



**Washington
County**

ST. CROIX BLUFFS REGIONAL PARK RAVINE STABILIZATION – PHASE 1

Washington County Parks

Dan MacSwain
Natural Resource Coordinator

South Washington WD

Kyle Axtell
BMP Project Specialist

Image: Ravine Lake, ©Sarah Lilja, <http://sarahlilja.photography>



Project Introduction

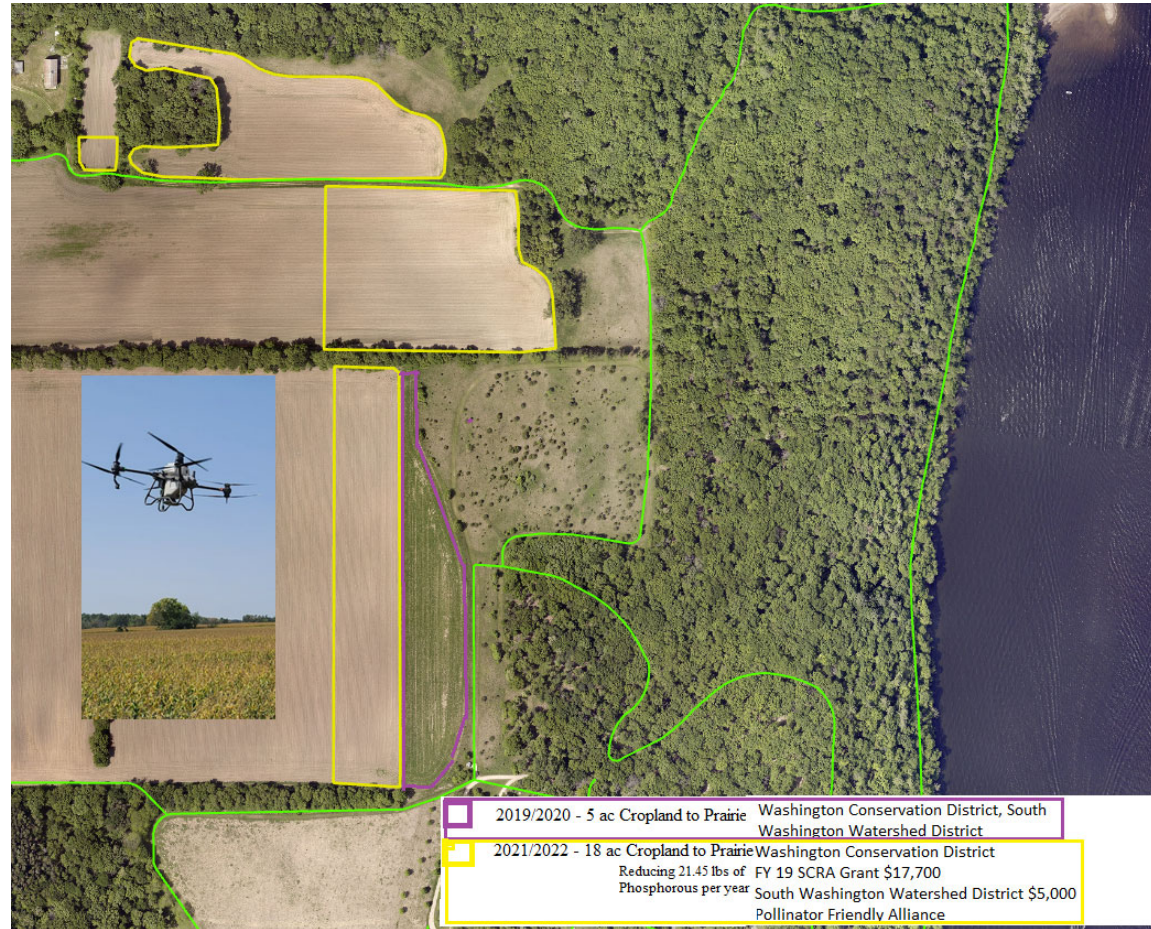
- St. Croix Bluffs Regional Park is a 685-acre regional park on the wild and scenic St. Croix River.
- The rolling, upland prairies, wooded ravines, and bluffs are a hallmark of this park, which fronts on 3,800 feet of shoreline along the St. Croix River, a nationally-recognized wild and scenic river route.
- Washington County closed the river trail in 2022 due to safety concerns related to erosion areas along the trail.





Recent Restoration Efforts at the Park

- 23 acres of cropland to prairie conversion in partnership with WCD, SWWD & others
- 110 acres of cover crop seeding by drone
- Ongoing woodland restoration along St. Croix River





NOW 2024

PHASE 1

- Embankment Stabilization at Lake St. Croix shoreline using vegetated riprap
- New Drop Structure & Culvert Stabilization (via slip-lining) at former railroad grade
- Annual Load Reductions: 4.6 lbs TP, 5.4 tons TSS

Project Sponsor: Washington County

Project Budget: \$150,000

LSCWP Request: \$120,000

Supplemental FY23 WBIF
A1 - Agricultural Structural BMPs

Grant Match: \$30,000 (from SWWD)

Site Drainage Area





**NOW
2024**

PHASE 1

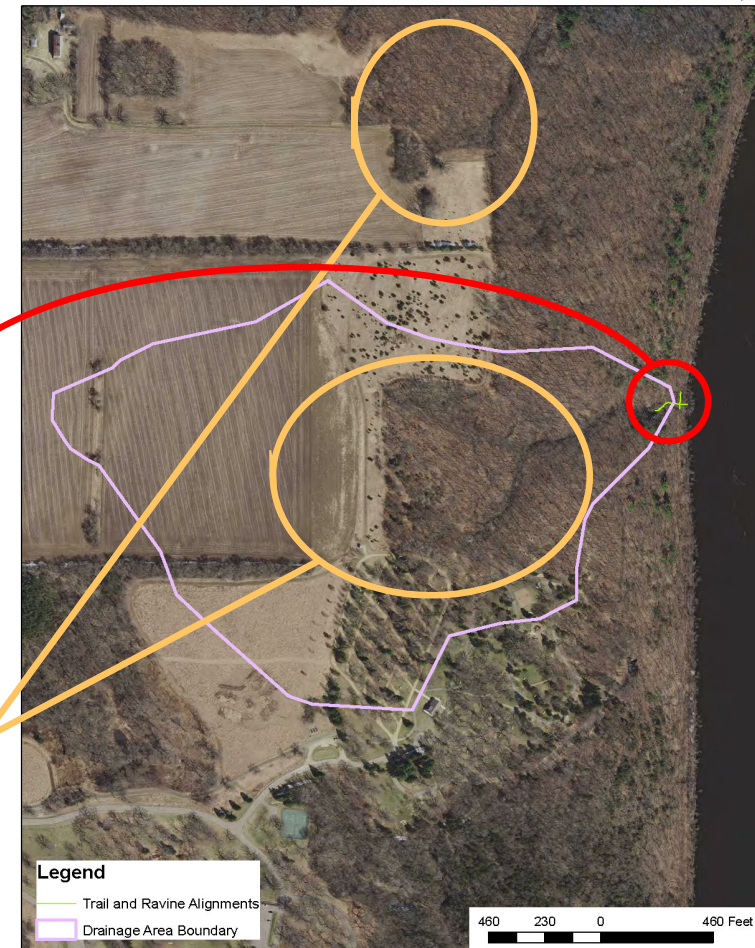
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**LATER
2025**

PHASE 2

- 4 upland bioretention basins (rate control)
- Upper ravine stabilization via canopy clearing, channel riprap, check dams, drop structures & native understory restoration
- \$200,000 - \$250,000 estimated cost

Site Drainage Area





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Above: View from lakeshore of eroded embankment behind headwall

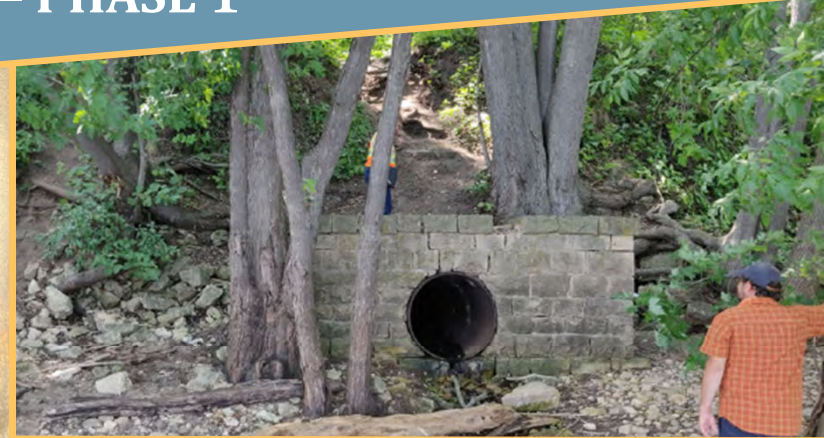
Top Right: View from trail eroded embankment above lakeshore

Bottom Right: Erosion cutting across trail corridor through rail grade



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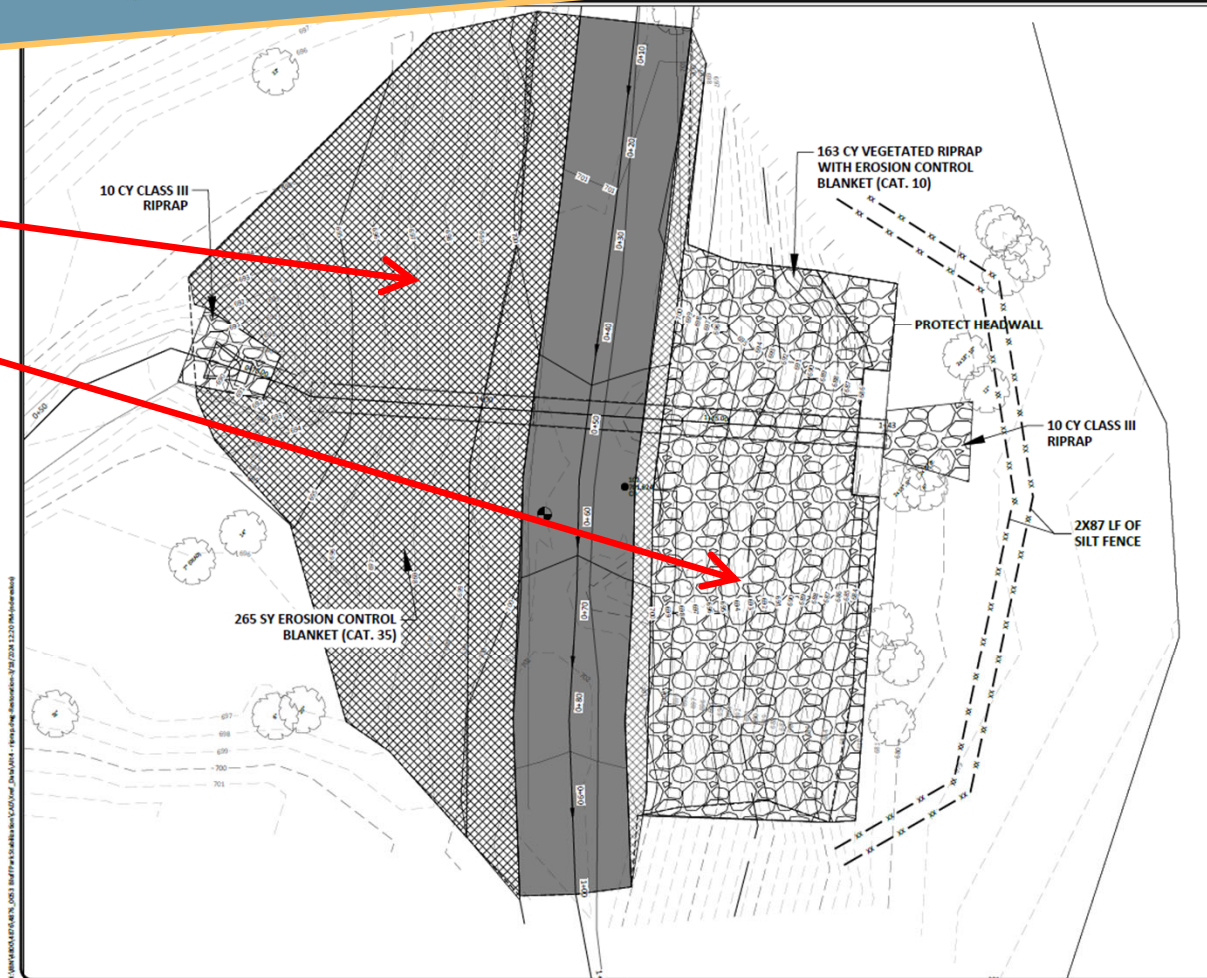


- Left:** Grade break in pipe causing debris buildup
- Above:** Offset pipe joints visible from downstream
- Top Right:** View from lakeshore for scale
- Bottom Right:** Pipe inlet blocked with debris; block wall either missing or gone



Proposed Work:

- Native slope restoration on western embankment
- Vegetated riprap restoration on eastern embankment
- Remove western portion of 36" steel culvert
- Install new manhole drop structure with emergency overflow to match existing downstream culvert grade
- Install new 30" HDPE culvert from new manhole through remaining existing pipe to outlet
- Regrading of trail alignment to correct/improve slopes



Scale 0 10 20 Feet

N

█ SALVAGED TRAIL MATERIAL

▨ EROSION CONTROL BLANKET AND SEEDING

▩ RIPRAP

- - - SILT FENCE

NOTES:

1. SEED ALL DISTURBED AREAS WITH MNDOT SEED MIX 36-211, EXCLUDING TRAIL.
2. PLACE RIPRAP OVER ROOT STRUCTURES THAT ARE LEFT IN PLACE.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. *Alexander J. Schmidt* 3-18-2024
 License No. 52794 Date

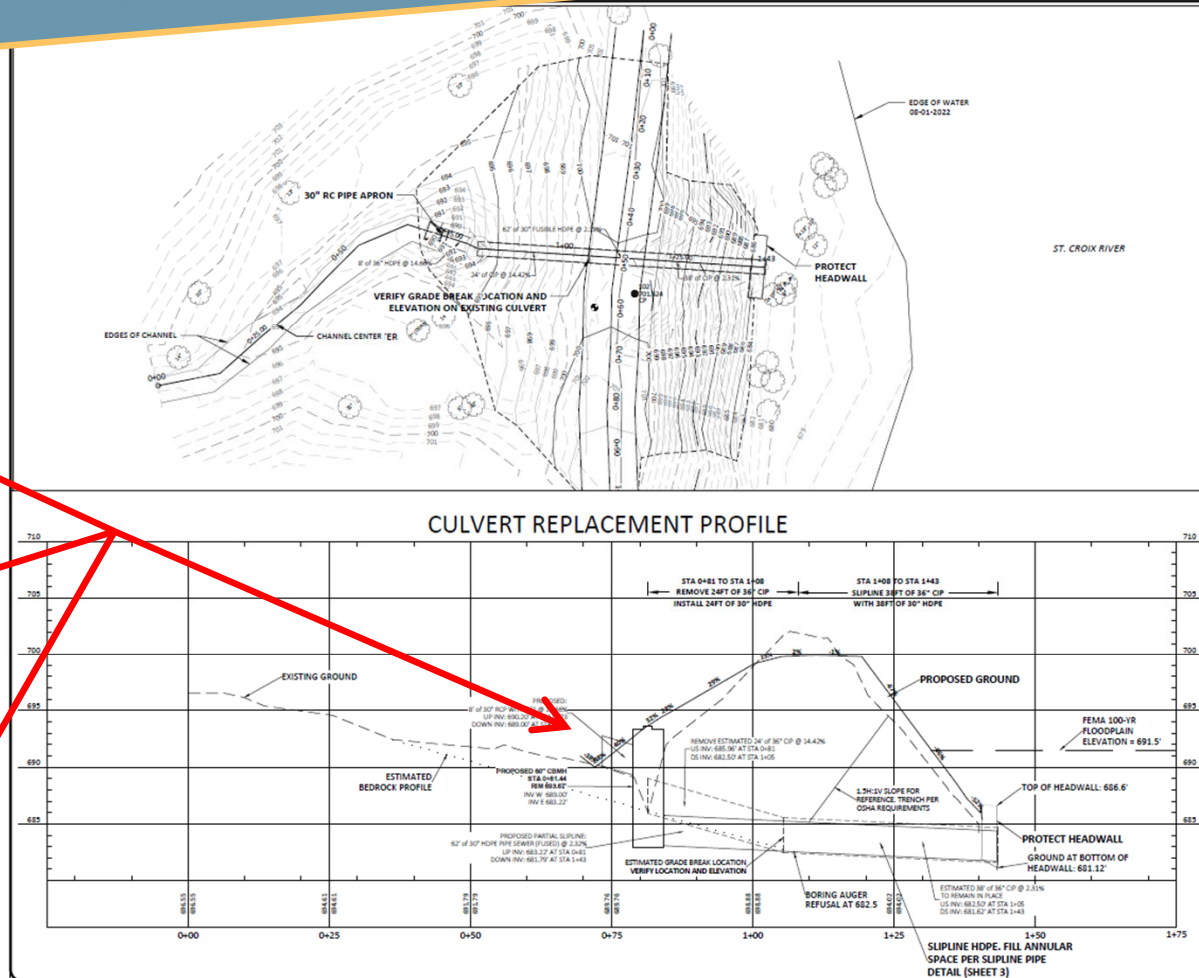
Drawn By: AID
 Checked By: AIS
 Date: 3-18-2024
 Scale: As Shown
 Project No.: 4879-0051
 SHEET: 8

	Revision
	Date
	No.
BLUFF PARK STABILIZATION SOUTH WASHINGTON WATERSHED DISTRICT RAVINE STABILIZATION PLANS	



Proposed Work:

- Native slope restoration on western embankment
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- Regrading of trail alignment to correct/improve slopes



NOTES:

1. CONTRACTOR MUST FIELD VERIFY LOCATION AND ELEVATION OF GRADE BREAK IN EXISTING CULVERT. IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED PIPE QUANTITIES ARE BASED ON ESTIMATED GRADE BREAK LOCATION.
3. CONTRACTOR MUST PROTECT DOWNSTREAM HEADWALL.
4. ESTIMATED BEDROCK EXCAVATION FOR PIPE AND CBMH PAID UNDER "ROCK EXCAVATION (EV)".

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Alexander J. Schmidt
License No. 52741

Date: 3-18-2024

Scale: AS SHOWN

Project No: 4276-0053

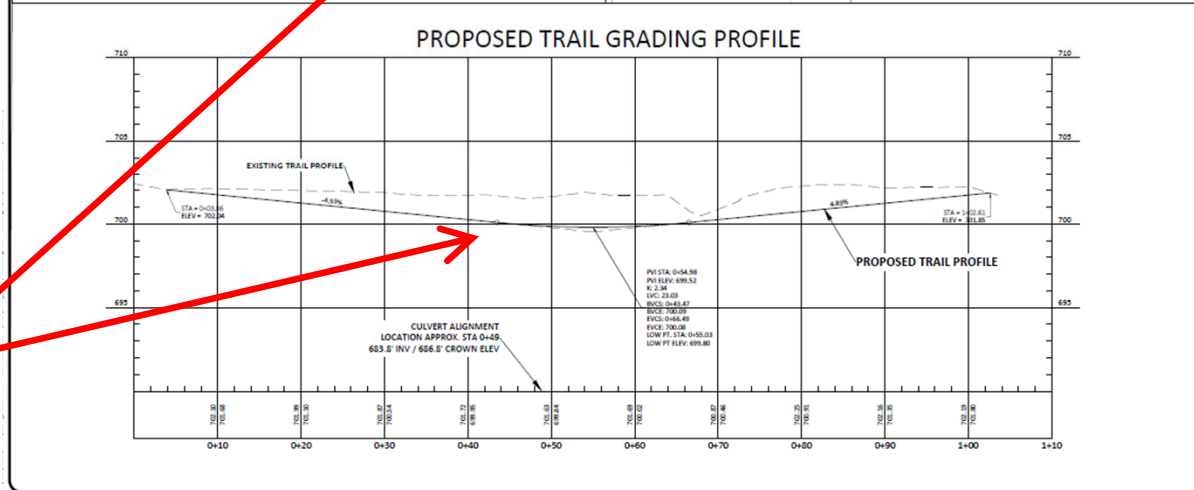
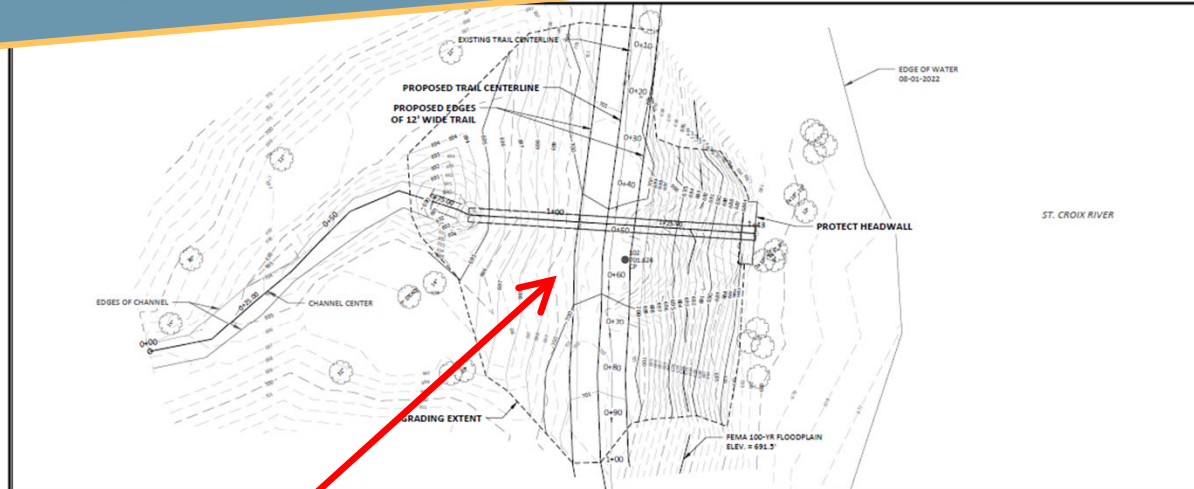
SHEET 7

Drawn By	NJD
Checked By	ASJ
Date	3-18-2024
Scale	AS SHOWN
Project No.	4276-0053
SHEET	7



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- Native slope restoration on western embankment
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- STRIP, STOCKPILE, AND RESPREAD TOPSOIL OVER ALL DISTURBED AREA.
- DO NOT DISTURB TREE ROOTS ON THE EAST BANK TO THE MAXIMUM EXTENT PRACTICABLE.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature: *[Signature]* Date: 3/16/2024
 License No. 31743

BLUFF PARK STABILIZATION
 SOUTH WASHINGTON WATERSHED DISTRICT
 ST. CROIX COUNTY

GRADING PLAN

Drawn By: RJD
 Checked By: AJS
 Date: 1-16-2024
 Scale: As Shown
 Project No: 4876-005
 SHEET



**Washington
County**

**ST. CROIX BLUFFS REGIONAL PARK RAVINE
STABILIZATION – PHASE 1**

THANK YOU!

Washington County Parks

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South Washington WD

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Image: Ravine Lake, ©Sarah Lilja, <http://sarahlilja.photography>