reach of Brown’s Creek and Lake St. Croix could be affected by the proposed project activities. As such, installation and maintenance of construction and sediment-control BMPs will be completed to minimize water quality impacts to downstream resources. In the long-term, the restored floodplain and stabilized bank soils will reduce sediment and nutrient loading to the downstream waterbodies.

13. CONTAMINATION, HAZARDOUS MATERIALS, AND WASTE

a. Pre-Project Site Conditions

According to historical aerial photos accessed through Minnesota Historical Aerial Photographs Online, the project area has been in mixed agricultural use since at least the 1930s. Hay fields/ pastures and small farmsteads can be seen in aerial images taken in 1938 and 1964. By 1992, development began to increase in the area and has progressed to the present day with numerous housing developments and residential streets now located within one mile of the project site.

No existing site contamination is known within the project boundary. A desktop review of both the Minnesota Department of Agriculture and MPCA’s “What’s In My Neighborhood” databases did not identify any known environmental contamination within the project boundary, but several construction stormwater projects related to stormwater improvements and residential developments were located within 0.5 miles of the project. In addition, one hazardous waste site was located approximately 0.15 miles northeast of the project area that is related to an automotive repair shop.

b. Project Related Generation/Storage of Solid Wastes

Project construction will require tree and brush removal and grading to reconnect the floodplain. Excess soil derived from the project will be spread in an upland area delineated within the project boundary. All spread soils in the upland will be seeded with native prairie seed and covered with straw mulch. Woody material from tree and shrub harvest will be repurposed for instream habitat features or used as brush piles in the stream corridor for non-game habitat. Any non-biodegradable waste generated from installation of temporary erosion control BMPs will be removed from the project site by the contractor.

c. Project Related Use/Storage of Hazardous Materials

Construction of the project will not require storage of hazardous materials. Portable tanks of diesel fuel and hydraulic fluid will be used to service heavy machinery but will not be stored onsite. Small

amounts of grease and petroleum will be stored in weatherproof containers and stored inside a job box or a contractor trailer. Construction equipment will be refueled outside of the immediate floodplain and liquid storage tanks will not be kept onsite.

d. Project Related Generation/Storage of Hazardous Wastes

The project is not anticipated to generate hazardous waste during construction. The only waste generated will be those discussed in Item 13.b: soils, woody debris, and scraps from BMP materials.

14. FISH, WILDLIFE, PLANT COMMUNITIES, AND ECOLOGICAL RESOURCES

a. Fish and Wildlife Resources

Original public land survey records indicate that pre-settlement vegetation consisted of bur oak and other timber with an undergrowth of oak bushes and hazel. Post-settlement, the riparian corridor has been impacted by a history of agriculture and drainage alterations. Much of the stream channel has been disconnected from its floodplain with exposed eroded banks along outside bends of meanders. The western half of the project area (upstream of Neal Avenue) is part of Brown's Creek Nature Preserve and consists of a mosaic shrub-carr/open meadow wetland and degraded floodplain forest. The floodplain forest is dominated by common buckthorn and boxelder with scattered black willow, silver maple, elm, and cottonwood. The upland forest contains boxelder, aspen, bur oak, pin oak, and black cherry.

Despite impacts from historic land use, the stream corridor provides habitat for a variety of wildlife and serves as an important wildlife corridor within the city. Fish surveys conducted in the project reach by the MNDNR in 1999 recorded green sunfish, bluntnose minnow, central mudminnow, creek chub, black bullhead, fathead, and stickleback. MNDNR fish surveys conducted in 2021 recorded central mudminnow, fathead minnow, longnose dace, and rainbow trout. Approximately 1,000 rainbow trout yearlings are stocked annually within the Brown's Creek Nature Preserve.

b. Rare Features

A review of rare features for a one-mile search area around the project boundary was conducted using the Natural Heritage Information System database. No state-listed endangered, threatened, or special concern species were identified within the project site, but three state-listed species were identified within one mile of the project boundary, including Louisiana waterthrush (*Parkesia motacilla*), Blanding's turtle (*Emydoidea blandingii*), and water-willow (*Decodon veticillatus* var. *laevigatus*).

The Blanding's turtle is a state-threatened species that uses a variety of habitats including ephemeral wetlands, open marshes, and bottomland wetlands as well as sandy upland areas for nesting (MNDNR, 2023d). A combination of wetland complexes and adjacent sandy upland areas are required to support viable populations for Blanding's turtles. The project area contains suitable foraging habitat such as the wet meadows and floodplain areas near the creek, and suitable nesting habitat may occur in the

dry upland areas near the Brown’s Creek State Trail. Overwintering habitat is marginal within the creek, but possible overwintering wetlands and deep marshes occur in both the Brown’s Creek Nature Preserve and the Oak Glen golf course just south of the project area.

The Louisiana waterthrush is listed as a species of special concern. It is a migratory neotropical warbler that generally occurs in mature riparian forests near swiftly flowing streams in steep-sided forested valleys. In east-central Minnesota, the Louisiana waterthrush is associated with the St. Croix River valley and its tributaries (MNDNR, 2023e). The Louisiana waterthrush has been found in the lower gorge of Brown’s Creek where steep forested bluffs occur adjacent to the stream. The lower gorge contains excellent foraging and nesting habitat where there is a prevalence of rocky riffles and swift-flowing water that supports abundant macroinvertebrates. Conversely, most of the stream bed through the project reach is covered with fine sandy substrates and lacks swift-flowing water to expose coarse substrates preferred by a variety of macroinvertebrates. In addition, the surrounding floodplain forest consists of young trees dominated by boxelder and woody invasive species that provide marginal nesting opportunities along the creek.

Water-willow is a species of special concern that grows along marshy or boggy fringes of lakes or slow-moving streams, often within the beds of cattails and bulrushes (MNDNR, 2023f). This type of habitat does not exist within the project site, and the species is unlikely to occur within the project reach. The known population within one mile of the project reach occurs along a lake shore.

A review of Native Plant Communities and Sites of Biodiversity Significance was completed for the project, and no mapped Native Plant Communities or Sites of Biodiversity Significance occur within the project boundary. However, the Natural Heritage Information System review identified the lower gorge of Brown’s Creek as an area of High Biodiversity Significance as mapped by the Minnesota County Biological Survey. This area contains several native plant communities that support habitat for rare species such as the Louisiana waterthrush. The gorge is located approximately one mile downstream of the project reach.

In addition, the USFWS Information for Planning and Consultation (IPaC) Resources List was reviewed for information on endangered species, critical habitats, migratory birds, refuges and hatcheries, and wetlands that may occur within the same county as the project reach. The IPaC report identified 7 federally-listed species that may occur within the project area and 13 additional bird species that are either protected under the Migratory Bird Act or the Bald and Golden Eagle Protection Act (Table 9, Appendix A). The IPaC report did not identify any critical habitats, refuges, or hatcheries within the project area.

Table 9. IPaC Federally Listed Wildlife.

Common Name	Taxa	Scientific Name	Federal Status
Northern Long-Eared Bat	Bat	<i>Myotis septentrionalis</i>	Endangered
Tricolored Bat	Bat	<i>Perimyotis subflavus</i>	Proposed Endangered

Whooping Crane	Bird	<i>Grus americana</i>	Experimental Population; Non-essential
Monarch Butterfly	Insect	<i>Danaus plexippus</i>	Candidate
Rusty Patched Bumblebee	Insect	<i>Bombus affinis</i>	Endangered
Higgins Eye (pearlymussel)	Mussel	<i>Lampsilis higginsii</i>	Endangered
Winged Mapleleaf	Mussel	<i>Quadrula fragosa</i>	Endangered

The project reach may provide suitable foraging habitat for monarch butterflies and rusty patched bumblebees due to the presence of forbs in the project reach. Northern long-eared bats and tricolored bats may utilize the mature, larger trees within the project reach as roosting trees during the spring, summer, and fall months, and as such, it is proposed that all tree harvest activities for the project will be conducted in the winter months between January 1 – March 1 when the bats are in hibernation. The project reach does not contain habitat for whooping crane, Higgins eye pearlymussel, or the winged mapleleaf.

The project reach contains possible nesting habitat for several of the migratory birds listed in the IPaC report including black-billed cuckoo and cerulean warbler, and to a lesser extent, red-headed woodpecker, wood thrush, and bald eagle. The remaining bird species listed in the IPaC report may use the area for foraging and stop over during migration, but the project area either lacks suitable nesting habitat (for black tern, bobolink, and chimney swift) or the species is not known to nest in this part of the state (golden eagle, golden-winged warbler, Canada warbler, rusty blackbird, and lesser yellowlegs).

c. Impacts to Ecological Resources

The project will impact forest and wetland communities through select tree harvest and grading adjacent to the stream channel, but it will yield an increase in wet meadow habitat within the floodplain. Although the natural habitats in the project area have been historically degraded by invasive species and stream channel erosion, the flora and fauna that currently exist within the construction limits will be temporarily impacted by project construction. Select tree removal will occur within 30 feet of the stream banks and will have an impact on any species using the trees for nesting or roosting. Grading and clearing has the potential to temporarily impact nesting bumblebees and floral resources for monarch butterflies and other insects. Likewise, the installation of rock riffles and instream habitat will temporarily disrupt the streambed and the aquatic species that live there such as small fishes and macroinvertebrates.

Project construction will impact habitat that could potentially be used by rare and protected species. Removing trees from the project area could impact migratory and breeding birds as well as the northern long-eared bat and tricolored bat if they roost within the project boundary. The northern

long-eared bat hibernates in caves in the winter and roosts in tree cavities and under exfoliating tree bark during the spring and summer. The tricolored bat also hibernates in caves during the winter and typically roosts in forested areas among tree leaves in the spring, summer, and fall (USFWS, 2023). To limit impacts to these species and other migratory wildlife, tree harvest is proposed to occur in the winter months between January and early March when many species are in hibernation, dormant, or have migrated out of the area.

Stream habitat improvement projects have the potential to degrade habitat for the Louisiana waterthrush through canopy thinning and stabilization of eroded stream banks. In addition, stream projects may also increase the chance of brood parasitism by disturbance-associated species like brown-headed cowbird (Stucker and Cuthbert, 2000). There have been several sightings of Louisiana waterthrush in the Brown's Creek gorge dating back to 1988, including confirmed nesting in 2019 (pers. comm. M. Majeski 2023). However, as previously described, these sightings have occurred over one-mile downstream of the project reach in a steep, forested gorge along swift-flowing water; these habitat features are lacking within the project reach.

Climate change threatens to exacerbate some of the impacts to fish and wildlife. Hotter summers and warmer winters combined with canopy removal have the potential to increase stream temperatures within the project reach. However, stream channel narrowing, creation of deep pools, and shading the stream with overhanging native herbaceous vegetation will help mitigate impacts to water temperature from solar radiation.

Invasive reed canary grass and buckthorn are currently well-established within the project boundary, and project construction may spread existing weedy and invasive species within the project site through soil disturbance. As such, the project will include a three-year vegetation management plan that will be conducted by the project contractor with oversight from BCWD to manage both woody and herbaceous invasive species using cut-stump and spot herbicide treatments. In addition, the project contractor will be required to decontaminate their construction equipment before entering and leaving the project site to minimize the spread of invasive species outside the project. The outcome of the project will be a reduction in invasive species over the long term through invasive species management and the establishment of a diverse community of native grasses and forbs.

Overall, the project will have a net-positive impact on fish, wildlife, and the plant communities within the stream reach and will have a long-term positive benefit to the natural resources in the project area through the following:

- Creation of rock riffles will improve and increase macroinvertebrate habitat and fish spawning opportunities and will also help maintain deep-pool habitat.
- The project will increase the number and depth of pools for thermal refugia during the summer months and provide overwintering habitat for fish and other aquatic biota.
- The reconnected floodplain will improve riparian hydrology, benefit native hydrophytic vegetation, and support wetland habitat adjacent to the stream.
- Reducing sediment and nutrient loading within the project reach will improve downstream resources (Brown's Creek and St. Croix River).

- Native seeding will increase the diversity and extent of native vegetation, and the project will target populations of invasive species documented in the project reach including common buckthorn, glossy buckthorn, exotic bush honeysuckles, black locust, reed canary grass, creeping charlie, and garlic mustard.
- Seeding native forbs will also improve habitat for pollinators including the federally listed rusty patched bumblebee and monarch butterfly.
- Establishment of brush piles will provide refugia for terrestrial fauna.

d. Ecological Impact Mitigation

The project will have a net positive impact on fish and wildlife habitat as mentioned above in Item 14.c. The temporary negative impacts the project construction will be mitigated by the following measures:

- No instream work will occur between September 1 to April 1 per MNDNR work exclusion dates to allow for fish spawning and migration.
- Tree harvest will occur in the winter months between January and early March to minimize impacts to migratory species and tree-nesting/roosting species such as the northern long-eared bat and tricolored bat.
- Work is only proposed on degraded stream banks and will bypass stream banks that are stable or that are currently providing quality near-stream/ instream habitat.
- Significant native trees and stable root masses adjacent to the creek will be preserved for bank stability and habitat diversity.
- Implementation of appropriate sediment BMPs, including rapid soil stabilization, to minimize soil erosion during project construction.
- Upon completion of the project, all disturbed soils will be seeded with native species and stabilized with hydromulch and crimped straw.

15. HISTORIC PROPERTIES

A Phase I Archaeological and Cultural Resources field survey was completed by Mississippi Valley Archeology Center (MVAC) in August 2023 (Appendix C). This study showed: 1) No properties currently listed on the National Register of Historic Places are located within or proximate to the study area; 2) Four previously inventoried cultural sites were located within one-mile of the project area, including one site that overlaps the study area; 3) Soils are classified as deep post-settlement alluvium with limited potential for intact archaeological deposits due to significant stream migration and floodplain erosion interpreted from historic aerial imagery.

EOR submitted the Phase I Archaeological and Cultural Resources report to the Minnesota State Historic Preservation Office for review and comment.

As part of the Section 404 permitting process, the U.S. Army Corps of Engineers will conduct its own internal review of the project to fulfill its responsibilities under Section 106 of the National Historic Preservation Act to identify and consider impacts the project may have on historic or potentially

historic resources. A copy of the MVAC report will be included in the permit application submitted to the USACE.

16. VISUAL

Visitors to the project site will notice disturbance to the stream corridor during project construction, but these impacts are considered temporary since the proposed seeding of native herbaceous vegetation is expected to mature within three years following completion of the project.

17. AIR

a. Stationary Source Emissions

No stationary source of emissions will be employed during the construction of the project or in its completed state.

b. Vehicle Emissions

Heavy equipment such as dump trucks, excavators, bulldozers, and tractors will be used during construction. Engine emissions including particulate pollution, carbon monoxide, hydrocarbons, and nitrogen oxides will increase at the project site during construction, but the release of these pollutants will be limited to periods of active construction during the day. Emissions from construction are considered temporary and are not anticipated to cause or contribute to a violation of ambient air quality standards for any pollutants. After construction, there will not be any project-related air emissions.

c. Dust and Odors

The project will generate dust during construction from grading activities and from importing materials over dirt access trails. The effects on air quality from fugitive dust generated during construction will be temporary and localized. Dust minimization and prevention efforts are expected to be consistent with state standards contained in Minn. R. ch. 7011. There is one business and 14 residential houses located within 500 feet of the project boundary. Rapid soil stabilization is proposed for the project which will mitigate the release of dust from the work area. After construction is complete and vegetation becomes established, the project area will not create any dust.

Odors generated by the project during construction will be temporary and are expected to be odors typical of construction equipment, primarily dust and diesel exhaust. There will be no man-made odors emanating from the project area after construction.

18. GREENHOUSE GAS (GHG) EMISSIONS/CARBON FOOTPRINT

a. GHG Quantification

GHG emissions caused by the project will result from two sources: the operation of construction equipment, and tree and brush removal during the conversion of forest to prairie/wetland. Emissions from construction equipment emissions were calculated by using methods identified in the Environmental Quality Board guidance document and standard metrics from the EPA’s Greenhouse Gas Emission Factors Hub (<https://www.epa.gov/climateleadership/ghg-emission-factors-hub>). Project construction is estimated to take 25 days to complete and require the use of 4 diesel construction vehicles per day: one excavator, one skidsteer, one bulldozer, and one dump truck. Fuel consumption at an average of 4 gallons per hour and 8-hour working days was used to calculate total fuel use:

$$\text{Fuel use} = \text{days} * \text{hours} * \text{fuel use per hour} * \text{number of vehicles}$$

Emissions were calculated using this equation from the EQB EAW guidance document:

$$\text{Tons CO}_2 = \text{fuel use in physical units} * \text{CO}_2 \text{ Emission Factor (kg CO}_2/\text{physical unit of fuel use)} * \text{conversion of kg to tons}$$

Emissions rates in Table 10 were retrieved from the Emissions Factors for Greenhouse Gas Inventory (EPA, 2023) for diesel nonroad construction vehicles.

Table 10. Rates of GHG Emissions for Nonroad Construction Equipment.

CO2 (kg/gal)	CH4 (grams/gal)	N2O (grams/gallon)
10.21	0.94	0.87

Totals emissions from construction equipment were estimated at 37.01 tons of carbon dioxide equivalents (CO₂e) which were calculated using the appropriate global warming potential for each GHG and the appropriate unit conversion factor.

Land use conversion from forest to grassland is the second category of emissions from the project. It is estimated that select tree harvest proposed for the project will remove approximately 80% of the trees from a 2.02-acre area, which is equivalent to 1.62 acres of forest converted to grassland. (It should be noted that the proposed removal of buckthorn and other invasive bushes from the understory does not constitute a change from forest to grassland.) Using the EPA’s Inventory of Greenhouse Gas Emissions and Sinks to estimate an average carbon loss per acre for conversion from forest to grassland, there would be an estimated loss of 14.81 tons of CO₂e per acre converted, which equates to 24.00 tons for the proposed land conversion. However, all harvested trees and brush will be reincorporated into the project for stream and floodplain habitat enhancements, which is assumed to be a carbon sink. As a result, the total potential project-related emissions are estimated at 37.01 tons of CO₂e (Table 11).

Table 11. Construction Emissions.

Scope	Type of Emission	Emission Sub-type	Project-related CO ₂ e Emissions (tons)	Calculation method(s)
Scope 1	Combustion	Mobile Equipment	37.01	Linear rate of diesel nonroad construction vehicle emissions
Scope 1	Land Use	Conversion from Forest to Grassland	24.00	Estimated from nationwide averages for conversion from forest to grassland
Scope 1	Land Use	Carbon Sink	(24.00)	100% of woody material will be reused for bank stabilization and habitat enhancements
TOTAL			37.01	

d. GHG Assessment

The project will follow Tier 4 Emissions standards for nonroad diesel engines as defined by the Environmental Protection Agency. It is estimated that the project will be constructed in 25 working days, and air quality impacts from project construction will be temporary and limited to the hours of equipment operation.

It is not anticipated that the project will require other inputs during its life, and the project will not emit greenhouse gases. The project will reduce the potential for bank erosion through bank reshaping and reconnection of the floodplain. Establishment of diverse, native vegetation will increase sequestration of carbon through the dense growth of plants and subsequent storage of carbon in the soil through the root systems.

19. NOISE

Existing Noise Levels and Sources

The project is located in a suburban area near Brown’s Creek Park and Oak Glen Golf Course. The residential setting, park, and golf course are all generally quiet with little to no noise contribution. Sources of noise are mainly from the nearby roads including McKusick Road and Neal Avenue.

Noise Generated During Construction

The project is expected to generate noise during active construction. Daily hours of construction will follow regulatory and construction permit regulated times. Noise will be generated by construction equipment during import of materials, earthwork, and tree removal activities. Noise levels will vary depending on equipment in use and the distance between construction equipment and receptors.

Noise Generated After Construction

After construction, the project is not expected to generate noise. All noise after construction will be from pre-project sources; primarily traffic on McKusick Road and Neal Avenue.

Nearby Sensitive Receptors

Sensitive receptors near the project include an automotive repair shop approximately 250 feet to the northeast, a residential area starting approximately 260 feet to the south, and Oak Glen Golf Course approximately 175 feet to the southeast.

Conformance to State Noise Standards

State noise standards are contained in Minn. R. ch. 7030. The noise standards are based on the land use at the location of the person that hears the noise and the sound level in A-weighted decibels (dBA) over ten percent (L10) or fifty percent (L50) of an hour.

The land in the vicinity of the site is mostly open space and residential with one commercial business. Noise limits for residential locations are L10 = 65 dBA and L50 = 60 dBA during the daytime, and L10 = 55 dBA and L50 = 50 dBA during the nighttime. Commercial area noise limits are L10 = 70 dBA and L50 = 65 dBA during the daytime and the nighttime. Noise generated from construction will be limited by Stillwater ordinance to the hours between 7am to 10pm Monday through Friday, and 9am to 9pm on any weekend or holiday.

20. TRANSPORTATION

a. Traffic Related Aspects

There are no consequential traffic related aspects of this project. Only a small number of vehicles will be working onsite during construction.

b. Effects on Traffic Congestion

It is not anticipated that there will be a significant impact to traffic operations on any of the nearby roads.

c. Traffic Mitigation Measures

No traffic mitigation measures will be necessary.

21. CUMULATIVE POTENTIAL EFFECTS

a. Geographic Scales and Timeframes

Cumulative effects result from the incremental impact of the project added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. The geographic area considered for cumulative potential effects is the area proximate to the project limits. No additional developments are anticipated on the properties bordering the proposed project area.

The project will aid in building resiliency in the stream channel to buffer potential effects of further urbanization and specific effects of climate change such as increased rain events. Rain events are considered seasonal and sporadic and have been gaining in intensity for several decades. Average annual temperatures have also been increasing which may have cumulative potential effects with partial removal of the tree canopy. Climate change effects are anticipated to increase for the foreseeable future.

Table 12 summarizes project related environmental effects that could combine with other environmental effects and the geographic extent of the anticipated impacts.

Table 12. Project-Related Environmental Effects and Mitigation.

EAW Section	Project-Related Effects	Mitigation
7 – Climate Adaptation and Resilience	Increase in rainstorm intensity may increase the severity of erosion along the stream channel	After project completion, the streambanks will be better protected against the effects of erosion from increased rainfall and flow and will allow dissipation of floodwaters over the reconnected floodplain
	Removal of some of the riparian canopy may increase ground and water temperatures	All disturbed soils will be revegetated with perennial native vegetation Installation of rock riffles will maintain deep pools for thermal refugia
8 – Cover Types	Conversion of forest to native prairie / wetland	No effect
10 – Land Use	The project is compatible with city zoning and is consistent with long-term land use planning	No mitigation is required
11 – Geology, Soils, and Topography	Disturbed ground and exposed soil during construction	Erosion control plan will be implemented and BMPs will be installed during construction
12 – Water Resources	Conversion of forested wetlands to non-forested wetlands	Disturbed areas within floodplain will be revegetated with native wetland species

EAW Section	Project-Related Effects	Mitigation
13 – Contamination, Hazardous Materials, and Waste	Construction Debris and Waste	Hauled to disposal sites and appropriate on-site storage of construction materials, fuels, and chemicals
14 – Fish, Wildlife, Plant Communities, and Ecological Resources	Temporary disruption of stream and riparian habitat	<p>Minimization of grading and tree removal (selective tree harvest)</p> <p>Timing of construction to avoid impacts to nesting / roosting species and spawning fish.</p> <p>Invasive vegetation will be removed and replaced with native species, thereby increasing pollinator habitat</p> <p>Habitat enhancements will be installed to improve aquatic and terrestrial wildlife habitat</p>
15 – Historic Properties	None anticipated	Phase 1 archaeological survey completed
16 – Visual	None anticipated	No additional actions are required
17 – Air	Emissions and dust during construction	Temporary impacts in a suburban setting and will only occur during active construction
18 – Noise	Construction noise impacts	Temporary impacts in a suburban setting and will only occur during active construction
	After construction – none	Compliance with city and state noise standards
19 – Transportation	None anticipated	No additional actions are required

b. Future Projects

There are no future associated projects.

c. Cumulative Potential Effects

The project will result in partial conversion of disturbed forest habitat to open prairie and wetlands with a net improvement in habitats for fish, macroinvertebrates, herptiles, mammals, and pollinators. In general, the project will mitigate the cumulative effects of climate change and future land

development in the area. The project will have net positive effects on soils and vegetation in the riparian corridor as a result of restored hydrology in the reconnected floodplain and through removal of invasive species and reestablishment of native species. The project will also have a net positive effect on downstream water resources by improving water quality and expanding habitat for aquatic biota.

22. OTHER POTENTIAL ENVIRONMENTAL EFFECTS

No other additional environmental effects are anticipated from this project. Potential environmental effects have been addressed in Items 1 through 21.

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RGU CERTIFICATION

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature _____

Date _____

Title _____

FIGURES

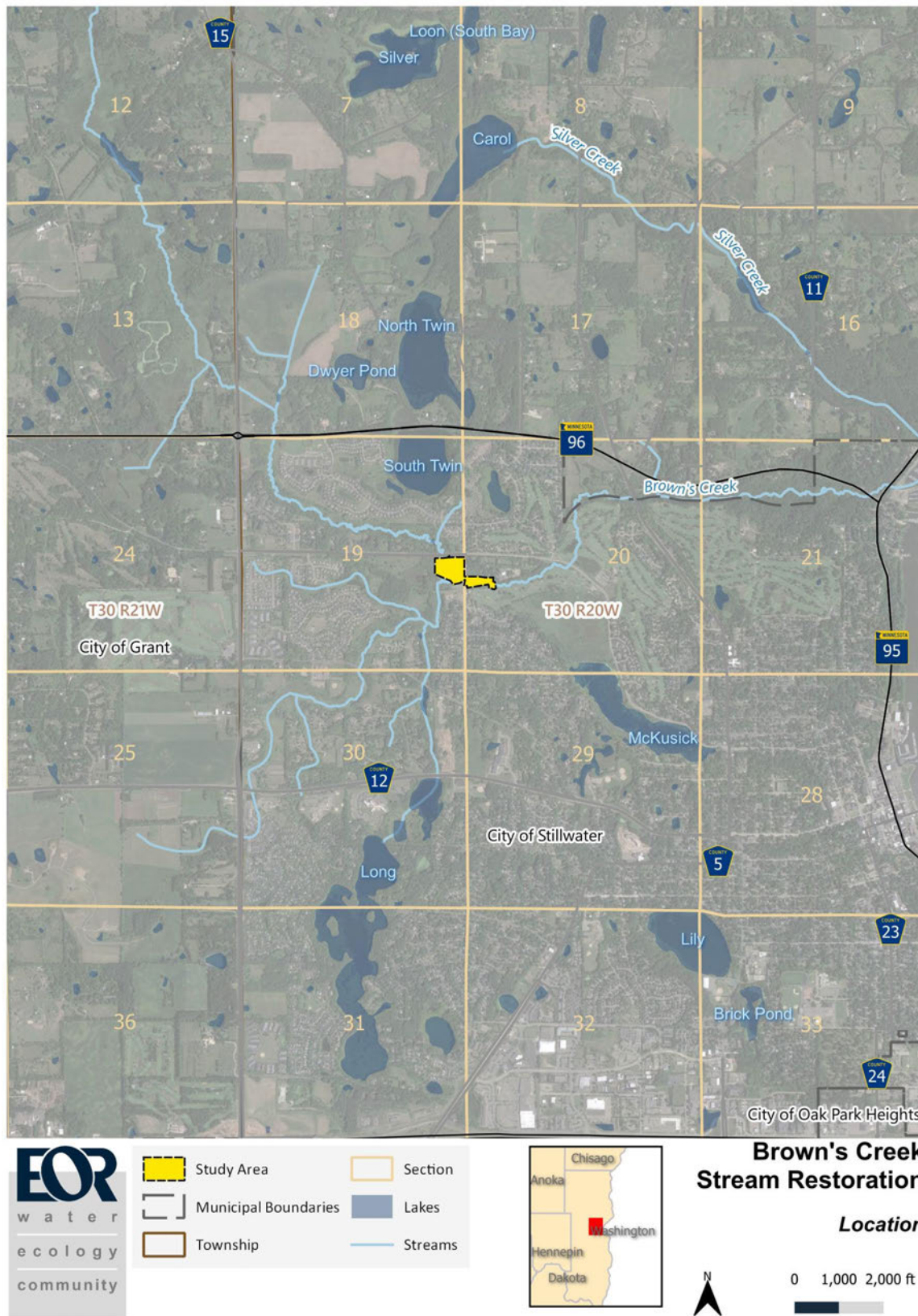


Figure 1. Project location map

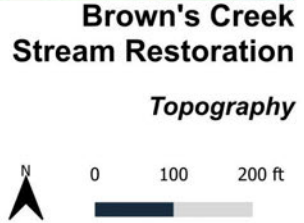
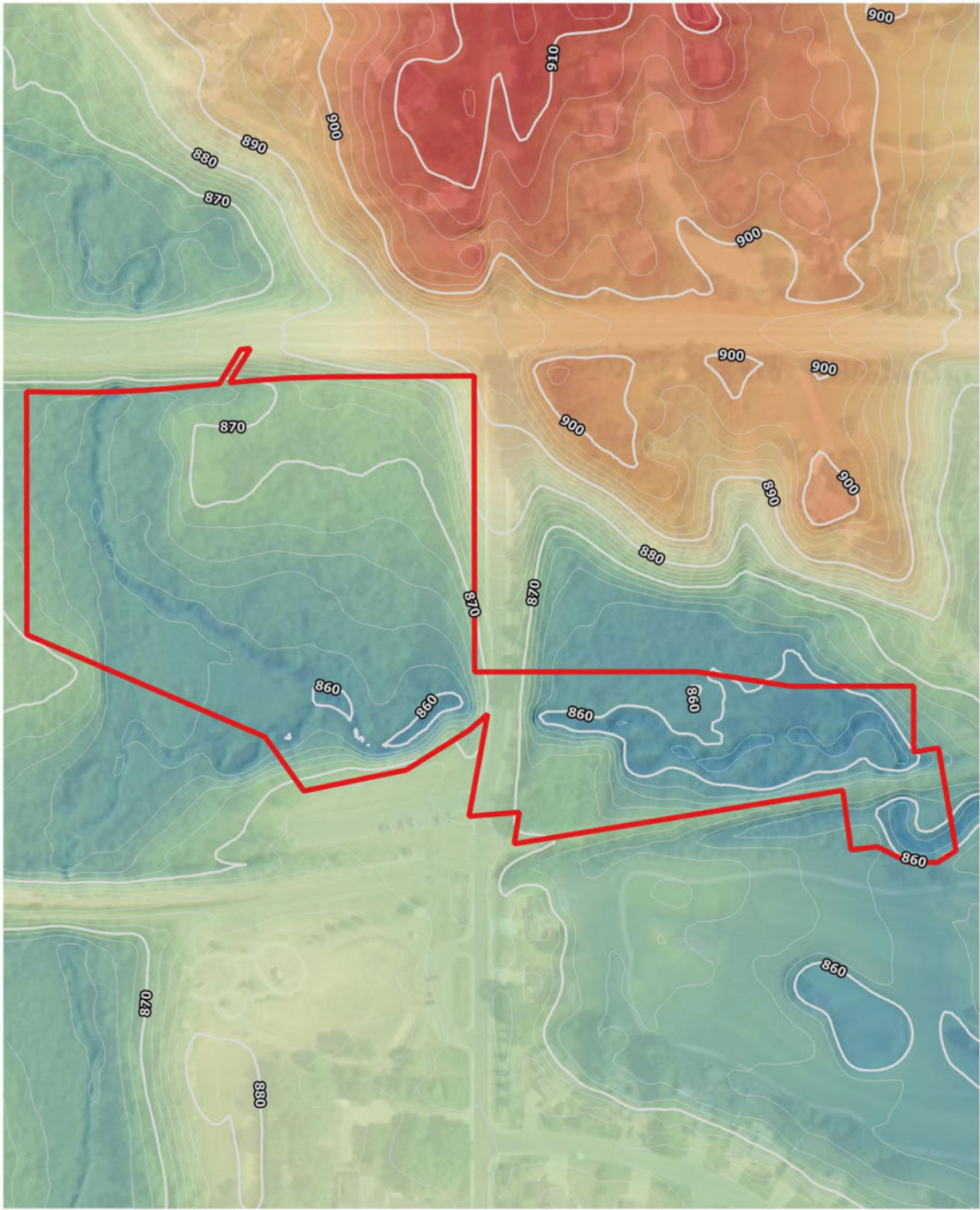
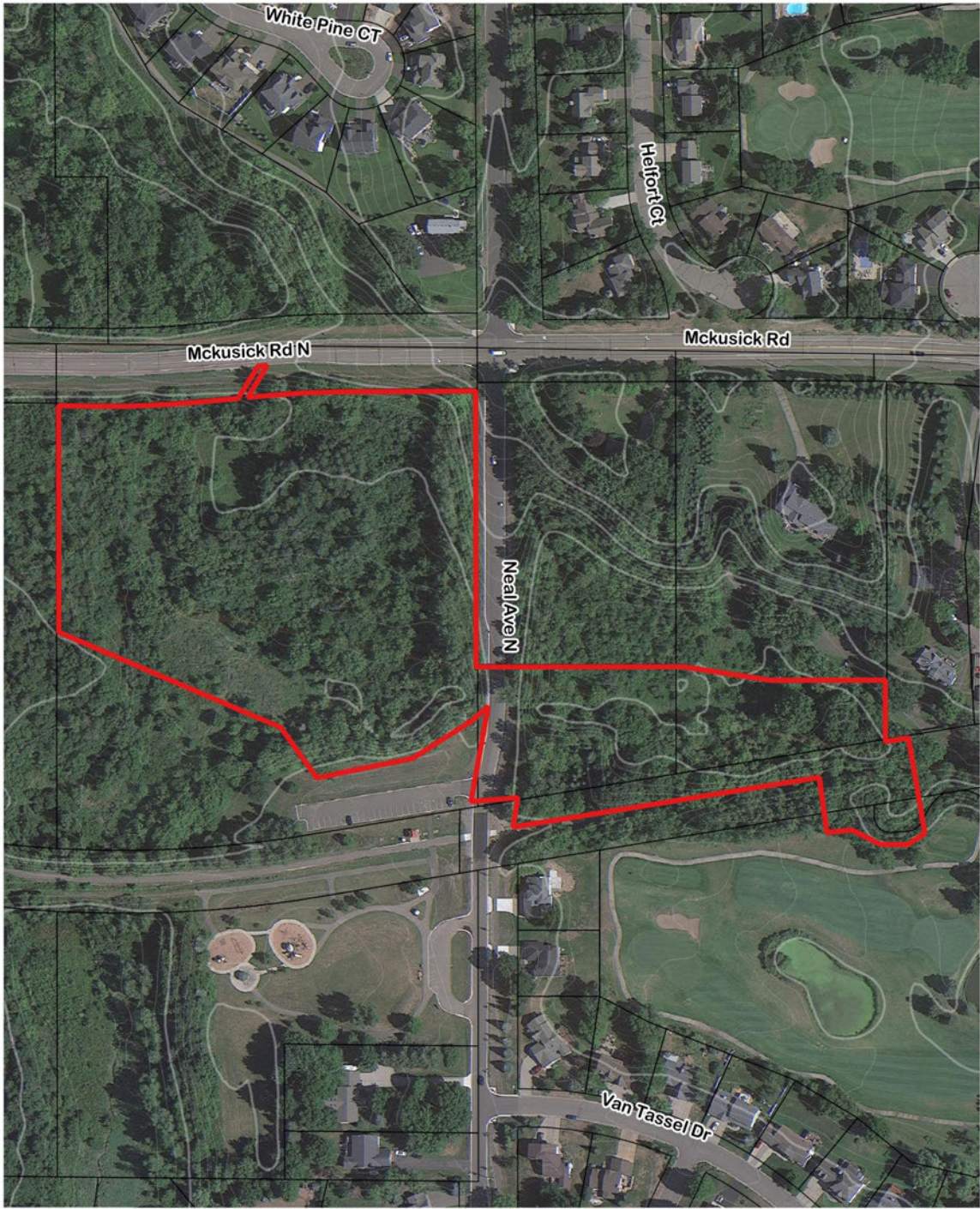


Figure 2. Project topography map



Study Area	Contours (2ft)
Parcel Boundaries	Index
	Intermediate

**Brown's Creek
Stream Restoration**

Project Work Area

0 100 200 ft

Figure 3. Project area with parcel lines and topography

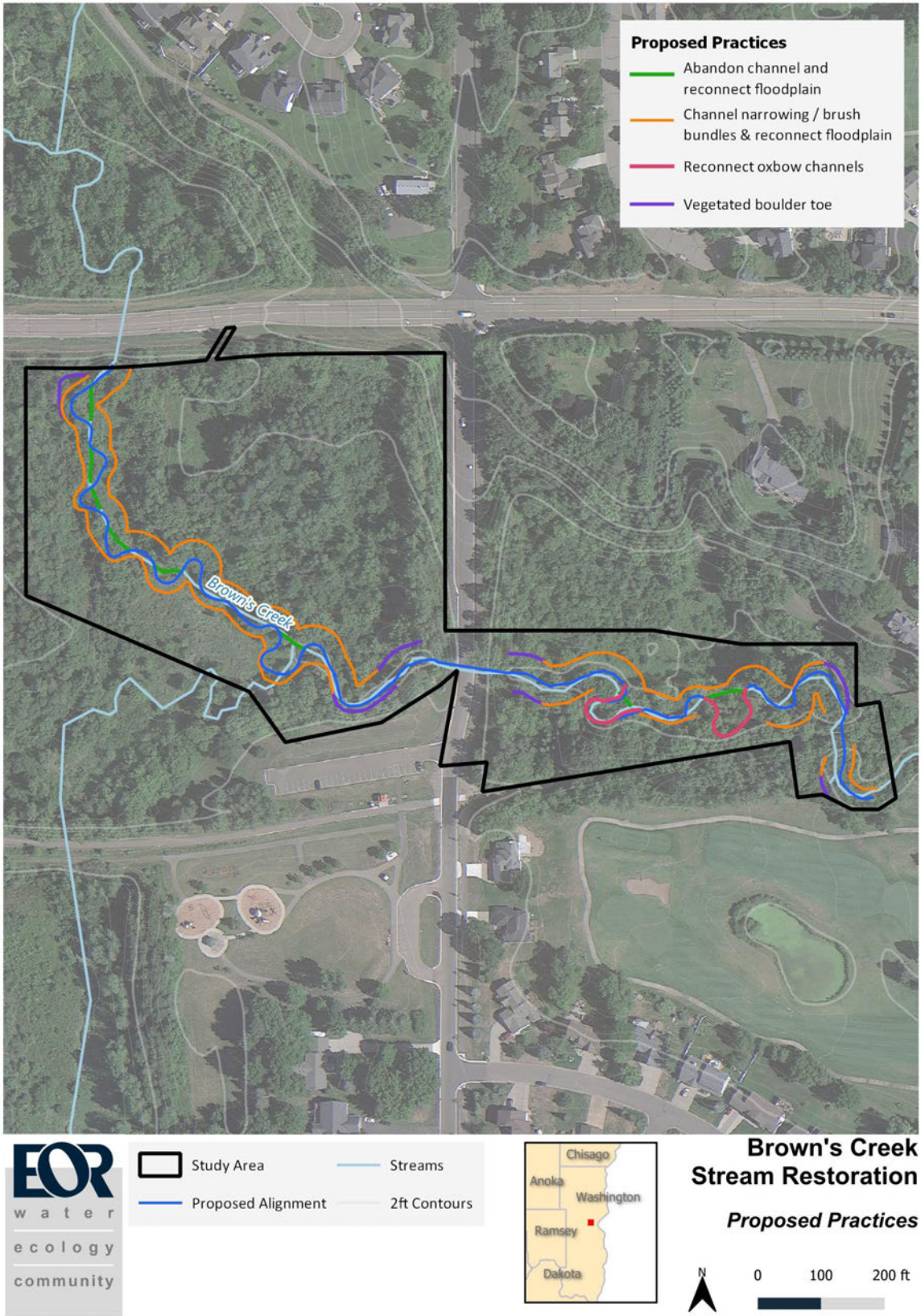


Figure 4. Proposed project practices

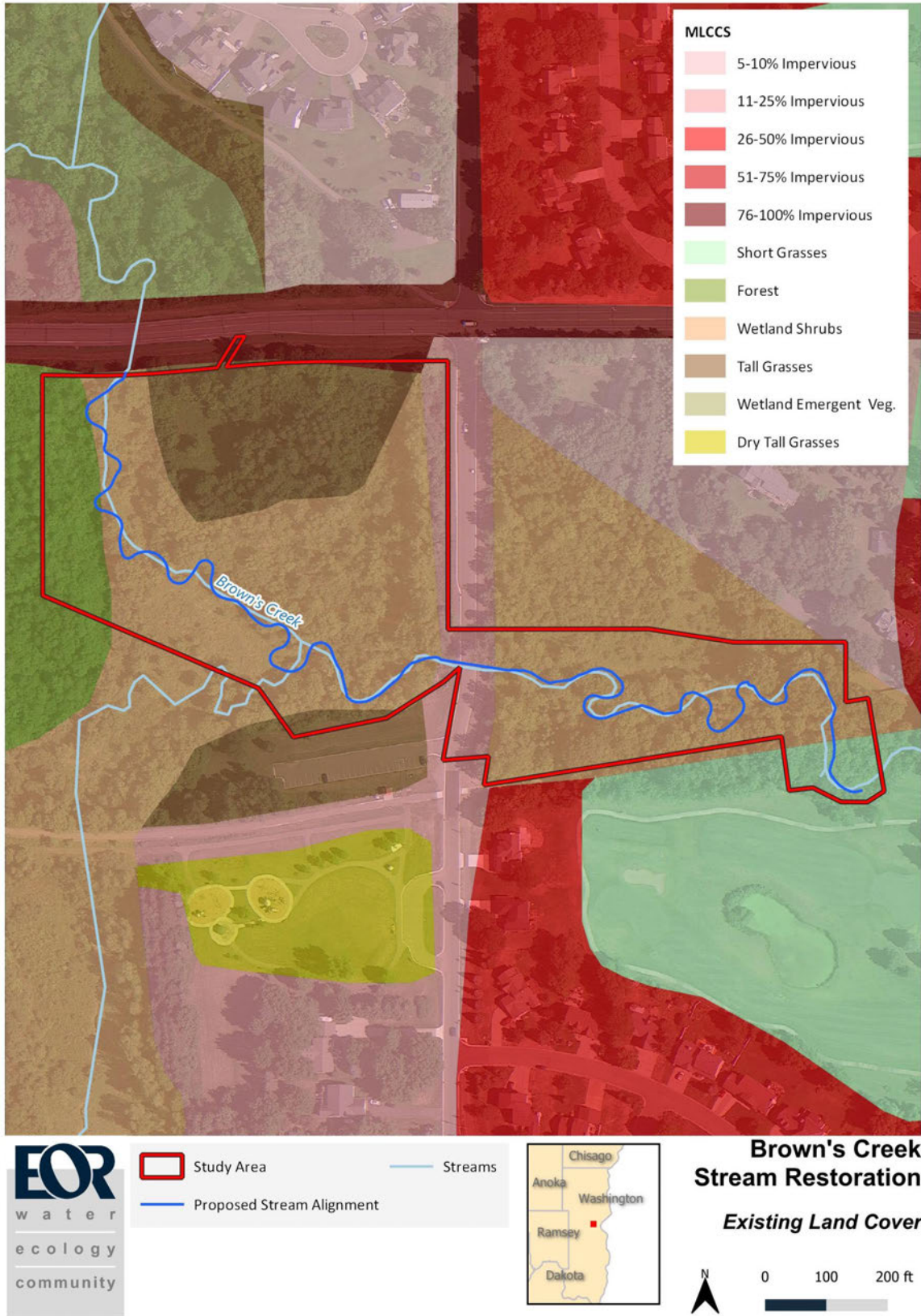


Figure 5. Existing land cover

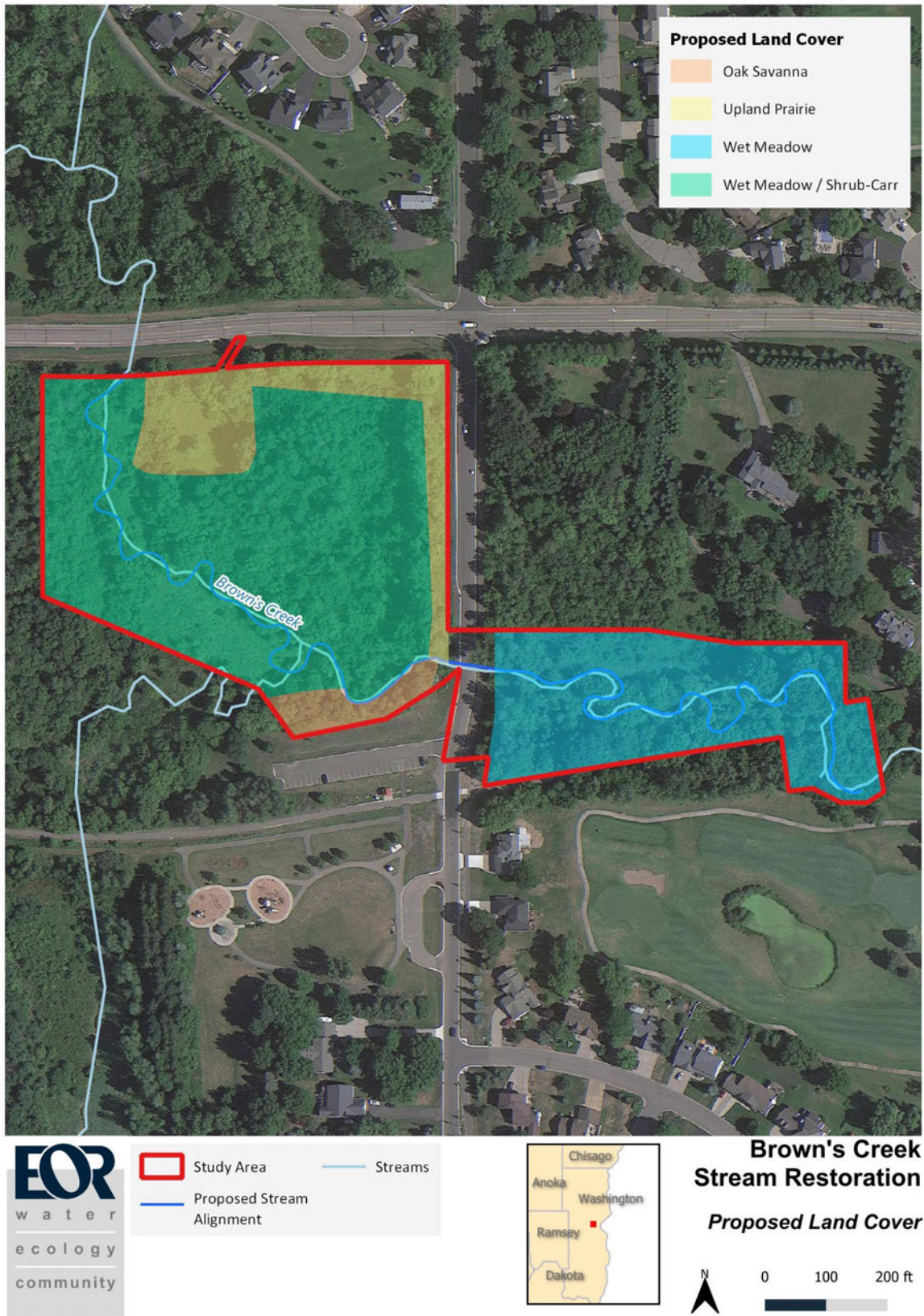


Figure 6. Proposed land cover after construction

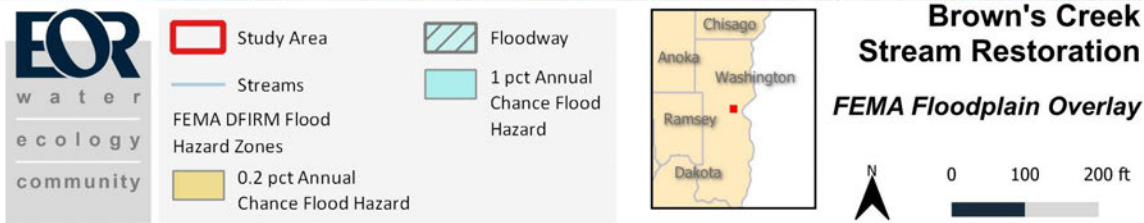
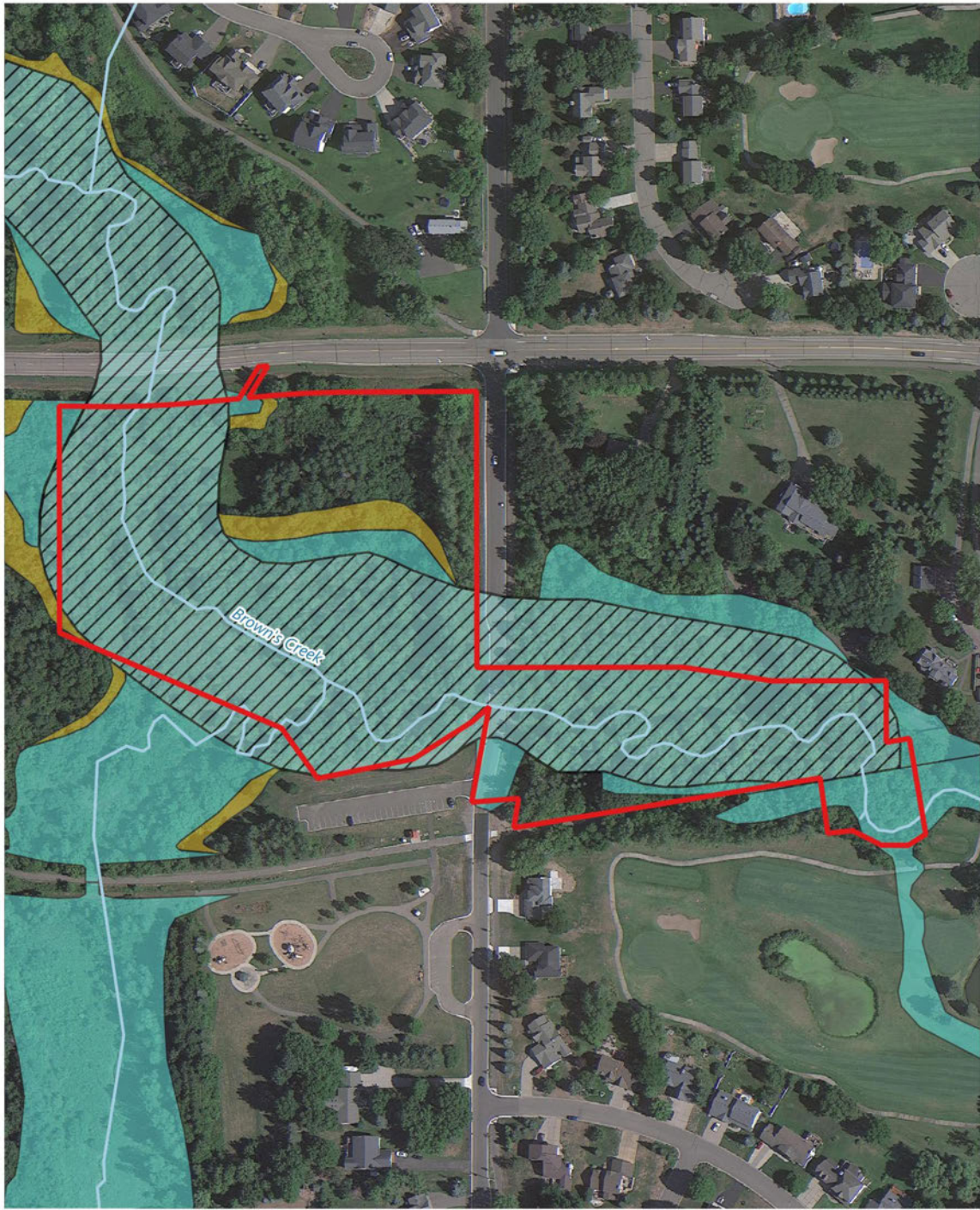


Figure 7. Project area with FEMA FIRM overlay

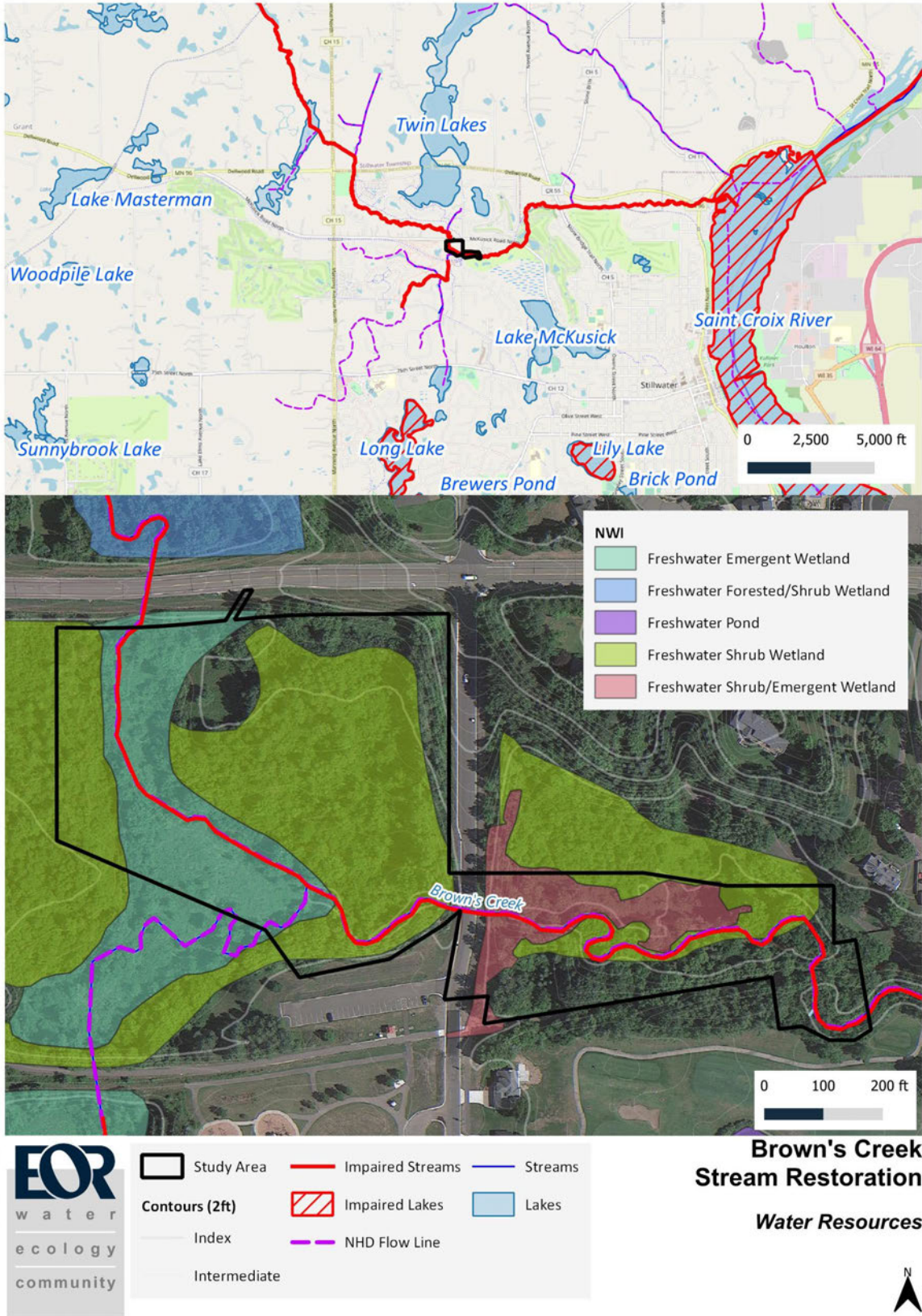


Figure 8. Water resources

APPENDIX A – USFWS IPAC RESOURCES LIST

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.


Location


Washington County, Minnesota



Local office

Minnesota-Wisconsin Ecological Services Field Office

 (952) 858-0793

 (952) 646-2873

3815 American Blvd East
Bloomington, MN 55425-1659

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Whooping Crane <i>Grus americana</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/758	EXPN

Clams

NAME	STATUS
Higgins Eye (pearlymussel) <i>Lampsilis higginsii</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5428	Endangered

Winged Mapleleaf *Quadrula fragosa*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4127>

Insects

NAME

STATUS

Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9743>

Rusty Patched Bumble Bee *Bombus affinis*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9383>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the [Bald and Golden Eagle Protection Act](#) and the [Migratory Bird Treaty Act](#).

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

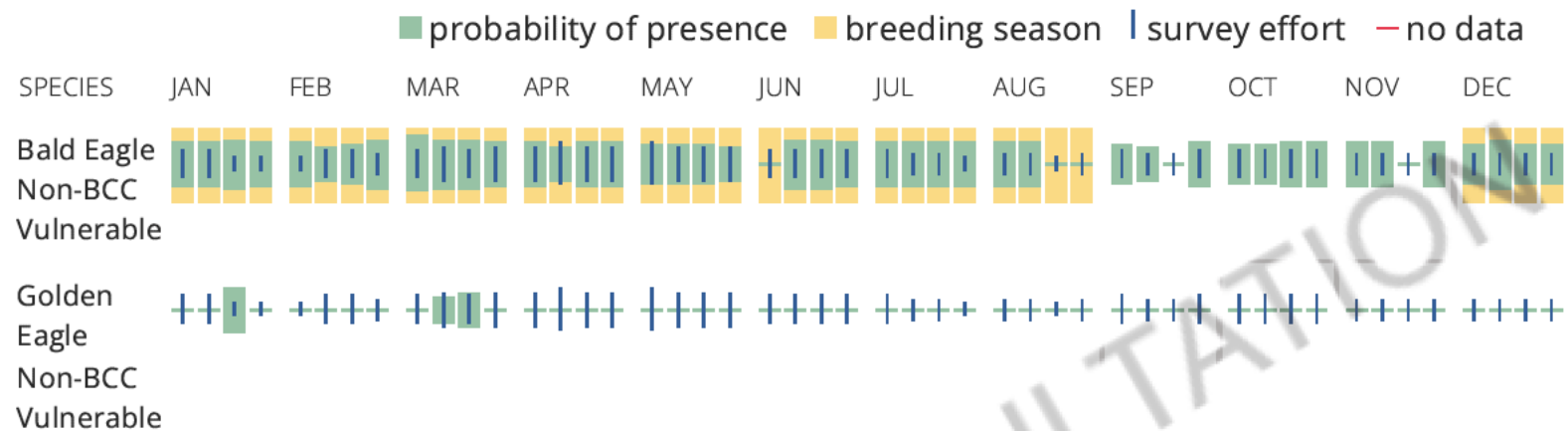
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle [Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle [Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip:

enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black Tern <i>Chlidonias niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10

Cerulean Warbler *Dendroica cerulea*

Breeds Apr 22 to Jul 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2974>

Chimney Swift *Chaetura pelagica*

Breeds Mar 15 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Golden Eagle *Aquila chrysaetos*

Breeds elsewhere

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Golden-winged Warbler *Vermivora chrysoptera*

Breeds May 1 to Jul 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8745>

Lesser Yellowlegs *Tringa flavipes*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Red-headed Woodpecker *Melanerpes erythrocephalus*

Breeds May 10 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Rusty Blackbird *Euphagus carolinus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Wood Thrush *Hylocichla mustelina*

Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

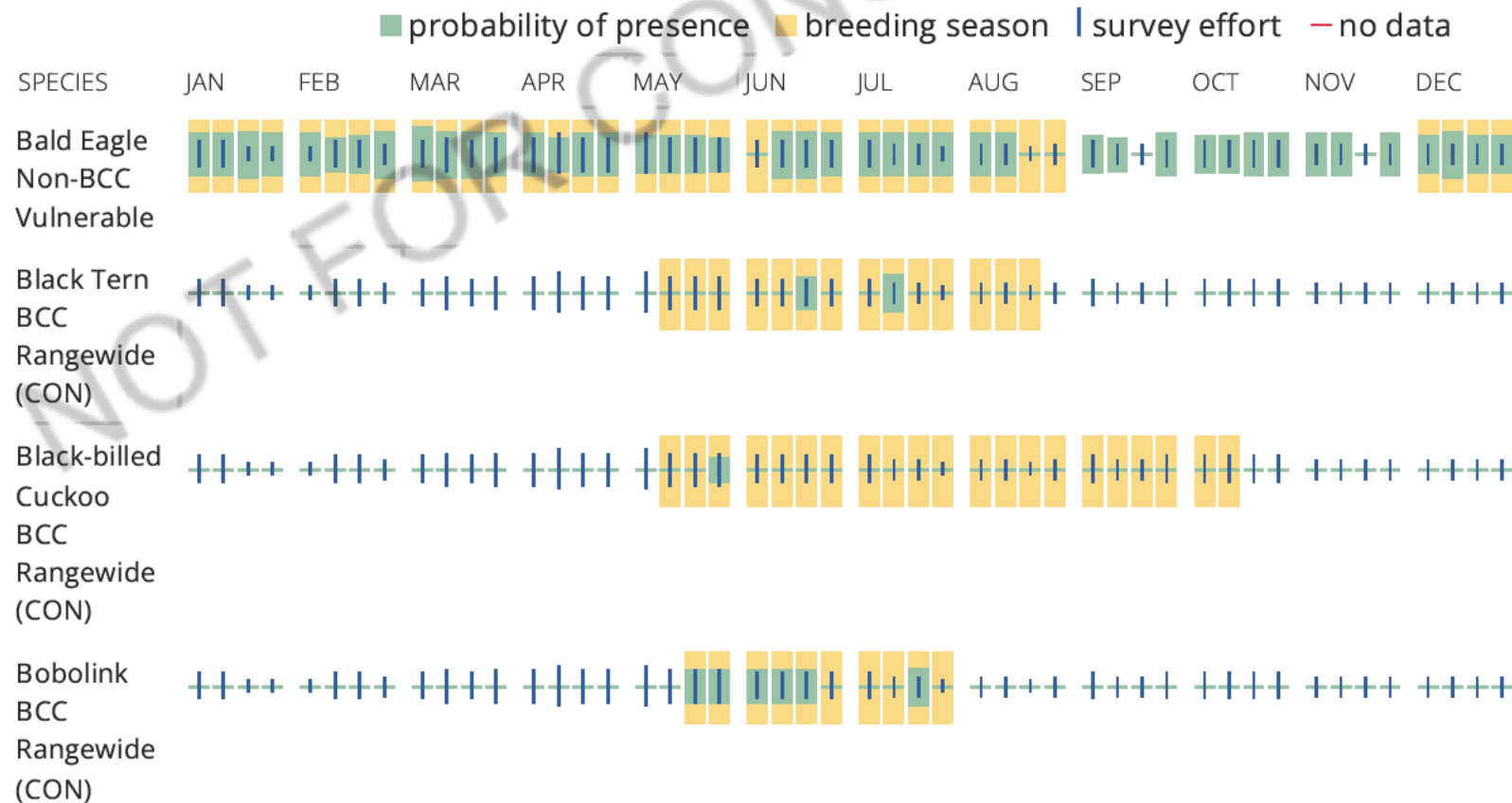
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

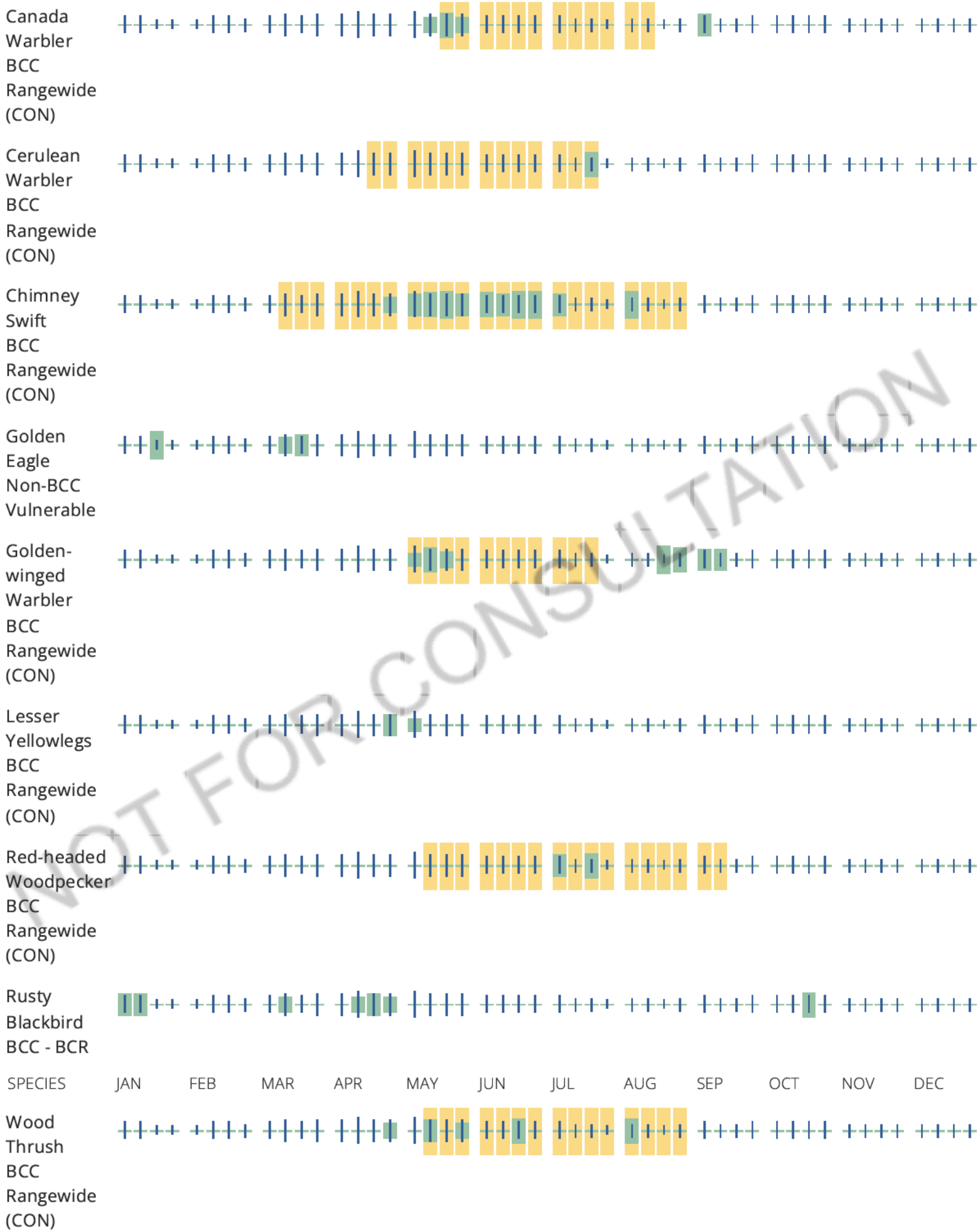
No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX B – GROUNDWATER WELL LOGS

109689

County Washington
 Quad Stillwater
 Quad ID 118D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 07/31/1989
 Update Date 02/14/2014
 Received Date

Well Name TRENT, JOHN	Township 30	Range 20	Dir Section W 20	Subsection CBBBAC	Well Depth 180 ft.	Depth Completed 180 ft.	Date Well Completed 11/28/1975
Elevation 901 ft.	Elev. Method 7.5 minute topographic map (+/- 5 feet)				Drill Method Non-specified Rotary	Drill Fluid	
Address C/W 13033 MCKUSICK RD N STILLWATER MN 55082					Use domestic	Status Active	
Stratigraphy Information					Well Hydrofractured? Yes <input type="checkbox"/> No <input type="checkbox"/>	From	To
Geological Material	From	To (ft.)	Color	Hardness	Casing Type Single casing <input type="checkbox"/> Joint <input type="checkbox"/> Threaded <input type="checkbox"/>		
SAND & GRAVEL	0	51	BROWN	SFT-HRD	Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
CLAY & BOULDERS	51	148	RED/BRN	SFT-HRD	Above/Below 1 ft.		
SANDROCK	148	180	YEL/BRN	MEDIUM	Casing Diameter 4 in. To 174 ft. 11 lbs./ft.		
					Open Hole From 174 ft. To 180 ft.		
					Screen? <input type="checkbox"/>	Type	Make
					Static Water Level 50 ft. land surface Measure 11/28/1975		
					Pumping Level (below land surface) 55 ft. 2 hrs. Pumping at 15 g.p.m.		
					Wellhead Completion Pitless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified Material Amount From To bentonite 2 Cubic yards 0 ft. 174 ft.		
					Nearest Known Source of Contamination 80 feet West Direction Septic tank/drain field Type Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input type="checkbox"/> Not Installed Date Installed 12/05/1975 Manufacturer's name REDA PUMP CO. Model Number 9D9P051 HP 0.5 Volt 230 Length of drop pipe 90 ft Capacity 12 g.p. Typ Submersible		
					Abandoned Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Miscellaneous First Bedrock Jordan Sandstone Aquifer Jordan Last Strat Jordan Sandstone Depth to Bedrock 148 ft Located by Minnesota Geological Survey Locate Method Digitized - scale 1:24,000 or larger (Digitizing Table) System UTM - NAD83, Zone 15, Meters X 512407 Y 4990945 Unique Number Verification Address verification Input Date 01/01/1990		
Remarks					Angled Drill Hole		
					Well Contractor Mantyla Well Co. 82084 SANDERS, G. Licensee Business Lic. or Reg. No. Name of Driller		

156399

County Washington
 Quad Stillwater
 Quad ID 118D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 07/17/1989
 Update Date 02/14/2014
 Received Date

Well Name VAN TASSEL,	Township 30	Range 20	Dir Section W 20	Subsection CBBAAB	Well Depth 170 ft.	Depth Completed 170 ft.	Date Well Completed 12/18/1978
Elevation 901 ft.	Elev. Method 7.5 minute topographic map (+/- 5 feet)				Drill Method Non-specified Rotary	Drill Fluid	
Address					Use domestic	Status Active	
C/W 13093 MCKUSICK RD N STILLWATER MN					Well Hydrofractured? Yes <input type="checkbox"/> No <input type="checkbox"/> From To		
Stratigraphy Information					Casing Type Single casing Joint Welded		
Geological Material From To (ft.) Color Hardness					Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Above/Below 1 ft.		
CLAY 0 30 BROWN SOFT					Casing Diameter Weight		
SAND & GRAVEL 30 145 BROWN SFT-HRD					4 in. To 167 ft. 11 lbs./ft.		
SANDROCK 145 157 WHITE SOFT					Open Hole From 167 ft. To 170 ft.		
SANDROCK 157 170 YEL/BRN MEDIUM					Screen? <input type="checkbox"/> Type Make		
					Static Water Level		
					55 ft. land surface Measure 12/18/1978		
					Pumping Level (below land surface)		
					60 ft. 2 hrs. Pumping at 20 g.p.m.		
					Wellhead Completion		
					Pitless adapter manufacturer Model		
					<input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade		
					<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified		
					Material Amount From To		
					bentonite 0 0 ft. 167 ft.		
					Nearest Known Source of Contamination		
					85 feet Northeast Direction Septic tank/drain field Type		
					Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input type="checkbox"/> Not Installed Date Installed 12/22/1978		
					Manufacturer's name REDA		
					Model Number 12D9P021 HP 0.75 Volt 230		
					Length of drop pipe 100 ft Capacity 12 g.p. Typ Submersible		
					Abandoned		
					Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Variance		
					Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Miscellaneous		
					First Bedrock Jordan Sandstone Aquifer Jordan		
					Last Strat Jordan Sandstone Depth to Bedrock 145 ft		
					Located by Minnesota Geological Survey		
					Locate Method Digitized - scale 1:24,000 or larger (Digitizing Table)		
					System UTM - NAD83, Zone 15, Meters X 512483 Y 4990957		
					Unique Number Verification Name on mailbox Input Date 01/01/1990		
					Angled Drill Hole		
					Well Contractor		
					Mantyla Well Co. 82084 SANDERS, G.		
					Licensee Business Lic. or Reg. No. Name of Driller		

Remarks

595649

County Washington
 Quad Stillwater
 Quad ID 118D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 09/12/2000
 Update Date 09/04/2018
 Received Date

Well Name DNR OB 82047	Township 30	Range 20	Dir Section W 19	Subsection DAAAAB	Well Depth 240 ft.	Depth Completed 240 ft.	Date Well Completed 06/20/2000
Elevation 876 ft.	Elev. Method LiDAR 1m DEM (MNDNR)				Drill Method Non-specified Rotary	Drill Fluid Bentonite	
Address					Use observation well	Status Active	
Contact 216 4TH ST N STILLWATER MN 55082					Well Hydrofractured? Yes <input type="checkbox"/> No <input type="checkbox"/> From To		
Well NEAL AV STILLWATER MN 55082					Casing Type Single casing Joint		
Stratigraphy Information					Drive Shoe? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Above/Below		
Geological Material	From	To (ft.)	Color	Hardness	Casing Diameter 4 in. To 215 ft. lbs./ft.		
GRAVEL	0	70			Hole Diameter 8 in. To 215 ft.		
SAND	70	75			4 in. To 240 ft.		
SAND & GRAVEL	75	100					
SAND & GRAVEL	100	149					
SANDSTONE	149	154	BROWN				
ST LAWRENCE	154	185					
TUNNEL CITY GROUP	185	240					
					Open Hole From 215 ft. To 240 ft.		
					Screen? <input type="checkbox"/> Type Make		
					Static Water Level 16 ft. land surface Measure 06/20/2000		
					Pumping Level (below land surface) 20 ft. 1 hrs. Pumping at 30 g.p.m.		
					Wellhead Completion Pitless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
					Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Specified		
					Material Amount From To		
					neat cement 20 Sacks 0 ft. 150 ft.		
					bentonite 20 Sacks 150 ft. 215 ft.		
					Nearest Known Source of Contamination 60 feet North Direction Other Type		
					Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input checked="" type="checkbox"/> Not Installed Date Installed		
					Manufacturer's name		
					Model Number HP Volt		
					Length of drop pipe ft Capacity g.p. Typ		
					Abandoned Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
					Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
					Miscellaneous First Bedrock Jordan Sandstone Aquifer Tunnel City Last Strat Tunnel City Group Depth to Bedrock 149 ft Located by Minnesota Geological Survey Locate Method Digitization (Screen) - Map (1:12,000) (>15 meters) System UTM - NAD83, Zone 15, Meters X 512289 Y 4990961 Unique Number Verification Information from Input Date 10/24/2000		
					Angled Drill Hole		
					Well Contractor Schultz, Nicholas 10622 SCHULTZ, N. Licensee Business Lic. or Reg. No. Name of Driller		

Remarks
 GAMMA LOGGED 6-21-2000 BY MNDNR M G S NO 4021
 DNR OBWELL 82047

623066

County Washington
 Quad Stillwater
 Quad ID 118D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
 Minnesota Statutes Chapter 1031

Entry Date 02/27/2001
 Update Date 09/04/2018
 Received Date

Well Name	Township	Range	Dir Section	Subsection	Well Depth	Depth Completed	Date Well Completed	
DNR OB 82048	30	20	W 19	DAAAABA	47 ft.	47 ft.	08/23/2000	
Elevation	876 ft.	Elev. Method	LiDAR 1m DEM (MNDNR)					
Address					Use	monitor well	Status	
Contact 216 4TH ST N STILLWATER MN 55082					Active			
Contact 500 LAFAYETTE RD ST PAUL MN 55155					Well Hydrofractured?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Stratigraphy Information Location V N STILLWATER MN 55082 Geological Material From To (ft.) Color Hardness SILTY CLAY 0 9 BROWN SAND & GRAVEL 9 18 VARIED SAND CLAY 18 31 BROWN SAND & GRAVEL 31 47 VARIED					Casing Type	Single casing	Joint	
					Drive Shoe?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Above/Below
Casing Diameter		Weight		Hole Diameter				
2 in. To 37 ft.		lbs./ft.		6.7 in. To 47 ft.				
Open Hole					From	ft.	To	
					ft.		ft.	
Screen?	<input checked="" type="checkbox"/>	Type		plastic	Make			
Diameter	Slot/Gauze	Length		Set				
2 in.	10	10 ft.		37 ft.	47 ft.			
Static Water Level					6.4 ft.	land surface	Measure	
							08/23/2000	
Pumping Level (below land surface)					6.4 ft.	hrs.	Pumping at	
							g.p.m.	
Wellhead Completion					Pitless adapter manufacturer Model			
					<input checked="" type="checkbox"/>	Casing Protection	<input type="checkbox"/>	
						At-grade (Environmental Wells and Borings ONLY)	<input type="checkbox"/>	
Grouting Information					Well Grouted?	<input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	
						No <input type="checkbox"/>	Not Specified <input type="checkbox"/>	
Material		Amount		From To				
bentonite		1.25 Sacks		4 ft. 33 ft.				
neat cement		1 Sacks		ft. 4 ft.				
Nearest Known Source of Contamination					feet	Direction		
						Type		
Well disinfected upon completion?					<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Pump					<input checked="" type="checkbox"/>	Not Installed	Date Installed	
Manufacturer's name								
Model Number		HP		Volt				
Length of drop pipe		ft Capacity		g.p. Typ				
Abandoned					Does property have any not in use and not sealed well(s)?			
					<input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Variance					Was a variance granted from the MDH for this well?			
					<input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Miscellaneous					First Bedrock	Aquifer Quat. Water		
Last Strat sand +larger					Depth to Bedrock ft			
Located by Minnesota Geological Survey								
Locate Method Digitization (Screen) - Map (1:12,000) (>15 meters)								
System UTM - NAD83, Zone 15, Meters		X 512272		Y 4990960				
Unique Number Verification		Site Plan		Input Date		09/04/2018		
Angled Drill Hole								
Well Contractor					Minnesota DNR	M0058	LILJEGREN, M.	
					Lic. or Reg. No.	Name of Driller		

County Washington
Quad Stillwater
Quad ID 118D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING REPORT
Minnesota Statutes Chapter 1031

Entry Date 10/14/2021
Update Date 10/14/2021
Received Date

Well Name DNR OB 82080
Township 30
Range 20
Dir Section W 19
Subsection DAAAAA
Elevation 886 ft. **Elev. Method** LiDAR 1m DEM (MNDNR)

Address
 Contact 216 4TH ST N STILLWATER MN 55082
 Contact 500 LAFAYETTE RD ST PAUL MN 55155

Stratigraphy Information

Geological Material	From	To (ft.)	Color	Hardness
TOPSOIL (FILL)	0	1	BLACK	SOFT
LOAMY SOIL (FILL)	1	5	BROWN	SOFT
SILTY SAND CLAY, TR.	5	11	BLK/BRN	SOFT
SILTY CLAY W/ FINE	11	14	BROWN	SFT-HRD
SILTY SAND TR.	14	20	BROWN	SOFT
FINE SAND, TR. SILT,	20	32	BROWN	SOFT
FINE SAND TR. SILT	32	34	BROWN	SOFT
FINE TO COARSE	34	63	BROWN	SOFT

Well Depth 63 ft. **Depth Completed** 60.5 ft. **Date Well Completed** 11/20/2020
Drill Method Power Auger **Drill Fluid**

Use observation well **Status** Active

Well Hydrofractured? Yes No **From** **To**

Casing Type Single casing **Joint** Solvent Welded
Drive Shoe? Yes No **Above/Below**

Casing Diameter 2 in. **Weight** 50.5 lbs./ft. **Hole Diameter** 8 in. To 60.5 ft.

Open Hole From ft. To ft.
Screen? **Type** stainless **Make** JOHNSON
Diameter 2 in. **Slot/Gauze** 10 **Length** 10 ft. **Set** 50.5 ft. 60.5 ft.

Static Water Level
 12.8 ft. land surface Measure 11/20/2020

Pumping Level (below land surface)
 13.6 ft. 1 hrs. Pumping at 8 g.p.m.

Wellhead Completion
 Pitless adapter manufacturer Model
 Casing Protection 12 in. above grade
 At-grade (Environmental Wells and Borings ONLY)

Grouting Information Well Grouted? Yes No Not Specified
 Material Amount From To
 high solids bentonite 4 Sacks ft. 41.5 ft.

Nearest Known Source of Contamination
 feet Direction Type
 Well disinfected upon completion? Yes No

Pump Not Installed Date Installed
 Manufacturer's name
 Model Number HP Volt
 Length of drop pipe ft Capacity g.p. Typ

Abandoned
 Does property have any not in use and not sealed well(s)? Yes No

Variance
 Was a variance granted from the MDH for this well? Yes No

Miscellaneous
 First Bedrock Aquifer Quat. Water
 Last Strat sand-brown Depth to Bedrock ft
 Located by Minnesota Geological Survey
 Locate Method Digitization (Screen) - Map (1:24,000) (15 meters or
 System UTM - NAD83, Zone 15, Meters X 512319 Y 4990962
 Unique Number Verification Info/GPS from data Input Date 10/14/2021

Angled Drill Hole

Well Contractor
 MN DNR Waters 1759 MEYER, M.
 Licensee Business Lic. or Reg. No. Name of Driller

Remarks
 DNR OB 82080

APPENDIX C – PHASE 1 ARCHEOLOGICAL AND CULTURAL RESOURCES REPORT



August 19, 2023

MVAC SR 2023-100

Mike Majeski
EOR, Inc.
Ste 300
1919 University Avenue West
St Paul, MN 55104

From: Wendy Holtz-Leith, Mississippi Valley Archaeology Center (MVAC), University of Wisconsin-La Crosse

Principle Investigator: Constance Arzigian, *Constance Arzigian*

Re: Phase I Archaeological Survey for proposed trout stream habitat improvements on Brown’s Creek, Washington County, Minnesota.

License Number: 23-193

This letter summarizes a Phase I archaeological investigations along an approximately 1,900-foot stretch of streambank on Brown’s Creek, Washington County, Minnesota (Figure 1), for trout stream habitat improvements. Portions of the project area are located on land owned by the State of Minnesota Department of Natural Resources (MNDNR) and the City of Stillwater and require a license from the Office of the State Archaeologist, License No. 23-193 and a Research Permit from the Minnesota Department of Natural Resources Parks and Trails Division (Special Permit No. 2023). The work was completed for EOR, Inc. by Wendy K. Holtz-Leith, Senior Research Archaeologist, with Constance Arzigian, Principal Investigator and Senior Research Archaeologist, Mississippi Valley Archaeology Center (MVAC) at the University of Wisconsin-La Crosse.



Figure 1. Project area within Minnesota.

Mississippi Valley Archaeology Center at the University of Wisconsin-La Crosse
1725 State Street, La Crosse, WI 54601 Office: 608-785-8463

Project description: The project area covers an approximately 1,900-foot stretch along Brown's Creek. A field survey was conducted for proposed stream modifications for trout stream habitat improvements. The project area begins in the NE ¼, SE ¼ of Section 19 and ends in the NW ¼, SW ¼ of Section 20, T30N R20W, Stillwater Township (Figures 2 and 3). Brown's Creek generally flows through the project area from the northwest to the southeast and flows to the St. Croix River north of Stillwater. The project area starts where Mc Kusick Road North crosses Brown's Creek and ends near the Brown's Creek State Trail. Historic aerials show meandering of the stream from 1938, 1949, 1966, 2010, to 2023 (Figures 4 and 5). Sometime between 1997 and 2003, near the east end of the project area, Brown's Creek was rerouted to its current location.

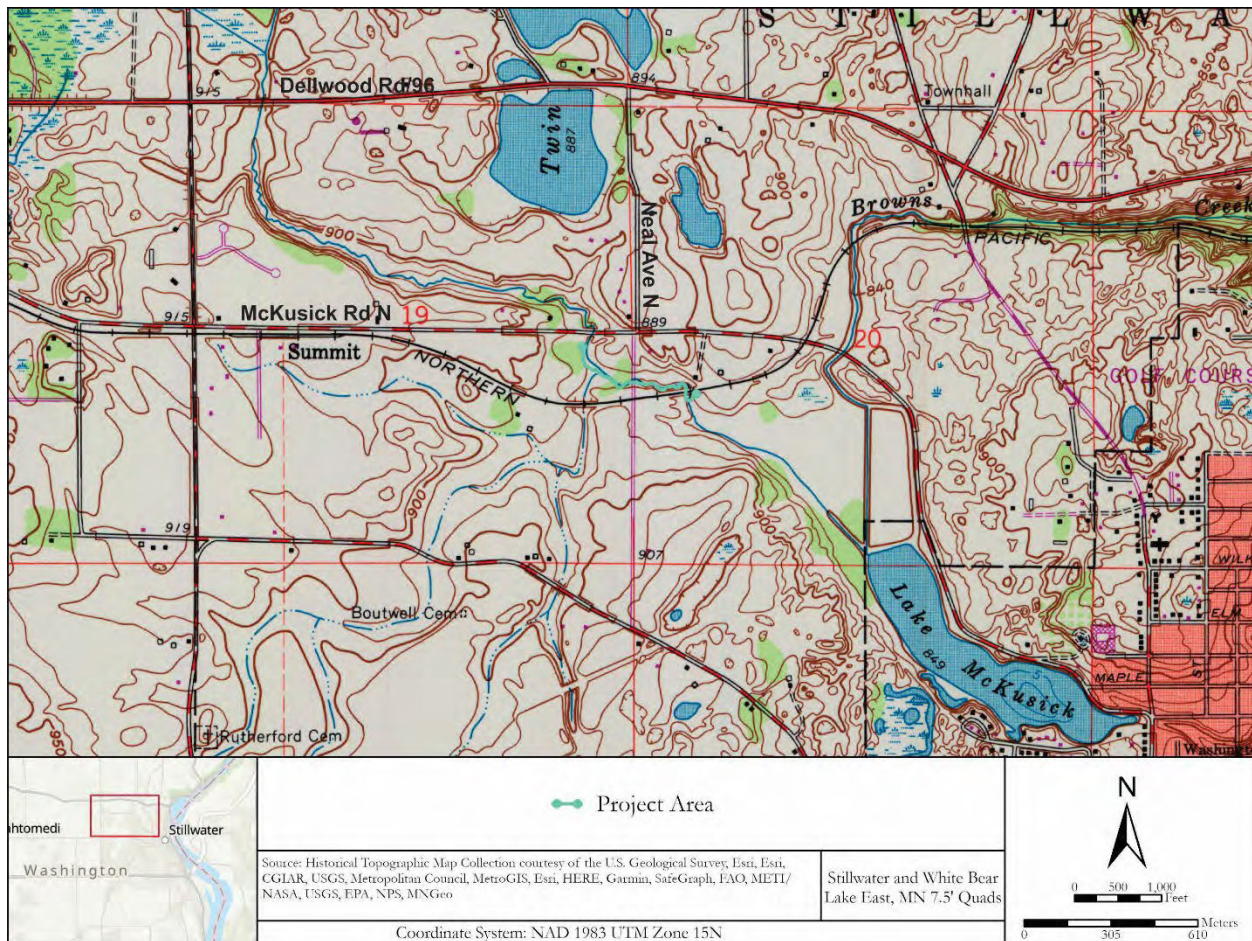


Figure 2. Project area on the Stillwater and White Bear Lake East, Minnesota 7.5' Quadrangles (Generated in ArcGIS).



Figure 3. Brown's Creek project area on aerial map (Generated in ArcGIS).

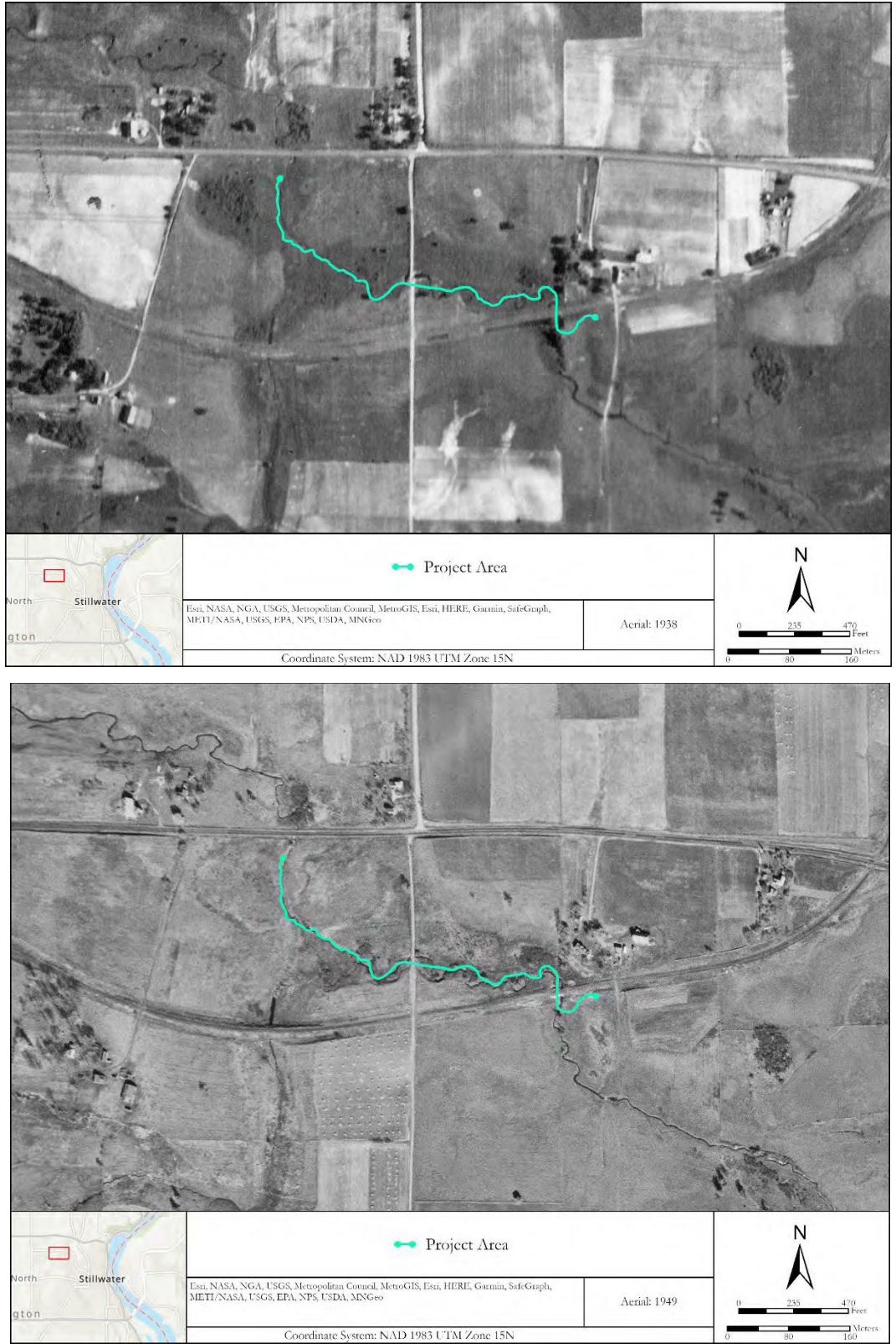


Figure 4. 1938 and 1949 aerial photos with project area (current location of Brown's Creek) overlaid (University of Minnesota-Minnesota Historical Aerial Photographs Online).

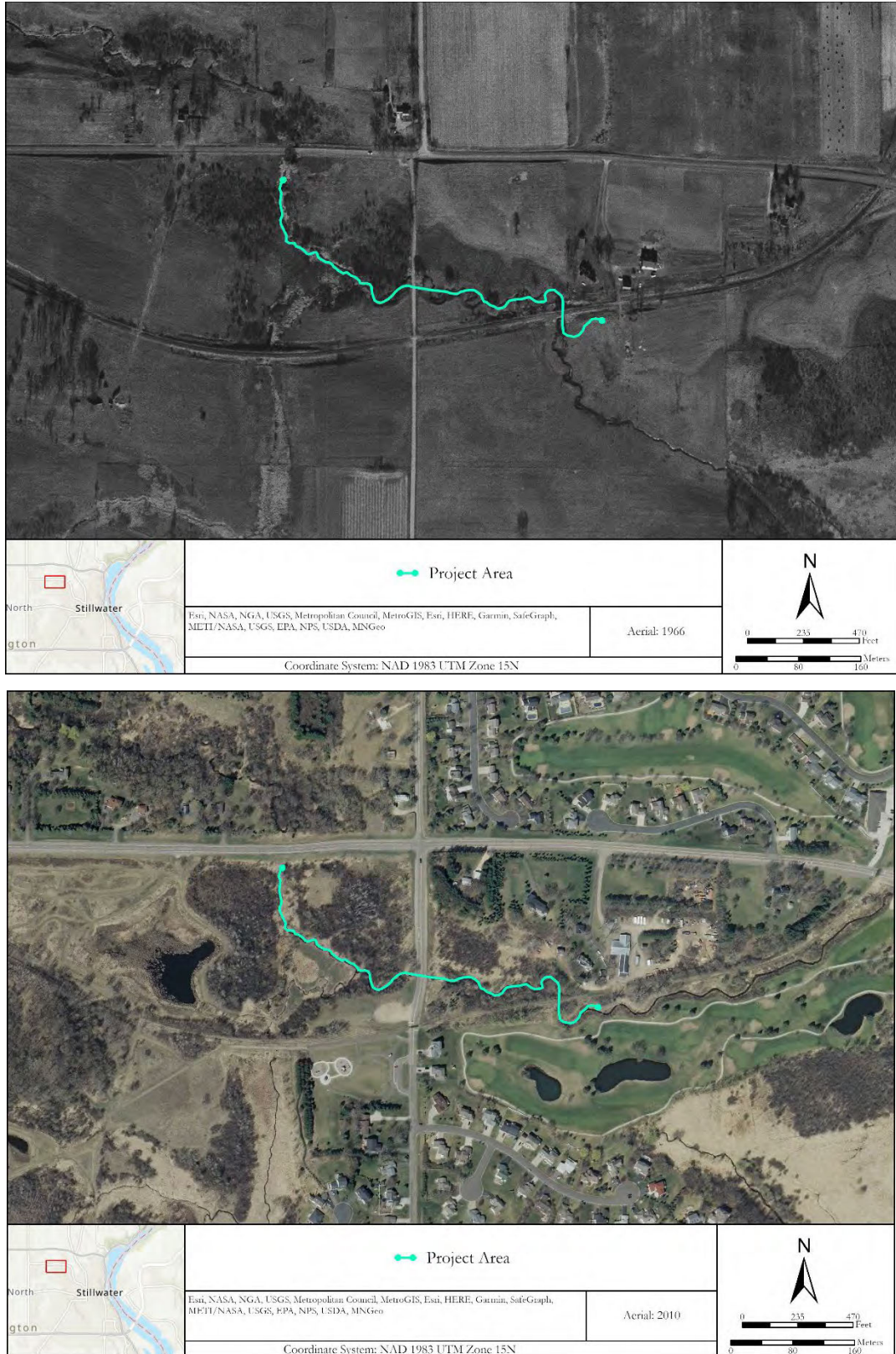


Figure 5. 1966 and 2010 aerial photo with project area (current location of Brown's Creek) overlaid (University of Minnesota-Minnesota Historical Aerial Photographs Online).

Previously reported sites: A site search was requested from the State Historic Preservation Office and research was conducted using the Office of the State Archaeologist (OSA) Portal. One previously identified site overlaps the project area, and three others are located within one mile (Figure 6 and 7).

The project area overlaps the mapped location of 21WAac. The site is based on the 1874 plat map of Washington County (Andreas 1874). The map shows structures in Section 19, [REDACTED]. No other information is given in the OSA portal.

21WA30 is a small precontact find artifact scatter of unknown age and cultural affiliation located on a ridgetop north of Brown's Creek in a plowed field. The site is located [REDACTED] of the project area.

21WA26 is a precontact habitation site of unknown age and cultural affiliation located on the northwest side of Twin Lakes. In 1971 a survey for proposed highway work found no cultural resources in the area but the landowner reported that he and the previous landowner had found numerous projectile points in the area. The site is located [REDACTED] of the project area.

21WA73 is a small precontact find spot of unknown age and cultural affiliation located on a knoll overlooking the north shore of Lake McKusick. The site is located [REDACTED] of the project area.

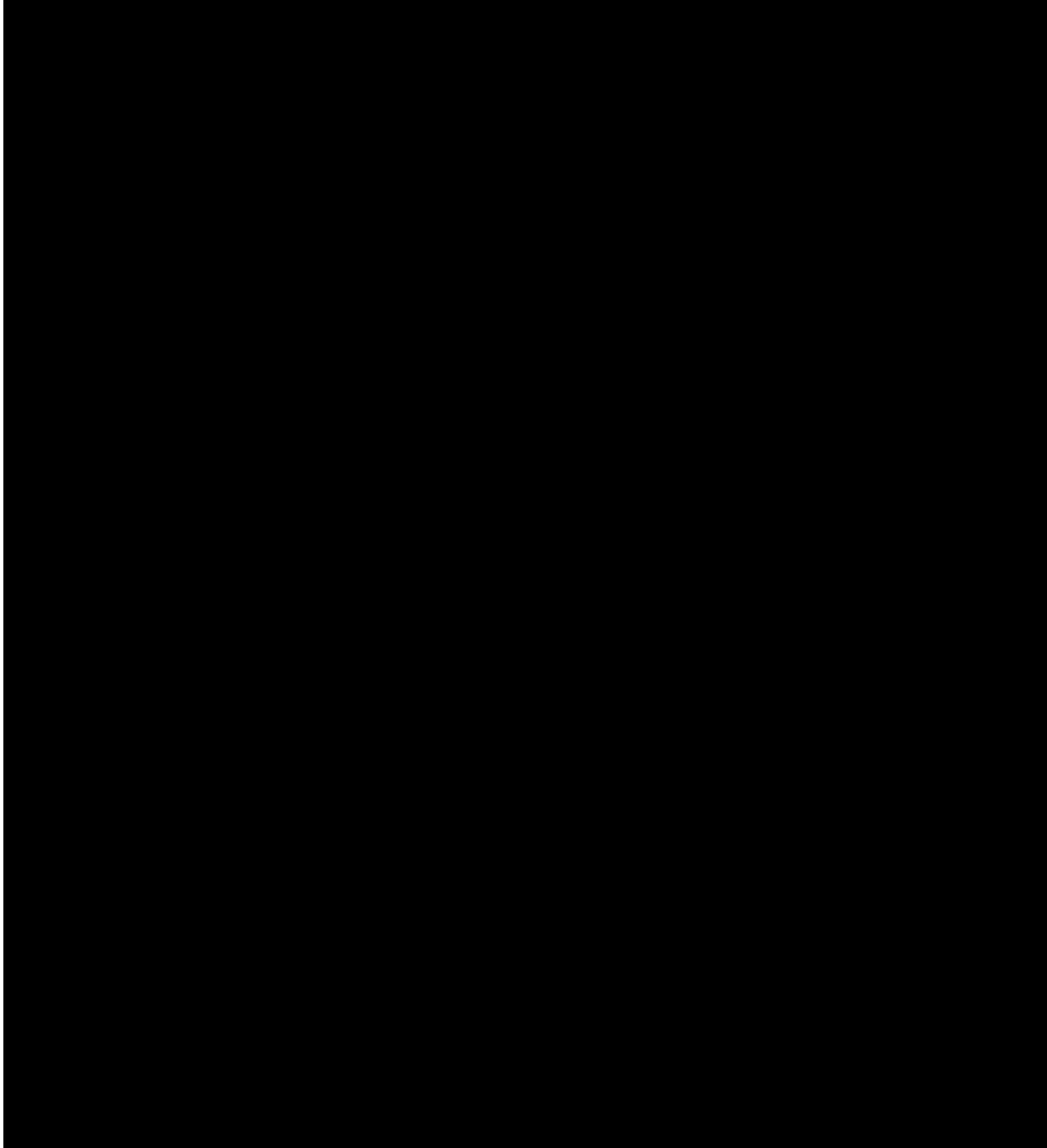


Figure 6. Previously reported sites in relationship to the project area on the Stillwater and White Bear Lake East, Minnesota 7.5' Quadrangles, adapted from the OSA portal.

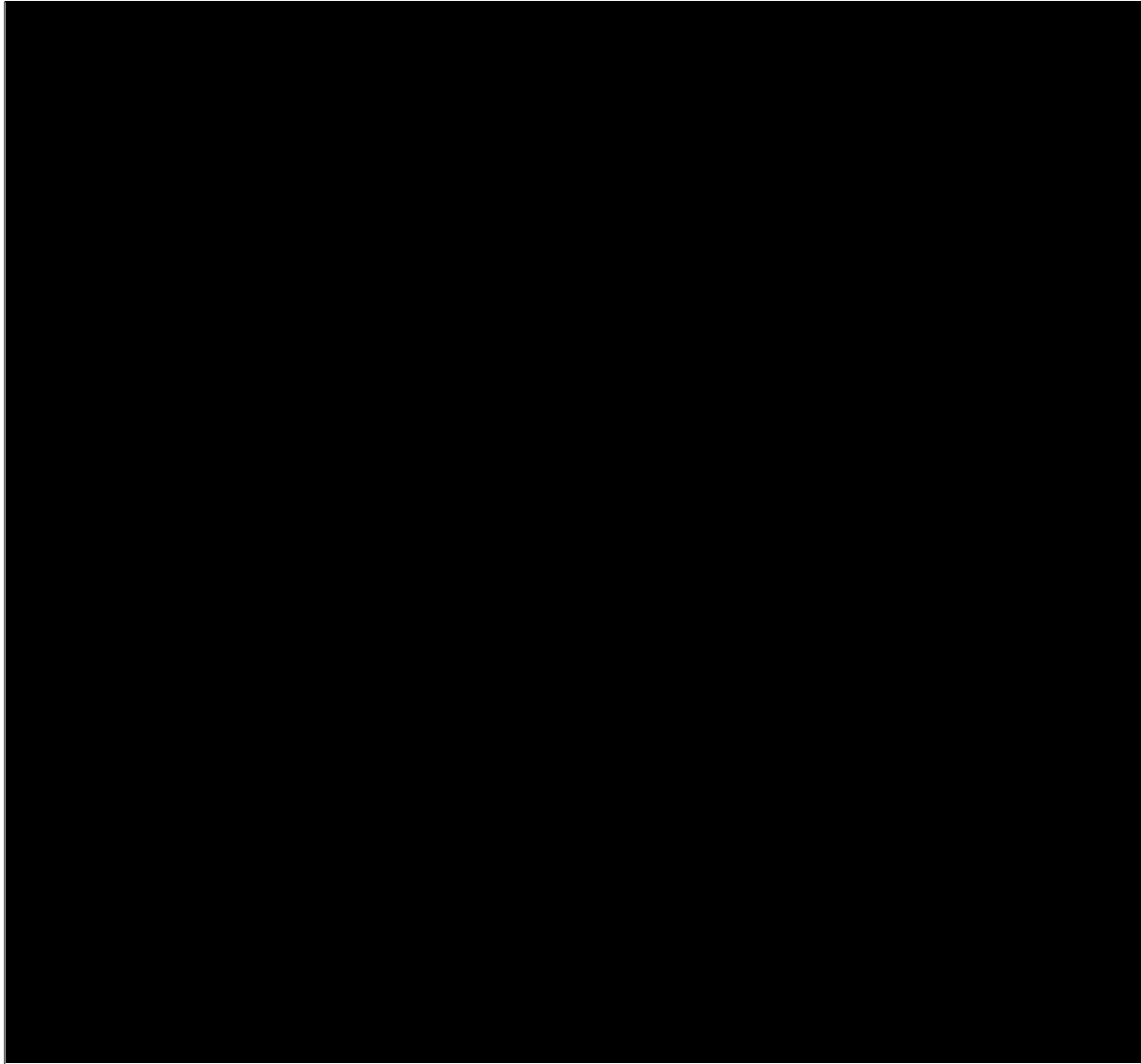


Figure 7. Previously reported sites in relationship to the project area on aerial imagery, adapted from the OSA portal.

Soils, vegetation and landscape change: The United States Department of Agriculture, Natural Resources Conservation Services Web Soil Survey (USDA-NRCS) was consulted to determine soils mapped within the project area (USDA-NRCS 2023). All of the project area is mapped as Auburndale silt loam, 0-2 percent slope (Figure 8). This soil type is found on drainageways on ground moraines or depressions on ground moraines and are formed in loess and/or silty alluvium over dense loamy till. It is a poorly drained soil type. The Auburndale soil series consists of deep, poorly drained soils formed in loess or silty alluvium. These soils are frequently saturated. Native vegetation consists of wetland grasses, alder shrubs, and trees such as black ash, quaking aspen, and bog willows.



Figure 8. USDA-NRCS soils map of the project area.

Vegetation near the project area was noted in the 1847 Government Land Office surveys [GLO] (GLO Historic Plat Map Retrieval System 2023). Sections 19 and 20 of T30N, R20W was described as rolling, third-rate soils with timber Bur, black, and white oak.

The OSA Portal identifies the project area as deciduous savanna. Since the mid-nineteenth century, the region around the project area has seen intensive land clearing and agriculture. Prior to this period the uplands would have been predominantly short grass prairies with hardwoods in the narrow, often steep, stream valleys. More than 150 years of agriculture has eroded the uplands and deposited thick accumulations of fine-grained sediments in the valley margins. This post-settlement-alluvium (PSA)

or legacy sediment as it is sometimes called, is ubiquitous in small stream valleys such as Brown's Creek. The portal also has a survey implementation model that identifies the area as high site potential and has been poorly surveyed.

Field investigations: Field investigations were conducted on August 16, 2023, by the author, under the direction of Constance Arzigian, Principal Investigator. The project area is located in a wooded area near the Brown's Creek State Trail (Figure 9). The survey was conducted by walking along either side of the creek bank, and in the stream where it was feasible. The stream is fairly shallow and clear in most areas, so the stream banks and the stream bed could be surveyed by walking in the stream (Figure 10). Exposed banks were inspected for the presence of any cultural materials or evidence of a buried soil horizon and soil probes were placed in areas without good exposure.

The western half of the project area, west of Neal Avenue N., is located in a low, wider stream valley located southwest of higher hills and bluff margins. The stream bank is approximately three feet tall through much of this area. There is active stream meandering, old meander scars and pockets of wetlands throughout this area. Approximately 30 % of the banks were exposed, with visibility of the banks themselves being 50-100%. The exposed banks provided excellent visibility and discernibility, permitting the identification of any potential cultural materials or cultural horizons (Figure 11). Soil probes were also placed approximately 1.5-3 meters (5-10 feet) on either side of the stream at various points along the route to confirm the soils profiles noted in the cut banks. The general soil profile for the western half of the project area was a very dark gray to very dark grayish brown (10YR3/1-3/2) sandy loam with streaks of iron from saturation at about 60 cm (2 feet). All of the soil in the probes were moist to wet (Figure 12).

The east half of the project area, east of Neal Avenue N., is located in a narrower stream valley with fairly steeply sloped margins. In a few areas where it widened out there were cut banks with very good visibility. The stream bed was again visible and could be surveyed for artifacts. At the very eastern end of the project area the stream crosses under the old railroad bed, now the Brown's Creek State Trail.

In the historic air photos and in the field, there was evidence of past meanders. There are no mapped wetlands but areas along the project area were saturated, even with the lack of rain this summer.

The cutbanks and soil probes showed deep profiles with no soil horizon development. The primary soil profile noted throughout the project area was a very dark gray to dark grayish brown (10YR3/1-10YR3/2) sandy loam, interpreted as PSA. The amount of PSA depended on the depth of the cut bank or soil probe and had no visible stratigraphy in profile. No intact soil horizons were noted in the project area.



Figure 9. General setting for the west half of the project area, view northwest.



Figure 10. Example of clear, shallow nature of the creek.



Figure 11. Example of cutbank soil profile.



Figure 12. Soil probe from near center part of the project area. Iron staining near base of probe and soil saturated.

Results: The Brown's Creek project area is located in a moderately narrow stream valley. There is active erosion, with banks being undercut by the stream, providing excellent visibility for the survey. There are also areas of past and ongoing stream meandering and small wetland areas. Aerial photos dating back to 1938 show the stream moving across the project area, especially the central and

eastern half of the project area. During the field investigations extensive accumulations of PSA were verified throughout the project area. Both the stream banks, the stream bed, and soil probes were inspected for cultural resources and/or potential non-PSA soil horizons and none were observed.

Recommendations: The entire project area is within historic alluvial deposits, PSA. There are no previously identified cultural resources within or near the project area and none were found during this survey. 21WAac is a historic site of some kind mapped within the project area. The site is based on an 1874 map and there is no other information given. No historic resources were found during the survey. The nearest previously reported precontact sites are located over 0.5 miles away from the project area and are located on higher landforms. Based on these findings there is very little chance that if cultural resources ever existed within the project area that they would remain intact. Consequently, it is recommended that the proposed trout habit improvements go ahead as planned.

However, it is always possible that deeply buried materials, including human remains, may be encountered during the course of construction. If human remains are discovered, all work must cease in that area immediately, and the Minnesota Office of State Archaeologist must be contacted promptly.

Please let me know if you have any questions or need clarification regarding this report.

Sincerely,

Wendy K. Holtz-Leith

Wendy K. Holtz-Leith
Research Archaeologist
608-785-8455
wholtz-leith@uwlax.edu

References cited:

Andreas, A.T.

1874 Illustrated Historical Atlas of the State of Minnesota. Published by A.T. Andreas, Chicago, Illinois.

GLO Historic Plat Map Retrieval System

2023 Digital Public Land Survey plat maps images. Accessed online July 2023.
<http://www.mngeo.state.mn.us/glo/>

USDA-NRCS Soil Survey Division (USDA-NRCS)

2023 Web Soil Survey. Accessed online July 2023 at
<https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

University of Minnesota

2023 Minnesota Historical Aerial Photographs. Accessed online July 2023 at
<https://www.lib.umn.edu/apps/mhapo/>

Attachments:

Office of the State Archaeologist, License No. 23-193

Research Permit Minnesota Department of Natural Resources Parks and Trails Division (Special Permit No. 2023)

MINNESOTA ARCHAEOLOGICAL SURVEY LICENSE APPLICATION

This license only applies to Phase I survey fieldwork¹ conducted under Minnesota Statute 138.31-.42² at the location listed below and during the 2023 calendar year³. Any archaeological investigation performed on publicly owned or managed (non-federal) land must have a licensed archaeologist associated with the project. Archaeological investigations include, but are not limited to, the following methodologies: assessing archaeological potential, mapping, geophysical studies, drone surveys, surface survey, shovel testing, coring, soil, chemical and biological sampling, augering, and excavation⁴.

The Principal Investigator must have a separate license for each Phase I survey project. Each Phase II evaluation, Phase III major investigation, and burial site work must also be individually licensed. Only the individual indicated below is licensed as the principal investigator⁵. *The principal investigator is responsible for all work conducted by their employees, contractors, and subcontractors*⁶. The licensed individual (principal investigator) is responsible for reading, understanding, and complying with all Conditions attached to this license. Future licenses may be denied or revoked for failure to comply with this license, its conditions, professional ethics, or professional work standards.

Applicant Information

Name: Constance Arzigian

Institution/Agency/Company Affiliation: Mississippi Valley Archaeology Center

Title/Position: Senior Research Archaeologist E-Mail: carzigian@uwlax.edu

Address: University of Wisconsin-La Crosse, 1725 State Street, La Crosse, WI 54601

Work Phone: 608-785-8452 Cell Phone: 608-386-3682

Education/Qualifications

Name of Advanced Degree Institution: University of Wisconsin-Madison Degree: PhD

Department Name: Anthropology Year of Completion: 1993

Required documentation:

Curriculum Vita and documentation of appropriate experience attached (*submit an updated CV annually*)

Up-to-date CV and documentation on file at the OSA

¹ The study of the traces of human culture at any land or water site by means of surveying, digging, sampling, excavating, or removing objects, or going on a site with that intent (MS 138.31 [Subd. 7])

² State archaeological licenses are required on publicly owned and managed (non-federal) land.

³ January 1st through December 31st of a given year

⁴ As technologies change, survey options increase. This list is not intended to be nor can it be comprehensive.

⁵ The individual named on this license. The Principal Investigator is responsible for the methods, implementation, standards, results, and recommendations of all work conducted under this license.

⁶ Any person or entity working for or under the Principal Investigator's direction or contract as part of this license.

License History

Year of most recent license: 2023

Type of License (survey, evaluation, etc.): survey License #: 23-105

Have you ever been denied an archaeological license? If not, check "NO" and leave this section blank.)

No Yes; If yes, when: _____ Where: _____

Explain: _____

Contact Name: _____ Phone: _____

Email: _____

Curation

Minnesota Historical Society #: 1031

Other Approved Curation Facility Name: _____ #: _____

By signing this license application, I consent to the sharing of information submitted as part of the licensing process among the Office of the State Archaeologist (OSA), the Minnesota Historical Society (MHS), and the Minnesota Indian Affairs Council (MIAC). As the primary licensing agencies, OSA and MHS may share license application information with MIAC and Tribal Historic Preservation Offices (THPOs) as part of the tribal consultation process. I understand that the information shared with MIAC includes only the information I submit as part of the license application process. This consent expires upon completion of the above-stated purpose.

Signatures

Applicant: Constance Arzigian Date: 7/14/2023

Minnesota Historical Society Approval: [Signature] Date: 07/24/2023

Minnesota State Archaeologist Approval: [Signature] Date: 7-17-2023

LICENSE NUMBER: 23-193



MINNESOTA ARCHAEOLOGICAL PROJECT INFORMATION

LICENSE #: 23-193

** IMPORTANT -This information will be shared with MIAC and tribal officials as part of the tribal consultation process.*

Applicant Information

Name: Constance Arzigian

Institution/Agency/Company Affiliation: Mississippi Valley Archaeology Center

Land Management

Type of Land: (check all that apply)

- State-Owned or Managed
 County-Owned or Managed
 Township/City Owned or Managed
 Other non-federal public (describe): _____

Dates

Dates of proposed fieldwork: July 24 to August 4, 2023 (ASAP)

Is the project within a recorded archaeological site? Yes No

If so, what are the site number(s)? 21WAac

Survey:

Location (attach a detailed map, and provide an address or Property ID #, and PLSS location):

The project area is located west of the city of Stillwater, south of CR 64 to just south of Brown's Creek State Trail. Portions of the project area are located in property owned by the City of Stillwater (parcel ID is 1903020410001), NE, SE of Section 19 T30,R20 and the Minnesota Dept of Natural Resources (parcel IDs 2003020320020, 2003020320023, and 2003020320018) NW, SW of Section 20, T30,R20.



Name and purpose of the project, and proposed survey methods (attach pages if necessary) (400 word limit - attach additional pages if more space is needed.)

Brown's Creek Washington County: The survey will be conducted for trout stream habitat improvements and will examine banks for presence of cultural materials or intact soils other than post-settlement alluvium. Shovel test and probing as needed where there is insufficient bank exposure and to establish soil profiles. Both sides of the creek will be surveyed either from the bank or within the creek. The mapped location of 21WAac overlaps the project area. The site is based on historic Andreas documentation and there is no other information given in the OSA portal.

CONDITIONS OF MINNESOTA ARCHAEOLOGICAL SURVEY LICENSE

1. The licensed individual and the sponsoring institution/agency/company must comply with all the conditions attached to the license. If the licensee does not comply with these conditions, the license could be revoked and impact one's ability to obtain future licenses.
2. All information given on this license application is accurate and up to date.
3. The individual listed on this license is responsible for all work of their employees, contractors, and subcontractors.
4. A license can be denied for any of the following reasons: a) failure to meet the required professional qualifications standards, b) failure to possess the necessary regional, topical, or managerial experience, c) failure to fulfill the conditions of a previous license, or d) exhibiting unethical professional behavior, including, but not limited to falsifying field notes or reports, plagiarism, intentionally misrepresenting professional qualifications or experience, mishandling archaeological and site information or materials owned by the state per MS 138.37 (Subd. 1).
5. This license can be revoked or suspended by the State Archaeologist or the director of the MHS, or their agent, at any time for failure to fulfill the license conditions or for exhibiting unethical behavior such as listed above (4). Appeals of license denial, suspension, or revocation must follow procedures outlined in Minnesota Statutes 138.36, Subd. 6
6. As part of this license and in support of Executive Order 19-24, licensing information will be submitted to MIAC and tribal officials as part of the tribal consultation process. The licensee is strongly encouraged to continue consultation with MIAC and appropriate THPOs.
7. If the project area is within the boundaries of a reservation or Dakota community, archaeologists should directly communicate with the appropriate THPO or tribal cultural resource specialist regarding the proposed work.
8. If the project area is on Federal land, archaeologists should directly communicate with the federal agency regarding proposed work.
9. Under the provisions of Minnesota Statutes 138.31-138.42, the license applicant must be a Qualified Professional Archaeologist as specified in Minnesota Statutes (MS) 138.31, Subd. 10, and meet the Secretary of the Interior's Professional Qualifications Standards for Archaeology. The applicant must also possess the appropriate regional, topical, and managerial experience to undertake reconnaissance surveys.
10. This license only applies to Reconnaissance/Phase I archaeological surveys conducted on non-federal public lands in Minnesota. If more than two square meters of formal unit excavation or procedures that involve terrain disturbance (e.g., machine excavation) at a known site are planned, the principal investigator must consult with the Office of the State Archaeologist (OSA) before implementation.
11. This license does not authorize activities within cemeteries, per Minnesota Statutes 307.08. No ground disturbance within 50 feet of recorded cemeteries is allowed, without the prior approval of the State Archaeologist and the Minnesota Indian Affairs Council, in the case of American Indian cemeteries. If human remains or suspected burial-related items are encountered, all work must immediately cease, the remains or items left in situ, and law enforcement contacted (e.g., county sheriff). If the remains are not deemed a crime scene, the licensee must immediately contact the State Archaeologist.
12. This license only applies to fieldwork conducted between the dates specified on this license application.
15. This license applies only to the location specified on this license application.
16. If the licensee ceases association with the institution/agency/company before completing the project, immediately notify the OSA. The OSA and licensee or institution/agency/company

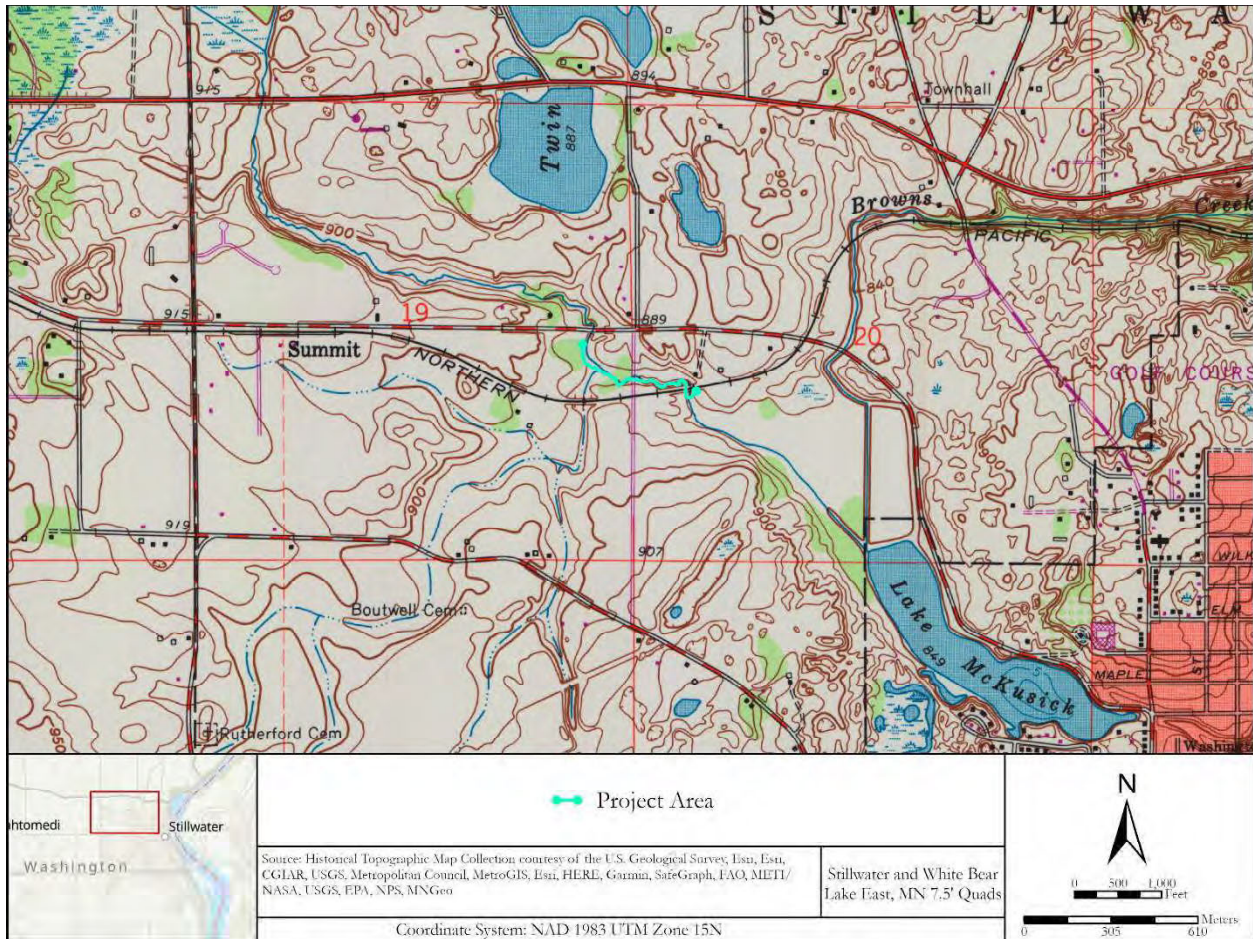
will develop a plan to fulfill reporting and curation obligations.

17. The license is non-transferable and applies only to work conducted under the direct supervision of the licensee.
18. The licensee must comply with the field, laboratory, and reporting guidelines in the *OSA Manual for Archaeological Projects in Minnesota*. Any exceptions must be discussed with the OSA before work occurs.
19. The licensee must obtain permission from the landowner or land manager to enter the land for archaeological investigations.
20. All archaeological materials and data recovered from non-federal public property in Minnesota are the state's property and should be curated with the MHS (<http://www.mnhs.org/collections/archaeology/curation.htm>), or other OSA approved facility.
21. If materials, samples, or data are being processed or analyzed by an entity other than that with which the principal investigator is associated, the principal investigator must notify the OSA and MHS.
22. If materials or samples are to leave the state of Minnesota, the OSA and MHS must approve the transport before materials, samples, or data leave the state.
23. Official OSA Minnesota site inventory forms must be completed for all archaeological sites identified during surveys (previously recorded and known sites). The site forms must be submitted to the OSA within three months of site discovery. Professional archaeologists are also ethically obligated to inform the OSA if previously unrecorded archaeological sites located outside their project boundaries are identified during their project survey.
24. One copy of the report (see *OSA Manual for Archaeological Projects in Minnesota*) must be submitted to the OSA for each project within six months of completing the fieldwork. The licensee may submit a written application requesting an extension of this deadline. Digital copies of reports are accepted as .pdf files.
25. If presentations or publications develop from this project, the OSA and MHS must be notified, and the following information submitted for inclusion in the archaeological site files:
 - a. Location of presentation or publication,
 - b. Date
 - c. Title
 - d. Abstract
 - e. The final and complete version of the presentation, publication, etc.
26. The licensee must submit a summary report of all licensed activity to the OSA by the end of January of the following year. Summaries should include:
 - a. project name and description (e.g., road construction),
 - b. sponsor/review agency,
 - c. location,
 - d. type of work (Phase I, Phase II) and field methods (e.g., shovel testing),
 - e. results (number of sites located/type of sites or official site numbers) and recommendations
27. Upon completing the project, the licensee must submit .shp files to the OSA. These files should show the project's Area of Potential Effect and archaeological survey areas, including the type of survey conducted in each survey area. Templates for submitting .shp files are at <https://mn.gov/admin/archaeologist/professional-archaeologists/manuals-licenses/apply/>. Please do not alter these templates.
28. Additional conditions may be added, as appropriate. If this occurs, the applicant will be notified of the update and asked to submit a response accepting the Condition.

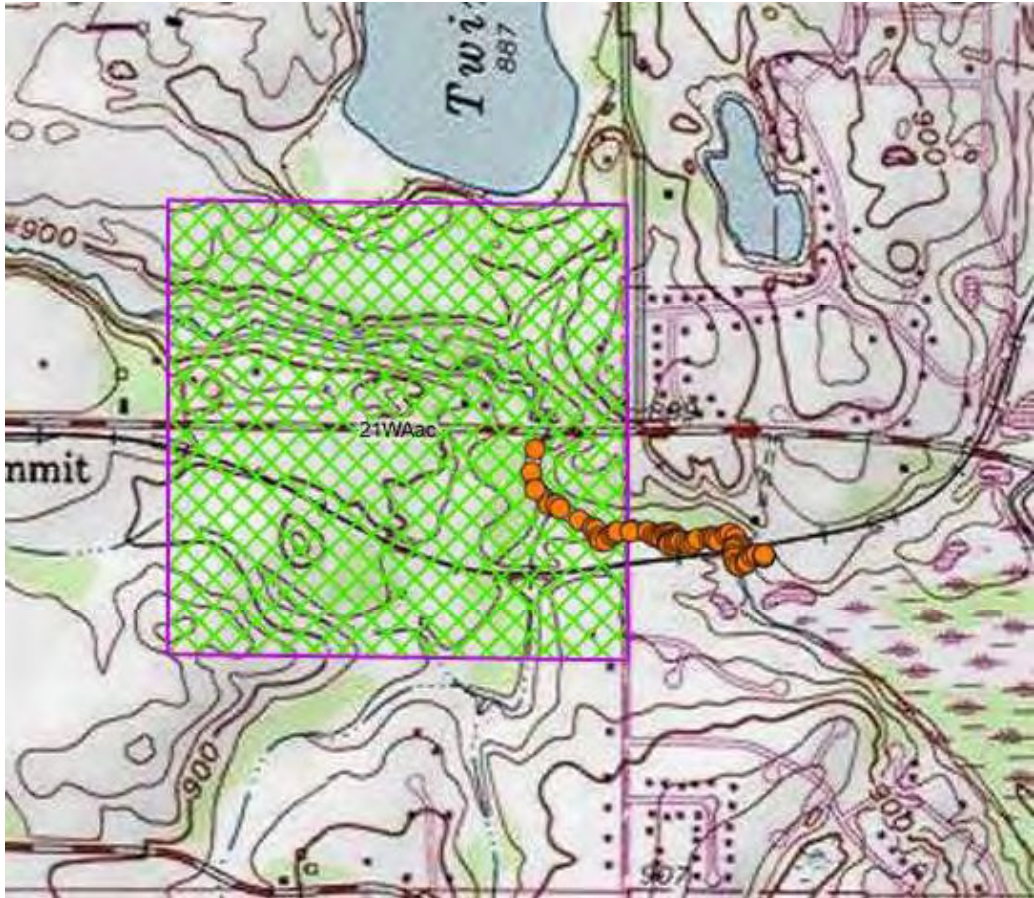
29. Minnesota Department of Health and the Center for Disease Control recommendations regarding COVID-19 and limiting its spread. These recommendations include, but are not limited to, social distancing, appropriate personal protective equipment (e.g., masking), and sanitation. This Condition does not supersede stricter landowner, agency, or employer restrictions. This Condition will remain in effect until state health officials determine that social distancing is no longer necessary.

I have read, understand, and agree to all Conditions attached to this license. ca (Initial)





Project area on the Stillwater and White Bear Lake East, MN 7.5' quadrangles.



Brown's Creek trout stream project area and 21WAac on Stillwater, MN 7.5' quadrangle.



Project area on current aerial.



Project area and parcel ownership.

Parks and Trails Division Research Permit

Special Permit Number: 2023

Date: August 9, 2023

Permission is hereby granted to:

The individual(s) listed below to do a project entitled **Archaeological investigations on Brown’s Creek for proposed trout stream habitat improvements** as described in the research application. This permit applies only to those lands administered by the Parks and Trails Division listed below. The permittee is also subject to any other state or federal permits which may apply.

Permittee	Parks and Trails Unit	Unit Supervisor Contact Information
Constance Arzigian, Wendy Holtz-Leith	Browns Creek ST	Rachel Henzen, 651-259-5875 Rachel.henzen@state.mn.us

-Standard Conditions:

- 1) You must contact the unit supervisor to notify them when permitted activities are scheduled to begin.
- 2) The unit supervisor, or designee, may approve or disapprove where research activities may occur.
- 3) Permitted research activities must be carried out in a way that minimizes the potential to introduce, establish or spread invasive species.
- 4) Research locations may be subject to management actions such as prescribed burning, invasive species control, and timber harvest. Unless prior arrangements have been made with the unit supervisor, research locations will not be exempt from these actions.
- 5) Interim progress reports must be submitted annually by the end of the calendar year. A final report is also required at the conclusion of the research project. Please submit interim and final reports to Katie.immel@state.mn.us.
- 6) The permittee, or designees listed under this permit, must carry a copy of this permit when conducting research activities.
- 7) All markers, equipment, and other items used during the research must be removed at the end of the research project. Marking ribbons, stakes or similar items must be marked with the researcher’s name and permit number.
- 8) You are using lands administered by the Parks and Trails Division at your own risk. You agree to take all necessary safety precautions to protect yourself, all designees listed under this permit, and the general public when conducting research activities.

- 9) You must comply with all applicable federal, state and local laws when conducting the work authorized by this permit. All Parks and Trails rules remain in effect except those necessary to be waived to conduct this research ([MN Rule 6100.0100 – 6100.2400](#)).
- 10) The ownership of any samples collected under this permit remains in the State of Minnesota, in its sovereign capacity for the benefit of all people of the state. Permittee shall not file any patent application covering any samples.
- 11) Permittee may retain the entire right, title and interest throughout the world to any invention derived or otherwise originating from the samples. With respect to any subject invention in which the permittee retains title, DNR and all political subdivisions of the state of Minnesota, and the providing Federal Agency if federal funding is involved, will have a nonexclusive, nontransferable, perpetual, irrevocable, royalty free license to practice or have practiced the invention for its governmental purposes throughout the world. The DNR shall also have the right to claim royalties resulting from any such invention, the royalty rate to be negotiated between the permittee and DNR upon disclosure of the invention, but in no event will the DNR's royalty rate exceed 50%.
- 12) The samples and any portions or derivatives thereof shall not be sold, assigned, transferred, or otherwise distributed from the custody of the permittee (i.e., shall not be shared with any other person or entity) without prior approval from the DNR, unless it is for the purposes of laboratory analyses specified in the study design and the laboratory collaborator does not retain any samples or portions or derivatives thereof after completing the analyses.

Special Conditions:

- 1) The researcher must have a license from the Office of the State Archaeologist before the project start date.
- 2) The researcher will provide archaeological GIS data/shapefiles from survey inside of the DNR boundaries to the DNR cultural resource team including excavation/shovel test locations, archaeological features and site boundaries.
- 3) Provide a copy of resulting report(s) to MnDNR cultural resources for review before submittal to other agencies.
- 4) All archaeological researchers are responsible for the curation of any cultural material collected during research.
- 5) Any professional and/or public presentations of data obtained through this research requires advanced notice of presentation title, date/time, and location. All required information and questions can be sent to PATCulturalRes.dnr@state.mn.us

This permit is valid from the date of issuance through December 31, 2023, but it may be revoked at any time.

SARAH STROMMEN, COMMISSIONER

DEPARTMENT OF NATURAL RESOURCES

By_

Philip G Leversedge

Parks and Trails Deputy Director

Cc: Resource Program Consultant, Regional Resource Specialist, District Resource Specialist, Unit Supervisor,
Archaeologist (if applicable)

APPENDIX D – NHIS REVIEW LETTER FROM DNR

APPENDIX E – EAW COMMENTS AND RESPONSES

Brown's Creek Park EAW Comments and Responses to Comments

Dated completed: 01/03/2024

Organization / Person	Comment	Response to Comment
Minnesota Indian Affairs Council	The Minnesota Indian Affairs Council (MIAC) has completed the EAW for the proposed - Brown's Creek Restoration Project. Following review, the proposed project does not seem in any way to potentially damage or alter known cultural resources within the area. MIAC does not have any specific recommendations. For any questions or concerns regarding this review, please reply back to MIAC's cultural resource personnel.	Comment noted, no response needed.
Minnesota Pollution Control Agency	MPCA staff has reviewed the EAW and have no comments at this time. Requested that a notice of decision on the need for an Environmental Impact Statement.	Comment noted, notice of decision on need for an EIS forthcoming.
State Historic Preservation Office	We previously provided comments on this project in a letter dated November 3, 2023, to Mike Magner of the Minnesota Department of Natural Resources. We have reviewed the cultural resources survey letter report, Phase I Archaeological Survey for proposed trout stream habitat improvements on Brown's Creek, Washington County, Minnesota (August 19, 2023) as prepared by Mississippi Valley Archaeology Center. Based on the results of the survey, we conclude that there are no properties listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties in the area that will be affected by this project. (SHPO also noted the potential need for historic-resource review under federal law.)	Comment noted. As noted in the EAW, the project will be supported by federal grant funds provided through the Minnesota Pollution Control Agency, and all applicable regulatory requirements will be addressed in obtaining permits for the project.
Metropolitan Council	Item 6. Project Summary: The EAW states "The project will also include the creation of an American Disability Act-compliant 'spur' off Brown's Creek State Trail to improve public access to the creek." No additional expansion of the existing fixed route transit network is planned given the current transit investments and surrounding development patterns. Increasing the availability of existing (non-fixed route) public transportation services within Stillwater may be an option.	Comment noted. The BCWD is working with the Minnesota Department of Natural Resources Parks & Trails to incorporate ADA-site access from Brown's Creek State Trail, and will note the opportunity for transit connections in working with the City of Stillwater on the project as well.
Metropolitan Council	Item 7. Climate Adaptation and Resilience: The EAW adequately addresses climate adaptation and resilience, including disclosure of potential climate hazards and impacts, with proposed on-site adaptations. The project will include reconnecting the creek with the floodplain, installing grade control riffles to limit channel incision, installing woody material and boulders for instream habitat, removing woody invasive species, and reestablishing native riparian vegetation. The project would restore stream pattern and dimension to better accommodate flood events. The project proposes planting native vegetation to provide deep rooted vegetation to stabilize the creek, which would improve resiliency of the creek. Reconnecting the floodplain will slow flood waters and allow the water to spread out over a wider area, thereby decreasing flood energy and bank scour. These are all best management practices for stormwater management over the long-term. The project's nature and scale appears to reduce on-site vulnerabilities related to potential climate hazards (extreme heat and localized flooding).	Comment noted. No response needed.
Metropolitan Council	Item 10. Land Use: The EAW does not acknowledge the future land use guidance of the parcels. It should note that the western parcel has a future land use guidance of "Park, Rec, or Open Space" and that the eastern two parcels have a future land use guidance of "Medium Density Residential." Additionally, the parcel owned by the DNR (PIN 2003020320020) has a future land use guidance of Medium Density Residential; however, on page 14, the EAW indicates that this area will remain as open space. The City will need to submit a comprehensive plan amendment in the future to reflect that change in the City's 2040 Plan. Similarly, the noted RA zoning for the eastern two parcels does not align with the parcels' Medium Density Residential land use guidance. Minn. Stat § 473.865 requires that planned land use and zoning be reconciled.	Comments noted. EAW text will be updated to reflect the future land use guidance as specified in the comment provided. BCWD also will work with the City of Stillwater on the project under terms that will be captured in a cooperative agreement between the parties. While BCWD will confirm that the project is consistent with the city's long-term land-use planning and zoning, Stillwater will retain decisionmaking authority and responsibility for compliance with applicable statutory requirements.

Metropolitan Council	Item 18. Greenhouse Gas (GHG) Emissions/Carbon Footprint: The GHG emission sources for this project include the operation of construction equipment, and tree and brush removal during the conversion of forest to prairie/wetland. Total emissions from construction equipment were estimated at 37.01 tons of carbon dioxide equivalents (CO2e) which were calculated using the appropriate global warming potential for each GHG and the appropriate unit conversion factor. Land use conversion from forest to grassland is the second category of emissions from the project. It is estimated that select tree harvest proposed for the project will remove approximately 80% of the trees from a 2.02-acre area, which is equivalent to 1.62 acres of forest converted to grassland. The average carbon loss per acre for conversion from forest to grassland would be an estimated loss of 14.81 tons of CO2e per acre converted, which equates to 24.00 tons for the proposed land conversion. However, all harvested trees and brush will be reincorporated into the project for stream and floodplain habitat enhancements, which is assumed to be a carbon sink. As a result, the total potential project-related emissions are estimated at 37.01 tons of CO2e. In summary, the project will reduce the potential for bank erosion through bank reshaping and reconnection of the floodplain. Establishment of diverse, native vegetation will increase sequestration of carbon through the dense growth of plants and subsequent storage of carbon in the soil through the root systems. The project, as proposed, does not have the potential for significant environmental effects based on the type, extent and reversibility of impacts related to emissions of greenhouse gasses which are reasonably expected to occur.	Comment noted. No response needed.
Minnesota Trout Unlimited	No specific comment on EAW; statement of support for the proposed project.	Comment noted, no response needed.
Washington County	Ensure traffic control for access off the County Road; access should be via Neal Ave if possible. If not, possible access should meet the county road at a 90-degree angle.	Proposed access to project area west of Neal will be off McKusick Road to limit impacts to existing wetlands. Access to the project area east of Neal Ave will be off Neal Ave.
Washington County	There is the possibility of a future pedestrian underpass under the county road. This is an area that pedestrians want to cross to reach Brown's Creek Trail, and the steam culvert is a promising location elevation-wise. Would a trail along the creek ever be plausible, and is it compatible with the work being done?	A trail along the creek from an underpass under the county road is not compatible with soft soils associated with seepage wetland in the area.
Washington County	The project will need to protect the existing curb and gutter, storm sewer outlets, and guardrail.	Comment noted. Coonstruction plan notes and contract requirements will ensure all existing infrastructure is protected.
Washington County	While the disposal site is located on the City of Stillwater property, this location would make for a good stormwater management basin for a future project.	Comment noted. The proposed spoils area is a disturbed upland meadow that appears have been filled previously, based on notes from members of the Technical Advisory Committee for the project. Hauling soil off the project site would incur significant cost to the project. This site would have limitations as a stormwater managment basin given the proximity to a cold-water trout stream. BCWD would be willing to discuss project specific ideas to determine feasibility.
Washington County	We find the Brown's Creek Restoration Project EAW in general alignment with the Washington County Groundwater Plan. In particular note, we appreciate considerations taken for habitat protection/securement at various trophic levels and for planning efforts to increase long-term native species' and floodplain resilience.	Comment noted, no response needed.
Washington County	This project is within the Browns Creek Central High Priority Area of the Washington County Land and Water Legacy Program Top Ten Priority Areas. The county appreciates the effort to restore critical water resources in this area. This project is aligned with the goals of the Land and Water Legacy Program and has taken the necessary precautions to maintain best stewardship practices.	Comment noted, no response needed.
Minnesota Department of Natural Resources	Page 7, Project Description. We support the Brown's Creek Restoration Project that connects the incised channel with the floodplain and reconnects several oxbows.	Comment noted, no response needed.
Minnesota Department of Natural Resources	Page 12, Permits and Approvals. Please submit the floodway no-rise certificate to the DNR as part of the public waters work permit application.	Comment noted. The no-rise certificate is in development and will be provided once complete (expected by January 15, 2024).
Minnesota Department of Natural Resources	Page 14, Geology. This section states that there are no susceptible geologic features in the project area. Please be aware that a portion of the project area is mapped as a region prone to surface karst feature development, and that natural springs and seeps have been documented extensively throughout the project area. Great care should be taken if karst features are encountered during construction to avoid contamination groundwater.	Comment noted. We will preserve any surface karst features encountered including spring seeps and springs. There are construction plan call outs that depict the locations of springs and seeps identified in the project area.
Minnesota Department of Natural Resources	Page 17, Stormwater. Please be sure that all requirements regarding state-listed species from the Natural Heritage letter are incorporated into the SWPPP and construction plans. Please use only appropriate BWSR-approved native seed mixes, and do not apply fertilizer. Wildlife-friendly erosion control materials are required.	Comment noted. Requirements regarding state-listed species from the Natural Heritage Review Letter will be incorporated into the stormwater pollution prevention plan and construction plans as noted. In addition, the project specifications include state-approved seed mixes, and no fertilizers are proposed. The existing construction plan includes requirements for wildlife-friendly erosion control materials.

Minnesota Department of Natural Resources	Page 19, Rare Features. This section should discuss that a Natural Heritage letter was issued on May 9, 2023 and include it in the appendix. Please see the attached Natural Heritage letter and include it with DNR comments in the Record of Decision. It contains required avoidance measures for the state-threatened Blanding's turtle. The Natural Heritage letter also recommends a rare plant survey be conducted. This section of the EAW does not mention that state-threatened Tubercled rein orchid (<i>Platanthera flava</i> var. <i>herbiola</i>), has also been documented in the vicinity. Please refer to the Natural Heritage letter for further direction on the rare plant survey process.	The May 9, 2023 letter addressed to Aaron DeRusha was in response to a potential Conservation Partners Legacy Program grant for a larger project area than is proposed under the EAW for Brown's Creek stream restoration. Removal of invasive species from City of Stillwater property may be undertaken in the future, under a separate scope of work. As stated in the EAW, "A review of rare features for a one-mile search area around this project boundary was conducted using the Natural Heritage Information System database. No state-listed endangered, threatened, or special concern species were identified within the project site, but three state-listed species were identified within one mile of the project boundary, including Louisiana waterthrush (<i>Parkesia motacilla</i>), Blanding's turtle (<i>Emydoidea blandingii</i>), and water-willow (<i>Decodon veticillatus</i> var. <i>laevigatus</i>)." The difference between these reviews was that for our smaller project area, tubercled rein orchid and Goldie's fern were not found within one mile. It should be noted that the BCWD engineer has a NHIS license (LA-1068) and submitted a project-specific MCE (2023-00785) for review on October 13, 2023; no response has been provided to date. Blanding's turtle avoidance measures will be required in the construction plans and specifications.
Minnesota Department of Natural Resources	Section 14.c. Impacts to Ecological Resources. The project proposes increases in floodplain connectivity and infiltration in the riparian and upland habitats. Some questions still remain that should be addressed in this section: a. What method will be used to limit compaction or remedy areas of soil compaction following construction? b. Where any considerations made regarding aquatic organism passage through the box culvert? c. What method will be used to remove black locust to prevent a flush of black locust sprouts or seedlings? d. What method(s) will be taken to remove common buckthorn, glossy buckthorn, and exotic bush honeysuckle to limit resprouting and subsequent ongoing maintenance? e. We recommend that vegetation management include control of Sandbar Willow (<i>Salix interior</i>) migrating into the project area.	a: Soil compaction to be addressed through soil scarification/decompaction methods after construction and before seeding and final soil stabilization. b: Yes, the proposed project includes installation of constructed riffles downstream of the box culverts to raise the creek bed and increase the baseflow water elevation specifically to allow fish passage through the culverts. c: Cut stump treatment will be used on black locust and any other woody invasive species, and the project will include a post-construction vegetation-maintenance plan that will include followup treatments of resprouts. d: Same method as described under c. e: We will add sandbar willow to the list of species to manage as part of the vegetation-management plan.
Minnesota Department of Natural Resources	Project Design. As the project designs are finalized, DNR would like more information on how key features were determined in the design of the new stream channel, and offers the following questions and comments: a. What are the general stream widths and bankfull height in the design? b. Are all the constructed riffles grade control? Will some riffle material be mobile at bankfull to migrate downstream to the next riffle? This application may be limited by the sediments migrating in from upstream. Hopefully, the efficient channel will recruit some gravels into the project area. c. Will the project consider additional roughness across channel plugs to limit cutoffs occurring in the near term? Consider using remaining woody material that can be placed/partially buried onto the newly created floodplain. d. There may be an opportunity/benefit for BCWD and DNR Fisheries to coordinate management of the Aquatic Management Area (AMA) so the subsequent handoff of project and benefits can continue within the Brown's Creek AMA. e. With the added sunlight herbaceous wetland vegetation should do well in this area.	a: general stream width (minimum toe to toe width) is 9 feet (refer to Sheet 26, detail 1/26), bankfull height above baseflow water elevation is 1.8 feet per multiple details on Sheet 24. These dimensions are based off reference reach data collected upstream and downstream of the project area. b: Yes, all constructed riffles will act as grade control, but note the details shown on Sheet 26 (detail 2/26) call out the use of existing native gravel within the void spaces of the constructed riffle and over the riffle surface to emulate natural conditions. Some of these gravels are anticipated to be carried downstream to the next riffle during bankfull or greater flows. The reduced channel width should improve fine sediment transport and minimize embeddedness of coarse substrates in the channel. c: Yes, all channel plugs are being protected by woody material and toewood to prevent cutoff of oxbow channels. However, the project is located in a Zone AE floodplain which means certification of no-rise of the 100-year flood will be required. This will limit the ability to manipulate floodplain roughness. d: Comment noted; BCWD will work with DNR staff to coordinate long-term management of the Aquatic Management Area. e: Agreed.

**Agreement for the Restoration of Brown’s Creek,
Dedicating an Irrevocable Term License, and
Committing to Convey a Maintenance Easement**

Between the Beltram H. Van Tassel, an individual, and Barbara Van Tassel, an individual, and Beltram H. Van Tassel and Barbara Van Tassel as trustees for the Beltram H. Van Tassel Revocable Trust and Brown’s Creek Watershed District

This agreement is made by and between Beltram H. Van Tassel, an individual, and Barbara Van Tassel, an individual, and Beltram H. Van Tassel and Barbara Van Tassel as trustees for the Beltram H. Van Tassel Revocable Trust (collectively, Van Tassels) and Brown’s Creek Watershed District, a special purposes governmental entity of the State of Minnesota with purposes and powers set forth at Minnesota Statutes chapters 103B and 103D (BCWD), for purposes of conveyance by Van Tassel to BCWD of temporary and ongoing property rights necessary for construction and maintenance of a creek-improvement project.

RECITALS

A. Van Tassels are the owners in fee simple of 4.6 acres of certain real property at 13093 McKusick Rd North in the City of Stillwater, Washington County, legally described as:

That part of the east 335 feet of the west 650 feet of the northwest quarter of the southwest quarter of section 20, township 30 north, range 20 west, Washington County, Minnesota, lying southerly of the southerly line of Washington County Highwater Right of Way No. 85 – County Road 64, recorded as Document No. 714569 in the office of the County Recorder, Washington County, Minnesota, and lying northerly of the northerly line of the Minnesota Transportation Museum property, formerly the Stillwater St. Paul Railroad Company property, as describe Book “U” of Deeds, page 499, on file and of record in said office of the County Recorder, Washington County, Minnesota.

(the Van Tassel Property).

B. Whereas Brown’s Creek Watershed District has an approved and adopted watershed resources management plan in fulfillment of Minnesota Statutes section 103B.231 including policies committing BCWD to the improvement of the water quality and ecological integrity of Brown’s Creek and its tributaries, including maintaining a viable cold-water fishery and maintaining the hydrology and geomorphology of Brown’s Creek and its tributaries required for stream equilibrium and health, and the capital improvements program in the plan includes creek-restoration projects addressing impairments of Brown’s Creek for turbidity and fish-bioassessments identified in the Brown’s Creek Total Maximum Daily Load Plan (2012) and the Brown’s Creek Thermal Study (2016), including improvement of reaches categorized as having degraded stream

channel geomorphology by addressing lack of buffer, stream width, overhanging banks, and profile and alignment;

C. Whereas at the direction of the BCWD Board of Managers to address the impairments and improve the ecological health of Brown's Creek, the BCWD staff and engineer developed a conceptual design for restoration of roughly 2,000 feet of the creek from McKusick Road just upstream of Brown's Creek Park to just downstream of the Brown's Creek State Trail in Stillwater, and the design includes:

- reconnection of cutoff meanders, pattern adjustments to increase stream sinuosity, and grade control to reconnect the floodplain adjacent to the creek;
- reconnect the floodplain and remove invasive species from the bank and upstream areas along the reach;
- bank shaping and selective tree thinning to promote herbaceous understory growth;
- restoration of fish habitat with rock riffles and pools to increase spawning opportunities and provide stable refuge for macroinvertebrates;
- establishment and maintenance of vegetation; and
- improved access to the creek from Brown's Creek State Trail.

(Altogether, the elements listed here constitute and are referred to as "the Project" for purposes of this agreement.) The Project will also include the development and implementation of a plan for post-construction maintenance and repair of the Project (the Maintenance Plan).

D. Whereas the Project includes work on the Van Tassel Property, among others, and the Van Tassels have agreed to provide rights to access and use the Van Tassel Property to facilitate implementation and maintenance of the Project;

E. Whereas after presentation by staff and the engineer of the concept for and assessment of the feasibility of the Project at its July 2023 regular meeting and a duly noticed public hearing pursuant to Minnesota Statutes section 103B.251, subdivision 3, at its September 2023 regular meeting, the managers adopted BCWD Resolution 23-04, ordering the Project; and

F. Construction of the Project will benefit Van Tassels by stabilizing and improving the Van Tassel Property, securing it against loss from erosion, and benefitting the public generally by mitigating risk of flooding and improving the ecological health of the creek and wildlife habitat. The parties acknowledge in executing this agreement that sufficient mutual consideration is exchanged under the terms hereof, and that this agreement sets forth obligations that are duly binding on the parties.

NOW, THEREFORE, in consideration of the foregoing recitals, which are incorporated into and made a part of this agreement, and other good and valuable consideration, and to facilitate the Project for the benefit of the public, the parties agree as follows:

1. Approval of design and plans. BCWD has contracted with the BCWD engineer, Emmons & Olivier Resources Inc., for the preparation of a design and plans for the Project, attached hereto and incorporated herein as Exhibit A. By their signature hereunder, Van Tassels approve the plans and design in Exhibit A. BCWD makes no warranty to the Van Tassels regarding the BCWD engineer's or another third party's performance in design, construction or construction management for the Project.

2. License

- a. **Grant of license.** Van Tassels hereby grant and convey to BCWD, its contractors, agents, successors and assigns, an irrevocable term license over, under, upon and across that portion of the Van Tassel Property shown and labeled "Construction Area" on Exhibit B, attached hereto and incorporated herein, for purposes of access to and construction on the Van Tassel Property to construct the Project (the License). The License includes the right of ingress and egress and to pass over and through the Construction Area on foot and using motorized equipment for staging of construction, construction and implementation of the Project and the right to plant, install stabilization techniques, alter existing grades and perform grading and filling within the Construction Area necessary to achieve the intended purposes of the Project. The rights granted hereby include the right to lay and maintain temporary utilities across or above the surface of the Construction Area for purposes of implementation and construction of the Project.
- b. **Restrictions on Van Tassels' use of the Construction Area.** During the term of the License, Van Tassels will not use the Construction Area in any manner that would damage or interfere with the Project. Specifically, any grading, filling or alteration of the surface of the Construction Area by any party other than BCWD, its contractors, agents, successors or assigns, or the construction of any hard-surfaced areas, fences, sheds, structures or similar improvements within the Construction Area is prohibited. Van Tassels may use and enjoy the Van Tassel Property and the Construction Area for all purposes, but such use and enjoyment is subject to the restrictions stated herein and the temporary right of BCWD to use the same for the purposes herein expressed.
- c. **No public access or use.** No right of access or use of the Van Tassel Property is granted to the general public by this License.

3. Property Condition. On completion of construction of the Project, BCWD will restore the Van Tassel Property to materially the same condition as existed prior to the commencement of construction, except to the degree that the Van Tassel Property is improved by the Project. In the event the Van Tassel Property is damaged by the activities of BCWD or its contractors, agents or assigns pursuant to the exercise of any of BCWD's rights under this agreement, BCWD will promptly repair or restore the Van Tassel Property to the extent reasonably practicable or to a condition agreed to by BCWD and

Van Tassels. BCWD will repair, seed or plant disturbed or damaged areas with vegetation suitable for Van Tassels' intended uses of the Van Tassel Property. Van Tassels agree and acknowledge that BCWD will not be responsible for any preexisting conditions on the Van Tassel Property, environmental or otherwise, or for any damage to the Van Tassel Property or liability arising out of or related to such preexisting conditions.

4. BCWD's ongoing specific rights and duties. In addition to its rights and responsibilities for fulfillment of the terms of this agreement as provided herein, BCWD has rights and duties as follows:

- a. BCWD will contract with the BCWD engineer for construction oversight and otherwise manage the implementation of the Project in accordance with the design and plans in Exhibit A.
- b. In contracting for the construction of the Project, BCWD will require that:
 - i. The contractor restrict all of its activities to the Construction Area of the Van Tassel Property as specified in section 2 herein.
 - ii. The contractor name the Van Tassels as an additional insured for general liability with primary and noncontributory coverage and provide a certificate showing same prior to start of construction.
 - iii. The contractor indemnify, defend and hold harmless the Van Tassels from any and all actions, costs, damages and liabilities of any nature arising from the contractor's negligent or otherwise wrongful act or omission, or breach of a specific contractual duty, or a subcontractor's negligent or otherwise wrongful act or omission, or breach of a specific contractual duty owed by the contractor to BCWD.
 - iv. The contractor extend all warranties applicable to the Van Tassel Property to the Van Tassels.
 - v. The contractor assess the need for and obtain all permits and other regulatory approvals applicable to the Project on behalf of BCWD and the Van Tassels.
- c. BCWD will notify Van Tassels at least 10 calendar days prior to commencement of construction of the Project, and within 10 days of substantial completion of construction. (For purposes of this agreement and the Project generally, "substantial completion" is defined as completion of all elements of the Project as described herein for the intended purposes of the Project, except establishment and maintenance of vegetation, and implementation of the Maintenance Plan, as specified and defined in paragraph 6c herein, all of which will continue after substantial completion.)
- d. BCWD will consult with Van Tassels in advance of making any material change in the design and plans in Exhibit A.

- e. BCWD will provide Van Tassels with as-built drawings of the portion of the Project on the Van Tassel Property and a draft Maintenance Plan within 60 days of substantial completion of construction.
- f. BCWD will commence performance or contract for the performance of maintenance of the Project on receipt of the executed Maintenance Easement and approval of a draft of the Maintenance Plan, both as specified and defined in paragraphs 6b and 6c herein. As between BCWD and Van Tassels, BCWD will retain responsibility for establishment of vegetation and implementation of the Maintenance Plan.
- g. Until substantial completion of the Project, if BCWD, in its judgment, should decide that the Project is infeasible, BCWD, at its option, may declare the agreement rescinded and annulled. If BCWD so declares, all obligations herein, performed or not, will be void and, if land-disturbing activities for the Project have commenced, BCWD will return the Van Tassel Property materially to its prior condition or to a condition agreed to in writing by Van Tassels and BCWD.

5. Van Tassels’ ongoing specific rights and duties. In addition to its rights and responsibilities for fulfillment of the terms of this agreement as provided herein, Van Tassels have rights and duties as follows:

- a. Van Tassels will cooperate with efforts undertaken by BCWD and its contractors to obtain permits and approvals needed for the Project, and by their execution below Van Tassels authorize BCWD to apply for such permits and approvals on their behalf.
- b. *Commitment to execute maintenance easement.* When BCWD notifies the Van Tassels of substantial completion of construction of the Project and provides Van Tassels with final construction drawing(s) of the portions of the Project on the Van Tassel Property, Van Tassels will attach the final construction drawing(s) provided by BCWD and execute a maintenance easement substantially in the form attached to and incorporated herein as Exhibit C (the Maintenance Easement). The Maintenance Area, as defined in the Maintenance Easement, will not extend outside of the Construction Area as shown in Exhibit B, and the Maintenance Area defined in the Maintenance Easement will encompass no greater area than that described as the Construction Area in this license, as shown in Exhibit B.
- c. *Review and approval of the Maintenance Plan.* In accordance with paragraphs 4e and 4f, BCWD will timely provide a draft of the Maintenance Plan to Van Tassels for their cooperation in the development of the Maintenance Plan. In addition, Van Tassels will have 60 days from receipt to review and approve the final draft Maintenance Plan submitted in accordance with paragraph 4f herein. Failure to act within the specified time will constitute approval. Van Tassels’ approval will not be unreasonably withheld.

6. **Costs.** As between the parties, BCWD will be responsible for all costs of design, specification, construction, construction oversight and management for the Project, and development and implementation of the Maintenance Plan. Van Tassels will dedicate the License and the Maintenance Easement pursuant to the terms of this agreement at no cost to BCWD. In addition, the parties each will bear their own incidental costs of determination and completion of their responsibilities and exercise of their rights hereunder.

7. **Insurance.** BCWD will require its contractors, agents, successors and assigns to carry commercial general liability coverage for injury to or death of a person or persons and for damage to property caused by the performance of the Project. Van Tassels will remain solely responsible for maintaining liability and other insurance for their own use of and authority over the Van Tassel Property.

8. **Term.** The License granted hereunder will expire two years from the date of execution of this agreement or on recordation in the office of the Washington County Recorder by BCWD of the Maintenance Easement, whichever occurs sooner. Van Tassels may revoke the License prior to its expiration only on written concurrence of BCWD. All other rights, obligations and duties hereunder will survive termination of the License, including but not limited to Van Tassels' obligation under paragraph 6b hereunder.

9. **Delivery of Notices.** All notices required or permitted under this agreement will be in writing and will be deemed delivered when personally delivered, delivered by documented courier delivery or mailed by United States registered or certified mail, return receipt requested, at the address below or to such other address as a party may designate by a written notice to the other.

If to Van Tassels: Beltram H. and Barbara Van Tassel
13093 McKusick Road North
Stillwater, MN

If to BCWD: Brown's Creek Watershed District
Attn: Administrator
455 Hayward Ave North
Oakdale, MN 55128
KKill@mnwcd.org
651-330-8220

10. **Severability.** If any one or more of the provisions of this agreement, or the applicability of any such provision to a specific situation, is held invalid or unenforceable, such provision will be modified to the extent necessary to make it or its application valid and enforceable, and the validity and enforceability of all other provisions of this agreement and all other applications of any such provision will not be affected thereby.

11. Venue; governing law. Venue for any adjudication arising from this agreement will be in the district court of Washington County, Minnesota, and the agreement will be construed and governed by the laws of the State of Minnesota.

12. No waiver of immunity. No provision of this agreement will be interpreted as a waiver of any statutory or common-law immunity by or limitation of liability available to BCWD, all such immunities and limitations being expressly reserved by BCWD.

IN WITNESS WHEREOF, the undersigned have executed this agreement with the intent to be legally bound by its terms as of the date this agreement is fully executed by both parties.

Van Tassels

_____ Date: _____
By Barbara Van Tassel, as trustee of the Beltram H. Van Tassel Revocable Trust

_____ Date: _____
By Barbara Van Tassel, individually

_____ Date: _____
By Beltram H. Van Tassel, as trustee of the Beltram H. Van Tassel Revocable Trust

_____ Date: _____
By Beltram H. Van Tassel, individually

Brown’s Creek Watershed District

_____ Date: _____
By Karen Kill
Its administrator

Approved as to form and execution

BCWD counsel

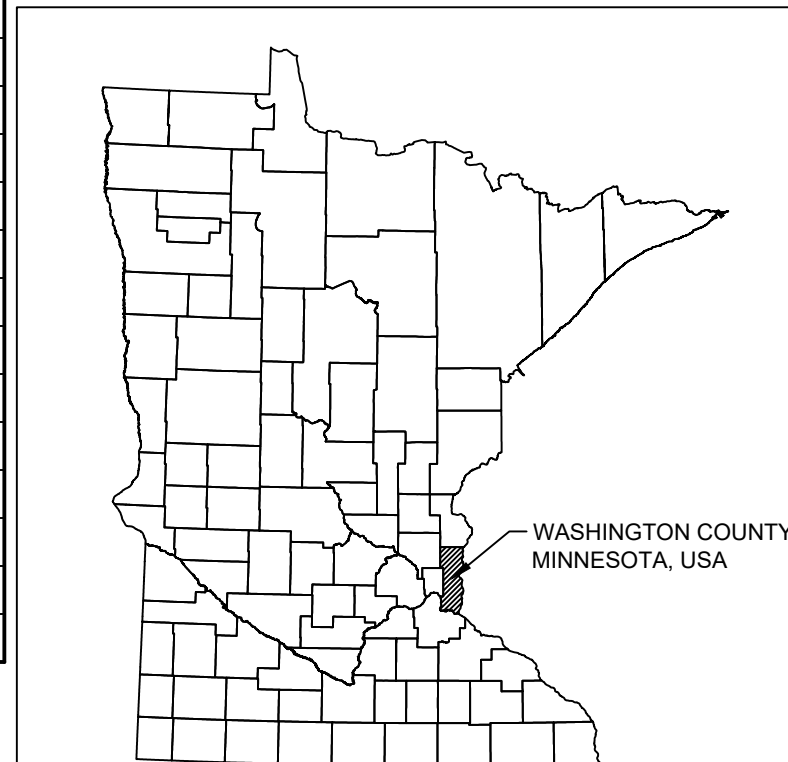
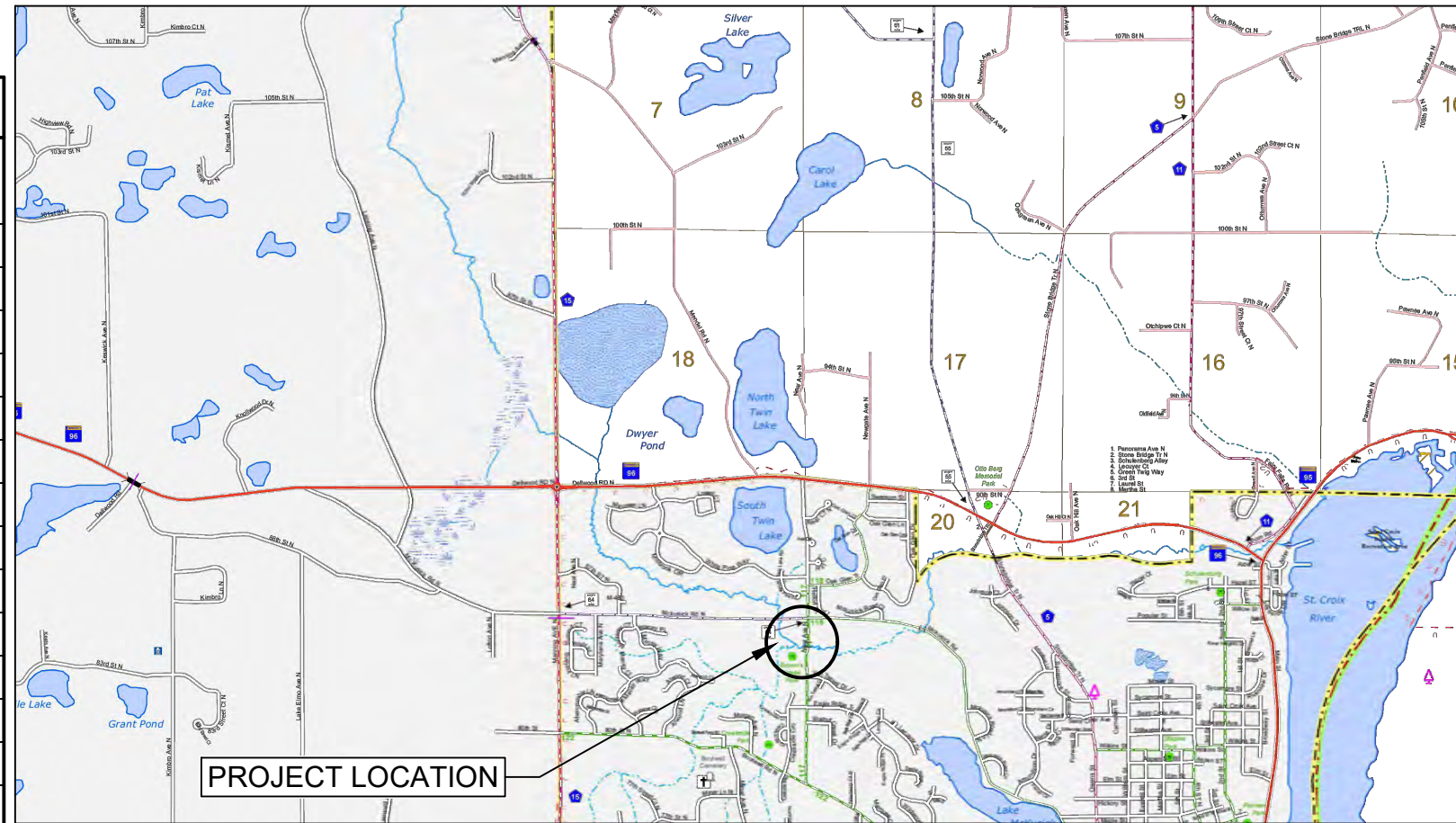
EXHIBIT A

Project Design & Plans

**BROWN'S CREEK WATERSHED DISTRICT
BROWN'S CREEK PARK
STREAM RESTORATION**
WASHINGTON COUNTY, STILLWATER, MN
95% DESIGN PLAN SET

Sheet List Table

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01	TITLE SHEET
02	NOTES & SEQ
03	PROJECT OVERVIEW
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05	TREE HARVEST PLAN 2
06	TREE HARVEST PLAN 3
07	EXISTING STREAM PROFILE
08	EXISTING CONDITIONS PLAN & PROFILE - 1
09	EXISTING CONDITIONS PLAN & PROFILE - 2
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11	EXISTING CONDITIONS PLAN & PROFILE - 4
12	EXISTING CROSS SECTIONS - 1
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16	PROPOSED PLAN & PROFILE - 1
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20	PROPOSED ADA ACCESS TRAIL
21	ESC & RESTORATION PLAN 1
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23	ESC & RESTORATION PLAN 3
24	DETAILS - 1
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26	DETAILS - 3
27	DETAILS - 4
28	DETAILS - 5



PROJECT LOCATION, REFERENCE MAP

GENERAL NOTES

EXISTING UTILITIES

THE LOCATION OF UNDERGROUND FACILITIES AND/OR STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORDS AT THE TIME THE PLANS WERE PREPARED AND ARE NOT GUARANTEED TO BE COMPLETE OR CORRECT.

THE SUBSURFACE UTILITY INFORMATION SHOWN IS UTILITY QUALITY LEVEL D, AS DETERMINED USING THE GUIDELINES OF "C/ASCE 38-02 STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE THE EXACT LOCATION OF ALL FACILITIES AND TO PROVIDE ADEQUATE PROTECTION OF SAID UTILITIES DURING THE COURSE OF WORK.

CONSTRUCTION NOTE

CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN OPERATION OF EXISTING UTILITIES THROUGHOUT THE DURATION OF THE PROJECT. IN THE EVENT THAT AN INTERRUPTION OF SERVICE IS UNAVOIDABLE IN ORDER TO COMPLETE THE WORK, CONTRACTOR SHALL PROVIDE ADEQUATE NOTIFICATION TO ALL AFFECTED ENTITIES A MINIMUM OF 3 WORKING DAYS IN ADVANCE OF ANY INTERRUPTION.

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING FIELD MANUAL FOR TEMPORARY CONTROL ZONE LAYOUTS.

GOPHER STATE ONE-CALL

IT IS THE LAW THAT ANYONE EXCAVATING AT ANY SITE MUST NOTIFY GOPHER STATE ONE CALL (GSOC) SO THAT UNDERGROUND ELECTRIC, NATURAL GAS, TELEPHONE OR OTHER UTILITY LINES CAN BE MARKED ON OR NEAR YOUR PROPERTY BEFORE ANY DIGGING BEGINS. A 48-HOUR NOTICE, NOT INCLUDING WEEKENDS, IS REQUIRED. CALLS CAN BE MADE TO GSOC AT 1-800-252-1166 OR (651) 454-0002, MONDAY THROUGH FRIDAY (EXCEPT HOLIDAYS) FROM 7 A.M. TO 5 P.M.



NOT FOR CONSTRUCTION



DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
	2	
	3	
	4	
	5	
	6	

DESIGNED BY: EOR
DRAWN BY: DEM
CHECKED BY: MJM



**BROWN'S CREEK PARK
STREAM RESTORATION**
WASHINGTON COUNTY, STILLWATER, MN

EOR JOB #0041-0418

CLIENT PROJECT #XXX-XXXX




BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

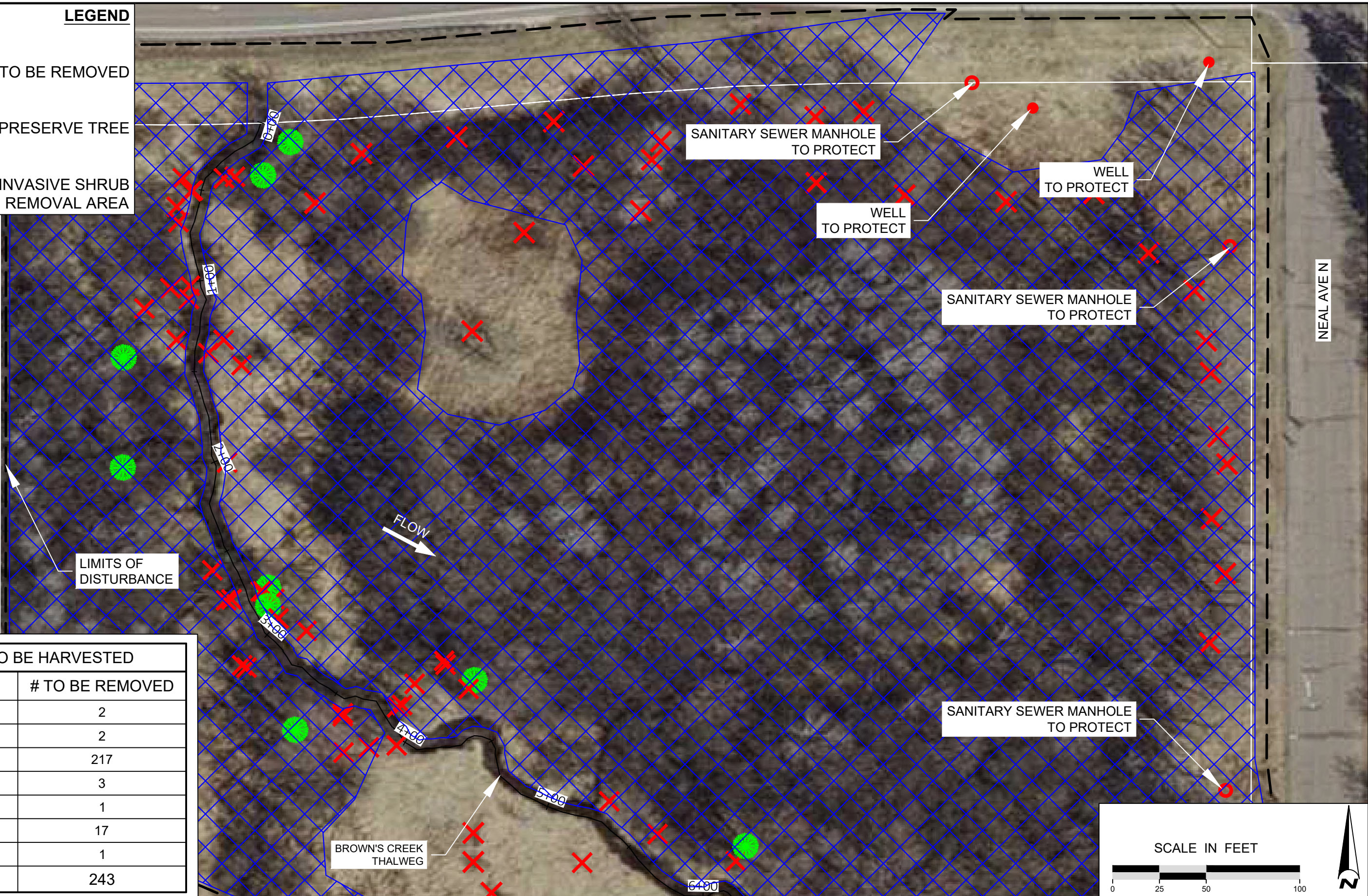
TITLE SHEET

SHEET 01 OF 28

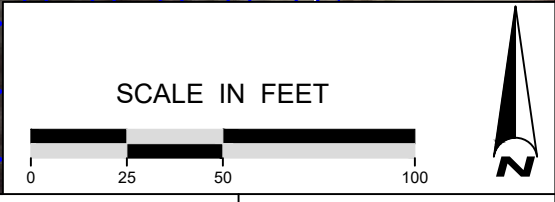
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 User: EOR\jdemmer
 Scale: 1"=100'
 Sheet: 01 of 28
 Title: BROWN'S CREEK PARK STREAM RESTORATION
 Project: BROWN'S CREEK WATERSHED DISTRICT
 Location: WASHINGTON COUNTY, MN
 Date: 12/04/2023
 Time: 10:10:10 AM
 Page 151

LEGEND

-  TREE TO BE REMOVED
-  PRESERVE TREE
-  INVASIVE SHRUB REMOVAL AREA



TREES TO BE HARVESTED	
TREE TYPE	# TO BE REMOVED
AMERICAN ELM	2
BLACK WILLOW	2
BOX ELDER	217
CRAB APPLE	3
COTTONWOOD	1
SILVER MAPLE	17
SPRUCE	1
TOTAL	243



NOT FOR CONSTRUCTION

Plot Date: 12/04/2023
 Drawing Title: W041_BCMWD0418_Brown's_Ck_Pk_Restor09_GNIS/wg0041_0418-CD.dwg
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EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN
 TEL: 612-291-1000 FAX: 612-291-1001
 www.eor.com

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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	3	
	4	
	5	
	6	

DESIGNED BY: EOR
DRAWN BY: DEM
CHECKED BY: MJM
EOR JOB #0041-0418

BROWN'S CREEK WATERSHED DISTRICT

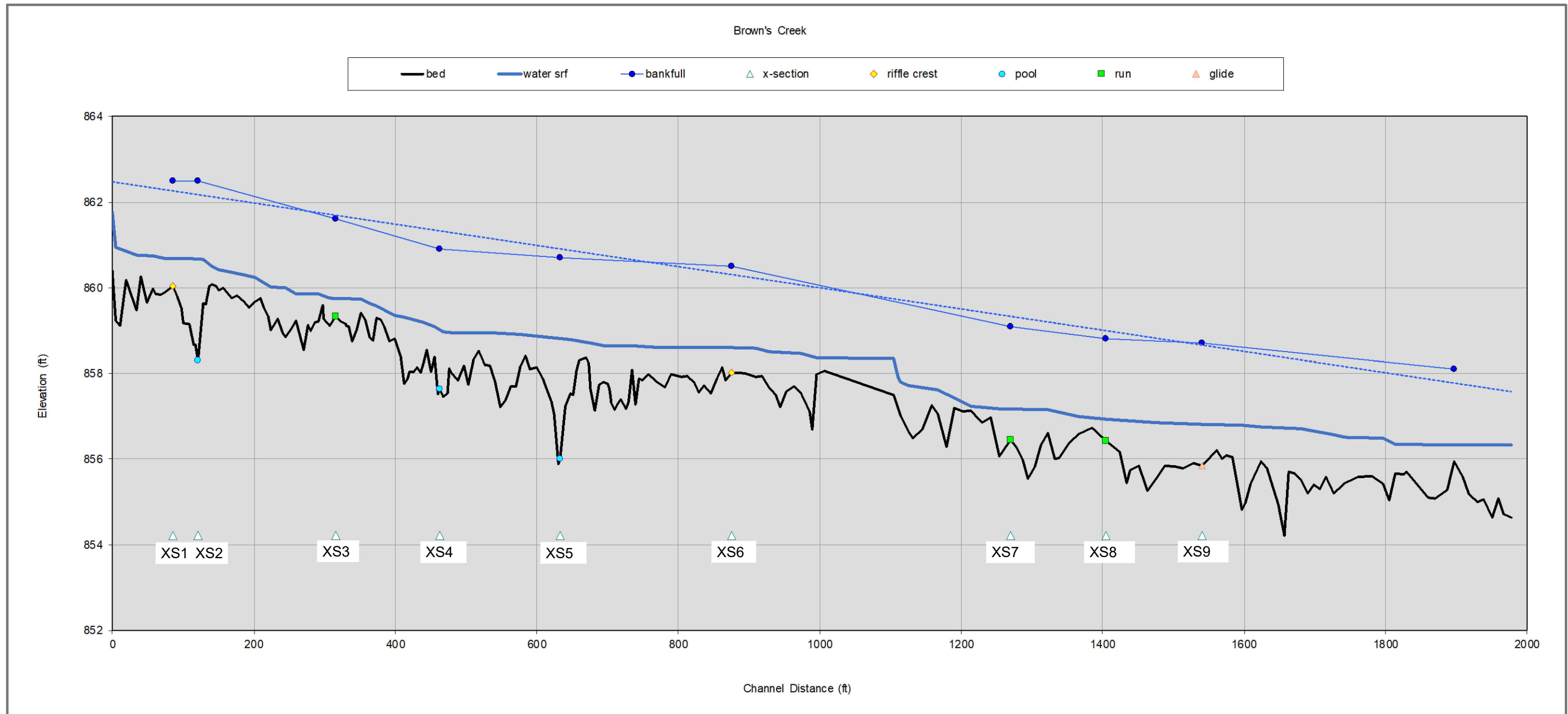
CLIENT PROJECT #XXX-XXXX

BROWN'S CREEK PARK STREAM RESTORATION
 WASHINGTON COUNTY, STILLWATER, MN

BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

TREE HARVEST PLAN 1

SHEET 04 OF 28



NOTE:
STREAM AND WATER PROFILE SURVEYED ON DECEMBER 2, 2022

NOT FOR CONSTRUCTION

EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN 55104
Tel: 612-291-1100
www.eor.com

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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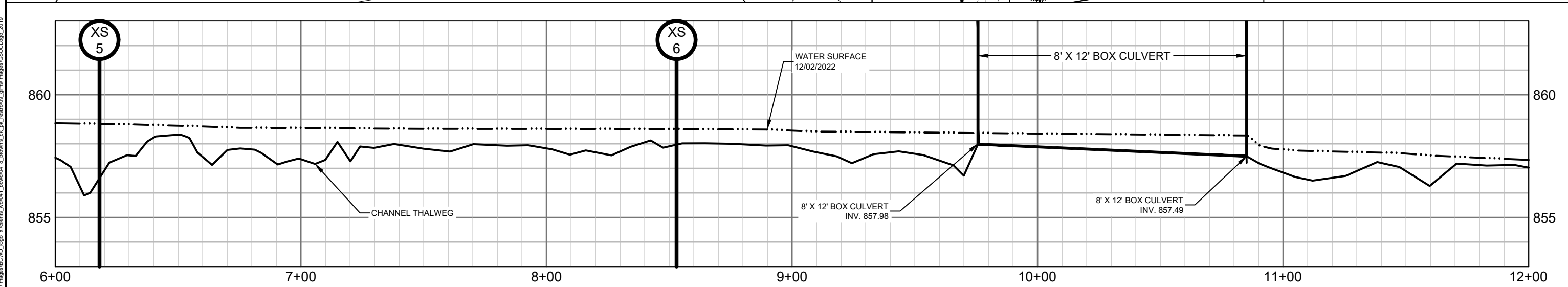
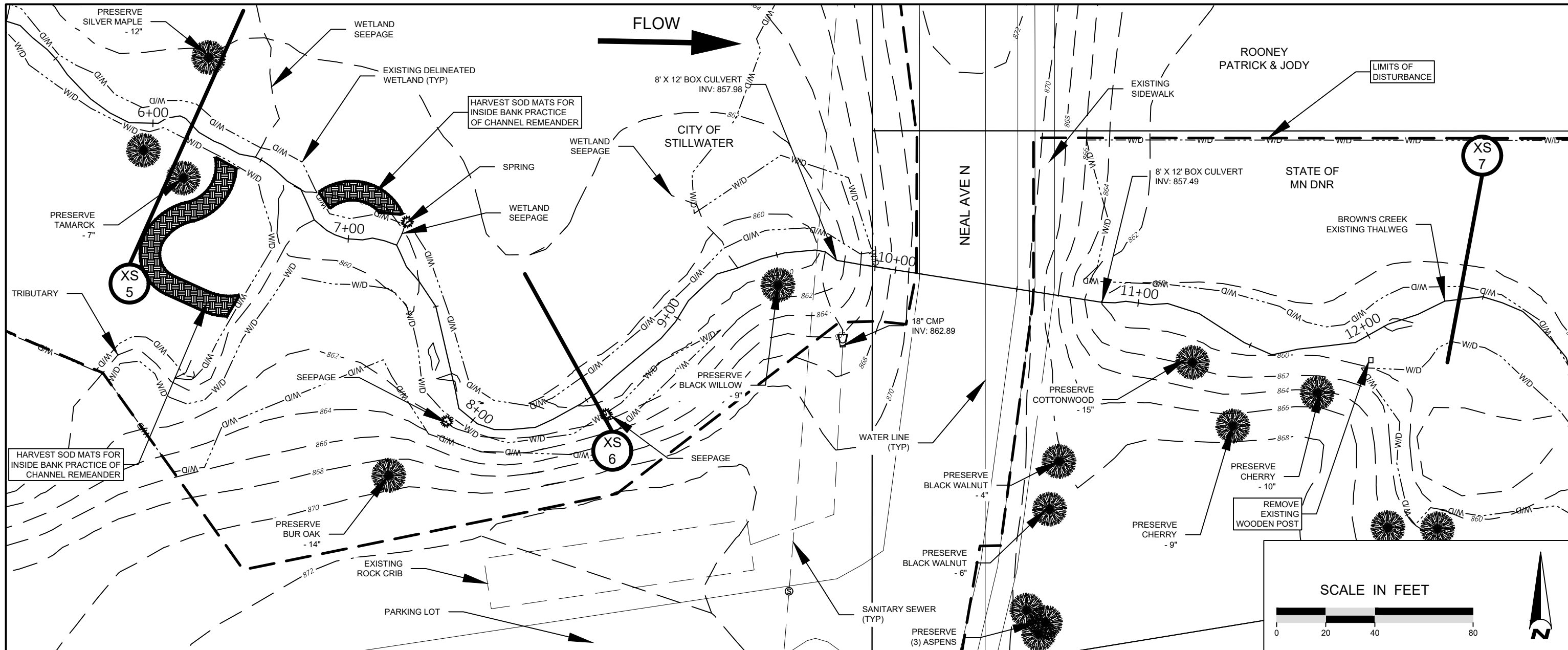
DESIGNED BY: EOR
DRAWN BY: DEM
CHECKED BY: MJM
EOR JOB #0041-0418

BROWN'S CREEK WATERSHED DISTRICT

BROWN'S CREEK PARK STREAM RESTORATION
WASHINGTON COUNTY, STILLWATER, MN
BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

EXISTING STREAM PROFILE
SHEET 07 OF 28

Plot Date: 12/04/2023
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 Sheet: 07 of 28



NOT FOR CONSTRUCTION

EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN 55104
 TEL: 612-763-1111 FAX: 612-763-1112
 WWW.EOR.COM

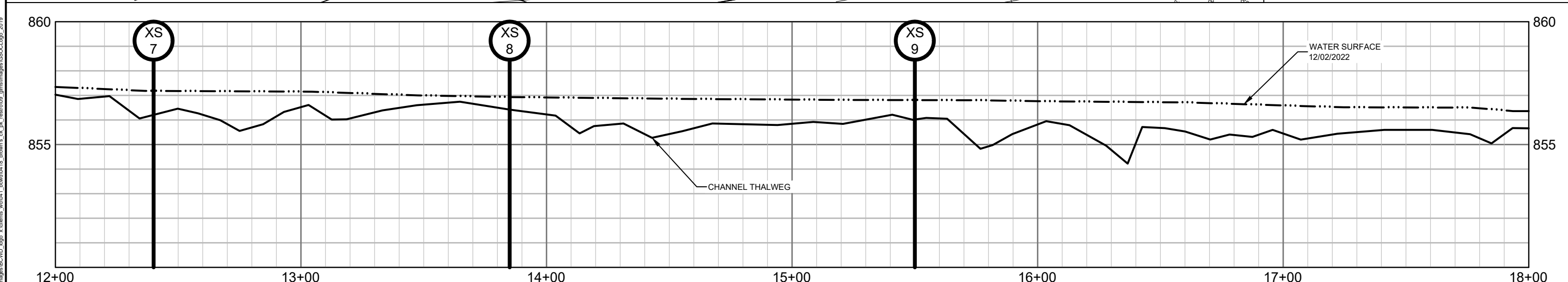
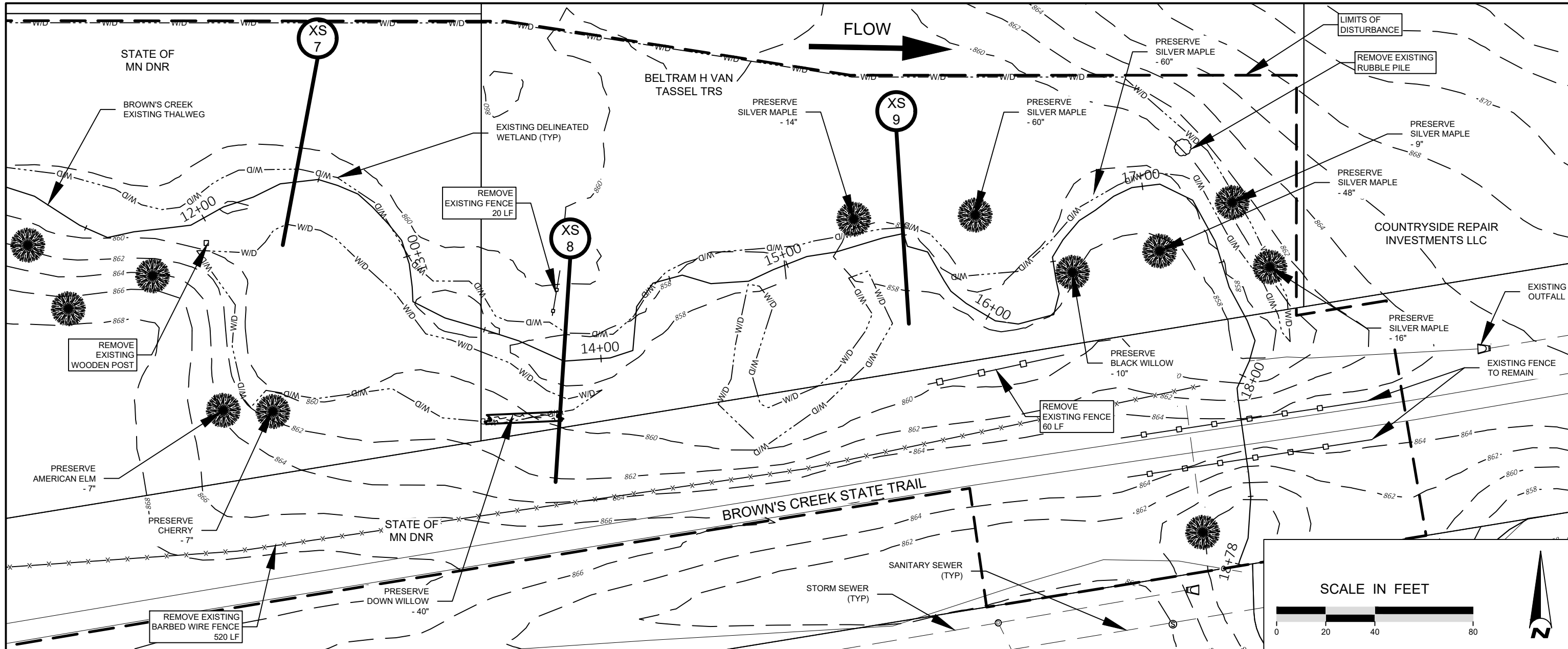
DATE	NO.	DESCRIPTION
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	3	
	4	
	5	
	6	

DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418
 CLIENT PROJECT #XXX-XXXX

**BROWN'S CREEK PARK
 STREAM RESTORATION**
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT
 OAKDALE, MN 55128

EXISTING CONDITIONS
 PLAN & PROFILE - 2
 SHEET 09 OF 28

Plot Date: 12/04/2023
 Drawing: 0009 - 0418 - XSURFACE
 40041_0418-XBASE
 40041_0418-LBASE
 40041_0418-LBASE
 Sheet Border: images...images\BCHD_bgp_x\clients_w\041_browns_creek_restoration_gm\images\SSC\logs_2019



NOT FOR CONSTRUCTION

EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN 55108
 TEL: 612-763-1111 FAX: 612-763-1112
 WWW.EOR.COM

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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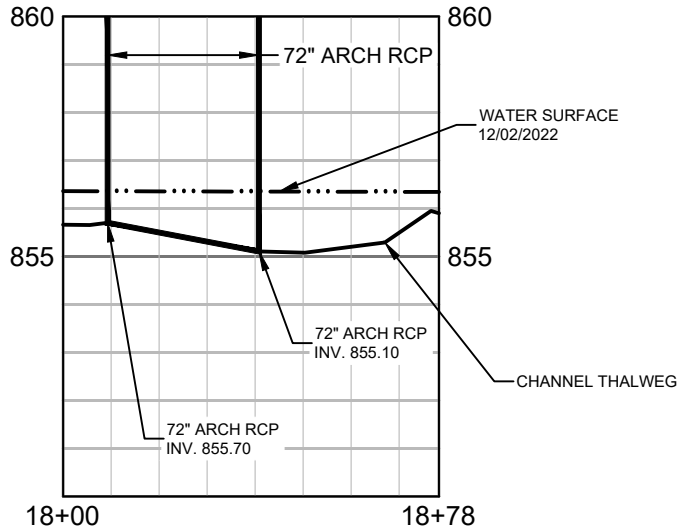
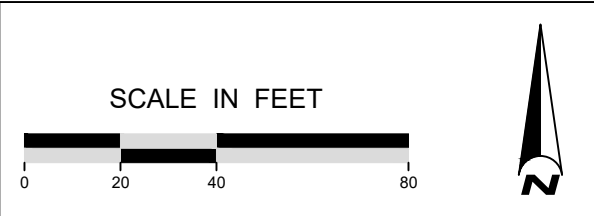
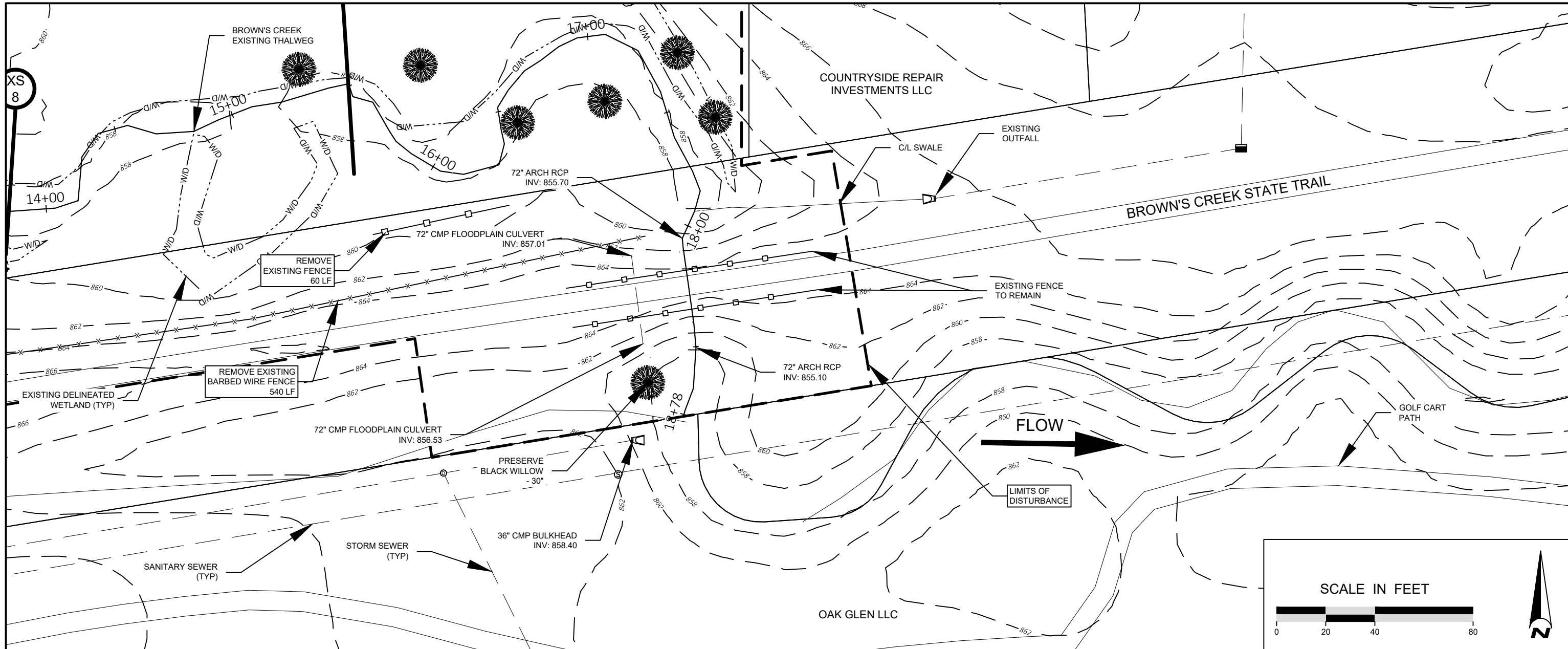
DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418

BROWN'S CREEK WATERSHED DISTRICT
 CLIENT PROJECT #XXX-XXXX

BROWN'S CREEK PARK STREAM RESTORATION
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

EXISTING CONDITIONS PLAN & PROFILE - 3
 SHEET 10 OF 28

Plot Date: 12/04/2023
 Drawing: EOR\Projects\0418-PRASE\0418-PRASE.dwg
 User: dem
 Title: BROWN'S CREEK PARK STREAM RESTORATION
 Scale: AS SHOWN
 Plot: 10 of 10
 Path: \\server\projects\0418-PRASE\0418-PRASE.dwg
 Plot: 10 of 10
 Path: \\server\projects\0418-PRASE\0418-PRASE.dwg



NOT FOR CONSTRUCTION

Plot Date: 12/04/2023
 Drawing Name: XS_8
 Drawing Path: \\s01\proj\0418\Browns_Ck_Pk_Restor\09_GNIS\Map\041_0418-CD.dwg
 User: jdemmer
 Plot Scale: 1"=40'
 40041_0418-XBASE
 40041_0418-FBASE
 40041_0418-LBASE
 Sheet Border: images...images\11...images\BCHD_bgp_x\clients_wd\041_browns_ck_pk_restor\09_gnis\images\SSOCLogo_2019

EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN 55104
 TEL: 612-761-1000 FAX: 612-761-1001
 WWW.EOR.COM

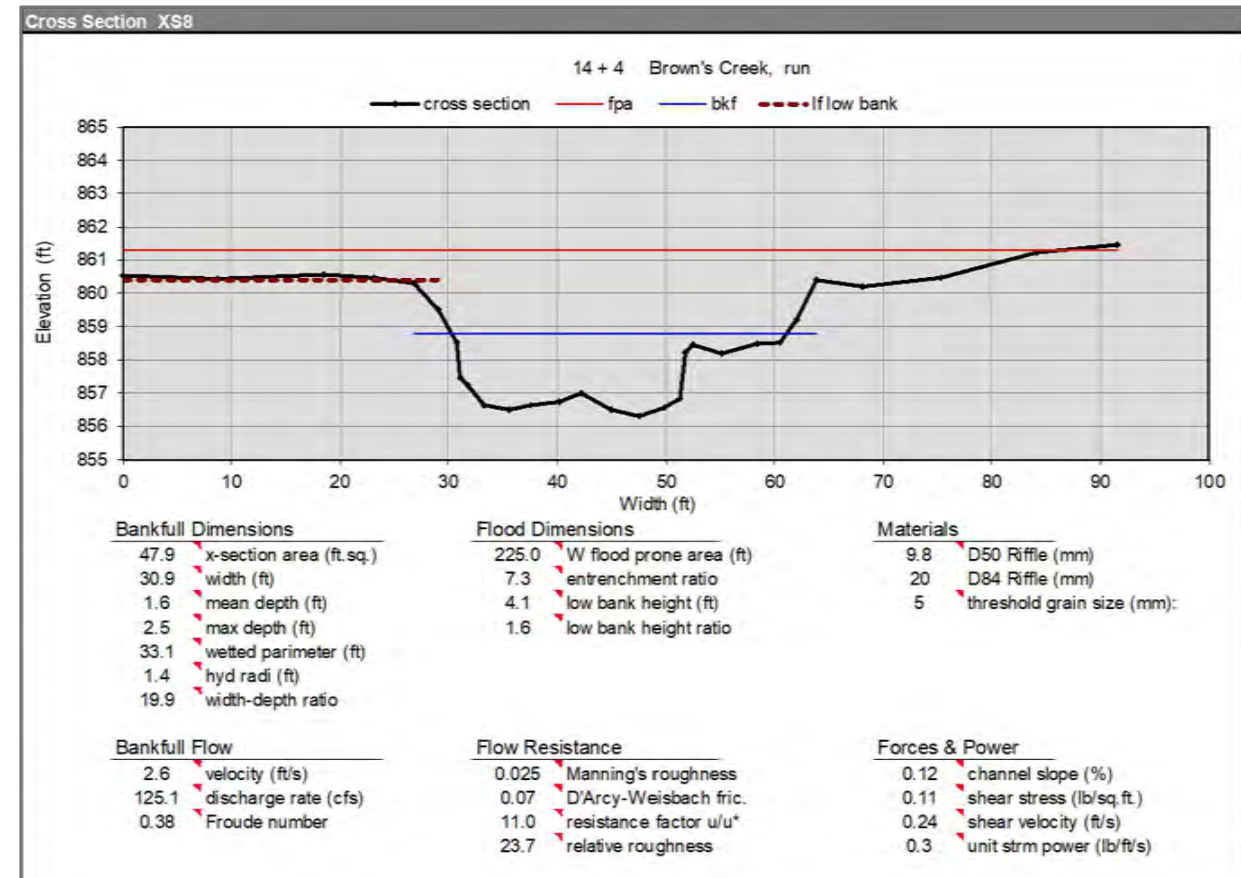
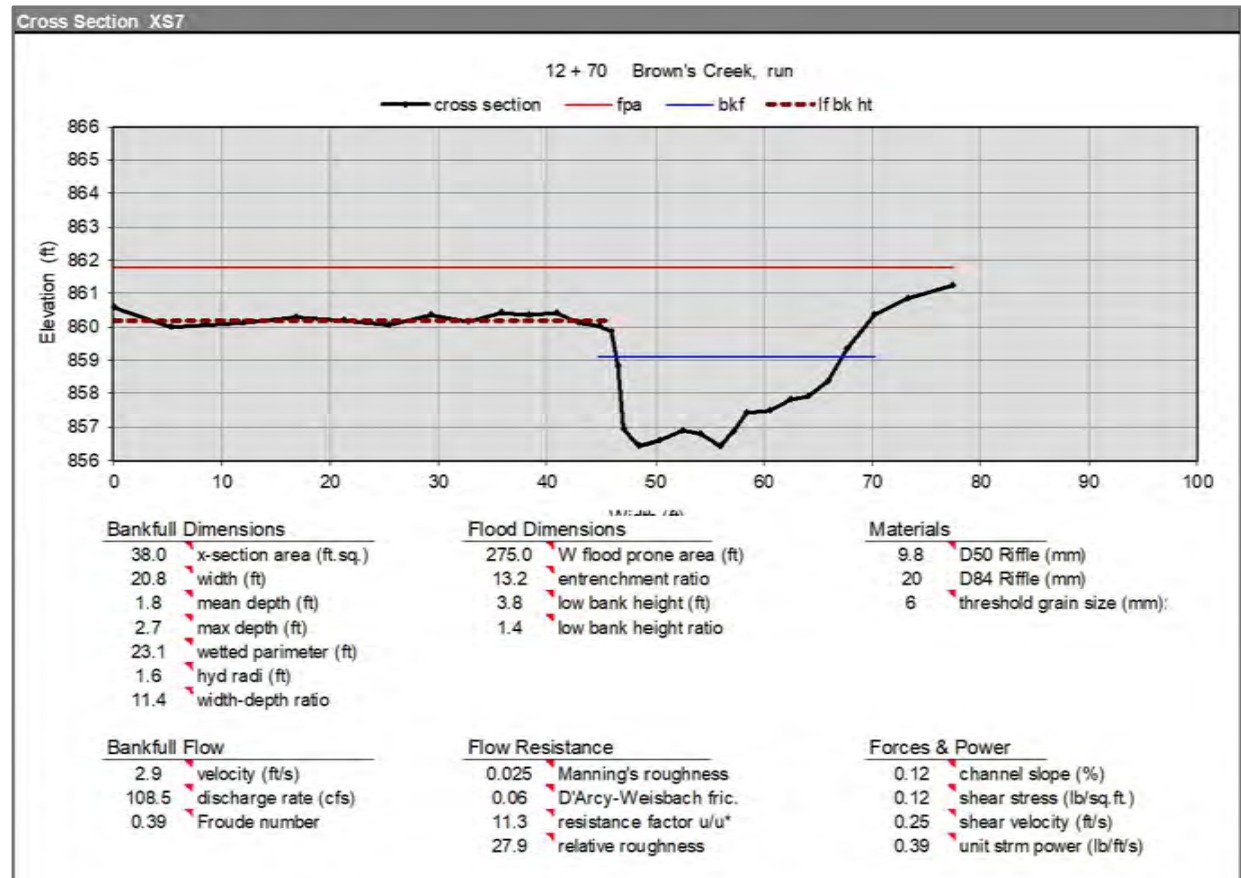
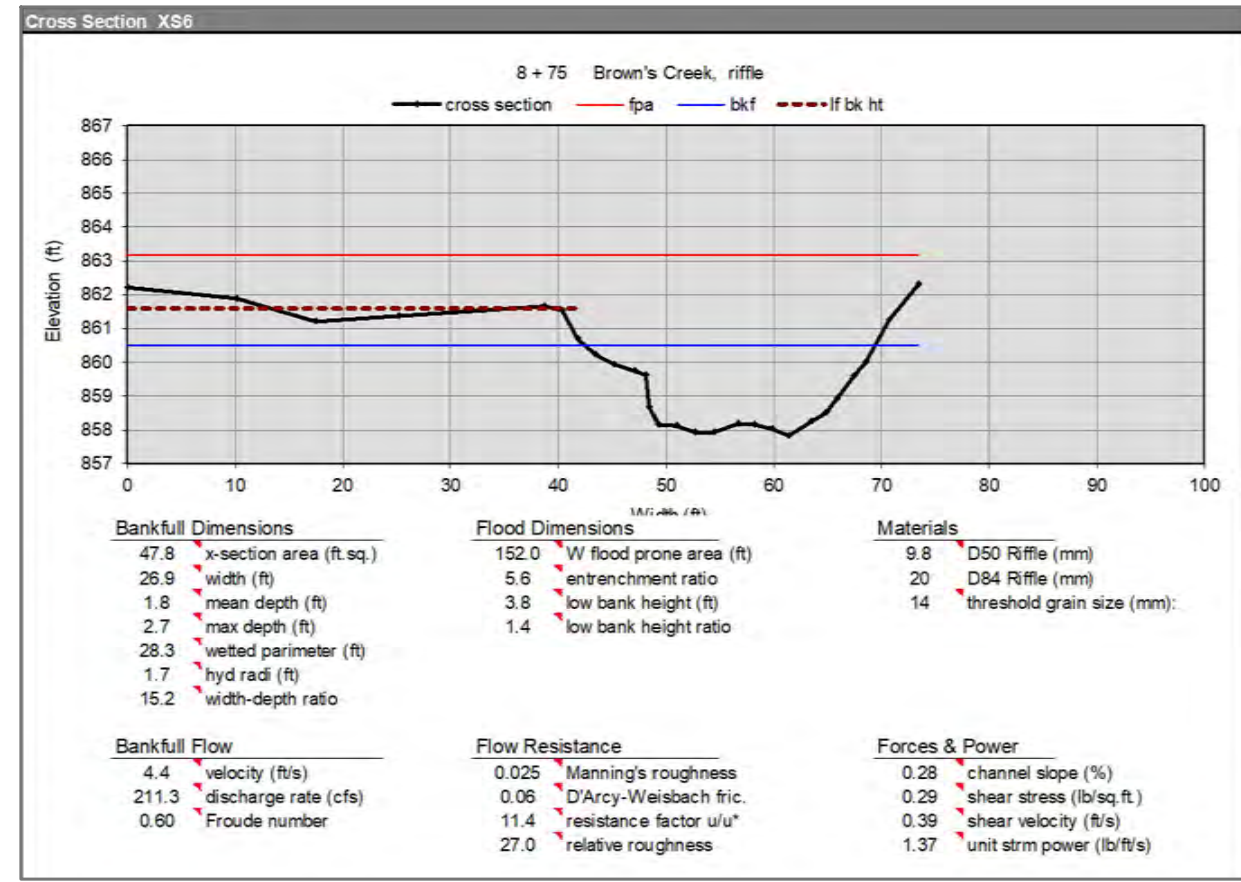
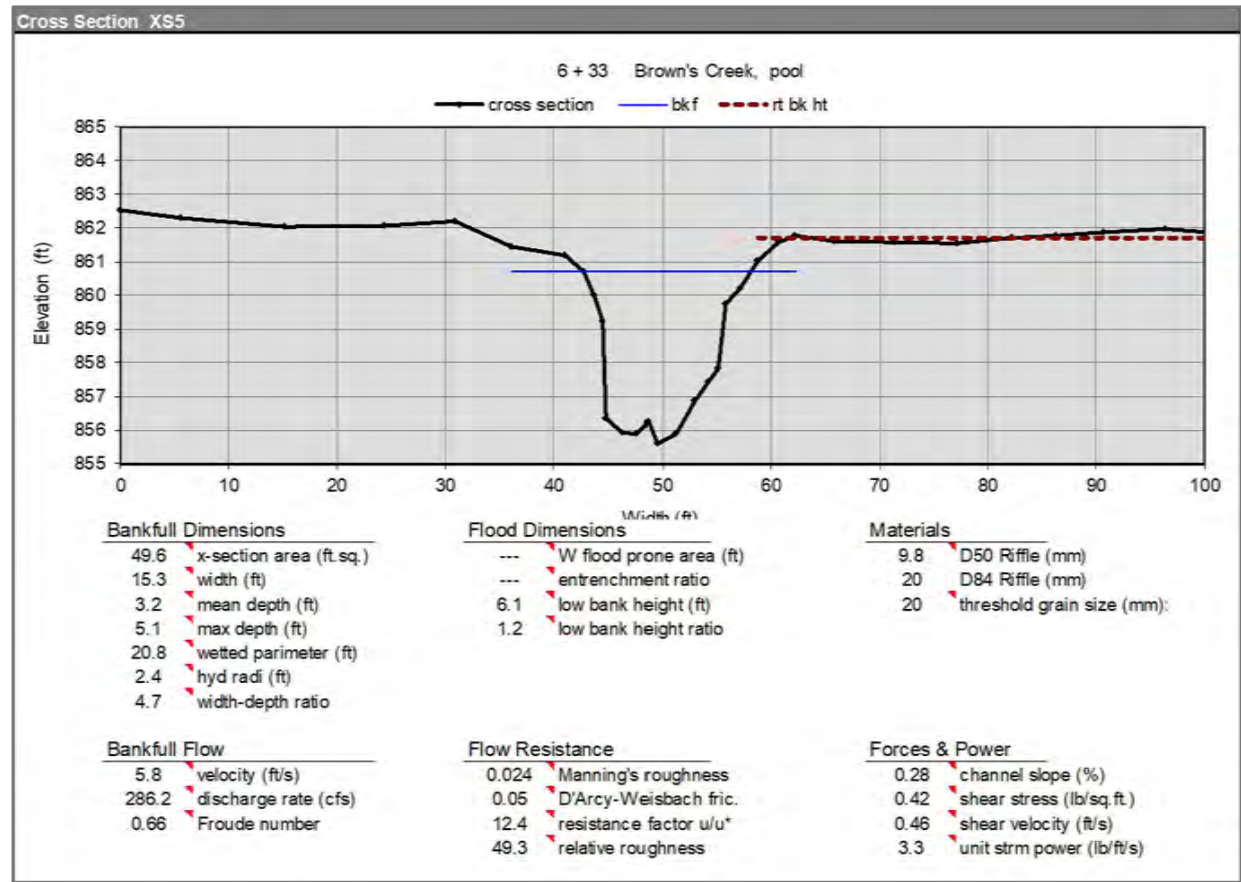
DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418

BROWN'S CREEK WATERSHED DISTRICT
 CLIENT PROJECT #XXX-XXXX

BROWN'S CREEK PARK STREAM RESTORATION
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

EXISTING CONDITIONS PLAN & PROFILE - 4
 SHEET 11 OF 28



NOTE:
ALL CROSS SECTIONS ARE ORIENTED DOWNSTREAM W/ RIVER LEFT ON THE LEFT AND RIVER RIGHT ON THE RIGHT.

Plot Date: 12/04/2023
 Drawing Name: XS5-XS8
 User: JMB
 Project: BROWN'S CREEK PARK STREAM RESTORATION
 Client: BROWN'S CREEK WATERSHED DISTRICT
 Location: WASHINGTON COUNTY, MN
 Scale: AS SHOWN
 Date: 12/04/2023



NOT FOR CONSTRUCTION

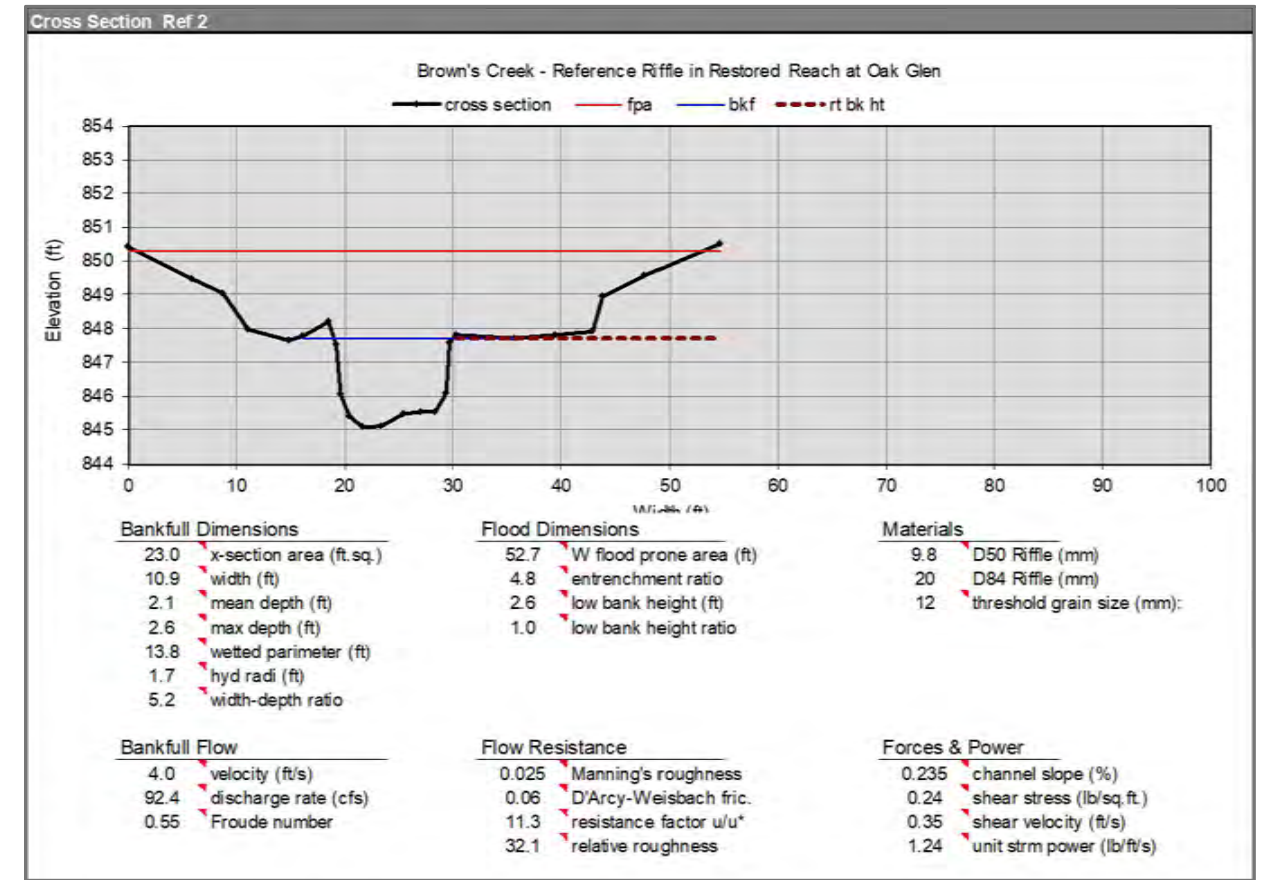
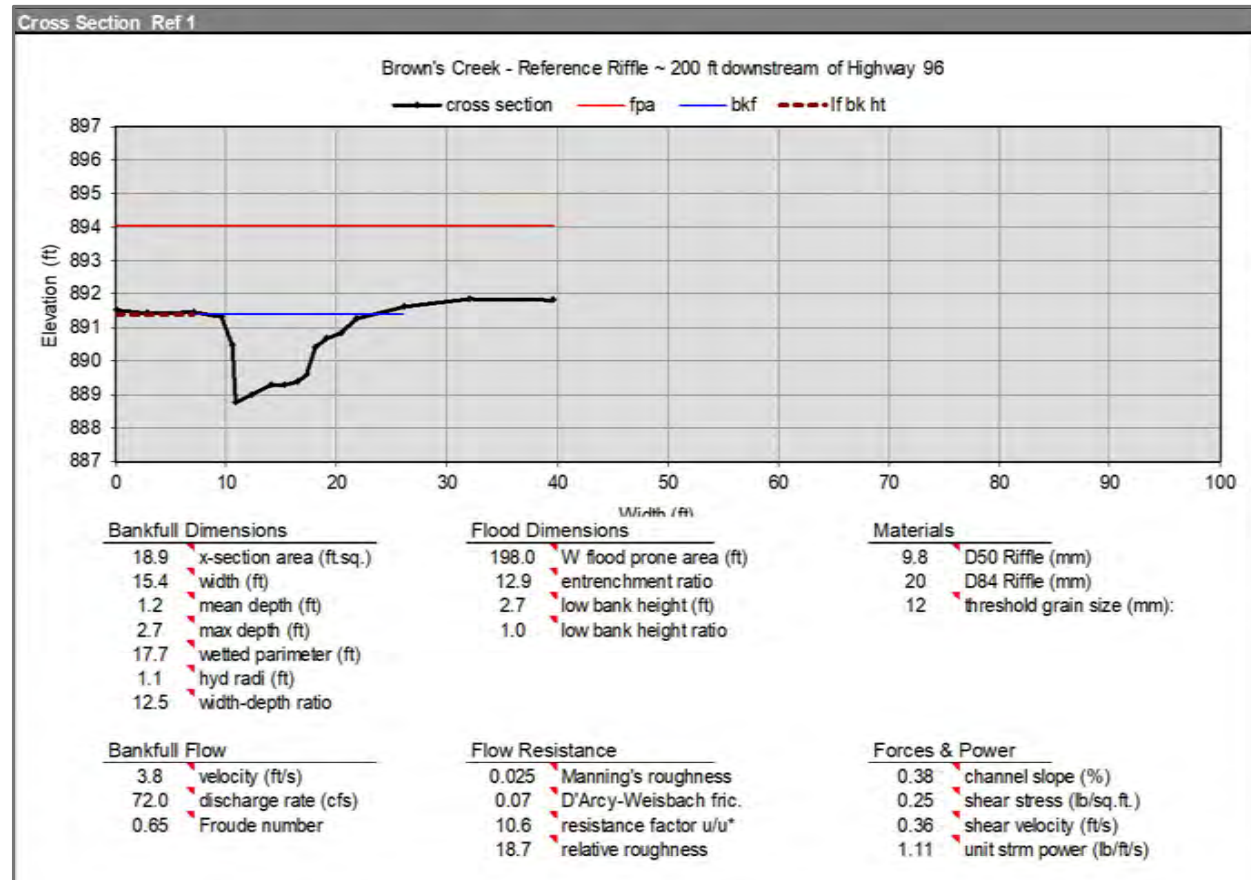
DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR
DRAWN BY: DEM
CHECKED BY: MJM
EOR JOB #0041-0418



**BROWN'S CREEK PARK
STREAM RESTORATION**
WASHINGTON COUNTY, STILLWATER, MN
BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

EXISTING CROSS SECTIONS - 2
SHEET 13 OF 28



NOTE:

ALL CROSS SECTIONS ARE ORIENTED DOWNSTREAM W/ RIVER LEFT ON THE LEFT AND RIVER RIGHT ON THE RIGHT.

Plot Date: 12/04/2023
 Drawing: E:\Projects\0418-PRASE\04001_0418-PRASE\04001_0418-PRASE.dwg
 User: jrb
 Title: BCWD Board Packet 10-2024
 Sheet: 15 of 28

NOT FOR CONSTRUCTION

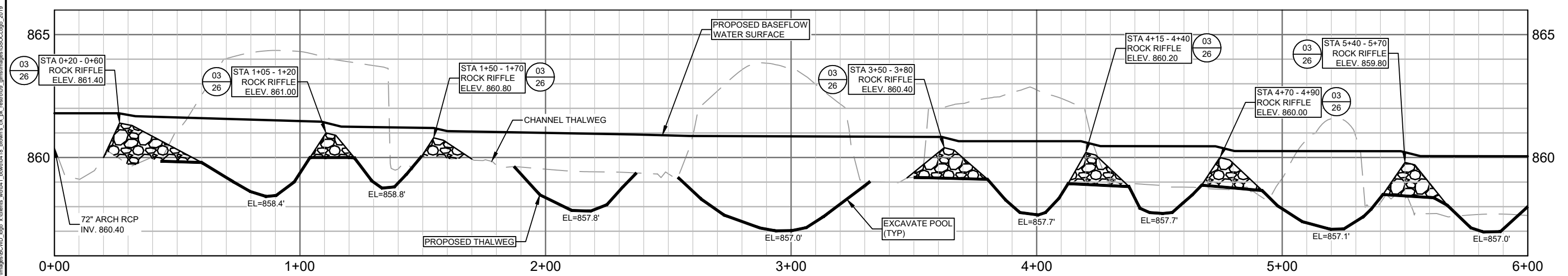
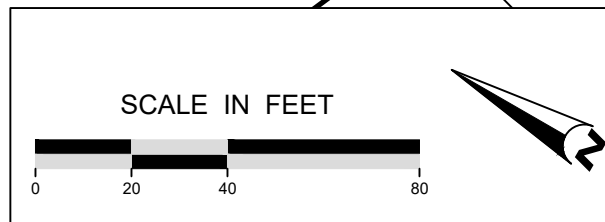
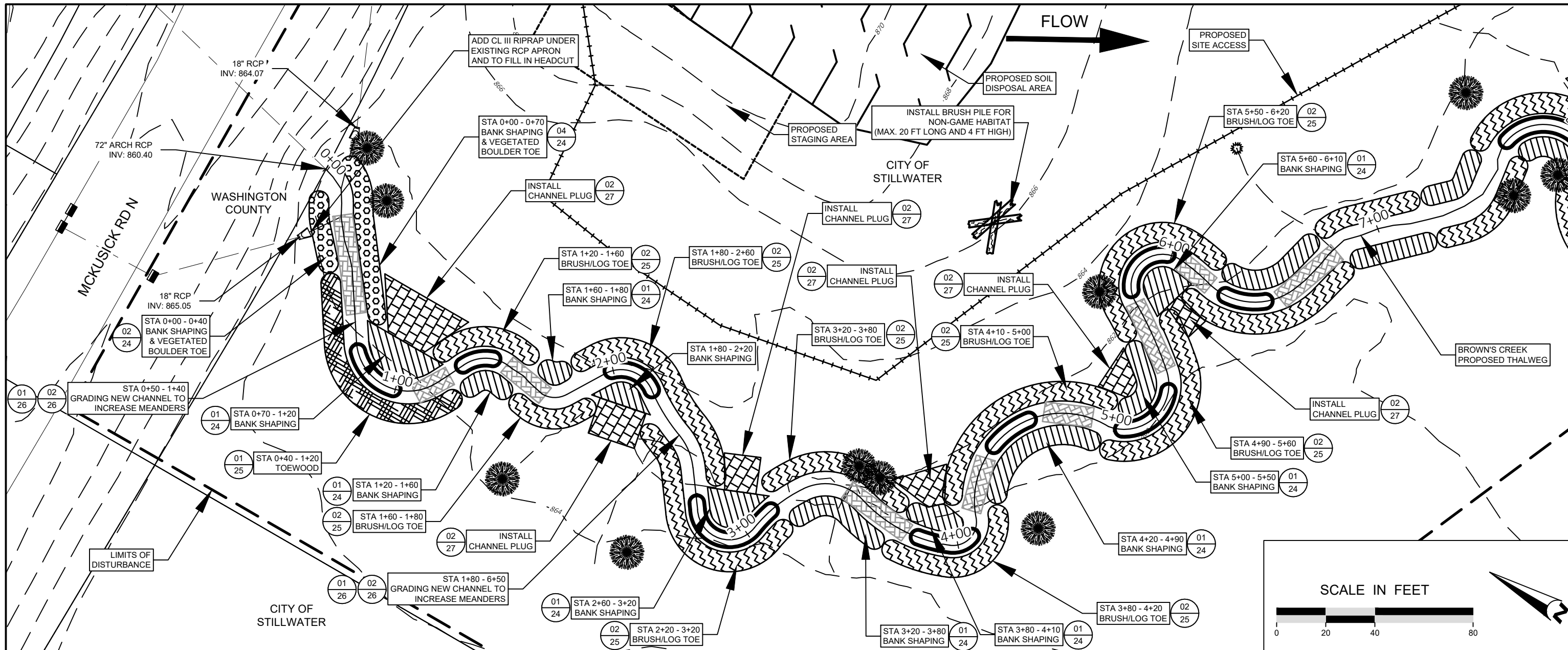
DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418



**BROWN'S CREEK PARK
 STREAM RESTORATION**
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

REFERENCE CROSS SECTIONS



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EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN 55104
TEL: 612-418-1818 FAX: 612-418-1818
www.eor.com

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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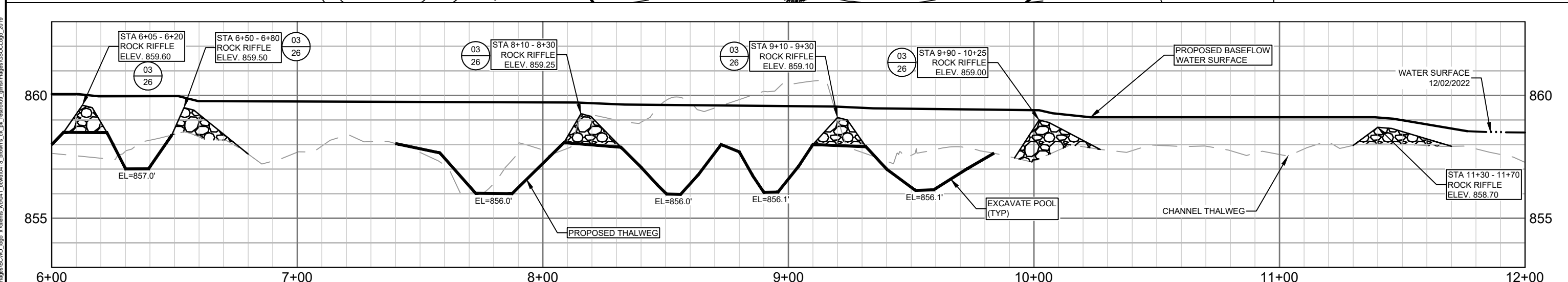
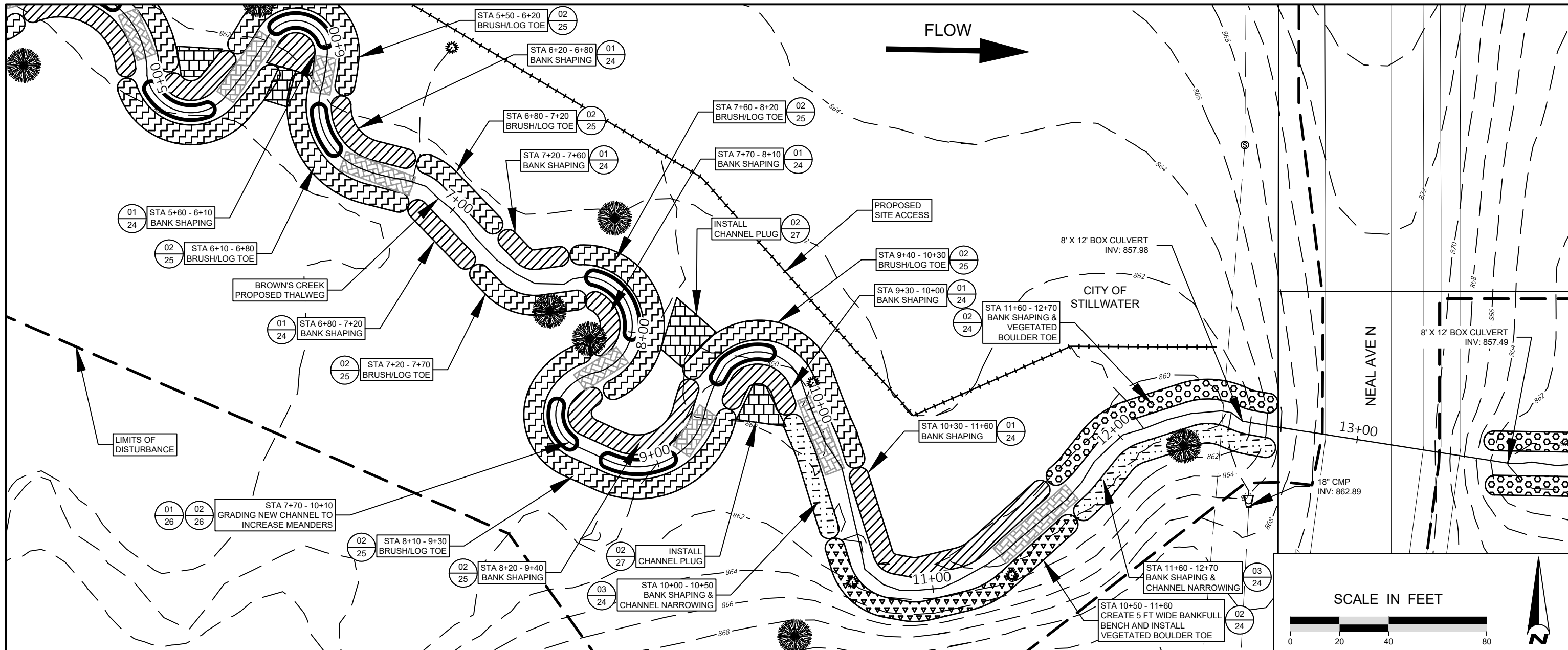
DESIGNED BY: EOR
DRAWN BY: DEM
CHECKED BY: MJM
EOR JOB #0041-0418

BROWN'S CREEK WATERSHED DISTRICT
CLIENT PROJECT #XXX-XXXX

BROWN'S CREEK PARK STREAM RESTORATION
WASHINGTON COUNTY, STILLWATER, MN
BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

PROPOSED PLAN & PROFILE - 1
SHEET 16 OF 28

Plot Date: 12/04/2023
 Drawing: EOR\Projects\0418_Brown's_Ck_Pk_Restoration_GNIS\Map0041_0418-CD.dwg
 User: dem
 Title: BROWN'S CREEK THALWEG SURFACE
 40041_0418-XBASE
 40041_0418-FBASE
 40041_0418-LBASE
 Sheet Border: images...images\BCHD_bgp_x\clients\w0041_brown's_ck_pk_restoration_gnis\Map0041_Brown's_Ck_Pk_Restoration_GNIS\Map0041_0418-CD.dwg
 Page 166



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EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN 55104
 TEL: 612-761-1000 FAX: 612-761-1001
 www.eor.com

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418

BROWN'S CREEK WATERSHED DISTRICT

CLIENT PROJECT #XXX-XXXX

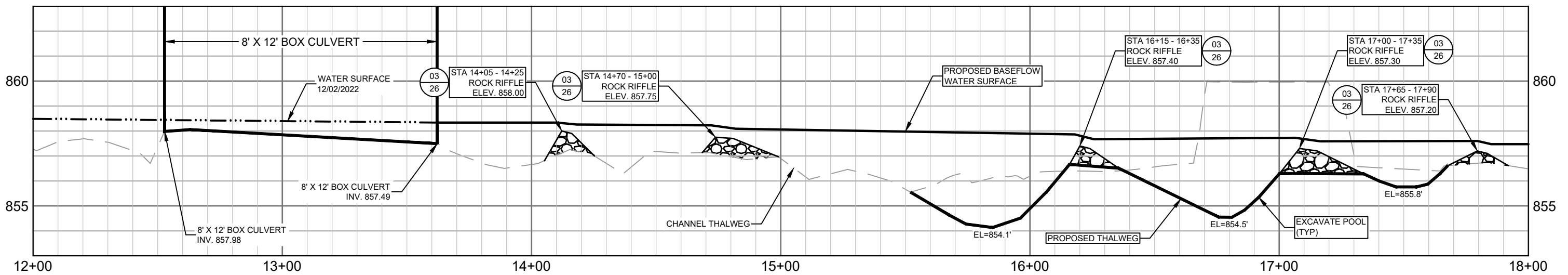
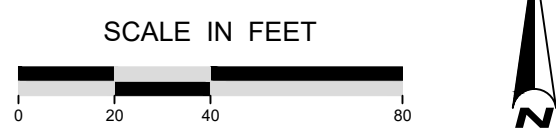
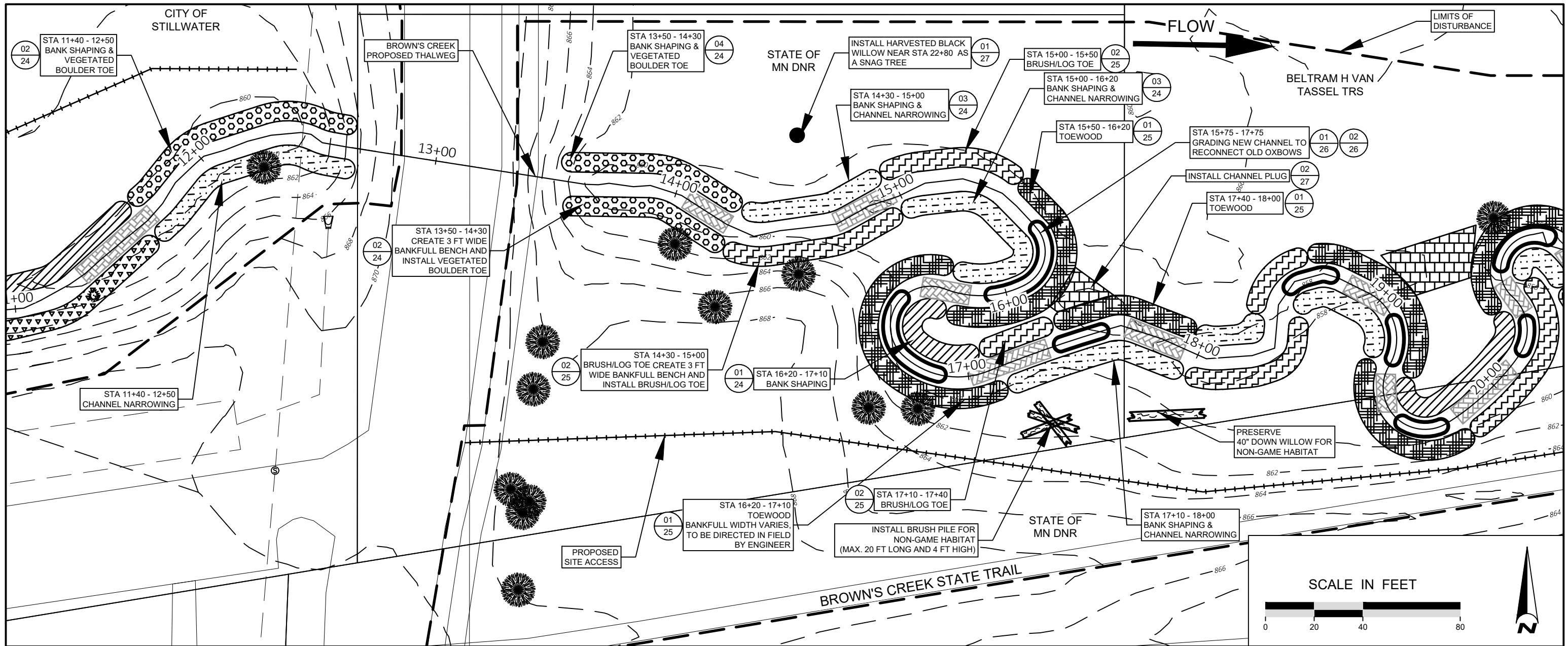
BROWN'S CREEK PARK STREAM RESTORATION
 WASHINGTON COUNTY, STILLWATER, MN

BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

PROPOSED PLAN & PROFILE - 2

SHEET 17 OF 28

Plot Date: 12/04/2023
 Drawing: EOR-0041-0418-CD.dwg
 Title: BROWN'S CREEK PARK STREAM RESTORATION
 User: EOR-0041-0418-CD.dwg
 Path: C:\Users\dem\OneDrive\Documents\Projects\0041-0418-CD.dwg
 Plot: 12/04/2023 10:10:10 AM
 Scale: 1"=40'
 Page: 17 of 28



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EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN 55108
 TEL: 612-418-1818 FAX: 612-418-1818
 WWW.EOR.COM

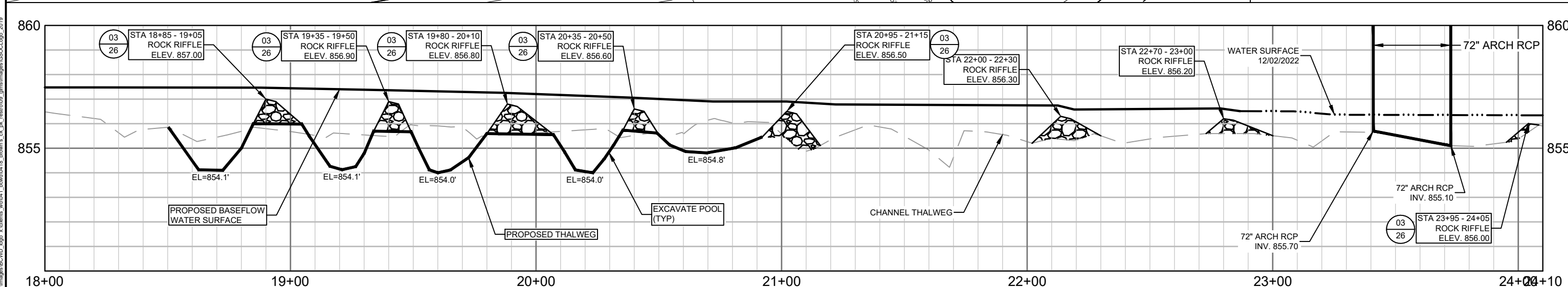
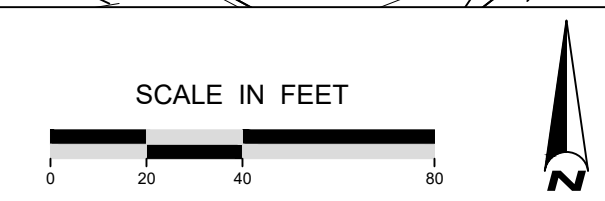
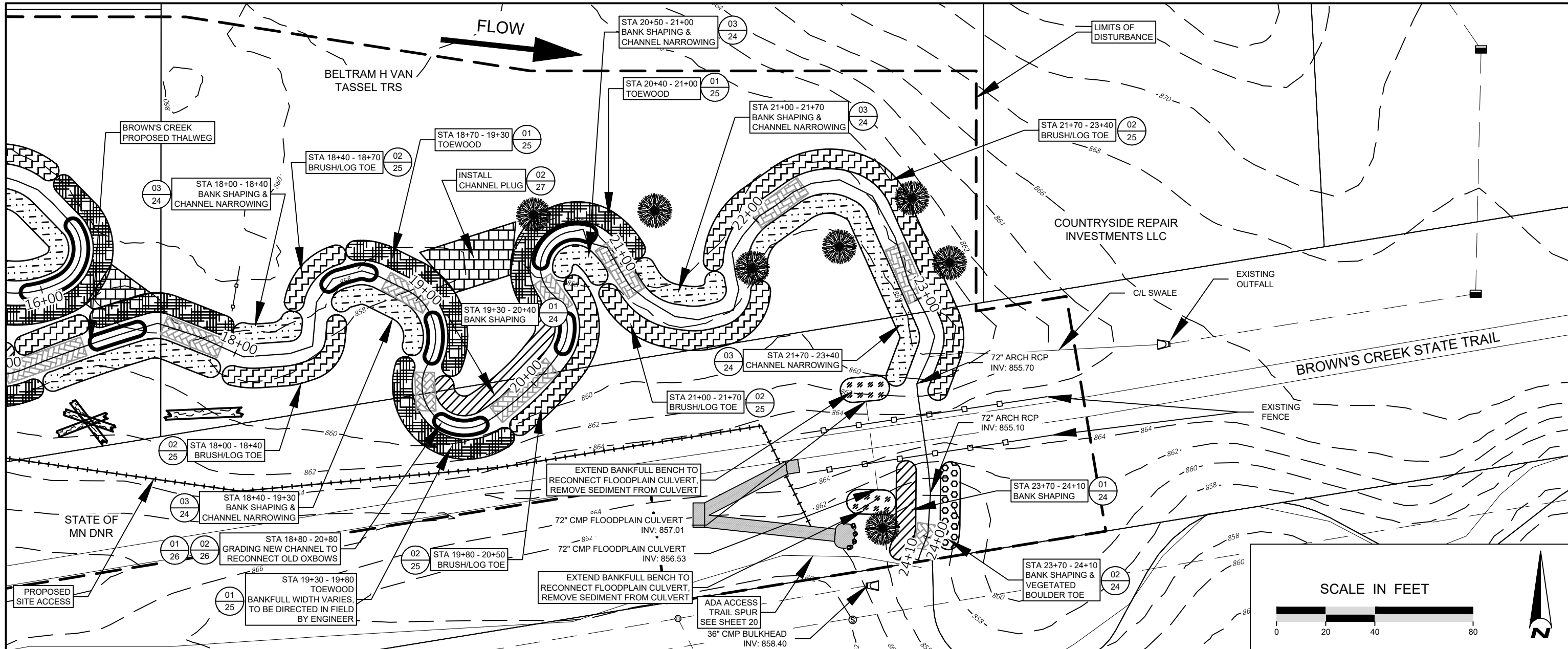
DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418
 CLIENT PROJECT #XXX-XXXX

BROWN'S CREEK PARK STREAM RESTORATION
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT
 OAKDALE, MN 55128

PROPOSED PLAN & PROFILE - 3
 SHEET 18 OF 28

Plot Date: 12/04/2023
 Drawing Title: BROWN'S CREEK PARK STREAM RESTORATION
 Drawing Path: \\server\projects\0418-XBASE\04041-0418-XBASE\04041-0418-LBASE\04041-0418-LBASE.dwg
 User: jrb
 Sheet: 18 of 28



NOT FOR CONSTRUCTION

EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN 55104
 TEL: 612-441-1818 FAX: 612-441-1818
 WWW.EOR.COM

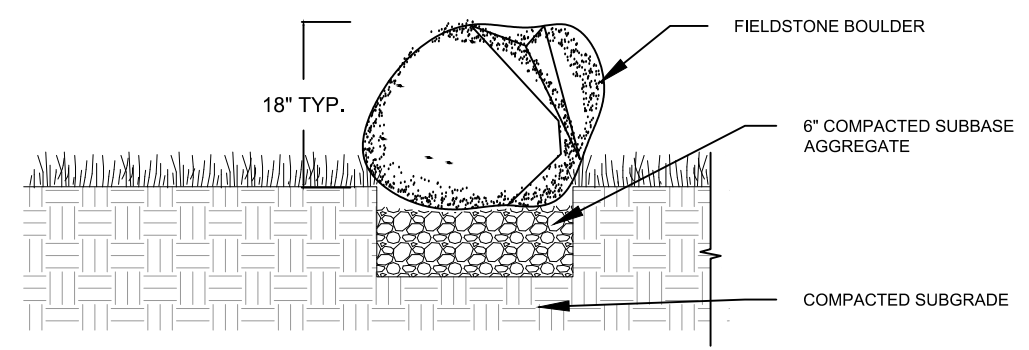
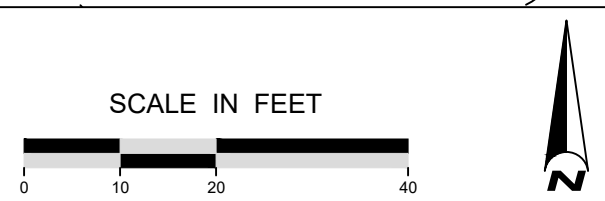
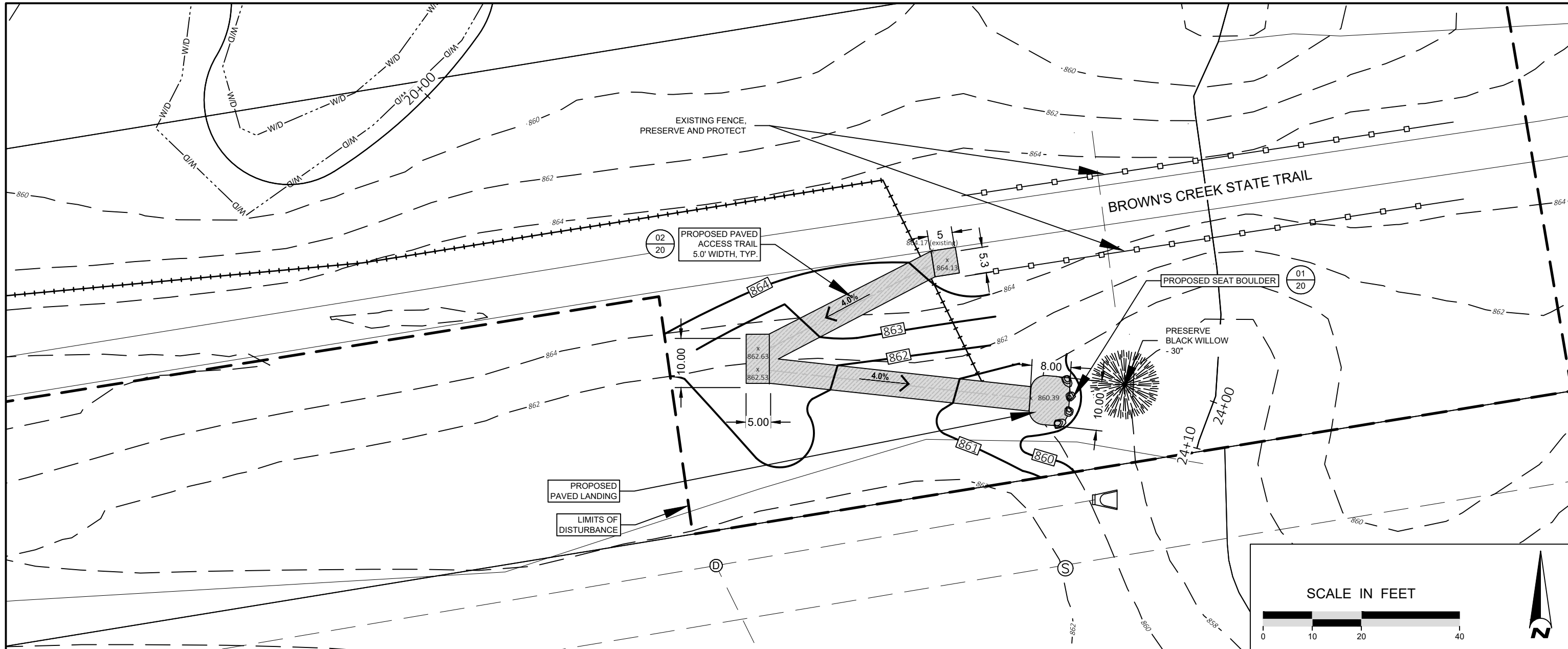
DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418
 CLIENT PROJECT #XXX-XXXX

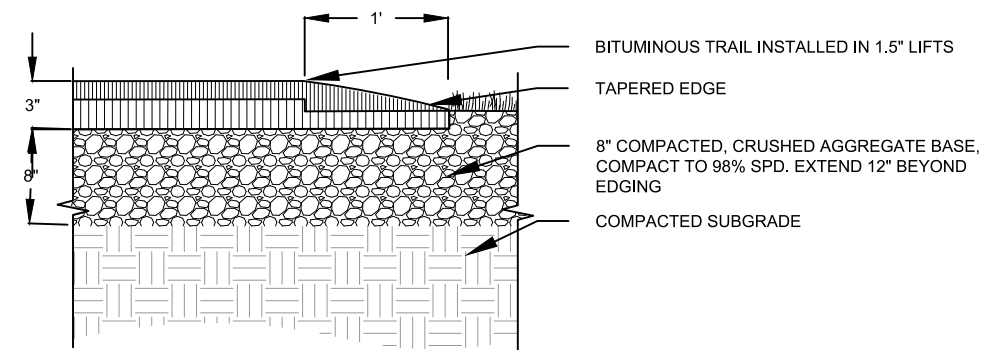
BROWN'S CREEK PARK STREAM RESTORATION
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT
 OAKDALE, MN 55128

PROPOSED PLAN & PROFILE - 4
 SHEET 19 OF 28

Plot Date: 12/04/2023
 Drawing Name: 0041-0418-CD.dwg
 Drawing Path: \\server\projects\0041-0418-CD.dwg
 User: jrb
 Title: BROWN'S CREEK PARK STREAM RESTORATION
 Project: BROWN'S CREEK PARK STREAM RESTORATION
 Sheet: 19 OF 28
 Date: 12/04/2023
 Time: 10:18:18 AM
 Author: jrb
 Plotter: HP DesignJet T1100e
 Plot Style: BROWN'S CREEK PARK STREAM RESTORATION.ctb
 Page: 19 OF 28



01
20 SEAT BOULDER DETAIL
NOT TO SCALE



02
20 BITUMINOUS TRAIL DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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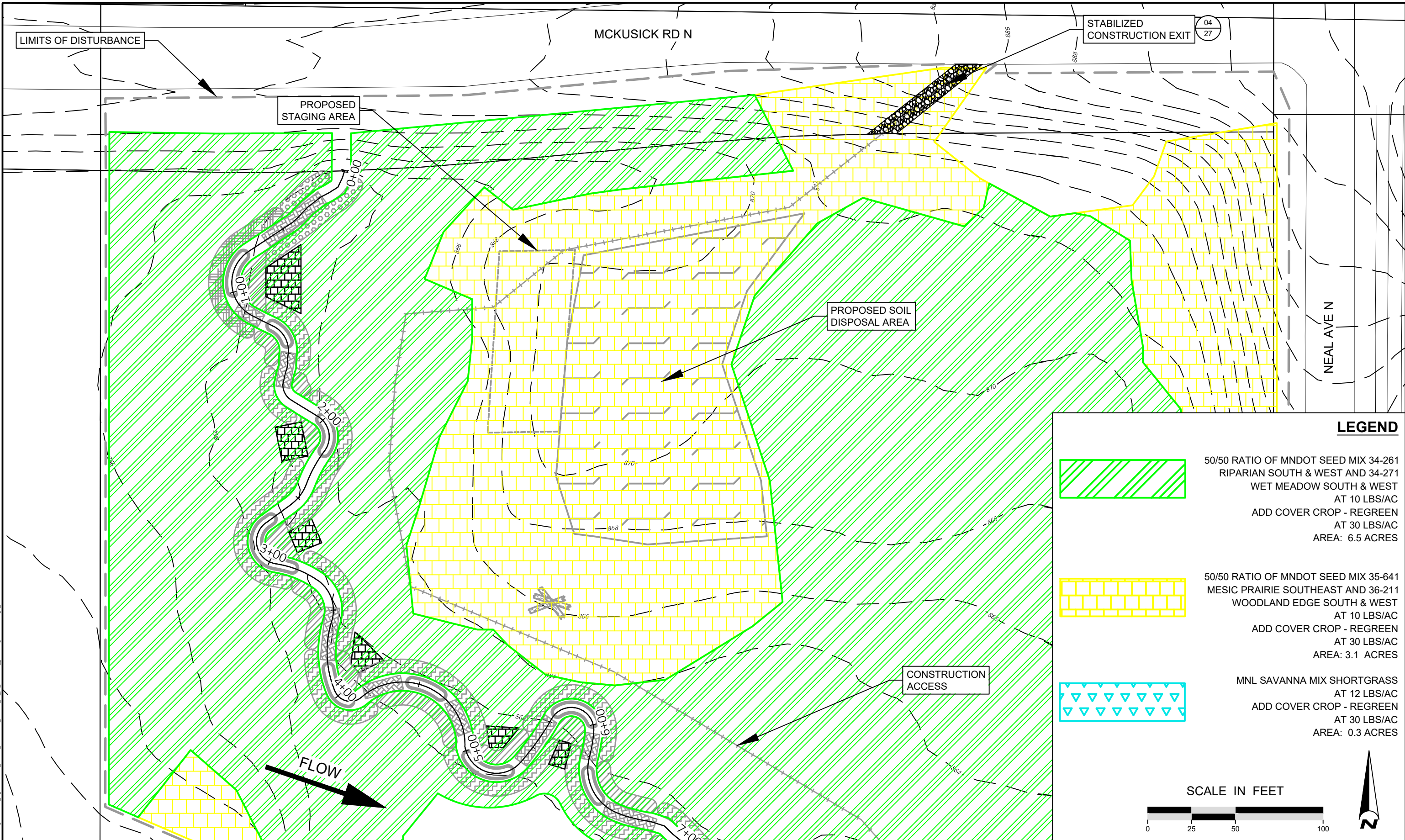
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DRAWN BY: DEM
CHECKED BY: MJM
EOR JOB #0041-0418



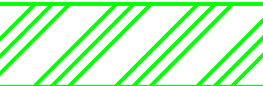
**BROWN'S CREEK PARK
STREAM RESTORATION**
WASHINGTON COUNTY, STILLWATER, MN
BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

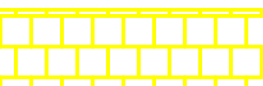
PROPOSED ADA
ACCESS TRAIL
SHEET 20 OF 28


Plot Date: 12/04/2023
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 Drawing Path: C:\Users\dem\OneDrive\Documents\Projects\BCWD0418_Brown's_Ck_Pk_Restore09_GNIS.dwg
 User: dem
 Title Block: 40041_0418-XBASE
 Plot Scale: 1"=40'
 Plot Date: 12/04/2023
 Drawing Title: BCWD0418_Brown's_Ck_Pk_Restore09_GNIS.dwg
 Drawing Path: C:\Users\dem\OneDrive\Documents\Projects\BCWD0418_Brown's_Ck_Pk_Restore09_GNIS.dwg
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 Title Block: 40041_0418-XBASE
 Plot Scale: 1"=40'



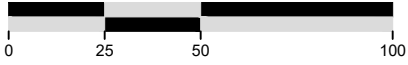
LEGEND


 50/50 RATIO OF MNDOT SEED MIX 34-261
RIPARIAN SOUTH & WEST AND 34-271
WET MEADOW SOUTH & WEST
AT 10 LBS/AC
ADD COVER CROP - REGREEN
AT 30 LBS/AC
AREA: 6.5 ACRES

 50/50 RATIO OF MNDOT SEED MIX 35-641
MESIC PRAIRIE SOUTHEAST AND 36-211
WOODLAND EDGE SOUTH & WEST
AT 10 LBS/AC
ADD COVER CROP - REGREEN
AT 30 LBS/AC
AREA: 3.1 ACRES

 MNL SAVANNA MIX SHORTGRASS
AT 12 LBS/AC
ADD COVER CROP - REGREEN
AT 30 LBS/AC
AREA: 0.3 ACRES

SCALE IN FEET





Plot Date: 12/04/2023
 Drawing: E:\Projects\0418\0418-01\0418-CD.dwg
 User: emmons\jacob@emmons.com
 40041_0418-XBASE
 40041_0418-FBASE
 40041_0418-LBASE
 Sheet Border: images...images\11...images\BCVD_bgp...clients_wd\041_browns_creek_restoration\images\SCCL02_2019

EO **water ecology community**
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN
 TEL: 612-291-1000 FAX: 612-291-1001
 www.emmons.com

NOT FOR CONSTRUCTION

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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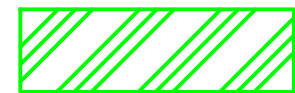
DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418

 **BROWN'S CREEK WATERSHED DISTRICT**
 CLIENT PROJECT #XXX-XXXX

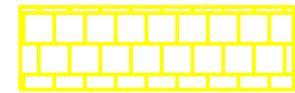
BROWN'S CREEK PARK STREAM RESTORATION
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

ESC & RESTORATION PLAN 1
 SHEET 21 OF 28

LEGEND



50/50 RATIO OF MNDOT SEED MIX 34-261
RIPARIAN SOUTH & WEST AND 34-271
WET MEADOW SOUTH & WEST
AT 10 LBS/AC
ADD COVER CROP - REGREEN
AT 30 LBS/AC
AREA: 6.5 ACRES

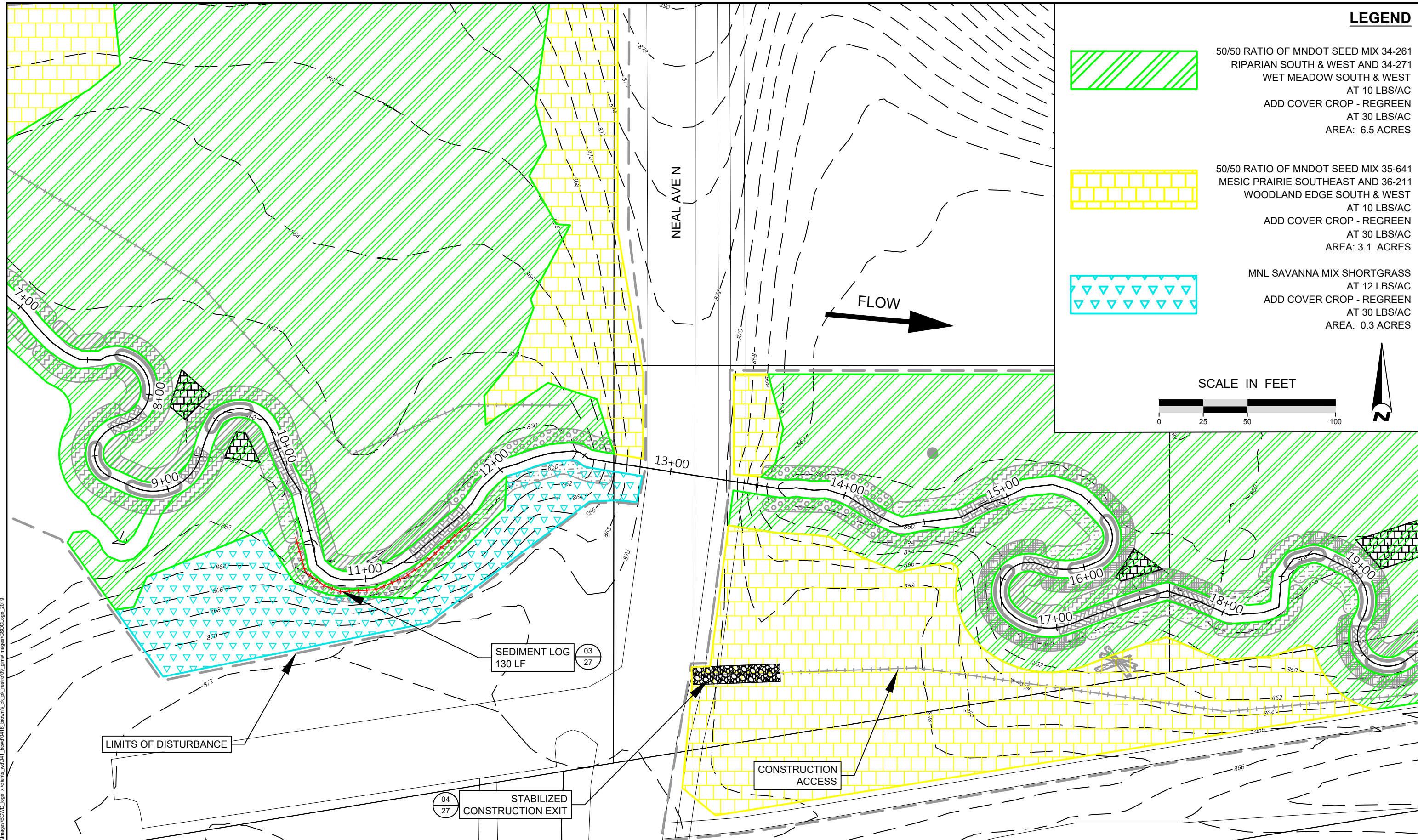
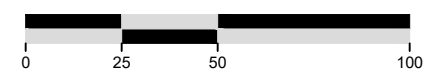


50/50 RATIO OF MNDOT SEED MIX 35-641
MESIC PRAIRIE SOUTHEAST AND 36-211
WOODLAND EDGE SOUTH & WEST
AT 10 LBS/AC
ADD COVER CROP - REGREEN
AT 30 LBS/AC
AREA: 3.1 ACRES



MNL SAVANNA MIX SHORTGRASS
AT 12 LBS/AC
ADD COVER CROP - REGREEN
AT 30 LBS/AC
AREA: 0.3 ACRES

SCALE IN FEET

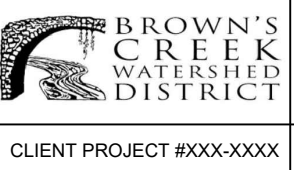


Plot Date: 12/04/2023
 Drawing: E:\0041_Brown's_Ck_Pk_Restor\09_GNIS\Map\041_0418-CD.dwg
 User: emmons\jacob.klaus@emmons.com
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 40041_0418-FBASE
 40041_0418-LBASE
 Sheet Border: images...images\BCHD_bgp_x\clients_wd\041_browns_ck_pk_restor\09_gnis\Map\041_0418-CD.dwg
 Page 172

NOT FOR CONSTRUCTION

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418

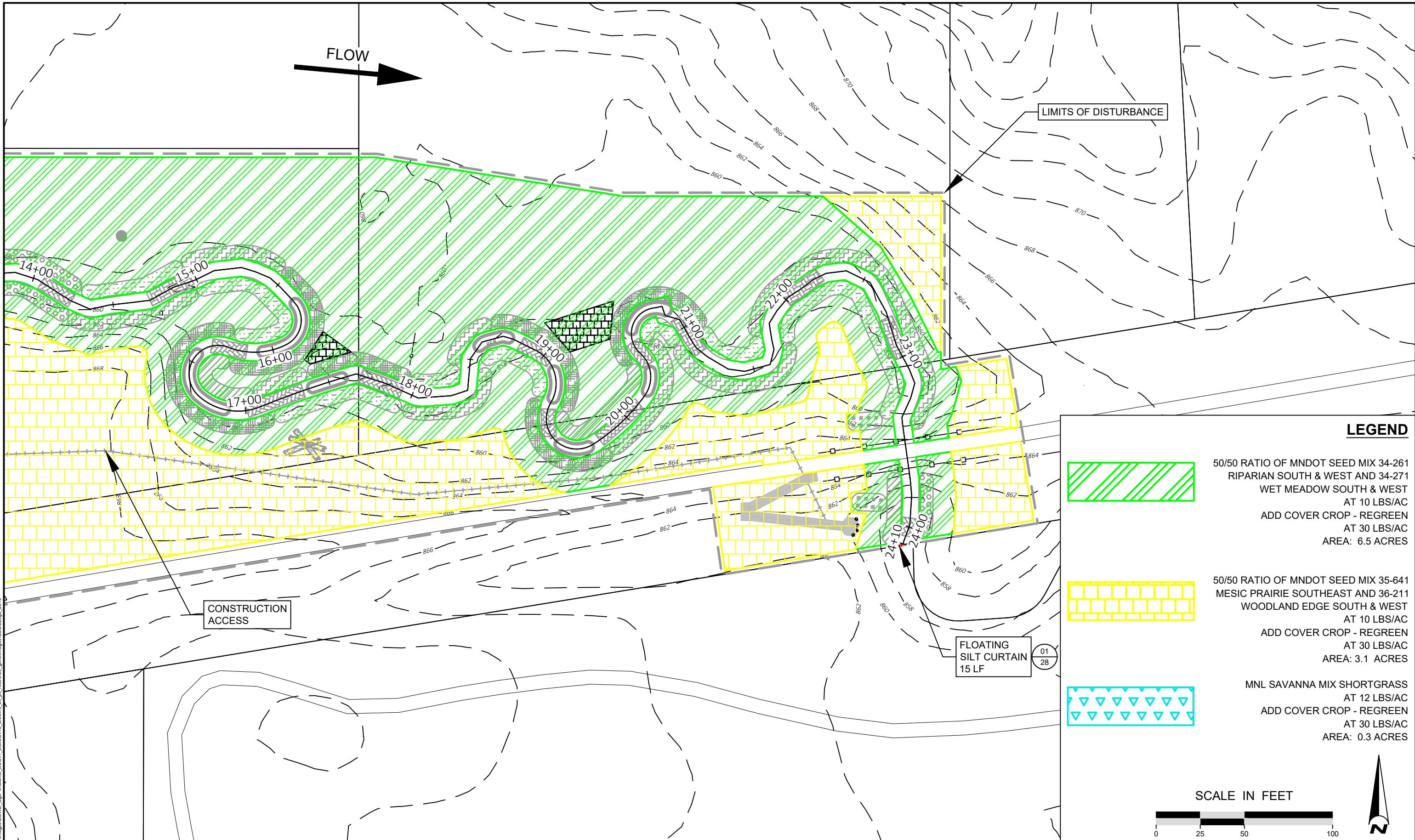


**BROWN'S CREEK PARK
 STREAM RESTORATION**
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

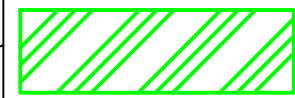
ESC & RESTORATION
 PLAN 2
 SHEET 22 OF 28



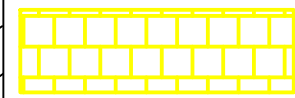
EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN
 TEL: 612-761-1111 FAX: 612-761-1112
 WWW.EMMONS-OLIVIER.COM



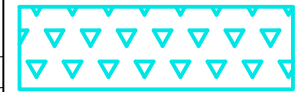
LEGEND



50/50 RATIO OF MNDOT SEED MIX 34-261
 RIPARIAN SOUTH & WEST AND 34-271
 WET MEADOW SOUTH & WEST
 AT 10 LBS/AC
 ADD COVER CROP - REGREEN
 AT 30 LBS/AC
 AREA: 6.5 ACRES

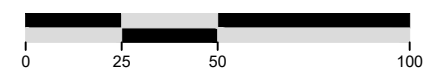


50/50 RATIO OF MNDOT SEED MIX 35-641
 MESIC PRAIRIE SOUTHEAST AND 36-211
 WOODLAND EDGE SOUTH & WEST
 AT 10 LBS/AC
 ADD COVER CROP - REGREEN
 AT 30 LBS/AC
 AREA: 3.1 ACRES



MNL SAVANNA MIX SHORTGRASS
 AT 12 LBS/AC
 ADD COVER CROP - REGREEN
 AT 30 LBS/AC
 AREA: 0.3 ACRES

SCALE IN FEET



NOT FOR CONSTRUCTION

EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN 55108
 TEL: 612-763-1111 FAX: 612-763-1112
 WWW.EOR.COM

Plot Date: 12/04/2023
 Drawing: EOR\Projects\0418-XB\0418-XB-CD.dwg
 User: jrb
 Title: ESC & RESTORATION PLAN 3
 Scale: 1"=40'
 Date: 12/04/2023
 Author: jrb
 Check: jrb
 Date: 12/04/2023
 Project: BROWN'S CREEK PARK
 Client: BROWN'S CREEK WATERSHED DISTRICT
 Location: WASHINGTON COUNTY, MN
 Sheet: 23 OF 28

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
	2	
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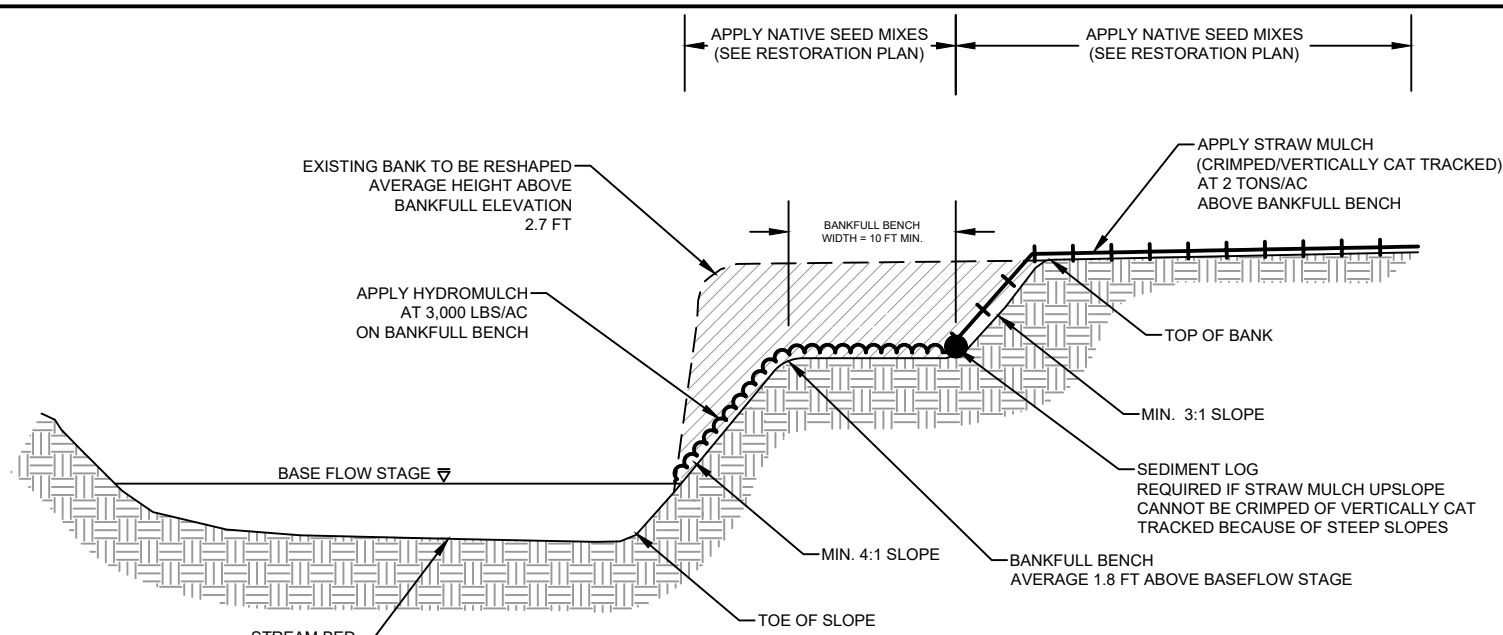
DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418



CLIENT PROJECT #XXX-XXXX

**BROWN'S CREEK PARK
 STREAM RESTORATION**
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT
 OAKDALE, MN 55128

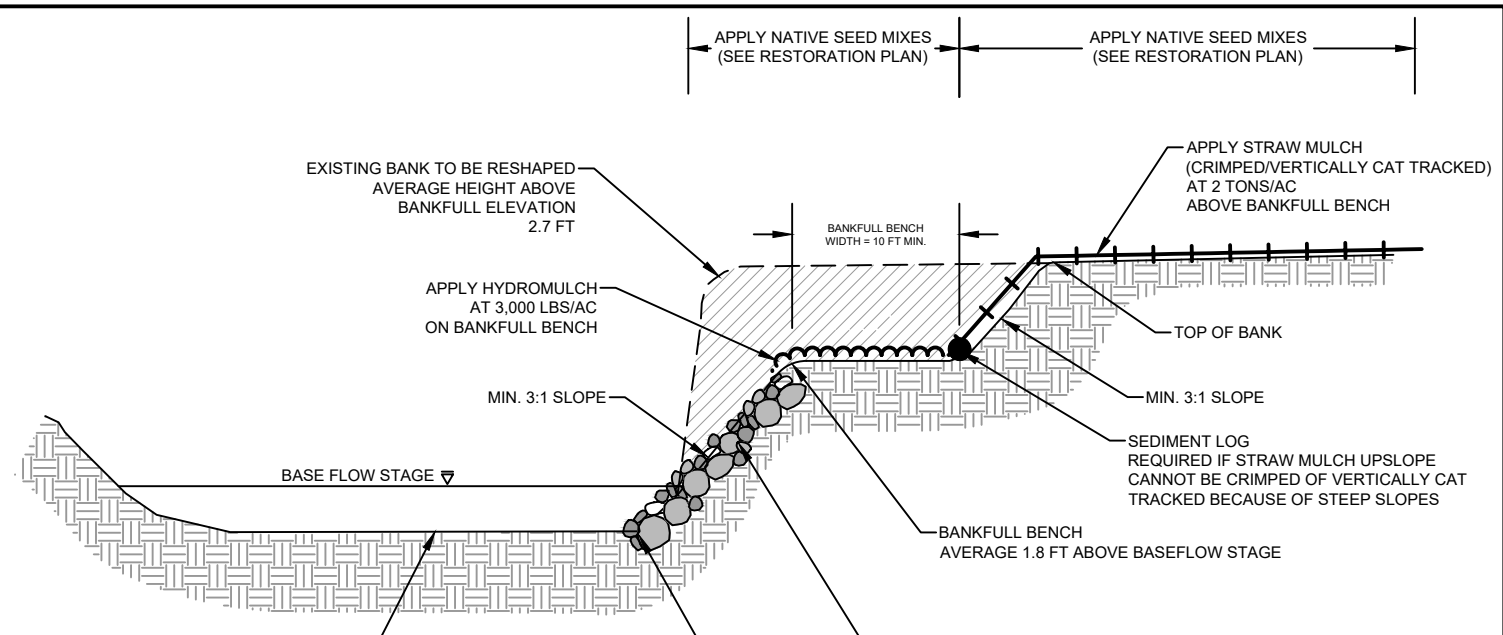
ESC & RESTORATION
 PLAN 3
 SHEET 23 OF 28



NOTES:

1. APPLY COVER CROP (REGREEN) TO ALL DISTURBED AREAS AT A RATE OF 30 LBS/AC
2. REDUNDANT BMPS ARE:
 - 2.1 FLAT BANKFULL BENCH
 - 2.2 STRAW MULCH CRIMPED/VERTICAL CAT TRACKING ABOVE TOP OF BANK
2. (2) ROWS OF SEDIMENT LOGS SPACED 5 FEET APART AT TOE OF STEEP SLOPES IF CRIMPING/VERTICAL CAT TRACKING AND FLAT BANKFULL BENCH IS NOT FEASIBLE

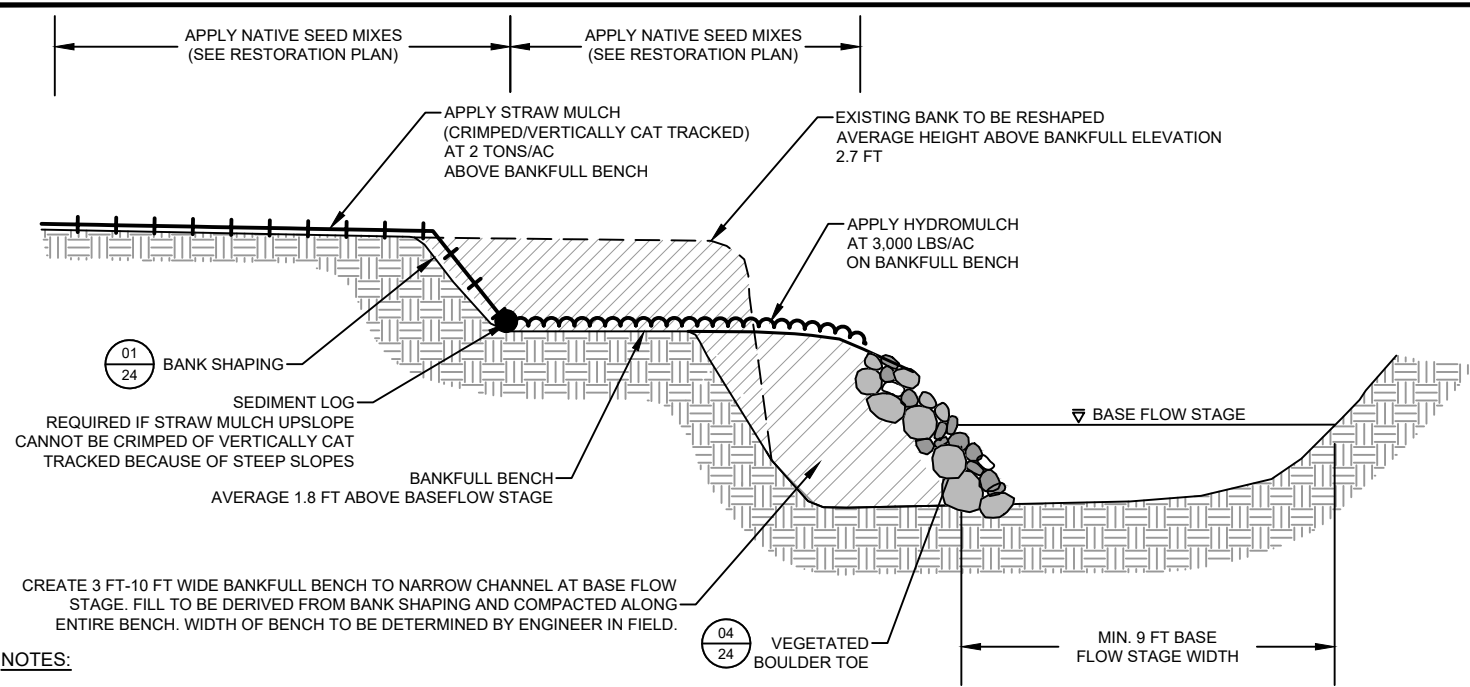
01 BANK SHAPING
24 NOT TO SCALE



NOTES:

1. APPLY COVER CROP (REGREEN) TO ALL DISTURBED AREAS AT A RATE OF 30 LBS/AC
2. REDUNDANT BMPS ARE:
 - 2.1 FLAT BANKFULL BENCH
 - 2.2 STRAW MULCH CRIMPED/VERTICAL CAT TRACKING ABOVE TOP OF BANK
2. (2) ROWS OF SEDIMENT LOGS SPACED 5 FEET APART AT TOE OF STEEP SLOPES IF CRIMPING/VERTICAL CAT TRACKING AND FLAT BANKFULL BENCH IS NOT FEASIBLE

02 BANK SHAPING W/ VEGETATED BOULDER TOE
24 NOT TO SCALE



NOTES:

1. APPLY COVER CROP (REGREEN) TO ALL DISTURBED AREAS AT A RATE OF 30 LBS/AC
2. REDUNDANT BMPS ARE:
 - 2.1 FLAT BANKFULL BENCH
 - 2.2 STRAW MULCH CRIMPED/VERTICAL CAT TRACKING ABOVE TOP OF BANK
2. (2) ROWS OF SEDIMENT LOGS SPACED 5 FEET APART AT TOE OF STEEP SLOPES IF CRIMPING/VERTICAL CAT TRACKING AND FLAT BANKFULL BENCH IS NOT FEASIBLE

03 BANK SHAPING W/ CHANNEL NARROWING
24 NOT TO SCALE

NOTES:

1. FILL VOID SPACES IN RIPRAP WITH TOPSOIL TO AID IN VEGETATION ESTABLISHMENT
2. BOULDER MATERIAL SHALL BE CLASS III ANGULAR GRANITE RIPRAP
3. ANGULAR GRANITE RIPRAP SHALL CONFORM TO SPECIFIED SIZE CLASS

04 VEGETATED BOULDER TOE
24 NOT TO SCALE

EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN 55104
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DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR
DRAWN BY: DEM
CHECKED BY: MJM
EOR JOB #0041-0418
CLIENT PROJECT #XXX-XXXX

**BROWN'S CREEK PARK
STREAM RESTORATION**
WASHINGTON COUNTY, STILLWATER, MN
BROWN'S CREEK WATERSHED DISTRICT
OAKDALE, MN 55128

DETAILS - 1
SHEET 24 OF 28

Plot Date: 12/04/2023
 Drawing: E:\Projects\0418-PRASE\0418-PRASE\0418-PRASE\0418-PRASE.dwg
 User: mjm
 Title: 0418-PRASE
 Sheet: 24 of 28
 Project: 0418-PRASE
 Client: Brown's Creek Watershed District
 Location: Stillwater, MN
 Date: 12/04/2023

NOTES:

1. ROOTWADS SHOULD MIN. 6 FT IN LENGTH AND 18 INCHES IN DIAMETER.
2. SPECIFIC ORIENTATION OF LOGS AND BALLAST MATERIALS MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SIZE AND SHAPE OF MATERIAL DELIVERED OR SALVAGED.
3. BUILD OUT TOE WOOD FROM TOE OF EXISTING BANK. BLEND UPSTREAM AND DOWNSTREAM ENDS OF THE TOE WOOD INTO THE EXISTING BANK TO PREVENT SCOUR/EDDYING.
4. WOOD PLACEMENT TO BE DIRECTED BY THE OWNERS REPRESENTATIVE IN THE FIELD AT THE TIME OF CONSTRUCTION. EXACT PLACEMENT LOCATION AND NUMBER OF PIECES PER WALL TO BE DICTATED BASED ON FIELD CONDITIONS AND LOCALIZED GEOMORPHOLOGY.

FOOTER LOGS & ROOT WADS:

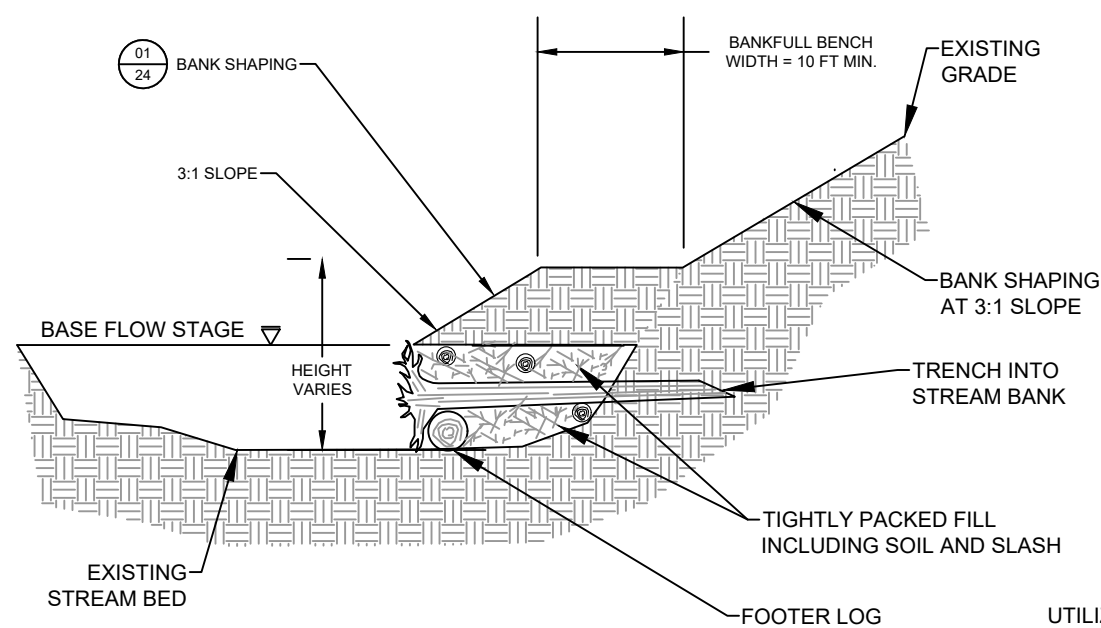
- TO BE HARVESTED ONSITE BY CONTRACTOR.
- SHALL BE FREE OF DECAY OR ROT. BOX ELDER & LARGE BUCKTHORN ARE ACCEPTABLE.
- MINIMUM 8 INCH TRUNK DIAMETER.
- ROOTWAD ROOT BOLE MUST BE INTACT AND HAVE A MINIMUM DIAMETER OF 18 INCHES AND A MAXIMUM DIAMETER OF 30 INCHES.

FILLER MATERIAL:

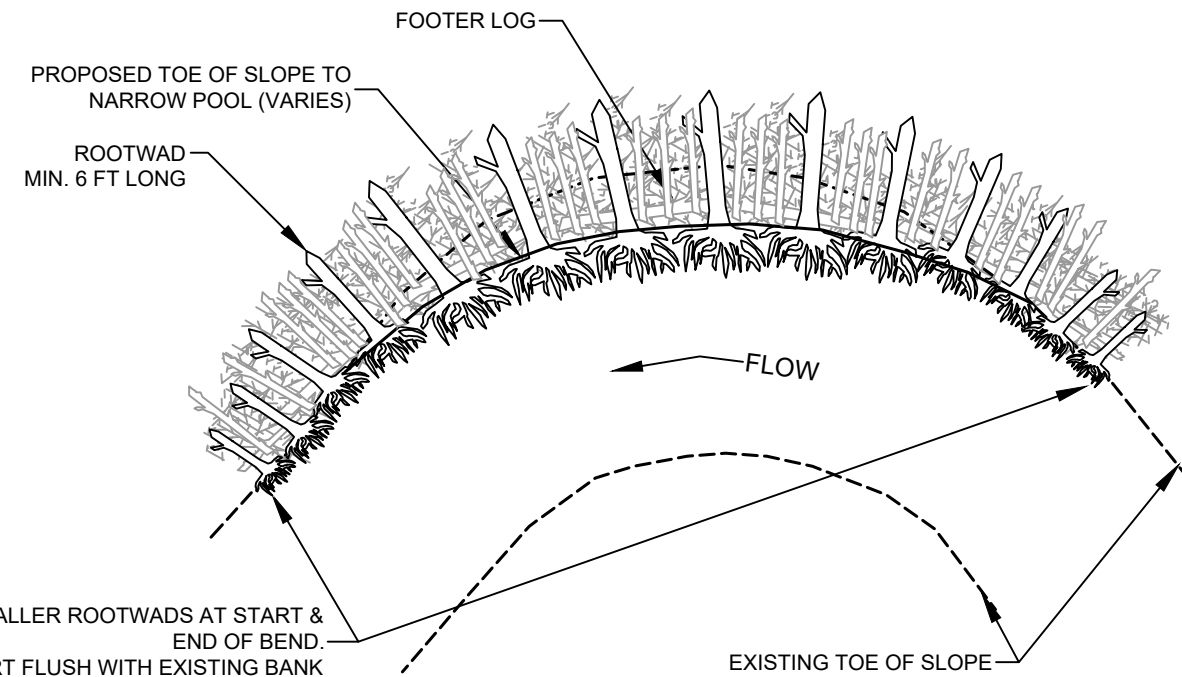
- TO BE HARVESTED ONSITE BY CONTRACTOR.
- SMALL LOGS, LIMBS AND TREE TOPS LESS THAN 6 INCHES DIAMETER.
- MATERIAL SHALL BE INSTALLED PARALLEL WITH ROOTWADS TO ACHIEVE MAXIMUM STEM DENSITY.

BACKFILL MATERIAL:

- ONSITE MATERIALS TO BE UTILIZED WHERE SUITABLE AS APPROVED BY THE ENGINEER. GRAVEL & COBBLE IS PREFERRED.
- IF ADDITIONAL MATERIAL IS REQUIRED, IT SHALL BE A MINERAL SOIL AND/OR NATURAL GRAVEL & COBBLE.

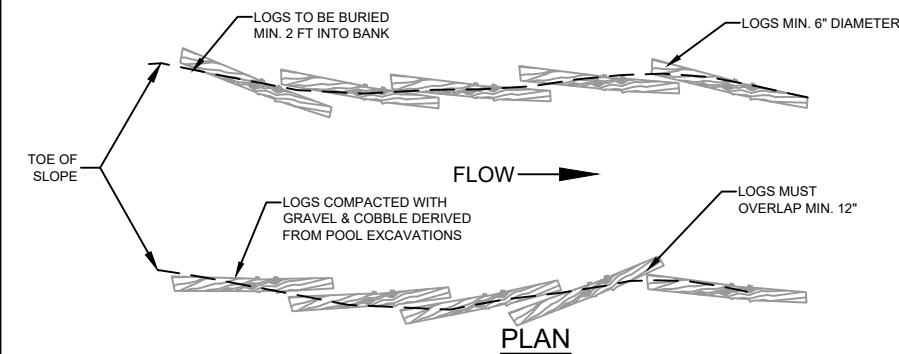


CROSS SECTION

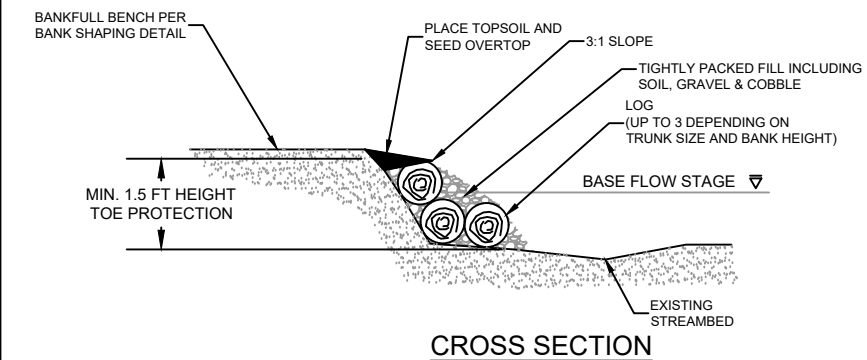


PLAN

01 TOEWOOD
25 NOT TO SCALE



PLAN

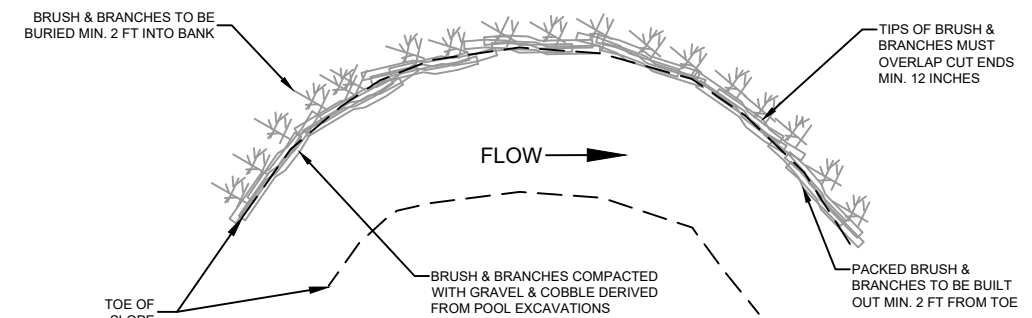


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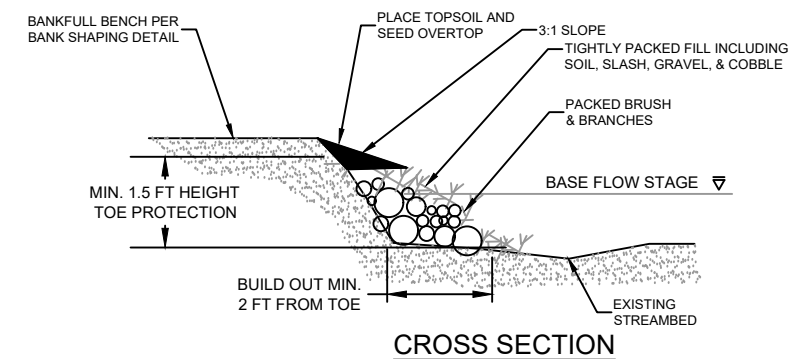
LOG TOE FOR STRAIGHT REACHES

NOTES:

1. SPECIFIC ORIENTATION OF LOGS AND BRUSH MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SIZE AND SHAPE OF MATERIAL DELIVERED OR SALVAGED.
2. WOOD PLACEMENT TO BE DIRECTED BY ENGINEER IN THE FIELD AT THE TIME OF CONSTRUCTION. EXACT PLACEMENT LOCATION AND NUMBER OF PIECES PER BANK TO BE DICTATED BASED ON FIELD CONDITIONS.
3. UPSTREAM LOG/BRANCH TO OVERLAP START OF DOWNSTREAM LOG/BRANCH MINIMUM 12 INCHES.
4. INNER VOID SPACES OF LOGS & BRUSH TO BE FILLED WITH SOIL, OUTER FILL TO BE COMPRISED OF GRAVEL & COBBLE.
5. ROOTWADS OF LOGS/TRUNKS AND SHRUBS MAY REMAIN ATTACHED IF ROOTWADS ARE ABLE TO BE ADEQUATELY BURIED UNDER BANKFULL BENCH.
6. ALL MATERIAL SHALL BE FRESHLY CUT (NO ROTTEN LOGS OR LIMBS)
7. WOODY MATERIAL SHALL BE TIGHTLY COMPACTED WITH EXCAVATOR BUCKET TO LIMIT VOID SPACE AS MUCH AS POSSIBLE.



PLAN



CROSS SECTION

BRUSH TOE FOR BENDS

02 BRUSH/LOG TOE
25 NOT TO SCALE

NOT FOR CONSTRUCTION

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
	2	
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DESIGNED BY: EOR
DRAWN BY: DEM
CHECKED BY: MJM
EOR JOB #0041-0418



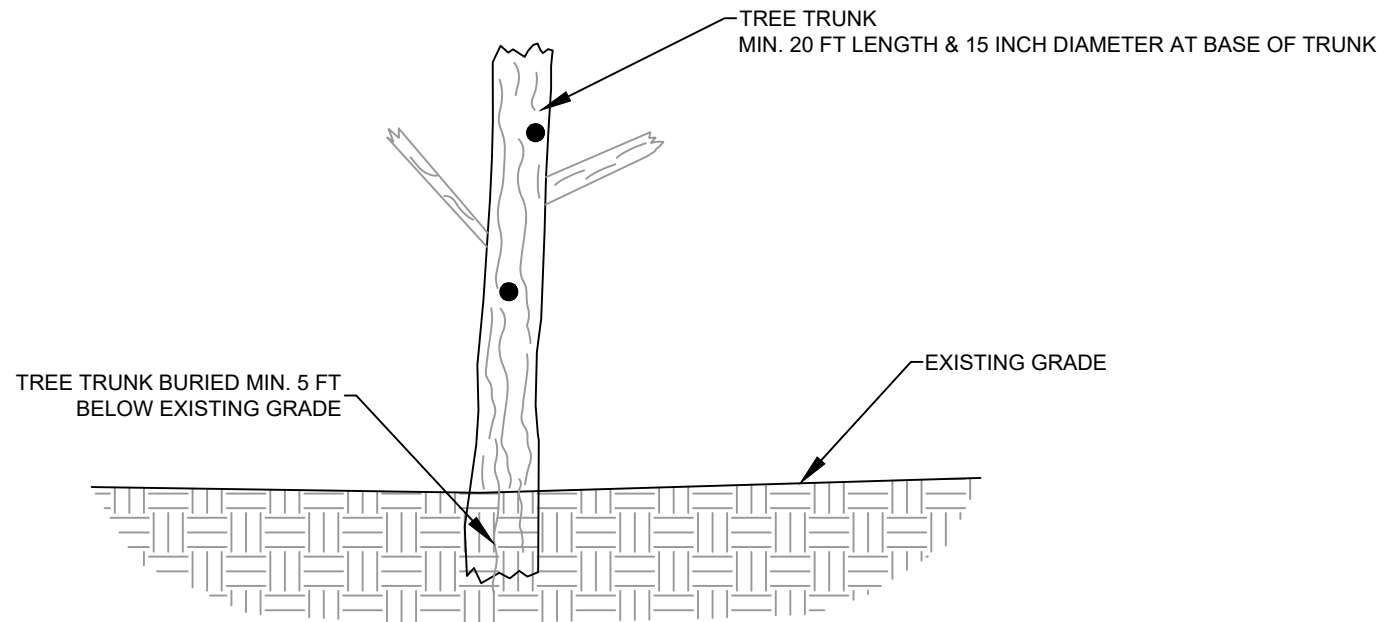
**BROWN'S CREEK PARK
STREAM RESTORATION**
WASHINGTON COUNTY, STILLWATER, MN

DETAILS - 2

BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

SHEET 25 OF 28

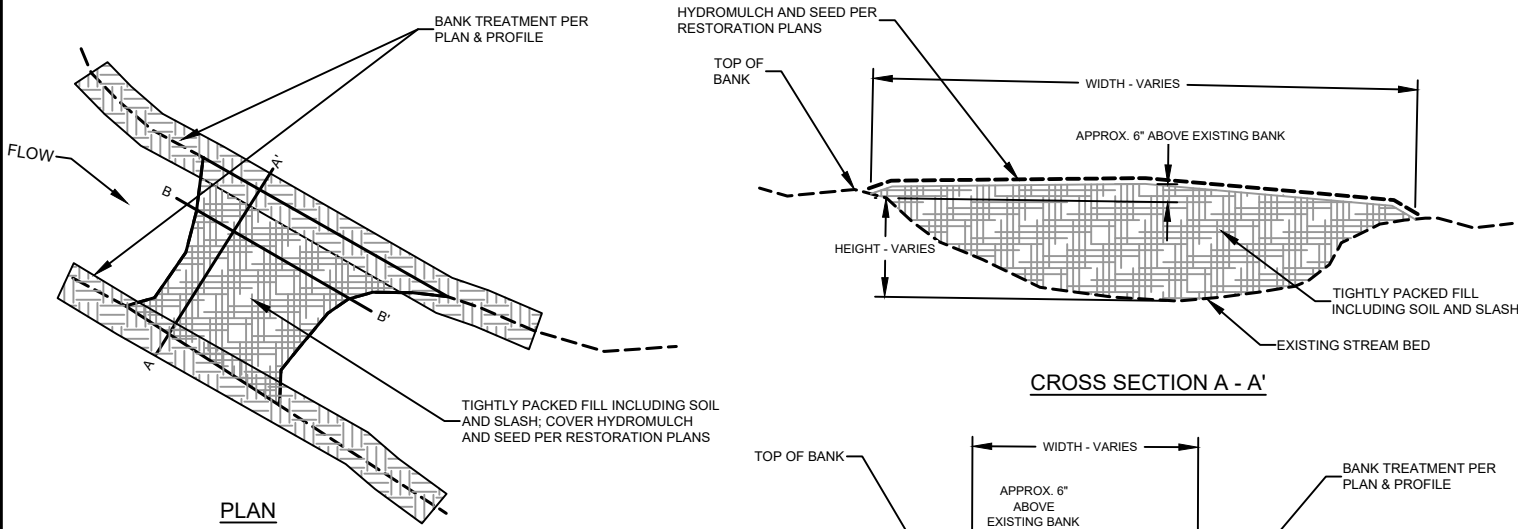
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 User: EOR\dem
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 40041_0418-XBASE
 40041_0418-FBASE
 40041_0418-LBASE
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CROSS SECTION

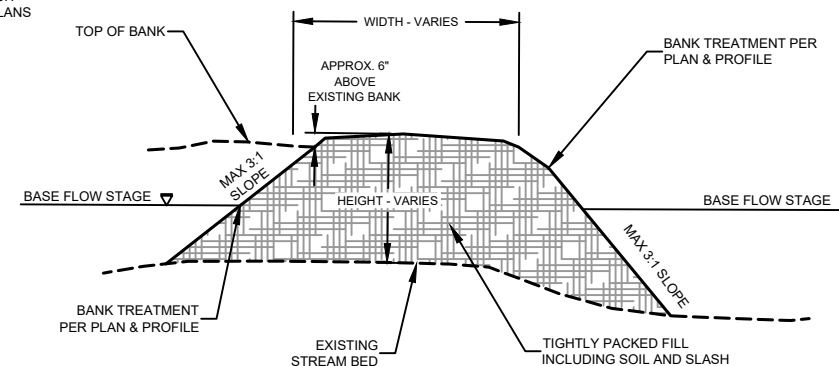
NOTES:

1. TRUNK LOCATION & PLACEMENT TO BE DIRECTED BY PROJECT ENGINEER IN THE FIELD. INSTALLATION OF SNAG TREE SHOULD BE CONDUCTED USING AN EXCAVATOR.
2. TRUNK SHALL BE SOURCED FROM A DEAD TREE, IDEALLY WITH SIGNS OF DECAY, CAVITIES, OR LOOSE BARK.
3. PRESERVE ANY BRANCHES AND BARK AS MUCH AS POSSIBLE DURING INSTALLATION.
4. COMPACT SOIL AROUND TREE TRUNK USING EXCAVATOR BUCKET.



PLAN

CROSS SECTION A - A'



CROSS SECTION B - B'

NOTES:

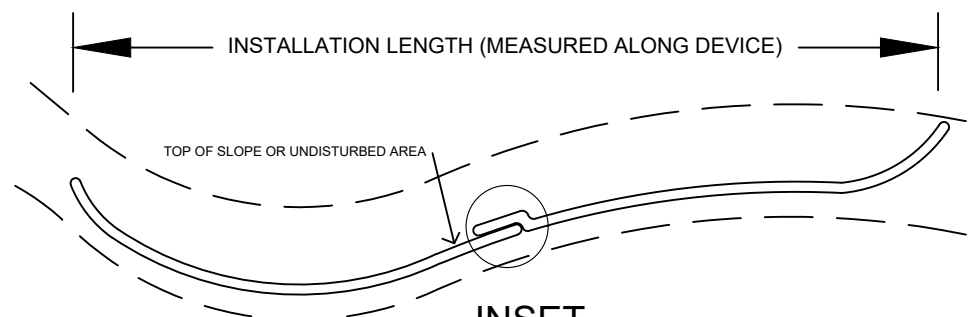
- 1) ALL MATERIALS SHALL BE CONSIDERED INCIDENTAL TO EXCAVATION.
- 2) UTILIZE SOILS FROM BANK SHAPING ACTIVITIES AND SLASH AS NEEDED FOR FILL.
- 3) SOIL PLUG TO BE TIGHTLY COMPACTED WITH MACHINERY ON-SITE (I.E. EXCAVATOR OR BULLDOZER TRACKING OVERTOP MULTIPLE TIMES)

01 SNAG TREE

27 NOT TO SCALE

02 CHANNEL PLUG

27 NOT TO SCALE



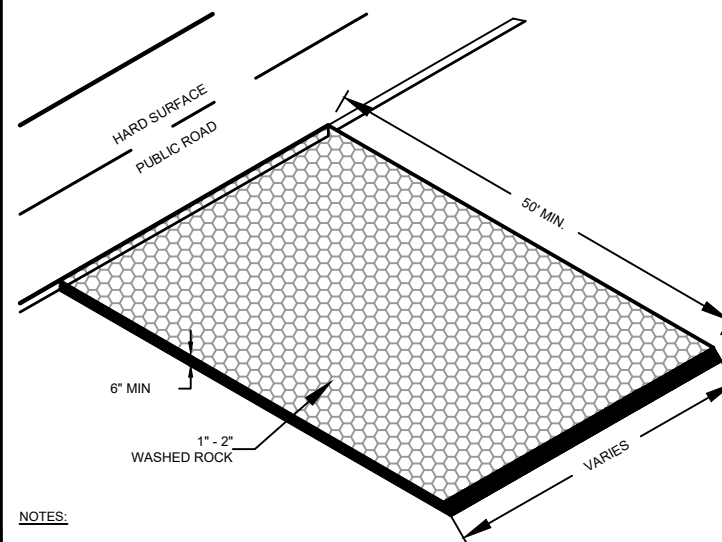
INSET

1. SEDIMENT LOGS SHOULD BE 6" CURLEX SEDIMENT LOG WITH WITH BIODEGRADABLE CONTAINMENT MATERIAL (OR APPROVED EQUIVALENT)
2. SEDIMENT CONTROL LOGS MAY BE REQUIRED ALONG ACCESS ROUTES AND/OR DOWNSLOPE OF STOCKPILES, AS DEEMED NECESSARY BY ENGINEER
3. SEDIMENT CONTROL LOGS MUST BE 100% BIODEGRADABLE. SYNTHETIC NETTING OR PHOTODEGRADABLE NETTING WILL NOT BE ACCEPTED
4. SPACE STAKES AT 1"X1" NOMINAL WOOD STAKES AT 8 FOOT MAXIMUM SPACING
5. INSTALL SLOPE PROTECTION PERPENDICULAR TO SLOPE (PARALLEL TO CONTOURS). OVERLAP JOINTS PER DETAIL 'A'. RUN THE LAST 10 FEET OF EACH DEVICE UP THE SLOPE TO PREVENT FLOW RUNAROUND
6. STAKES ARE NOT TO PROTRUDE THROUGH LOGS, BUT RATHER PLACED ON THE DOWNSTREAM SIDE AT A 45 DEGREE ANGLE SO AS TO "PINCH" THE LOG TIGHT TO THE GROUND SURFACE

INSET

03 SEDIMENT CONTROL LOG

27 NOT TO SCALE



NOTES:

1. IF STABILIZED CONSTRUCTION EXITS ARE LOCATED IN SATURATED SOILS, CONTRACTOR SHALL PLACE GEOTEXTILE FABRIC UNDERNEATH ROCK TO PREVENT SETTLING.
2. ROCK CONSTRUCTION ENTRANCE SHALL BE MAINTAINED FOR THE DURATION OF THE CONSTRUCTION PROCESS.
3. CONTRACTOR IS RESPONSIBLE FOR REMOVAL & RESTORATION AT COMPLETION OF PROJECT.
4. ALTERNATIVE CONSTRUCTION ENTRANCE MAY BE UTILIZED AFTER APPROVAL BY OWNERS REPRESENTATIVE/ ENGINEER.

04 STABILIZED CONSTRUCTION EXIT

27 NOT TO SCALE



EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
Tel: 612-418-1818
www.eor.com

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DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR

DRAWN BY: DEM

CHECKED BY: MJM

EOR JOB #0041-0418



CLIENT PROJECT #XXX-XXXX

BROWN'S CREEK PARK
STREAM RESTORATION

WASHINGTON COUNTY, STILLWATER, MN

BROWN'S CREEK WATERSHED DISTRICT

OAKDALE, MN 55128

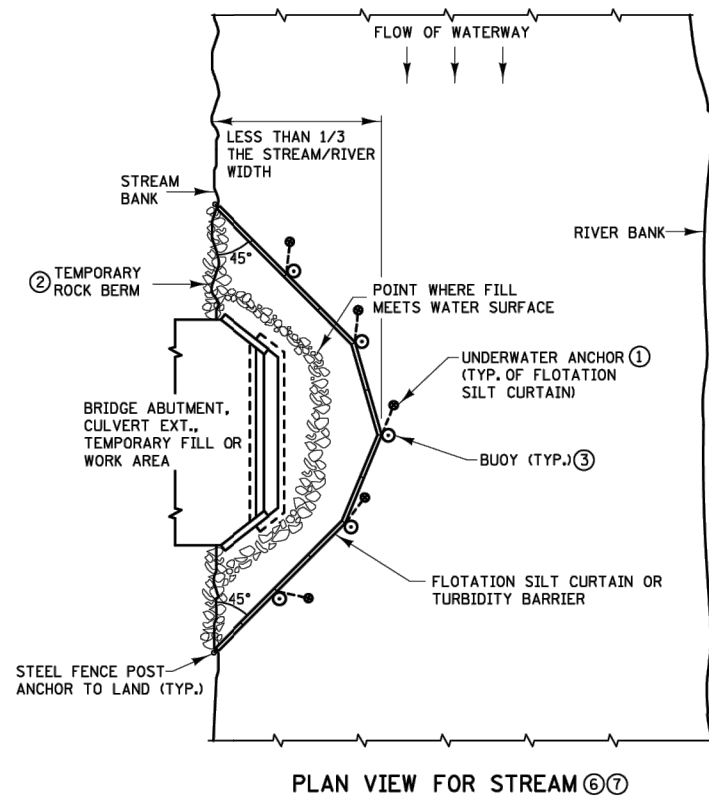
DETAILS - 4

SHEET 27 OF 28

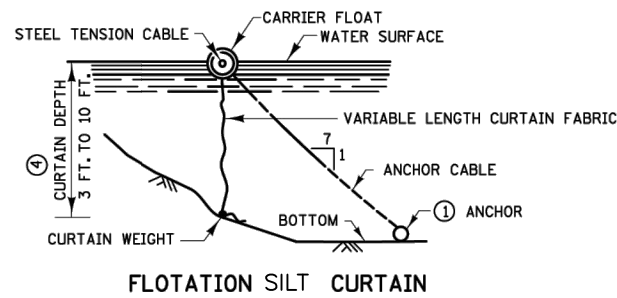
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PLOTTED/REVISED: 23-OCT-2013

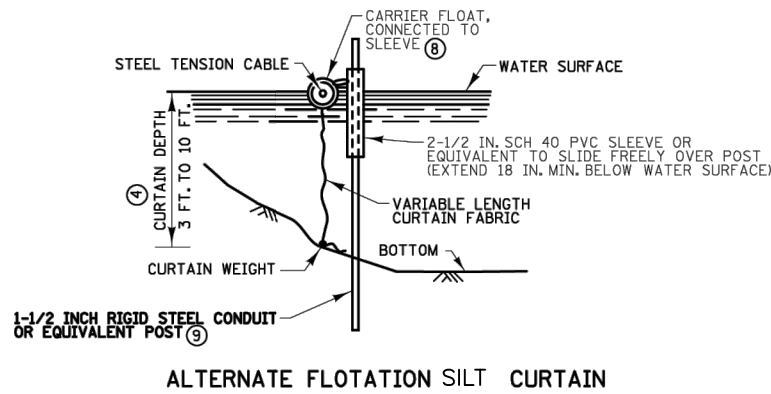
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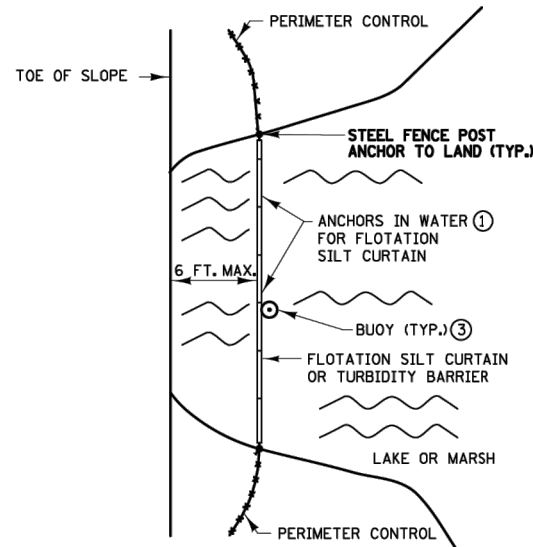
PLAN VIEW FOR STREAM (6, 7)



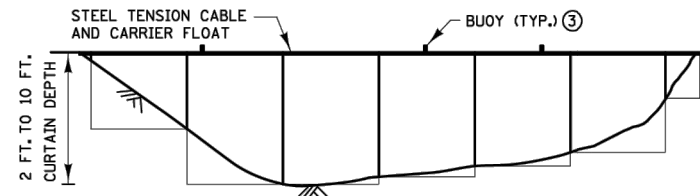
FLOTATION SILT CURTAIN



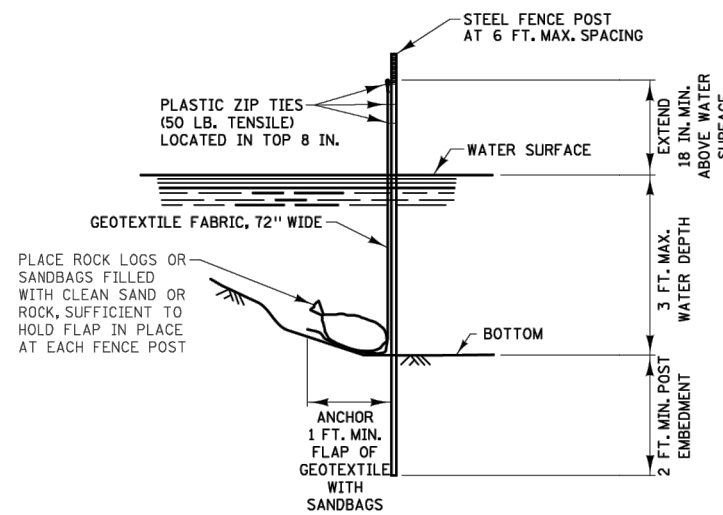
ALTERNATE FLOTATION SILT CURTAIN



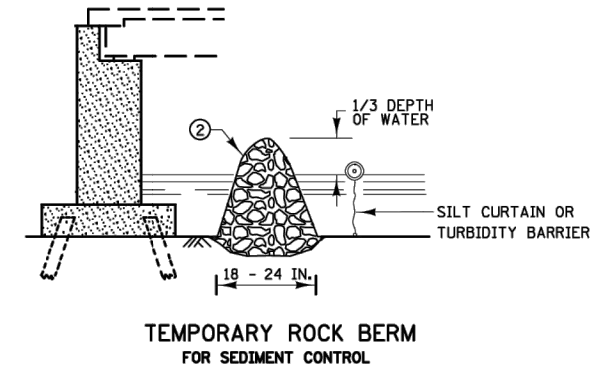
PLAN VIEW FOR LAKE OR MARSH (6, 7)



FRONT VIEW FOR FLOTATION SILT CURTAIN (4)



TURBIDITY BARRIER (SILT FENCE TYPE TB)



TEMPORARY ROCK BERM FOR SEDIMENT CONTROL

INSTALLATION GUIDELINES TURBIDITY BARRIER (4)
 MINIMUM WATER DEPTH: 1 FT.
 MAXIMUM WATER DEPTH: 3 FT.
 MAXIMUM WATER VELOCITY: 5 FT./SEC.

INSTALLATION GUIDELINES FLOTATION SILT CURTAIN TYPE: STILL WATER (5)
 MINIMUM WATER DEPTH: 3 FT.
 MAXIMUM WATER DEPTH: 10 FT.
 MAXIMUM WATER VELOCITY: 2 FT./SEC.
 MAXIMUM WAVE HEIGHT: 1 FT

INSTALLATION GUIDELINES FLOTATION SILT CURTAIN TYPE: MOVING WATER (5)
 MINIMUM WATER DEPTH: 3 FT.
 MAXIMUM WATER DEPTH: 10 FT.
 MAXIMUM WATER VELOCITY: 5 FT./SEC.
 MAXIMUM WAVE HEIGHT: 2 FT.

NOTES:

- SEE SPECS. 2573, 3886, 3887 & 3893.
- (1) FOR ANCHOR SPACING AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.
- (2) IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT A BRIDGE, CULVERT, OR SLOPE, A TEMPORARY ROCK BERM CONSTRUCTED FROM THE RIPRAP CAN BE USED TO PROVIDE ADDITIONAL PROTECTION. WHEN THE WORK IS COMPLETE THE RIPRAP CAN THEN BE MOVED TO THE PERMANENT LOCATION INDICATED IN THE PLANS. THE TEMPORARY ROCK BERM IS INCIDENTAL.
- (3) ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.
- (4) WATER DEPTH CAN BE 0 TO 10 FEET. THE DEPTH OF THE SILT CURTAIN VARIES.
- (5) MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR TURBIDITY BARRIER FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR TURBIDITY BARRIER.
- (6) SILT CURTAIN SHOULD BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF HAS BEEN TEMPORARILY OR PERMANENTLY STABILIZED. SILT CURTAIN SHOULD ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.
- (7) EMBED POST INTO BOTTOM A MINIMUM OF 40% OF THE WATER DEPTH (INCLUDING WAVE HEIGHT), BUT IN NO CASE SHALL EMBEDMENT BE LESS THAN 2 FEET.
- (8) ANCHOR FLOAT MUST BE CONNECTED SECURELY TO SLEEVE WITH A MINIMUM TENSILE STRENGTH OF 100 LBS. CONNECTION METHOD MUST ALLOW FOR SLEEVE TO MOVE FREELY ON POST.
- (9) PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

SILT CURTAIN OR TURBIDITY BARRIER			
TEMPORARY SEDIMENT CONTROL			
STATE PROJ. NO.	(TH)	SHEET NO.	OF SHEETS

01 FLOTATION SILT CURTAIN
 28 NOT TO SCALE

NOT FOR CONSTRUCTION

EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN 55104
 TEL: 612-761-1100 FAX: 612-761-1101
 WWW.EOR.COM

DATE	NO.	DESCRIPTION
12/04/2023	1	95% DESIGN PLAN SET
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DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM



EOR JOB #0041-0418 CLIENT PROJECT #XXX-XXXX

BROWN'S CREEK PARK STREAM RESTORATION

WASHINGTON COUNTY, STILLWATER, MN

BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

DETAILS - 5

SHEET 28 OF 28

Plot Date: 12/04/2023
 Drawing Name: IP_PWP-df567933temporary_sediment_control_ldgn
 User: jrb
 Path: C:\Users\jrb\OneDrive\Documents\Projects\2023\Brown's Creek\0418-PRASE\0418-PRASE.dwg
 Scale: 1:1
 Plot Size: 11x17
 Page: 178

EXHIBIT B

Site Plan - Construction Area

EXHIBIT C

Maintenance Easement

[MAINTAIN 3-INCH MARGIN]

**MAINTENANCE EASEMENT
On the Van Tassel Property at 13093 McKusick Road North
Washington County, Minnesota**

THIS EASEMENT is granted by Beltram H. Van Tassel, an individual, and Barbara Van Tassel, an individual, and Beltram H. Van Tassel and Barbara Van Tassel as trustees for the Beltram H. Van Tassel Revocable Trust (collectively, Van Tassels) to the Brown's Creek Watershed District, a special purposes district of the State of Minnesota with powers set forth at Minnesota Statutes chapters 103B and 103D (BCWD).

WITNESS:

A. Van Tassels own in fee simple certain real property consisting of 4.6 acres of land, more or less, at 13093 McKusick Rd North in the City of Stillwater, Washington County, legally described as:

That part of the east 335 feet of the west 650 feet of the northwest quarter of the southwest quarter of section 20, township 30 north, range 20 west, Washington County, Minnesota, lying southerly of the southerly line of Washington County Highwater Right of Way No. 85 - County Road 64, recorded as Document No. 714569 in the office of the County Recorder, Washington County, Minnesota, and lying northerly of the northerly line of the Minnesota Transportation Museum property, formerly the Stillwater St. Paul Railroad Company property, as describe Book "U" of Deeds, page 499, on file and of record in said office of the County Recorder, Washington County, Minnesota.

(the Van Tassel Property).

B. BCWD has undertaken a construction project reconnecting floodplain, stabilizing eroded and eroding creek banks, reshaping banks, constructing in-stream riffles and pools, thinning tree cover to improve habitat and prevent erosion, removing invasive species and replacing with native vegetation, and improving access to the creek on public property from the Brown's Creek State Trail (the Project). The Project has been constructed on city-owned land, county right-of-way, state property (including along Brown's Creek State Trail), and on the Van Tassel Property, benefitting Van Tassels by stabilizing and improving the Van Tassel Property and securing against soil loss from erosion, and will contribute to the realization of the public purposes for which BCWD was established;

C. BCWD has requested and Van Tassels have agreed to grant to BCWD an easement over the Van Tassel Property providing BCWD with the right to access and use the Van Tassel Property to maintain the Project after construction.

NOW, THEREFORE, for one dollar and other good and valuable consideration, the sufficiency of which the parties hereby acknowledge, the parties agree as follows:

1. Grant of Easement. Van Tassels hereby grant and convey to BCWD, its contractors, agents, successors and assigns a perpetual easement over, under, upon and across that portion of the Van Tassel Property delineated and labeled on Exhibit 1, attached hereto and incorporated herein (the Maintenance Area), for purposes of access for maintenance of the Project in accordance with the Maintenance Plan developed for and approved by the Van Tassels as part of the Project. The easement includes the right of ingress and egress and to pass over and through the Maintenance Area on foot and using motorized equipment to conduct maintenance of the Project, including the right to inspect, monitor, reconstruct and otherwise maintain the Project on the Van Tassel Property, including but not limited to correction of erosion and structural problems observed to ensure stability of the Maintenance Area, maintenance or replacement of plantings; seeding and reseedling to maintain ecological health and function; removal of invasive species and weeds as necessary to achieve the intended purposes of the Project. The rights granted hereby include the right to lay and maintain temporary utilities across or above the surface of the Maintenance Area for purposes of maintenance of the Project.

2. Restrictions on Van Tassels' Use of Maintenance Area. Van Tassels will not use the Maintenance Area or permit the construction of any improvements within the Maintenance Area in any manner that would damage or interfere with the function or physical structure of the Project. Specifically, Van Tassels will not alter or allow alteration of any grade-control structures or any filling or grading of land or construction of structures within the Maintenance Area to ensure the Project continues to protect water quality and moderate flow in the creek. Weeds may be hand-pulled or spot-treated with herbicide according to instructions on the herbicide label. Van Tassels will not mow or otherwise disturb vegetation, apply fertilizer to, or dispose of yard or other waste in the Maintenance Area.

3. No Public Access or Use; Van Tassels' Reserved Rights. No right of access or use is granted to the general public to the Van Tassel Property by this easement. Van Tassels may use and enjoy the Maintenance Area for any purposes and engage in or allow others to engage in all activities or uses and enjoy all rights accruing from their ownership of the Van Tassel Property, subject to the restrictions stated herein and the right of BCWD to use the Maintenance Area for the purposes herein expressed. Van Tassels retain the right to sell or transfer all or part of the Van Tassel Property subject to the easement. Van Tassels will inform all others who exercise any right on the Van Tassel Property by or through Van Tassels of the requirements and constraints imposed by the easement, and will take any other steps as necessary to ensure that the terms of the easement are met.
4. Conduct of the Project Maintenance; Property Condition. All activity by BCWD on the Van Tassel Property will be conducted in a safe and workmanlike manner at BCWD's sole cost. In the event the Maintenance Area or Van Tassel Property is damaged by the activities of BCWD or its contractors, agents or assigns pursuant to the exercise of any of BCWD's rights under the easement, BCWD will promptly repair or restore the Van Tassel Property to the extent reasonably practicable. BCWD will repair, seed or plant disturbed or damaged areas with vegetation suitable for the intended uses of the Van Tassel Property.
5. Inspection and Enforcement. BCWD representatives, agents and contractors may enter the Maintenance Area at reasonable times to monitor activities on and uses of the Maintenance Area. In acting under this paragraph, BCWD will not unreasonably interfere with Van Tassels' use and quiet enjoyment of the Van Tassel Property. BCWD may act to prevent or remedy all activities and uses of the Maintenance Area not consistent with the terms of the easement. BCWD will remain responsible for its legal fees and related expenses for any unlawful action taken by BCWD, its employees, agents or contractors.
6. Notice. BCWD may access the Maintenance Area and undertake work in accordance with and under the terms of the easement at any time, but after completion of construction of the Project, BCWD will notify Van Tassels by telephone or email at least 24 hours prior to commencement of any exercise of BCWD's further rights under the easement.
7. Regulatory Authorities Not Affected. The easement does not replace or diminish the regulatory authority of BCWD or any other public body, as may apply to the Van Tassel Property or any activity within it.
8. Insurance. Van Tassels remain solely responsible for maintaining liability and other insurance for its own uses of and authority over the Van Tassel Property.

9. Running with the Land. This easement, rights and privileges hereby granted, the restrictions and obligations hereby imposed, and the agreements contained in this easement will be easements, restrictions and covenants running with the land in perpetuity and will inure to the benefit of and be binding on the parties hereto and their respective heirs, successors and assigns including but not limited to all subsequent owners of any portion of the Van Tassel Property and all persons claiming under them.

10. Notices. Except as otherwise specifically provided herein, all notices required or permitted under this easement will be in writing and will be deemed delivered when personally delivered, delivered by documented courier delivery or mailed by United States registered or certified mail, return receipt requested, at the address appearing below or to such other address as each party may designate by a written notice to the other.

If to Van Tassels: Barbara Van Tassel
 13093 McKusick Road
 Stillwater MN 55082

If to BCWD: Brown's Creek Watershed District
 Attn: Administrator
 455 Hayward
 Oakdale MN 55128
 KKill@mnwcd.org

11. Severability. If any one or more of the provisions of this easement, or the applicability of any such provision to a specific situation, will be held invalid or unenforceable, such provision will be modified to the extent necessary to make it or its application valid and enforceable, and the validity and enforceability of all other provisions of this agreement and all other applications of any such provision will not be affected thereby.

12. Governing Law; Venue. This easement will be construed and governed by the laws of the State of Minnesota. Venue for any action taken under or related to the Easement will be in the district court of Washington County, Minnesota.

13. No Waiver of Immunity. No provision of this easement will be interpreted as a waiver of any statutory or common law immunity from or limitation of liability available to BCWD, all such immunities and limitations being expressly reserved by BCWD.

14. Recording. BCWD may, at its expense, record and rerecord this easement.

{Signature page follows.}

IN WITNESS WHEREOF, the undersigned execute this easement, intending to be legally bound.

Van Tassels

_____ Date: _____
By Barbara Van Tassel, as trustee of the Beltram H. Van Tassel Revocable Trust

_____ Date: _____
By Barbara Van Tassel, individually

_____ Date: _____
By Beltram H. Van Tassel, as trustee of the Beltram H. Van Tassel Revocable Trust

_____ Date: _____
By Beltram H. Van Tassel, individually

STATE OF MINNESOTA
COUNTY OF WASHINGTON

This instrument was acknowledged before me this ____ day of _____, 202__, by Beltram H. Van Tassel and Barbara Van Tassel as trustees of the Beltram H. Van Tassel Revocable Trust, and by Beltram H. Van Tassel, as an individual, and Barbara Van Tassel, , as an individual.

Notary Public

Brown’s Creek Watershed District

_____ Date: _____
By Karen Kill
Its administrator

STATE OF MINNESOTA
COUNTY OF WASHINGTON

This instrument was acknowledged before me this ___ day of _____, 202__, by Karen Kill, as administrator of the Brown’s Creek Watershed District, a special purposes

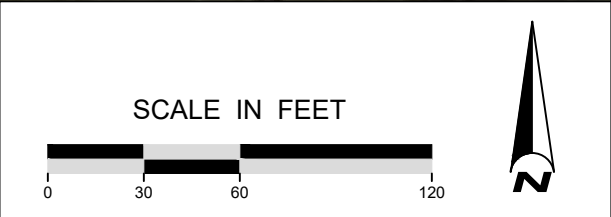
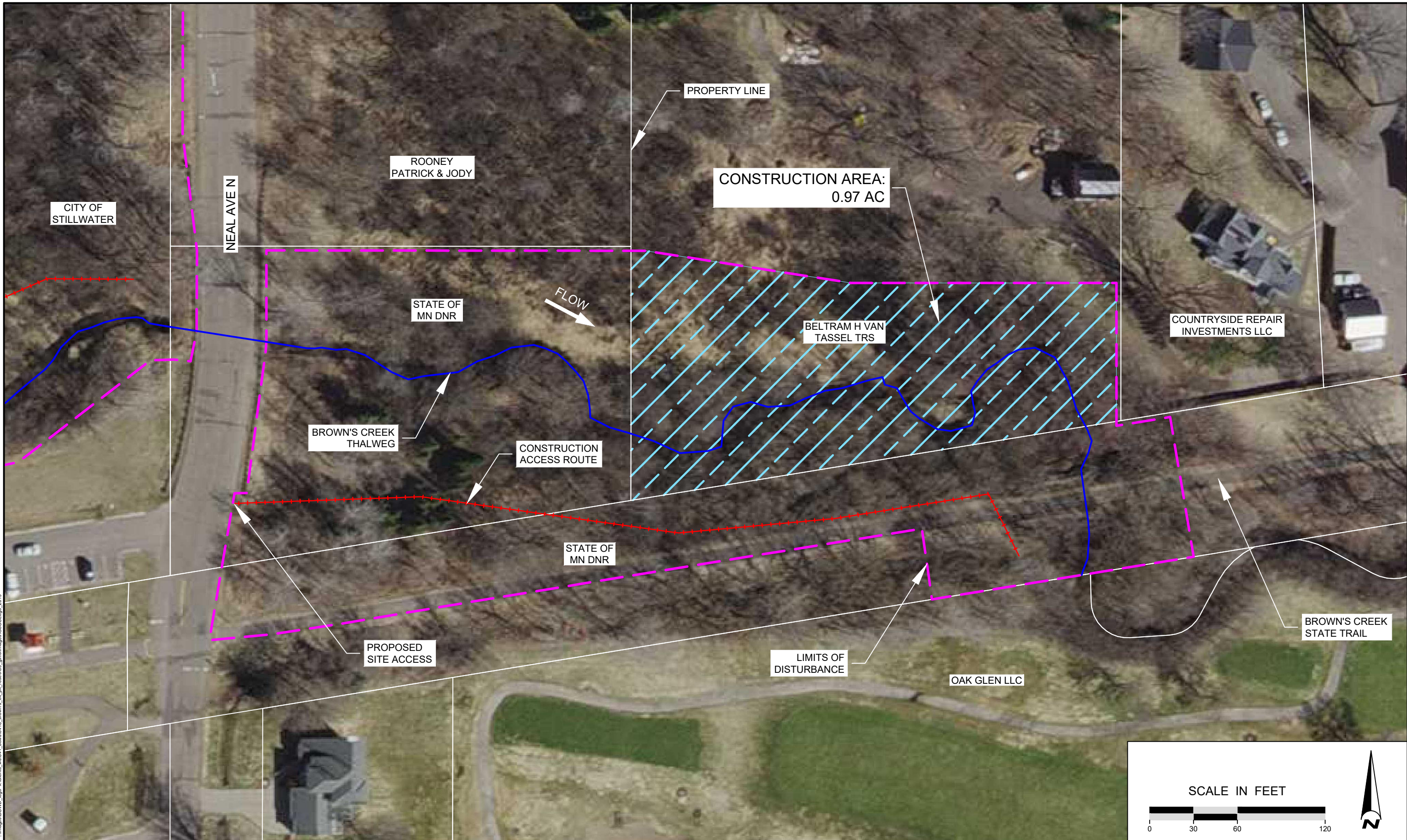
district of the State of Minnesota with powers set forth at Minnesota Statutes chapters 103B and 103D, on behalf of the district.

Notary Public

Drafted by:
Smith Partners PLLP – MJW
250 Marquette Avenue South, Suite 250
Minneapolis Minn 55401

EXHIBIT 1

Maintenance Area



Plot Date: 12/12/2023
 Drawing Name: W0411_BOWD0418_Brown's_Ck_Pk_Restor09_GNIS/ing0041_0418-EasementExhibit.dwg
 Drawing Path: X:\GIS\Projects\W0411_BOWD0418_Brown's_Ck_Pk_Restor09_GNIS\ing0041_0418-EasementExhibit.dwg
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 40041_0418-XBASE
 40041_0418-FBASE
 40041_0418-LBASE
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 2019

EOR water ecology community
 EMMONS & OLIVIER RESOURCES, INC.
 1919 UNIV. AVE. W. #300 ST. PAUL, MN 55108
 TEL: 612-771-1000 FAX: 612-771-1001
BCWD Board Packet 10-2024
 Page 189

NOT FOR CONSTRUCTION

DATE	NO.	DESCRIPTION
12/12/2023	1	EASEMENT EXHIBIT
	2	
	3	
	4	
	5	
	6	

DESIGNED BY: EOR
 DRAWN BY: DEM
 CHECKED BY: MJM
 EOR JOB #0041-0418



BROWN'S CREEK PARK STREAM RESTORATION
 WASHINGTON COUNTY, STILLWATER, MN
 BROWN'S CREEK WATERSHED DISTRICT OAKDALE, MN 55128

EASEMENT EXHIBIT
 SHEET 01 OF 01

BCWD ENHANCED STAKEHOLDER ENGAGEMENT

Date	01/07/2024
To / Contact info	BCWD Board of Managers and Karen Kill, District Administrator
From / Contact info	Camilla Correll, PE and Karli McCawley
Regarding	Interview Assignments, Supporting Materials and Plan

Background

At the December 13, 2023 Board Meeting, District Staff shared the information developed to assist with the task of conducting informal interviews for the enhanced stakeholder engagement effort. This information included:

- Draft scripts/interview questions.
- Schedule for conducting interviews.
- Google Form to track what you learned from the interviews.
- Interview Support Packet.

In addition, the BCWD Board of Managers approved a scope of services to develop a handout or leave-behind which interviewers can leave with the interviewees. This handout was developed to share additional information about the BCWD and to provide contact information should the interviewee want to get in contact at a later date.

Since the December Board Meeting, Karen Kill has conducted three interviews with stakeholders identified on the Stakeholder Mapping spreadsheet. These stakeholders/entities include David Washburn, the Synergy Group, and Trout Unlimited. Karen will share her experiences conducting these interviews and transcribing what she learned into the Google Form at the January Board Meeting.

The objective of this memorandum is to provide (1) interview assignments for the BCWD Board of Managers, CAC members, and District Staff, (2) an updated schedule for conducting the interviews, (3) the interview support packet materials.

Interview Assignments

The following table identifies the interview assignments recommended by District Staff. A minimum of 5 stakeholders/entities were assigned to each Manager. Those CAC members who were interested in participating in this effort were assigned the stakeholders/entities that they identified at the previous CAC meeting. The stakeholder group assigned to each interviewee (stakeholder/entity) is included after the interviewee in brackets. It should be noted that these assignments ensure adequate representation within each of the following stakeholder groups: Agriculture/Producers, Economic/Business Development, Education, Environmental, Healthcare/Wellness, Recreation, Regulatory Bodies (beyond those who will already be invited to participate on the Technical Advisory Committee), Religious Groups, Social/Cultural, Tribal, and Youth Groups.

At the December Board Meeting, the Managers requested that Karen Kill participate in one interview with each Manager to demonstrate how to conduct these conversations/interviews. It is recommended that the Managers decide who they would like interview with Karen Kill and contact her to schedule the first interview.

If the Managers need assistance identifying a point of contact for their assignments, they should reach out to Karen, Cameron or Camilla.

Table 1. Proposed Informal Interview Assignments

Interviewer	Interviewees	Number
Klayton Eckles, BCWD Manager	<ul style="list-style-type: none"> - Hugo Area Business Association [Economic/Business] - Kingwood Management (Property Managers) [Economic/Business] - Sustainable Stillwater [Environmental] - Wild Ones - St. Croix Oak Savana [Environmental] - Stillwater Sunrise Rotary Club [Social/Cultural] 	5
Jerry Johnson, BCWD Manager	<ul style="list-style-type: none"> - Landscaping / Snow Removal [Economic/Business] - Hometown Hero Outdoors [Healthcare/Wellness] - Stillwater Country Club [Recreation] - Stillwater American Legion [Social/Cultural] - Stillwater Lions Club [Social/Cultural] 	5
Chuck LeRoux, BCWD Manager	<ul style="list-style-type: none"> - Greater Stillwater Chamber of Commerce [Economic/Business] - St. Croix Catholic School [Education] - St Mary's Catholic Church [Religious Groups] - Lakeview Hospital [Healthcare/Wellness] - River Valley Athletic Club [Social/Cultural] 	5
Celia Wirth, BCWD Manager	<ul style="list-style-type: none"> - 21 Roots Farm [Agriculture/Producers] - Costa Produce Farm & Greenhouse [Agriculture/Producers] - Stillwater Area Community Foundation [Healthcare/Wellness] - First United Methodist Church [Religious Groups] - Art Reach St. Croix [Social/Cultural] - Community Thread [Social/Cultural] - The Connect Center [Social/Cultural] - Valley Outreach (non-profit organization) [Social/Cultural] 	8
Debra Sahulka , BCWD Manager	<ul style="list-style-type: none"> - Pollinator Friendly Alliance [Environmental] - Community Kitchen @ Ascension Episcopal Church [Healthcare/Wellness] - Courage Centre [Healthcare/Wellness] - Crosswinds Community Church [Religious Groups] - Prairie Island Tribe [Tribal] 	5
George Vanya, CAC Member	<ul style="list-style-type: none"> - Master Naturalists (UMN Extension) [Environmental] - The Gateway Brown's Creek Trail Association [Recreation] - Valley Outreach (non-profit organization) [Social/Cultural] 	3
Aimee Eberle, CAC Member	<ul style="list-style-type: none"> - Master Naturalists (UMN Extension) [Environmental] 	1
Karen Kill, District Administrator	<ul style="list-style-type: none"> - DeWolf's Farm (Corn/Soybean farm) [Agriculture/Producers] - Aamodt Apple Orchard [Agriculture/Producers] - Realtors [Economic/Business] - The Lowdown (local paper) [Economic/Business] - Housing First MN [Economic/Business] - Stillwater High School – Administration [Education] - MN Lakes & Rivers [Environmental] - Pheasants Forever [Environmental] - Young Life (connecting kids to outdoors) [Healthcare/Wellness] 	20

	<ul style="list-style-type: none"> - Logger's Trail Golf Course [Recreation] - Wolf Marina [Recreation] - Lodges of Settlers Glen HOA [Regulatory Bodies] - Millbrook HOA [Regulatory Bodies] - Settlers Glen (multiple in various additions) HOA [Regulatory Bodies] - Tu Vien Van Phat, Buddhist Temple (Hugo, MN) [Religious Groups] - University of Minnesota Extension Service [Research/Monitoring] - Washington County Historical Society [Social/Cultural] - Washington County Sentence to Serve [Social/Cultural] - Boy Scouts [Youth Groups] - Girl Scouts [Youth Groups] 	
Cameron Blake, District Staff	<ul style="list-style-type: none"> - Spruce Hill Farms Horse Boarding [Economic/Business] - Carpenter Nature Center [Education] - Liberty Classical Academy [Education] - Oakland Middle School [Education] - Rutherford Elementary School [Education] - Stillwater Middle School [Education] - Conservation Corps of MN and IA [Environmental] - Double H Stables [Recreation] - Hidden Pines Ranch (summer camp) [Recreation] - Summer Tuesdays Inc. [Social/Cultural] 	10
Camilla Correll, District Engineer	<ul style="list-style-type: none"> - Klingsporn Farm (Egg farmers) [Agriculture/Producers] - St. Croix Preparatory Academy [Education] - Ducks Unlimited [Environmental] - North Woods and Waters for the St. Croix Heritage Area Group [Env.] - The Nature Conservancy [Environmental] - United Hmong Family Org. [Social/Cultural] - United Hmong America Association [Social/Cultural] - United Hmong Asian American Community Centre [Social/Cultural] 	8

Schedule for Interviews

The goal for the Enhanced Engagement Interviews is to confirm the assignments at the January 10, 2024 Board Meeting and to complete the interviews before the next Board Meeting which is on February 14, 2024.

January 10 – February 12/14, 2024

- i. Conduct interviews
- ii. Submit information collected during interviews on Google Forms
- iii. Evaluate interest in additional meetings (i.e., 1-hour meeting, Focus Group meeting, other).

Following the interviews, EOR will summarize what was learned about who lives, works, and recreates in the watershed, how people interact with the BCWD and its natural resources, and what types of needs and/or opportunities to explore as part of the watershed management plan update. This information will allow District Staff to make recommendations for stakeholder engagement as the District embarks on its fifth generation watershed management plan.

Interview Support Packet Materials

The following interview support materials have been developed to assist with the interview process.

- Engagement Handout
- Interview Support Package
- Stakeholder Questions – *to print and take hand-written notes on during the interview*
- Link to the Google Form
[BCWD Stakeholder Interviews \(office.com\)](#)



BCWD Interview Support Package

This package is intended to support BCWD Board and CAC members during their stakeholder engagement interviews and includes the following pieces of information:

- Initial Contact Draft Script
- Interview Instructions
- Introductory Interview Questions
- BCWD Programs & Initiatives Table
- BCWD Map
- Attachments:
 - Survey Questions for Printing
 - Engagement Handout

Initial Contact Draft Script

When engaging with residents to discuss watershed management, it's essential to ask questions that encourage dialogue, gather valuable insights, and foster a sense of shared responsibility. By fostering a sense of **shared responsibility** and emphasizing the **tangible benefits of watershed management**, you can encourage active participation and collaboration among citizens.

Initial Conversation / Voicemail Message:

- Hello. This is [*your name here*] calling on behalf of the Brown's Creek Watershed District.
- BCWD is a local unit of government which is responsible for the management of surface water resources. We work with cities, developers, and citizens to protect and restore our water and natural resources.
- The BCWD covers parts of the cities of Oak Park Heights, Stillwater, Lake Elmo, Grant, and Hugo and Stillwater & May Townships.
- As part of our 10-year planning process, we are interested in expanding our network and looking for opportunities for mutual partnerships in order to provide more benefits to the community. To do this, we want to better understand who lives, works and/or recreates in the watershed so we better understand the needs of our community.
- We are reaching out to people like yourself to see if we can schedule a 30-minute conversation to learn more about your organization and explore synergies between your work and the watershed district's work. This meeting can take place in person, over a cup of coffee, or it can take place virtually.
- If you are interested in meeting, please call me at [*your number here*].

Interview Instructions

All interviews are to be conducted in person where possible. Interviewers can take notes in person or type directly into the online response form found here:

<https://forms.office.com/Pages/ResponsePage.aspx?id=8bU3xPkOCEaBwmJYo-TLV40fVCNDGwdIo46-slXZwdVUNk42Q1Y0S1Y3RDdBVjRkTk1PWEVIMOU3SC4u>

A copy of the interview questions for printing, with room to write answers, is provided for your convenience. The online response form is for you, the interviewer, to document your interviews (either directly during, or after the interview) and is not intended to be sent directly to those being interviewed.

Informal *Introductory* Interview Questions

The goal of this 30 minute interview is to expand BCWD stakeholder network and identify win-win's –i.e. how can the watershed district help this organization and/or the people its serves and how can it help the BCWD provide better/more equitable services.

Introduction to the Organization/Interviewee [5-10 minutes]:

- What is your organization's mission?
 - o How does your organization go about accomplishing its mission?
- How large is your membership?
 - o Who belongs to your group?
- **Note:** collect demographic information if possible
- How does the organization or its constituents interact with the environment? (*walking, accessing trails/open spaces, any impacts from the environment...*)

Knowledge of BCWD [5- 10 minutes]:

- Have you heard of the BCWD? (*Have you seen our project signs along Brown's Creek State Trail or at the Oak Glen Golf Course?*)
- Have you or your organization had an interaction with the BCWD (i.e., *watershed conservation or clean-up efforts*)?
- Have you or your organization used any of the BCWD's resources?

Notes: Share the Engagement Handout with map and explanation of what the BCWD is and what roles it plays. Share the table of projects below to show them the work that BCWD is doing.

Extra Information:

- o BCWD has been an organization since 1997.
- o BCWD's mission statement: "The Brown's Creek Watershed District works with the community to:
 - Preserve and improve the quality of the District's water and natural resources.

- Educate residents about the value of this ecosystem and advise residents of their potential impacts on the functions and values of the District’s water and natural resources.
- Implement acceptable solutions to water-related issues.
- Sustainably accommodate development.
- Assure that the integrity of the watershed is preserved for future generations.

Identifying Synergies [10 minutes]:

- Do you see places where your work overlaps with our work?
- Are there opportunities to:
 - Partner on projects.
 - Host education events together (i.e., hiking event and bring food for food drive)
 - Solicit volunteers.
 - Participate on the co-design of projects.
 - Sit on the CAC.
 - Participate in the watershed management plan update.
 - Other: _____
- Please elaborate on any of the potential opportunities identified above
- What would make it easier for your organization or the people you serve to participate in an event (i.e., day care, accessibility, other)?
- Do you have any suggestions for involving more residents in watershed-related activities?
- Who else do you think we would have synergies with? Who else should the BCWD be connecting with?

Extra Information:

- Extra questions are provided within the online survey to allow for extra information provided during the interview to be entered into the online form. These questions do not need to be asked.
 - What else does the BCWD need to know? i.e. Extra notes
 - Your name & data of interview (for tracking purposes)

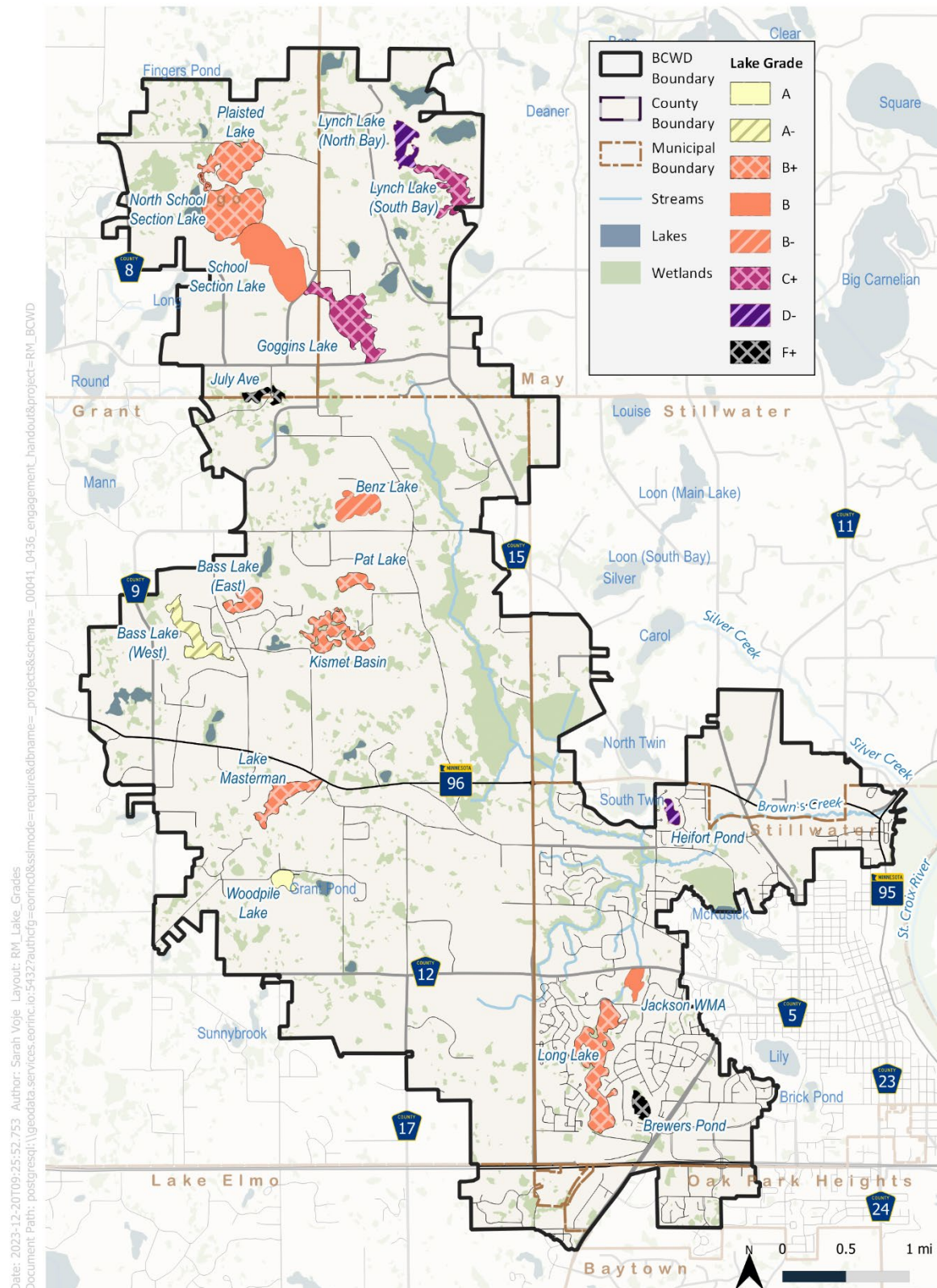
BCWD Programs & Initiatives

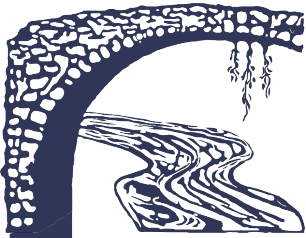
The following table may help the interviewer describe the BCWD’s activities and help to identify where there may be overlap or opportunities to partner in the work.

BCWD Programs/ Initiatives	Program Description	Who is involved now?	Who else could/should be involved?
Capital Improvement Program	BCWD implements capital improvement projects to address water quality, water quantity, and other issues identified in the 10-year watershed management plan. Examples include: Rock Crib at Brown’s Creek Park, and buffer along Oak Glen Golf Course.	Cities, Townships, state agencies, Washington County	Consider engaging the public in the co-design of projects, especially those being proposed to be constructed in their neighborhoods.
Education and Outreach	Provide education about the impacts of non-point source pollution on lakes, rivers, streams, wetlands and groundwater resources and to engage individuals and communities in projects that will help protect and improve water quality in the region. - Website - Project signage - Ice Cream Social - CAC-led events like buckthorn removals	Cities, Townships, residents (i.e., lakeshore residents or those who attend community events), students (i.e., Stillwater HS students), trail users, developers, permit applicants and their engineering staff.	Non-profit organizations, Health Care system, members of the business community
Data Collection / Monitoring	Monitor water quantity (flow) and water quality of high priority waterbodies.	Metropolitan Council, MPCA, MNDNR, citizen volunteers, Stillwater HS – macroinvertebrate survey work	TBD – Is there other information that the BCWD could collect to achieve broader participation (i.e., local examples of climate change impacts, crowd sourcing plants and animals)?
Regulatory Program	BCWD has rules to ensure that development activity doesn’t have an adverse impact to surface water and groundwater resources.	Development community, member communities, Washington County, state agencies, Design and Engineering community, residents	TBD
Water Quality Grants Improvement Program	Makes small grants available to landowners wishing to make improvements on their properties. BCWD provides 50% match grants of up to \$2,500 for eligible projects.	Individual homeowners – <i>It would be helpful to map the location of past participants to get a sense of who is benefitting from this program.</i>	Homeowners who aren’t typically applying for this water quality improvement program.
Community Demonstration Projects Cost-Share Program	To encourage and assist cities, towns, businesses and non-profits to integrate water quality improvement (retrofit) projects into	Cities, Townships, businesses and non-profits	Businesses and non-profits

	municipal projects. Example is raingarden at Community Thread.		
Flood Management Program	The BCWD’s current approach to flood management relies on its regulatory program’s floodplain management requirements to ensure no net loss of flood storage in the watershed as development and redevelopment occurs. Expansion of the District’s flood management program should address increasing occurrences of flooding (flood prevention) as well as flood risk mitigation. Given that factors such as climate change and increasing groundwater elevations heighten the uncertainty in planning and decision-making, the Board should consider an adaptive management approach that builds in the capacity to iterate and respond to future changes in conditions, additional information, and experience.	Cities, Townships, Washington County, lakeshore residents (i.e., property owners along Long Lake).	TBD
Citizens Advisory Committee	Volunteer advisory board comprised of community members. Members are appointed annually by the District’s Board of Managers. Members serve two-year terms. Activities include: Newsletter, Annual Report, scheduling monthly educational events, inventory and volunteer data collection at the 110 th street property, table-top education materials.	Residents.	Residents with other lived experiences than those who have historically participated on the CAC.
Technical Advisory Committee	Member communities and state agencies convened to participate in the 10-year Watershed Management Planning process. See description below.	Cities, Townships, Washington County, state agencies, adjacent watershed districts.	TBD
10-year Watershed Management Plans	In 1987, the Legislature directed watershed districts and water management organizations in the seven county metro area to develop watershed management plans to protect water resources. Metro cities are also required to develop and implement local water management plans. Watershed management plans identify the BCWD’s activities for the next 10 years.	CAC, TAC, the public via the Public Open House	People with different life-experiences to round out the plan development process and make implementation more equitable.
Unique Species Inventory	Inventory of the plant and animal communities dependent upon the Brown’s Creek system as well as upon the other natural resources in the BCWD (see Section 1.4 Biological Environment of the Land and Water Resource Inventory (Appendix A) in the 2017-2026 Watershed Management Plan).	District Staff, EOR, members of the CAC including Jyneen Thatcher and George Vanya	Residents, students, schools, hunting and fishing groups, people recreating in the watershed
Land Conservation Program	Management of 110 th Street Property	CAC	TBD

BCWD Map





Brown's Creek Watershed District

Preserving the integrity of the watershed for future generations

The Brown's Creek Watershed District (BCWD) invites you to 'Get your Head in the Watershed!' and learn more about the unique species, natural wonders and work happening in your backyard.

What is BCWD?

The Brown's Creek watershed is the total area that captures and drains to Brown's Creek via lakes, wetlands, and streams or tributaries. The Brown's Creek Watershed District (BCWD) is a local unit of government dedicated to protecting, managing and improving the water resources within this watershed. The BCWD is 28 square miles and includes parts of the cities of Stillwater, Oak Park Heights, Lake Elmo, Grant, Hugo as well as Stillwater and May Townships.

Who leads the BCWD?

BCWD is governed by a five-member Board of Managers, appointed by County Commissioners, that guides the District in carrying out its 2017-2026 Watershed Management Plan. A Citizen Advisory Committee (CAC) also helps shape the work of the District by reviewing annual budgets, work plans, project and program priorities and leading a number of community outreach efforts like the fall community event and invasive species removal events.

Watershed Facts

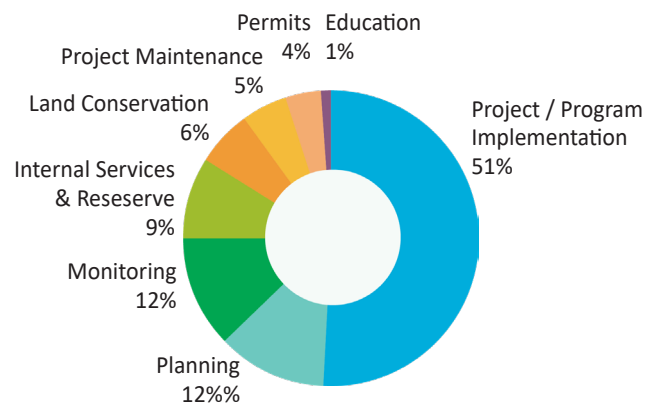
BCWD has four distinct landforms including the:

- Headwaters Region which is predominantly lakes and wetlands,
- Brown's Creek Middle Reach which is predominantly wetlands
- Long Lake Tributary which is routed to McKusick Lake
- Brown's Creek Gorge which is what you see when you travel along the Brown's Creek State Trail.

BCWD contains some of the last remaining rare and unique ecosystems in the Twin Cities Metropolitan Area including Brown's Creek, a cold-water fishery as well as other groundwater dependent wetlands. These ecosystems support a variety of plants and animals.

What does the BCWD do?

BCWD works across geographic and political boundaries to protect the health of the watershed's wetlands, lakes, streams and ultimately, the St. Croix River. Through research, planning and action, BCWD helps solve and prevent water-related problems.



Ways to Get Involved:

- Join a Volunteer Event
- Apply for a Stewardship Grant
- Join a Citizens Advisory Committee (CAC) meeting
- Contribute to the next Watershed Master Plan Update by taking a survey and/or participating in meetings in 2024.



Visit BCWD.org to learn more.

Get your head, in the watershed.....

Explore some of the actions that the BCWD takes to manage the water resources within the district.

Recreation

BCWD seeks to protect and restore the District's resources to provide recreational value to the community.

Erosion Prevention and Sediment Control

To reduce sediment loads to the District's water resources, the BCWD works to restore riparian buffers which provide water quality treatment.

Stream Management

BCWD has worked with community and landowners to improve Brown's Creek and its tributaries.

Stormwater Runoff

Implements projects like the Brown's Creek Rock Crib to treat stormwater runoff before it reaches Brown's Creek and the Districts lakes and ponds.

Wetland Management

BCWD has assigned management classifications to its wetlands, so application of the rules matches the quality and condition of the resources.

Lake Management

BCWD has developed numerous lake management plans which engage local residents.

Land Conservation

Brown's Creek Conservation Easement Area - 110th Street North.

Regulations

BCWD administers a permitting program to ensure development is sustainable for water resources and downstream properties.

Climate Change Adaptation

BCWD is using rainfall projections to evaluate how changing precipitation patterns affect water resource management decisions (i.e., flooding).

Ecological Health

Macroinvertebrate and fish surveys of Brown's Creek. Chloride sampling in lakes and ponds.

Education, Outreach and Stewardship

Hosting annual events like the ice cream social fall community event and open yard series to engage the community in watershed management. Partner in the East Metro Water Resources Education Program - changing behaviors to protect and restore water resources.

Floodplain Management

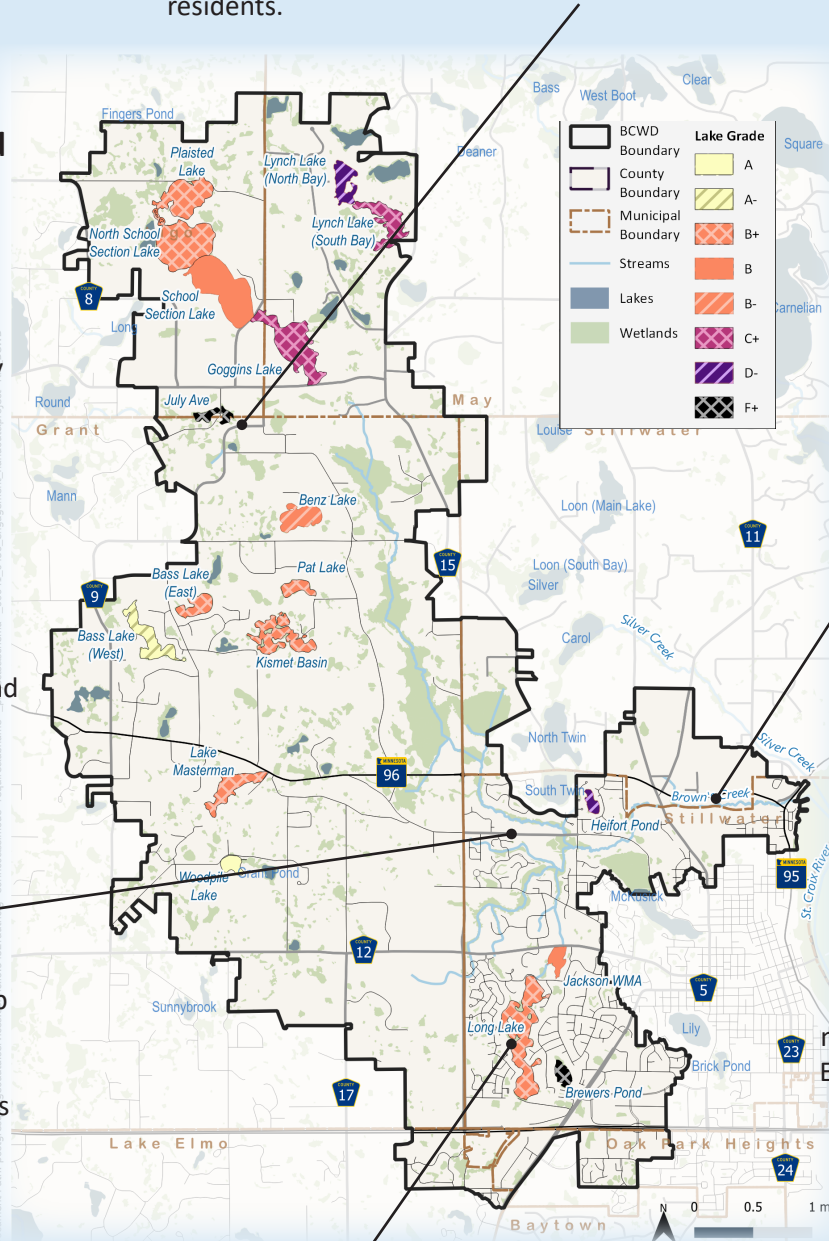
By evaluating high water levels under existing and projected rainfall conditions, the BCWD can help residents and member communities prepare for the future.

Groundwater Management

Groundwater monitoring improves the districts understanding of surface water – groundwater connections throughout the watershed.

Monitoring & Data Collection

BCWD collects and evaluates water quantity and water quality data on Brown's Creek and the Districts major lakes.



ADOPT A STORM DRAIN



2023 Browns Creek Annual Report



We're Making a Difference!

5

participants
2023

6

drains adopted
2023

70

participants
TOTAL

124

drains adopted
TOTAL

Drain Cleaning & Collection Data

16 Browns Creek participants reported cleanings, which represents 22.9% of all Browns Creek participants

Browns Creek participants collected 238.5 lbs of debris from their adopted storm drains in 2023

Debris Type	Amount (lbs)
Brown Leaves	116.8
Grass and Green Leaves	15.2
Sediment and dirt	92.1
Trash	2.0
Salt	12.5



Month	New Participants	Drains Adopted	Debris collected (lbs)	Time spent (hrs)
January	0	0	78.0	6.9
February	1	2	0.0	2.0
March	0	0	0.0	1.0
April	0	0	0.0	0.0
May	0	0	18.1	1.7
June	0	0	0.3	0.1
July	0	0	7.0	0.2
August	4	4	1.2	0.1
September	0	0	4.8	0.3
October	0	0	4.0	0.2
November	0	0	122.1	2.9
December	0	0	3.0	0.1
TOTALS	5	6	238.5	15.5

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GEOGRAPHIC BREAKDOWN

Annual Report 2023 Browns Creek

City and Subwatershed

Drains Adopted: Cumulative total

Debris collected: 2023 data only

City	Drains adopted	Debris collected (lbs)	Time spent (hours)
Stillwater	97	238.5	15.5
Oak Park Heights	10	0.0	0.0
Lake Elmo	1	0.0	0.0

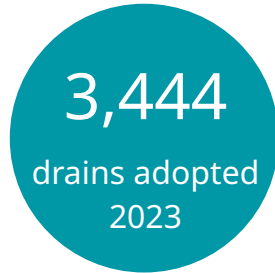
Subwatershed	Drains adopted	Debris collected (lbs)	Time spent (hours)
Long Lake	25	3.6	2.2
Central Browns Creek	6	16.0	2.0
Lower Browns Creek	9	90.0	0.5
South Central Tributaries of Brown's Creek	22	18.4	1.8
Market Place Pond	28	102.5	8.6
Lake St Croix Direct North	7	8.0	0.3
Oak Park Heights to Menards Pond	10	0.0	0.0
Kern Center Pond, south of Hwy 36	1	0.0	0.0

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adopt-a-drain.org

Minnesota Data



2,813 Minnesota participants reported cleanings, which represents 22.6% of all Minnesota participants

Minnesota participants collected 118,233.2 lbs of debris from their adopted storm drains in 2023

Debris Type	Amount (lbs)
Brown Leaves	63,628.7
Grass and Green Leaves	5,873.8
Sediment and dirt	40,161.5
Trash	8,486
Salt	83.1

Month	New Participants	Drains Adopted	Debris collected (lbs)	Time spent (hrs)
January	131	185	1,378.4	11,278
February	69	123	302.8	11,746
March	102	205	848.1	11,672
April	255	449	14,472.1	20,770
May	155	266	11,818.0	12,649
June	80	132	8,014.1	12,472
July	84	151	7,695.0	9,598
August	459	619	5,977.7	8,000
September	431	594	7,731.6	9,919
October	180	363	12,452.1	17,669
November	132	290	41,956.5	39,220
December	35	67	5,586.9	8,428
TOTALS	2,113	3,444	118,233.2	173,421

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