RCWD
RICE CREEK WATERSHED DISTRICT

FEBRUARY

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8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH

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RCWD BOARD OF MANAGERS REGULAR MEETING AGENDA

Wednesday, February 11, 2026, 9:00 a.m.

Mounds View City Hall Council Chambers
2401 County Road 10, Mounds View, Minnesota
Virtual Monitoring via Zoom Webinar

Join Zoom Webinar:
https://us06web.zoom.us/j/88460139384?pwd=C80zJzLMnXF4DmQOVBnQGXpLige9Hb.1
Passcode: 516265
+1 312 626 6799 US (Chicago)
Webinar ID: 884 6013 9384
Passcode: 516265

Agenda

CALL TO ORDER

ROLL CALL

OPEN MIC/PUBLIC COMMENT

Any RCWD resident may address the Board in his or her individual capacity, for up to three minutes, on any matter not on the agenda. Speakers are requested to come to the podium, state their name and address for the record. Additional comments may be solicited and accepted in writing. Generally, the Board of Managers will not take official action on items discussed at this time, but may refer the matter to staff for a future report or direct that the matter be scheduled on an upcoming agenda.

SETTING OF THE AGENDA

APPROVAL OF MINUTES: JANUARY 28, 2026, REGULAR MEETING

CONSENT AGENDA

The following items will be acted upon without discussion in accordance with the staff recommendation and associated documentation unless a Manager or another interested person requests opportunity for discussion:

Table of Contents-Permit Applications Requiring Board Action

No.	Applicant	Location	Plan Type	Recommendation
25-123	Lexington Meadows, LLC	Blaine	Final Site Drainage Plan	CAPROC 8 items

It was moved by Manager _____ and seconded by Manager _____, to approve the consent agenda as outlined in the above Table of Contents in accordance with RCWD District Engineer's Findings and Recommendations, dated February 4, 2026.

Water Quality Grant Program Cost Share Application (Molly Nelson)

No.	Applicant	Location	Project Type	Eligible Total Project Cost	Pollutant Reduction	Funding Recommendation
R26-01	Scott Barnes	1472 County Road C2 W, Roseville	Raingarden & Porous Pavers	$19,939.75	Vol: 3,695 Cu-ft/yr TSS: 70.76 Lbs/yr TP: 0.28 lbs/yr	Cost share of $9,969.87 not to exceed 50% of total eligible cost; or $10,000 whichever cost is lower
R26-02	White Bear Towns-hip	W Bald Eagle Blvd & St. Anthony Ave	Shoreline Stabilization & Restoration	$16,390.00	Vol: 3,931 Cu-ft/yr TSS: 1,614.83 Lbs/yr TP: 0.92 lbs/yr	Cost share of $8,195.00 not to exceed 50% of total eligible cost; or $10,000 whichever cost is lower

It was moved by Manager _____ and seconded by Manager _____, to approve the consent agenda as outlined in the above Table of Contents in accordance with RCWD Outreach and Grants Technician's Recommendations, dated February 3rd, 2026.

PUBLIC HEARING: 2026 STORMWATER MANAGEMENT GRANT PROGRAM

ITEMS REQUIRING BOARD ACTION

1. Annual Designation of Depository and Newspaper (Nick Tomczik)
2. Jones Lake Outlet Modification, Dredging, and Restoration Project – Environmental Assessment Worksheet Findings of Fact (David Petry)
3. Memorials to RCWD (Nick Tomczik)
4. Check Register Dated February 11, 2026, in the Amount of $252,912.98 Prepared by Redpath and Company

ITEMS FOR DISCUSSION AND INFORMATION

1. District Engineer Updates and Timeline
2. Administrator Updates
3. Manager Updates

APPROVAL OF MINUTES: JANUARY 28, 2026, REGULAR MEETING

For Consideration of Approval at the February 11, 2026 Board Meeting.
Use these minutes only for reference until that time.

REGULAR MEETING OF THE RCWD BOARD OF MANAGERS

Wednesday, January 28, 2026

Mounds View City Hall Council Chambers
2401 County Road 10, Mounds View, Minnesota
and
Meeting also conducted by alternative means
(teleconference or video-teleconference) from remote locations

Minutes

CALL TO ORDER

President Michael Bradley called the meeting to order, a quorum being present, at 9:00 a.m.

ROLL CALL

Present: President Michael Bradley, 1st Vice-Pres. John Waller, Treasurer, Marcie Weinandt, and Secretary Jess Robertson

Absent: None

Staff Present: Administrator Nick Tomczik, Regulatory Manager Patrick Hughes, Drainage & Facilities Manager Tom Schmidt, Program Technician Emmet Hurley (video-conference), Communications & Outreach Manager Kendra Sommerfeld, Lake & Stream Manager Matt Kocian, Project Manager David Petry, Office Manager Theresa Stasica

Consultants: District Engineer Chris Otterness from Houston Engineering, Inc. (HEI)

Visitors: Mark Fairbanks, Mike Perron

OPEN MIC/PUBLIC COMMENT

President Bradley noted that the District had received written communication from Laura Shira* concerning a new housing development in Blaine and the possible elimination of over 200 large oak trees, as well as concerns about the effect on local wildlife.

*The written communication is signed as Laura Currier

Mike Perron, 7671 Peltier Lake Drive, and Mark Fairbanks, 7625 Peltier Lake Drive, addressed the Board and explained that their concerns remained the same as they had shared last year, primarily related to algae blooms and curlyleaf pondweed management. They expressed their appreciation to the District for their help in identifying issues on the lake, and their desire to identify and implement projects to address those issues.

Nyle Zikmund, Administrator, City of Mounds View, shared that they were planning to begin work on the ditch in Mounds View and thanked the Board for their involvement in this project. He explained that he was here to celebrate, educate, and commemorate the project. He noted that they were planning to restore and expand the wetland, which will become the first wetland bank in Ramsey County and possibly the entire metro area.

SETTING OF THE AGENDA

Motion by Manager Robertson, seconded by Manager Weinandt, to approve the agenda as presented. Motion carried 4-0.

READING OF THE MINUTES AND THEIR APPROVAL

Minutes of the January 12, 2026, Workshop and January 14, 2026, Board of Managers Regular Meeting.
Motion by *Manager Robertson, seconded by Manager Weinandt, to approve the minutes as presented. Motion carried 4-0.*

CONSENT AGENDA

The following items will be acted upon without discussion in accordance with the staff recommendation and associated documentation unless a Manager or another interested person requests an opportunity for discussion:

Table of Contents-Permit Applications Requiring Board Action

No.	Applicant	Location	Plan Type	Recommendation
25-109	Harley A Carlotta Flor Living Trust	Blaine	Final Site Drainage Plan Land Development Wetland Alteration Floodplain Alteration	CAPROC 7 items
25-114	Sunset Rural Farms LLC	Blaine	Final Site Drainage Plan Land Development	CAPROC 7 items

Regulatory Manager Hughes reiterated that the District had received written comment from Laura Shira*, who lives just east of the Flowerfield development. He explained that she had wanted to address the Board, but was unable to attend the meeting, and he gave her the opportunity to submit her comments in writing. He noted that he had shared with her the District's rules and regulations and how they had worked through the project.

District Administrator Tomczik asked if the concerns noted by Ms. Shira were items addressed by the District rules.

Regulatory Manager Hughes shared examples of Ms. Shira's concerns and how some of them would be addressed through the District rules, but noted that others were related to land use authority and design, which is not something that could be addressed via District rules.

Manager Robertson explained that the City of Blaine was aware of both of these projects, including the concerns of the nearby residents, particularly for the Flowerfield project. She stated that the Blaine City Council had reviewed them at a recent workshop and noted that she could bring this feedback to the council if Ms. Shira doesn't share it with them herself.

President Bradley explained that Manager Robertson sits on the Blaine City Council.

*The written communication is signed by Laura Currier

It was moved by Manager Waller and seconded by Manager Bradley to approve the consent agenda as outlined in the above Table of Contents in accordance with RCWD District Engineer's Findings and Recommendations, dated January 20, 2026. Motion carried 4-0.

ITEMS REQUIRING BOARD ACTION

1. RCWD Board Election of Officers

Motion by Manager Bradley, seconded by Manager Weinandt, to approve the slate of existing officers, which included: Michael Bradley – President; John Waller – Vice President; Jess Robertson – Secretary; and Marcie Weinandt – Treasurer. Motion carried 4-0.

2. HEI Task Order 2026-004: Comprehensive Wetland Protection and Management Plans (CWPMP) Annual Reporting

Regulatory Manager Hughes reviewed the proposed Houston Engineering Task order related to the Comprehensive Wetland Protection and Management Plans Annual reporting.

Manager Weinandt confirmed that the $17,000 for this had already been included in the 2026 budget.

Motion by Manager Weinandt, seconded by Manager Bradley, to authorize the Board President to execute the HEI Task Order 2026-04 to prepare the 2025 CWPMP Annual Monitoring Report in an amount not to exceed $17,000.

Manager Waller suggested that the Board have a discussion around the loss of capacity for water storage in the District and gave an example of Rice Creek in Hugo.

District Administrator Tomczik stated that the annual budgetary District program review at forthcoming workshops may be a good opportunity for the Board to discuss this matter.

Motion carried 4-0.

3. HEI Task Order 2026-005: Hansen Park Iron-Enhanced Sand Filter (IESF) Rehabilitation

Drainage and Facilities Manager Schmidt reviewed the proposed Houston Engineering Task Order to evaluate the function of the Hansen Park IESF and reminded the Board that this had already been included in the 2026 budget.

District Engineer Otterness noted that an important part of their evaluation would be looking at updating the operations and maintenance of the IESF.

Manager Weinandt asked if the required work, following the study, would be done by District staff.

Drainage and Facilities Manager Schmidt explained that the work he was envisioning would be necessary, would be a contractor, and not District staff.

Manager Weinandt stated that the Board has had many discussions about the IESFs, and staff have also been having discussions with other watershed districts that also have them. She asked if those discussions would continue and the District would learn as they go about how the IESFs work.

District Administrator Tomczik acknowledged that the District has had several meetings regarding IESFs and planned to continue those meetings. He stated that the IESF at Hansen Park was one of the first of its kind, and what they know today about them is different than what they knew when it was first designed and installed. He noted that it is important for the Board and the public to know that the facility does indeed remove dissolved phosphorus from the water column.

Manager Weinandt stated that this was an important facility for the District, especially as the Jones Lake project moves forward.

President Bradley reminded the Board that the District had received grant money for this project and required a 25-year commitment to maintenance.

Motion by Manager Weinandt, seconded by Manager Bradley, to approve Task Order 2026-005 Hansen Park IESF rehabilitation, not to exceed $18,300, and further authorizes the District Administrator to sign the task order.

Manager Waller stated that he realized there was a commitment from the District for maintenance. He noted that he would not vote against this Task Order, but wanted to point out that IESFs work really well when they work. He stated that the problem with the IESFs has been that they don't work consistently. He explained that he would like this study to help the District find some standard operating procedures that help them eliminate the constant loss of use of these facilities throughout the year.

District Administrator Tomczik agreed that there have been problems with these systems and noted that they are District facilities, so there will be ongoing maintenance activities that need to take place, similar to car ownership and the need to change the oil. He gave the example of an IESF maintenance activity that will be necessary, changing out the sand media and recognized that there will be ongoing costs.

Motion carried 4-0.

4. HEI Task Orders 2026-002: GIS and Ditch Records Maintenance; DrainageDB Annual Subscription & 2026-003: MS4Front Annual Subscription and Implementation Services

District Administrator Tomczik explained that these were annual Task Orders for the District for the foundational tools of the District supporting the continuance of its work and gave a brief overview of what they covered.

Manager Waller asked if the engineering firm would provide the software solutions.

District Administrator Tomczik confirmed that HEI would provide the software solutions.

Manager Waller asked what provisions were in place in case HEI stopped working with the District.

District Engineer Otterness explained that the documents would be stored in the cloud, and if the District chose to go away from HEI, the District would simply download those documents, so they would have access to them. He added that it has always been HEI's policy that there would be no cost to the District for transferring documents should the District elect to use a different engineer.

Manager Waller explained that he brought this up because there was an annual cost to the software.

District Engineer Otterness noted that the majority of the Task Order was for the time HEI was putting in to manage the District's data, and that the software subscription was a smaller portion of the cost.

Board discussion

Motion by Manager Bradley, seconded by Manager Weinandt, to approve HEI Task Order 2026-002 in an amount not to exceed $23,000 and authorize the District Administrator to sign. Motion carried 4-0.

Motion by Manager Bradley, seconded by Manager Weinandt, to approve HEI Task Order 2026-003 in an amount not to exceed $22,000 and authorize the District Administrator to sign. Motion carried 4-0.

5. Winter Salt Week Proclamation 2026

Communications and Outreach Manager Sommerfeld briefly reviewed the proposed proclamation for Winter Salt Week 2026.

Motion by Manager Weinandt, seconded by Manager Bradley, to adopt the Winter Salt Week 2026 Proclamation.

President Bradley shared information about a salt alternative product called Chick Grit that he had started using on his property.

Manager Waller stated that another alternative North Dakota has used is a byproduct from the sugar beet industry.

Motion carried 4-0.

WINTER SALT WEEK PROCLAMATION

WHEREAS, all the salt applied to Rice Creek Watershed District's roadways, parking lots, and sidewalks eventually ends up in our freshwater, polluting lakes, streams, and groundwater; and
WHEREAS, chloride contamination is increasing statewide, with measurable impacts on our drinking water; and
WHEREAS, even a small amount—just one teaspoon—can pollute five gallons of water to a level that is toxic for aquatic life, and removing salt from water is costly and challenging; and
WHEREAS, winter maintenance best practices not only protect our freshwater resources, but also minimize damage to infrastructure and property and reduce harm to aquatic plants and animals while maintaining public safety; and
WHEREAS, raising awareness among residents, businesses, and local governments about the responsible use of deicing salt is essential to balancing public safety with environmental stewardship; and
WHEREAS, Winter Salt Week serves as an opportunity to educate our communities on smart salting practices, including effective application methods and environmental considerations; and
WHEREAS, the residents of Rice Creek Watershed District can make meaningful contributions to salt pollution reduction by learning about smart salting practices, engaging in safe winter driving, and hiring trained service providers; and
WHEREAS, the Rice Creek Watershed District is committed to promoting winter maintenance strategies that ensure public safety while protecting the health of our freshwater resources for present and future generations; and
NOW, THEREFORE, the Rice Creek Watershed District proclaims January 26-30, 2026, as

"WINTER SALT WEEK"

And urges all residents, businesses, and state departments to take part in activities and

initiatives that promote the responsible use of deicing salt and encourage the adoption of winter maintenance strategies that maintain safety while reducing environmental harm.

6. Anoka County Ditch 55 Branch #8 Transfer Petition Schedule

Drainage and Facilities Manager Schmidt explained that the engineering report was completed, and staff are to consult with the Board to schedule the Public Hearing for the transfer petition for ACD-55 branch #8. He noted that staff was suggesting the Public Hearing be scheduled for February 25, 2026, during the Board's regular meeting.

Motion by Manager Waller, seconded by **Manager Bradley, to schedule the ACD-55, Branch #8 Transfer Petition Public Hearing for February 25, 2026, at 9:30 a.m. during the Board's regular meeting.** ***Motion carried 4-0.***

7. Check Register Dated January 28, 2026, in the Amount of $289,479.64 and January Interim Financial Statements Prepared by Redpath and Company

Motion by Manager Weinandt, seconded by Manager Bradley, to approve the check register dated January 28, 2026, in the Amount of $289,479.64 and the January Interim Financial Statements prepared by Redpath and Company. Motion carried 4-0.

ITEMS FOR DISCUSSION AND INFORMATION

1. Chloride Pollution and the District's Role

Lake & Stream Manager Kocian gave a presentation regarding chloride pollution, which primarily comes from road salt application; outlined the problems it can bring, such as being toxic to many fish/invertebrates/amphibians; what the monitoring data show across the State and specifically within the District; demonstrating a trend of increasing chloride presence in surface waters and where there are chloride impairments in the District; what can be done to mitigate chloride pollution; and briefly reviewed the District's role. He referenced the recent proclamation for Winter Salt week and noted that the District regularly supports training and workshops related to smart salting.

President Bradley suggested that Lake & Stream Manager Kocian could give this presentation at the upcoming City/County partner meeting in March.

District Administrator Tomczik noted that the City/County partner meeting was scheduled for February 10, 2026, and staff could include chloride pollution in that meeting.

2. Staff Reports

Manager Weinandt asked if there was an update on Jones Lake and explained that a question that arose when they were discussing was how to manage the legislative body's requests. She asked Project Manager Petry had reached out to the cities to see if their lobbyists could also track this.

District Administrator Tomczik stated that the District did not know if the District was included in the Governor's bonding bill and noted that practically legislators would determine the District's inclusion its session begins on February 17, 2026.

Project Manager Petry reviewed the list of partners he had reached out to and possible funding through the State's bonding bill, as well as grant applications.

Manager Weinandt explained that she would advocate that the District have someone physically at the capital watching out for these interests.

Manager Waller noted that there were other bills the District was interested in and hoped that staff were also working on those. He stated that for working with the cities, even if they don't have lobbyists, he would suggest speaking with their administrators and having them contact the correct individuals at the League of Minnesota Cities. He suggested that they put together a map of the District and the various cities with their geographical limits superimposed on the map, along with the Senate and House districts, so they know the mayors, city administrators, and representatives for each city. He shared examples of other ways that may be useful to communicate and talk with individuals about these bills.

3. February Calendar

District Administrator Tomczik reiterated that the City/County partner meeting was scheduled for February 10, 2026.

4. Administrator Updates

District Administrator Tomczik stated that he and Project Manager Petry presented the City of New Brighton with the Mn Association of Floodplain Managers' plaque for the Hansen Park project. He noted that District staff have continued to work on water quality at Silver Lake and referenced things that are being looked at for White Bear Lake. He noted the opening on the Board for a representative from Anoka County has been posted, and the county's new manager appointment scheduled for later in February.

5. Manager Updates

Manager Waller referenced a recent article regarding the City of Hugo and how they had handled the Family Leave Act issue. He explained that he had asked District staff to reach out to discuss.

ADJOURNMENT

Motion by Manager Waller, seconded by Manager Robertson, to adjourn the meeting at 10:28 a.m. Motion carried 4-0.

CONSENT AGENDA

The following items will be acted upon without discussion in accordance with the staff recommendation and associated documentation unless a Manager or another interested person requests opportunity for discussion:

Table of Contents-Permit Applications Requiring Board Action

No.	Applicant	Location	Plan Type	Recommendation
25-123	Lexington Meadows, LLC	Blaine	Final Site Drainage Plan	CAPROC 8 items

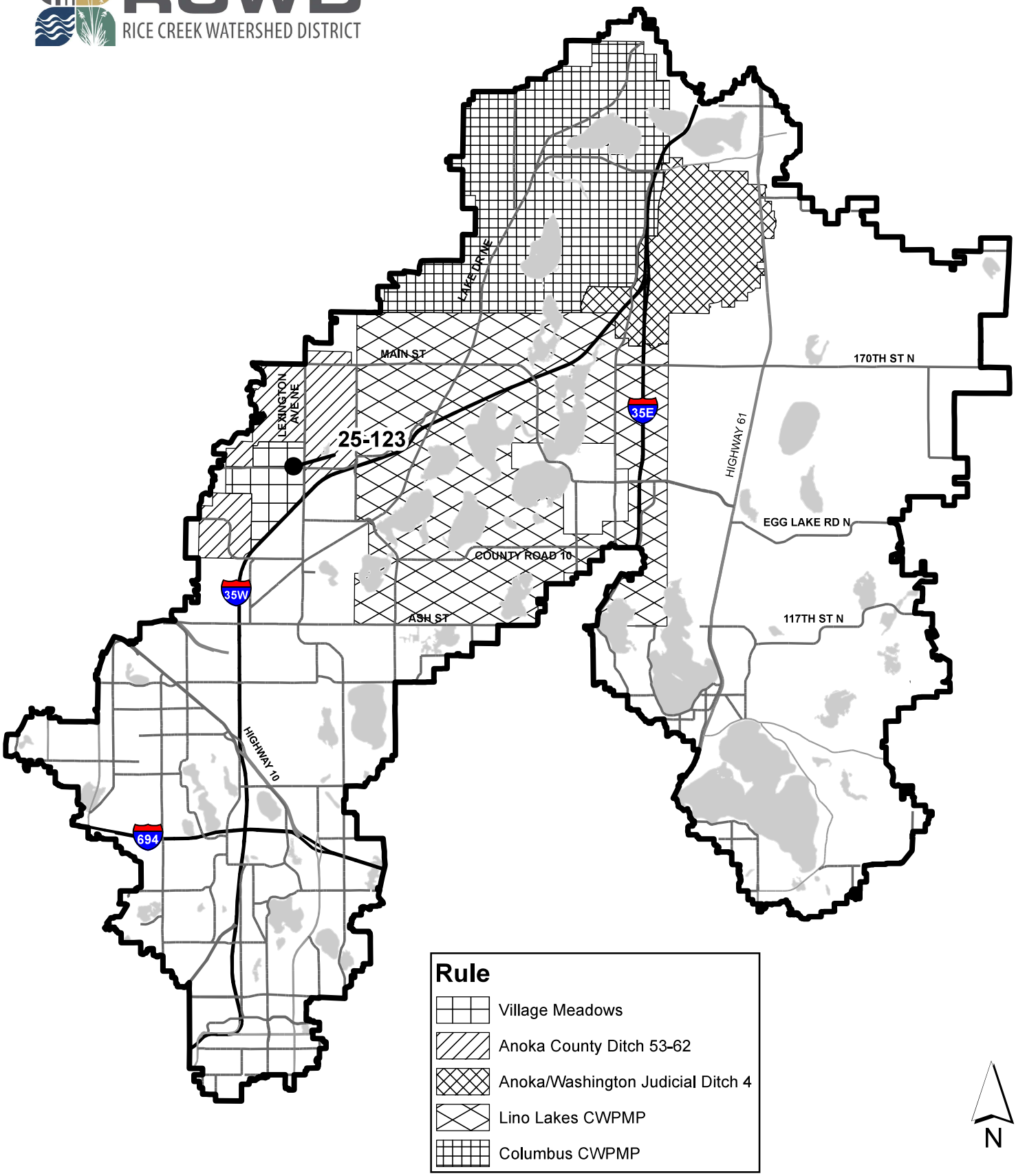
It was moved by Manager _____ and seconded by Manager _____, to approve the consent agenda as outlined in the above Table of Contents in accordance with RCWD District Engineer's Findings and Recommendations, dated February 4, 2026.

RICE CREEK WATERSHED DISTRICT
CONSENT AGENDA

February 11, 2026

It was moved by _____ and seconded by _____ to Approve, Conditionally Approve Pending Receipt Of Changes, or Deny, the Permit Application noted in the following Table of Contents, in accordance with the District Engineer's Findings and Recommendations, as contained in the Engineer's Findings and Recommendations, as contained in the Engineer's Reports dated February 4, 2026.

TABLE OF CONTENTS



Permit Reviews
02/11/2026 Agenda

RCWD
RICE CREEK WATERSHED DISTRICT

WORKING DOCUMENT: This Engineer's report is a draft or working document of RCWD staff and does not necessarily reflect action by the RCWD Board of Managers.

Permit Application Number: 25-123
Permit Application Name: Magnifi Financial

Applicant/Landowner:

Lexington Meadows LLC
Attn: Stephen B. Wellington
1625 Energy Park Drive Ste 100
Saint Paul, MN 55108
Ph: 651 292 9844
swellington@wellingtonmgt.com

Permit Contact:

Contour Civil Design LLC
Attn: Josephine Radach
P.O. Box 89
Rockford, MN 55373
Ph: 612 730 2265
jradach@contourcd.com

HTG Architects
Attn: Josh Longo
1010 Mainstreet, Suite 100
Hopkins, MN 55343
Ph: 952 204 3249
jlongo@htg-architects.com

Project Name: Magnifi Financial

Purpose: FSD – Final Site Drainage; Construction of a credit union building and associated parking and drive areas

Site Size: 1.55 ± acre parcel / 1.4 ± acres of disturbed area; existing and proposed impervious areas are 0.105 ± acres and 0.883 ± acres, respectively

Location: North Meadows plat corner of 109th Ave NE and 114th Ave NE, Blaine, MN

T-R-S: SE ¼, Section 14, T31N, R23W

District Rule: C, D

Recommendation: CAPROC

It is recommended that this Permit Application be given Conditional Approval Pending Receipt of Changes (CAPROC) and outstanding items related to the following items:

Conditions to be Met Before Permit Issuance:

Rule D – Erosion and Sediment Control

1. Submit the following information per Rule D.4:

   (c) Name, address and phone number of party responsible for maintenance of all erosion and sediment control measures.

   (i) A Storm Water Pollution Prevention Plan for projects that require an NPDES Permit.

Administrative

2. Email one final, signed full-sized pdf of the construction plan set. Include a list of changes that have been made since approval by the RCWD Board. Final plans must include the following:

- Ensure the EOF of underground system is shown

3. The applicant must pay the deferred Water Management District Charges associated with this parcel. These charges were previously noticed to the landowner in conjunction with a public hearing which established the charges to be due upon development or redevelopment of the parcel. The charges are subject to change during the 12-month CAPROC term of this permit application. Therefore, the applicant must contact the District prior to submitting final payment to verify the amount to be paid to the District.

   PID: 14-31-23-44-0003
   Amount: $242.47
   RCWD Fund: 80-24

4. Submit a copy of the recorded plat or easements establishing drainage or flowage over stormwater management facilities, stormwater conveyances, ponds, wetlands, on-site floodplain up to the 100-year flood elevation, or any other hydrologic feature (if easements are required by the City of Blaine).

5. The applicant must submit a Draft Declaration for Maintenance of Stormwater Management Facilities acceptable to the District for proposed onsite stormwater management and pretreatment features.

6. The applicant must provide an attested copy of any and all signed and notarized legal document(s) from the County Recorder. Applicant may wish to contact the County Recorder to determine recordation requirements prior to recordation.

7. The applicant must submit a cash surety of $2,600 along with an original executed escrow agreement acceptable to the District. If the applicant desires an original copy for their records, then two original signed escrow agreements should be submitted. The surety is based on $1,000 for 1.4 acres of disturbance, and $1,600 for 3,100 CF of storm water treatment.

8. The applicant or contractor must provide a construction schedule for the underground system (or communicate when the schedule will be provided). A note shall be added to the final plans to contact the RCWD inspection prior to the installation. See Stipulation 2.

Stipulations: The permit will be issued with the following stipulations as conditions of the permit. By accepting the permit, applicant agrees to these stipulations:

1. Provide an as-built survey of all stormwater BMPs (ponds, rain gardens, trenches, swales, etc.) to the District for verification of compliance with the approved plans before return of the surety.

2. RCWD inspector must be notified prior to installation of underground system.

Exhibits:

1. Plan set containing 16 sheets dated 1-06-2026 and received 1-06-2025

2. Permit application, dated 12-12-2025 and received 12-30-2025

3. HydroCAD model, received 1/20/2026 containing the 2-year, 10-year and 100-year rainfall events for proposed conditions.

4. Stormwater Calculations, dated 1-06-2026 and received 1-06-2025, containing narrative, drainage maps, HydroCAD report for the 2-inch rainfall event for proposed conditions. Geotechnical information (date)

5. Permit file 19-110

Findings:

1. Description – The project proposes to construct a credit union building and associated parking areas on a 1.553± acre parcel located in Blaine, MN. The project will increase the impervious area from 0.105± acres to 0.883± acres and disturb 1.4± acres overall. This site was previously mass graded under permit 19-110. The existing drainage pattern on site is that runoff drains southwest towards an existing storm sewer in Austin St. N, then towards an existing regional pond designed to provide rate control for this site (Pond 201 in permit 19-110), eventually draining to ACD 53-62 before draining to Golden Lake, the Resource of Concern. The proposed drainage pattern will route stormwater to a subsurface infiltration system on site, then towards the existing regional pond, and eventually towards ACD 53-62 which drains to Golden Lake. The applicant has submitted a $3,000 application fee for a Rule C permit creating less than 5 acres of new and/or reconstructed impervious surface.

2. Stormwater – The applicant is proposing the BMPs as described below for the project:

Proposed BMP Description	Location	Pretreatment	Volume provided	EOF
Underground infiltration system	Western property line	Sump manhole with SNOUT oil/debris stop	3,175± cubic feet	903.1*

*Applicant to label

Soils on site are primarily HSG A consisting of silty sands (SM) and sands (SP). Per Rule C.6(c)(1), the Water Quality requirement is 1.1-inches over the new/reconstructed area (0.778± acres) for a total requirement of 3,100± cubic feet.

Adequate pre-treatment has been provided. Drawdown is expected within 48-hours using an appropriate rate of 0.8 inches per hour. The seasonal high water table is estimated at elevation 894.6, which provides a minimum of three feet of separation. The project is not located within a DWSM area. The applicant has treated 96% of the required impervious area. Additional TSS removal is not practicable. The applicant has met all the Water Quality requirements of Rule C.6 and the design criteria of Rule C.9(c).

The project is not located within the Flood Management Zone. The North Meadows development (permit 19-110) was developed under the assumption that Outlot J, which encompasses this site, would have 70% impervious area. The regional ponds were designed to provide rate control to accommodate this. Outlot J is 8.36 acres, allowing for 5.85 acres of impervious surfaces. 2.12 acres has been used under permit 25-106. This project will use 0.78 acres, leaving 2.95 acres for the remaining development of the lot. Thus, the applicant has complied with the rate control requirements of Rule C.7.

The applicant has complied with the freeboard requirements of Rule C.9(h). The project discharges directly to ACD 53-62 Main Trunk and will not increase rates from existing conditions. As such, the project will not increase bounce or inundation.

3. Wetlands – This project is in accordance with the wetland mitigation plan previously permitted under 19-110, which included the WMC requirements. The WMC is not located on the project property. The project will not affect any additional wetlands.

4. Floodplain – This project is in accordance with the floodplain mitigation plan previously permitted under permit 19-110. The project will not impact any additional floodplain.

5. Erosion Control – Proposed erosion control methods include silt fence, rock construction entrances, inlet protection and erosion control blankets. The project will disturb more than 1 acre; an NPDES permit is required. The SWPPP is located on plan sheet(S) C5.1 through C5.3. The information listed under the Rule D – Erosion and Sediment Control section above must be submitted. Otherwise, the

project complies with RCWD Rule D requirements. The project is within 1 mile of Unnamed ditch (Anoka County Ditch 53-62) which is impaired for nutrients.

6. Regional Conveyances – Rule G is not applicable.
7. Public Drainage Systems – Rule I is not applicable.
8. Documenting Easements and Maintenance Obligations –Applicant must provide a draft maintenance declaration for approval, and a receipt showing recordation of the approved maintenance declaration and the drainage and flowage easements.
9. Previous Permit Information – This site was graded under permit 19-110. The floodplain fill, rate control, WMD charges, and wetland mitigation are covered under 19-110. Permit 20-111 was applied for north of the site but not constructed. Permit 25-106 was applied for east of the site.

I assisted in the preparation of this report under the supervision of the District Engineer.

02/04/2026

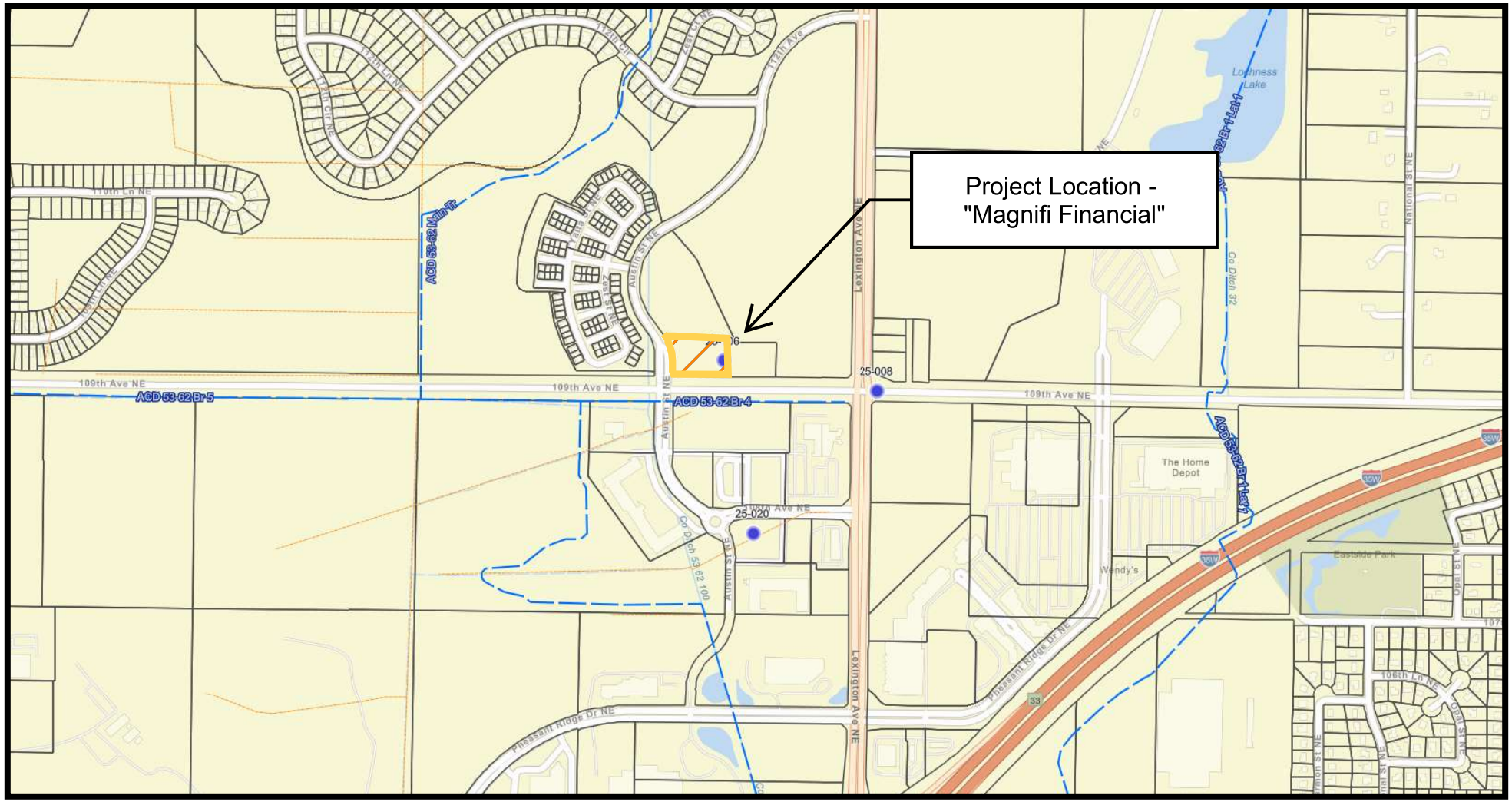
Josephine Khan, EIT

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

02/04/2026

Katherine MacDonald, MN Reg. No 44590

RCWD Permit File #25-123



Legend

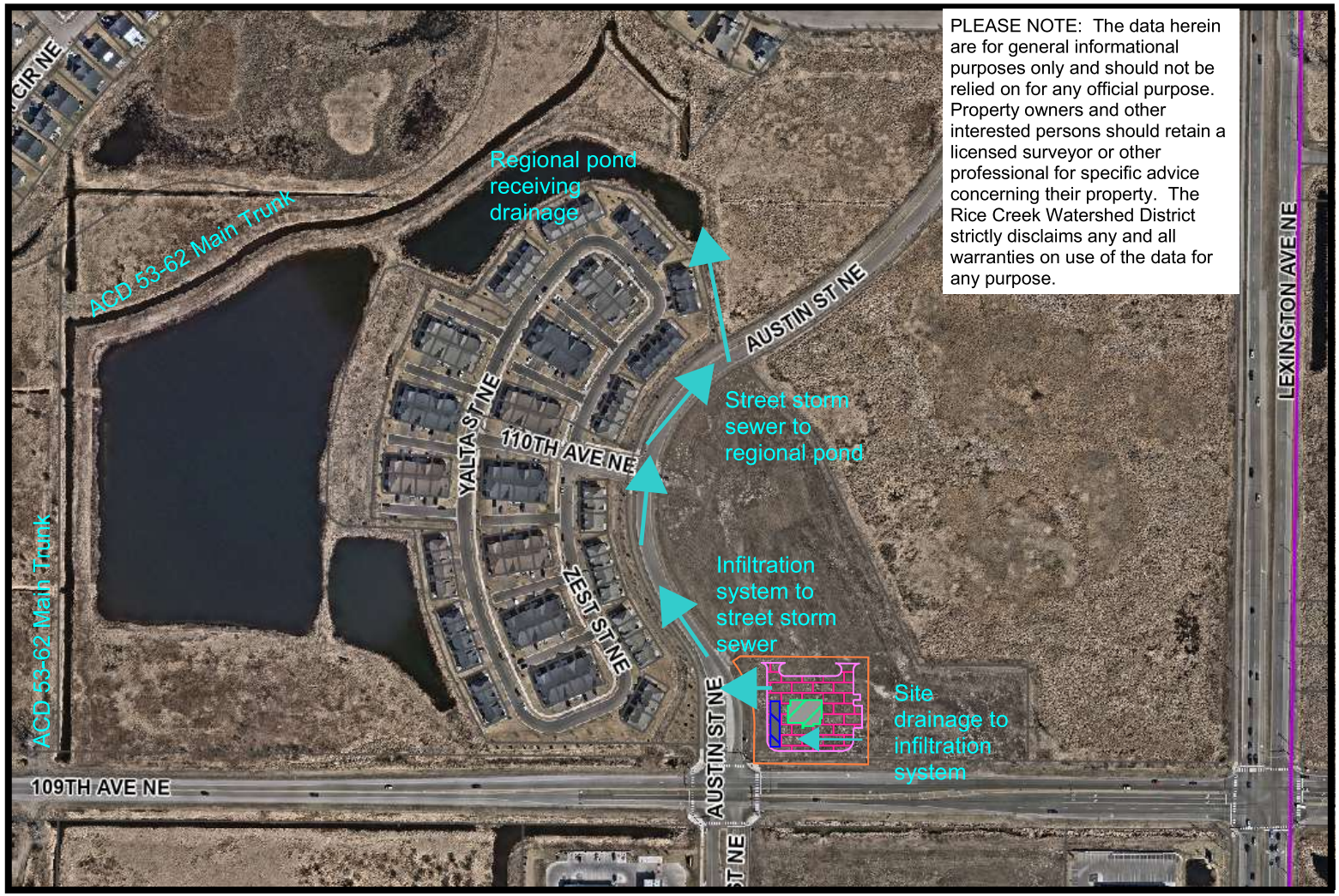
Public Ditch - Open Channel

Project Location

Private Ditch

N

RCWD Permit File #25-123



Legend

Project Location

Proposed Building

Proposed Impervious

Underground Infiltration System

Drainage Arrow

N

Water Quality Grant Program Cost Share Application (Molly Nelson)

No.	Applicant	Location	Project Type	Eligible Total Project Cost	Pollutant Reduction	Funding Recommendation
R26-01	Scott Barnes	1472 County Road C2 W, Roseville	Raingarden & Porous Pavers	$19,939.75	Vol: 3,695 Cu-ft/yr TSS: 70.76 Lbs/yr TP: 0.28 lbs/yr	Cost share of $9,969.87 not to exceed 50% of total eligible cost; or $10,000 whichever cost is lower
R26-02	White Bear Towns-hip	W Bald Eagle Blvd & St. Anthony Ave	Shoreline Stabilization & Restoration	$16,390.00	Vol: 3,931 Cu-ft/yr TSS: 1,614.83 Lbs/yr TP: 0.92 lbs/yr	Cost share of $8,195.00 not to exceed 50% of total eligible cost; or $10,000 whichever cost is lower

It was moved by Manager _____ and seconded by Manager _____, to approve the consent agenda as outlined in the above Table of Contents in accordance with RCWD Outreach and Grants Technician's Recommendations, dated February 3rd, 2026.

MEMORANDUM
Rice Creek Watershed District

Date: **February 3rd, 2026**

To: **RCWD Board of Managers**

From: **Molly Nelson, Outreach and Grants Technician**

Subject: **R26-01 Barnes Raingarden & Porous Pavers**

Introduction

R26-01 Barnes Raingarden & Porous Pavers

- Applicant: Scott Barnes
- Location: 1472 County Road C2 W, Roseville, MN
- Total Eligible Project Cost: $19,939.75
- RCWD Grant Recommendation: $9,969.87 (50%)

Background

The R26-01 Barnes Raingarden & Porous Pavers Water Quality Grant application proposes 2 raingardens with a retrofit of an existing swale and porous pavers on a residential property in Roseville. The benefitted waterway from the treatment and capture of stormwater in this project is Lake Josephine. The project scored a value of 14 on the Water Quality Grant program screening form and is eligible for the RCWD Water Quality Grant program. The Ramsey County Soil and Water Conservation Division (RSWCD) drafted the designs for the project and provided recommendations for a cost-share grant award which has been reviewed and approved by RCWD staff.

The estimated pollutant reductions for the proposed project are:

- Volume Reduction
    - Porous Pavers: 1,509 cu-ft/yr (61%)
    - Raingardens: 2,186 cu-ft/yr (33%)
- Total Suspended Solids (TSS)
    - Porous Pavers: 35.08 lbs/yr (80%)
    - Raingardens: 35.68 lbs/yr (33%)
- Total phosphorus (TP)
    - Porous Pavers: 0.12 lbs/yr (80%)
    - Raingardens: 0.16 lbs/yr (33%)

The applicant obtained 1 bid for the project:

- Sandstrom Land Management: $19,939.75

The RSWCD provided a cost estimate amounting to $20,885.5, which is higher than the proposed bid on the project.

Staff Recommendation

Based on the submitted application and program guidelines, RCWD staff support the project award of $9,969.87 not to exceed 50% of eligible project expenses of $19,939.75

Request for Proposed Motion

Manager _____ moves to authorize the RCWD Board President, on advice of counsel, to approve the Water Quality Grant Contract for R26-01 of $9,969.87 not to exceed 50% of eligible project

costs or up to $10,000.00, whichever amount is lower, as outlined in the consent agenda and in accordance with the RCWD Staff's recommendation and established program guidelines.

Attachments

R26-01 Barnes Raingarden & Porous Pavers application documents.

Ramsey County Soil & Water Conservation Division

RAMSEY COUNTY
Parks & Recreation

To: RCWD Advisory Committee
From: Brian Olsen: Environmental Resource Specialist
Date: 1/20/2026
Re: Scott Barnes Cost Share Application

Project: R26-01

1474 County Road C2 W.
Roseville, MN 55113
Raingarden & Porous Pavers

Material & Labor Estimate: $19,939.75
Cost Share Request: $9,969.87

Background:

The proposed project is located at a residential property in Roseville. Currently, the drainage on site runs towards the garage and around to the back of the house and eventually ends up entering a surface drain connected to the storm sewer without being properly treated. There is also an old swale around the other side of the property that is no longer function as designed to help capture driveway runoff.

The proposed project is to install porous pavement at the main collection point of the driveway with an underdrain that routes into the backyard and connects to an area with an existing dry well beneath the lawn. Also, the swale will be re-graded and retrofitted with native plants to better collect runoff and direct it to a new raingarden on the side of the house. Both of the projects are designed to collect the runoff before it enters the storm sewer and ultimately flows into Lake Josephine. The raingarden will also be planted with native species to provide pollinator resources throughout the growing season. The project will capture a large amount of stormwater to remove pollutants and infiltrate the water into the ground before it enters the surface waters. An additional raingarden is designed to be included in the backyard for a potential future project to enhance and collect additional runoff, but is not being installed at this time.

Total catchment area treated by the proposed project is 5,777 square feet (0.133 acres). It is 37% impervious and includes driveway, roofs, and landscape/turf grass.

Recommendation:

It is my recommendation that the Scott Barnes project be awarded cost share in the amount of $9,969.87 or 50% of the eligible project costs, whichever is less.

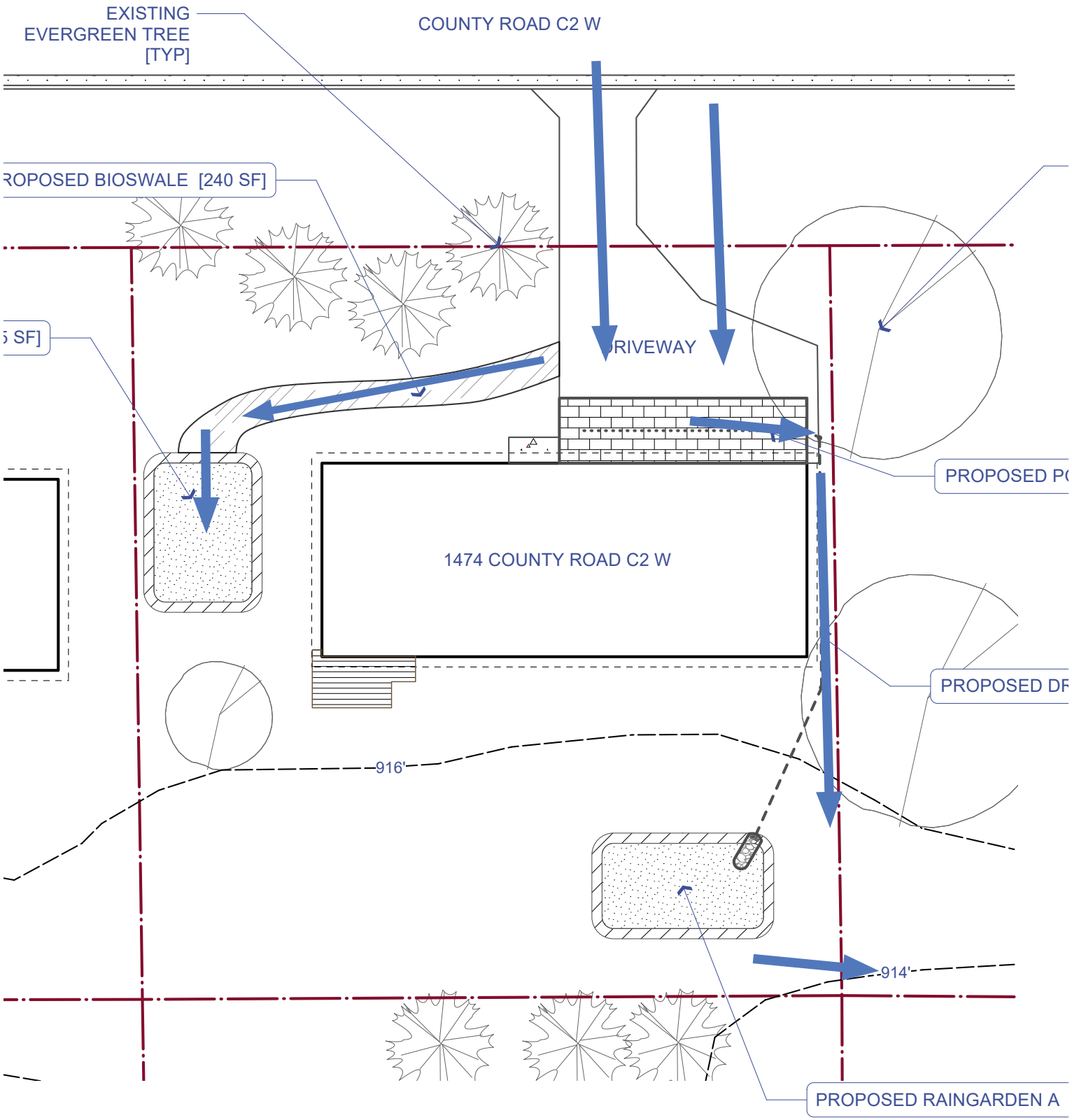
Pollution Reductions: Porous Pavers

	Before	After	Reduction	Red. %
Volume (cu-ft/yr)	2,493	983	1,509	61%
TSS (lbs/yr)	43.81	8.73	35.08	80%
TP (lbs/yr)	0.1532	0.0300	0.1233	80%

Pollution Reductions: Raingarden

	Before	After	Reduction	Red. %
Volume (cu-ft/yr)	6,537	4,351	2,186	33%
TSS (lbs/yr)	107.90	72.22	35.68	33%
TP (lbs/yr)	0.4843	0.3247	0.1596	33%

EXHIBIT A: Site Drainage



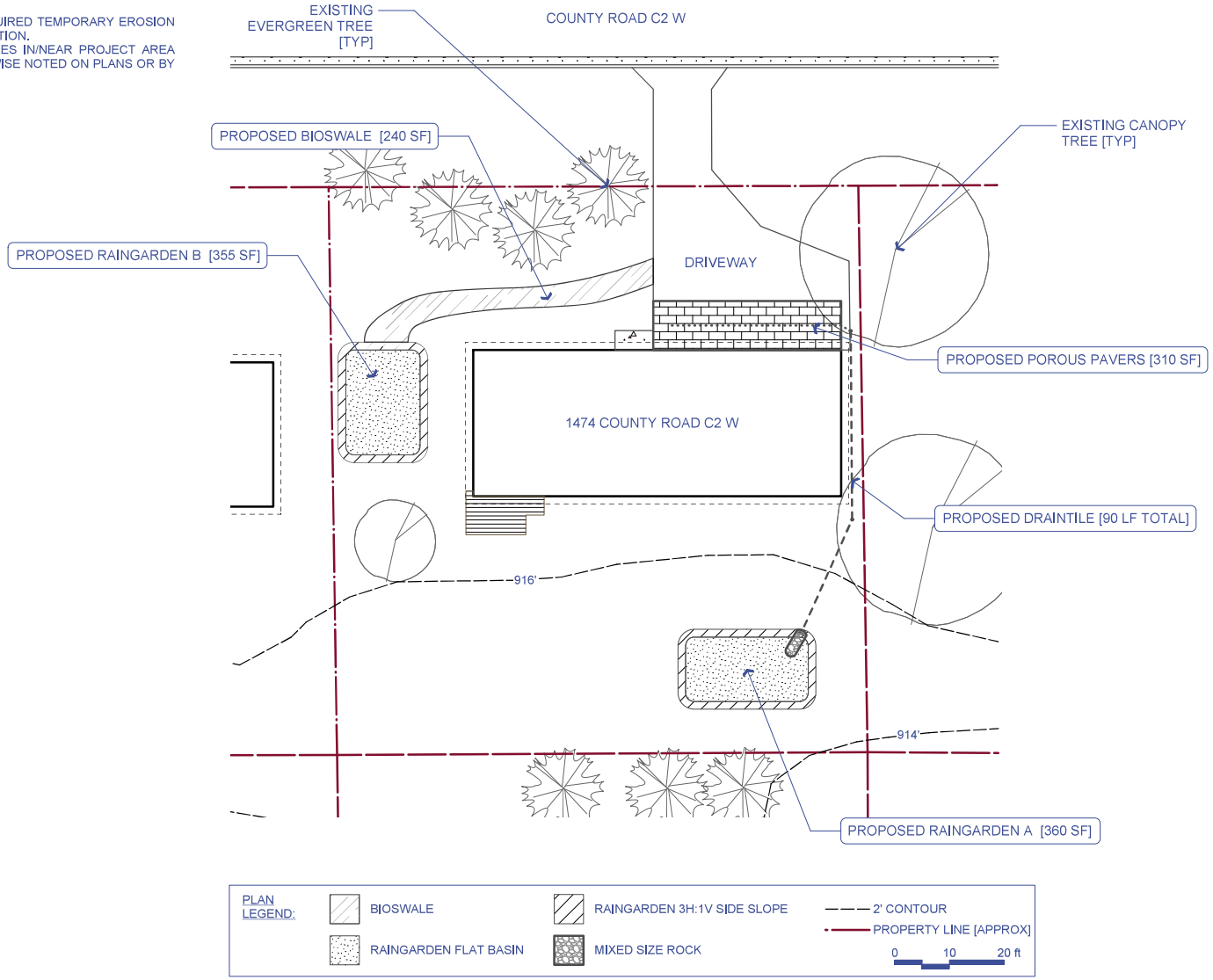
PLAN LEGEND:

- BIOSWALE
- RAINGARDEN FLAT BASIN
- RAINGARDEN 3H:1V SIDE SLOPE
- MIXED SIZE ROCK
- 2' CONTOUR
- PROPERTY LINE [APPROX]

0 10 20 ft

GENERAL PROJECT NOTES:

1. CONTRACTOR TO LOCATE UTILITIES PRIOR TO BEGINNING WORK AND SECURE ANY NECESSARY PERMITS. CONFRIM WITH RCSWCD STAFF IF ANY UNDERGROUND UTILITIES CONFLICT WITH PROPOSED PROJECT LOCATIONS.
2. CONTRACTOR TO PROVIDE ANY REQUIRED TEMPORARY EROSION CONTROL AS NEEDED DURING INSTALLATION.
3. CONTRACTOR TO PROTECT ALL TREES IN/NEAR PROJECT AREA DURING INSTALLATION UNLESS OTHERWISE NOTED ON PLANS OR BY LANDOWNER REQUEST.



RAMSEY COUNTY

RAMSEY COUNTY SWCD
2015 VAN DYKE STREET
MAPLEWOOD, MN 55109
651-266-7280
www.ramseycounty.us

PROJECT: BARNES RESIDENCE
LOCATION:
1474 COUNTY ROAD C2 W
ROSEVILLE, MN 55113

WATERSHED DISTRICT:
RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/7/2025
REVISION:
REVISION:
REVISION:
REVISION:
CHECKED BY: BTO
TAA:

NOTES:
-CONTACT GOPHER STATE ONE CALL TO CONFIRM UTILITY LOCATIONS
-ELEVATIONS ARE APPROXIMATE, SITE VERIFY
-VERIFY ANY BID ALTERNATES OR ONSITE CHANGES WITH SWCD STAFF PRIOR TO INSTALLATION
-ORIGINAL SHEET SIZE: 11"x17"

SCALE: 1" = 20'-0"

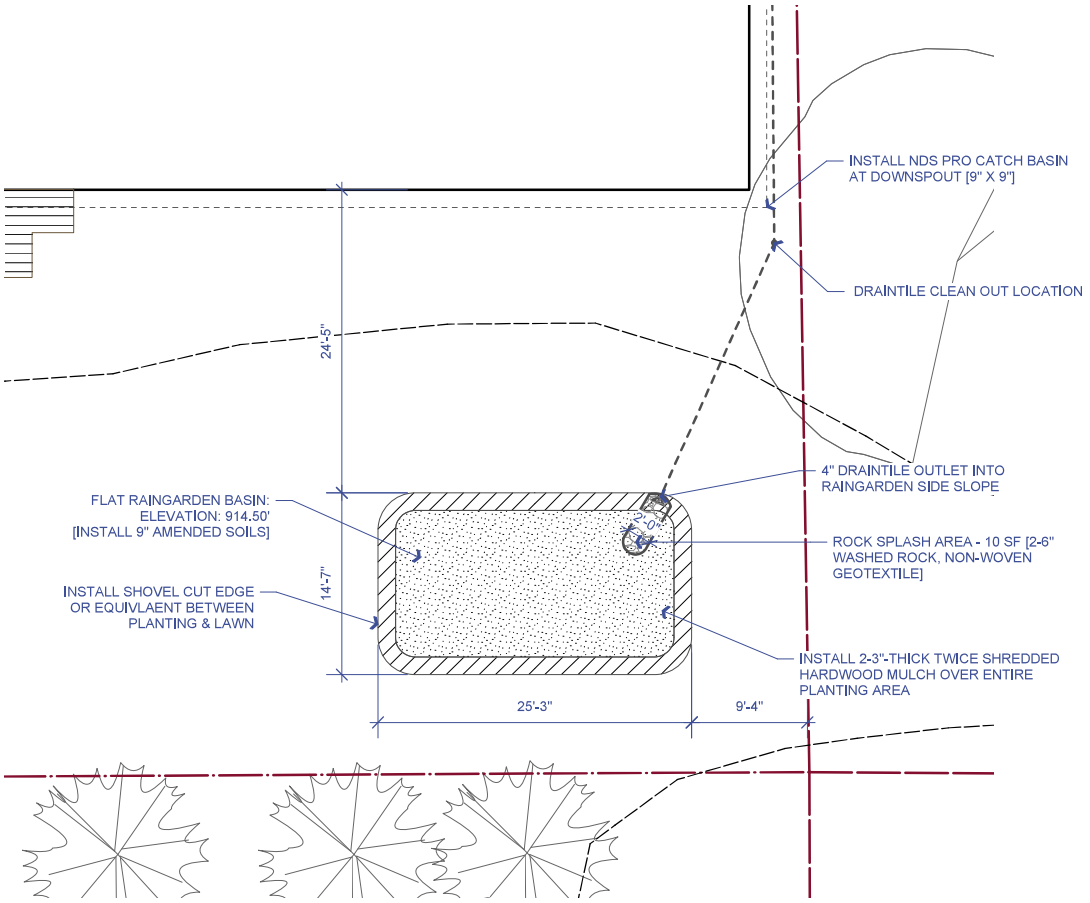
N

SITE PLAN

L100

RAINGARDEN A NOTES:

1. EXCAVATE RAINGARDEN AREA, LOOSEN UNDERLYING SOILS 6-12" MINIMUM, AND INSTALL 9" OF AMENDED SOILS IN RAINGARDEN BASIN AREA. [IF SANDY SOILS ARE ENCOUNTERED, AMENDED SOIL MAY BE REMOVED AND UNDERLYING SOILS ONLY LOOSENED]
2. GRADE OUT FLAT RAINGARDEN BASIN AREA. ENSURE BASIN ELEVATION IS LEVEL IN ALL DIRECTIONS. SEE LAYOUT PLAN FOR BASIN ELEVATIONS.
3. GRADE 3H:1V SIDE SLOPES. MATCH SURROUNDING GRADE.
4. INSTALL DRAINTILE OUTLET FROM POROUS PAVERS INTO RAINGARDEN SIDE SLOPE. SEE DETAIL SHEET FOR INSTALLATION INSTRUCTIONS.
5. INSTALL 2-6" MIXED SIZE WASHED RIVER ROCK OR EQUIVALENT FOR SPLASH AREA AT DRAINTILE OUTLET. INSTALL NON-WOVEN GEOTEXTILE BETWEEN ROCK & SOILS.
6. INSTALL TWO NDS PRO CATCH BASINS AT EXISTING DOWNSPOUT LOCATIONS AT EAST SIDE OF HOUSE. CONNECT TO 4" DRAINTILE THAT RUNS TO RAINGARDEN.
7. INSTALL 3"-THICK TWICE SHREDDED HARDWOOD MULCH OVER ENTIRE RAINGARDEN, PLANT WITH NATIVE SPECIES [SEE PLANTING PLAN ON SHEET L300]
8. SEE PLAN DRAWING FOR RAINGARDEN BASIN ELEVATIONS AND DIMENTIONS. [ELEVATIONS ARE APPROXIMATE, SITE VERIFY.]
9. ENSURE ALL COMPETING VEGETAION IN PROJECT AREA IS SCRAPED OR KILLED PRIOR TO INSTALLATION.
10. INSTALL SHOVEL CUT EDGE BETWEEN RAINGARDEN & EXISTING TURF LAWN, OR APPROVED EQUIVALENT EDGING MATERIAL.
11. RESTORE ANY LANDSCAPE/LAWN DAMAGE OUTSIDE OF PROJECT AREA WITH TURF/FESCUE SEED/SOD OR EQUIVALENT.
12. EXACT SIDE/SHAPE OF RAINGARDEN & PLANTING PROEJCT MAY VARY WITH LANDOWNER & RCSWCD STAFF APPROVAL. CONTRACTOR TO VERIFY ANY REQUIRED LAYOUT CHANGES PRIOR TO BEGINNING INSTALLATION WITH RCSWCD STAFF.



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PROJECT: BARNES RESIDENCE
LOCATION:
1474 COUNTY ROAD C2 W
ROSEVILLE, MN 55113

WATERSHED DISTRICT:
RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/7/2025
REVISION:
REVISION:
REVISION:
REVISION:
CHECKED BY: BTO
TAA:

NOTES:
-ELEVATIONS ARE APPROXIMATE
-UTILITY LOCATIONS ARE APPROXIMATE, CONFRIM LOCATIONS PRIOR TO WORK
-CONTRACTOR AQUIRE NECESSARY PERMITS PRIOR TO START
-EXCAVATE WITH TRACKED EQUIPMENT ONLY
-RIP UNDERLYING SOILS 6-12" TO REMOVE COMPACTION
-SIZE AND SHAPE OF RAINGARDEN MAY VARY
-MAINTAIN SQUARE FEET AND PONDING DEPTH
-ORIGINAL SHEET SIZE: 11"x17"

SCALE: 1" = 10'-0"

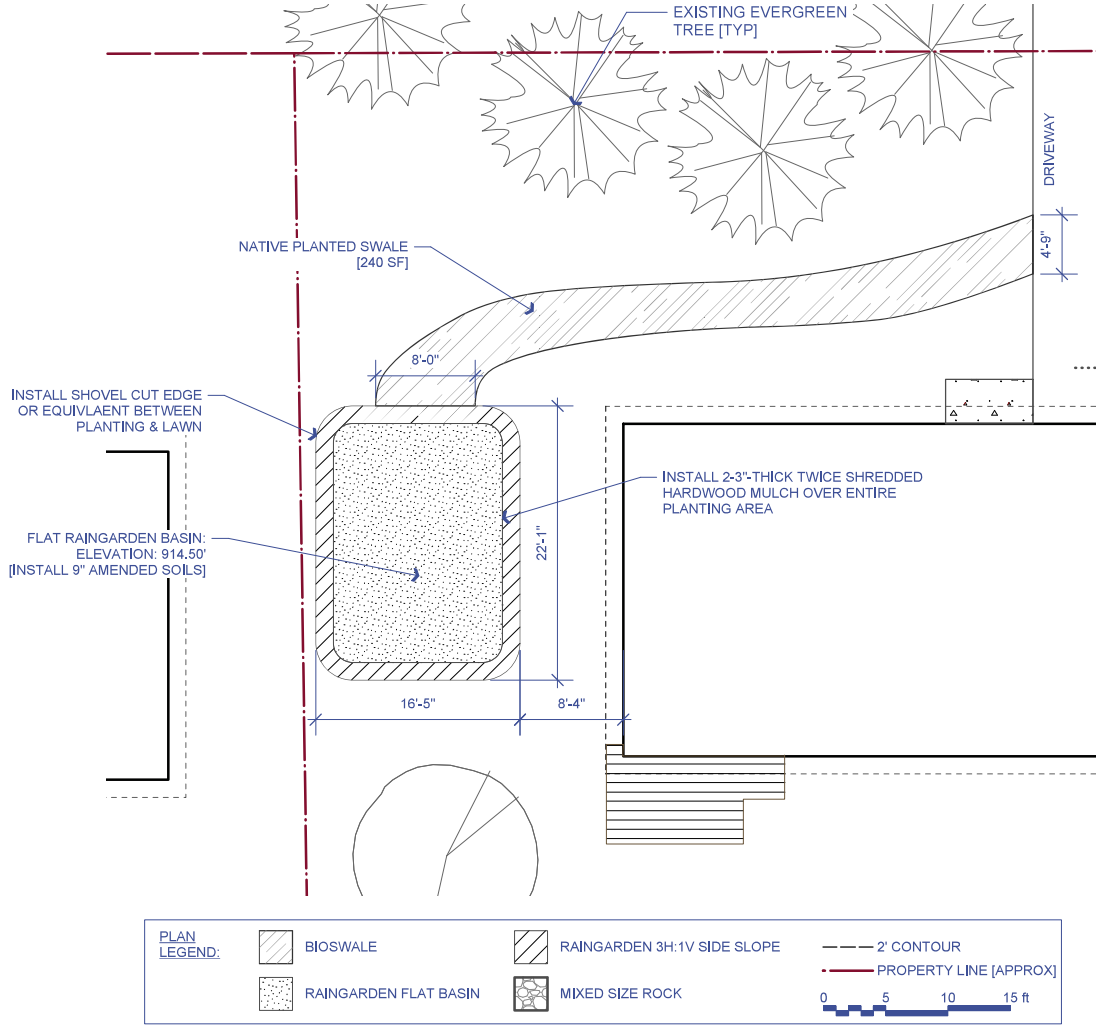
N

LAYOUT PLAN: RAINGARDEN A

L200

RAINGARDEN B AND BIOSWALE NOTES:

1. EXCAVATE RAINGARDEN AREA, LOOSEN UNDERLYING SOILS 6-12" MINIMUM, AND INSTALL 9" OF AMENDED SOILS IN RAINGARDEN BASIN AREA. [IF SANDY SOILS ARE ENCOUNTERED, AMENDED SOIL MAY BE REMOVED AND UNDERLYING SOILS ONLY LOOSENED]
2. GRADE OUT FLAT RAINGARDEN BASIN AREA. ENSURE BASIN ELEVATION IS LEVEL IN ALL DIRECTIONS. SEE LAYOUT PLAN FOR BASIN ELEVATIONS.
3. GRADE 3H:1V SIDE SLOPES. MATCH SURROUNDING GRADE.
4. REGRADE EXISTING SWALE TO PITCH TOWARDS PROPOSED RAINGARDEN. PLANT WITH NATIVE SPECIES PER PLANTING PLAN ON SHEET L301.
5. ENSURE RAINGARDEN OVERFLOWS SOUTH TOWARDS BACKYARD. ENSURE LANDSCAPE BETWEEN HOUSE AND PROPOSED PROJECT AREA IS PITCHED AWAY FROM FOUNDATION.
6. INSTALL 3"-THICK TWICE SHREDDED HARDWOOD MULCH OVER ENTIRE RAINGARDEN AND BIOSWALE, PLANT WITH NATIVE SPECIES [SEE PLANTING PLAN ON SHEET L301.]
7. SEE PLAN DRAWING FOR RAINGARDEN BASIN ELEVATIONS AND DIMENTIONS. [ELEVATIONS ARE APPROXIMATE, SITE VERIFY.]
8. ENSURE ALL COMPETING VEGETAION IN PROJECT AREA IS SCRAPED OR KILLED PRIOR TO INSTALLATION.
9. INSTALL SHOVEL CUT EDGE BETWEEN RAINGARDEN & EXISTING TURF LAWN, OR APPROVED EQUIVALENT EDGING MATERIAL.
10. RESTORE ANY LANDSCAPE/LAWN DAMAGE OUTSIDE OF PROJECT AREA WITH TURF/FESCUE SEED/SOD OR EQUIVALENT.
11. EXACT SIDE/SHAPE OF RAINGARDEN & PLANTING PROEJCT MAY VARY WITH LANDOWNER & RCSWCD STAFF APPROVAL. CONTRACTOR TO VERIFY ANY REQUIRED LAYOUT CHANGES PRIOR TO BEGINNING INSTALLATION WITH RCSWCD STAFF.



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LOCATION:
1474 COUNTY ROAD C2 W
ROSEVILLE, MN 55113

WATERSHED DISTRICT:
RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/7/2025
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-ORIGINAL SHEET SIZE: 11"x17"

SCALE: 1"=10'-0"

N

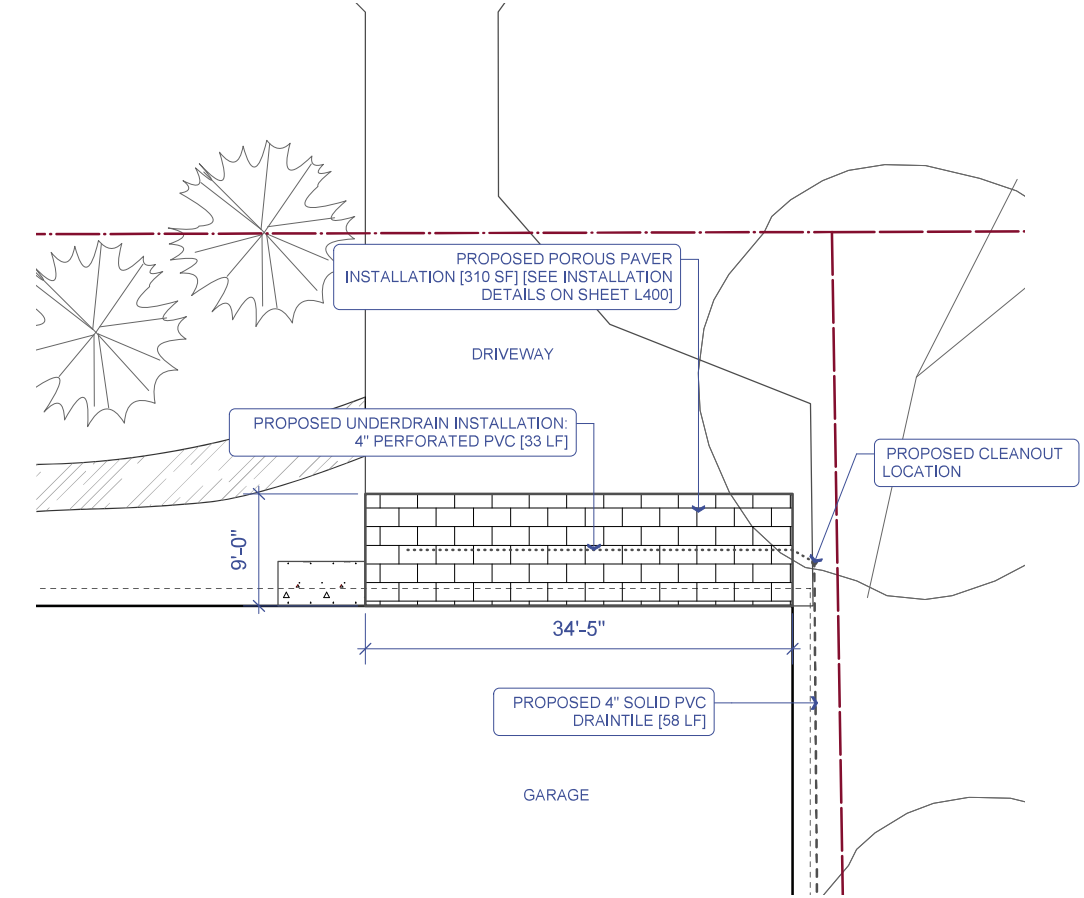
LAYOUT PLAN:
RAINGARDEN B

L201

POROUS PAVER NOTES:

POROUS PAVEMENT SURFACE AREA: ~310 SQ-FT TOTAL
ROCK RESEVOIR DEPTH: 1'-3"

1. SHAPE AND LAYOUT OF POROUS PAVEMENT MAY VARY.
2. MAINTAIN SPECIFICED STORAGE VOLUME [SQ-FT X RESEVOIR DEPTH.
3. BUILDER TO VERIFY WITH LANDOWNER AND RCWD/RCSWCD ANY PLAN MODIFICATIONS.
4. IF UNDERLYING SOIL IS WEAKER [SILT/CLAY], THE USE OF A HIGH-PERMEABILITY WOVEN GEOTEXTILE IS APPROPRIATE.
5. IF UNDERLYING SOIL IS STRUCTURALLY SOUND [SAND/GRAVEL], THE USE OF NON-WOVEN NEEDLE PUNCHED GEOTEXTILE [8OZ] IS APPROPRIATE.
6. INSTALL 4" PERFORATED PVC DRAINTILE ALONG ROUTE SHOWN ON PLAN. DRAINTILE INVERT ELEVATION TO BE MIN. 6" ABOVE BOTTOM OF ROCK RESERVOIR .
7. CONNECT DRAINTILE TO SOLID PVC DRAINTILE AT EAST SIDE OF PAVERS. RUN SOLID DRAINTILE TO RAINGARDEN BASIN IN BACKYARD.
8. INSTALL TWO CLEAN OUTS ALONG DRAIN TILE ROUTE.
9. EXTENT OF EXISTING DRIVEWAY REMOVAL MAY VARY, CONTRACTOR TO SITE VERIFY REMOVALS AND ANY REQUIRED PATCHING OR REPAIR ALONG INSTALLED PAVERS.



PLAN LEGEND:
BIOSWALE
POROUS PAVERS
2' CONTOUR
PROPERTY LINE [APPROX]
PERFORATED DRAINTILE
SOLID DRAINTILE
0 5 10 15 ft

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LOCATION:
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WATERSHED DISTRICT:
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DESIGNER: LACEY DOUCET CAMPBELL
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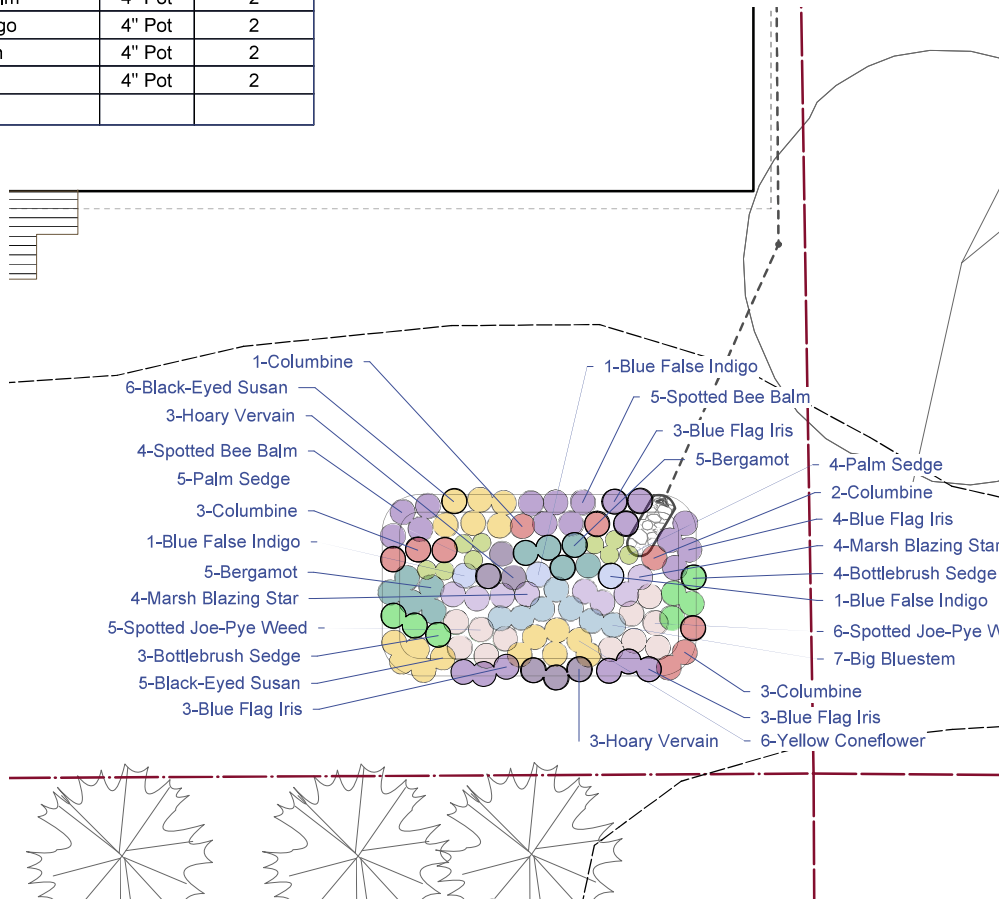
-SIZE AND SHAPE OF RAINGARDEN MAY VARY
-MAINTAIN SQUARE FEET AND PONDING DEPTH
-ORIGINAL SHEET SIZE: 11"x17"

SCALE: 1"=10'-0"

LAYOUT PLAN: POROUS PAVEMENT

L202

PLANT SCHEDULE					
ID	**Qty**	**Latin Name**	**Common Name**	**Size**	**Spacing (ft)**
C1	7	Carex comosa	Bottlebrush Sedge	4" Pot	2
C15	9	Carex muskingumensis	Palm Sedge	4" Pot	1,5
F12	10	Monarda fistulosa	Bergamot	4" Pot	2
F13	11	Rudbeckia hirta	Black-Eyed Susan	4" Pot	2
F17	13	Iris versicolor	Blue Flag Iris	4" Pot	2
F28	9	Aquilegia canadensis	Columbine	4" Pot	2
F44	11	Eupatorium maculatum	Spotted Joe-Pye Weed	4" Pot	2
F47	8	Liatris spicata	Marsh Blazing Star	4" Pot	2
F71	6	Ratibida pinnata	Yellow Coneflower	4" Pot	2
F79	9	Monarda punctata	Spotted Bee Balm	4" Pot	2
F109	3	Baptisia australis	Blue False Indigo	4" Pot	2
F146	6	Verbena stricta	Hoary Vervain	4" Pot	2
G1	7	Andropogon gerardi	Big Bluestem	4" Pot	2
	109	**TOTAL PLANTS**			



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WATERSHED DISTRICT:
RICE CREEK WATERSHED DISTRICT

RCWD RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/7/2025
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REVISION:
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REVISION:
CHECKED BY: BTO
TAA:

NOTES:
-CALL GOPHER ONE TO MARK UTILITIES BEFORE DIGGING
-PLANT PERENNIALS 24" O.C. [PLANT LOCATION MAY VARY]
-PLANT SUBSTITUTIONS MUST BE APPROVED BY RCD STAFF
-ORIGINAL SHEET SIZE: 11"x17"

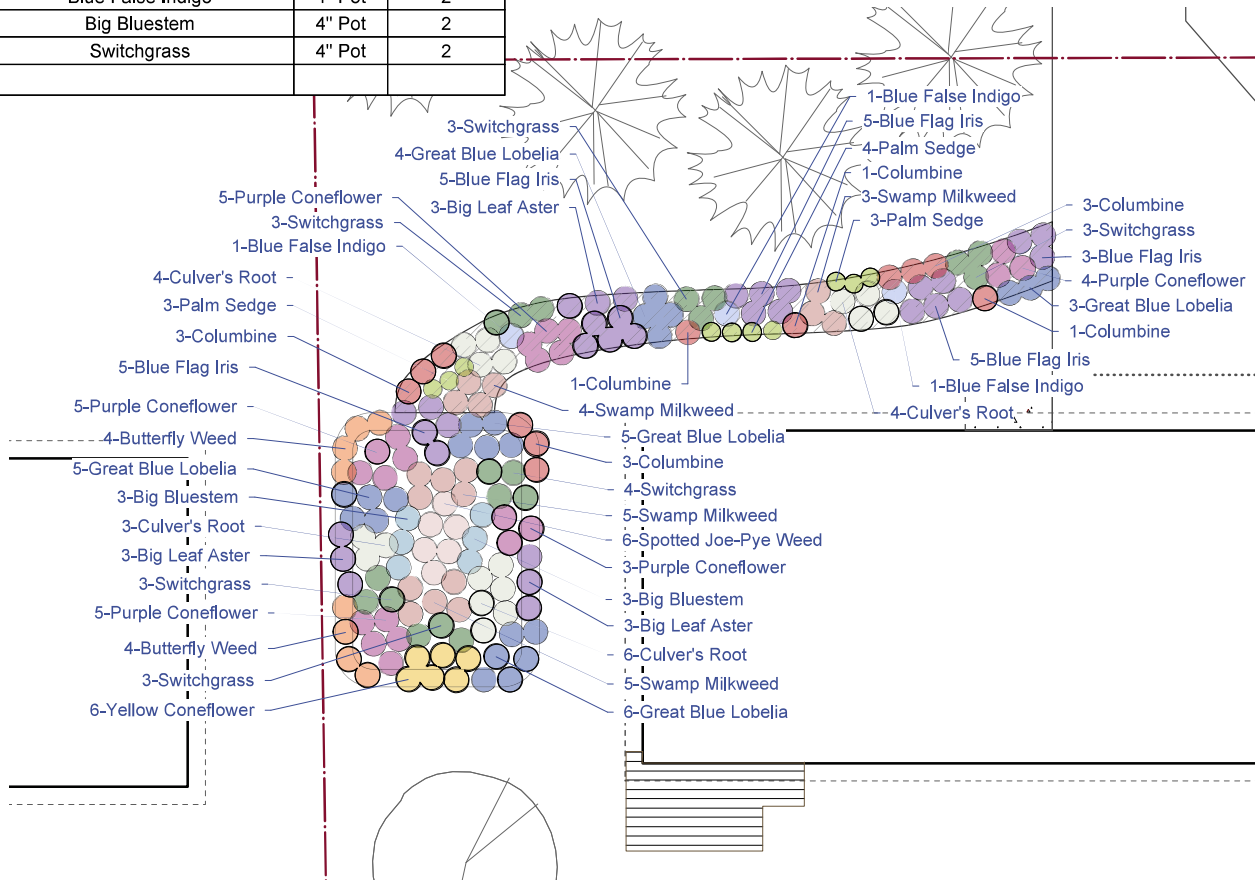
SCALE: 1"=10'-0"

N

RAINGARDEN A
PLANTING PLAN

L400

PLANT SCHEDULE					
ID	**Qty**	**Latin Name**	**Common Name**	**Size**	**Spacing (ft)**
C15	10	Carex muskingumensis	Palm Sedge	4" Pot	1.5
F5	9	Aster macrophyllus	Big Leaf Aster	4" Pot	2
F17	23	Iris versicolor	Blue Flag Iris	4" Pot	2
F28	12	Aquilegia canadensis	Columbine	4" Pot	2
F29	17	Veronicastrum virginicum	Culver's Root	4" Pot	2
F38	23	Lobelia siphilitica	Great Blue Lobelia	4" Pot	2
F44	6	Eupatorium maculatum	Spotted Joe-Pye Weed	4" Pot	2
F62	22	Echinacea purpurea	Purple Coneflower	4" Pot	2
F71	6	Ratibida pinnata	Yellow Coneflower	4" Pot	2
F80	17	Asclepias incarnata	Swamp Milkweed	4" Pot	2
F106	8	Asclepias tuberosa	Butterfly Weed	4" Pot	2
F109	3	Baptisia australis	Blue False Indigo	4" Pot	2
G1	6	Andropogon gerardi	Big Bluestem	4" Pot	2
G23	19	Panicum virgatum	Switchgrass	4" Pot	2
	181	**TOTAL PLANTS**			



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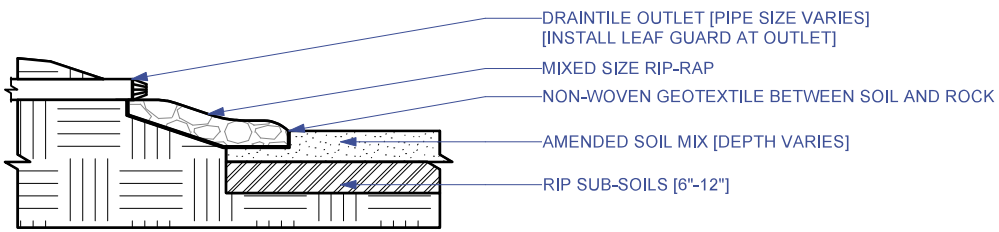
N

RAINGARDEN B
PLANTING PLAN

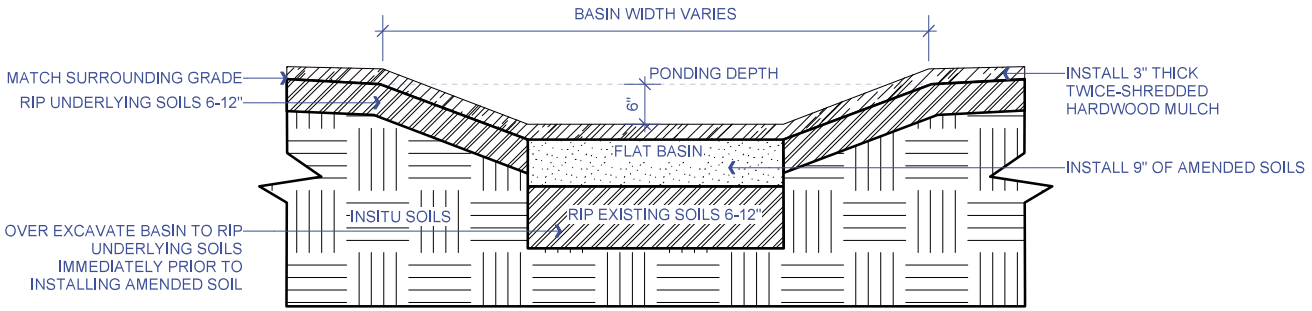
L400

NOTES:
1. EXCAVATE RAIN GARDEN. SCARIFY AN ADDITIONAL 6" BEFORE BACKFILLING WITH AMENDED SOILS. CHECK THAT BASIN IS LEVEL BEFORE APPLYING MULCH.
2. THE PLANTING MEDIUM AND MULCH SHALL BE PLACED IN SUCH A WAY AS TO LIMIT THE AMOUNT OF COMPACTION OF THE SUB-SOILS.
3. NO GEOTEXTILE TO BE USED BETWEEN NATIVE AND ENGINEERED SOILS.
4. SHOVEL CUT NATURAL EDGE FOR PLANTING.

1 PROJECT B: DRAINTILE OUTLET SECTION
Scale: 1/2" = 1'-0"



2 RAINGARDEN DETAIL
Scale: 1/2" = 1'-0"



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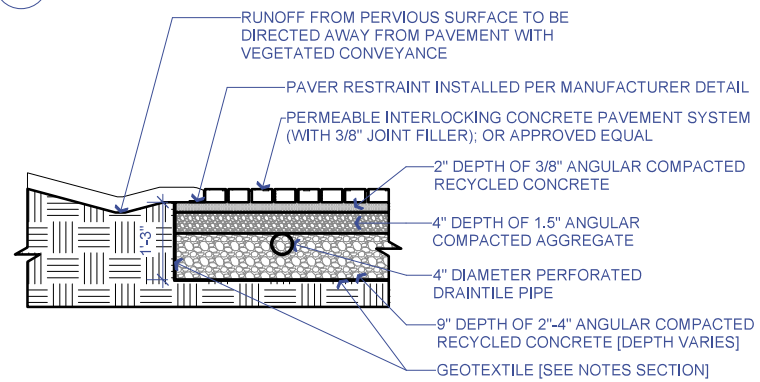
NOTES:
-CONTACT GOPHER STATE ONE CALL TO CONFIRM UTILITY LOCATIONS PRIOR TO WORK
-EXCAVATE WITH TRACKED EQUIPMENT ONLY
-MAINTAIN SQUARE FEET AND DEPTH
-SUBSTITUTIONS TO CONSTRUCTION DESIGN AND MATERIALS MUST BE APPROVED PRIOR TO INSTALLATION
-ORIGINAL SHEET SIZE: 11"x17"

SCALE:

SITE DETAILS A:
RAINGARDENS

L400

1 POROUS PAVEMENT DETAIL
Scale: 1/2" = 1'-0"



RAMSEY COUNTY

RAMSEY COUNTY SWCD
2015 VAN DYKE STREET
MAPLEWOOD, MN 55109
651-266-7280
www.ramseycounty.us

PROJECT: BARNES RESIDENCE
LOCATION:
1474 COUNTY ROAD C2 W
ROSEVILLE, MN 55113

WATERSHED DISTRICT:
RICE CREEK WATERSHED DISTRICT

RCWD RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/7/2025
REVISION:
REVISION:
REVISION:
REVISION:
CHECKED BY: BTO
TAA:

NOTES:
-CONTACT GOPHER STATE ONE CALL TO CONFIRM UTILITY LOCATIONS PRIOR TO WORK
-EXCAVATE WITH TRACKED EQUIPMENT ONLY
-MAINTAIN SQUARE FEET AND DEPTH
-SUBSTITUTIONS TO CONSTRUCTION DESIGN AND MATERIALS MUST BE APPROVED PRIOR TO INSTALLATION
-ORIGINAL SHEET SIZE: 11"x17"

SCALE:

SITE DETAILS B:
POROUS PAVERS

L401

RAMSEY COUNTY
Parks & Recreation

ALL ITEMS AS SPECIFIED BELOW ARE FOR REFERENCE USE ONLY

Scott Barnes
1474 County Rd C2 W
Roseville, MN 55113
BMP Type: Raingarden B
Number of BMPs: 1 of 3

County: Ramsey
Date: 8/8/2025

INSTALLED MATERIALS & LABOR - RAINGARDEN B

Item	Qty	Unit	Unit Cost	Amount
Sod/Vegetation Removal; Raingarden Excavation/Grading & Soil Haul-Away (use excavated soils onsite as possible before soil haul-away)	15.00	CY	$ 120.00	$ 1,800.00
Ripped Sub-Grade Soils	1.00	LS	$ 750.00	$ 750.00
Regrade Swale area; direct flow into raingarden	1.00	LS	$ 1,500.00	$ 1,500.00
Soil Amendment (80% Washed No.2 Sand; 20% MnDOT Grade II Compost)	7.00	CY	$ 110.00	$ 770.00
Aggregate: River Rock (Clean, washed (2-6") or equivalent)	0.25	TON	$ 200.00	$ 50.00
Geotex 401 (or Mirfani 140N: Non-woven geotextile, or equal)	10.00	SF	$ 3.50	$ 35.00
Shovel Cut Natural Edge; or approved equivalent edging material	100.00	LF	$ 3.00	$ 300.00
Twice-Shredded Hardwood Mulch (MnDot Type II)	5.50	CY	$ 110.00	$ 605.00
Native Perennial: 4" Pot; or equivalent [include 1 year plant warranty]	181.00	EA	$ 12.00	$ 2,172.00
Mobilization	1.00	LS	$ 1,000.00	$ 1,000.00
			Subtotal	$ 8,982.00

ADDITIONAL BID ITEMS AS NECESSARY

Subtotal	$ -

PROJECT TOTAL

Project Estimate	$ 8,982.00
:-10%	$ 8,083.80
:+10%	$ 9,880.20
Estimated WD/WMO Grant Award:	$ 4,491.00
Estimated RCPR Grant Award:	$ -
Potential Grant Award Total:	$ 4,491.00
Estimated Landowner Cost:	$ 4,491.00

Soil & Water Conservation Division
2015 Van Dyke Street
Maplewood, MN 55109
www.ramseycounty.us

RAMSEY COUNTY
Parks & Recreation

ALL ITEMS AS SPECIFIED BELOW ARE FOR REFERENCE USE ONLY

Scott Barnes
1474 County Rd C2 W
Roseville, MN 55113
BMP Type: Porous Pavers
Number of BMPs: 3 of 3

County: Ramsey
Date: 8/8/2025

INSTALLED MATERIALS - POROUS PAVERS

Item	Qty	Unit	Unit Cost	Amount
Aggregate: 3/8" Angular Granite	2.50	TON	$ 200.00	$ 500.00
Aggregate: 1.5" Angular Granite	4.75	TON	$ 210.00	$ 997.50
Aggregate: 2"-4" Angular Granite	10.75	TON	$ 210.00	$ 2,257.50
Asphalt/Concrete Removal & Haul Away	370.00	SF	$ 5.00	$ 1,850.00
Soil & Base Excavation, Grading & Haul-Away	14.25	CY	$ 90.00	$ 1,282.50
4" Perferated PVC Drain Tile Pipe - incl. fittings, install, etc.	33.00	LF	$ 12.00	$ 396.00
4" Solid PVC Draint Tile - incl. fittings, install, two clean-outs, etc.	58.00	LF	$ 12.00	$ 696.00
Paver Restraint	14.00	LF	$ 6.00	$ 84.00
Porous Pavers	310.00	SF	$ 6.00	$ 1,860.00
Asphalt Patching	60.00	SF	$ 8.00	$ 480.00
Mobilization	1.00	LS	$ 1,500.00	$ 1,500.00
			Subtotal	$ 11,903.50

ADD/DEDUCT BID ITEMS (AS NECESSARY)

Subtotal $ -

PROJECT TOTAL

Total Project Estimate	$	11,903.50
:-10%	$	10,713.15
:+10%	$	13,093.85

Estimated WD/WMO Grant Award:	$5,951.75
Potential Grant Award Total:	$5,951.75
Estimated Landowner Cost:	$5,951.75

Soil & Water Conservation Division
1425 Paul Kirkwold Drive
Arden Hills, MN 55112
www.ramseycounty.us

Scott Barnes Rain Garden / Paver Proposal				
Bid By Sandstrom Land Management	**Revised 1/10/26**			
BMP 2 of 3 - Rain Garden B				
Item	**Qty**	**Unit**	**unit cost**	**Amount**
Sod removal; Raingarden Excavation/Grading	15	CY	$110.00	$1,650.00
Rip Subgrade Soils	1	LS	$300.00	$300.00
Soil Amendment (20% compost rain garden mix)	7	CY	$100.00	$700.00
Aggregate: River Rock: 2"-6"	0.25	Ton	$200.00	$50.00
Geotex 401 (nonwoven geotextile)	10	SF	$2.00	$20.00
Shovel Cut Natural Edge	100	LF	$2.00	$200.00
Twice-shredded Hardwood mulch	5.5	CY	$100.00	$550.00
Native perrenial: 4" Pots	181	EA	$11.00	$1,991.00
Mobilization	1	LS	$1,000.00	$1,000.00
		BMP 1 of 2	**Subtotal =**	**$6,461.00**
BMP 3 of 3 Porous Pavers				
Item	**Qty**	**Unit**	**unit cost**	**Amount**
Aggregate: 3/8" Angular granite	2.5	Ton	$250.00	$625.00
Aggregate: 1.5" Angular granite	4.75	Ton	$250.00	$1,187.50
Aggregate: 2"-4" Angular granite	10.75	Ton	$250.00	$2,687.50
Asphalt /concrete removal and haul away	370	SF	$3.00	$1,110.00
Soil & Base Excavation, grading, & Haul Away	14.25	CY	$75.00	$1,068.75
4" Sch. Pererated PVC Drain Tile - incl connections	33	LF	$15.00	$495.00
4" Sch. 40PVC Solid draintile Pipe, incl connections	58	LF	$15.00	$870.00
Paver restraint	14	LF	$10.00	$140.00
Porous Pavers	310	SF	$12.50	$3,875.00
Asphalt Patching	60	SF	$7.00	$420.00
Mobilization	1	LS	$1,000.00	$1,000.00
		BMP 3 of 3	**Subtotal =**	**$13,478.75**
Bid Summary		**BMP 2 of 3**		**$6,461.00**
		BMP 3 of 3		**$13,478.75**
			Bid Total =	**$19,939.75**

MEMORANDUM
Rice Creek Watershed District

Date: **February 3rd, 2026**

To: **RCWD Board of Managers**

From: **Molly Nelson, Outreach and Grants Technician**

Subject: **R26-02 White Bear Shoreline Stabilization & Restoration**

Introduction

R26-02 White Bear Township Shoreline Stabilization & Restoration

- Applicant: The City of White Bear Township
- Location: Intersection of W Bald Eagle Blvd & St. Anthony Ave
- Total Eligible Project Cost: $16,390.00
- RCWD Grant Recommendation: $8,195.00 (50%)

Background

The R26-02 White Bear Township Shoreline Stabilization & Restoration Water Quality Grant application proposes a shoreline restoration project on a public parcel on White Bear Lake Locke Lake. The project location was identified by RCWD staff while conducting field work on White Bear Lake and was noted that severe erosion could be spotted from the boat on the lake. RCWD, RSWCD, and city staff met at the site to evaluate the state of the shoreline and determined a stabilization project was necessary. The project scored a value of 14 on the Water Quality Grant program screening form and is eligible for the RCWD Water Quality Grant program. The Ramsey County Soil and Water Conservation Division (RSWCD) drafted the designs for the project and provided recommendations for a cost-share grant award which has been reviewed and approved by RCWD staff.

The estimated pollutant reductions for the proposed project are:

- 3,931 cu-ft/yr reduction in volume (73%)
- 1,614.83 lbs/yr reduction in total suspended solids (TSS) (99%)
- 0.92 lbs/yr total phosphorus (TP) (92%)

The applicant obtained 1 bid for the project:

- Sandstrom Land Management: $16,390.00

The RSWCD provided a cost estimate amounting to $19,831.00, which is higher than the proposed bid on the project.

Staff Recommendation

Based on the submitted application and program guidelines, RCWD staff support the project award of $8,195.00 not to exceed 50% of eligible project expenses of $16,390.00

Request for Proposed Motion

Manager _____ moves to authorize the RCWD Board President, on advice of counsel, to approve the Water Quality Grant Contract for R26-02 of $8,195.00 not to exceed 50% of eligible project costs or up to $10,000.00, whichever amount is lower, as outlined in the consent agenda and in accordance with the RCWD Staff's recommendation and established program guidelines.

Attachments

R26-02 White Bear Township Shoreline Stabilization & Restoration application documents.

Ramsey County Soil & Water Conservation Division

RAMSEY COUNTY
Parks & Recreation

To: RCWD Advisory Committee
From: Brian Olsen: Environmental Resource Specialist
Date: 1/20/2026
Re: White Bear Township Shoreline Cost Share Application

Project: R26-02

Intersection of W. Bald Eagle Blvd & St. Anthony Ave
White Bear Township, MN 55110
Shoreline Stabilization & Restoration

Material & Labor Estimate: $16,390.00
Cost Share Request: $8,195.00

Background:

The proposed project is located at a small Township park property along the south shoreline of Bald EagleLake where W. Bald Eagle Blvd intersects St. Anthony Ave. The existing shoreline is experiencing significant erosion, with extensive areas of exposed soil along a steep cut-face bank. This ongoing erosion is contributing sediment and associated pollutants into Bald Eagle Lake, negatively impacting water quality and shoreline stability.

The proposed project involves shoreline stabilization and restoration using a combination of riprap and bioengineering techniques to regrade, properly slope, and stabilize the existing shoreline. In addition, a native shoreline planting buffer will be installed to enhance long-term stability, provide pollinator habitat, and help filter stormwater runoff from the adjacent park property and roadway. This site was identified by Ramsey County Watershed District (RCWD) staff as a priority restoration area along the Bald Eagle Lake shoreline. Implementation of this project will stabilize the shoreline, reduce sediment inputs to the lake, and establish a resilient, vegetated lake edge that supports long-term ecological health and habitat value.

Total catchment area treated by the proposed project is 3,980 square feet (0.091 acres). It is 40% impervious and includes road, sidewalk, and landscape/turf grass.

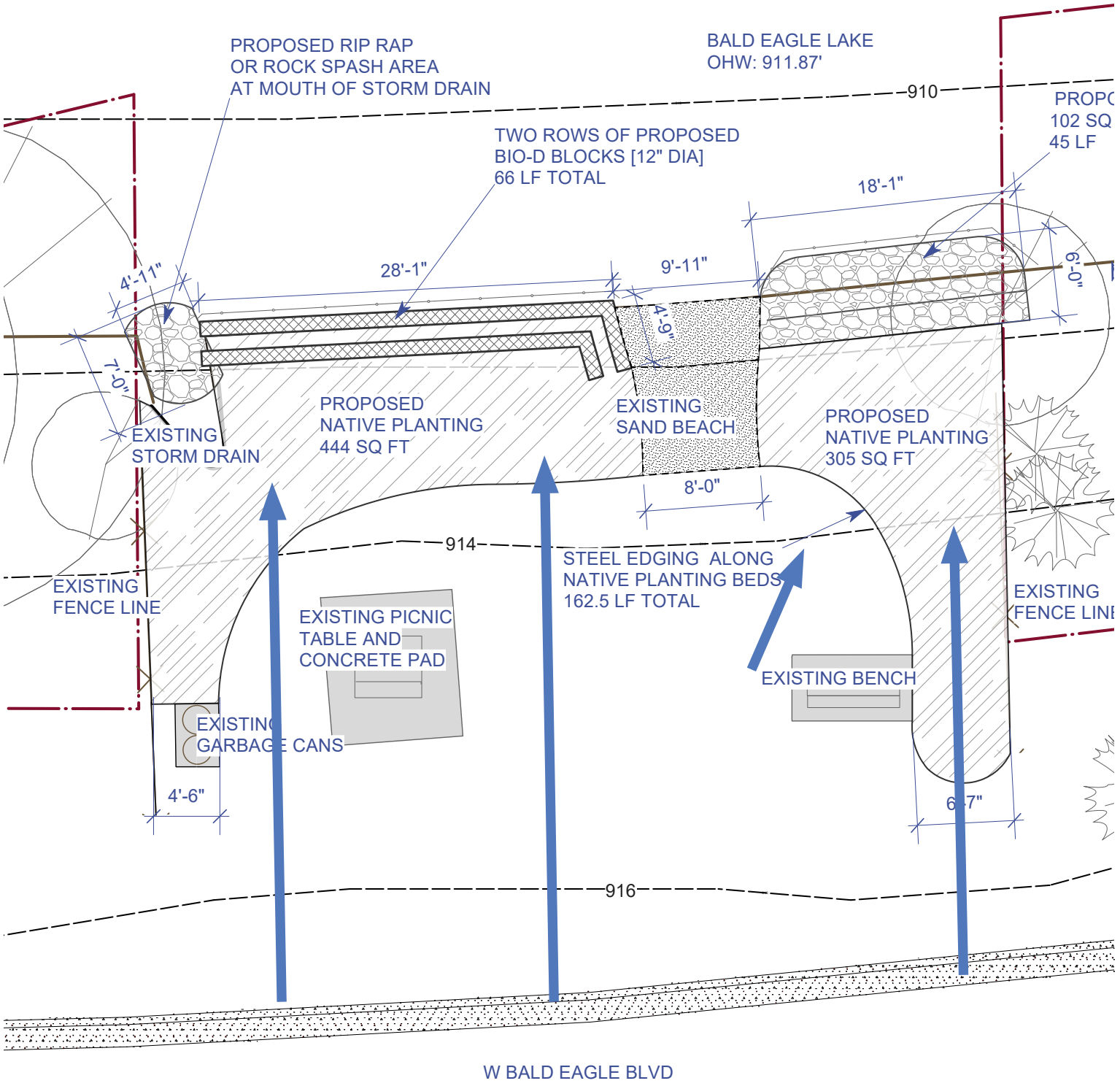
Recommendation:

It is my recommendation that the White Bear Township Shoreline project be awarded cost share in the amount of $8,195.00 or 50% of the eligible project costs, whichever is less.

Pollution Reductions: Porous Pavers

	Before	After	Reduction	Red. %
Volume (cu-ft/yr)	5,385	1,483	3,931	73%
TSS (lbs/yr)	1,635.60	20.77	1,614.83	99%
TP (lbs/yr)	0.994	0.075	0.919	92%

EXHIBIT A: Site Drainage



LEGEND

- PROPOSED BIO D-BLOCK
- PROPOSED NATIVE PLANTING
- PROPOSED FIELD STONE RIP RAP
- EXISTING SAND BEACH
- 2' CONTOUR
- PROPERTY LINE [APPROX]
- PROPOSED SILT FENCE

0 5 10 15 ft

SHORE STABILIZATION NOTES:

1. REMOVE ALL EXISTING VEGETATION WITHIN PROPOSED PROJECT AREA.

2. WATER-SAFE HERBICIDE APPLICATIONS MINIMUM, OR EQUIVALENT MECHANICAL REMOVAL METHOD.

3. CONTRACTOR TO INSTALL ADEQUATE SEDIMENT AND PERIMETER CONTROLS DURING SOIL DISTURBANCE & GRADING ACTIVITIES [I.S. SILT FENCE OR FLOATING SILT CURTAIN AS NEEDED.]

4. PROJECT LAYOUT, TOTAL AREA, AND MATERAILS MAY VARY WITH RCSWCD APPROVAL. VERIFY FINAL LAOUT WITH LANDOWNER/RCSWCD PRIOR TO HERBICIDE APPLICATION.

5. EAST SIDE OF SHORELINE: INSTALL BIO D-BLOCK SOIL LIFTS ALONG SHORELINE AT LOCATIONS SHOWN ON PLAN [9"x16"x10']. INSTALL TWO ROWS WITH 12" OFFEST BETWEEN THEM TO CREATE TIERED SLOPE. SEE NOTES AND SPECIFICATIONS ON SHEET L400.

6. MIDDLE OF SHORELINE: MAINTAIN SANDY SLOPED "BEACH" AREA IN APPROXIMATE AREA SHOWN ON PLAN.

7 EAST SIDE OF SHORELINE: INSTALL NATURAL FIELD STONE RIP RAP [6-24" MIXED SIZE BOULDERS OR EQUIVALENT MIX]. INSTALL PER DNR SPECIFICAITONS AND DETAILS/NOTS PROVIDED ON SHEET L500.

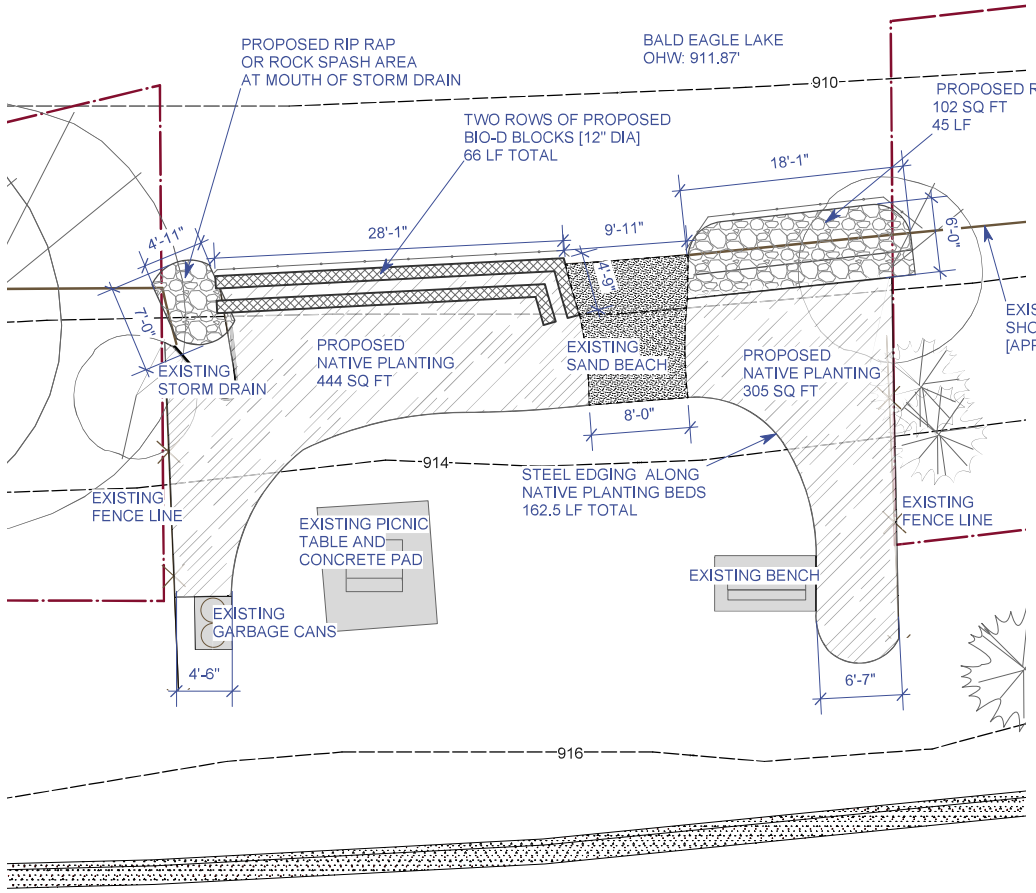
7. INSTALL NATURAL FIELD STONE RIP RAP TO ARMOR AREA IN FRONT OF EXSITING STORM SEWER OUTLET. EXCAVATE SOME SOIL & REMOVE PRIOR TO PLACING THE RIP RAP.

8. INSTALL 3"-THICK TWICE SHREDDED HARDWOOD MULCH IN AREAS ABOVE BIO D-BLOCK & RIP RAP.

9. PLANT PROPOSED NATIVE AREAS WITH SPECIES PER PLANTING PLAN ON SHEETS L200 & L300. EXACT SPECIES, QUANTITIES & LAYOUT MAY VARY WITH RCSWCD STAFF APPROVAL. MAINTAIN APPROXIMATE SQUARE FOOT SIZE OF PLANTING.

10. INSTALL STEEL EDGING BETWEEN PROPOSED PLANTING AREAS & EXISTING TURF/LAWN. INSTALL FLUSH WITH GRADE.

11. RESTORE ANY LANDSCAPE/LAWN DAMAGE OUTSIDE OF PROPOSED PROJECT AREAS. SEED AREAS TO TURF GRASS OR BEE LAWN/CLOVER MIXTURE. VERIFY WITH LANDOWNER AND RCSWCD STAFF PROPOSED LAWN RESTORATION METHODS/SPECIES PRIOR TO INSTALLATION.



LEGEND

- PROPOSED BIO D-BLOCK
- PROPOSED NATIVE PLANTING
- PROPOSED FIELD STONE RIP RAP
- EXISTING SAND BEACH
- 2' CONTOUR
- PROPERTY LINE [APPROX]
- PROPOSED SILT FENCE

0 5 10 15 ft

RAMSEY COUNTY

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2015 VAN DYKE STREET
MAPLEWOOD, MN 55109
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PROJECT:
BALD EAGLE SHORELINE AT ST. ANTHONY AVE & BALD EAGLE BLVD

LOCATION:
W BALD EAGLE BLVD &
ST ANTHONY AVE INTERSECTION
WHITE BEAR TOWNSHIP, MN 55110

RICE CREEK WATERSHED DISTRICT

RCWD
RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/19/2025
REVISION:
REVISION:

CHECKED BY: BTO
TAA: HH

NOTES:
-ELEVATIONS ARE APPROXIMATE
-UTILITY LOCATIONS ARE APPROXIMATE, CONFRIM LOCATIONS PRIOR TO WORK
-CONTRACTOR AQUIRE NECESSARY PERMITS PRIOR TO START
-ORIGINAL SHEET SIZE: 11"x17"

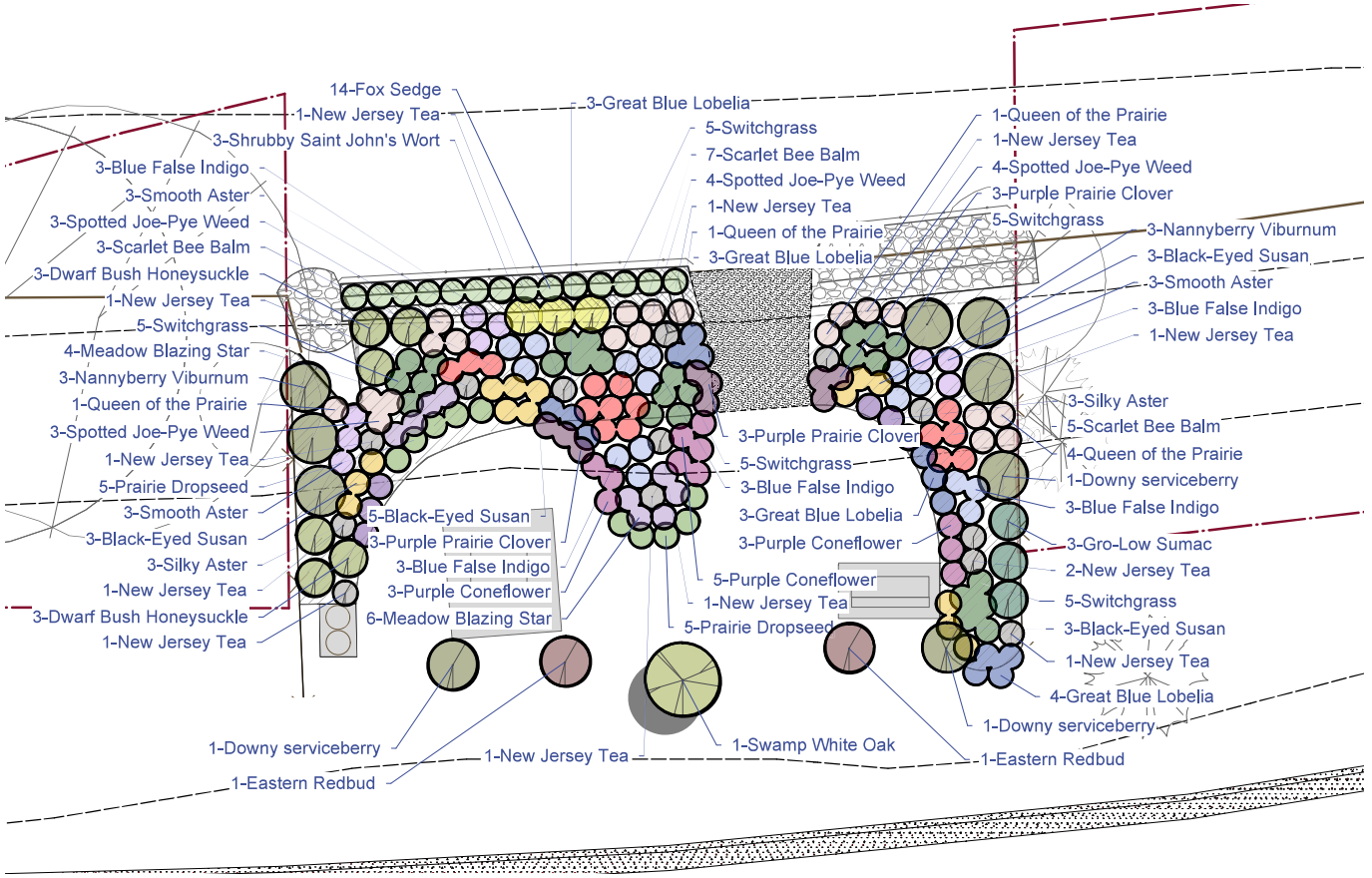
SCALE: 1"= 10'0"

N

SITE PLAN

L100

NOTE:
SEE PLANT SCHEDULE ON SHEET L201 FOR QUANTITY, SIZING, & SPACING INFORMATION.



RAMSEY COUNTY

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PROJECT:
W BALD EAGLE BLVD &
ST ANTHONY AVE
SHORELINE RESTORATION
POCKET PARK
W BALD EAGLE BLVD &
ST ANTHONY AVE INTERSECTION
WHITE BEAR TOWNSHIP, MN 55110

RICE CREEK WATERSHED DISTRICT

RCWD RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/19/2025
REVISION:
REVISION:

CHECKED BY: BTO
TAA:

NOTES:
-CALL GOPHER ONE TO MARK UTILITIES BEFORE DIGGING.
-PLANT SUBSTITUTIONS MUST BE APPROVED BY RCD STAFF
-ORIGINAL SHEET SIZE: 11"x17"

SCALE: 1"=10'0"

N

PLANTING PLAN

L200

NATIVE PLANTING NOTES:

1. EXACT SPECIES, QUANTITIES & SIZING MAY VARY WITH RCSWCD STAFF APPROVAL.

2. CONTRACTOR TO NOTIFY RCSWCD STAFF OF ANY PROPOSED PLANTING ALTERATIONS OR SUBSTITUIONS PRIOR TO INSTALLATION.

3. VERYIFY ALL PROPOSED TREE & SHRUB PLACEMENTS WITH LANDOWNER PRIOR TO INSTALLATION.

4. CONTRACTOR TO WATER PLANTS IMMEDIATELY UPON INSTALLATION. ADDITIONAL WATERING AND ESTABLISHMENT CARE TO BE LANDOWNER RESPONSIBILITY UNLESS OTHERWISE CONTRACTED BETWEEN LANDOWNER & CONTRACTOR.

PLANT SCHEDULE

ID	Qty	Latin Name	Common Name	Size	Spacing (ft)
F2	9	Aster laevis	Smooth Aster	4" Pot	2
F9	6	Symphyotrichum sericeum	Silky Aster	4" Pot	2
F13	14	Rudbeckia hirta	Black-Eyed Susan	4" Pot	2
F38	13	Lobelia siphilitica	Great Blue Lobelia	4" Pot	2
F44	14	Eupatorium maculatum	Spotted Joe-Pye Weed	4" Pot	2
F48	10	Liatris ligulistylis	Meadow Blazing Star	4" Pot	2
F62	11	Echinacea purpurea	Purple Coneflower	4" Pot	2
F65	9	Daela purpurea	Purple Prairie Clover	4" Pot	2
F70	15	Monarda didyma	Scarlet Bee Balm	4" Pot	2
F97	7	Filipendula rubra	Queen of the Prairie	4" Pot	2
F109	15	Baptisia australis	Blue False Indigo	4" Pot	2
G11	10	Sporobolus heterolepis	Prairie Dropseed	4" Pot	2
G23	25	Panicum virgatum	Switchgrass	4" Pot	2
P15	14	Carex vulpinoidea	Fox Sedge	4" Pot	2
S5	6	Diervilla lonicera	Dwarf Bush Honeysuckle	2 Gallon	3
S6	3	Rhus aromatica 'Gro-low'	Gro-Low Sumac	2 Gallon	3
S20	3	Amelanchier arborea	Downy serviceberry	2 Gallon	4
S25	13	Ceanothus americanus	New Jersey Tea	4" Pot	2
S29	6	Viburnum lentago	Nannyberry Viburnum	2 Gallon	4
S54	3	Hypericum profilicum	Shrubby Saint John's Wort	4" Pot	3
T1-1	1	Quercus bicolor	Swamp White Oak	10 Gallon	6
T11	2	Cercis canadensis	Eastern Redbud	10 Gallon	4
	209	**TOTAL PLANTS**			

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RICE CREEK WATERSHED DISTRICT
RCWD
RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/19/2025
REVISION:
REVISION:

CHECKED BY: BTO
TAA:

NOTES:
-CALL GOPHER ONE TO MARK UTILITIES BEFORE DIGGING
[PLANT LOCATION MAY VARY]
-PLANT SUBSTITUTIONS MUST BE APPROVED BY RCD STAFF
-ORIGINAL SHEET SIZE: 11"x17"

SCALE: N/A

N

PLANTING SCHEDULE

L201

BIO D-BLOCK INSTALLATION SHORELINE NOTES:

1. INSTALL 2 ROWS OF BIO D-BLOCK ALONG SHORELINE AT LOCATIONS SHOWN ON PLAN SHEET. SECURE WITH HARDWOOD STAKES AND INSTALL PER MANUFACTURERS SPECIFICATIONS & PER THIS DETAIL SHEET.

2. INSTALL 12" PLANTING BED BETWEEN THE STAGGERED ROWS OF BIO D-BLOCK. [SEE SECTION DETAIL] PLANT AREA WITH NATIVE SPECIES PER PLANTING PLAN.

3. FIRST LAYER OF BIO D-BLOCK TO HAVE BASE LAYER OF ANGULAR CLEAR ROCK INSTALLED TO ANCHOR & STABILIZE TOE. [1.5" CLEARR ANGULAR GRANITE OR EQUIVALENT APPROXIMATELY 3-4" THICK]

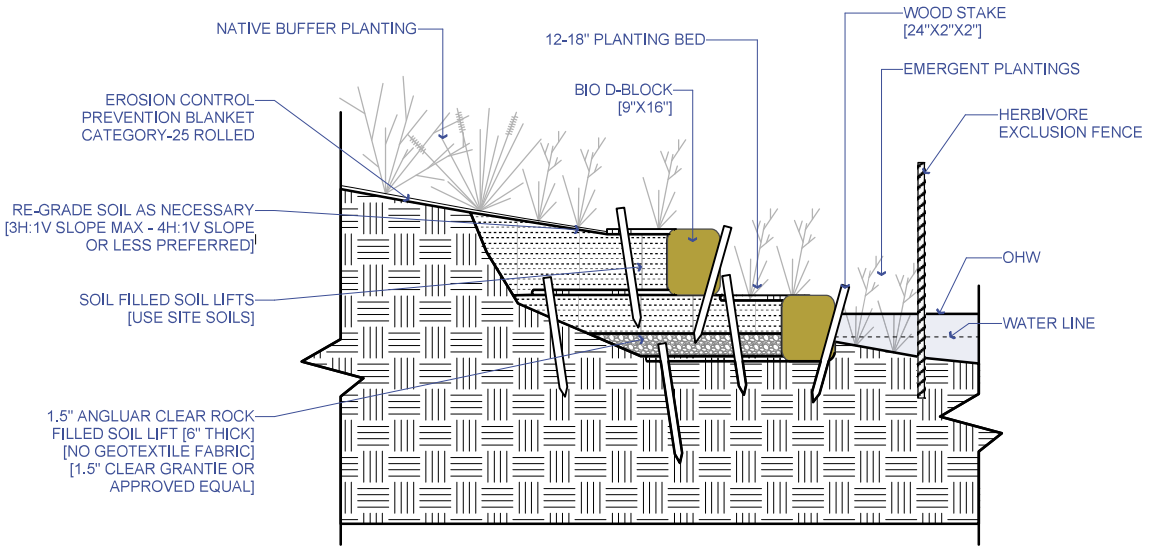
4. HERBIVORE EXCLUSION FENCE TO BE INSTALLED AROUND ENTIRE PERIMETER OF NATIVE PLANTING. METAL STAKES & VINYL-COATED GREEN WIRE FENCING OR APPROVED EQUIVALENT. FENCE TO REMAIN IN PLACE FOR MINIMUM 1-2 GROWING SEASONS AS PLANTS ESTABLISH.

5. INSTALL TWICE SHREDDED HARDOOD MULCH OVER PLANTING AREAS ABOVE BIO D-BLOCK. PLANT WITH NATIVE SPECIES.

6. BIO D-BLOCK 16-400 [16"x9"x10'] MATERIAL TO BE USED OR APPROVED EQUAL. SEE MANUFACTURERS SPECIFICATIONS FOR ADDITIONAL INFORMATION & INSTALLATION INSTRUCTIONS.

7. CONTRACTOR TO FOLLOW MNDOT STANDARD PLATE GUIDELINES FOR TEMPORARY AND PERMANENT EROSION CONTROL ON SITE AS NEEDED.

1 BIO D-BLOCK STANDARD SHORELINE SECTION [TYP]
Scale: 1:38



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RICE CREEK WATERSHED DISTRICT
RCWD RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/19/2025
REVISION:
REVISION:

CHECKED BY: BTO
TAA:

NOTES:

SCALE: 1"=38'0"
N

SITE DETAILS: BIO-D BLOCK

L300

SHORELINE RIP RAP DETAIL NOTES:

1. RIP RAP GRADATION TO BE 6-24" NATURAL FIELDSTONE ROCK, USE MNDOT CLASS III RIP RAP ROCK OR APPROVED EQUAL. VERIFY SIZING WITH RAMSEY COUNTY STAFF PRIOR TO PURCHASE & INSTALLATION.

2. THE LARGEST ROCK OF THE RIP RAP SHOULD BE PLACED OVER THE TOE AND END TO ANCHOR THE INSTALLATION. USE TYPE A TOE DESIGN [SEE NRCS TECH NOTE 2 FIGURE 2-5] DUMPED ROCK WILL BEST ADJUST ITSELF TO AN UNEVEN AREA. HAND PLACED ROCK IS EASILY DISRUPTED.

3. RIP RAP SLOPE NOT TO EXCEED 3H:1V WATERWARD OF THE OHW. [FOLLOW NATURAL SHORE ALIGNMENT]

4. INSTALL FILTER/SETTING BED OF 1.5" CLEAN WASHED AGGREGATE. APPROXIMATELY 4-6" THICKNESS OF FILTER BED ROCK. [DO NOT USE LANDSCAPE FABRIC]

5. RE-GRADE AREA ABOVE RIP RAP [3H:1V SLOPE MAXIMUM]. INSTALL 2-3"-THICK TWICE SHREDDED HARDWOOD MULCH [MNDOT TYPE 6]. PLANT AREA WITH NATIVE SPECIES PER PLANTING PLAN.

6. THE RIP RAP MUST BE NO MORE THAN 6 FEET WATERWARD OF THE ORDINARY HIGH WATER LEVEL.

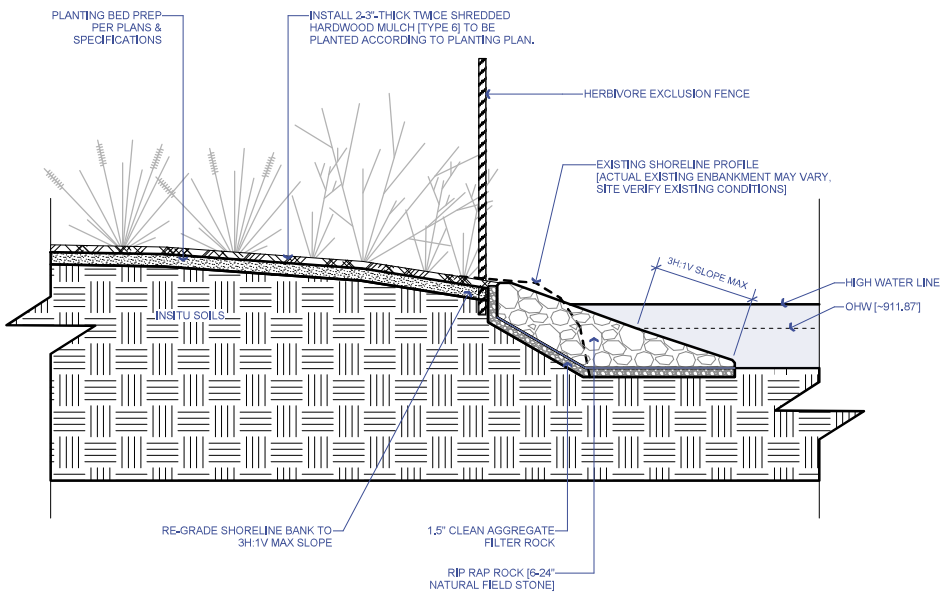
7. THICKNESS OF RIP RAP PERPENDICULAR TO THE SLOPE TO BE APPROXIMATELY 18-24" TO ENSURE PROPER ROCK COVERAGE.

8. TEMPORARY HERBIVORE EXCLUSION FENCE TO BE INSTALLED AROUND ENTIRE PERIMETER OF NATIVE PLANTING. EXCLUSION FENCE TO BE INSTALLED PER PLANS & SPECIFICATIONS. [METAL T-POSTS, 4' GREEN VINYL-COATED WIRE FENCING OR EQUAL]

9 EXISTING BANK HEIGHT, WATER LEVEL, AND SITE CONDITIONS MAY VARY. CONTRACTOR TO SITE VERIFY EXISTING CONDITIONS DURING BID PREPARATION AND PRIOR TO DELIVERY AND INSTALLATION OF MATERIALS.

10. CONTRACTOR TO FOLLOW MNDOT STANDARD PLATE GUIDELINES FOR TEMPORARY AND PERMANENT EROSION CONTROL ON SITES.

1 RIP RAP STANDARD SHORELINE SECTION [TYP]
Scale: 1:35



RAMSEY COUNTY

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MAPLEWOOD, MN 55109
651-266-7280
www.ramseycounty.us

PROJECT:
W BALD EAGLE BLVD &
ST ANTHONY AVE
SHORELINE RESTORATION
POCKET PARK
W BALD EAGLE BLVD &
ST ANTHONY AVE INTERSECTION
WHITE BEAR TOWNSHIP, MN 55110

RICE CREEK WATERSHED DISTRICT
RCWD
RICE CREEK WATERSHED DISTRICT

DESIGNER: LACEY DOUCET CAMPBELL
DATE: 8/14/2025
REVISION:
REVISION:

CHECKED BY: BTO
TAA:

NOTES:

SCALE: 1"=35'0"

N

SITE DETAILS:
RIP RAP

L400

White Bear Township - Shoreline
OPINION OF COST
DATE: 8/21/2025

Item #	Item Description	Unit	Estimated Quantity	Unit Price	Item Cost
1	NATIVE PERENNIAL/SHRUB: 4" POT	EA	188.00	$ 12.00	$ 2,256.00
2	NATIVE SHRUB: 2 GALLON	EA	18.00	$ 20.00	$ 360.00
3	NATIVE TREE: 10 GALLON	EA	3.00	$ 250.00	$ 750.00
4	TREE WATERING BAGS: TREEGATOR OR EQUIV.	EA	3.00	$ 25.00	$ 75.00
5	TEMPORARY EXCLUSION FENCE	LF	205.00	$ 5.00	$ 1,025.00
6	MULCH MATERIAL TYP 6 (2-3" DEPTH)	CY	7.00	$ 115.00	$ 805.00
7	EDGING [STEEL]	LF	75.00	$ 14.00	$ 1,050.00
8	GRADING (SHORELINE SHAPING AS NEEDED FOR 3H:1V SLOPE MAX)	CY	15.00	$ 150.00	$ 2,250.00
9	RIP RAP FILTER ROCK (1.5" WASHED ANGULAR ROCK)	TON	3.00	$ 200.00	$ 600.00
10	RIP RAP ROCK (NATURAL FIELD STONE 6-24" DIAMETER)	TON	12.00	$ 260.00	$ 3,120.00
11	BIO D-BLOCK 16-400 [9"x16"x10']	LF	66.00	$ 65.00	$ 4,290.00
12	MOBILIZATION	LS	1.00	$ 1,500.00	$ 1,500.00
13	PERIMITER/SEDIMENT & EROSION CONTROL AS NEEDED	LS	1.00	$ 1,000.00	$ 1,000.00
14	SITE RESTORATION – (TURF/LANDSCAPE REPAIR AS NEEDED)	LS	1.00	$ 750.00	$ 750.00
	Project Subtotal	**$**			**19,831.00**
				ESTIMATED RCWD GRANT	$ 10,000.00
				ESTIMATED LANDOWNER COST	$ 9,831.00

White Bear Township Shoreline Quote	By Sandstrom Land Management			
Bald Eagle Lake	Date of Quote =11/11/25			
by Bald Eagle Blvd & St Anthony				
Item #	Item Description	Qty	Unit	unit cost	Amount
1	Native Perrenial / Shrub: 4" Pots	188	each	$10.00	$1,880.00
2	Native Shrub: 2 gal	18	each	$40.00	$720.00
3	Native Tree: 10 gal	3	each	$400.00	$1,200.00
4	Tree Watering Bags: Treegator or equiv.	3	each	$40.00	$120.00
5	Temporary Exclusion Fence	205	LF	$2.00	$410.00
6	Mulch Type 6 (2"-3" depth)	7	CY	$75.00	$525.00
7	Edging (steel)	75	LF	$8.00	$600.00
8	Grading (for 3:1 slope)	15	CY	$75.00	$1,125.00
9	Riprap filter rock (1.5" angular rock)	3	Ton	$150.00	$450.00
10	Riprap (natural stone 6"-24"dia)	12	Ton	$200.00	$2,400.00
11	Bio D-Block 16-400 (9"x16"x10")	66	LF	$60.00	$3,960.00
12	Mobilization	1	LS	$2,000.00	$2,000.00
13	Perimeter / Sediment control	1	LS	$500.00	$500.00
14	Site Restoration	1	LS	$500.00	$500.00
		Total =			**$16,390.00**

PUBLIC HEARING: 2026 STORMWATER MANAGEMENT GRANT PROGRAM

MEMORANDUM
Rice Creek Watershed District

Date: January 28th, 2026
To: RCWD Board of Managers
From: Will Roach, Watershed Technician/Inspector
Subject: 2026 Stormwater Management Grant Program – Public Hearing

Introduction

District staff will host a public hearing to receive comments from the public regarding the six eligible Stormwater Management Grant applications.

Background

The District received six applications from four different applicants for funding through its 2026 Stormwater Management Grant Program. These Applications are attached to this memo. District staff will provide a summary presentation during a duly noticed public hearing to be held on February 11th, 2026, during the Board's regular meeting. No action will be taken druing February 11th meeting. After public comment, the Board is invited to to ask questions or provide preliminary comments to District staff regarding the applications. Board action on the applications is scheduled for the February 25th, 2026, Board meeting. A summary of the applications can be found on the following page.

Attachments
Stormwater Management Grant Applications (6).

Note: Submitted answers to SMG 2026 Application Forms may be incomplete when presented via certain formats, including printed paper. To accommodate, 'Expanded Answers' sections have been added, immediately following each Application Form.

1. **Arden Hills – 2026 PMP Street & Utility Improvements (Karth Pond)**
    a. Target Waterbody: Karth Lake & Valentine Lake
    b. Total Project Cost: $174,583
    c. Requested Grant: $87,291.50

2. **Arden Hills – 2026 PMP Street & Utility Improvements (Karth SAFLs)**
    a. Target Waterbody: Karth Lake, Valentine Lake, and Wetland Area
    b. Total Project Cost: $61,105
    c. Requested Grant: $30,552.50

3. **Lino Lakes – Regenerative Air Sweeper & Enhanced Street Sweeping**
    a. Targeted Waterbody: Rice Creek Chain of Lakes, Peltier, Baldwin, Bald Eagle.
    b. Total Project Cost: $425,000
    c. Requested Grant: $100,000

4. **New Brighton – Knollwood Pond Overflow**
    a. Targeted Waterbody: Rice Creek & Knollwood Pond
    b. Total Project Cost: $250,000
    c. Requested Grant: $100,000

5. **Shoreview- Target Pond Improvements**
    a. Targeted Waterbody: Valentine Lake
    b. Total Project Cost: $163,545
    c. Requested Grant: $81,772.50

6. **Shoreview – 2026 Storm Improvements**
    a. Targeted Waterbody: Island Lake
    b. Total Project Cost: $570,000
    c. Requested Grant: $100,000

Rice Creek Watershed District
Stormwater Management Grant Program
2026 Application Form

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Arden Hills

Street Address: 1245 West Highway 96

City, State, Zip: Arden Hills, MN 55112

Tax Status: Local Government Tax ID#: 9047998

(e.g., local government, non-profit 501(c)(3), private business, etc.)

II. PROJECT CONTACTS

Project Officer: David Swearingen Financial Officer: Jessica Jagoe

Title: Public Works Director/City Engineer Title: City Administrator/Finance Director

Telephone: 651-792-7847 Telephone: 651-792-7810

Fax: Fax:

Email: dswearingen@cityofardenhills.org Email: jjagoe@cityofardenhills.org

III. PROJECT INFORMATION

Project Name: 2026 PMP Street & Utility Improvements

Location(s) of Project: Karth Lake

City: Arden Hills State: MN County: Ramsey

Project Start Date: Spring 2026 Project Completion Date: Fall 2026

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Peak Runoff Rate Control Project
- [ ] Runoff Volume Control / Flood Storage Project
- [ ] Other:

Is a RCWD Rule C permit required for this project? [ ] YES [x] NO [ ] UNKNOWN

IV. GRANT REQUEST

RCWD Grant Funding Requested: $ 87,291.50

Applicant Match Funding Committed: $ 87,291.50

Total Estimated Project Cost: $ 174,583.00

Would you be willing to accept grant funding in an amount less than requested? [x] YES [ ] NO

V. SIGNATURE OF APPLICANT

I certify that the information contained within this application is true and accurate.

David Swearingen Digitally signed by David Swearingen Date: 2025.12.24 08:21:40 -06'00' 12/24/2025

Signature of Project Officer Date

VI. Executive Summary / Abstract

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match. The summaries will be used in the grant review process and on the RCWD website for projects that are funded.

The City of Arden Hills proposes a stormwater pond with the 2026 PMP Street & Utility Improvements project. This pond will provide water quality treatment by reducing sediment and phosphorus before runoff enters Karth Lake. The improvement supports watershed protection goals, aligns with recommendations from the Southwest Urban Lakes Study, and complements other planned BMPs with the project, including sump structures with SAFL Baffles and the Karth

VII. Description (10 points)

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD lake classified as either "Protection" or "Restoration" (see Table 2-4 in the RCWD 2020 Watershed Management Plan), and/or a waterbody with an approved Total Maximum Daily Load (TMDL) study or other recognized diagnostic water quality study. Flood storage and runoff rate control projects should focus on reducing peak flood elevations in known regional flood hazard areas and/or documented local problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

Name the target waterbody benefiting from this project: Karth Lake & Valentine Lake

List and describe the Best Management Practices (BMPs) to be incorporated into this project

The 2026 PMP Street & Utility Improvements project includes the construction of a stormwater pond designed to provide dedicated water quality treatment before runoff discharges to Karth Lake and ultimately Valentine Lake. Stormwater ponds improve water quality through physical, biological, and chemical processes, with the primary treatment

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

The project maintains a net-zero increase in impervious surface, ensuring no additional

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

Describe how long-term operation and maintenance of the project will be accomplished and identify the individual(s) responsible for maintenance activities if different than the project officer listed in section 2.

The stormwater pond is designed to reduce sediment and phosphorus loading prior to discharge into Karth Lake, and ultimately Valentine Lake. By capturing and settling sediment within the pond, the amount of material reaching Karth Lake will be reduced, lowering long-term sediment accumulation and decreasing the frequency and cost of future lake maintenance activities such as dredging. Routine inspections and sediment removal will be completed by City staff in

VIII. Prioritization (20 points)

How does the project support existing regional planning efforts such as the RCWD Watershed Management Plan, municipal surface water management plans, TMDLs, or other recognized diagnostic studies? Is the project included on the Member Community Project List (Appendix G) within the RCWD Watershed Management Plan? Please provide citations where possible.

This project supports RCWD goals identified in the Watershed Management Plan by advancing water quality protections for Karth Lake, and ultimately Valentine Lake, resources highlighted for improvement in local and regional planning. The stormwater pond is Phase 2 of the previously completed Karth Lake BMP #1 project, included on the Member Community

IX. Targeting (15 points)

Describe the critical pollution or flooding sources and risks addressed by this project. Explain why the proposed project is the most cost-effective and feasible means to attain the expected resource benefits. Has a formal analysis been conducted to substantiate this position?

Runoff from the contributing drainage areas currently carries sediment and phosphorus to Karth Lake, affecting water quality and contributing to long-term maintenance needs such as dredging. The proposed stormwater pond will help address these issues by capturing sediment and providing permanent pool treatment before water reaches Karth Lake and, ultimately, Valentine Lake. Because the pond is being constructed as part of the larger 2026 PMP Street & Utility Improvements project, it offers a cost-effective opportunity to add

X. Measurable Outcomes (20 points)

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, XP-SWMM, MIDS, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions and/or hydrologic outcomes. **(Mandatory for RCWD to consider your proposal!)**

The proposed BMPs will significantly reduce pollutant loading to Karth Lake, and ultimately Valentine Lake. Modeling using MIDS indicates an estimated removal of 84% Total Suspended Solids (1596.8 lbs) and 50% Total Phosphorus (5.211 lbs) to Karth Lake, and ultimately Valentine Lake, annually from the contributing drainage areas. These reductions will improve water quality and reduce sediment accumulation in downstream systems, minimizing future dredging and maintenance costs. Effectiveness will be monitored through routine inspections and sediment removal records, ensuring measurable and sustained water quality benefits.

XI. Cost-Effectiveness (15 points)

Provide a detailed budget that lists each item for which funding is being requested. You must also list the sources of required local matching contributions. Please provide a summary that demonstrates why this is the most cost-effective approach to solving the problem. Or, have other alternatives been explored, and if so, why were they determined to not be the best alternative? What is the anticipated lifespan of the practice? **(Attach separate sheets if needed.)**

See attached cost estimate for the project elements which funding is being requested for. Matching funds will be provided from a combination of the City of Arden Hills Surface Water Management Utility Fund and its PIR Fund. This is the most cost effective solution because the pond is being constructed as part of the larger 2026 PMP Street & Utility Improvements project and therefore does not have the additional expense of a standalone project. This stormwater improvement approach provides substantial pollutant reduction while minimizing new infrastructure costs.

XII. Project Readiness (10 points)

Please describe the anticipated timeline for implementing this project. What steps have been taken to ensure that the project can be implemented according to this timeline? Are any permits needed? (If permits are required please cite from what agency and where the project is in that process).

The work identified is part of the City of Arden Hills 2026 PMP Street & Utility Improvements project which is scheduled to be constructed over the 2026 construction season. This overall project is already under design and will be bid in late winter/early spring of 2026. The overall project requires some permits but the stormwater pond work described does not require any permits to proceed.

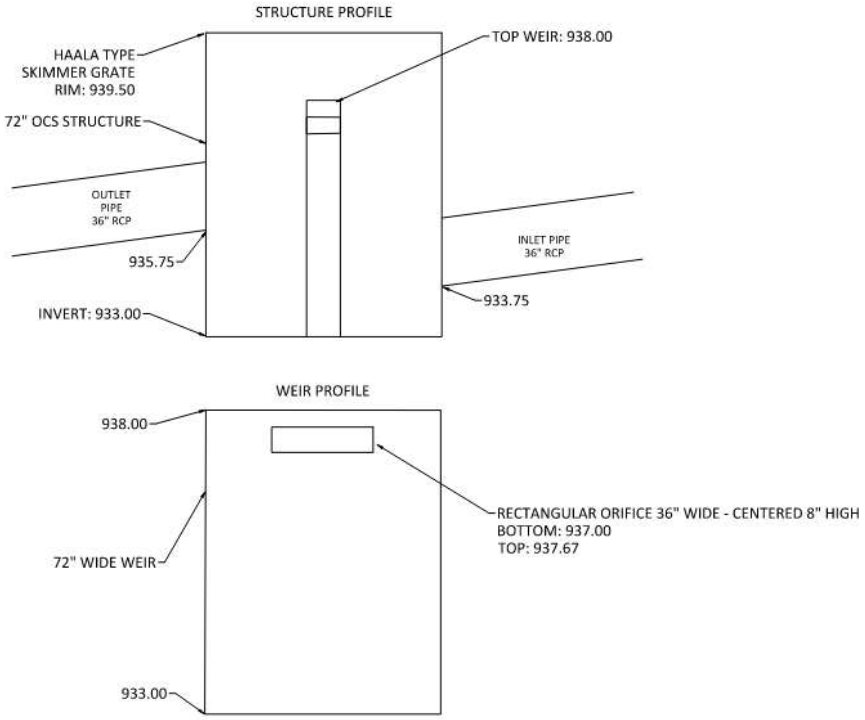
XIII. Engagement Opportunities (10 points)

Demonstrate any potential for public engagement, education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. Applicants must incorporate a public engagement component into the project.

The purpose of the stormwater pond and the reason for inclusion in the project will be made known to the public through a project summary included in a Community Newsletter.

FIGURE 3: STORMWATER POND BMP

DECEMBER 2025



DRAINAGE STRUCTURE DESIGN SPECIAL 4 (OCS)

NOT TO SCALE

2026 Arden Hills PMP Street & Utility Improvements Project
MIDS Calculator - Water Quality Removals - Stormwater Pond Results

Summary Information:

Impervious area not routed to a BMP
0 acres

Pervious area not routed to a BMP
0 acres

Performance goal requirement
21744 ft^3

Performance goal reduction achieved
ft^3

Percent TP reduction achieved
50 %

Percent TSS reduction achieved
84 %

Site Information | Schematic | Results

Project Name: Arden Hills PMP 2026
User Name/Company Name: BMI
Date: 12/10/2025
Project Description:
Wet Pond for Boston Scientific Site.

Are you using the calculator to determine compliance with a Construction Stormwater permit? No

Retention Requirement (inches)	1.1
Site's Zip Code	55112
Annual Rainfall (inches)	31.5
Phosphorus EMC (mg/l)	0.3
TSS EMC (mg/l)	54.5

Land Cover	A soils (acres)	B soils (acres)	C soils (acres)	D soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/ open space or reforested land		4.97524			4.97524
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed		0.527261			0.527261
				Impervious Area	5.445601
				Total Area	10.94810

Summary Information:

Impervious area not routed to a BMP
0 acres

Pervious area not routed to a BMP
0 acres

Performance goal requirement
21744 ft^3

Performance goal reduction achieved
ft^3

Percent TP reduction achieved
50 %

Percent TSS reduction achieved
84 %

Site Information | Schematic | Results

BMPs

Schematic

1 - Constructed stormwater pond

Other

Site Information | Schematic | Results

Project Information

Calculator Version:	Version 4: July 2020
Project Name:	Arden Hills PMP 2026
User Name / Company Name:	BMI
Date:	12/10/2025
Project Description:	Wet Pond for Boston Scientific Site.
Construction Permit?:	No

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	55112
Annual Rainfall (inches):	31.5
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land		4.97524			4.97524
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed		0.527261			0.527261
				Impervious Area (acres)	5.445601
				Total Area (acres)	10.948102

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land		4.97524			4.97524
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed		0.527261			0.527261
				Impervious Area (acres)	5.445601
				Total Area (acres)	10.948102

Site Information | Schematic | Results

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	21744	ft3
Volume removed by BMPs towards performance goal:		ft^3
Percent volume removed towards performance goal		**%**

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	12.8237	acre-ft
Annual runoff volume removed by BMPs:	0	acre-ft
Percent annual runoff volume removed:	**0**	**%**
Post development annual particulate P load:	5.7553	lbs
Annual particulate P removed by BMPs:	4.834	lbs
Post development annual dissolved P load:	4.709	lbs
Annual dissolved P removed by BMPs:	0.377	lbs
Total P removed by BMPs	5.211	lbs
Percent annual total phosphorus removed:	**50**	**%**
Post development annual TSS load:	1901	lbs
Annual TSS removed by BMPs:	1596.8	lbs
Percent annual TSS removed:	**84**	**%**

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained (%)
1 - Constructed stormwater pond	0	21744	0	21744	0

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)
1 - Constructed stormwater pond	12.8237	0	0	12.8237	0

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Constructed stormwater pond	5.7553	0	4.8345	0.9208	84

Site Information | Schematic | Results

Dissolved Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Constructed stormwater pond	4.7089	0	0.3767	4.3322	8

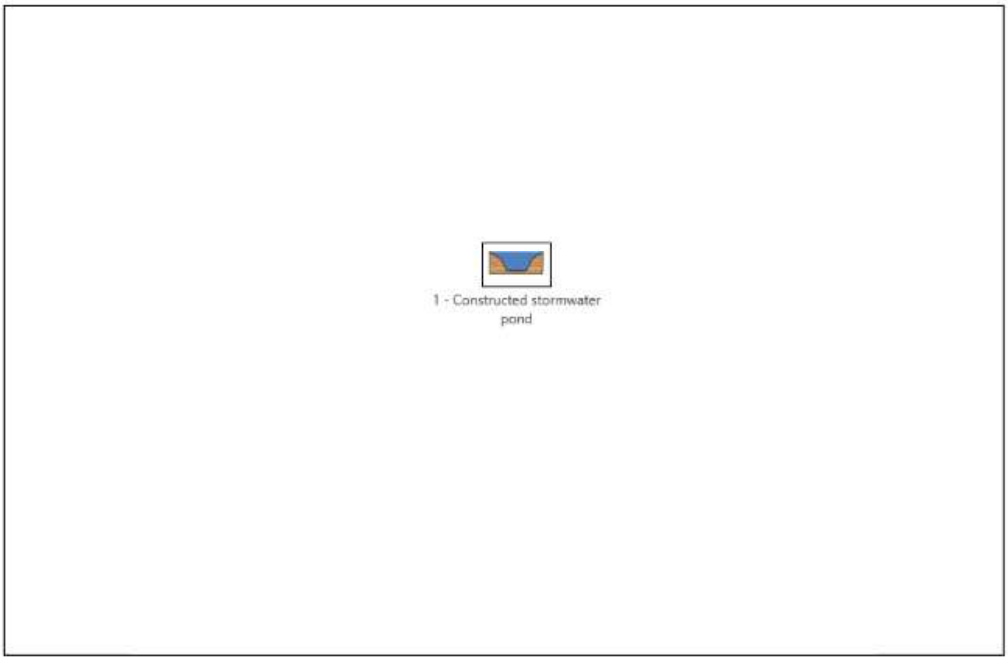
Total Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Constructed stormwater pond	10.4642	0	5.2112	5.253	46

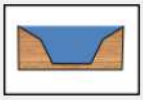
TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Constructed stormwater pond	1900.99	0	1596.83	304.16	84

BMP Schematic



BMP Properties: 1 - Constructed stormwater pond



Watershed | BMP Parameters | BMP Summary

BMP Name: 1 - Constructed stormwater pond

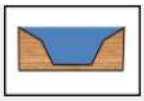
Routing/downstream BMP:

Minnesota Stormwater Manual Wiki

BMP Watershed Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land		4.97524			4.97524
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed		0.527261			0.527261
		Impervious Cover (acres)			5.445601
		Total Area (acres)			10.9481

BMP Properties: 1 - Constructed stormwater pond



Watershed | BMP Parameters | BMP Summary

Constructed Stormwater Pond

Bypass %: 0 %

Have amendments to attenuate phosphorus be incorporated? No

Pond Design Level: Design Level 2

Percent annual particulate P removal rate: 84 %

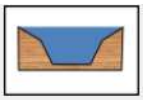
Percent annual dissolved P removal rate: 8 %

Percent annual TSS removal rate: 84 %

This BMP does not provide volume reduction towards the performance goal or on an annual basis. Please select a Design Level to determine pollutant removal rates.

Requirements for each Design Level are explained in the Requirements, recommendations, and information for using sand filter as a BMP in the MIDS Calculator page in the Minnesota Stormwater Manual wiki. To access hit the Help button below.

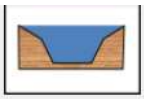
BMP Properties: 1 - Constructed stormwater pond



Watershed | BMP Parameters | BMP Summary

Performance Goal Summary		
Water volume from direct watershed:	21744	ft^3
Water volume from upstream BMPs:	0	ft^3
Total water volume routed to BMP:	21744	ft^3
Retention volume provided by BMP:	0	ft^3
Outflow volume:	21744	ft^3
Percent of Performance Goal achieved:	**0**	**%**
Annual Summary		
Annual water volume from direct watershed:	12.8237	acre-ft
Annual water volume from upstream BMPs:	0	acre-ft
Annual retention volume provided by BMP:	0	acre-ft
Annual outflow volume:	12.8237	acre-ft
Percent annual runoff volume retained:	**0**	**%**
Percent annual Particulate P reduction (via non volume reduction treatment)	84	%
Particulate P load from direct watershed:	5.755	lbs
Particulate P load from upstream BMPs:	0	lbs
Particulate P load reduction:	4.834	lbs
Particulate P load bypass	0	lbs
Particulate P load outflow:	0.921	lbs
Total percent annual Particulate P reduction:	**84**	**%**
Percent annual Dissolved P reduction (via non volume reduction treatment)	8	%

BMP Properties: 1 - Constructed stormwater pond



Watershed | BMP Parameters | BMP Summary

Particulate P load from upstream BMPs:	0	lbs
Particulate P load reduction:	4.834	lbs
Particulate P load bypass	0	lbs
Particulate P load outflow:	0.921	lbs
Total percent annual Particulate P reduction:	**84**	**%**
Percent annual Dissolved P reduction (via non volume reduction treatment)	8	%
Dissolved P load from watershed:	4.709	lbs
Dissolved P load from upstream BMPs:	0	lbs
Dissolved P load reduction:	0.3767	lbs
Dissolved P Bypass	0	lbs
Dissolved P load outflow:	4.3322	lbs
Total percent annual Dissolved P reduction:	**8**	**%**
Total percent annual TP reduction:	**50**	**%**
Percent annual TSS reduction (via non volume reduction treatment)	84	%
TSS load from watershed:	1900.99	lbs
TSS load from upstream BMPs:	0	lbs
TSS load reduction:	1596.83	lbs
TSS Annual Bypass:	0	lbs
TSS load outflow:	304.16	lbs
Total percent annual TSS reduction	**84**	**%**

ENGINEER'S ESTIMATE FOR RCWD STORMWATER GRANTS

2026 PMP STREET & UTILITY IMPROVEMENTS

CITY OF ARDEN HILLS, MINNESOTA

CITY PROJECT NO. PW-26-0100

BMI PROJECT NO. 25X.137753

12/23/2025

ITEM NO.	SPEC. REF	DESCRIPTION	UNIT	RESIDENTIAL MILL AREAS SUMP/SAFLS		RESIDENTIAL RECLAMATION AREAS SUMP/SAFLS		RETAINING WALL/SHORELINE STABILIZATION	STORMWATER POND BMP	TOTAL ESTIMATED QUANTITY	ESTIMATED UNIT PRICE	ESTIMATED TOTAL PRICE
				STREET	STORM	STREET	STORM					
SCHEDULE "A" - GRANT ELIGIBLE ITEMS												
1	2101.505	CLEARING	ACRE	0	0	0	0	0	0.62	0.62	$25,000.00	$ 15,500.00
2	2101.505	GRUBBING	ACRE	0	0	0	0	0	0.62	0.62	$15,000.00	$ 9,300.00
3	2104.502	REMOVE METAL APRON	EACH	0	0	0	0	0	1	1.00	$250.00	$ 250.00
4	2104.502	REMOVE MANHOLE OR CATCH BASIN	EACH	0	1	0	1	0	0	2.00	$550.00	$ 1,100.00
5	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	0	16	0	16	0	0	32.00	$15.00	$ 480.00
6	2104.503	REMOVE CURB & GUTTER (SPOT)	LIN FT	20	0	20	0	0	0	40.00	$12.00	$ 480.00
7	2104.503	REMOVE RETAINING WALL	LIN FT	0	0	0	0	72	0	72.00	$40.00	$ 2,880.00
8	2106.507	EXCAVATION - CHANNEL AND POND	CU YD	0	0	0	0	0	1900	1900.00	$20.00	$ 38,000.00
9	2106.507	COMMON EMBANKMENT (POND)	CU YD	0	0	0	0	0	200	200.00	$12.00	$ 2,400.00
10	2501.502	12" HDPE PIPE APRON	EACH	0	0	0	0	0	1	1.00	$650.00	$ 650.00
11	2501.502	36" RC PIPE APRON	EACH	0	0	0	0	0	2	2.00	$3,700.00	$ 7,400.00
12	2501.602	ADJUST PIPE APRON	EACH	0	0	0	0	0	1	1.00	$850.00	$ 850.00
13	2503.503	15" RC PIPE SEWER	LIN FT	0	16	0	0	0	0	16.00	$80.00	$ 1,280.00
14	2503.503	24" RC PIPE SEWER	LIN FT	0	0	0	8	0	0	8.00	$105.00	$ 840.00
15	2503.503	27" RC PIPE SEWER	LIN FT	0	0	0	8	0	0	8.00	$125.00	$ 1,000.00
16	2503.503	36" RC PIPE SEWER	LIN FT	0	0	0	0	0	34	34.00	$200.00	$ 6,800.00
17	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	0	2	0	2	0	1	5.00	$1,500.00	$ 7,500.00
18	2506.502	CASTING ASSEMBLY (STORM)	EACH	0	1	0	1	0	0	2.00	$1,300.00	$ 2,600.00
19	2506.602	CONCTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1 (SAFL BAFFLE W/ SUMP)	EACH	0	1	0	0	0	0	1.00	$12,000.00	$ 12,000.00
20	2506.602	CONCTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2 (SAFL BAFFLE W/ SUMP)	EACH	0	0	0	1	0	0	1.00	$15,000.00	$ 15,000.00
21	2506.602	CONCTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 4 (OCS)	EACH	0	0	0	0	0	1	1.00	$9,000.00	$ 9,000.00
22	2511.507	RANDOM RIPRAP CLASS III	CU YD	0	0	0	0	0	40	40.00	$110.00	$ 4,400.00
23	2531.503	CONCRETE CURB & GUTTER DESIGN B618 (SPOT)	LIN FT	20	0	20	0	0	0	40.00	$40.00	$ 1,600.00
24	2550.501	PUMP ELECTRIC SYSTEM PANEL (REMOVE & REPLACE)	LUMP SUM	0	0	0	0	1	0	1.00	$45,000.00	$ 45,000.00
25	2573.503	FLOTATION SILT CURTAIN TYPE STILL WATER	LIN FT	0	0	0	0	150	200	350.00	$30.00	$ 10,500.00
26	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	110	0	110	0	170	660	1050.00	$4.00	$ 4,200.00
27	2574.507	COMMON TOPSOIL BORROW	CU YD	4	0	4	0	67	317	392.00	$40.00	$ 15,680.00
28	2575.504	ROLLED EROSION PREVENTION CATEGORY 20 W/ SEED MIXTURE (XX-XXX)	SQ YD	20	0	20	0	400	1900	2340.00	$4.00	$ 9,360.00
29	2575.604	SHORELINE STABILIZATION (GEOWEB BY PRESTO)	SQ YD	0	0	0	0	110	0	110.00	$160.00	$ 17,600.00
ESTIMATED SCHEDULE "A" - CONSTRUCTION SUBTOTAL				**$ 1,720.00**	**$ 18,370.00**	**$ 1,720.00**	**$ 21,930.00**	**$ 74,940.00**	**$ 124,970.00**			**$ 243,650.00**
10% CONTINGENCY				**$ 172.00**	**$ 1,837.00**	**$ 172.00**	**$ 2,193.00**	**$ 7,494.00**	**$ 12,497.00**			**$ 24,365.00**
ESTIMATED SCHEDULE "A" - CONSTRUCTION TOTAL				**$ 1,892.00**	**$ 20,207.00**	**$ 1,892.00**	**$ 24,123.00**	**$ 82,434.00**	**$ 137,467.00**			**$ 268,015.00**
27% OVERHEAD				**$ 511.00**	**$ 5,456.00**	**$ 511.00**	**$ 6,513.00**	**$ 22,257.00**	**$ 37,116.00**			**$ 72,364.00**
ESTIMATED SCHEDULE "A" - PROJECT TOTAL				**$ 2,403.00**	**$ 25,663.00**	**$ 2,403.00**	**$ 30,636.00**	**$ 104,691.00**	**$ 174,583.00**			**$ 340,379.00**

Expanded Answers: Arden Hills Karth Pond

Section VI Executive Summary & Abstract

The City of Arden Hills proposes a stormwater pond with the 2026 PMP Street & Utility Improvements project. This pond will provide water quality treatment by reducing sediment and phosphorus before runoff enters Karth Lake. The improvement supports watershed protection goals, aligns with recommendations from the Southwest Urban Lakes Study, and complements other planned BMPs with the project, including sump structures with SAFL Baffles and the Karth Lake pumping system retrofit. The total cost for the proposed work is estimated to be $174,583.00. Arden Hills requests $87,291.50 in RCWD grant funding (50% of eligible costs) to implement this BMP.

Section VII Description

List and describe the Best Management Practices (BMPs) to be incorporated into this project.

The 2026 PMP Street & Utility Improvements project includes the construction of a stormwater pond designed to provide dedicated water quality treatment before runoff discharges to Karth Lake and ultimately Valentine Lake. Stormwater ponds improve water quality through physical, biological, and chemical processes, with the primary treatment occurring as sediment and associated pollutants settle to the bottom of the permanent pool. The permanent pool prevents resuspension, increasing long-term pollutant removal effectiveness.

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

The project maintains a net-zero increase in impervious surface, ensuring no additional runoff is generated within the watershed. The stormwater pond is designed to maximize treatment within the available project area by slowing, storing, and filtering runoff before it reaches Karth Lake and, ultimately, Valentine Lake. Together with the SAFL Baffle BMPs proposed elsewhere in the project, the pond enhances pollutant removal and reduces downstream loading, supporting RCWD goals for lake protection and restoration identified in the Watershed Management Plan and the Southwest Urban Lakes Study.

Describe how long-termoperation and maintenance ofthe project will be accomplished and identify the individual(s)responsible for maintenance activitiesif differentthan the project officer listed in section 2.

The stormwater pond is designed to reduce sediment and phosphorus loading prior to discharge into Karth Lake, and ultimately Valentine Lake. By capturing and settling sediment within the pond, the amount of material reaching Karth Lake will be reduced, lowering long-term sediment accumulation and decreasing the frequency and cost of future lake maintenance activities such as dredging. Routine inspections and sediment removal will be completed by City staff in accordance with MS4 requirements, including annual inspections of structural stormwater BMPs and additional inspections as needed.

Section VIII Prioritization

This project supports RCWD goals identified in the Watershed Management Plan by advancing water quality protections for Karth Lake, and ultimately Valentine Lake, resources highlighted for improvement in local and regional planning. The stormwater pond is Phase 2 of the previously completed Karth Lake BMP #1 project, included on the Member Community Project List, reinforcing its priority status within the watershed. The pond also aligns with recommendations in the Southwest Urban Lakes Study, which identifies the need for enhanced stormwater treatment to protect and restore urban lake systems. In addition, the BMP complements other coordinated improvements in the Karth Lake subwatershed, including the planned pumping retrofit/cost-share effort and installation of sump structures with SAFL Baffles. Collectively, these actions strengthen pollutant removal, increase watershed resilience, and advance RCWD priorities for long-term lake protection.

Section IX Targeting

Runoff from the contributing drainage areas currently carries sediment and phosphorus to Karth Lake, affecting water quality and contributing to long-term maintenance needs such as dredging. The proposed stormwater pond will help address these issues by capturing sediment and providing permanent pool treatment before water reaches Karth Lake and, ultimately, Valentine Lake. Because the pond is being constructed as part of the larger 2026 PMP Street & Utility Improvements project, it offers a cost-effective opportunity to add meaningful water quality treatment without the additional expense of a standalone project. This coordinated approach provides substantial pollutant reduction while minimizing new infrastructure costs.

Rice Creek Watershed District
Stormwater Management Grant Program
2026 Application Form

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Arden Hills

Street Address: 1245 West Highway 96

City, State, Zip: Arden Hills, MN 55112

Tax Status: Local Government Tax ID#: 9047998

(e.g., local government, non-profit 501(c)(3), private business, etc.)

II. PROJECT CONTACTS

Project Officer: David Swearingen Financial Officer: Jessica Jagoe

Title: Public Works Director/City Engineer Title: City Administrator/Finance Director

Telephone: 651-792-7847 Telephone: 651-792-7810

Fax: Fax:

Email: dswearingen@cityofardenhills.org Email: jjagoe@cityofardenhills.org

III. PROJECT INFORMATION

Project Name: 2026 PMP Street & Utility Improvements

Location(s) of Project: Karth Lake Circle & Karth Lake Drive

City: Arden Hills State: MN County: Ramsey

Project Start Date: Spring 2026 Project Completion Date: Fall 2026

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Peak Runoff Rate Control Project
- [ ] Runoff Volume Control / Flood Storage Project
- [ ] Other:

Is a RCWD Rule C permit required for this project? [ ] YES [x] NO [ ] UNKNOWN

IV. GRANT REQUEST

RCWD Grant Funding Requested: $ 30,552.50

Applicant Match Funding Committed: $ 30,552.50

Total Estimated Project Cost: $ 61,105

Would you be willing to accept grant funding in an amount less than requested? [x] YES [ ] NO

V. SIGNATURE OF APPLICANT

I certify that the information contained within this application is true and accurate.

David Swearingen Digitally signed by David Swearingen Date: 2025.12.24 08:28:03 -06'00' 12/24/2025

Signature of Project Officer Date

VI. Executive Summary / Abstract

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match. The summaries will be used in the grant review process and on the RCWD website for projects that are funded.

The City of Arden Hills proposes installing two sump storm sewer structures with SAFL Baffles as part of the 2026 PMP Street & Utility Improvements project. These BMPs will remove sediment and phosphorus from stormwater before it enters Karth Lake and adjacent wetlands, improving water quality and reducing long-term maintenance needs. The total cost for the proposed work is estimated to be $61,105. Arden Hills requests $30,552.50 in RCWD grant funding (50% of

VII. Description (10 points)

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD lake classified as either "Protection" or "Restoration" (see Table 2-4 in the RCWD 2020 Watershed Management Plan), and/or a waterbody with an approved Total Maximum Daily Load (TMDL) study or other recognized diagnostic water quality study. Flood storage and runoff rate control projects should focus on reducing peak flood elevations in known regional flood hazard areas and/or documented local problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

Name the target waterbody benefiting from this project: Karth Lake, Valentine Lake & Wetland

List and describe the Best Management Practices (BMPs) to be incorporated into this project

The 2026 PMP Street & Utility Improvements project addresses water quality concerns by installing two sump storm sewer structures with SAFL Baffles upstream of outfalls to Karth Lake and an adjacent wetland. SAFL Baffles are a stormwater pretreatment systems that are installed with a sump storm sewer manhole structure to provide stormwater quality treatment by removing sediment and harmful chemicals (such as phosphorus) that cling to

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

The project will maintain net-zero impervious surface and enhance regional water quality. The sump & SAFL Baffle structure improvements, along with a planned stormwater pond

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

Describe how long-term operation and maintenance of the project will be accomplished and identify the individual(s) responsible for maintenance activities if different than the project officer listed in section 2.

Each structure will be inspected at least annually (or more frequently if deemed necessary over the first season of operation) by city maintenance staff. As the SAFL Baffle captures sediment which settles into the sump, staff will utilize a Vac Truck to remove the accumulated sediment and ensure proper operation of the structure is maintained. By capturing sediment and phosphorus before discharging to surrounding water bodies, the sump & SAFL Baffle structures

VIII. Prioritization (20 points)

How does the project support existing regional planning efforts such as the RCWD Watershed Management Plan, municipal surface water management plans, TMDLs, or other recognized diagnostic studies? Is the project included on the Member Community Project List (Appendix G) within the RCWD Watershed Management Plan? Please provide citations where possible.

This project supports RCWD's Watershed Management Plan goals for lake protection and restoration by improving water quality in Karth Lake, and ultimately Valentine Lake, resources identified in regional planning efforts. The proposed BMPs align with recommendations in the Southwest Urban Lakes Study, which highlights the need for enhanced stormwater treatment

IX. Targeting (15 points)

Describe the critical pollution or flooding sources and risks addressed by this project. Explain why the proposed project is the most cost-effective and feasible means to attain the expected resource benefits. Has a formal analysis been conducted to substantiate this position?

The current stormwater system conveys sediment and pollutants to lakes and wetlands, creating pollution risks that degrade water quality and increase dredging and maintenance needs. These pollutants impact aquatic habitats and reduce system performance. Installing sump structures with SAFL Baffles offers a practical, cost-effective solution by capturing sediment at the source without major infrastructure changes. SAFL Baffles retrofit easily into existing structures and provide measurable pollutant reduction at a relatively low cost.

X. Measurable Outcomes (20 points)

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, XP-SWMM, MIDS, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions and/or hydrologic outcomes. **(Mandatory for RCWD to consider your proposal!)**

The proposed BMPs will significantly reduce pollutant loading to Karth Lake and the adjacent wetland. Modeling using SHSAM and MIDS indicates an estimated removal of 54% Total Suspended Solids (514.12 lbs) to Karth Lake and 48% Total Suspended Solids (1616.76 lbs) to adjacent wetlands annually from the contributing drainage areas. These reductions will improve water quality and reduce sediment accumulation in downstream systems, minimizing future dredging and maintenance costs. Effectiveness will be monitored through routine inspections and sediment removal records, ensuring measurable and sustained water quality benefits.

XI. Cost-Effectiveness (15 points)

Provide a detailed budget that lists each item for which funding is being requested. You must also list the sources of required local matching contributions. Please provide a summary that demonstrates why this is the most cost-effective approach to solving the problem. Or, have other alternatives been explored, and if so, why were they determined to not be the best alternative? What is the anticipated lifespan of the practice? **(Attach separate sheets if needed.)**

See attached cost estimate for the project elements which funding is being requested for. Matching funds will be provided from a combination of the City of Arden Hills Surface Water Management Utility Fund and its PIR Fund. This is the most cost-effective approach because it provides a high pollutant reduction performance without significant additional project costs, when compared to other relevant BMP's. SAFL Baffle devices come with a 20 year guarantee from the manufacturer. https://upstreamtechnologies.us/docs/SAFL-Baffle-Guarantee.pdf

XII. Project Readiness (10 points)

Please describe the anticipated timeline for implementing this project. What steps have been taken to ensure that the project can be implemented according to this timeline? Are any permits needed? (If permits are required please cite from what agency and where the project is in that process).

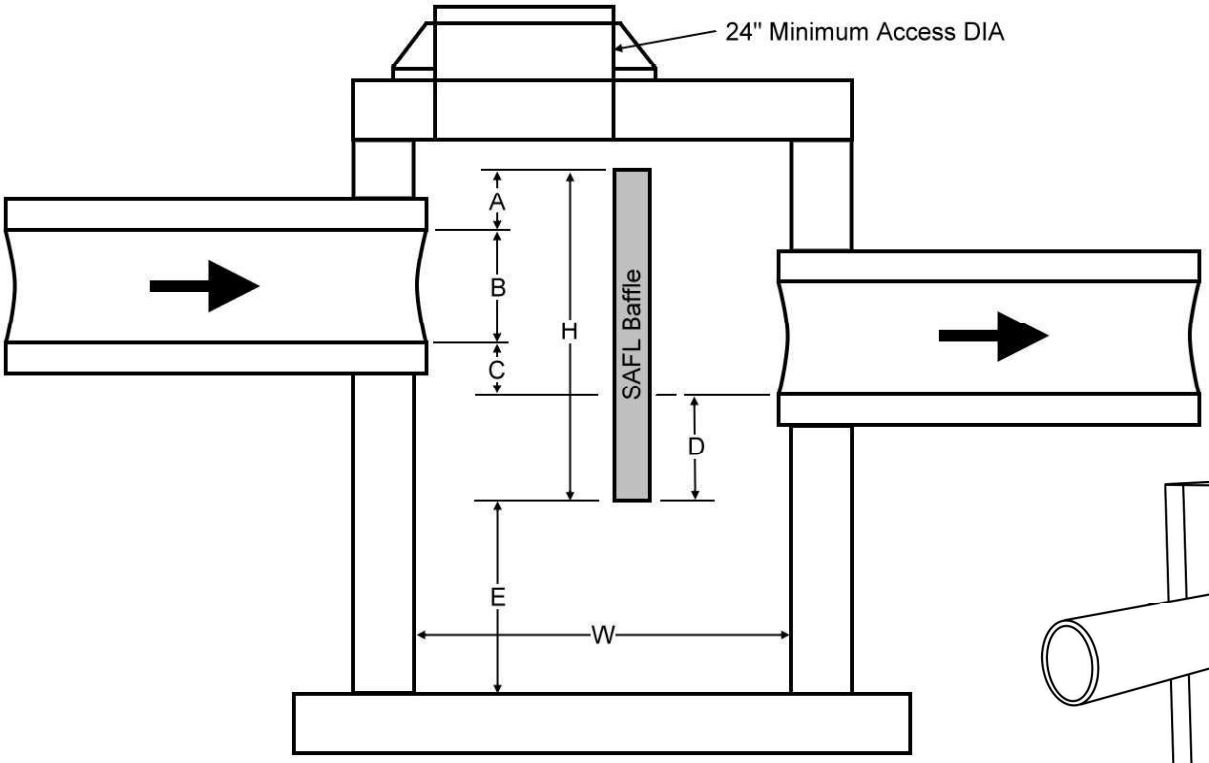
The work identified is part of the City of Arden Hills 2026 PMP Street & Utility Improvements project which is scheduled to be constructed over the 2026 construction season. This overall project is already under design and will be bid in late winter/early spring of 2026. The overall project requires some permits but the SAFL Baffle work described does not require any permits to proceed.

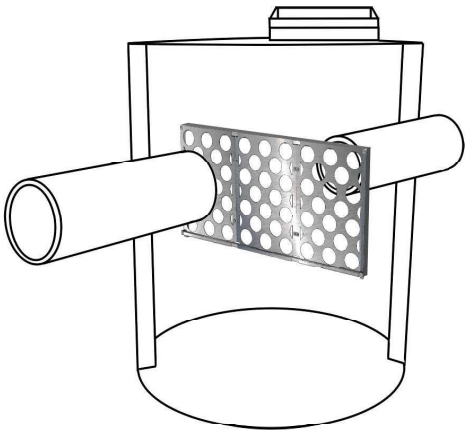
XIII. Engagement Opportunities (10 points)

Demonstrate any potential for public engagement, education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. Applicants must incorporate a public engagement component into the project.

The purpose of the SAFL Baffles and the reason for inclusion in the project will be made known to the public through a project summary included in a Community Newsletter.

SAFL BAFFLE SIZING REQUIREMENTS





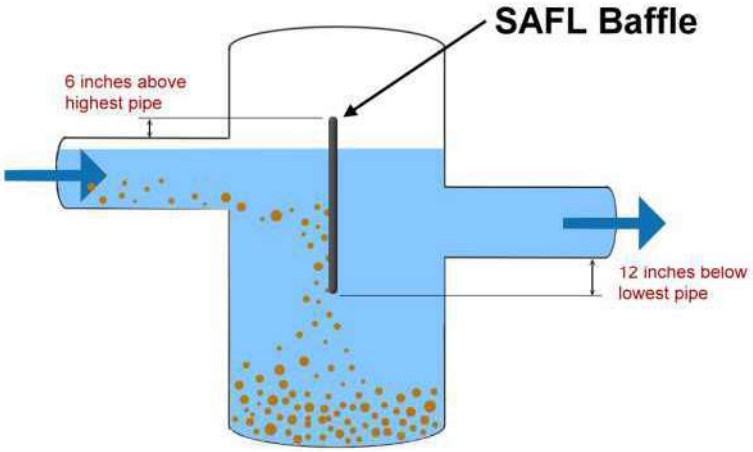
A	0 to 6" 6" is ideal
B	Inlet pipe inside diameter
C	0 to 6" 0" is ideal
D	12"
E	36" Minimum. 48" or greater is ideal and results in less frequent sump cleanout
W	W = Sump diameter if round or width if rectangular
H	Baffle height = A + B + C + D
Purchase Baffle Size	W x H View the complete list of Available Baffle Sizes
	Also see: Bracing Guide & Stacking Guide
NOTE 1	If H is greater than 57" two SAFL Baffles may be stacked.
NOTE 2	75% of flow must be horizontal. No more than 25% falling from above
NOTE 3	This detail does not cover sizing the sump for sediment removal efficiency. Contact Upstream for sump sizing or use SHSAM Software
NOTE 4	For more information, see our Design Guide

PATENT PROTECTED Patents: US #8663466B2 - US #8715507B2 - US #9506237B2 - CA #2742207

SAFL BAFFLE SIZING DETAIL

UPSTREAM TECHNOLOGIES INC.
5201 EAST RIVER ROAD, SUITE 303
FRIDLEY, MN 55421
651-237-5123

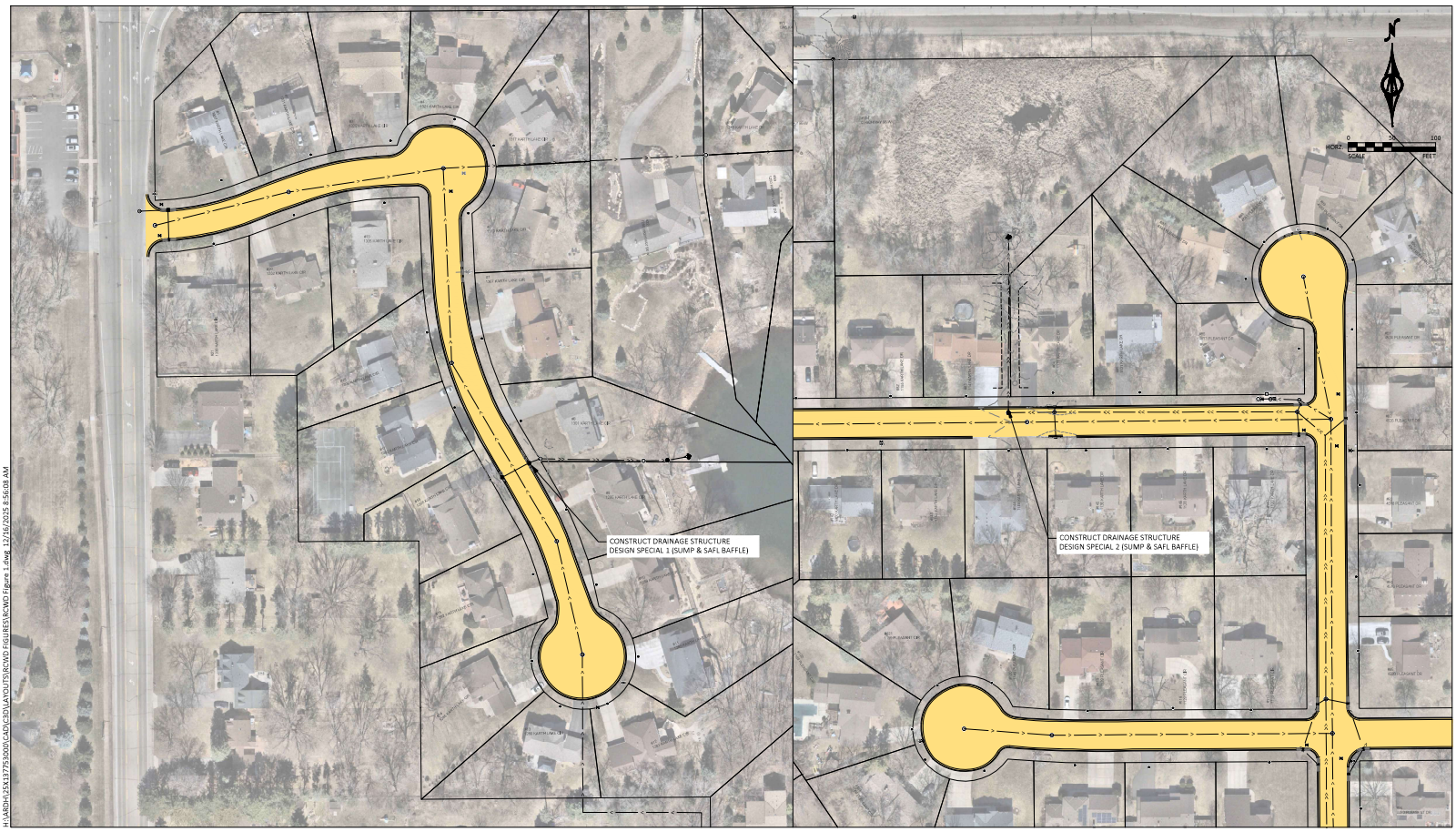
SAFL BAFFLE


SAFL Baffle
6 inches above
highest pipe
12 inches below
lowest pipe

2026 PMP STREET & UTILITY IMPROVEMENTS
CITY OF ARDEN HILLS

RCWD GRANT FIGURE 1
DECEMBER 2025

BOLTON & MENK



H:\ARDH\25X\137753600\CAD\C3D\LAYOUTS\RCWD FIGURES\RCWD Figure 1.dwg 12/16/2025 8:56:09 AM

2026 Arden Hills PMP Street & Utility Improvements Project
MIDS Calculator - Water Quality Removals - SAFL Baffle Results

Summary Information:

Impervious area not routed to a BMP: 0 acres

Pervious area not routed to a BMP: 0 acres

Performance goal requirement: 34859 ft³

Performance goal reduction achieved: ft³

Percent TP reduction achieved: 0 %

Percent TSS reduction achieved: 49 %

Site Information | Schematic | Results

Project Name: Arden Hills PMP

User Name/Company Name: BMI

Date: 12/10/2025

Project Description:

Sump & SAFL Baffle Structures

Are you using the calculator to determine compliance with a Construction Stormwater permit? No

Retention Requirement (inches)	1.1
Site's Zip Code	55126
Annual Rainfall (inches)	31.6
Phosphorus EMC (mg/l)	0.3
TSS EMC (mg/l)	54.5

Land Cover	A soils (acres)	B soils (acres)	C soils (acres)	D soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/ open space or reforested land		0			0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed		20.37			20.37
				Impervious Area	8.73
				Total Area	29.1

Summary Information:

Impervious area not routed to a BMP: 0 acres

Pervious area not routed to a BMP: 0 acres

Performance goal requirement: 34859 ft³

Performance goal reduction achieved: ft³

Percent TP reduction achieved: 0 %

Percent TSS reduction achieved: 49 %

Site Information | Schematic | Results

BMPs

Schematic

Other
Karth Lake Sump & SAFL Baffle Structure

Other
Wetland Sump & SAFL Baffle Structure

Project Information

Calculator Version:	Version 4: July 2020
Project Name:	Arden Hills PMP
User Name / Company Name:	BMI
Date:	12/10/2025
Project Description:	Sump & SAFL Baffle Structures
Construction Permit?:	No

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	55126
Annual Rainfall (inches):	31.6
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land		0			0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed		20.37			20.37
			Impervious Area (acres)		8.73
				Total Area (acres)	29.1

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed		20.37			20.37
			Impervious Area (acres)		8.73
				Total Area (acres)	29.1

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	34859	ft3
Volume removed by BMPs towards performance goal:		ft^3
Percent volume removed towards performance goal		**%**

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	29.311	acre-ft
Annual runoff volume removed by BMPs:	0	acre-ft
Percent annual runoff volume removed:	**0**	**%**
Post development annual particulate P load:	13.1548	lbs
Annual particulate P removed by BMPs:	0	lbs
Post development annual dissolved P load:	10.763	lbs
Annual dissolved P removed by BMPs:	0	lbs
Total P removed by BMPs	0	lbs
Percent annual total phosphorus removed:	**0**	**%**
Post development annual TSS load:	4345.1	lbs
Annual TSS removed by BMPs:	2130.9	lbs
Percent annual TSS removed:	**49**	**%**

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained (%)
Karth Lake Sump & SAFL Baffle Structure	0	7667	0	7667	0
Wetland Sump & SAFL Baffle Structure	0	27192	0	27192	0

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)
Karth Lake Sump & SAFL Baffle Structure	6.4464	0	0	6.4464	0
Wetland Sump & SAFL Baffle Structure	22.8646	0	0	22.8646	0

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
Karth Lake Sump & SAFL Baffle Structure	2.8931	0	0	2.8931	0
Wetland Sump & SAFL Baffle Structure	10.2616	0	0	10.2616	0

Dissolved Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
Karth Lake Sump & SAFL Baffle Structure	2.3671	0	0	2.3671	0
Wetland Sump & SAFL Baffle Structure	8.3959	0	0	8.3959	0

Total Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
Karth Lake Sump & SAFL Baffle Structure	5.2602	0	0	5.2602	0
Wetland Sump & SAFL Baffle Structure	18.6575	0	0	18.6575	0

TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
Karth Lake Sump & SAFL Baffle Structure	955.61	0	514.12	441.49	54
Wetland Sump & SAFL Baffle Structure	3389.44	0	1616.76	1772.68	48

BMP Properties: Karth Lake Sump SAFL Baffle Structure

Other

Watershed | BMP Parameters | BMP Summary

BMP Name: Karth Lake Sump & SAFL Baffle Structure

Routing/downstream BMP:

Minnesota Stormwater Manual Wiki

BMP Watershed Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land		0			0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed		4.48			4.48
		Impervious Cover (acres)			1.92
		Total Area (acres)			6.4

BMP Properties: Karth Lake Sump SAFL Baffle Structure

Other

Watershed | BMP Parameters | BMP Summary

Other (User Defined Reductions)

Required treatment volume	7667	ft^3
Volume reduction capacity of BMP [V]	0	ft^3
Volume of retention provided by BMP	0	ft^3
Annual runnoff volume retained	0	%
Particulate P removal rate via non volume reduction treatment	0	%
Dissolved P removal rate via non volume reduction treatment	0	%
TSS removal rate via non volume reduction treatment	53.800	%

BMP Properties: Karth Lake Sump SAFL Baffle Structure

Other

Watershed | BMP Parameters | BMP Summary

Performance Goal Summary		
Water volume from direct watershed:	7667	ft^3
Water volume from upstream BMPs:	0	ft^3
Total water volume routed to BMP:	7667	ft^3
Retention volume provided by BMP:	0	ft^3
Outflow volume:	7667	ft^3
Percent of Performance Goal achieved:	**0**	**%**
Annual Summary		
Annual water volume from direct watershed:	6.4464	acre-ft
Annual water volume from upstream BMPs:	0	acre-ft
Annual retention volume provided by BMP:	0	acre-ft
Annual outflow volume:	6.4464	acre-ft
Percent annual runoff volume retained:	**0**	**%**
Percent annual Particulate P reduction (via non volume reduction treatment)	0	%
Particulate P load from direct watershed:	2.893	lbs
Particulate P load from upstream BMPs:	0	lbs
Particulate P load reduction:	0	lbs
Particulate P load bypass	0	lbs
Particulate P load outflow:	2.893	lbs
Total percent annual Particulate P reduction:	**0**	**%**
Percent annual Dissolved P reduction (via non volume reduction treatment)	0	%

BMP Properties: Karth Lake Sump SAFL Baffle Structure

Other

Watershed | BMP Parameters | BMP Summary

Particulate P load from upstream BMPs:	0	lbs
Particulate P load reduction:	0	lbs
Particulate P load bypass	0	lbs
Particulate P load outflow:	2.893	lbs
Total percent annual Particulate P reduction:	**0**	**%**
Percent annual Dissolved P reduction (via non volume reduction treatment)	0	%
Dissolved P load from watershed:	2.367	lbs
Dissolved P load from upstream BMPs:	0	lbs
Dissolved P load reduction:	0	lbs
Dissolved P Bypass	0	lbs
Dissolved P load outflow:	2.3671	lbs
Total percent annual Dissolved P reduction:	**0**	**%**
Total percent annual TP reduction:	**0**	**%**
Percent annual TSS reduction (via non volume reduction treatment)	54	%
TSS load from watershed:	955.61	lbs
TSS load from upstream BMPs:	0	lbs
TSS load reduction:	514.12	lbs
TSS Annual Bypass:	0	lbs
TSS load outflow:	441.49	lbs
Total percent annual TSS reduction	**54**	**%**

BMP Properties: Wetland Sump SAFL Baffle Structure

Other

Watershed | BMP Parameters | BMP Summary

BMP Name: Wetland Sump & SAFL Baffle Structure

Routing/downstream BMP:

Minnesota Stormwater Manual Wiki

BMP Watershed Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land		0			0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed		15.89			15.89
		Impervious Cover (acres)			6.81
		Total Area (acres)			22.7

BMP Properties: Wetland Sump SAFL Baffle Structure

Other

Watershed | BMP Parameters | BMP Summary

Other (User Defined Reductions)

Required treatment volume	27192	ft^3
Volume reduction capacity of BMP [V]	0	ft^3
Volume of retention provided by BMP	0	ft^3
Annual runnoff volume retained	0	%
Particulate P removal rate via non volume reduction treatment	0	%
Dissolved P removal rate via non volume reduction treatment	0	%
TSS removal rate via non volume reduction treatment	47.700	%

OK HELP

BMP Properties: Wetland Sump SAFL Baffle Structure

Other

Watershed | BMP Parameters | BMP Summary

Performance Goal Summary		
Water volume from direct watershed:	27192	ft^3
Water volume from upstream BMPs:	0	ft^3
Total water volume routed to BMP:	27192	ft^3
Retention volume provided by BMP:	0	ft^3
Outflow volume:	27192	ft^3
Percent of Performance Goal achieved:	**0**	**%**
Annual Summary		
Annual water volume from direct watershed:	22.8646	acre-ft
Annual water volume from upstream BMPs:	0	acre-ft
Annual retention volume provided by BMP:	0	acre-ft
Annual outflow volume:	22.8646	acre-ft
Percent annual runoff volume retained:	**0**	**%**
Percent annual Particulate P reduction (via non volume reduction treatment)	0	%
Particulate P load from direct watershed:	10.262	lbs
Particulate P load from upstream BMPs:	0	lbs
Particulate P load reduction:	0	lbs
Particulate P load bypass	0	lbs
Particulate P load outflow:	10.262	lbs
Total percent annual Particulate P reduction:	**0**	**%**
Percent annual Dissolved P reduction (via non volume reduction treatment)	0	%

BMP Properties: Wetland Sump SAFL Baffle Structure

Other

Watershed | BMP Parameters | BMP Summary

Particulate P load from upstream BMPs:	0	lbs
Particulate P load reduction:	0	lbs
Particulate P load bypass	0	lbs
Particulate P load outflow:	10.262	lbs
Total percent annual Particulate P reduction:	**0**	**%**
Percent annual Dissolved P reduction (via non volume reduction treatment)	0	%
Dissolved P load from watershed:	8.396	lbs
Dissolved P load from upstream BMPs:	0	lbs
Dissolved P load reduction:	0	lbs
Dissolved P Bypass	0	lbs
Dissolved P load outflow:	8.3959	lbs
Total percent annual Dissolved P reduction:	**0**	**%**
Total percent annual TP reduction:	**0**	**%**
Percent annual TSS reduction (via non volume reduction treatment)	48	%
TSS load from watershed:	3389.44	lbs
TSS load from upstream BMPs:	0	lbs
TSS load reduction:	1616.76	lbs
TSS Annual Bypass:	0	lbs
TSS load outflow:	1772.68	lbs
Total percent annual TSS reduction	**48**	**%**

ENGINEER'S ESTIMATE FOR RCWD STORMWATER GRANTS

2026 PMP STREET & UTILITY IMPROVEMENTS

CITY OF ARDEN HILLS, MINNESOTA

CITY PROJECT NO. PW-26-0100

BMI PROJECT NO. 25X.137753

12/23/2025

ITEM NO.	SPEC. REF	DESCRIPTION	UNIT	RESIDENTIAL MILL AREAS SUMP/SAFLS		RESIDENTIAL RECLAMATION AREAS SUMP/SAFLS		RETAINING WALL/SHORELINE STABILIZATION	STORMWATER POND BMP	TOTAL ESTIMATED QUANTITY	ESTIMATED UNIT PRICE	ESTIMATED TOTAL PRICE
				STREET	STORM	STREET	STORM					
SCHEDULE "A" - GRANT ELIGIBLE ITEMS												
1	2101.505	CLEARING	ACRE	0	0	0	0	0	0.62	0.62	$25,000.00	$ 15,500.00
2	2101.505	GRUBBING	ACRE	0	0	0	0	0	0.62	0.62	$15,000.00	$ 9,300.00
3	2104.502	REMOVE METAL APRON	EACH	0	0	0	0	0	1	1.00	$250.00	$ 250.00
4	2104.502	REMOVE MANHOLE OR CATCH BASIN	EACH	0	1	0	1	0	0	2.00	$550.00	$ 1,100.00
5	2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	0	16	0	16	0	0	32.00	$15.00	$ 480.00
6	2104.503	REMOVE CURB & GUTTER (SPOT)	LIN FT	20	0	20	0	0	0	40.00	$12.00	$ 480.00
7	2104.503	REMOVE RETAINING WALL	LIN FT	0	0	0	0	72	0	72.00	$40.00	$ 2,880.00
8	2106.507	EXCAVATION - CHANNEL AND POND	CU YD	0	0	0	0	0	1900	1900.00	$20.00	$ 38,000.00
9	2106.507	COMMON EMBANKMENT (POND)	CU YD	0	0	0	0	0	200	200.00	$12.00	$ 2,400.00
10	2501.502	12" HDPE PIPE APRON	EACH	0	0	0	0	0	1	1.00	$650.00	$ 650.00
11	2501.502	36" RC PIPE APRON	EACH	0	0	0	0	0	2	2.00	$3,700.00	$ 7,400.00
12	2501.602	ADJUST PIPE APRON	EACH	0	0	0	0	0	1	1.00	$850.00	$ 850.00
13	2503.503	15" RC PIPE SEWER	LIN FT	0	16	0	0	0	0	16.00	$80.00	$ 1,280.00
14	2503.503	24" RC PIPE SEWER	LIN FT	0	0	0	8	0	0	8.00	$105.00	$ 840.00
15	2503.503	27" RC PIPE SEWER	LIN FT	0	0	0	8	0	0	8.00	$125.00	$ 1,000.00
16	2503.503	36" RC PIPE SEWER	LIN FT	0	0	0	0	0	34	34.00	$200.00	$ 6,800.00
17	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	0	2	0	2	0	1	5.00	$1,500.00	$ 7,500.00
18	2506.502	CASTING ASSEMBLY (STORM)	EACH	0	1	0	1	0	0	2.00	$1,300.00	$ 2,600.00
19	2506.602	CONCTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1 (SAFL BAFFLE W/ SUMP)	EACH	0	1	0	0	0	0	1.00	$12,000.00	$ 12,000.00
20	2506.602	CONCTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2 (SAFL BAFFLE W/ SUMP)	EACH	0	0	0	1	0	0	1.00	$15,000.00	$ 15,000.00
21	2506.602	CONCTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 4 (OCS)	EACH	0	0	0	0	0	1	1.00	$9,000.00	$ 9,000.00
22	2511.507	RANDOM RIPRAP CLASS III	CU YD	0	0	0	0	0	40	40.00	$110.00	$ 4,400.00
23	2531.503	CONCRETE CURB & GUTTER DESIGN B618 (SPOT)	LIN FT	20	0	20	0	0	0	40.00	$40.00	$ 1,600.00
24	2550.501	PUMP ELECTRIC SYSTEM PANEL (REMOVE & REPLACE)	LUMP SUM	0	0	0	0	1	0	1.00	$45,000.00	$ 45,000.00
25	2573.503	FLOTATION SILT CURTAIN TYPE STILL WATER	LIN FT	0	0	0	0	150	200	350.00	$30.00	$ 10,500.00
26	2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	110	0	110	0	170	660	1050.00	$4.00	$ 4,200.00
27	2574.507	COMMON TOPSOIL BORROW	CU YD	4	0	4	0	67	317	392.00	$40.00	$ 15,680.00
28	2575.504	ROLLED EROSION PREVENTION CATEGORY 20 W/ SEED MIXTURE (XX-XXX)	SQ YD	20	0	20	0	400	1900	2340.00	$4.00	$ 9,360.00
29	2575.604	SHORELINE STABILIZATION (GEOWEB BY PRESTO)	SQ YD	0	0	0	0	110	0	110.00	$160.00	$ 17,600.00
ESTIMATED SCHEDULE "A" - CONSTRUCTION SUBTOTAL				**$ 1,720.00**	**$ 18,370.00**	**$ 1,720.00**	**$ 21,930.00**	**74,940.00**	**$ 124,970.00**			**$ 243,650.00**
10% CONTINGENCY				**$ 172.00**	**$ 1,837.00**	**$ 172.00**	**$ 2,193.00**	**7,494.00**	**$ 12,497.00**			**$ 24,365.00**
ESTIMATED SCHEDULE "A" - CONSTRUCTION TOTAL				**$ 1,892.00**	**$ 20,207.00**	**$ 1,892.00**	**$ 24,123.00**	**82,434.00**	**$ 137,467.00**			**$ 268,015.00**
27% OVERHEAD				**$ 511.00**	**$ 5,456.00**	**$ 511.00**	**$ 6,513.00**	**22,257.00**	**$ 37,116.00**			**$ 72,364.00**
ESTIMATED SCHEDULE "A" - PROJECT TOTAL				**$ 2,403.00**	**$ 25,663.00**	**$ 2,403.00**	**$ 30,636.00**	**104,691.00**	**$ 174,583.00**			**$ 340,379.00**

Expanded Answers: Arden Hills Karth SAFL

Section VI Executive Summary & Abstract

The City of Arden Hills proposes installing two sump storm sewer structures with SAFL Baffles as part of the 2026 PMP Street & Utility Improvements project. These BMPs will remove sediment and phosphorus from stormwater before it enters Karth Lake and adjacent wetlands, improving water quality and reducing long-term maintenance needs. The total cost for the proposed work is estimated to be $61,105. Arden Hills requests $30,552.50 in RCWD grant funding (50% of eligible costs) to implement these improvements alongside a planned stormwater pond BMP, supporting regional water quality goals identified in the Southwest Urban Lakes Study.

Section VII Description

List and describe the Best Management Practices (BMPs) to be incorporated into this project.

The 2026 PMP Street & Utility Improvements project addresses water quality concerns by installing two sump storm sewer structures with SAFL Baffles upstream of outfalls to Karth Lake and an adjacent wetland. SAFL Baffles are a stormwater pretreatment systems that are installed with a sump storm sewer manhole structure to provide stormwater quality treatment by removing sediment, and harmful chemicals (such as phosphorus) that cling to the surface area of sediment, from stormwater, which keeps it out of downstream water bodies. It works by capturing and retaining sediment, by stopping the rotating scour action that takes place during high flow conditions.

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

The project will maintain net-zero impervious surface and enhance regional water quality. The sump & SAFL Baffle structure improvements, along with a planned stormwater pond BMP within the same project, maximize treatment benefits to Karth Lake, an adjacent wetland, and ultimately, Valentine Lake. Together, these measures support RCWD goals for lake protection and restoration identified in the Watershed Management Plan and the Southwest Urban Lakes Study.

Describe how long-term operation and maintenance of the project will be accomplished and identify the individual(s) responsible for maintenance activities if different than the project officer listed in section 2.

Each structure will be inspected at least annually (or more frequently if deemed necessary over the first season of operation) by city maintenance staff. As the SAFL Baffle captures sediment which settles into the sump, staff will utilize a Vac Truck to remove the accumulated sediment and ensure proper operation of the structure is maintained. By capturing sediment and phosphorus before discharging to surrounding water bodies, the sump & SAFL Baffle structures will reduce pollutant loading and long-term maintenance needs for Karth Lake and adjacent wetlands.

Section VIII Prioritization

This project supports RCWD's Watershed Management Plan goals for lake protection and restoration by improving water quality in Karth Lake, and ultimately Valentine Lake, resources identified in regional planning efforts. The proposed BMPs align with recommendations in the Southwest Urban Lakes Study, which highlights the need for enhanced stormwater treatment in urban lake watersheds. Additionally, these improvements complement the City's broader efforts in the Karth Lake area, including a planned pumping retrofit and cost-share initiative, and the installation of a stormwater pond BMP within the 2026 PMP project. Together, these actions advance RCWD objectives for pollutant reduction and watershed resilience. The sump & SAFL Baffle structure improvements are not identified on the Member Community Project List.

Section IX Targeting

The current stormwater system conveys sediment and pollutants to lakes and wetlands, creating pollution risks that degrade water quality and increase dredging and maintenance needs. These pollutants impact aquatic habitats and reduce system performance. Installing sump structures with SAFL Baffles offers a practical, cost-effective solution by capturing sediment at the source without major infrastructure changes. SAFL Baffles retrofit easily into existing structures and provide measurable pollutant reduction at a relatively low cost. Additional research can be found at the following website:
https://upstreamtechnologies.us/docs/SAFL/SAFL-Baffle-Research-Summary.pdf

Rice Creek Watershed District
Stormwater Management Grant Program
2026 Application Form

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Lino Lakes

Street Address: 600 Town Center Parkway

City, State, Zip: Lino Lakes MN 55014

Tax Status: Local Government Tax ID#: 8924122

(e.g., local government, non-profit 501(c)(3), private business, etc.)

II. PROJECT CONTACTS

Project Officer: Timothy Payne Financial Officer: Tracy Thoma

Title: Streets & Stormwater Supervisor Title: Finance Director

Telephone: (651) 982-2455 Telephone: (651) 982-2411

Fax: Fax:

Email: tpayne@linolakes.us Email: tthoma@linolakes.us

III. PROJECT INFORMATION

Project Name: Regenerative Air Sweeper and Enhanced Sweeping

Location(s) of Project: City of Lino Lakes

City: Lino Lakes State: MN County: Anoka

Project Start Date: Spring 2026 Project Completion Date: Ongoing

Project Type (check only those that directly apply):

- ☐ Water Quality Treatment Project
- ☐ Stormwater Reuse Irrigation Project
- ☐ Peak Runoff Rate Control Project
- ☐ Runoff Volume Control / Flood Storage Project
- ☑ Other: Sweeping for Water Quality

Is a RCWD Rule C permit required for this project? ☐ YES ☑ NO ☐ UNKNOWN

IV. GRANT REQUEST

RCWD Grant Funding Requested: $ 100,000

Applicant Match Funding Committed: $ $325,000

Total Estimated Project Cost: $ 425,000

Would you be willing to accept grant funding in an amount less than requested? ☑ YES ☐ NO

V. SIGNATURE OF APPLICANT

I certify that the information contained within this application is true and accurate.

Signature of Project Officer

12/4/2025
Date

VI. Executive Summary / Abstract

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match. The summaries will be used in the grant review process and on the RCWD website for projects that are funded.

The City of Lino Lakes wishes to initiate an enhanced sweeping program with the purchase of a regenerative air sweeper (RAS). The additional sweeper would be used in tandem with our existing mechanical sweeper to more efficiently and frequently remove pollutants citywide and within priority areas designated to receive additional sweeping throughout the sweeping season. The City is requesting $100,000 to help facilitate the purchase of the sweeper. Lino Lakes will

VII. Description (10 points)

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD lake classified as either "Protection" or "Restoration" (see Table 2-4 in the RCWD 2020 Watershed Management Plan), and/or a waterbody with an approved Total Maximum Daily Load (TMDL) study or other recognized diagnostic water quality study. Flood storage and runoff rate control projects should focus on reducing peak flood elevations in known regional flood hazard areas and/or documented local problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

Name the target waterbody benefiting from this project: Rice Creek Chain of Lakes, Peltier & Baldwin Lakes, Bald Eagle & Otter Lakes

List and describe the Best Management Practices (BMPs) to be incorporated into this project

The City intends to incorporate a Regenerative Air Sweeper (RAS) into our street sweeping practices. By utilizing both a mechanical and RAS sweeper, the City would more efficiently remove phosphorus and other pollutants from our roadways. Regenerative Air Sweepers are proven to remove the fine dust/particles that are left behind by a mechanical sweeper. It is these fine particles that carry and release the highest concentrations of pollutants to th

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

Enhanced sweeping would provide additional opportunities to remove pollutants before they reach our infiltration BMPs, thereby protecting groundwater resources. Removing

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

Describe how long-term operation and maintenance of the project will be accomplished and identify the individual(s) responsible for maintenance activities if different than the project officer listed in section 2.

Currently Public Works staff sweeps twice annually utilizing two full time employees. If approved, resources would be prioritized to allow for three FTE to be assigned to sweeping duties as necessary to accomplish the goals of our increased/targeted sweeping program.

VIII. Prioritization (20 points)

How does the project support existing regional planning efforts such as the RCWD Watershed Management Plan, municipal surface water management plans, TMDLs, or other recognized diagnostic studies? Is the project included on the Member Community Project List (Appendix G) within the RCWD Watershed Management Plan? Please provide citations where possible.

The Lino Lakes Chain of Lakes TMDL, the Peltier and Centerville Lakes TMDL, and the Bald Eagle TMDL each identify excess nutrients as a primary impairment. The adoption of an increased/targeted sweeping program by the City would directly reduce phosphorus and other nutrients discharged to each of the lakes included in these TMDLs. 99.6% of Lino

IX. Targeting (15 points)

Describe the critical pollution or flooding sources and risks addressed by this project. Explain why the proposed project is the most cost-effective and feasible means to attain the expected resource benefits. Has a formal analysis been conducted to substantiate this position?

The critical pollutant targeted with sweeping is phosphorus. The risk addressed is the accelerated eutrophication caused by the presence of excess phosphorus. As a first line of defense, sweeping is recognized to be the most cost-effective practice to reduce phosphorus loading. The University of Minnesota Water Resources Center suggests that street sweeping can be up to 10 times more cost effective than structural phosphorus removal practices. The second most efficient phosphorus removal practice, catch basin cleaning structures, are

X. Measurable Outcomes (20 points)

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, XP-SWMM, MIDS, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions and/or hydrologic outcomes. **(Mandatory for RCWD to consider your proposal!)**

The City of Lino Lakes has kept meticulous records of the volume of material removed from our streets. Using volume to mass calculation guidance provided within the MN Stormwater Manual, along with the MPCA Phosphorus Credit Calculator, we estimated the lbs phosphorus collected by our mechanical sweeper for each of the past three seasons and compared the data to the anticipated results of a regenerative air sweeper (supporting calculations attached). Per the previously cited 2011 sweeper comparison study, we assume a 35% pick up efficiency with our existing mechanical sweeper and a 75% pick up efficiency with a proposed regenerative air sweeper. Calculations estimate 579 lbs P are currently removed on average annually with our mechanical sweeper compared to the expected average of 1,242 lbs P removal per year with a regenerative air sweeper. This represents a 114% increase in phosphorus yield by simply replacing our existing sweeper with a

XI. Cost-Effectiveness (15 points)

Provide a detailed budget that lists each item for which funding is being requested. You must also list the sources of required local matching contributions. Please provide a summary that demonstrates why this is the most cost-effective approach to solving the problem. Or, have other alternatives been explored, and if so, why were they determined to not be the best alternative? What is the anticipated lifespan of the practice? **(Attach separate sheets if needed.)**

Sweeping is recognized as the most cost-effective nonstructural practice to remove pollutants before they enter runoff. Studies cited in the Minnesota Stormwater Manual-Street Sweeping for Trees (Kalinosky et al 2012, 2013) show that spring & fall sweeping yield removal rates at $18 - 28 per lbs. of P removed, mid-summer rates can be "several hundred" $ per lbs., and an average optimized rate could be $40 to $110 per lbs. P removed. The months of March, April, October and November are shown to have a cost efficiency of less than $100/lbs of phosphorus removed (Kalinosky et al.,2013 Prior Lake).
Our own cost-effectiveness calculations using data generated from the phosphorus credit

XII. Project Readiness (10 points)

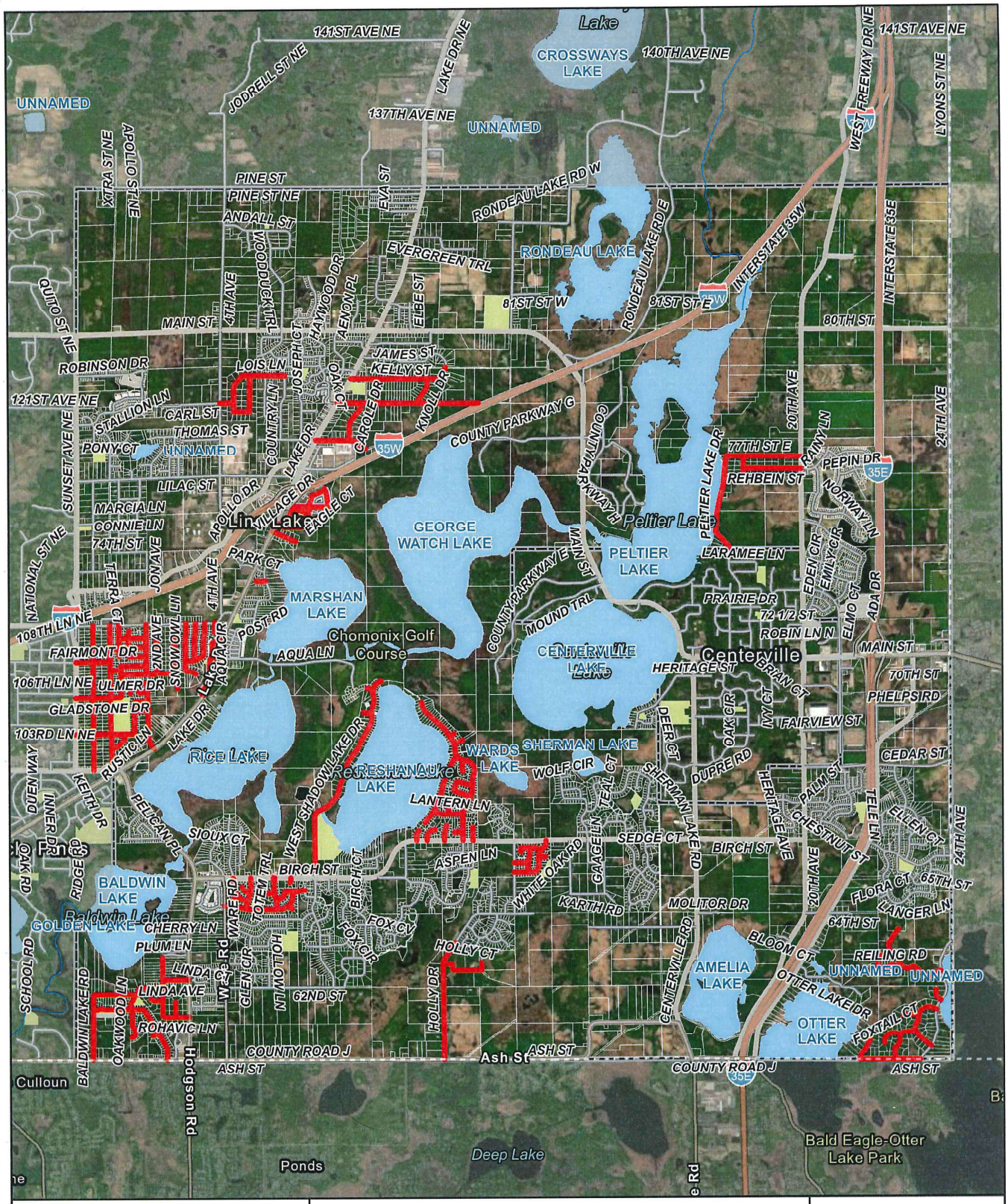
Please describe the anticipated timeline for implementing this project. What steps have been taken to ensure that the project can be implemented according to this timeline? Are any permits needed? (If permits are required please cite from what agency and where the project is in that process).

If approved, it is anticipated it may take up to one year for the city to take possession of a sweeper after placing the order. An enhanced sweeping program can be implemented almost immediately after acquiring an additional sweeper.

XIII. Engagement Opportunities (10 points)

Demonstrate any potential for public engagement, education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. Applicants must incorporate a public engagement component into the project.

We would welcome new public engagement opportunities as they are a component of our MS4 program. Opportunities may include:
- A citywide newsletter article pertaining to sweeping, equipment and RCWD collaboration.
- Local catv or website video pertaining to sweeping, equipment and RCWD collaboration.
- Make sweeper available at local community events and school “touch a truck” type functions
- Affix a decal to the sweeper with a tasteful environmental slogan or statement
- Name the sweeper contest



Legend

Targets Sweeping Roads

Targeted Sweeping

Earthstar Geographics, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

2025

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere

N

0 0.05 0.1 Mi

0 0.1 0.2 Km

Annual Comparisons of Phosphorus Yield (per volume calculations) for mechanical sweeper versus Projected RAS

	2022		2023		2024		2025	
	Mechanical Sweeper (lbs)	Projected RAS (lbs)	Mechanical Sweeper (lbs)	Projected RAS (lbs)	Mechanical Sweeper (lbs)	Projected RAS (lbs)	Mechanical Sweeper (lbs)	Projected RAS (lbs)
spring	145.16	311.06	163.99	351.4	159.48	341.75	185.27	397.01
summe	149.93	321.29	202.05	432.96	76.4	163.71	150.89	323.33
fall	257.55	551.89	292.44	626.66	289.41	624.21	301.78	646.67
total	552.64	1184.24	658.48	1411.02	525.29	1129.67	637.94	1367

Calculated average with Mechanical sweeper = **593.6 lbs/year**
Projected average with regenerative air sweeper = **1272.9 lbs/year**

	Annual Operation Cost*	Total P Yield (mech sweeper)	$/lb P Spring	$/lb P Summer	$/lb P Fall
2022	$65,059	552 lbs	$192.08	$123.98	$72.17
2023	$91,819	658 lbs	$157.47	$163.31	$112.83
2024	$84,692	525 lbs	$157.35	$328.45	$119.22
2025	$100,151	638 lbs	$151.04	$263.40	$107.31

*Annual cost for each years sweeping activities derived from Cartegraph
(Lino Lakes asset management software - accounts for labor, equipment cost, fuel & depreciation)

Expanded Answers: Lino Lakes Regenerative Air Sweeper

Section VI Executive Summary & Abstract

The City of Lino Lakes wishes to initiate an enhanced sweeping program with the purchase of a regenerative air sweeper (RAS). The additional sweeper would be used in tandem with our existing mechanical sweeper to more efficiently and frequently remove pollutants citywide and within priority areas designated to receive additional sweeping throughout the sweeping season. The City is requesting $100,000 to help facilitate the purchase of the sweeper. Lino Lakes will contribute the balance of the purchase (approx. $325,000) if the grant were approved.

Section VII Description

List and describe the Best Management Practices (BMPs) to be incorporated into this project.

The City intends to incorporate a Regenerative Air Sweeper (RAS) into our street sweeping practices. By utilizing both a mechanical and RAS sweeper, the City would more efficiently remove phosphorus and other pollutants from our roadways. Regenerative Air Sweepers are proven to remove the fine dust/particles that are left behind by a mechanical sweeper. It is these fine particles that carry and release the highest concentrations of pollutants to the environment. A sweeper comparison study* found regenerative air sweepers showed significantly higher debris pick up efficiency (75%) compared to a mechanical broom sweeper (35%). A similar study** shows when RAS sweepers are used in tandem with mechanical sweepers, cleaning efficiency can approach 90%.

Areas proposed to receive additional fall sweeping include subdivisions discharging stormwater to receiving waters without treatment and subdivisions with fully developed tree canopies. In some locations both conditions occur. The priority areas total 28.2 miles of curbed road. This is currently 30.6% of our curbed roadways.

The increase in efficiency along with more frequent sweeping efforts, particularly in the fall, will result in a substantially improved street sweeping program.

*City of Los Angelas/Larry Walker Associates

**Roger Sutherland MSCE, P.E. Cascade Water Resources

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

Enhanced sweeping would provide additional opportunities to remove pollutants before they reach our infiltration BMPs, thereby protecting groundwater resources. Removing sediment from the road before it is deposited in infiltration BMPs would also help extend the life of those BMPs. Areas with raingardens, permeable pavers and our underground storm chamber are included in our targeted sweeping area.

Section VIII Prioritization

The Lino Lakes Chain of Lakes TMDL, the Peltier and Centerville Lakes TMDL, and the Bald Eagle TMDL each identify excess nutrients as a primary impairment. The adoption of an increased/targeted sweeping program by the City would directly reduce phosphorus and other nutrients discharged to each of the lakes included in these TMDLs. 99.6% of Lino Lakes maintained roads are within the RCWD.

Section IX Targeting

The critical pollutant targeted with sweeping is phosphorus. The risk addressed is the accelerated eutrophication caused by the presence of excess phosphorus. As a first line of defense, sweeping is recognized to be the most cost-effective practice to reduce phosphorus loading. The University of Minnesota Water Resources Center suggests that street sweeping can be up to 10 times more cost effective than structural phosphorus removal practices. The second most efficient phosphorus removal practice, catch basin cleaning structures, are known to be 6 to 40 times more expensive per pound P removed (John Sansalone University of Florida 2019). Sweeping operations should be optimized for maximum pollutant removal before structural practices are considered. Lino Lakes is able to reduce nutrients delivered to any one of three approved TMDLs nearly every time the sweeper is utilized.

Section X Measurable Outcomes

The City of Lino Lakes has kept meticulous records of the volume of material removed from our streets. Using volume to mass calculation guidance provided within the MN Stormwater Manual, along with the MPCA Phosphorus Credit Calculator, we estimated the lbs phosphorus collected by our mechanical sweeper for each of the past three seasons

and compared the data to the anticipated results of a regenerative air sweeper (supporting calculations attached). Per the previously cited 2011 sweeper comparison study, we assume a 35% pick up efficiency with our existing mechanical sweeper and a 75% pick up efficiency with a proposed regenerative air sweeper. Calculations estimate 579 lbs P are currently removed on average annually with our mechanical sweeper compared to the expected average of 1,242 lbs P removal per year with a regenerative air sweeper. This represents a 114% increase in phosphorus yield by simply replacing our existing sweeper with a regenerative air sweeper and continuing with our existing program. After consulting with MPCA staff familiar with the comparison study, it was suggested this increase may be slightly high for a RAS alone but is certainly achievable with a tandem sweeping program.

Further, our enhanced sweeping plan targets 28.2 miles of asphalt for additional sweeping efforts. The Clean Sweep quick estimating tool (QET) predicts an additional 60% increase in Phosphorus removal by adding three additional fall sweeping efforts to our target area, increasing our estimated phosphorus yield to 1,987 lbs annually.

In summary, estimates via the MPCA Phosphorus Credit Calculator and the Clean Sweep Quick Estimating Tool show that we can reasonably expect to triple our phosphorus yield with the integration of a regenerative air sweeper into an enhanced sweeping program.

If approved, staff with the U of M and the Clean Sweep program have expressed a willingness to include Lino Lakes in extensive free material testing for a research study on street sweeping materials. This would allow us to monitor our phosphorus yield and ensure we are achieving our reduction goals. Lino Lakes has independently submitted 11 sweeping samples to the U of M laboratory for analysis from our fall 2026 sweeping efforts. We intend to continue to collect samples throughout the seasons to obtain the most representative results from the MPCA Phosphorus Credit Calculator.

Section XI Cost Effectiveness

Sweeping is recognized as the most cost-effective nonstructural practice to remove pollutants before they enter runoff. Studies cited in the Minnesota Stormwater Manual-Street Sweeping for Trees (Kalinosky et al 2012, 2013) show that spring & fall sweeping yield removal rates at $18 - 28 per lbs. of P removed, mid-summer rates can be "several hundred" $ per lbs., and an average optimized rate could be $40 to $110 per lbs. P removed. The months of March, April, October and November are shown to have a cost efficiency of less than $100/lbs of phosphorus removed (Kalinosky et al.,2013 Prior Lake).

Our own cost-effectiveness calculations using data generated from the phosphorus credit calculator and our city asset management software (Cartegraph) range from $72 to $328 per lb total P removed. Our overall average is $158 per lb P removed.

In comparison, catch basin cleaning structures (generally regarded as the second most efficient BMP for phosphorus removal) are shown to range from $1,600 to $12,000 per lb P removed (John Sansalone University of Florida 2019).

Rice Creek Watershed District
Stormwater Management Grant Program
2026 Application Form

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of New Brighton

Street Address: 803 Old Highway 8 NW

City, State, Zip: New Brighton, MN 55012

Tax Status: local government Tax ID#:

(e.g., local government, non-profit 501(c)(3), private business, etc.)

II. PROJECT CONTACTS

Project Officer: Craig Schlichting Financial Officer: Gina Foschi

Title: Director DCAD Title: Finance Director

Telephone: 651-638-2056 Telephone: 651-638-2105

Fax: 651-638-2044 Fax: same

Email: craig.schlichting@newbrightonmn.gov Email: gina.foschi@newbrightonmn.gov

III. PROJECT INFORMATION

Project Name: Knollwood Pond Overflow

Location(s) of Project: County Road H and Knollwood

City: New Brighton/ Mounds View State: MN County: Ramsey

Project Start Date: 6/1/2026 Project Completion Date: 10/1/2026

Project Type (check only those that directly apply):

- ☐ Water Quality Treatment Project
- ☐ Stormwater Reuse Irrigation Project
- ☐ Peak Runoff Rate Control Project
- ☐ Runoff Volume Control / Flood Storage Project
- ☑ Other: Flood Risk Protection

Is a RCWD Rule C permit required for this project? ☑ YES ☐ NO ☐ UNKNOWN

IV. GRANT REQUEST

RCWD Grant Funding Requested: $ 100000

Applicant Match Funding Committed: $ 150000

Total Estimated Project Cost: $ 250,000

Would you be willing to accept grant funding in an amount less than requested? ☑ YES ☐ NO

V. SIGNATURE OF APPLICANT

I certify that the information contained within this application is true and accurate.

Craig Schlichting

Signature of Project Officer

12/8/2025

Date

VI. Executive Summary / Abstract

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match. The summaries will be used in the grant review process and on the RCWD website for projects that are funded.

Provide a primary outlet for an existing pond that currently does not allow for adequate low floor protection of local residences during rainfall/flood events. The pond receives runoff from 3 local agencies including New Brighton, Mounds View, and Ramsey County. The total grant funds requested is $100,000 with a match that will exceed $100,000 meeting RCWD requirements.

VII. Description (10 points)

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD lake classified as either "Protection" or "Restoration" (see Table 2-4 in the RCWD 2020 Watershed Management Plan), and/or a waterbody with an approved Total Maximum Daily Load (TMDL) study or other recognized diagnostic water quality study. Flood storage and runoff rate control projects should focus on reducing peak flood elevations in known regional flood hazard areas and/or documented local problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

Name the target waterbody benefiting from this project: Rice Creek

List and describe the Best Management Practices (BMPs) to be incorporated into this project

The peak rate leaving the proposed pipe network will flow through the system before regional flows arrive in Rice Creek.

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

NA

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

Describe how long-term operation and maintenance of the project will be accomplished and identify the individual(s) responsible for maintenance activities if different than the project officer listed in section 2.

The stormwater pipes will be installed in New Brighton and Ramsey County ROW and will adhere to the the current maintenance standards established. The outlet will be maintained by New Brighton.

VIII. Prioritization (20 points)

How does the project support existing regional planning efforts such as the RCWD Watershed Management Plan, municipal surface water management plans, TMDLs, or other recognized diagnostic studies? Is the project included on the Member Community Project List (Appendix G) within the RCWD Watershed Management Plan? Please provide citations where possible.

Section 5 of New Brighton's Surface Water Management Plan includes provisions to prevent flooding, protect public health and safety and minimize public capital expenditures. Without additional infrastructure the existing homes are subject to future and increased flooding potential.

IX. Targeting (15 points)

Describe the critical pollution or flooding sources and risks addressed by this project. Explain why the proposed project is the most cost-effective and feasible means to attain the expected resource benefits. Has a formal analysis been conducted to substantiate this position?

The new outlet will allow for most stormwater events to be collected and discharged without reaching the secondary/emergency overflow. The route selected minimizes initial investment and places the pipes in publicly owned ROW. This allows for long term maintenance and flood protection.

X. Measurable Outcomes (20 points)

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, XP-SWMM, MIDS, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions and/or hydrologic outcomes. **(Mandatory for RCWD to consider your proposal!)**

The 100 yr HWL from the existing pond is 887.93, and with the proposed pond pipe outlet the HWL is reduced to 887.15. The lowest adjacent floor elevation is 887.6, and is only protected from flooding with sandbags and homeowner/city pumping efforts. The proposed pipe will provide the homeowner with some level of insurance that they don't need to watch the weather so closely, which will significantly improve their quality of life. The City has currently installed a water elevation monitor to help understand when mechanical pumping may be required.

XI. Cost-Effectiveness (15 points)

Provide a detailed budget that lists each item for which funding is being requested. You must also list the sources of required local matching contributions. Please provide a summary that demonstrates why this is the most cost-effective approach to solving the problem. Or, have other alternatives been explored, and if so, why were they determined to not be the best alternative? What is the anticipated lifespan of the practice? **(Attach separate sheets if needed.)**

MOBILIZATION 1 LUMP SUM $10,000.00
CLEARING 8 EA 500 $4,000.00
GRUBBING 8 EA 300 $2,400.00
SAWING BIT PAVEMENT (FULL DEPTH) 700 LF 4 $2,800.00
REMOVE BITUMINOUS PAVEMENT 780 SQ YD 10 $7,800.00
REMOVE BITUMINOUS DRIVEWAY PAVEMENT 45 SQ YD 15 $675.00
AGGREGATE BASE CLASS 5 400 TON 30 $12,000.00
TYPE SP 12.5 NON WEAR COURSE MIX (4;B) 224 TON 125 $28,000.00
TYPE SP 12.5 WEARING COURSE MIX (4;F) 100 TON 150 $15,000.00
18" RC PIPE SEWER DES 3006 CL V 791 LF 85 $67,235.00

XII. Project Readiness (10 points)

Please describe the anticipated timeline for implementing this project. What steps have been taken to ensure that the project can be implemented according to this timeline? Are any permits needed? (If permits are required please cite from what agency and where the project is in that process).

A RCWD permit will be required, and New Brighton has worked with Mounds View and Ramsey County on this solution. New Brighton will enter a cooperative agreement with Ramsey County for this project.

XIII. Engagement Opportunities (10 points)

Demonstrate any potential for public engagement, education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. Applicants must incorporate a public engagement component into the project.

The City will create a one-page info graphic describing the proposed project benefits for the the surrounding homes.

William Roach

From: Craig Schlichting <craig.schlichting@newbrightonmn.gov>
Sent: Monday, December 8, 2025 3:05 PM
To: William Roach
Subject: RE: New Brighton 2026 Stormwater Management Grant Pre-Application Follow Up
Attachments: Knollwood Pond Outlet.pdf; application 2026.pdf; Knollwood Pond Drainage.pdf; Knollwood Pond Hard Cover.pdf; KNOLLWOOD POND CERT (9-23-25).pdf; pipe alignment.png

William:

Consider this our submittal for Knollwood Pond.

This item seems to be cutoff on the pdf

XI

CLEARING 8 EA 500 $4,000.00
GRUBBING 8 EA 300 $2,400.00
SAWING BIT PAVEMENT (FULL DEPTH) 700 LF 4 $2,800.00
REMOVE BITUMINOUS PAVEMENT 780 SQ YD 10 $7,800.00
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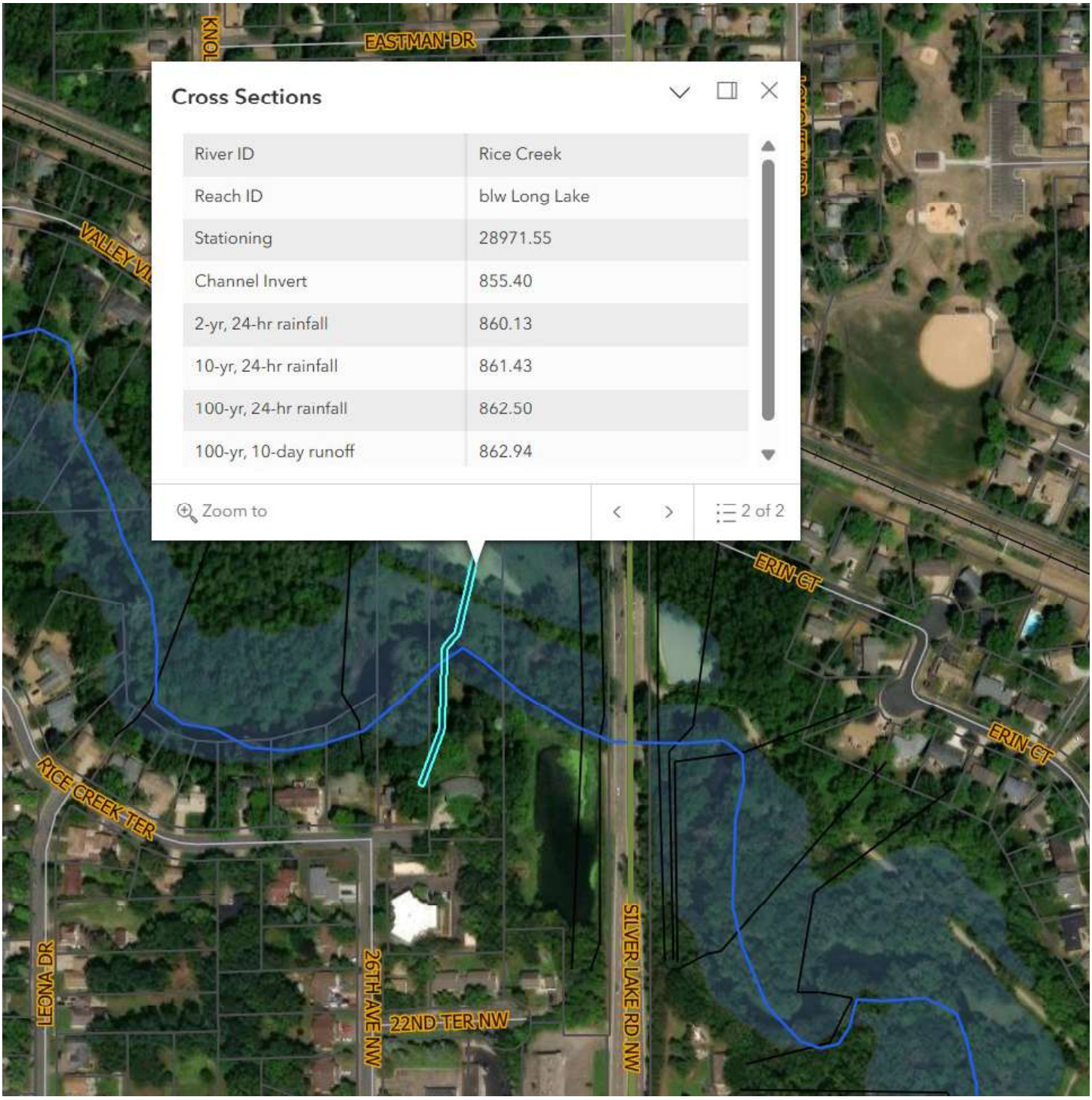
TYPE SP 12.5 WEARING COURSE MIX (4;F) 100 TON 150 $15,000.00
18" RC PIPE SEWER DES 3006 CL V 791 LF 85 $67,235.00
18" RC PIPE APRON 2 EA 2500 $5,000.00
CASTING ASSEMBLY 3 EA 2500 $7,500.00
CONST DRAINAGE STRUCTURE DES 48-4020 9 LF 750 $6,750.00
RANDOM RIPRAP CLASS III 10 CY 200 $2,000.00
CONCRETE CURB & GUTTER DESIGN B618 633 LF 30 $18,990.00
4" SOLID LINE PAINT 613 LF 4 $2,452.00
SEDIMENT CONTROL LOG TYPE WOOD FIBER 613 LF 10 $6,130.00
INLET PROTECTION 5 EA 200 $1,000.00
COMPOST BLANKET 700 SQ YD 3 $2,100.00
SEED MIXTURE 21-111 500 LB 15 $7,500.00
TRAFFIC CONTROL 1 LS 5000 $5,000.00
TOTAL $214,332.00
CONTINGENCY $246,481.80

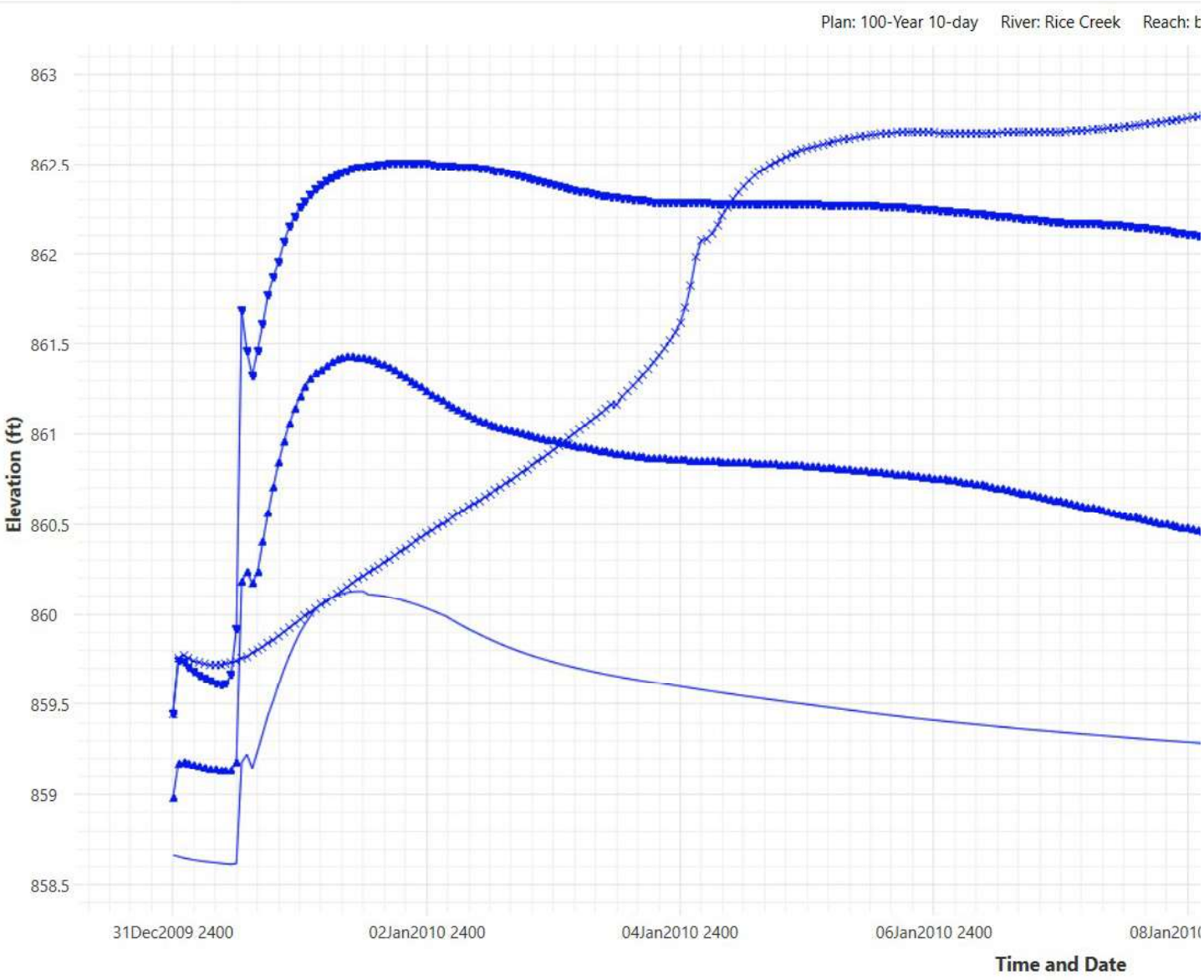
Other routes were explored with higher costs and doing nothing has the potential to repeatedly costs 10's of thousands in flood clean up and restoration. Concrete pipes can last for several centuries.

The information below is from RCWD on the local HWL and time of concentrations for Rice Creek. Our peak will happen in advance of these times meaning our water will have exited the area before larger volumes from the entire watershed reach this location.

Event	HWL (NAVD 88)	Peak Timing Relative to Start of Storm [1] (days)	Peak Timing Relative Peak Intensity of Rainfall/Runoff [2] (days)
2-year	860.13	1.5	1.0
10-year	861.43	1.5	1.0
100-year	862.50	1.9	1.4
100-year, 10-day	862.94	10.7	5.7

[1] Starting from hour 0, when the event begins.
[2] 12-hours from the beginning of the storm for the 24-hour events. 5-days from the beginning of the storm for the 10-day event.


EASTMAN DR
Cross Sections
River ID
Rice Creek
Reach ID
blw Long Lake
Stationing
28971.55
Channel Invert
855.40
2-yr, 24-hr rainfall
860.13
10-yr, 24-hr rainfall
861.43
100-yr, 24-hr rainfall
862.50
100-yr, 10-day runoff
862.94
Zoom to
2 of 2
ERIN CT
ERIN CT
RICE CREEK TER
LEONA DR
26TH AVE NW
22ND TER NW
SILVER LAKE RD NW



Craig Schlichting, P.E.
Director of Community Assets and Development | City of New Brighton
803 Old Highway 8 NW | New Brighton, MN 55112
651-638-2056 | **www.newbrightonmn.gov** | **Find us on Facebook**

From: William Roach <wroach@ricecreek.org>
Sent: Monday, December 1, 2025 1:25 PM
To: Craig Schlichting <craig.schlichting@newbrightonmn.gov>
Subject: New Brighton 2026 Stormwater Management Grant Pre-Application Follow Up

Craig,

Thank you again for your time during the pre-application process to discuss the city's two proposals. In discussing with the District Program Managers there was additional data points identified that would be beneficial to include in the full applications. For the Knollwood Creek project, be sure to include the elevations of the outlet control structure, and as previously discussed, modeling that demonstrates no negative effect downstream because of the 'bounce'.

For the proposed WaterOx systems, as noted in the pre-application meeting, please ensure the expected water quality improvement (e.g., total phosphorus load reduction) can be demonstrated to further District goals for the program. There was also concern expressed that this treatment technique may be still considered experimental, and it was suggested that the UMN Stormwater Research Council may be an alternative project partner. Lastly, full applications are due by no later than 4:30pm, Dec 30th. If you have any additional questions, please let me know.

Best,

Will Roach
Watershed Technician/Inspector
4325 Pheasant Ridge Dr. NE #611
Blaine, MN 55449
Direct: (763)398-3085
wroach@ricecreek.org

CERTIFICATE OF SURVEY - POND AS-BUILT

~for~ THE CITY OF NEW BRIGHTON
~of~ KNOLLWOOD POND

PROPERTY DESCRIPTION

Lots 4, 5, 6 and 7, KNOLLWOOD PARK NO. 2, Ramsey County, Minnesota.

POND RICE 002

(APPROXIMATE NORMAL WATER LEVEL AREA = 0.95 ACRES)

VOLUME DATA
DEAD STORAGE TO BOTTOM OF POND = 5,217 CU. YDS.
DEAD STORAGE TO TOP OF MUCK = 4,208 CU. YDS.

NWL= 886.1

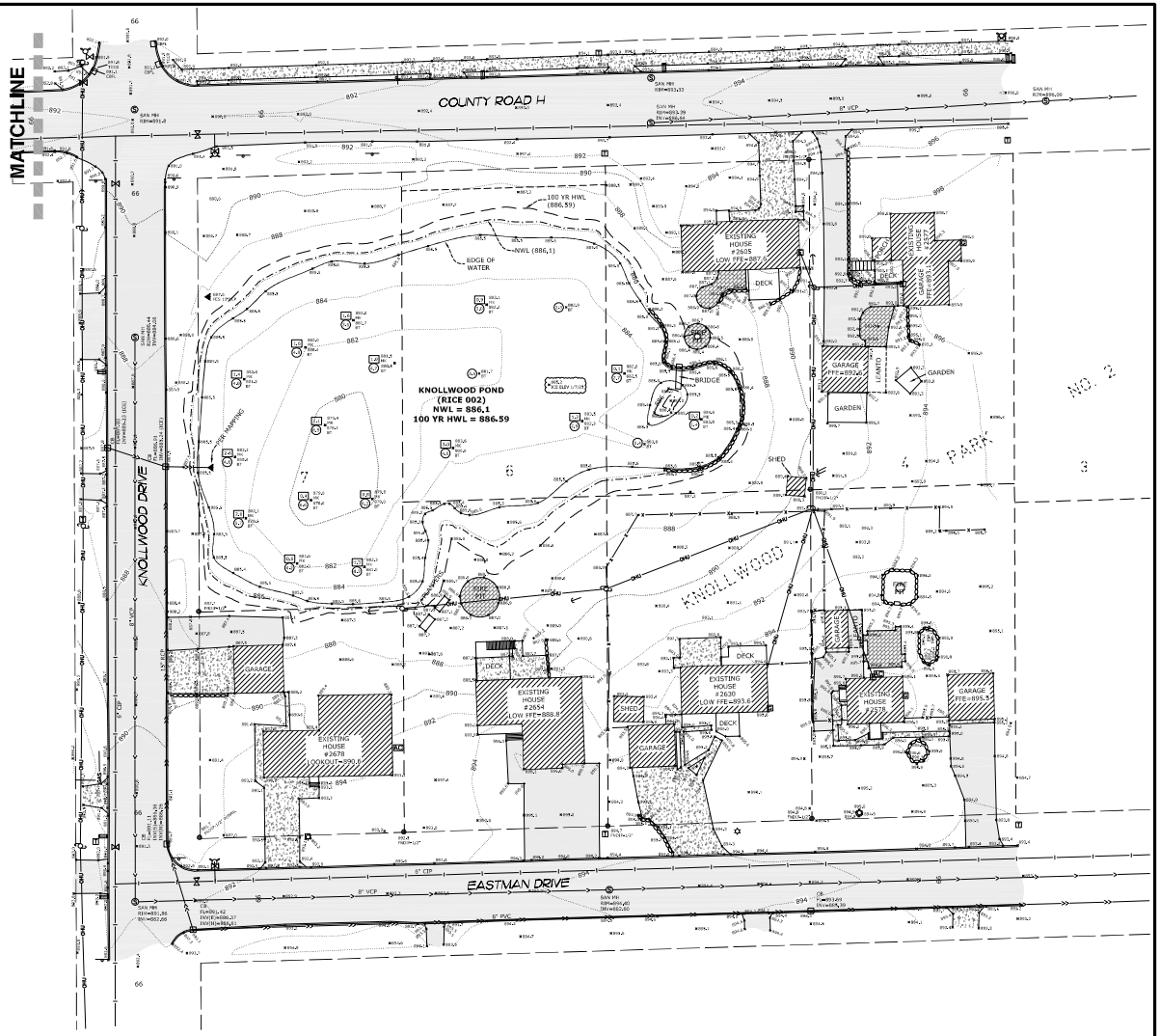
NOTES

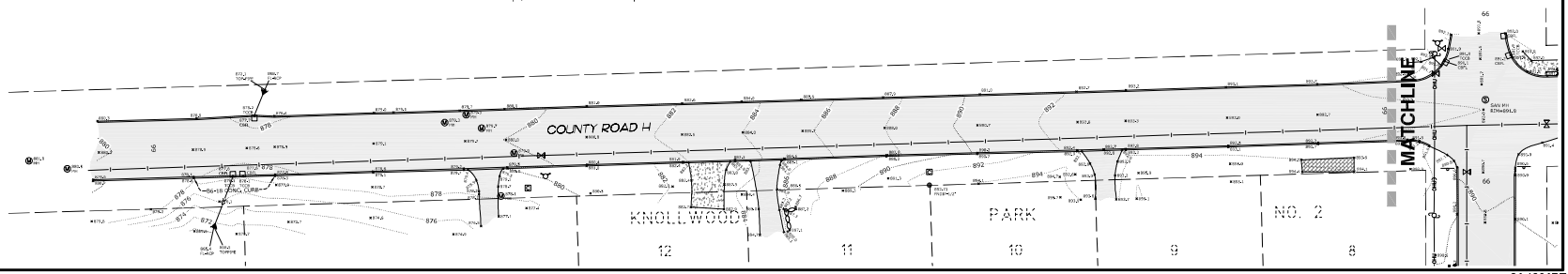
- Field survey was completed by E.G. Rud and Sons, Inc. on 1/8/2025.
- Bearings shown are on Ramsey County datum.
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.
- Due to field work being completed during the winter season there may be improvements in addition to those shown that were not visible due to snow and ice conditions characteristic of Minnesota winters.

LEGEND

- DENOTES IRON MONUMENT FOUND AS LABELED
- DENOTES AIR CONDITIONING UNIT
- DENOTES CATCH BASIN
- DENOTES ELECTRIC METER
- DENOTES GAS METER
- DENOTES GUY WIRE
- DENOTES HYDRANT
- DENOTES LIGHT POLE
- DENOTES MAILBOX
- DENOTES EXISTING SPOT ELEVATION
- DENOTES FIBER OPTIC BOX
- DENOTES POWER POLE
- DENOTES SANITARY SEWER MANHOLE
- DENOTES SIGN
- DENOTES STORM SEWER APRON
- DENOTES TELEPHONE PEDESTAL
- DENOTES WATER VALVE
- DENOTES FENCE
- DENOTES RETAINING WALL
- DENOTES EXISTING CONTOURS
- DENOTES EXISTING STORM SEWER
- DENOTES EXISTING SANITARY SEWER
- DENOTES OVERHEAD UTILITY
- DENOTES BITUMINOUS SURFACE
- DENOTES CONCRETE SURFACE
- DENOTES PAVER SURFACE
- DENOTES DEPTH OF MUCK
- DENOTES POND DEPTH TO BOTTOM OF POND

NORTH
GRAPHIC SCALE
30 0 15 30 60
1 INCH = 30 FEET





I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly licensed Land Surveyor under the laws of the State of Minnesota.

Preliminary
09/23/2025 11:37:06 AM

Date: 9/23/2025 License No. 41578

BENCHMARK

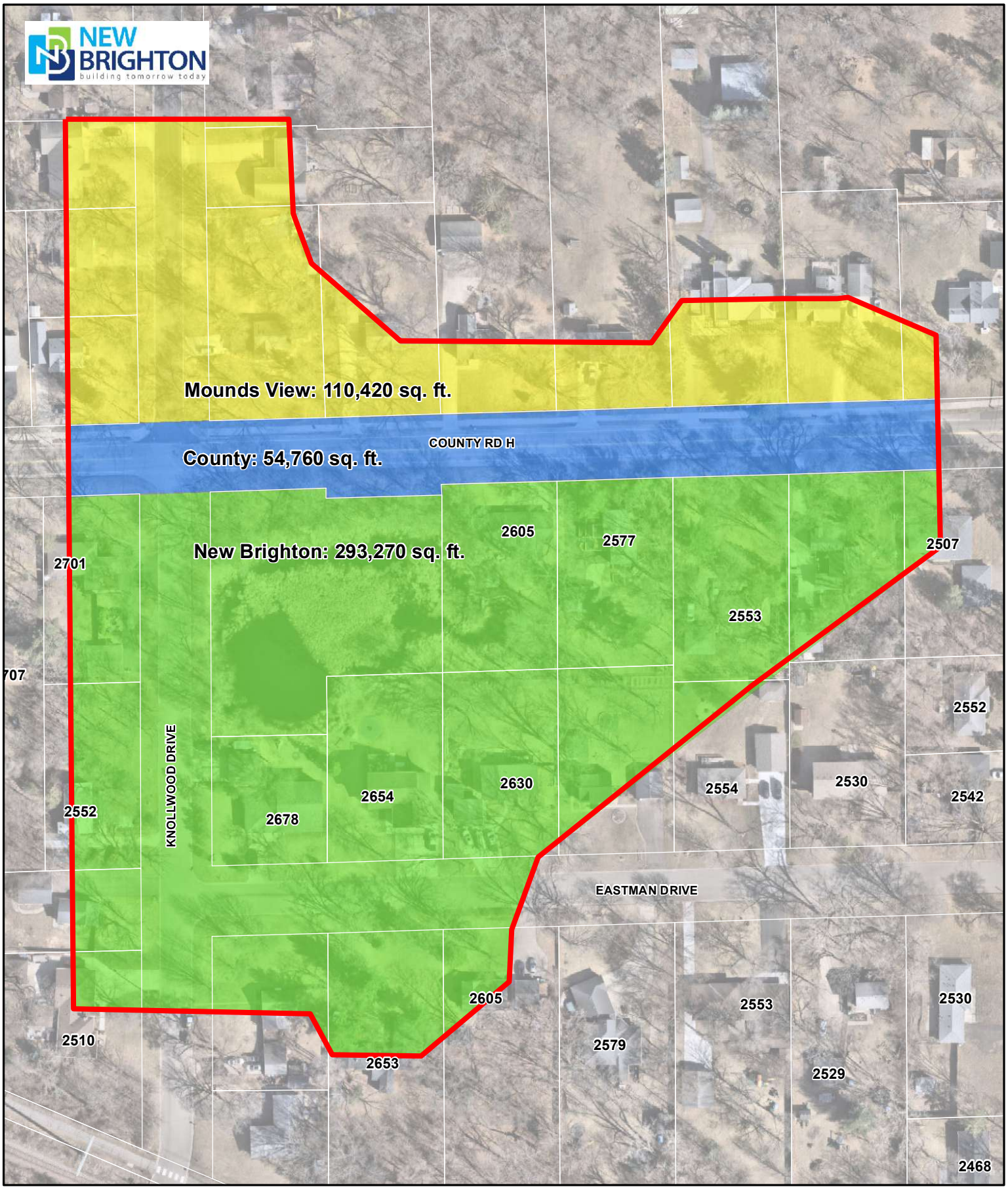
RAMSEY COUNTY BENCHMARK 9048
ELEVATION = 894.22 (NAVD 88 DATUM)

DRAWN BY: BAB	JOB NO: 241364BT		DATE: 1/15/2025
CHECK BY: JER	FIELD CREW: RW/MR AND JH		
1	9/23/25	ADDITIONAL TOPO	BAB
2			
3			
NO.	DATE	DESCRIPTION	BY

E.G. RUD & SONS, INC.
EST. 1977
Professional Land Surveyors
6776 Lake Drive NE, Suite 110
Lino Lakes, MN 55014
Tel. (651) 361-8200 Fax (651) 361-8701
www.egrud.com

C:\USERS\BBYER.EGRUD\DESKTOP\REMOTE JOBS\241364 NEW BRIGHTON PONDS\241364BT.DWG

24.1364BT



Ownership

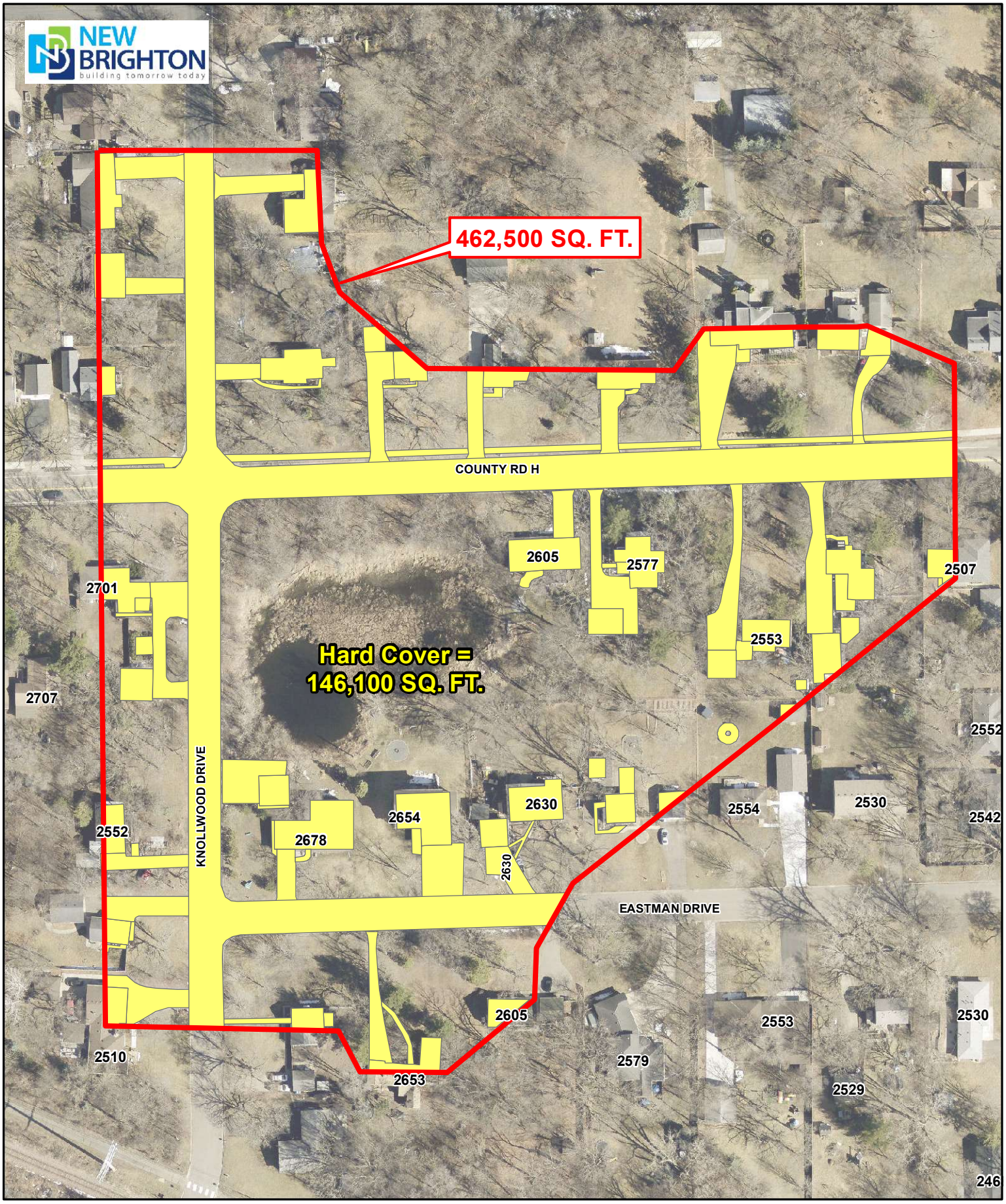
- Mounds View
- Ramsey County
- New Brighton

Drainage Boundary

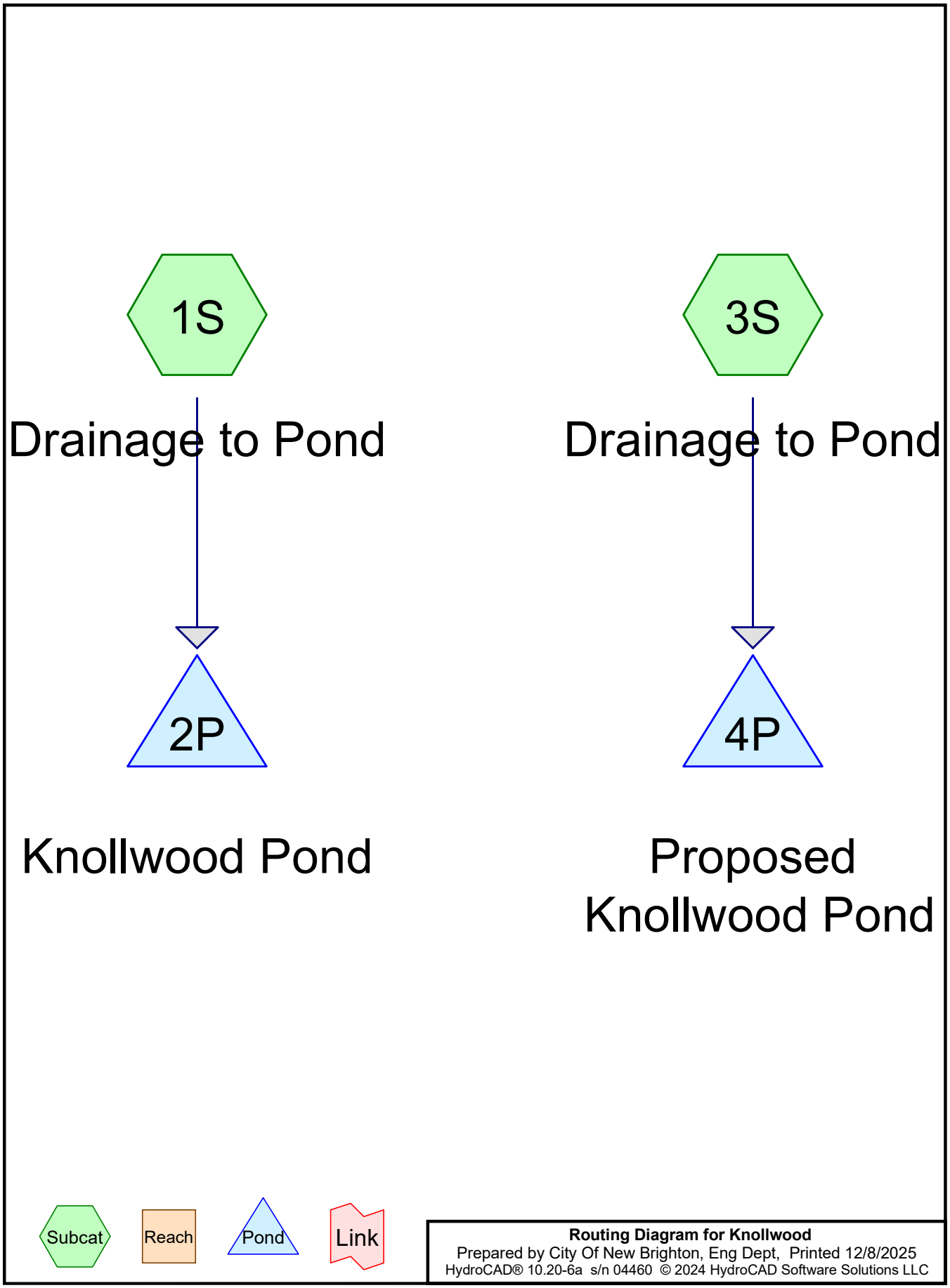
N

50 25 0 50 Feet

Knollwood Pond
Drainage Area



Knollwood Pond
Hard Cover


1S
Drainage to Pond
2P
Knollwood Pond
3S
Drainage to Pond
4P
Proposed
Knollwood Pond
Subcat
Reach
Pond
Link
Routing Diagram for Knollwood
Prepared by City Of New Brighton, Eng Dept, Printed 12/8/2025
HydroCAD® 10.20-6a s/n 04460 © 2024 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.46	2
2	2-yr	Type II 24-hr		Default	24.00	1	2.83	2
3	10-day Snowmelt	Spillway 1-day 10-day		Default	240.00	1	7.20	4
4	10-yr	Type II 24-hr		Default	24.00	1	4.22	2
5	100-yr	Type II 24-hr		Default	24.00	1	7.33	2
6	NURP	Type II 24-hr		Default	24.00	1	2.50	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.625	61	>75% Grass cover, Good, HSG B (1S, 3S)
6.708	98	Paved parking, HSG B (1S, 3S)
1.716	98	Water Surface, HSG B (1S, 3S)
21.049	**76**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
21.049	HSG B	1S, 3S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
21.049		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	12.625	0.000	0.000	0.000	12.625	>75% Grass cover, Good	1S, 3S
0.000	6.708	0.000	0.000	0.000	6.708	Paved parking	1S, 3S
0.000	1.716	0.000	0.000	0.000	1.716	Water Surface	1S, 3S
0.000	**21.049**	**0.000**	**0.000**	**0.000**	**21.049**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	4P	885.00	874.27	750.0	0.0143	0.012	0.0	12.0	0.0	

Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=1.00"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=11.46 cfs 0.880 af

Subcatchment 3S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=1.00"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=11.46 cfs 0.880 af

Pond 2P: Knollwood Pond Peak Elev=886.40' Storage=129,122 cf Inflow=11.46 cfs 0.880 af
Discarded=0.02 cfs 0.327 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.327 af

Pond 4P: Proposed Knollwood Pond Peak Elev=885.66' Storage=98,402 cf Inflow=11.46 cfs 0.880 af
Discarded=0.02 cfs 0.005 af Primary=1.51 cfs 1.271 af Secondary=0.00 cfs 0.000 af Outflow=1.53 cfs 1.276 af

Total Runoff Area = 21.049 ac Runoff Volume = 1.760 af Average Runoff Depth = 1.00"
59.98% Pervious = 12.625 ac 40.02% Impervious = 8.424 ac

Summary for Subcatchment 1S: Drainage to Pond

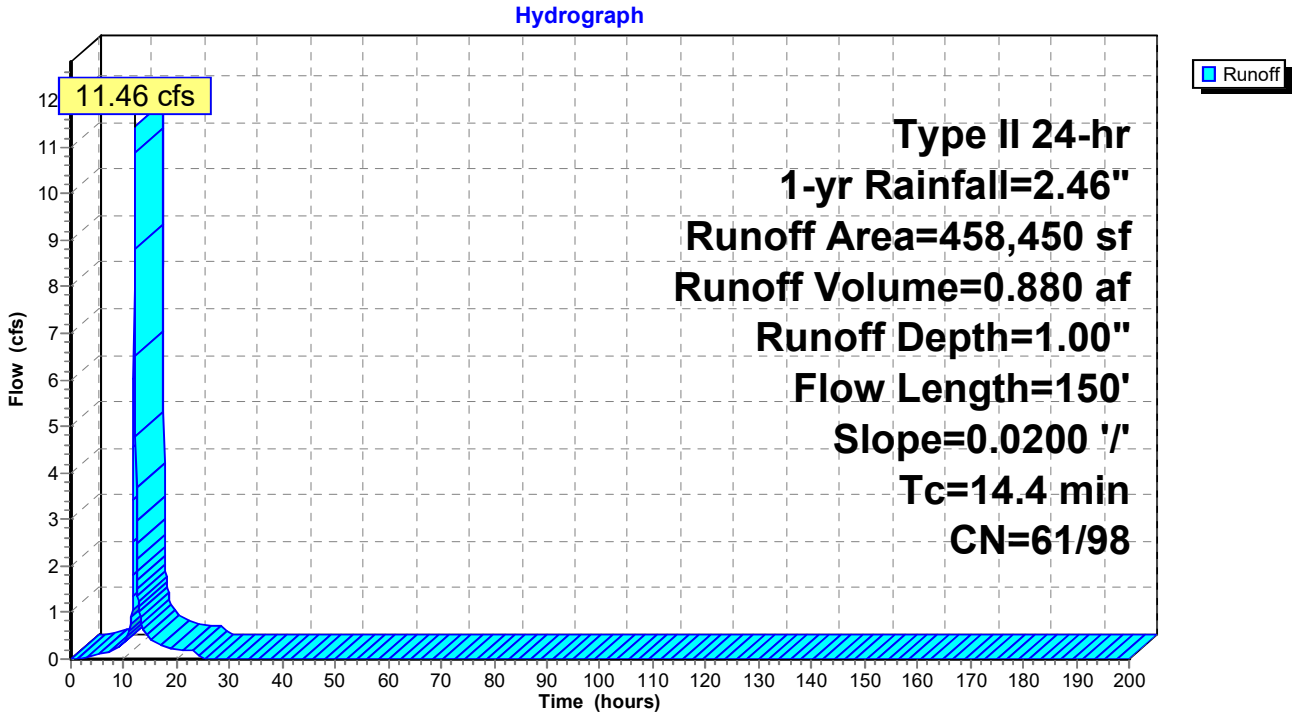
Runoff = 11.46 cfs @ 12.06 hrs, Volume= 0.880 af, Depth= 1.00"
Routed to Pond 2P : Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.46"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 1S: Drainage to Pond



Summary for Subcatchment 3S: Drainage to Pond

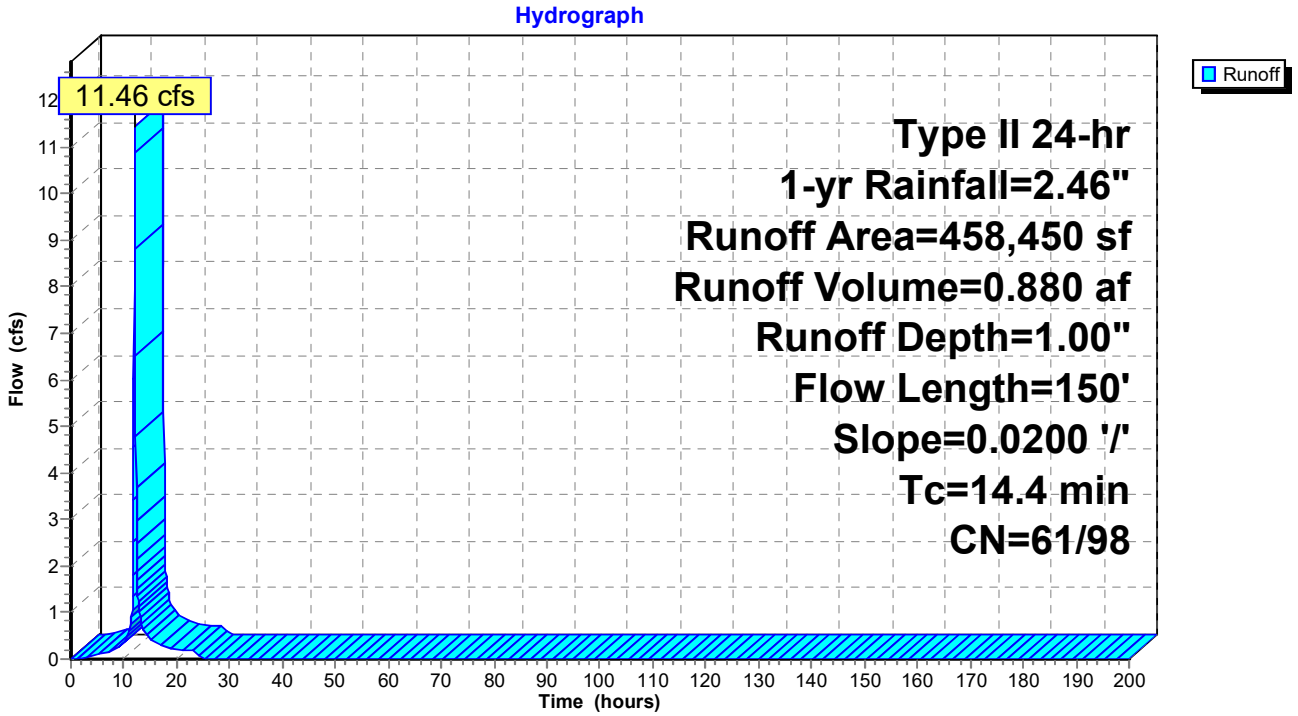
Runoff = 11.46 cfs @ 12.06 hrs, Volume= 0.880 af, Depth= 1.00"
Routed to Pond 4P : Proposed Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.46"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 3S: Drainage to Pond



Summary for Pond 2P: Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 1.00" for 1-yr event
Inflow = 11.46 cfs @ 12.06 hrs, Volume= 0.880 af
Outflow = 0.02 cfs @ 6.30 hrs, Volume= 0.327 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.02 cfs @ 6.30 hrs, Volume= 0.327 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 886.40' @ 24.35 hrs Surf.Area= 46,094 sf Storage= 129,122 cf (36,721 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 5,274.5 min (6,063.0 - 788.5)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

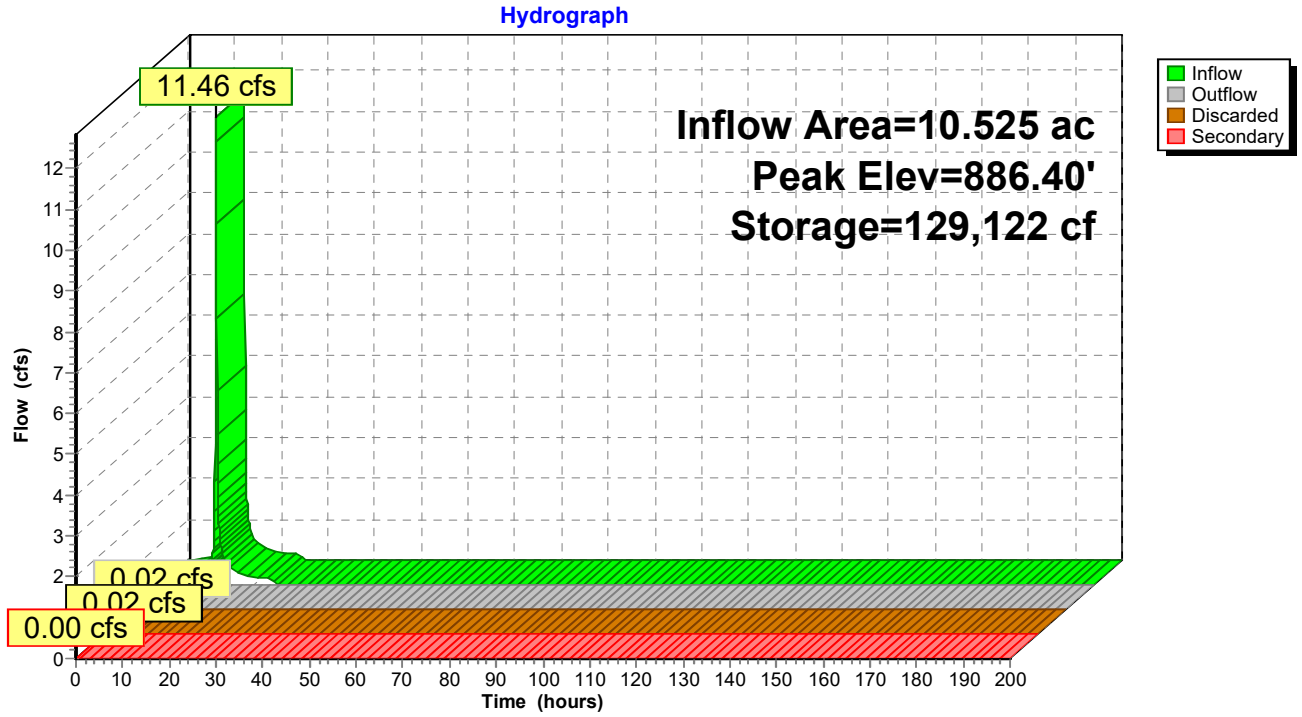
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**

Discarded OutFlow Max=0.02 cfs @ 6.30 hrs HW=885.52' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=885.50' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Knollwood Pond



Summary for Pond 4P: Proposed Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 1.00" for 1-yr event
Inflow = 11.46 cfs @ 12.06 hrs, Volume= 0.880 af
Outflow = 1.53 cfs @ 12.59 hrs, Volume= 1.276 af, Atten= 87%, Lag= 32.0 min
Discarded = 0.02 cfs @ 12.10 hrs, Volume= 0.005 af
Primary = 1.51 cfs @ 12.59 hrs, Volume= 1.271 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 885.66' @ 12.59 hrs Surf.Area= 38,438 sf Storage= 98,402 cf (6,002 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 229.6 min (1,018.1 - 788.5)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

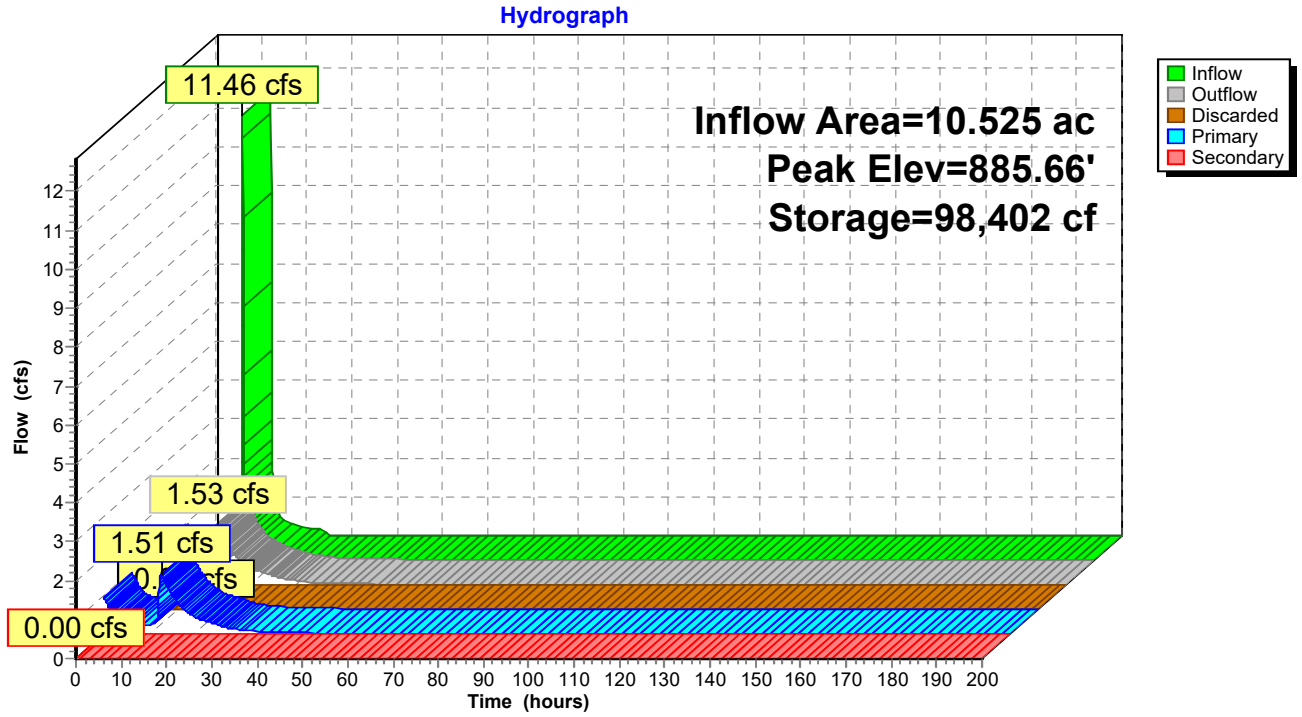
Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**
#3	Primary	885.00'	**12.0" Round Culvert** L= 750.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 885.00' / 874.27' S= 0.0143 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Discarded OutFlow Max=0.02 cfs @ 12.10 hrs HW=885.53' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.51 cfs @ 12.59 hrs HW=885.66' (Free Discharge)
↑**3=Culvert** (Inlet Controls 1.51 cfs @ 2.76 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=885.50' (Free Discharge)
↑**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: Proposed Knollwood Pond



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=1.22"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=13.98 cfs 1.072 af

Subcatchment 3S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=1.22"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=13.98 cfs 1.072 af

Pond 2P: Knollwood Pond Peak Elev=886.57' Storage=137,448 cf Inflow=13.98 cfs 1.072 af
Discarded=0.02 cfs 0.328 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.328 af

Pond 4P: Proposed Knollwood Pond Peak Elev=885.75' Storage=102,107 cf Inflow=13.98 cfs 1.072 af
Discarded=0.02 cfs 0.007 af Primary=1.88 cfs 1.461 af Secondary=0.00 cfs 0.000 af Outflow=1.90 cfs 1.468 af

Total Runoff Area = 21.049 ac Runoff Volume = 2.143 af Average Runoff Depth = 1.22"
59.98% Pervious = 12.625 ac 40.02% Impervious = 8.424 ac

Summary for Subcatchment 1S: Drainage to Pond

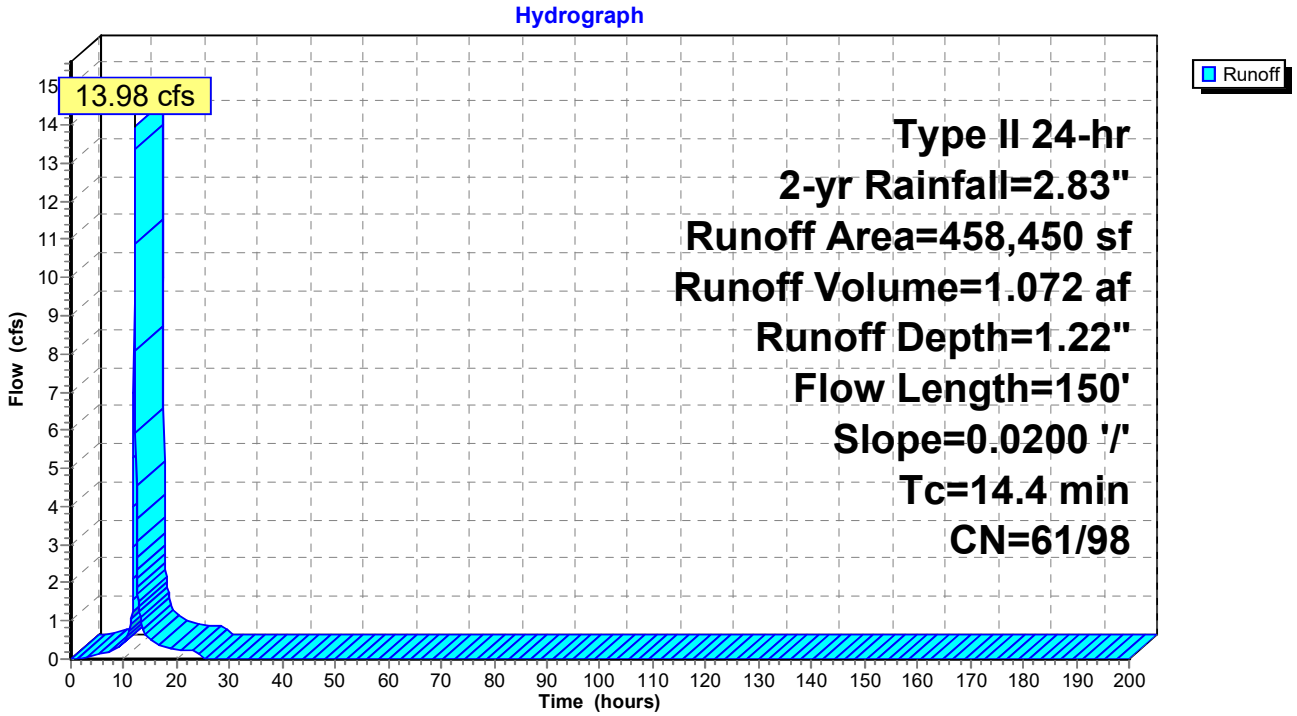
Runoff = 13.98 cfs @ 12.06 hrs, Volume= 1.072 af, Depth= 1.22"
Routed to Pond 2P : Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.83"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 1S: Drainage to Pond



Summary for Subcatchment 3S: Drainage to Pond

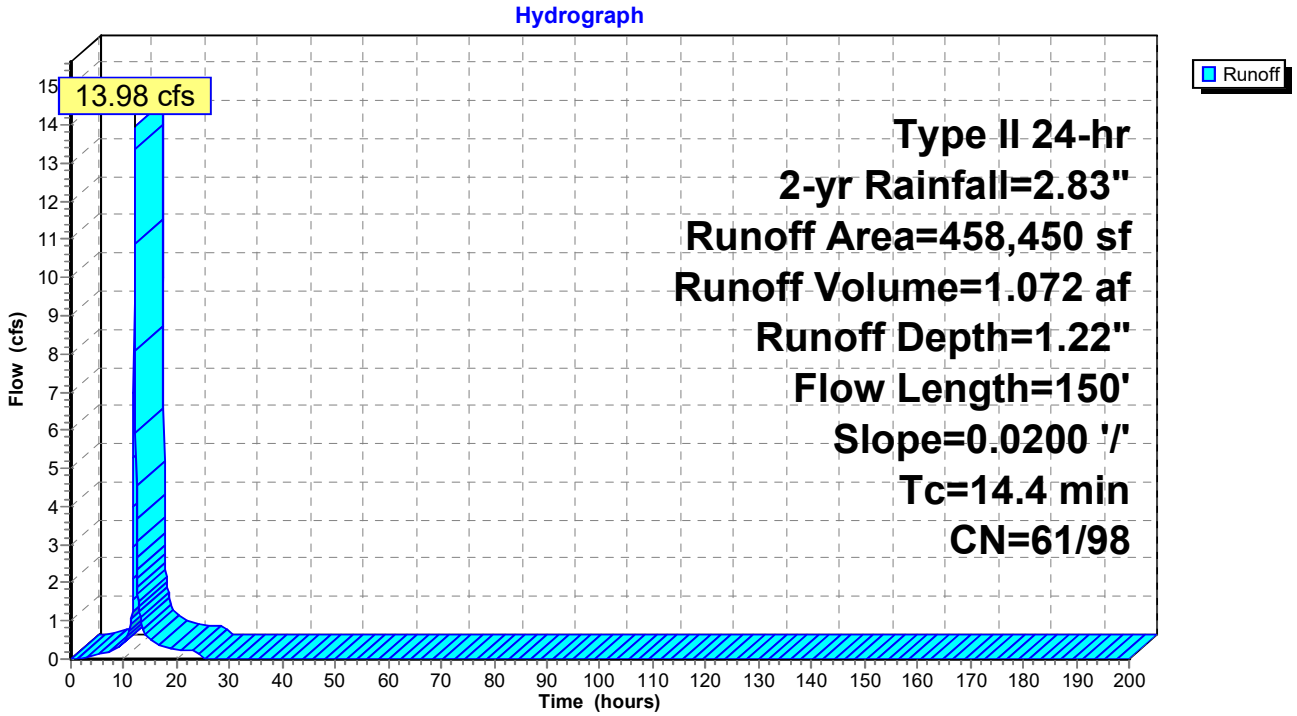
Runoff = 13.98 cfs @ 12.06 hrs, Volume= 1.072 af, Depth= 1.22"
Routed to Pond 4P : Proposed Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-yr Rainfall=2.83"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 3S: Drainage to Pond



Summary for Pond 2P: Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 1.22" for 2-yr event
Inflow = 13.98 cfs @ 12.06 hrs, Volume= 1.072 af
Outflow = 0.02 cfs @ 5.60 hrs, Volume= 0.328 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.02 cfs @ 5.60 hrs, Volume= 0.328 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 886.57' @ 24.37 hrs Surf.Area= 48,475 sf Storage= 137,448 cf (45,048 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 5,265.9 min (6,055.2 - 789.3)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

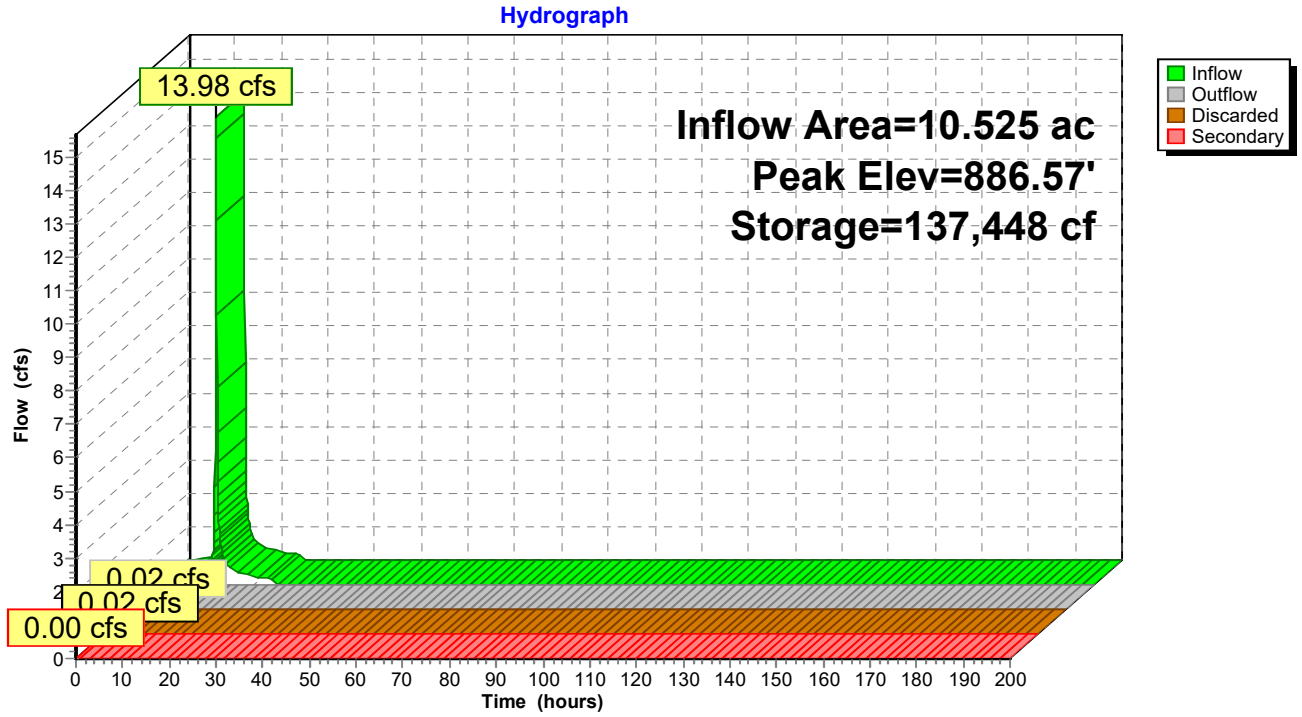
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**

Discarded OutFlow Max=0.02 cfs @ 5.60 hrs HW=885.52' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=885.50' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Knollwood Pond



Summary for Pond 4P: Proposed Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 1.22" for 2-yr event
Inflow = 13.98 cfs @ 12.06 hrs, Volume= 1.072 af
Outflow = 1.90 cfs @ 12.60 hrs, Volume= 1.468 af, Atten= 86%, Lag= 32.0 min
Discarded = 0.02 cfs @ 12.05 hrs, Volume= 0.007 af
Primary = 1.88 cfs @ 12.60 hrs, Volume= 1.461 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 885.75' @ 12.60 hrs Surf.Area= 39,082 sf Storage= 102,107 cf (9,707 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 228.8 min (1,018.1 - 789.3)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

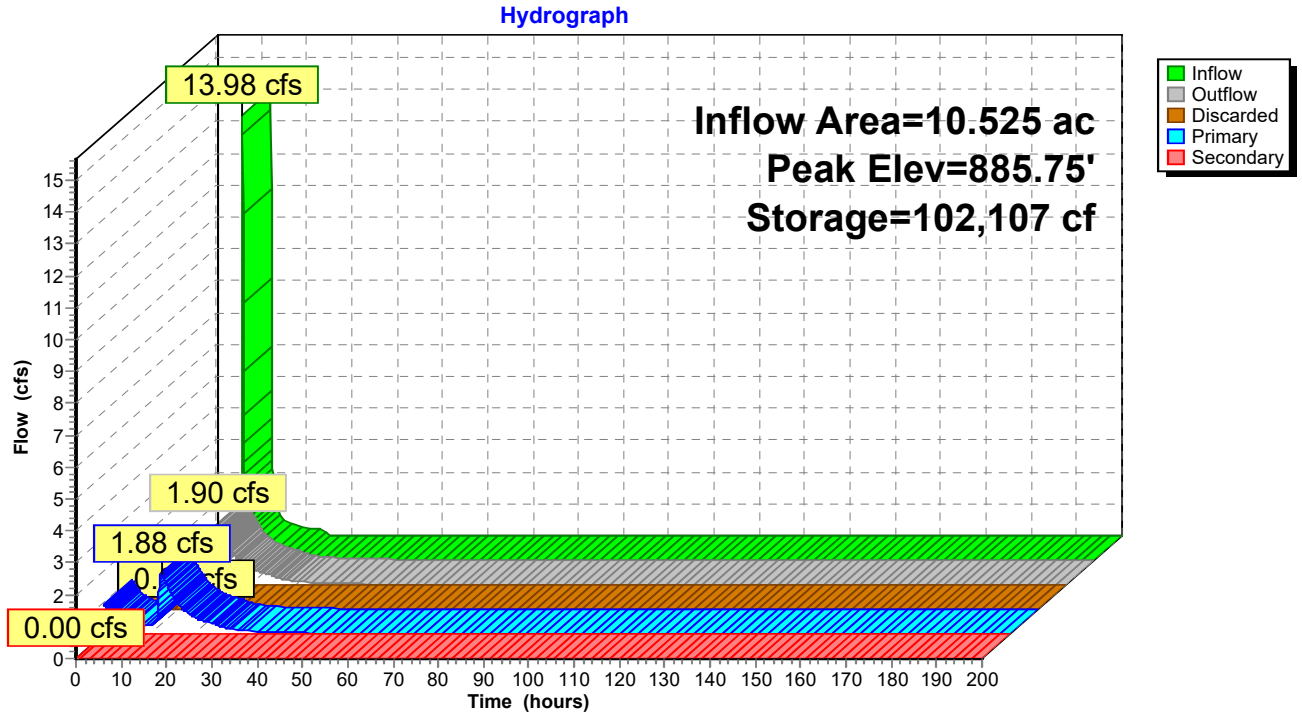
Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**
#3	Primary	885.00'	**12.0" Round Culvert** L= 750.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 885.00' / 874.27' S= 0.0143 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Discarded OutFlow Max=0.02 cfs @ 12.05 hrs HW=885.54' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.88 cfs @ 12.60 hrs HW=885.75' (Free Discharge)
3=Culvert (Inlet Controls 1.88 cfs @ 2.96 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=885.50' (Free Discharge)
1=Orifice/Grate (Controls 0.00 cfs)

Pond 4P: Proposed Knollwood Pond



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth>6.47"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min AMC Adjusted CN=98/98 Runoff=4.98 cfs 5.679 af

Subcatchment 3S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth>6.47"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min AMC Adjusted CN=98/98 Runoff=4.98 cfs 5.679 af

Pond 2P: Knollwood Pond Peak Elev=887.70' Storage=201,031 cf Inflow=4.98 cfs 5.679 af
Discarded=0.02 cfs 0.322 af Secondary=1.47 cfs 4.023 af Outflow=1.49 cfs 4.345 af

Pond 4P: Proposed Knollwood Pond Peak Elev=886.05' Storage=113,776 cf Inflow=4.98 cfs 5.679 af
Discarded=0.02 cfs 0.019 af Primary=2.79 cfs 5.908 af Secondary=0.00 cfs 0.000 af Outflow=2.81 cfs 5.927 af

Total Runoff Area = 21.049 ac Runoff Volume = 11.357 af Average Runoff Depth = 6.47"
59.98% Pervious = 12.625 ac 40.02% Impervious = 8.424 ac

Summary for Subcatchment 1S: Drainage to Pond

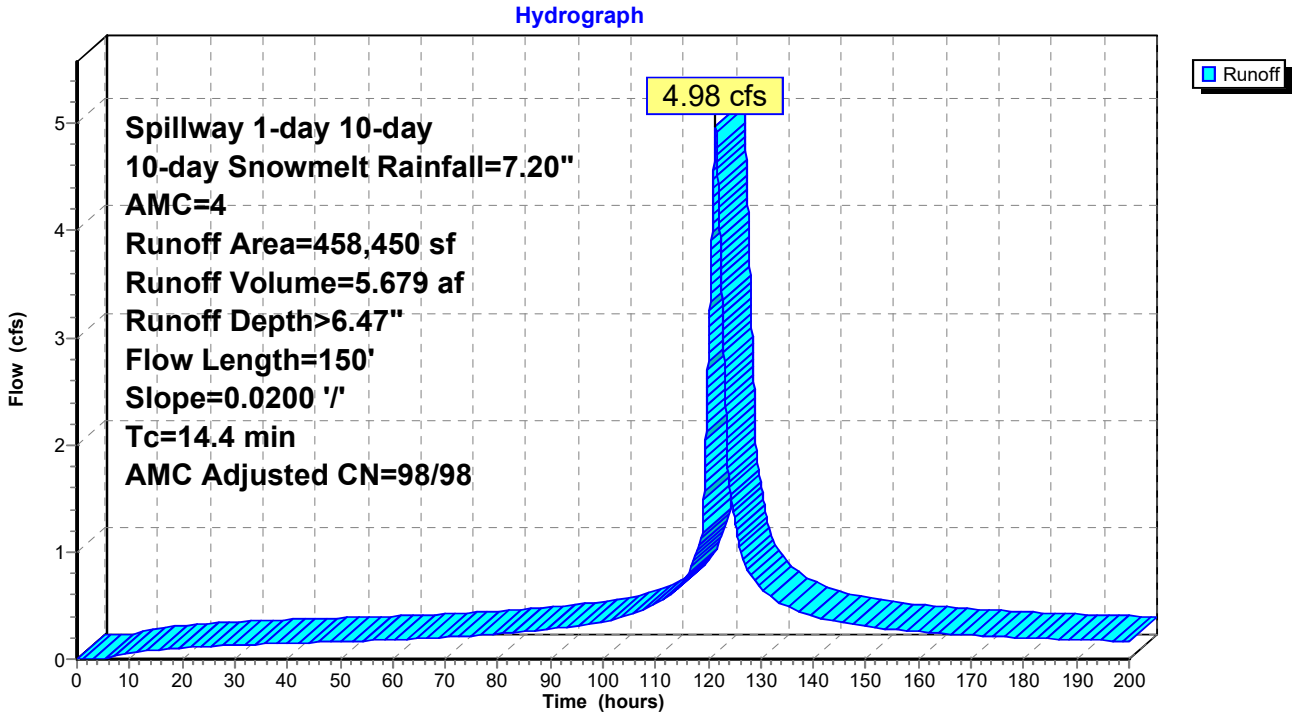
Runoff = 4.98 cfs @ 121.42 hrs, Volume= 5.679 af, Depth> 6.47"
Routed to Pond 2P : Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Spillway 1-day 10-day 10-day Snowmelt Rainfall=7.20", AMC=4

Area (sf)	CN	Adj	Description
146,100	98		Paved parking, HSG B
37,370	98		Water Surface, HSG B
274,980	61		>75% Grass cover, Good, HSG B
458,450	76	98	Weighted Average, AMC Adjusted
274,980	61	98	59.98% Pervious Area, AMC Adjusted
183,470	98	98	40.02% Impervious Area, AMC Adjusted

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 1S: Drainage to Pond



Summary for Subcatchment 3S: Drainage to Pond

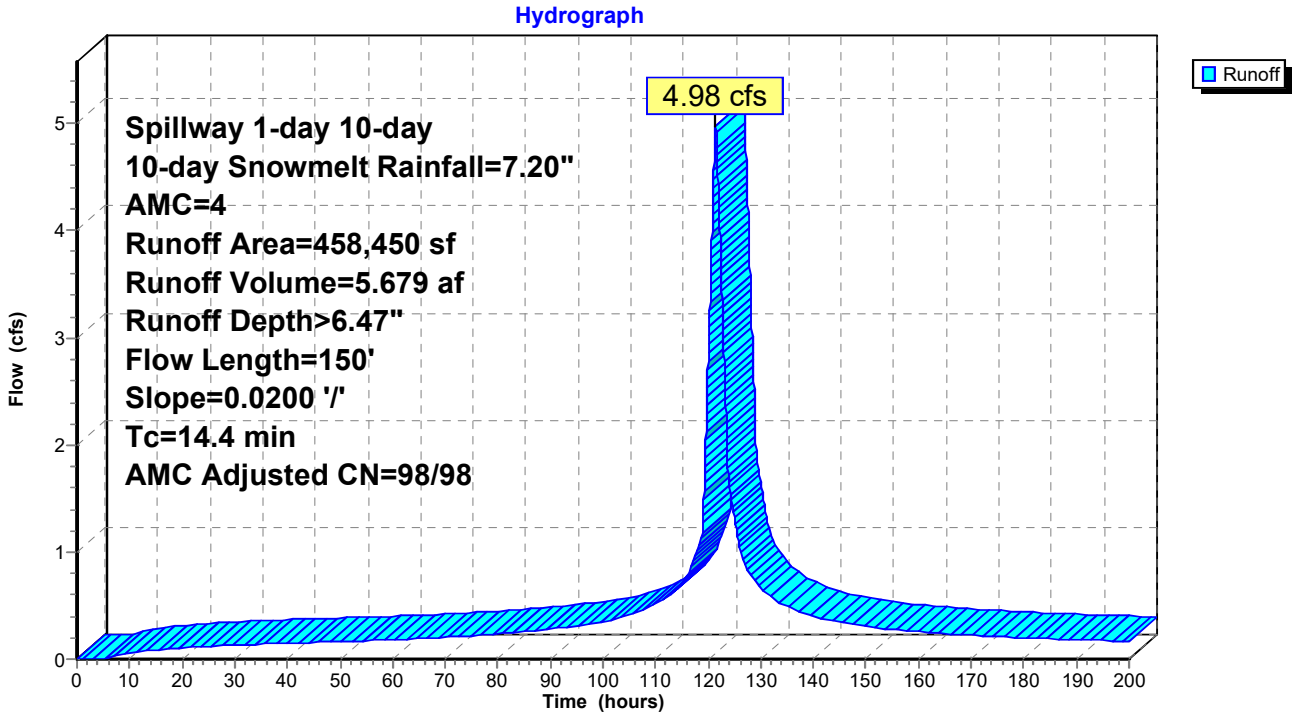
Runoff = 4.98 cfs @ 121.42 hrs, Volume= 5.679 af, Depth> 6.47"
Routed to Pond 4P : Proposed Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Spillway 1-day 10-day 10-day Snowmelt Rainfall=7.20", AMC=4

Area (sf)	CN	Adj	Description
146,100	98		Paved parking, HSG B
37,370	98		Water Surface, HSG B
274,980	61		>75% Grass cover, Good, HSG B
458,450	76	98	Weighted Average, AMC Adjusted
274,980	61	98	59.98% Pervious Area, AMC Adjusted
183,470	98	98	40.02% Impervious Area, AMC Adjusted

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 3S: Drainage to Pond



Summary for Pond 2P: Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth > 6.47" for 10-day Snowmelt event
Inflow = 4.98 cfs @ 121.42 hrs, Volume= 5.679 af
Outflow = 1.49 cfs @ 124.36 hrs, Volume= 4.345 af, Atten= 70%, Lag= 176.0 min
Discarded = 0.02 cfs @ 12.90 hrs, Volume= 0.322 af
Secondary = 1.47 cfs @ 124.36 hrs, Volume= 4.023 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 887.70' @ 124.36 hrs Surf.Area= 63,786 sf Storage= 201,031 cf (108,631 cf above start)

Plug-Flow detention time= 4,430.8 min calculated for 2.224 af (39% of inflow)
Center-of-Mass det. time= 1,232.4 min (8,228.3 - 6,995.9)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

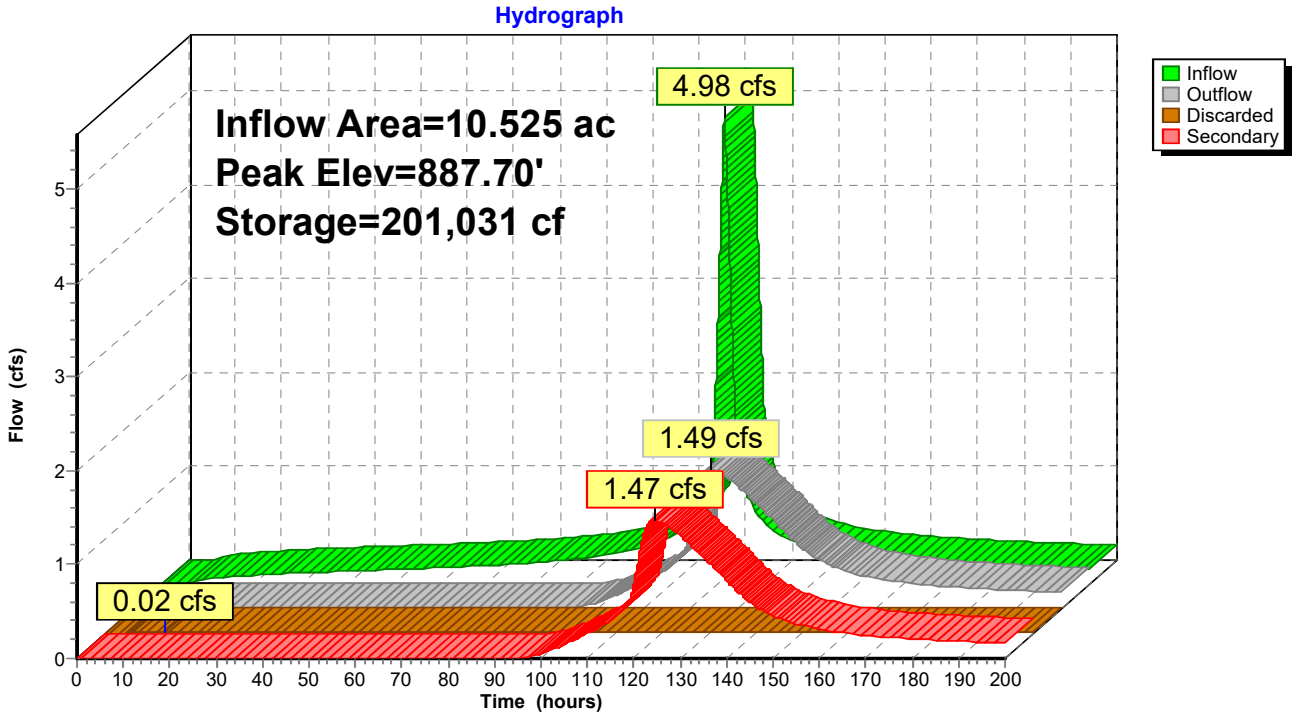
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**

Discarded OutFlow Max=0.02 cfs @ 12.90 hrs HW=885.52' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Secondary OutFlow Max=1.47 cfs @ 124.36 hrs HW=887.70' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 1.47 cfs @ 4.20 fps)

Pond 2P: Knollwood Pond



Summary for Pond 4P: Proposed Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth > 6.47" for 10-day Snowmelt event
Inflow = 4.98 cfs @ 121.42 hrs, Volume= 5.679 af
Outflow = 2.81 cfs @ 123.03 hrs, Volume= 5.927 af, Atten= 44%, Lag= 96.5 min
Discarded = 0.02 cfs @ 119.70 hrs, Volume= 0.019 af
Primary = 2.79 cfs @ 123.03 hrs, Volume= 5.908 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 886.05' @ 123.03 hrs Surf.Area= 41,350 sf Storage= 113,776 cf (21,375 cf above start)

Plug-Flow detention time= 2,464.0 min calculated for 3.806 af (67% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

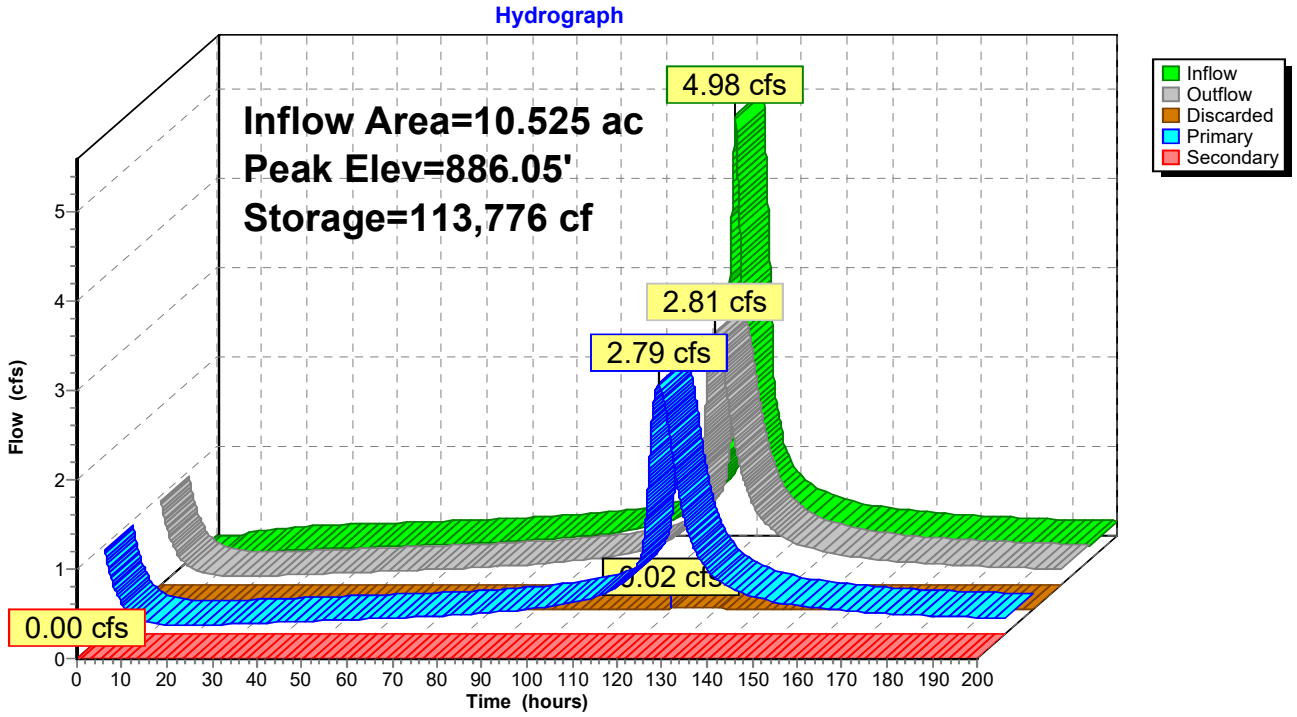
Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**
#3	Primary	885.00'	**12.0" Round Culvert** L= 750.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 885.00' / 874.27' S= 0.0143 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Discarded OutFlow Max=0.02 cfs @ 119.70 hrs HW=885.52' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=2.79 cfs @ 123.03 hrs HW=886.04' (Free Discharge)
↑**3=Culvert** (Inlet Controls 2.79 cfs @ 3.55 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=885.50' (Free Discharge)
↑**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: Proposed Knollwood Pond



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=2.15"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=25.78 cfs 1.886 af

Subcatchment 3S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=2.15"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=25.78 cfs 1.886 af

Pond 2P: Knollwood Pond Peak Elev=886.99' Storage=158,846 cf Inflow=25.78 cfs 1.886 af
Discarded=0.02 cfs 0.329 af Secondary=0.43 cfs 0.652 af Outflow=0.45 cfs 0.980 af

Pond 4P: Proposed Knollwood Pond Peak Elev=886.17' Storage=118,859 cf Inflow=25.78 cfs 1.886 af
Discarded=0.02 cfs 0.013 af Primary=3.09 cfs 2.269 af Secondary=0.00 cfs 0.000 af Outflow=3.11 cfs 2.282 af

Total Runoff Area = 21.049 ac Runoff Volume = 3.772 af Average Runoff Depth = 2.15"
59.98% Pervious = 12.625 ac 40.02% Impervious = 8.424 ac

Summary for Subcatchment 1S: Drainage to Pond

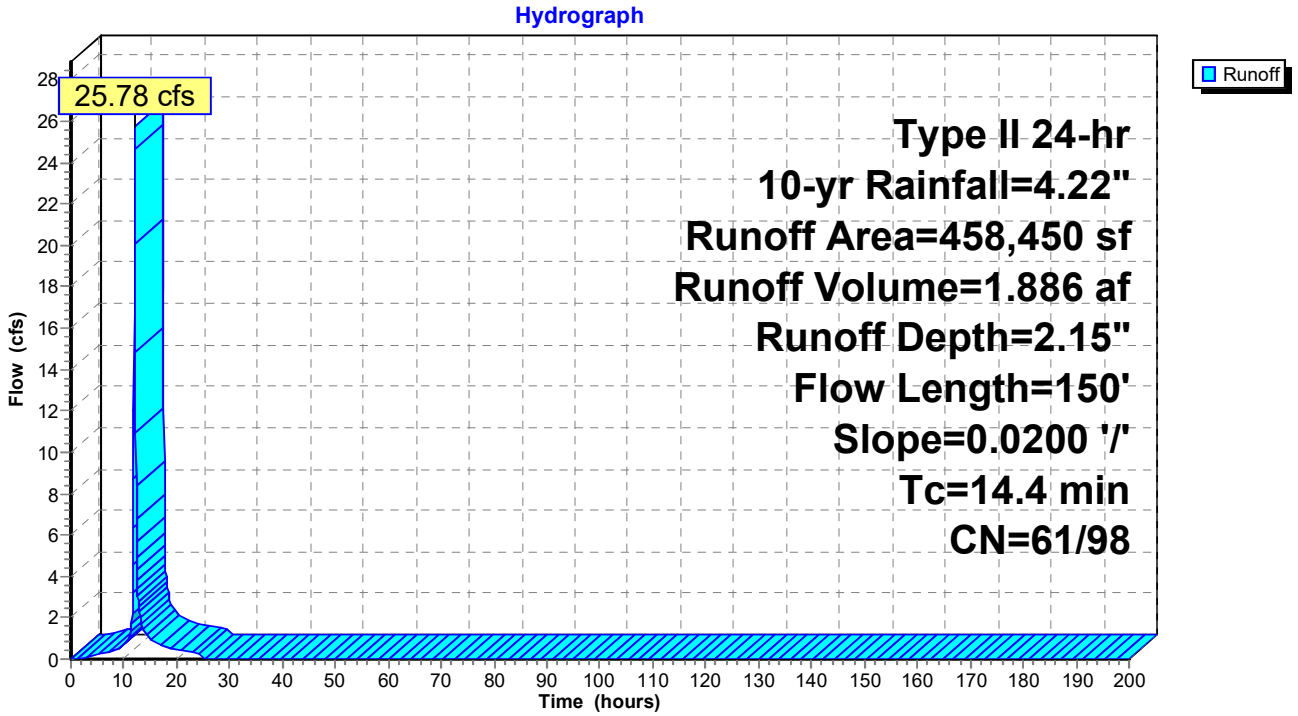
Runoff = 25.78 cfs @ 12.06 hrs, Volume= 1.886 af, Depth= 2.15"
Routed to Pond 2P : Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.22"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 1S: Drainage to Pond



Summary for Subcatchment 3S: Drainage to Pond

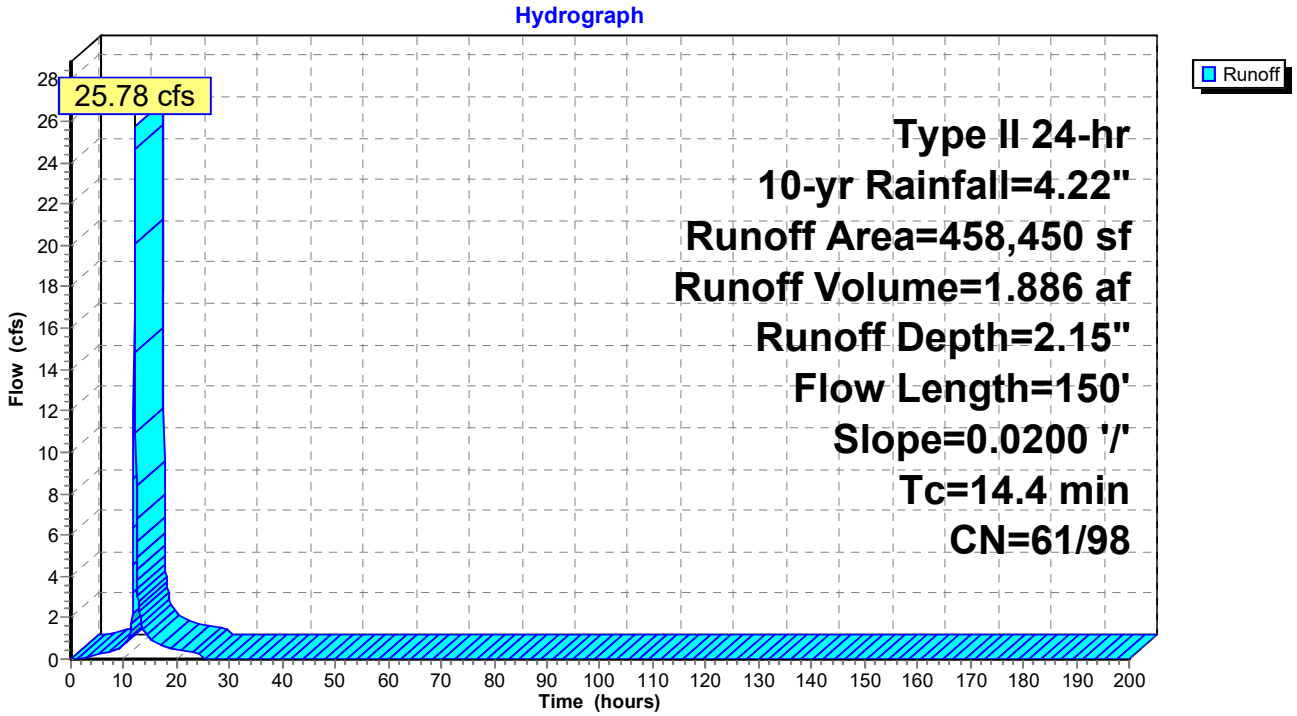
Runoff = 25.78 cfs @ 12.06 hrs, Volume= 1.886 af, Depth= 2.15"
Routed to Pond 4P : Proposed Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=4.22"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 3S: Drainage to Pond



Summary for Pond 2P: Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 2.15" for 10-yr event
Inflow = 25.78 cfs @ 12.06 hrs, Volume= 1.886 af
Outflow = 0.45 cfs @ 19.71 hrs, Volume= 0.980 af, Atten= 98%, Lag= 458.6 min
Discarded = 0.02 cfs @ 4.00 hrs, Volume= 0.329 af
Secondary = 0.43 cfs @ 19.71 hrs, Volume= 0.652 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 886.99' @ 19.71 hrs Surf.Area= 54,113 sf Storage= 158,846 cf (66,446 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 2,299.9 min (3,089.7 - 789.9)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

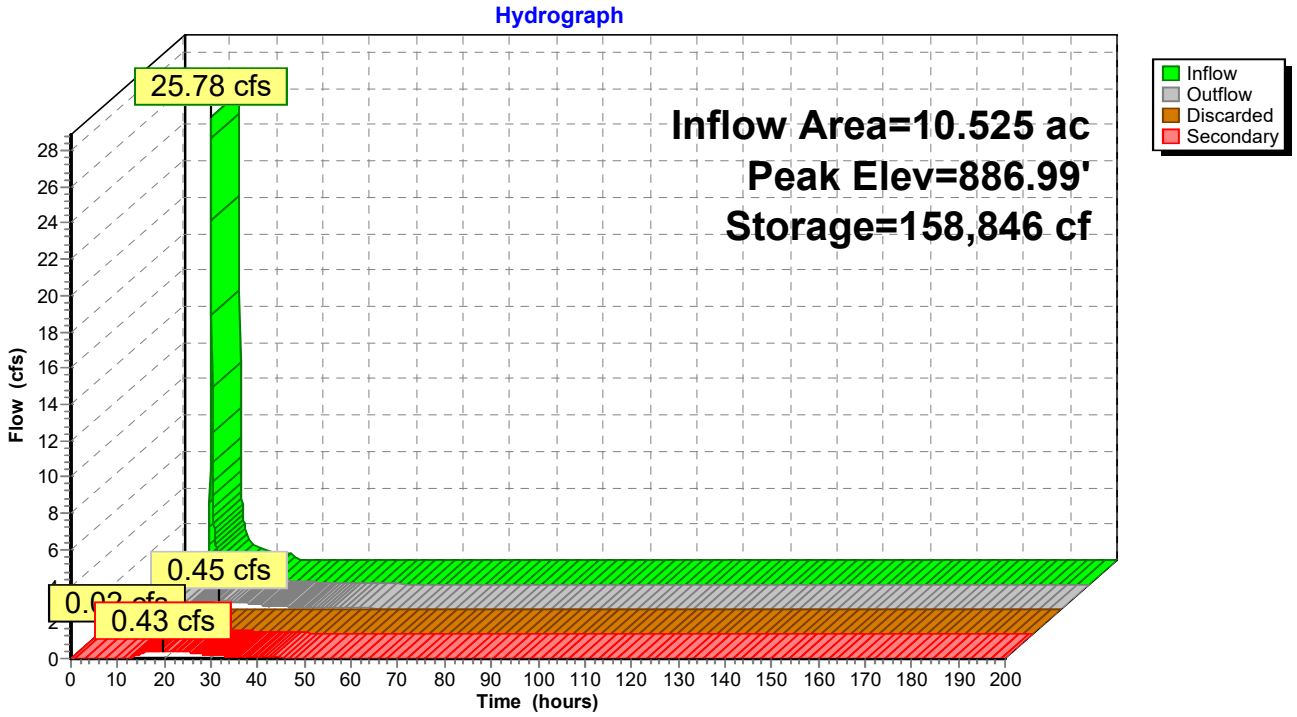
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**

Discarded OutFlow Max=0.02 cfs @ 4.00 hrs HW=885.52' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Secondary OutFlow Max=0.43 cfs @ 19.71 hrs HW=886.99' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 0.43 cfs @ 2.10 fps)

Pond 2P: Knollwood Pond



Summary for Pond 4P: Proposed Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 2.15" for 10-yr event
Inflow = 25.78 cfs @ 12.06 hrs, Volume= 1.886 af
Outflow = 3.11 cfs @ 12.64 hrs, Volume= 2.282 af, Atten= 88%, Lag= 34.9 min
Discarded = 0.02 cfs @ 11.90 hrs, Volume= 0.013 af
Primary = 3.09 cfs @ 12.64 hrs, Volume= 2.269 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 886.17' @ 12.64 hrs Surf.Area= 42,980 sf Storage= 118,859 cf (26,459 cf above start)

Plug-Flow detention time= 2,508.4 min calculated for 0.161 af (9% of inflow)
Center-of-Mass det. time= 224.9 min (1,014.8 - 789.9)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

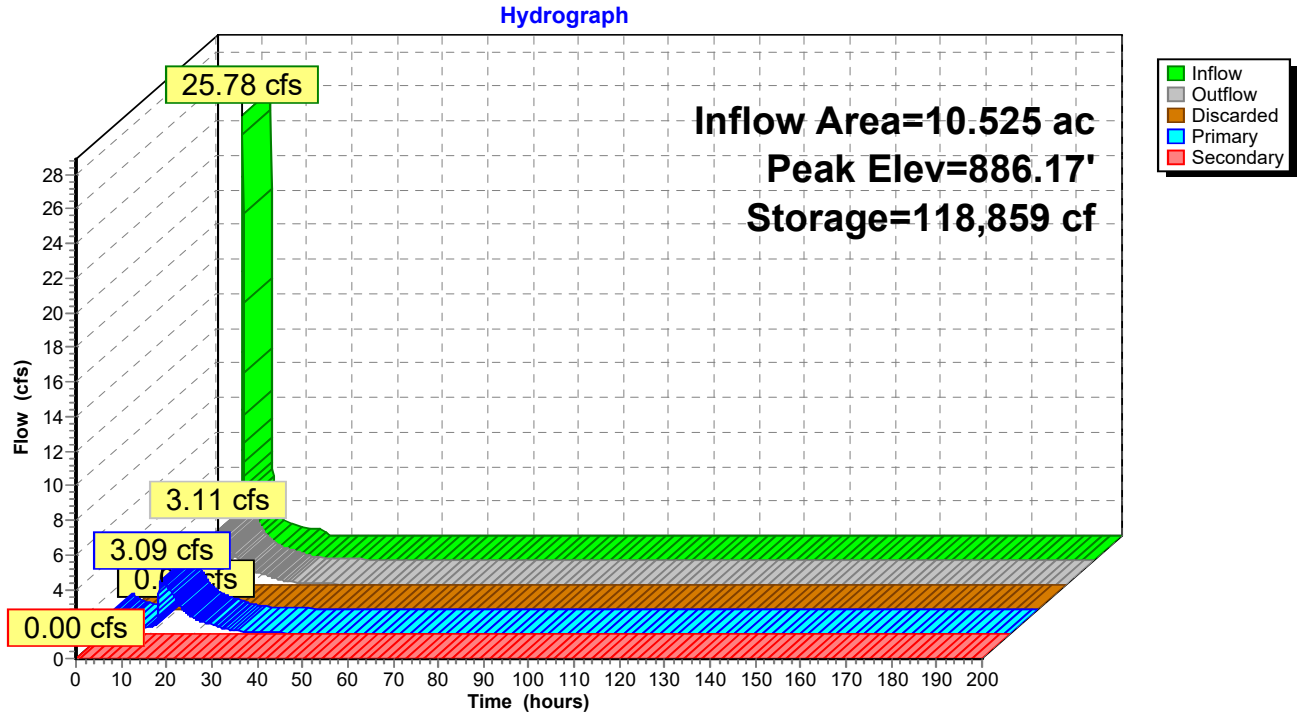
Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**
#3	Primary	885.00'	**12.0" Round Culvert** L= 750.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 885.00' / 874.27' S= 0.0143 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Discarded OutFlow Max=0.02 cfs @ 11.90 hrs HW=885.53' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=3.09 cfs @ 12.64 hrs HW=886.17' (Free Discharge)
↑**3=Culvert** (Inlet Controls 3.09 cfs @ 3.93 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=885.50' (Free Discharge)
↑**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: Proposed Knollwood Pond



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=4.60"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=57.58 cfs 4.037 af

Subcatchment 3S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=4.60"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=57.58 cfs 4.037 af

Pond 2P: Knollwood Pond Peak Elev=887.93' Storage=215,733 cf Inflow=57.58 cfs 4.037 af
Discarded=0.02 cfs 0.329 af Secondary=1.67 cfs 2.781 af Outflow=1.69 cfs 3.111 af

Pond 4P: Proposed Knollwood Pond Peak Elev=887.15' Storage=167,627 cf Inflow=57.58 cfs 4.037 af
Discarded=0.02 cfs 0.023 af Primary=4.68 cfs 4.281 af Secondary=0.75 cfs 0.128 af Outflow=5.45 cfs 4.433 af

Total Runoff Area = 21.049 ac Runoff Volume = 8.073 af Average Runoff Depth = 4.60"
59.98% Pervious = 12.625 ac 40.02% Impervious = 8.424 ac

Summary for Subcatchment 1S: Drainage to Pond

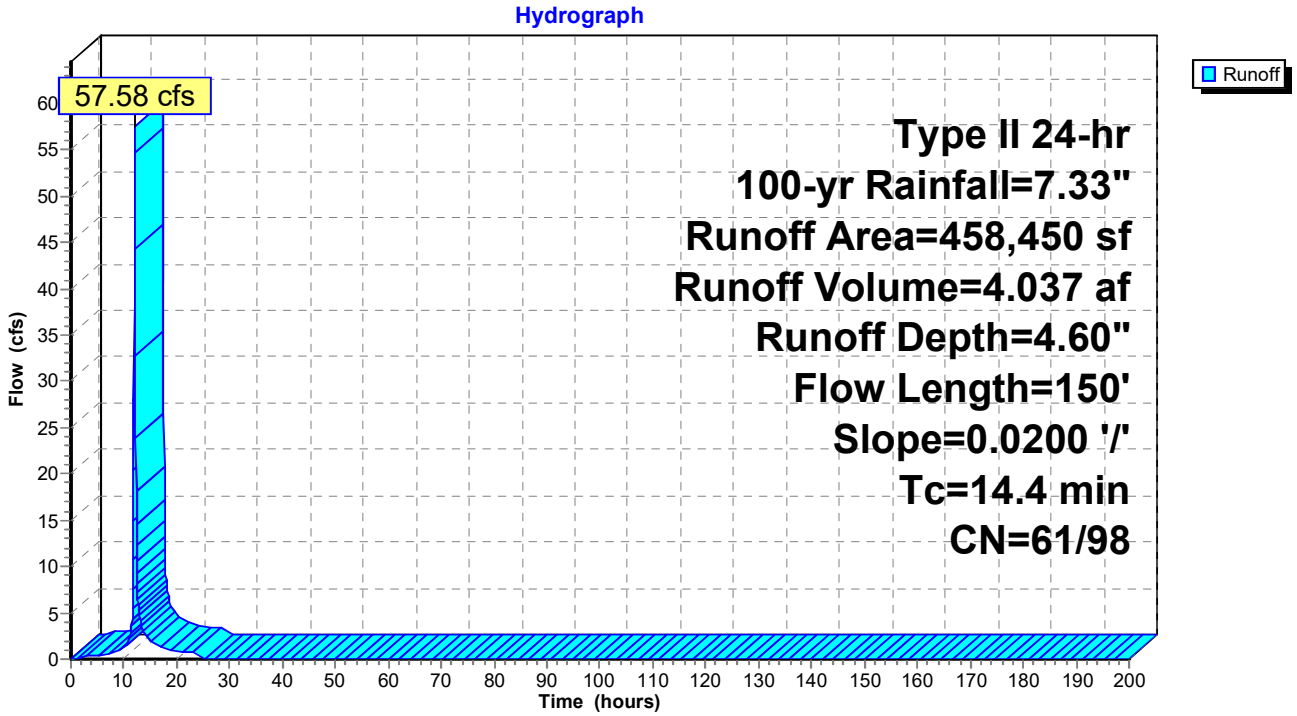
Runoff = 57.58 cfs @ 12.06 hrs, Volume= 4.037 af, Depth= 4.60"
Routed to Pond 2P : Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.33"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 1S: Drainage to Pond



Summary for Subcatchment 3S: Drainage to Pond

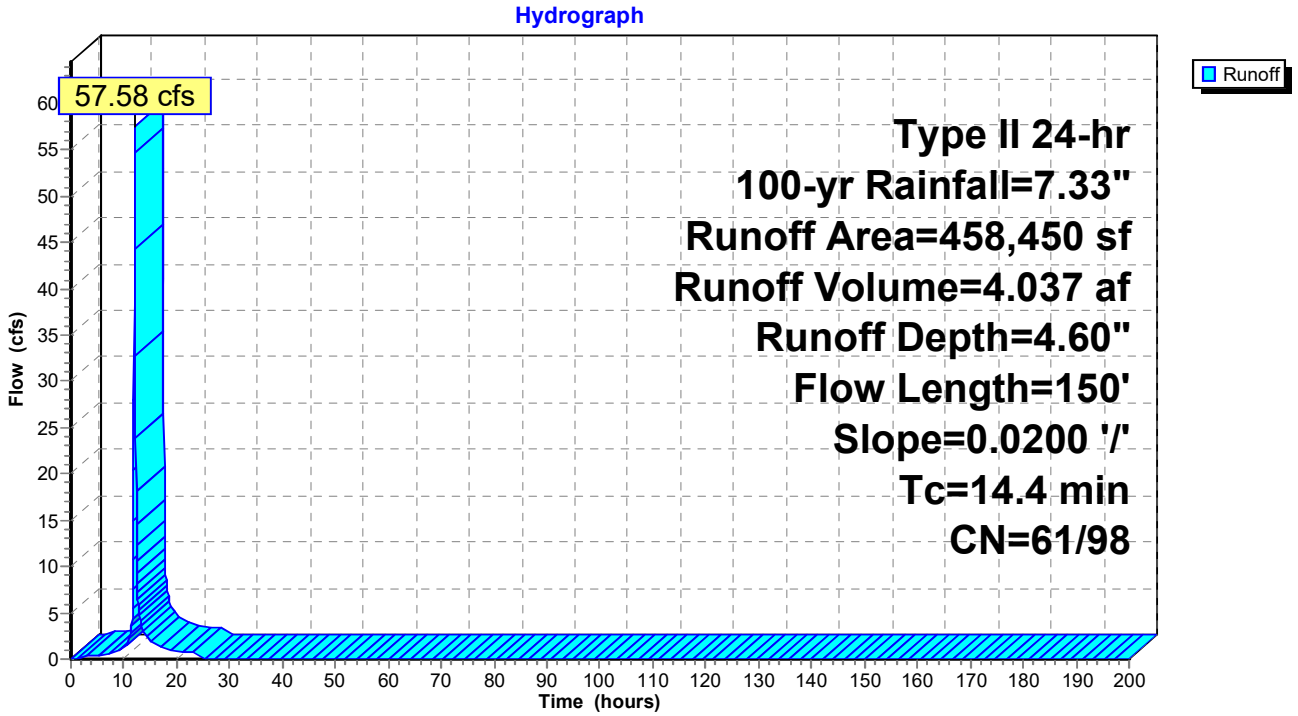
Runoff = 57.58 cfs @ 12.06 hrs, Volume= 4.037 af, Depth= 4.60"
Routed to Pond 4P : Proposed Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=7.33"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 3S: Drainage to Pond



Summary for Pond 2P: Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 4.60" for 100-yr event
Inflow = 57.58 cfs @ 12.06 hrs, Volume= 4.037 af
Outflow = 1.69 cfs @ 15.69 hrs, Volume= 3.111 af, Atten= 97%, Lag= 217.9 min
Discarded = 0.02 cfs @ 2.45 hrs, Volume= 0.329 af
Secondary = 1.67 cfs @ 15.69 hrs, Volume= 2.781 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 887.93' @ 15.69 hrs Surf.Area= 66,829 sf Storage= 215,733 cf (123,333 cf above start)

Plug-Flow detention time= 3,042.4 min calculated for 0.990 af (25% of inflow)
Center-of-Mass det. time= 1,184.0 min (1,971.0 - 787.0)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

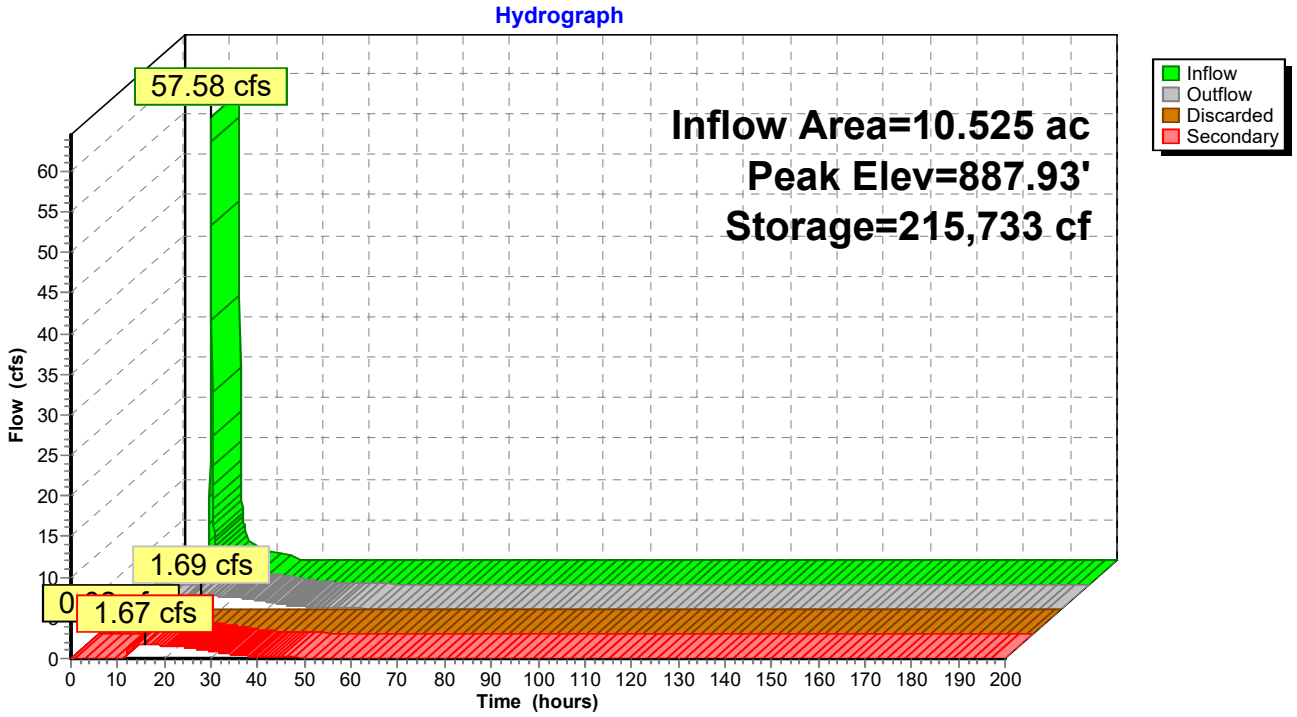
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**

Discarded OutFlow Max=0.02 cfs @ 2.45 hrs HW=885.52' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Secondary OutFlow Max=1.67 cfs @ 15.69 hrs HW=887.93' (Free Discharge)
↑—**1=Orifice/Grate** (Orifice Controls 1.67 cfs @ 4.78 fps)

Pond 2P: Knollwood Pond



Summary for Pond 4P: Proposed Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 4.60" for 100-yr event
Inflow = 57.58 cfs @ 12.06 hrs, Volume= 4.037 af
Outflow = 5.45 cfs @ 12.76 hrs, Volume= 4.433 af, Atten= 91%, Lag= 42.1 min
Discarded = 0.02 cfs @ 11.25 hrs, Volume= 0.023 af
Primary = 4.68 cfs @ 12.76 hrs, Volume= 4.281 af
Secondary = 0.75 cfs @ 12.76 hrs, Volume= 0.128 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 887.15' @ 12.76 hrs Surf.Area= 56,264 sf Storage= 167,627 cf (75,227 cf above start)

Plug-Flow detention time= 668.4 min calculated for 2.311 af (57% of inflow)
Center-of-Mass det. time= 243.7 min (1,030.7 - 787.0)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

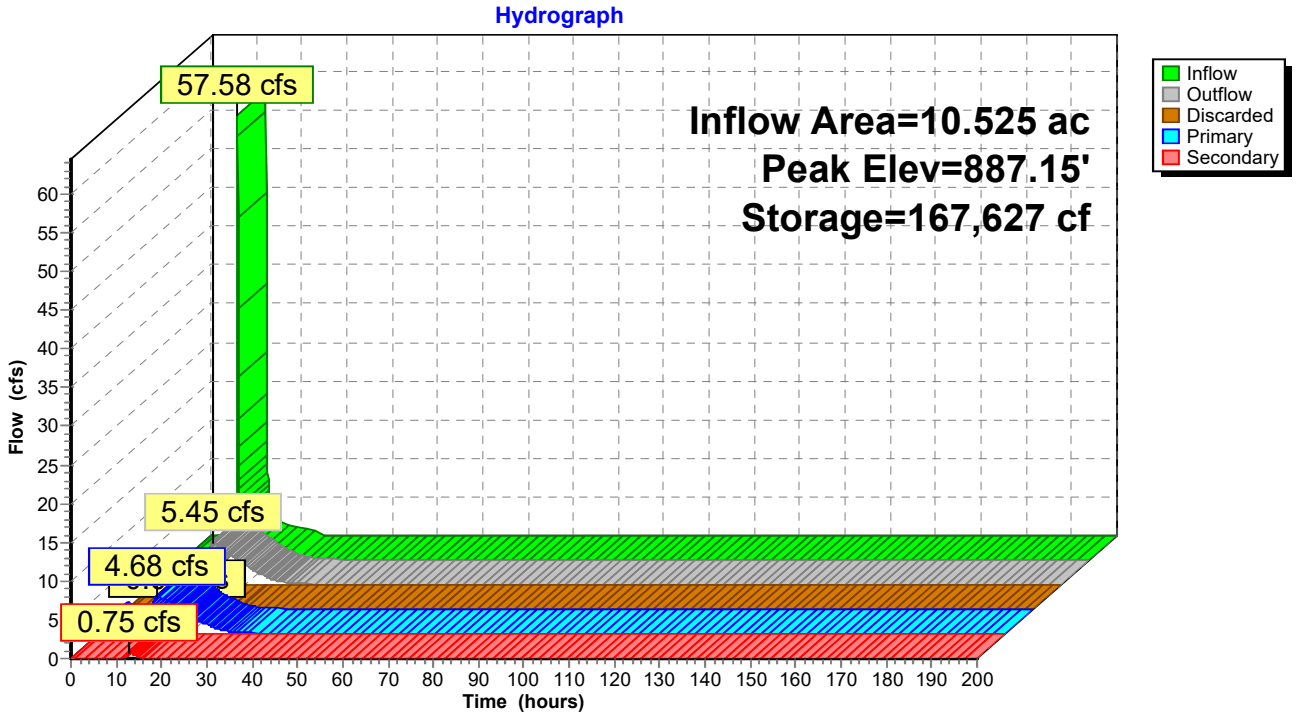
Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**
#3	Primary	885.00'	**12.0" Round Culvert** L= 750.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 885.00' / 874.27' S= 0.0143 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Discarded OutFlow Max=0.02 cfs @ 11.25 hrs HW=885.53' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=4.68 cfs @ 12.76 hrs HW=887.15' (Free Discharge)
3=Culvert (Barrel Controls 4.68 cfs @ 5.96 fps)

Secondary OutFlow Max=0.75 cfs @ 12.76 hrs HW=887.15' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.75 cfs @ 2.50 fps)

Pond 4P: Proposed Knollwood Pond



Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=1.03"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=11.71 cfs 0.900 af

Subcatchment 3S: Drainage to Pond Runoff Area=458,450 sf 40.02% Impervious Runoff Depth=1.03"
Flow Length=150' Slope=0.0200 '/' Tc=14.4 min CN=61/98 Runoff=11.71 cfs 0.900 af

Pond 2P: Knollwood Pond Peak Elev=886.41' Storage=129,994 cf Inflow=11.71 cfs 0.900 af
Discarded=0.02 cfs 0.327 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.327 af

Pond 4P: Proposed Knollwood Pond Peak Elev=885.67' Storage=98,788 cf Inflow=11.71 cfs 0.900 af
Discarded=0.02 cfs 0.006 af Primary=1.55 cfs 1.291 af Secondary=0.00 cfs 0.000 af Outflow=1.57 cfs 1.296 af

Total Runoff Area = 21.049 ac Runoff Volume = 1.800 af Average Runoff Depth = 1.03"
59.98% Pervious = 12.625 ac 40.02% Impervious = 8.424 ac

Summary for Subcatchment 1S: Drainage to Pond

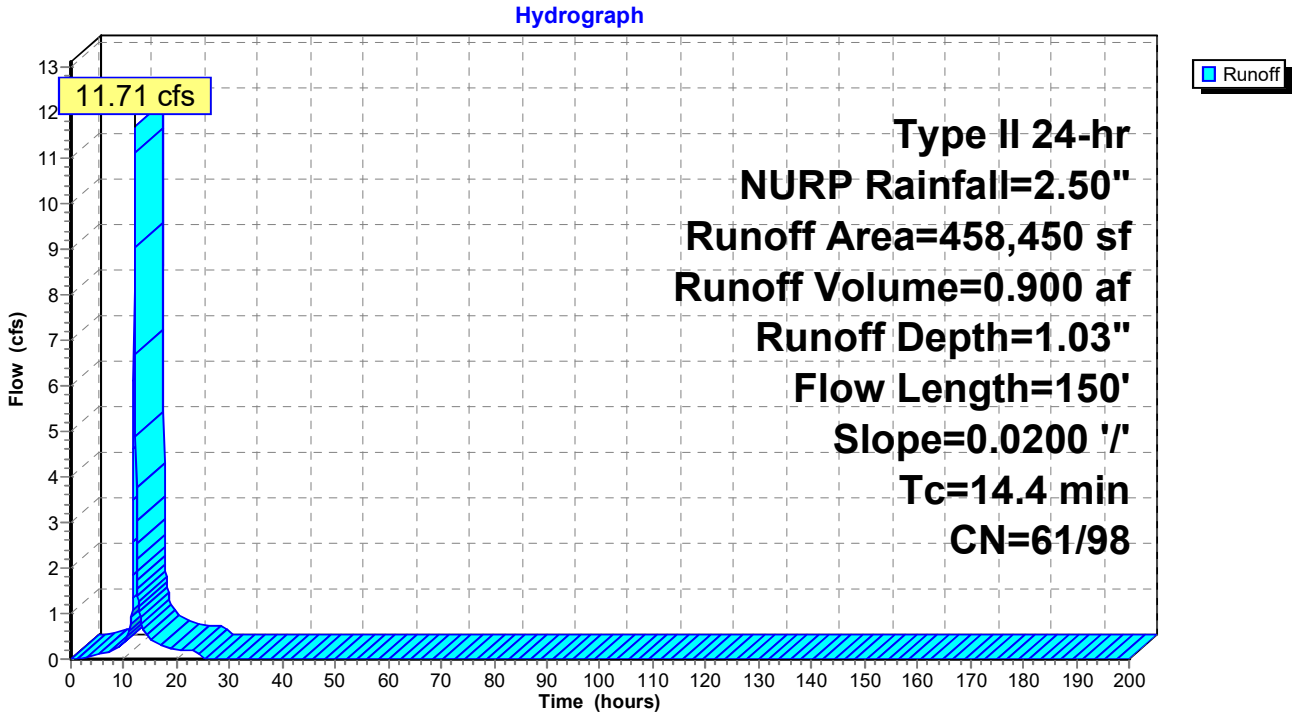
Runoff = 11.71 cfs @ 12.06 hrs, Volume= 0.900 af, Depth= 1.03"
Routed to Pond 2P : Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr NURP Rainfall=2.50"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 1S: Drainage to Pond



Summary for Subcatchment 3S: Drainage to Pond

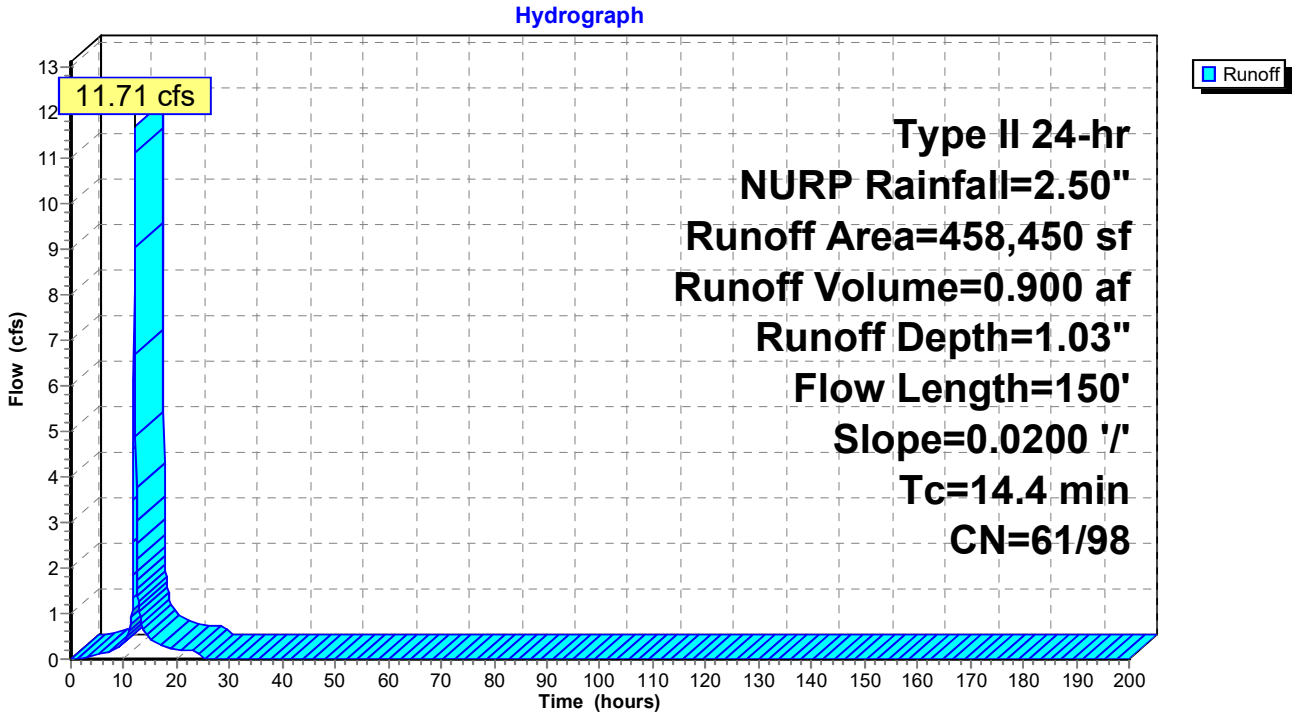
Runoff = 11.71 cfs @ 12.06 hrs, Volume= 0.900 af, Depth= 1.03"
Routed to Pond 4P : Proposed Knollwood Pond

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Type II 24-hr NURP Rainfall=2.50"

Area (sf)	CN	Description
146,100	98	Paved parking, HSG B
37,370	98	Water Surface, HSG B
274,980	61	>75% Grass cover, Good, HSG B
458,450	76	Weighted Average
274,980	61	59.98% Pervious Area
183,470	98	40.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.4	150	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.83"

Subcatchment 3S: Drainage to Pond



Summary for Pond 2P: Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 1.03" for NURP event
Inflow = 11.71 cfs @ 12.06 hrs, Volume= 0.900 af
Outflow = 0.02 cfs @ 6.20 hrs, Volume= 0.327 af, Atten= 100%, Lag= 0.0 min
Discarded = 0.02 cfs @ 6.20 hrs, Volume= 0.327 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 886.41' @ 24.35 hrs Surf.Area= 46,350 sf Storage= 129,994 cf (37,594 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 5,273.4 min (6,062.0 - 788.6)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

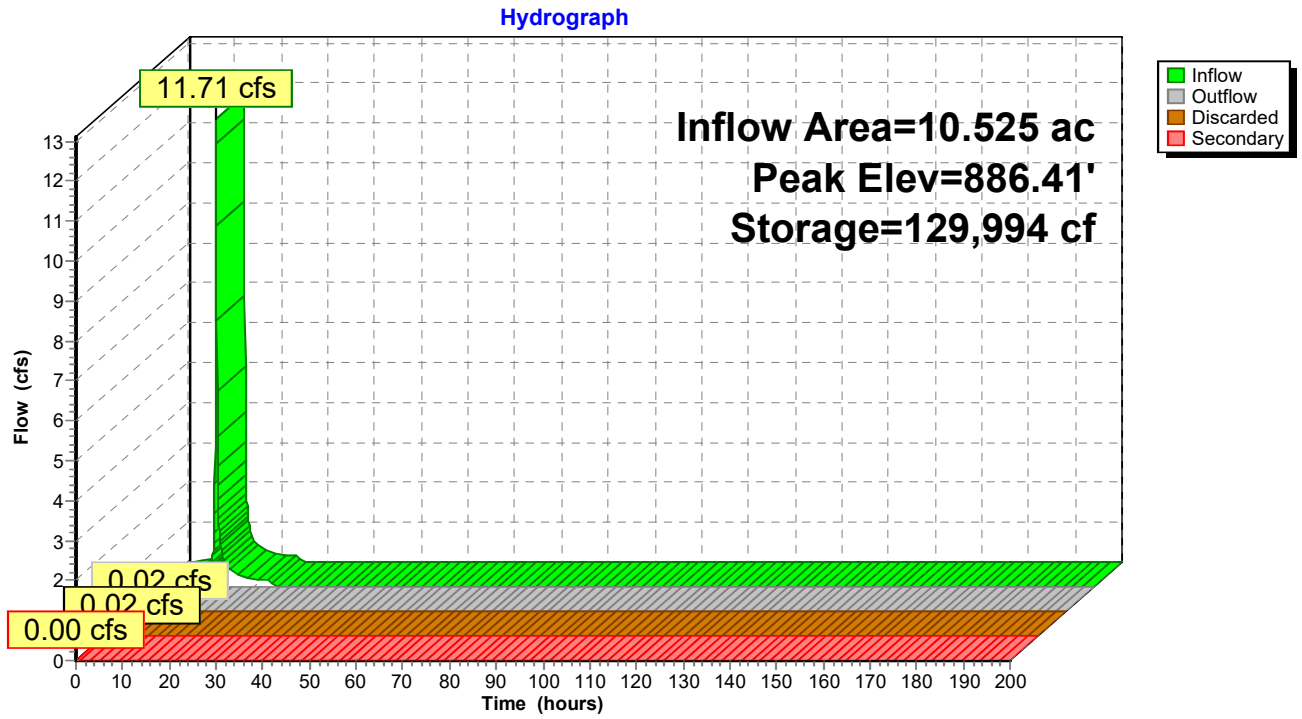
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**

Discarded OutFlow Max=0.02 cfs @ 6.20 hrs HW=885.52' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=885.50' (Free Discharge)
↑—**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Knollwood Pond



Summary for Pond 4P: Proposed Knollwood Pond

Inflow Area = 10.525 ac, 40.02% Impervious, Inflow Depth = 1.03" for NURP event
Inflow = 11.71 cfs @ 12.06 hrs, Volume= 0.900 af
Outflow = 1.57 cfs @ 12.59 hrs, Volume= 1.296 af, Atten= 87%, Lag= 32.0 min
Discarded = 0.02 cfs @ 12.10 hrs, Volume= 0.006 af
Primary = 1.55 cfs @ 12.59 hrs, Volume= 1.291 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Starting Elev= 885.50' Surf.Area= 37,370 sf Storage= 92,400 cf
Peak Elev= 885.67' @ 12.59 hrs Surf.Area= 38,506 sf Storage= 98,788 cf (6,388 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 229.6 min (1,018.2 - 788.6)

Volume	Invert	Avail.Storage	Storage Description
#1	880.00'	220,445 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
880.00	2,361	0	0
882.00	10,012	12,373	12,373
884.00	23,993	34,005	46,378
885.50	37,370	46,022	92,400
886.00	40,742	19,528	111,928
888.00	67,775	108,517	220,445

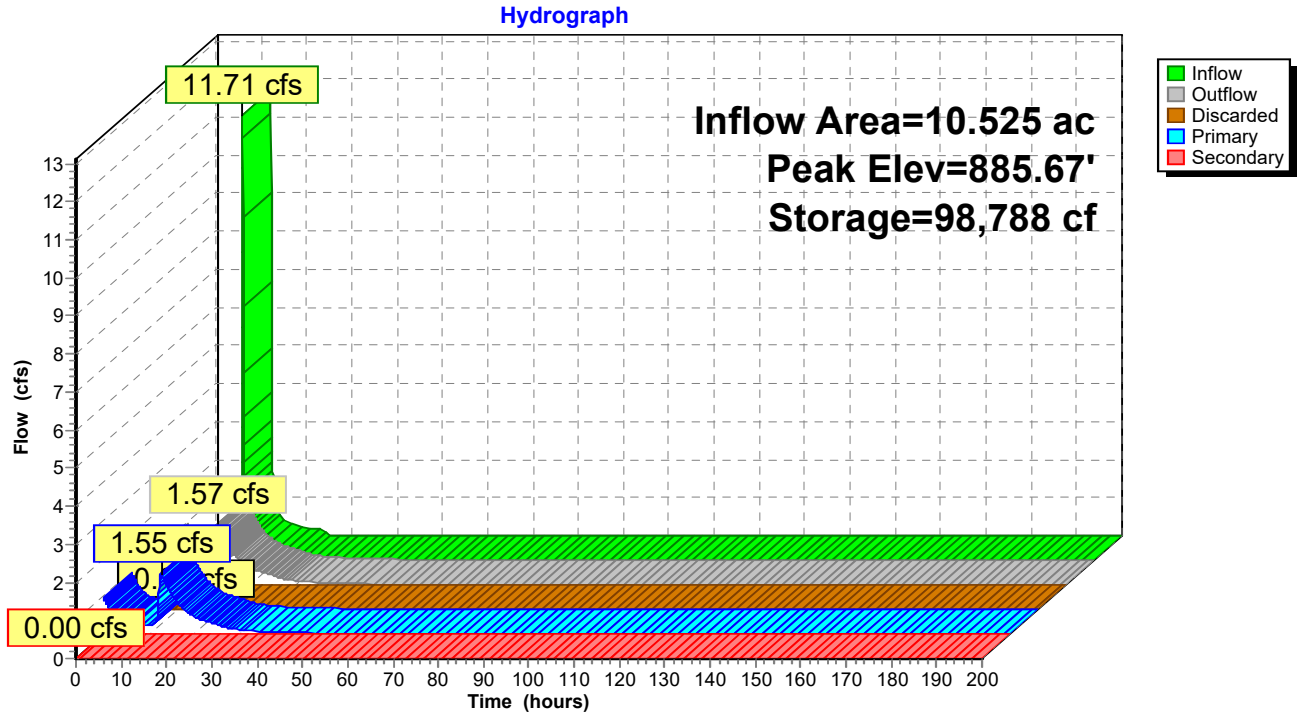
Device	Routing	Invert	Outlet Devices
#1	Secondary	886.61'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Discarded	885.50'	**0.02 cfs Exfiltration when above 885.50'**
#3	Primary	885.00'	**12.0" Round Culvert** L= 750.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 885.00' / 874.27' S= 0.0143 '/' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf

Discarded OutFlow Max=0.02 cfs @ 12.10 hrs HW=885.54' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.55 cfs @ 12.59 hrs HW=885.67' (Free Discharge)
↑**3=Culvert** (Inlet Controls 1.55 cfs @ 2.78 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=885.50' (Free Discharge)
↑**1=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: Proposed Knollwood Pond



Rice Creek Watershed District
Stormwater Management Grant Program
2026 Application Form

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Shoreview

Street Address: 4600 Victoria St N

City, State, Zip: Shoreview, MN, 55126

Tax Status: Local Government Tax ID#: 41-6008808

(e.g., local government, non-profit 501(c)(3), private business, etc.)

II. PROJECT CONTACTS

Project Officer: Stephanie Smith Financial Officer: Kevin Knopik

Title: city engineer Title: finance director

Telephone: 651-490-4651 Telephone: 651-490-4622

Fax: Fax:

Email: ssmith@shroeviewmn.gov Email: kknopik@shoreviewmn.gov

III. PROJECT INFORMATION

Project Name: Target Pond Improvements

Location(s) of Project: Southeast corner of Lexington Avenue and Red Fox Road

City: City of Shoreview State: MN County: Ramsey

Project Start Date: 06/15/2025 Project Completion Date: 8/15/2025

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Peak Runoff Rate Control Project
- [ ] Runoff Volume Control / Flood Storage Project
- [ ] Other:

Is a RCWD Rule C permit required for this project? [ ] YES [x] NO [ ] UNKNOWN

IV. GRANT REQUEST

RCWD Grant Funding Requested: $ 81,772.50

Applicant Match Funding Committed: $ 81,772.50

Total Estimated Project Cost: $ 163,545.00

Would you be willing to accept grant funding in an amount less than requested? [x] YES [ ] NO

V. SIGNATURE OF APPLICANT

I certify that the information contained within this application is true and accurate.

Signature of Project Officer

12/29/2025
Date

VI. Executive Summary / Abstract

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match. The summaries will be used in the grant review process and on the RCWD website for projects that are funded.

The City of Shoreview intends to convert an existing sand filtration system in the southeast corner of Red Fox Road and Lexington Avenue North into an iron-enhanced filtration system. The existing system receives runoff from the surrounding roadways and ultimately outlets into Valentine Lake, which has been on the MPCA's Impaired Water list since 2002. The goal of this project is to provide additional treatment for runoff outletting into Valentine Lake to work towards

VII. Description (10 points)

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD lake classified as either "Protection" or "Restoration" (see Table 2-4 in the RCWD 2020 Watershed Management Plan), and/or a waterbody with an approved Total Maximum Daily Load (TMDL) study or other recognized diagnostic water quality study. Flood storage and runoff rate control projects should focus on reducing peak flood elevations in known regional flood hazard areas and/or documented local problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

Name the target waterbody benefiting from this project: Valentine Lake

List and describe the Best Management Practices (BMPs) to be incorporated into this project

Iron-enhanced filtration system: The existing sand filtration system will be converted into an iron-enhanced filtration system. The proposed filter will be designed and installed per the MPCA design standards as feasible. The system receives flow from an existing pretreatment wet pond directly south via five existing culverts. The existing sand will be removed and replaced with iron-enhanced sand. The existing draintile will be replaced to

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

An iron-enhanced sand filter provides additional removal of Total Phosphorus than the existing system, which will limit the amount of phosphorus entering RCWD groundwater

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

Describe how long-term operation and maintenance of the project will be accomplished and identify the individual(s) responsible for maintenance activities if different than the project officer listed in section 2.

A maintenance agreement will be executed that requires the following:
The City of Shoreview will perform annual inspections of the filter bed, inlets, and outlets. Staff will remove accumulated sediment to maintain a clean filter bed and replace structural components, as necessary.
City staff will visually inspect the filter and surrounding area on a monthly basis. Staff will verify

VIII. Prioritization (20 points)

How does the project support existing regional planning efforts such as the RCWD Watershed Management Plan, municipal surface water management plans, TMDLs, or other recognized diagnostic studies? Is the project included on the Member Community Project List (Appendix G) within the RCWD Watershed Management Plan? Please provide citations where possible.

The receiving water body, Valentine Lake, has TMDLs for excess nutrients and chlorine, per the RCWD WMP and MPCA Impaired Waters List. The existing sand filter system receives a significant amount of runoff from surrounding roadways and industrial areas, which ultimately discharge into Valentine Lake. This project will provide additional water quality benefit to this

IX. Targeting (15 points)

Describe the critical pollution or flooding sources and risks addressed by this project. Explain why the proposed project is the most cost-effective and feasible means to attain the expected resource benefits. Has a formal analysis been conducted to substantiate this position?

The proposed system will treat runoff from the neighboring Target and Raising Cane's parking lots, a portion of Red Fox Road, and a portion of Lexington Avenue. Runoff from each of these areas introduce trash, debris, oil, grease, and sediment from cars and other vehicle into the downstream storm system. This project is able to treat all these pollutants in one central location with the existing wet pond and proposed iron-enhanced sand filter. A central location is more cost-effective and space-efficient than multiple smaller systems. The project's locatio

X. Measurable Outcomes (20 points)

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, XP-SWMM, MIDS, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions and/or hydrologic outcomes. **(Mandatory for RCWD to consider your proposal!)**

The proposed iron-enhanced provides a higher pollutant reduction than the existing sand filter. A MIDS model was created to analyze the existing and proposed pollutant reduction. The TP and TSS removal through the existing sand filter is 21% and 71%, respectively. The TP and TSS removal through the proposed iron-enhanced sand filter is 39% and 71%, respectively. The results in an additional 6.4 pounds of TP removal on an annual basis, nearly double the amount of TP removal provided by the existing sand filter.

XI. Cost-Effectiveness (15 points)

Provide a detailed budget that lists each item for which funding is being requested. You must also list the sources of required local matching contributions. Please provide a summary that demonstrates why this is the most cost-effective approach to solving the problem. Or, have other alternatives been explored, and if so, why were they determined to not be the best alternative? What is the anticipated lifespan of the practice? **(Attach separate sheets if needed.)**

See attached for the budget breakdown. Due to the presence of the existing sand filter and wet basin, construction costs are limited to what is required for this retrofit. This results in lower costs than what would be required for a new iron-enhanced sand filter elsewhere. With the proposed operation and maintenance agreement, this BMP has an anticipated lifespan of 20-30 years.

XII. Project Readiness (10 points)

Please describe the anticipated timeline for implementing this project. What steps have been taken to ensure that the project can be implemented according to this timeline? Are any permits needed? (If permits are required please cite from what agency and where the project is in that process).

30% construction plans for this project have been completed. Project implementation is anticipated to occur in the summer of 2026. The project footprint is less than 10,000 square feet and does not trigger the NPDES or Rice Creek Watershed Permitting process. County permit for ROW will be applied by contractor along with any traffic control needed. No other permits are anticipated.

XIII. Engagement Opportunities (10 points)

Demonstrate any potential for public engagement, education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. Applicants must incorporate a public engagement component into the project.

Educational signage may be placed around the BMP to provide a location for interaction with the public. Additional interactive displays are not recommended due to the site's proximity to Lexington Ave N, a major roadway, due to a safety concern.
The City of Shoreview will feature this project on its website and highlight the collaboration with the Rice Creek Watershed District.

Figure 1: Project Location

Project Location

Target Pond Improvements
City of Shoreview

Kimley»Horn

N

Project Information

Calculator Version:	Version 4: July 2020
Project Name:	RCWD Grant Application - Existing Conditions
User Name / Company Name:	H.Beikircher/Kimley-Horn
Date:	12/17/2025
Project Description:	Existing Conditions - Shoreview Target Pond Improvements
Construction Permit?:	Yes

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	55126
Annual Rainfall (inches):	31.6
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				1	1
				Impervious Area (acres)	20
				Total Area (acres)	21

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				1	1
				Impervious Area (acres)	20
				Total Area (acres)	21

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	79860	ft3
Volume removed by BMPs towards performance goal:		ft^3
Percent volume removed towards performance goal		**%**

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	45.6225	acre-ft
Annual runoff volume removed by BMPs:	0	acre-ft
Percent annual runoff volume removed:	**0**	**%**
Post development annual particulate P load:	20.4754	lbs
Annual particulate P removed by BMPs:	7.975	lbs
Post development annual dissolved P load:	16.753	lbs
Annual dissolved P removed by BMPs:	0	lbs
Total P removed by BMPs	7.975	lbs
Percent annual total phosphorus removed:	**21**	**%**
Post development annual TSS load:	6763.1	lbs
Annual TSS removed by BMPs:	4818.7	lbs
Percent annual TSS removed:	**71**	**%**

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained (%)
1 - Sand filter	0	79860	0	79860	0

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)
1 - Sand filter	45.6225	0	0	45.6225	0

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Sand filter	20.4754	0	7.9752	12.5002	39

Dissolved Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Sand filter	16.7526	0	0	16.7526	0

Total Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Sand filter	37.228	0	7.9752	29.2528	20

TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Sand filter	6763.08	0	4818.69	1944.39	71

BMP Schematic

1 - Sand filter

Project Information

Calculator Version:	Version 4: July 2020
Project Name:	RCWD Grant Application - Proposed Conditions
User Name / Company Name:	H.Beikircher/Kimley-Horn
Date:	12/17/2025
Project Description:	Proposed Conditions - Shoreview Target Pond Improvements
Construction Permit?:	Yes

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	55126
Annual Rainfall (inches):	31.6
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				1	1
				Impervious Area (acres)	20
				Total Area (acres)	21

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				1	1
				Impervious Area (acres)	20
				Total Area (acres)	21

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	79860	ft3
Volume removed by BMPs towards performance goal:		ft^3
Percent volume removed towards performance goal		**%**

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	45.6225	acre-ft
Annual runoff volume removed by BMPs:	0	acre-ft
Percent annual runoff volume removed:	**0**	**%**
Post development annual particulate P load:	20.4754	lbs
Annual particulate P removed by BMPs:	7.975	lbs
Post development annual dissolved P load:	16.753	lbs
Annual dissolved P removed by BMPs:	6.366	lbs
Total P removed by BMPs	14.341	lbs
Percent annual total phosphorus removed:	**39**	**%**
Post development annual TSS load:	6763.1	lbs
Annual TSS removed by BMPs:	4818.7	lbs
Percent annual TSS removed:	**71**	**%**

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained (%)
1 - Sand filter	0	79860	0	79860	0

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)
1 - Sand filter	45.6225	0	0	45.6225	0

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Sand filter	20.4754	0	7.9752	12.5002	39

Dissolved Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Sand filter	16.7526	0	6.36595	10.3867	38

Total Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Sand filter	37.228	0	14.34115	22.8869	38

TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Sand filter	6763.08	0	4818.69	1944.39	71

BMP Schematic

ENGINEER'S OPINION OF PROBABLE COST					
PROJECT: TARGET POND IMPROVEMENTS OWNER: CITY OF SHOREVIEW					
ITEM NO.	**ITEM DESCRIPTION**	**UNIT**	**UNIT COST**	**ESTIMATED QUANTITY**	**COST**
2021.501	MOBILIZATION	LUMP SUM	**$ 10,000.00**	1	$ 10,000.00
2104.503	REMOVE PIPE DRAIN	LIN FT	**$ 4.00**	320	$ 1,280.00
2105.607	COMMON EXCAVATION	CU YD	**$ 25.00**	460	$ 11,500.00
2106.601	DEWATERING	LUMP SUM	**$ 5,000.00**	1	$ 5,000.00
2108.504	GEOTEXTILE FABRIC TYPE 1	SQ YD	**$ 2.50**	83	$ 207.50
2108.604	PLASTIC LINER	SQ YD	**$ 50.00**	320	$ 16,000.00
2451.507	IRON-ENHANCED FILTER MEDIA	CU YD	**$ 160.00**	450	$ 72,000.00
2451.507	COARSE FILTER AGGREGATE	CU YD	**$ 70.00**	10	$ 700.00
2502.503	8" PERF PVC PIPE DRAIN	LIN FT	**$ 30.00**	320	$ 9,600.00
2563.601	TRAFFIC CONTROL	LUMP SUM	**$ 5,000.00**	1	$ 5,000.00
2564.602	STORMWATER EDUCATION SIGN	EACH	**$ 500.00**	4	$ 2,000.00
2575.601	LANDSCAPE RESTORATION	LUMP SUM	**$ 3,000.00**	1	$ 3,000.00
			SUBTOTAL		**$ 136,287.50**
			CONSTRUCTION CONTINGENCY (20%)		**$ 27,257.50**
			TOTAL ESTIMATED CONSTRUCTION COST		**$ 163,545.00**

CITY OF SHOREVIEW, MN
TARGET POND IMPROVEMENTS

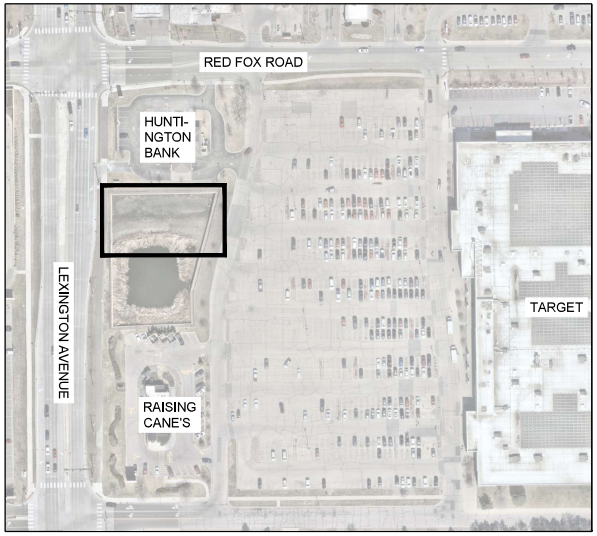
SHOREVIEW PROJECT NO. 26-10

CONSTRUCTION PLANS FOR: IRON ENHANCED SAND FILTER STORMWATER BMP RETROFIT.

LOCATED ON: LEXINGTON AVENUE FROM RED FOX ROAD TO GREY FOX ROAD

LEGEND

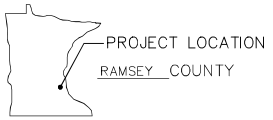
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING CURB BOX
- EXISTING WATERMAIN MANHOLE
- EXISTING SANITARY MANHOLE
- EXISTING STORM MANHOLE
- EXISTING GAS MANHOLE
- EXISTING CATCH BASIN
- EXISTING POWER POLE
- EXISTING CABLE TV BOX
- EXISTING TELEPHONE BOX
- EXISTING ELECTRICAL MANHOLE
- EXISTING ELECTRICAL TRANSFORMER
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- EXISTING CURB AND GUTTER
- EXISTING FIBER OPTIC
- EXISTING GAS MAIN
- EXISTING OVERHEAD POWER/COMMUNICATION
- EXISTING UNDERGROUND POWER
- EXISTING FENCE
- EXISTING TREE
- EXISTING TREE LINE
- EXISTING STREET SIGN
- EXISTING RIGHT-OF-WAY
- CONSTRUCTION LIMITS



PLAN SET SCALES

LOCATION MAP 0 75 150 300 1"=1000'

PLAN 0 15 30 60 1"=30'



NOTE:
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

THE EXACT LOCATION OF UNDERGROUND UTILITIES SHOWN IN THIS PLAN SET ARE UNKNOWN. THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE PRIOR TO STARTING ANY EXCAVATION.

GOPHER STATE ONE CALL SYSTEM.....1-800-252-1166

PLAN REVISONS

DATE	SHEET NO.	APPROVED BY

CITY PROJ. NO. 26-10 SHEET NO. 1 OF 18 SHEETS

GOVERNING SPECIFICATIONS

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE THE LATEST MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

THE LATEST EDITION OF THE MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION IS FURTHER AMENDED BY THE 2025 EDITION OF THE CITY ENGINEERS ASSOCIATION OF MINNESOTA STANDARD SPECIFICATIONS. THE LATEST EDITIONS OF THE MnDOT AND CITY ENGINEERS ASSOCIATION OF MINNESOTA STANDARD SPECIFICATIONS ARE AMENDED BY THE CITY OF SHOREVIEW SPECIFICATIONS FOR CONSTRUCTION.

INDEX

30% PLANS
THIS PLAN SET CONTAINS 18 SHEETS

Kimley»Horn

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.

DATE 12/30/2025 LIC. NO. 59337

ENGINEER ADAM TJADEN

APPROVED XXXX
NAME OF CITY/ COUNTY ENGINEER

K:\TW_Civil\City\SHOREVIEW\2026 GRANT ROND\CAD\Plan Sheets\TARGET-POND-COVER.dwg December 30, 2025 - 2:24pm

STATEMENT OF ESTIMATED QUANTITIES

		TARGET POND IMPROVEMENTS		
ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY
2021.501	MOBILIZATION	LUMP SUM	**1**	1
2104.503	REMOVE PIPE DRAIN	LIN FT	**320**	320
2105.607	COMMON EXCAVATION	CU YD	**460**	460
2106.601	DEWATERING	LUMP SUM	**1**	1
2108.504	GEOTEXTILE FABRIC TYPE 1	SQ YD	**83**	83
2108.604	PLASTIC LINER	SQ YD	**320**	320
2451.507	IRON-ENHANCED FILTER MEDIA	CU YD	**450**	450
2451.507	COARSE FILTER AGGREGATE	CU YD	**10**	10
2502.503	8" PERF PVC PIPE DRAIN	LIN FT	**320**	320
2563.601	TRAFFIC CONTROL	LUMP SUM	**1**	1
2564.602	STORMWATER EDUCATION SIGN	EACH	**4**	4
2575.601	LANDSCAPE RESTORATION	LUMP SUM	**1**	1

K:\TWC_Civil\City\SHOREVIEW\2026 GRANT RCWD\CAD\Plan Sheets\TARGET-POND-SEQ.dwg December 30, 2025 - 2:24pm

No.	Date	Revisions	App.

DRAWING NAME: TARGET-POND-SEQ.dwg
DESIGNED BY: EWM
DRAWN BY: EWM
CHECKED BY: ART
DATE: 12/30/2025
PROJECT NO. XXXXXXXX

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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.

ADAM TJADEN
DATE: 12/30/2025 MN LIC. NO. 59337

CITY OF SHOREVIEW
TARGET POND IMPROVEMENTS

STATEMENT OF ESTIMATED QUANTITIES

CITY PROJECT 26-10

SHEET NO. 2

GENERAL CONSTRUCTION NOTES:

1. EXCAVATE PLACE, COMPACT, TEST, FINISH, AND DISPOSE OF EMBANKMENT MATERIAL IN ACCORDANCE WITH CITY SPECIFICATION 02020.
2. NON-STRUCTURAL EMBANKMENT, SUCH AS MINERAL SOILS, EXCESS TOPSOIL, AND ORGANIC SOILS CAPABLE OF SUPPORTING CONSTRUCTION EQUIPMENT, SHALL ONLY BE USED AS EMBANKMENT IN A MANNER IN WHICH THE MATERIAL WILL MAINTAIN LONG TERM STABILITY.
3. CONSTRUCTION LIMIT LINES SHOWN ON THE PLANS ARE FOR THE COMPUTATION OF PAY QUANTITIES. TEMPORARY AND INTERMEDIATE LIMITS AND SLOPES WITHIN THE CONSTRUCTION LIMITS SHOWN IN THE PLANS ARE TO BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION. EXCAVATION AND BACKFILL BEYOND THE LIMITS SHOWN IN THE PLAN SHALL BE CONSIDERED INCIDENTAL.
4. NO EXTRA PAYMENT SHALL BE MADE FOR TEMPORARY STOCKPILING OF EXCAVATION, EMBANKMENT, AND/OR BORROW MATERIAL. ALL MATERIAL NOT UTILIZED ON THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF OFF THE RIGHT-OF-WAY IN ACCORDANCE WITH MnDOT SPECIFICATION 2104.
5. BITUMINOUS PAVEMENT SHALL BE CONSTRUCTED IN LAYERS OF THE THICKNESS SPECIFIED ON THE PLANS IN ACCORDANCE WITH MnDOT SPECIFICATION 2360.
6. PLACEMENT OF BITUMINOUS MATERIAL FOR TACK COAT SHALL BE IN ACCORDANCE WITH MnDOT SPECIFICATION 2357 AND INCIDENTAL.
7. OBTAIN COMPACTION FOR AGGREGATE BASE BY THE PENETRATION INDEX COMPACTION METHOD.
8. THE CONTRACTOR SHALL UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" REQUIRED BY MINNESOTA STATUTE 2160.
9. THE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.
10. UNDERGROUND UTILITIES EXIST WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL HAVE ALL UNDERGROUND UTILITIES LOCATED PRIOR TO THE START OF CONSTRUCTION AND COORDINATE THE WORK SCHEDULE WITH UTILITY COMPANY CREWS PERFORMING RELOCATION WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT EACH RESPECTIVE UTILITY COMPANY AND SCHEDULE WORK AROUND WORK PERFORMED BY PRIVATE UTILITY COMPANIES. PRIVATE UTILITY WORK SHALL BE SHOWN ON THE CONTRACTOR'S PROJECT SCHEDULE AND UPDATED FOR EACH WEEKLY CONSTRUCTION MEETING.
11. BITUMINOUS SURFACING, CONCRETE ITEMS, ABANDONED UTILITY ITEMS, OR ANY OTHER MATERIAL WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION THAT ARE NOT SUITABLE FOR SALVAGE OR FOR ROADWAY CONSTRUCTION MUST BE DISPOSED OF BY THE CONTRACTOR OUTSIDE OF RIGHT-OF-WAY IN ACCORDANCE WITH MnDOT SPECIFICATION 2104.
12. PROVIDE A UNIFORM, FULL-DEPTH SAW CUT WHERE PLACING NEW PAVEMENT NEXT TO EXISTING PAVEMENT TO ENSURE A UNIFORM JOINT. COAT THE EXPOSED EDGE OF EXISTING SURFACING WITH TACK COAT PRIOR TO PLACING NEW BITUMINOUS SURFACING ADJACENT TO EXISTING SURFACING.
13. CONCRETE TRUCKS THAT WASH OUT WITHIN THE PROJECT LIMITS MUST DO SO AT A LOCATION APPROVED BY THE ENGINEER. HARDENED CONCRETE WASTE MUST BE REMOVED FROM THE PROJECT LIMITS AND PROPERLY DISPOSED IN ACCORDANCE WITH MnDOT SPECIFICATION 2104. REMOVAL OF HARDENED CONCRETE WASTE SHALL BE INCIDENTAL.

EARTHWORK NOTES:

1. ALL SHAPING AROUND CULVERT ENDS AND STORM SEWER INLETS & OUTLETS, AS DIRECTED BY THE ENGINEER, WILL BE CONSIDERED INCIDENTAL.
2. NO WORK, INCLUDING THE STOCKPILING OF TOPSOIL, SHALL EXTEND BEYOND THE RIGHT-OF-WAY, TEMPORARY EASMENT, OR THE DRAINAGE & UTILITY EASEMENT UNLESS THE CONTRACTOR HAS PROVIDED THE CITY WITH A COPY OF THE OWNERS WRITTEN PERMISSION FOR SUCH WORK.

STORMWATER POLLUTION PREVENTION NOTES:

1. VALENTINE LAKE IS A SPECIAL OR IMPAIRED WATERS WITHIN 1 MILE OF THE PROJECT THAT RECEIVES RUNOFF FROM THE PROJECT.

EROSION AND SEDIMENT CONTROL MAINTENANCE REQUIREMENTS:

2. CONTRACTOR SHALL, AT A MINIMUM, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL MANAGEMENT PRACTICES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE. SPECIFIC MAINTENANCE REQUIREMENTS ARE AS FOLLOWS:
   - A. ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
   - B. THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE THAT DRAINS WATER FROM THE SITE, OR DIVERTS WATER AROUND A SITE MUST BE STABILIZED. STABILIZATION MUST BE COMPLETED WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER. PORTIONS OF THE DITCH THAT ARE UNDER CONSTRUCTION MUST BE STABILIZED WITH 24 HOURS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION HAS CEASED.
   - C. SEDIMENT CONTROL PRACTICES MUST MINIMIZE SEDIMENT FROM ENTERING SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS.
   - D. SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED ON ALL DOWNGRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND-DISTURBING ACTIVITIES BEGIN. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL THE CITY AND WATERSHED HAVE DETERMINED THAT THE SITE SOILS HAVE BEEN PERMANENTLY STABILIZED.
   - E. THE TIMING OF THE INSTALLATION OF SEDIMENT CONTROL PRACTICES MAY BE ADJUSTED TO ACCOMMODATE SHORT-TERM ACTIVITIES SUCH AS CLEARING OR GRUBBING OR PASSAGE OF VEHICLES. ANY SHORT-TERM ACTIVITY MUST BE COMPLETED AS SOON AS POSSIBLE AND THE SEDIMENT CONTROL PRACTICES MUST BE INSTALLED IMMEDIATELY AFTER THE ACTIVITY IS COMPLETED. HOWEVER, SEDIMENT CONTROL PRACTICES MUST BE INSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE ACTIVITY IS NOT COMPLETED.
   - F. ALL STORM DRAIN INLETS MUST BE PROTECTED BY BMPS DETERMINED BY THE CITY AND WATERSHED TO BE APPROPRIATE, DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.
   - G. PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITH 24 HOURS OF CONNECTION TO A SURFACE WATER.
   - H. IN ORDER TO MAINTAIN SHEET FLOW AND MINIMIZE RILLS AND GULLIES, THERE SHALL BE NO UNBROKEN SLOPE LENGTH OF GREATER THAN 30 FEET FOR SLOPES WITH A GRADE OF 3:1 OR STEEPER.
   - I. TEMPORARY STOCKPILES MUST HAVE EFFECTIVE SEDIMENT CONTROLS IN PLACE TO PREVENT DISCHARGE TO SURFACE WATERS INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER.
   - J. VEHICLE TRACKING OF SEDIMENT FROM THE CONSTRUCTION SITE MUST BE MINIMIZED BY BMPS SUCH AS ROCK CONSTRUCTION ENTRANCES, WASH RACKS OR EQUIVALENT PRACTICES. STREET SWEEPING MUST BE USED IF SUCH BMPS ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED OFF SITE.
   - K. DEWATERING OR BASIN DRAINING (E.G. PUMPED DISCHARGES, TRENCH/DITCH CUTS FOR DRAINAGE) RELATED TO THE CONSTRUCTION ACTIVITY THAT MAY HAVE TURBID OR SEDIMENT LADEN DISCHARGE WATER MUST BE DISCHARGED TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN ON THE SITE WHEREVER POSSIBLE. IF WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN PRIOR TO ENTERING THE SURFACE WATER, IT MUST BE TREATED WITH THE APPROPRIATE BMPS, SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER OR DOWNSTREAM LANDOWNERS.
   - L. IF DETERMINED TO BE COMPACTED BY THE CITY OR WATERSHED, SITE SOILS SHALL BE DECOMPACTED TO A DEPTH OF 18 INCHES AND ORGANIC MATER SHALL BE INCORPORATED BEFORE REVEGETATION. DECOMPACTION SHALL BE ACCOMPLISHED SOLELY INCORPORATION OF ORGANIC MATTER WITHIN THE DRIP LINE OR CRITICAL ROOT ZONE OF THREES OR WITHIN 10 FEET OF UNDERGROUND UTILITIES.
   - M. INLET PROTECTION DEVICES AND ALL PERIMETER CONTROL SHALL BE MAINTAINED ONCE SEDIMENT ACCUMULATES TO A DEPTH 1/3 OF THE DESIGN CAPACITY.

EROSION AND SEDIMENT CONTROL INSPECTION REQUIREMENTS:

3. ROUTINELY INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.
4. INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING AND THESE RECORDS MUST BE RETAINED WITH THE EROSION CONTROL PLAN. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:
   - A. DATE AND TIME OF INSPECTIONS;
   - B. NAME OF PERSON CONDUCTING INSPECTIONS;
   - C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
   - D. CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES AND PARTY COMPLETING MAINTENANCE ACTIVITIES); AND
   - E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS.
5. NOTIFY RICE CREEK WATERSHED DISTRICT IN WRITING AT THE FOLLOWING STAGES:
   - A. PRIOR TO ANY SITE DEWATERING;
   - B. WHEN THE SITE HAS BEEN PERMANENTLY STABILIZED OR REVEGETATED; AND
   - C. WHEN ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS HAVE BEEN REMOVED FROM THE SITE

TURF ESTABLISHMENT NOTES:

1. ALL DISTURBED AREAS WITHIN THE CONSTRUCTION LIMITS INCLUDING ACCESS ROUTES SHALL BE RESTORED ACCORDING TO THE FOLLOWING NOTES AND PROJECT SPECIFICATIONS. PAID FOR AS LANDSCAPE RESTORATION.
2. UNLESS OTHERWISE SHOWN ON THE PLANS, ESTABLISH VEGETATIVE COVER BY SEEDING AND MULCHING. FERTILIZE THE AREAS WITH TYPE 3, SLOW RELEASE FERTILIZER IN ACCORDANCE WITH 3881.2B.3, "TYPE 3 – SLOW RELEASE FERTILIZER", AT A RATE OF 350 LBS/ACRE. PLACE SEED MIXTURE 25-131 AS SPECIFIED AS SPECIFIED IN 3876, "SEED", AND PROVIDE 3882, "MULCH MATERIAL", TYPE 3 MULCH WITH DISK ANCHORING OR ROLLED EROSION PREVENTION PRODUCT 25 ON SLOPES 1:3 AND STEEPER, AND DITCH BOTTOMS.
3. APPLY SEED MIXTURE OVER DESIGNATED AREAS AT A RATE CALLED FOR BY THE SEED MIXTURE.
4. APPLY SEED UNIFORMLY BY MECHANICAL OR HYDRO-SPREADING METHOD.
5. FIRM ALL SEEDED AREAS WITH A DRAG OR CULTIPACKER IMMEDIATELY AFTER SEEDING AND PRIOR TO MULCHING.

CITY OF SHOREVIEW STANDARD PLATES	
PLATE NO.	DESCRIPTION
ERO-1	BIOLOG DITCH CHECK
ERO-2	SILT FENCE
ERO-3	HEAVY DUTY SILT FENCE
STR-4	CONSTRUCTION ENTRANCE
STO-6	STRUCTURE INLET PROTECTION

MnDOT STANDARD PLATES	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.	
PLATE NO.	DESCRIPTION

No.	Date	Revisions	App.

DRAWING NAME: TARGET-POND-NOTES_EW.dwg
DESIGNED BY: EWM
DRAWN BY: EWM
CHECKED BY: ART
DATE: 12/30/2025
PROJECT NO. XXXXXXXX

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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ADAM TJADEN
DATE: 12/30/2025 MN LIC. NO. 59337

CITY OF SHOREVIEW
TARGET POND IMPROVEMENTS
GENERAL NOTES

CITY PROJECT 26-10

SHEET NO. 3 / 18

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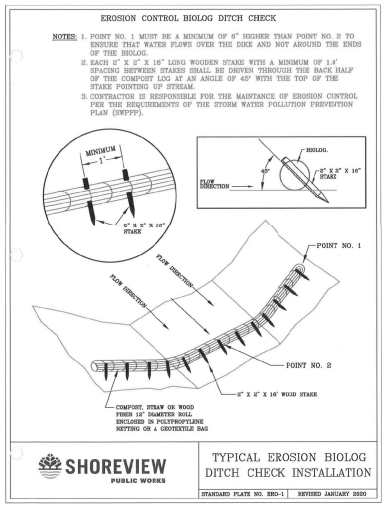

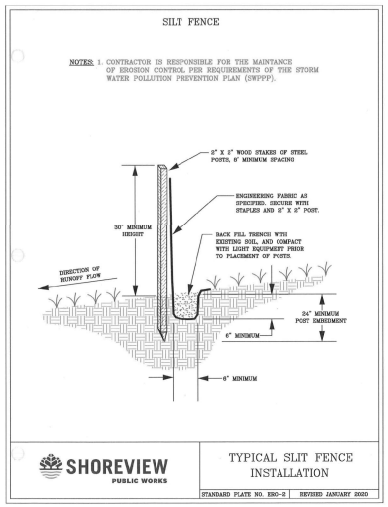

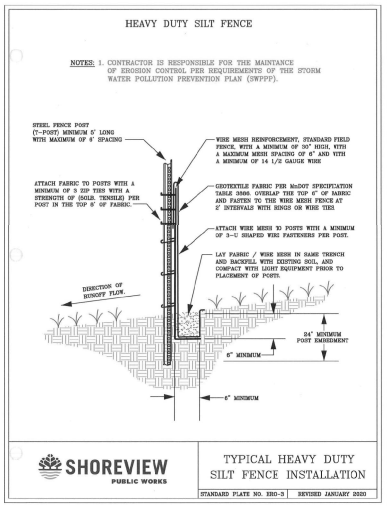

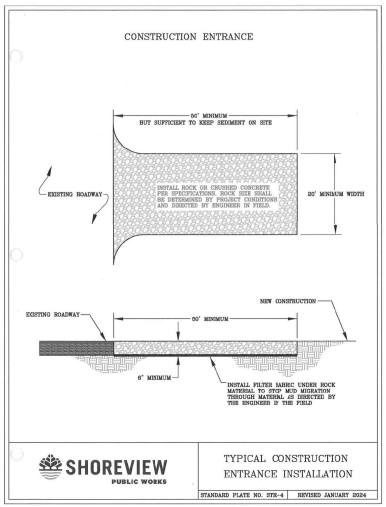

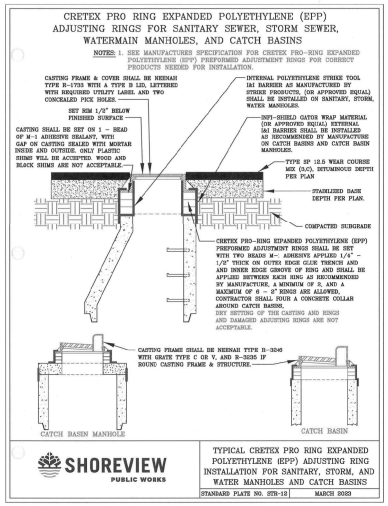

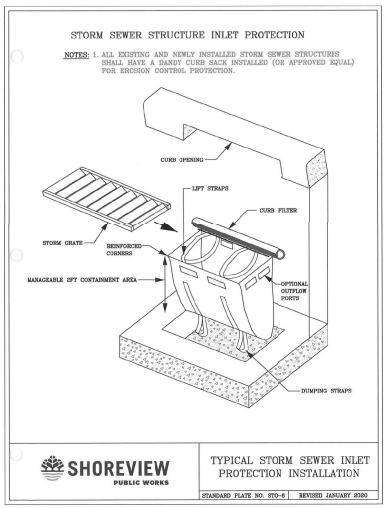

No.	Date	Revisions	App.

DRAWING NAME	
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DESIGNED BY:	EWM
DRAWN BY:	EWM
CHECKED BY:	ART
DATE:	12/30/2025
PROJECT NO.	XXXXXXXX

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767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
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WWW.KIMLEY-HORN.COM

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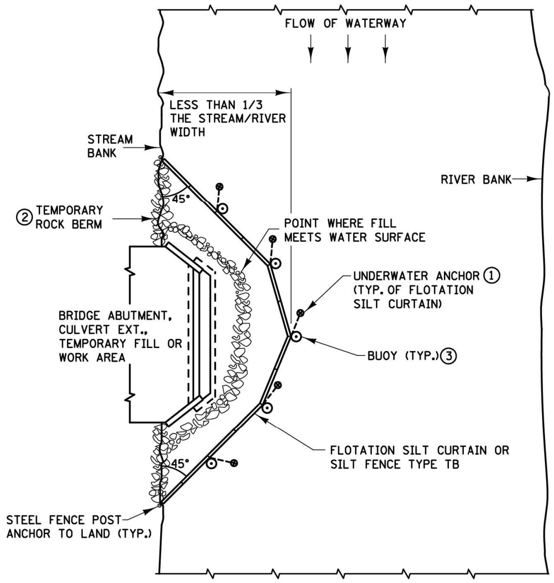
ADAM TJADEN
DATE: 12/30/2025 MN LIC. NO. 59337

CITY OF SHOREVIEW
TARGET POND IMPROVEMENTS

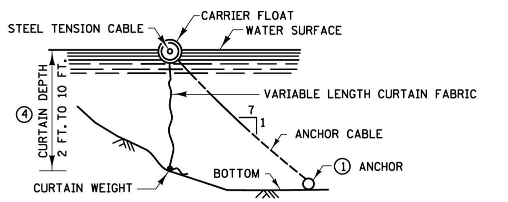
STANDARD DETAILS

CITY PROJECT 26-10

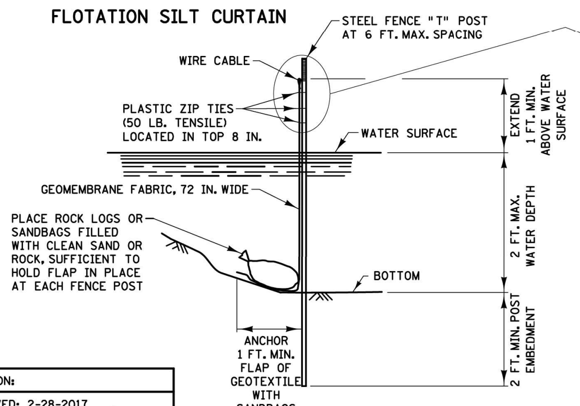
SHEET NO. 4 / 18



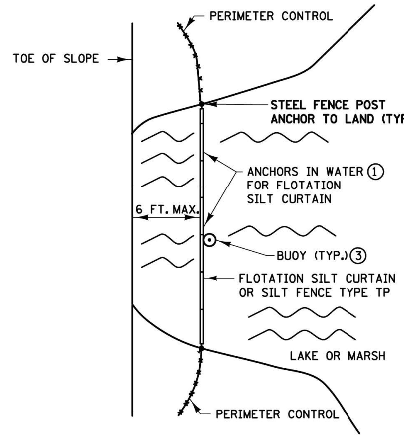
PLAN VIEW FOR STREAM ⑤



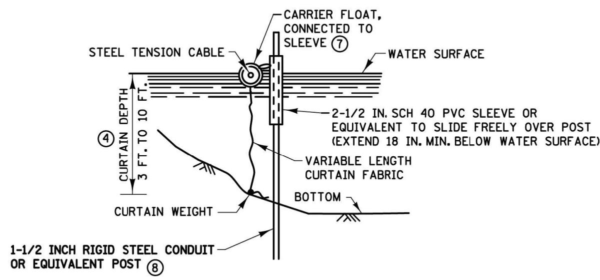
FLOTATION SILT CURTAIN



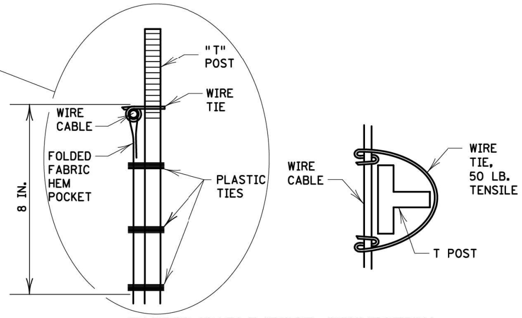
SILT FENCE TYPE TB ⑥



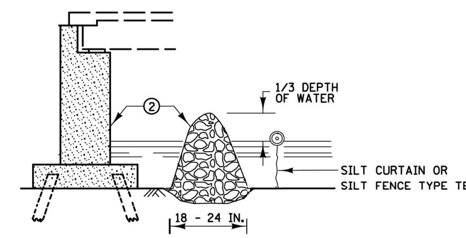
PLAN VIEW FOR LAKE OR MARSH ⑤



ALTERNATE FLOTATION SILT CURTAIN



FABRIC/CABLE/POST CONNECTION

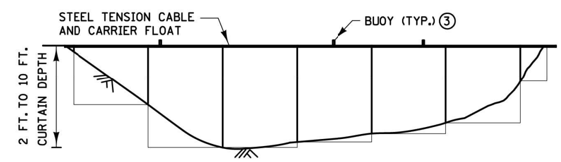


TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL

INSTALLATION GUIDELINES
SILT FENCE TYPE TB
MINIMUM WATER DEPTH: 1 FT.
MAXIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: STILL WATER
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 2 FT./SEC.
MAXIMUM WAVE HEIGHT: 1 FT

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: MOVING WATER
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WAVE HEIGHT: 2 FT.



FRONT VIEW FOR FLOTATION SILT CURTAIN

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 MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB.

⑤ 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.

⑥ 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.

⑦ 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.

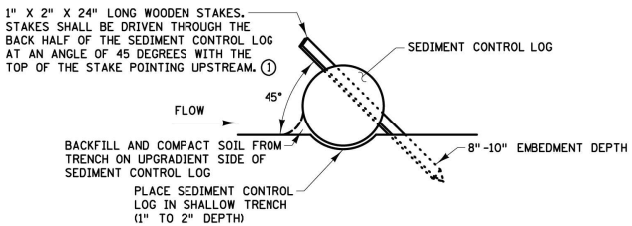
⑧ PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

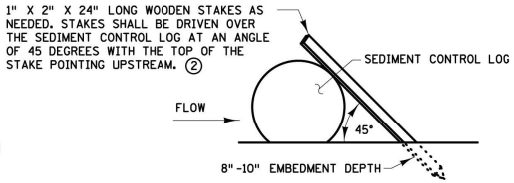
MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.405 | 1 OF 8
APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
SILT CURTAIN OR SILT FENCE TYPE TB

PLOTTED/REVISED: 4-APR-2018
IPLOT NAME: s405_l.spn
PATH & FILENAME: OTS\DesignStandards\Development\New Border\400_Series\s405_l_spn.dgn

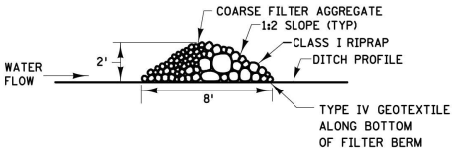


TYPES: STRAW, WOOD FIBER, OR COIR

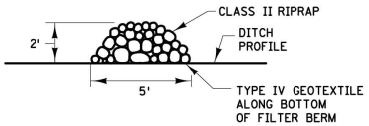


TYPES: WOOD CHIP, COMPOST, OR ROCK

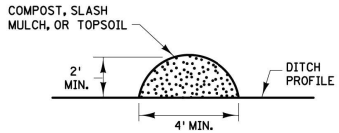
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

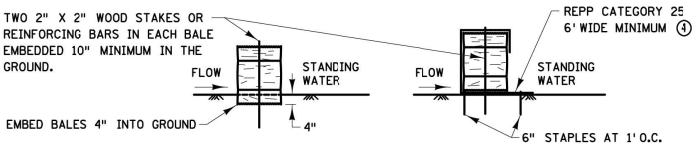


TYPE 5 (ROCK)



TYPE 1 (COMPOST), TYPE 2 (SLASH MULCH), OR TYPE 4 (TOPSOIL)

FILTER BERMS



EMBEDMENT METHOD

REPP (BLANKET) METHOD (ALTERNATE)

BALE BARRIERS (3)

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

(1) SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER APPLICATIONS.

(2) PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.

(3) TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6" MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.

(4) INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

REVISION:

APPROVED: JANUARY 8, 2020

MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 2 OF 8

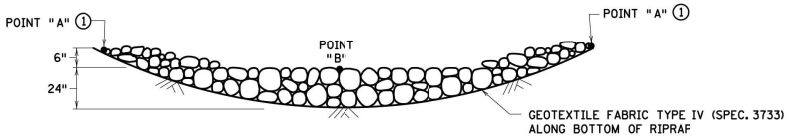
APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

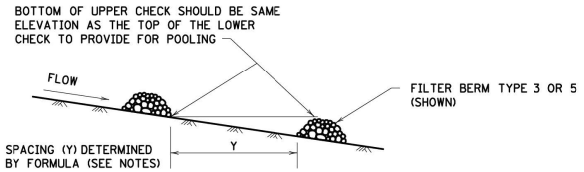
TEMPORARY SEDIMENT CONTROL

FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

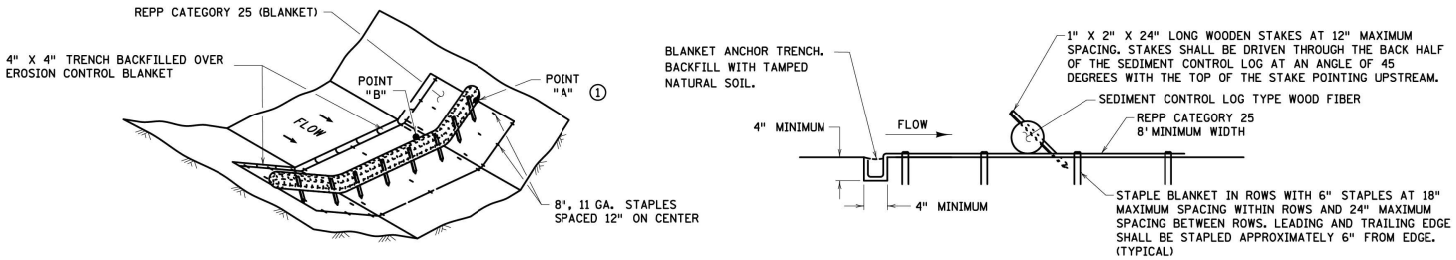
TARGET POND IMPROVEMENTS – SHEET 6 OF 18



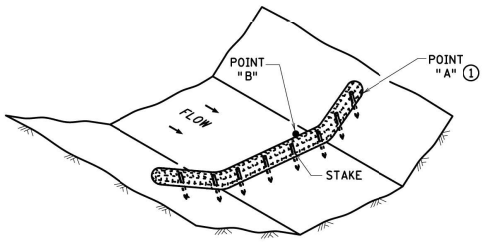
ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ③
FOR USE ON ROUGH-GRADED AREAS
ONLY FOR USE OUTSIDE CLEAR ZONE ②



DITCH CHECK SPACING
FOR ALL FILTER BERM TYPES



SEDIMENT CONTROL LOG TYPE REPP (BLANKET) SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤
FOR USE ON ROUGH GRADED AREAS

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT.)}}{\text{\% CHANNEL SLOPE}} \times 100$$

① POINT "A" MUST BE A MINIMUM OF 6" HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC.

④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC.

⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC.

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CHIEF ENVIRONMENTAL OFFICER

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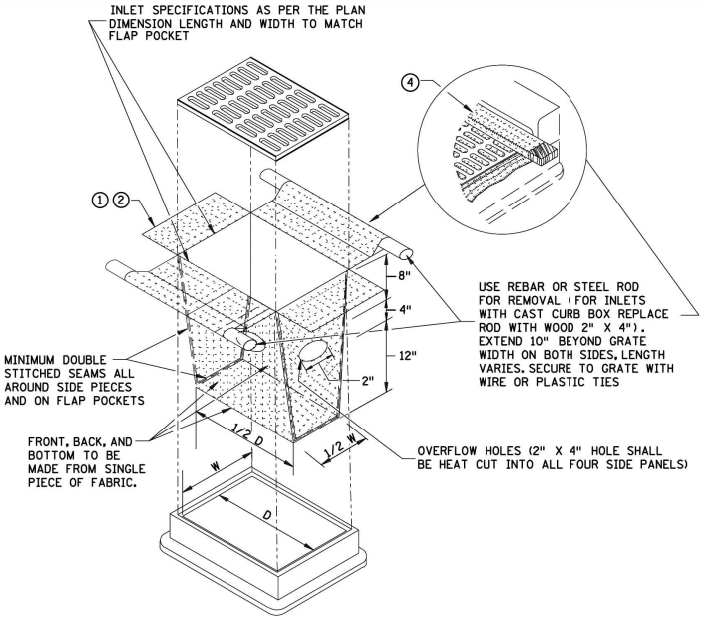
STANDARD PLAN 5-297.405 | 3 OF 8

APPROVED: 1-8-2020
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

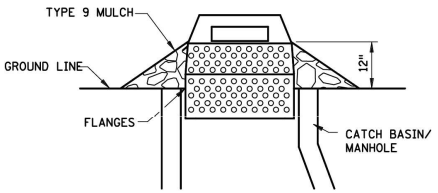
TEMPORARY SEDIMENT CONTROL
DITCH CHECK

TARGET POND IMPROVEMENTS – SHEET 7 OF 18



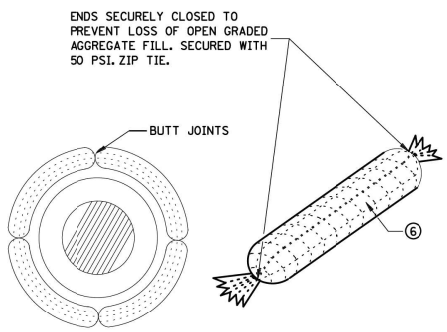
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)

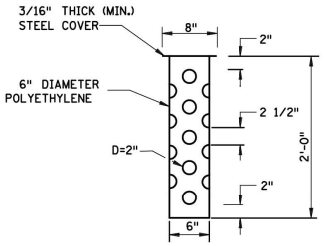


SEDIMENT CONTROL INLET HAT

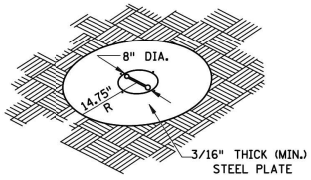
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



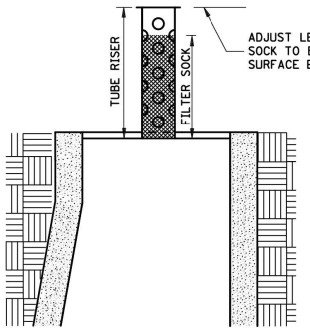
ROCK LOG/COMPOST LOG



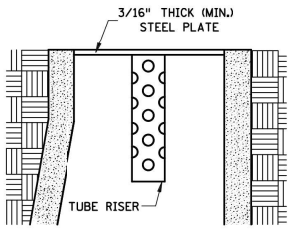
TUBE RISER



PERSPECTIVE VIEW

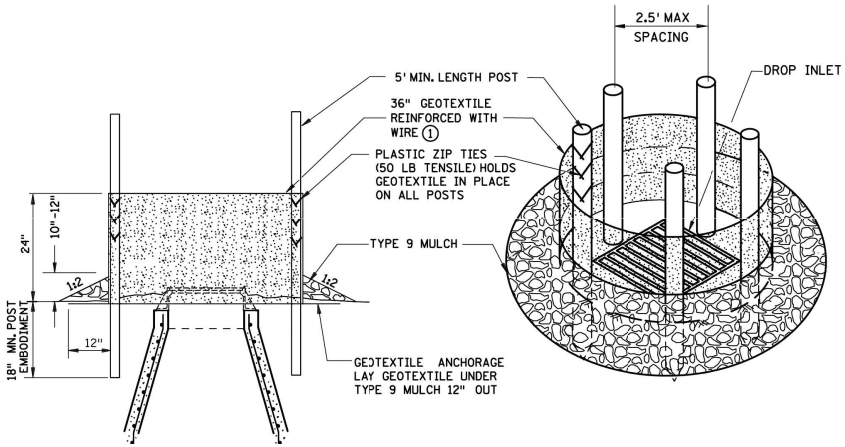


SECTION
(UP POSITION)



SECTION
(DOWN POSITION)

POP-UP HEAD



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

NOTES:

SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

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MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 4 OF 8

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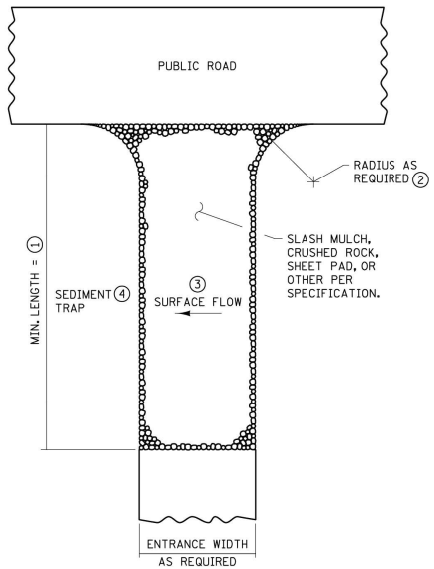
REVISED:
STATE DESIGN ENGINEER

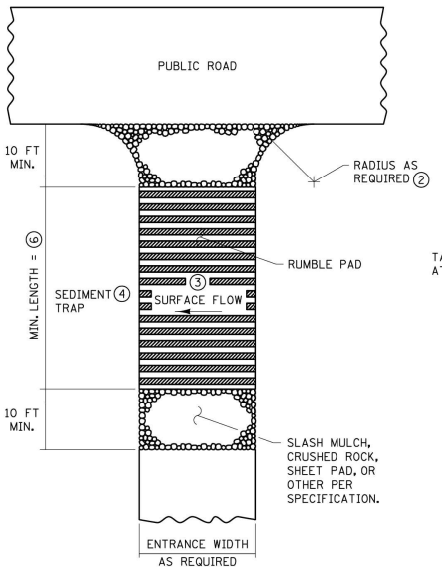
TEMPORARY SEDIMENT CONTROL

STORM DRAIN INLET PROTECTION

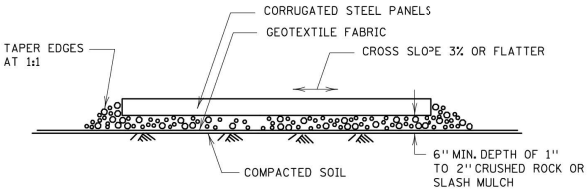
TARGET POND IMPROVEMENTS – SHEET 8 OF 18



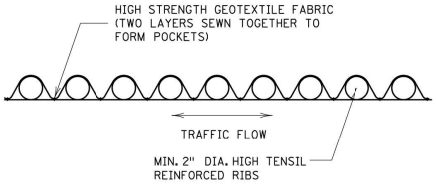
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



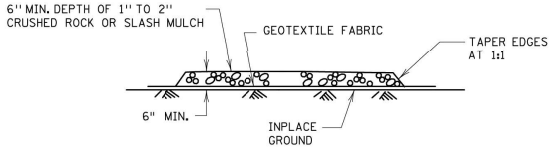
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

(1) MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

(2) PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

(3) IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

(4) IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

(5) IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

(6) MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

(7) MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 5 OF 8

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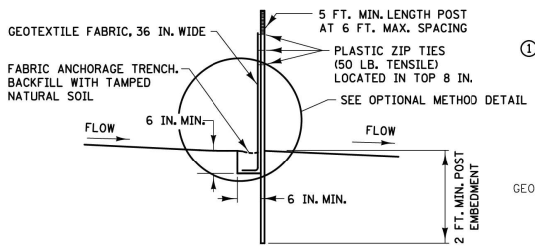
REVISED:

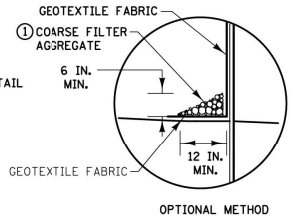
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

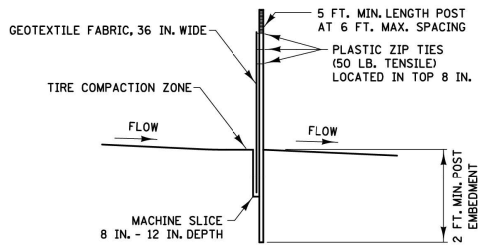
STABILIZED CONSTRUCTION EXIT

TARGET POND IMPROVEMENTS – SHEET 9 OF 18

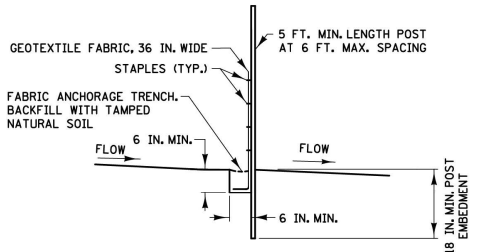




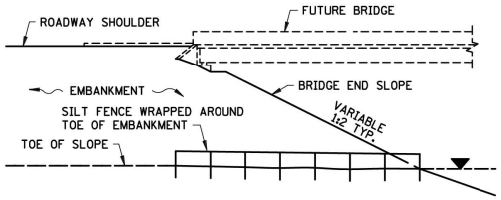
SILT FENCE TYPE HI ②
(HAND INSTALLED)



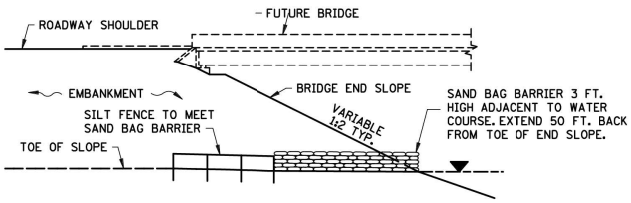
SILT FENCE TYPE MS ②
(MACHINE SLICED)



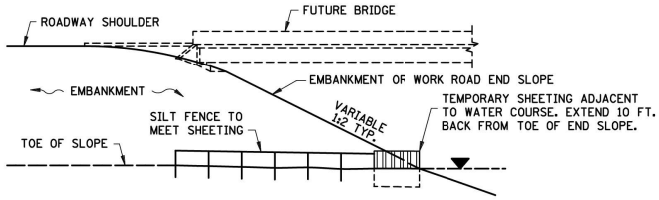
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

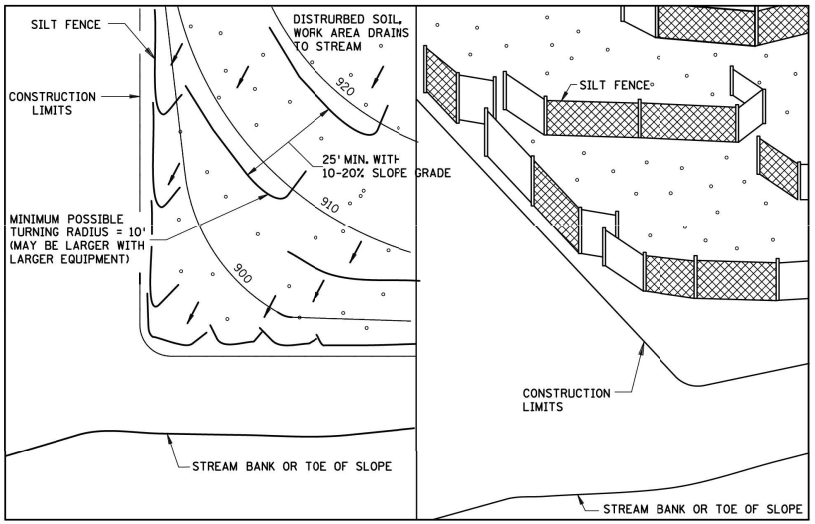


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

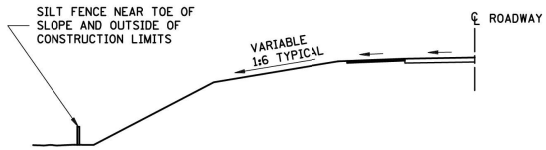
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1./2 ACRE.

⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1. ACRE.

⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 6 OF 8

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REVISED:

STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

SILT FENCE

TARGET POND IMPROVEMENTS – SHEET 10 OF 18

PLOTTED/REVISED: 4 APR 2018

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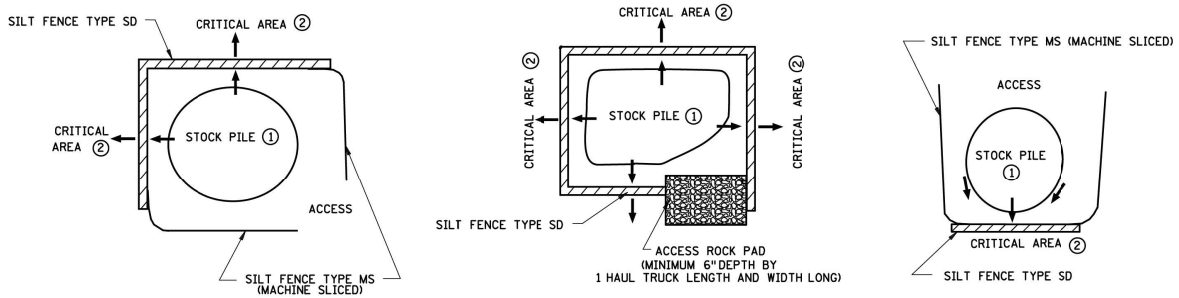
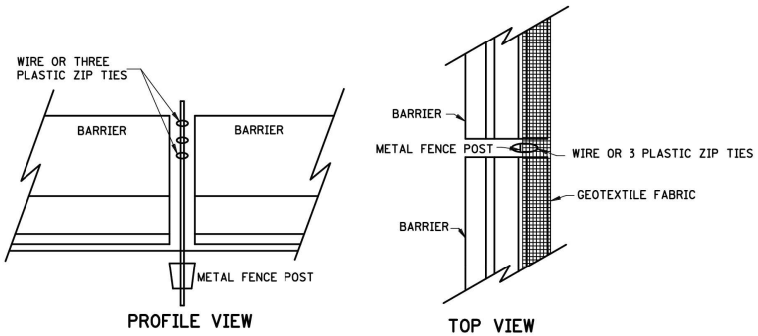


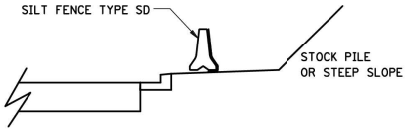
STOCK PILE CONTAINMENT

STOCKPILE SEDIMENT CONTROL

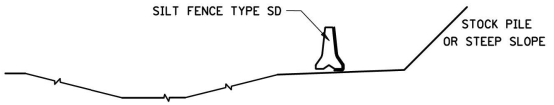


PROFILE VIEW TOP VIEW

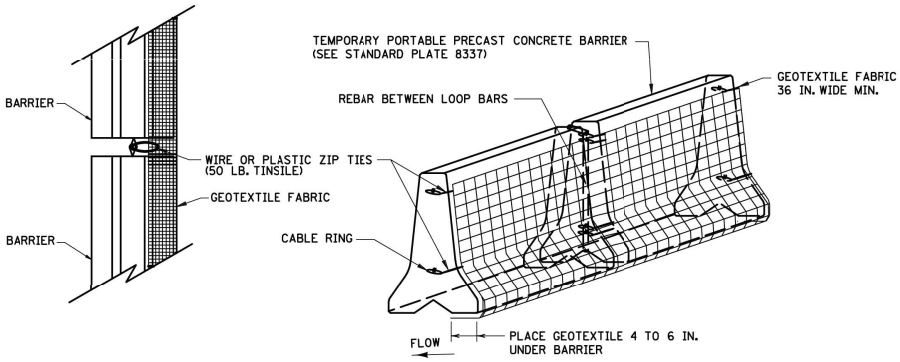
SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITHOUT LOOP BARS



CURB AND GUTTER PROTECTION SYSTEM



DITCH PROTECTION SYSTEM



TOP VIEW PERSPECTIVE VIEW

SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITH LOOP BARS

NOTES:

SEE SPECS. 2533, 2573 & 3886.

SILT FENCE TYPE SD USED TO PROTECT CRITICAL AREAS FROM SHEET FLOW, AND AREAS WHERE OTHER SILT FENCES CANNOT BE PLACED. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

PLACE SILT FENCE TYPE SD ALONG A CONSTANT ELEVATION.

SILT FENCE TYPE SD CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.

(1) PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, PLACE SILT FENCE SD AS SHOWN OR AS DIRECTED BY THE ENGINEER.

(2) CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 7 OF 8

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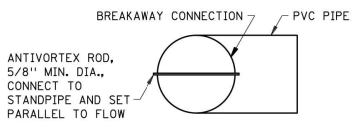
REVISED:

STATE DESIGN ENGINEER

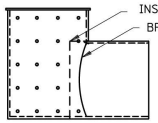
TEMPORARY SEDIMENT CONTROL

SUPER DUTY SILT FENCE

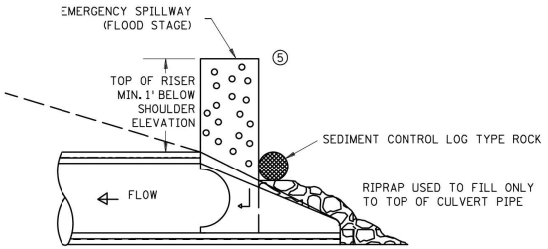
TARGET POND IMPROVEMENTS – SHEET 11 OF 18



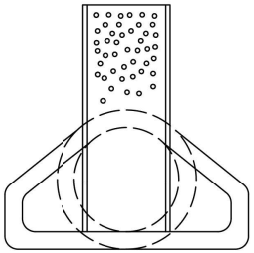
PLAN VIEW



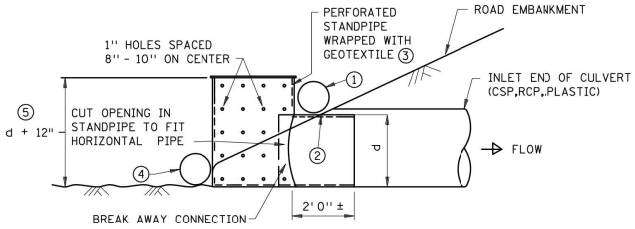
CULVERT STANDPIPE



LONGITUDINAL SECTION



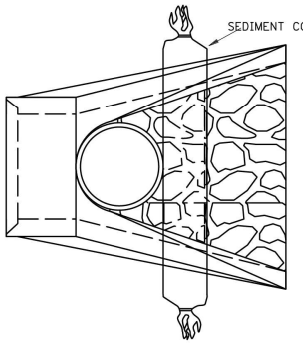
END VIEW



ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

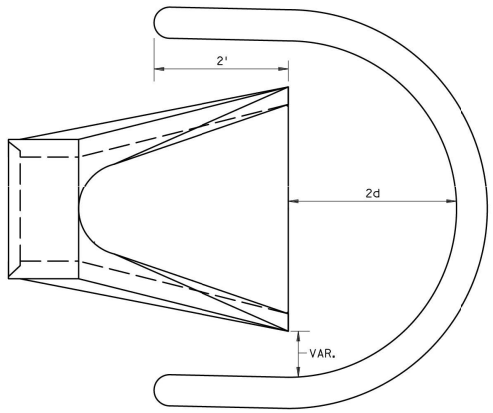
d= CULVERT SIZE: 12" - 36"



TOP VIEW

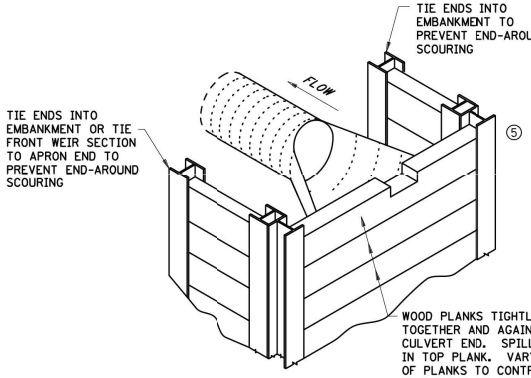
NOTE: SEDIMENT CONTROL LOG TYPE ROCK MAY BE WRAPPED AROUND RISER

CULVERT STANDPIPE INSERT (D-RISER)



SEDIMENT CONTROL LOG WEIR
(COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12"-36"



WOOD PLANK WEIR

NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.

① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.

② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.

③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.

④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

⑤ HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 8 OF 8

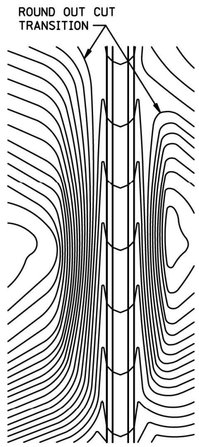
APPROVED: 2-28-2017
REVISED:

STATE DESIGN ENGINEER

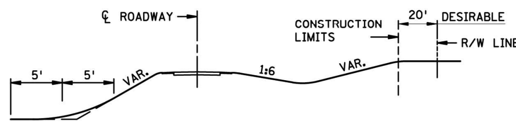
TEMPORARY SEDIMENT CONTROL

CULVERT END CONTROLS

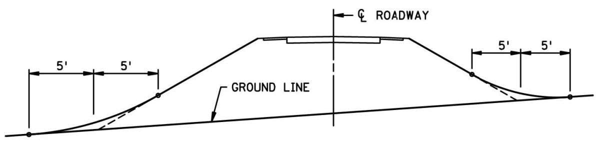
TARGET POND IMPROVEMENTS – SHEET 12 OF 18



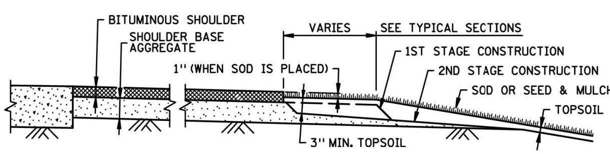
CONTOURING ROAD CUTS



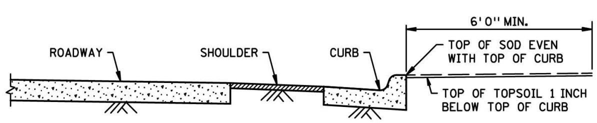
ROUNDING SHOULDERS AND BACKSLOPES



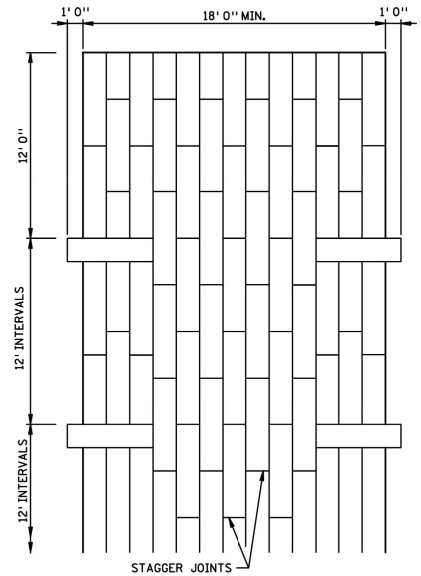
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



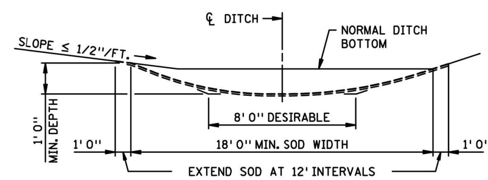
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

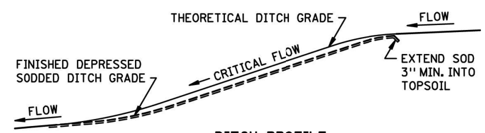


PLAN VIEW



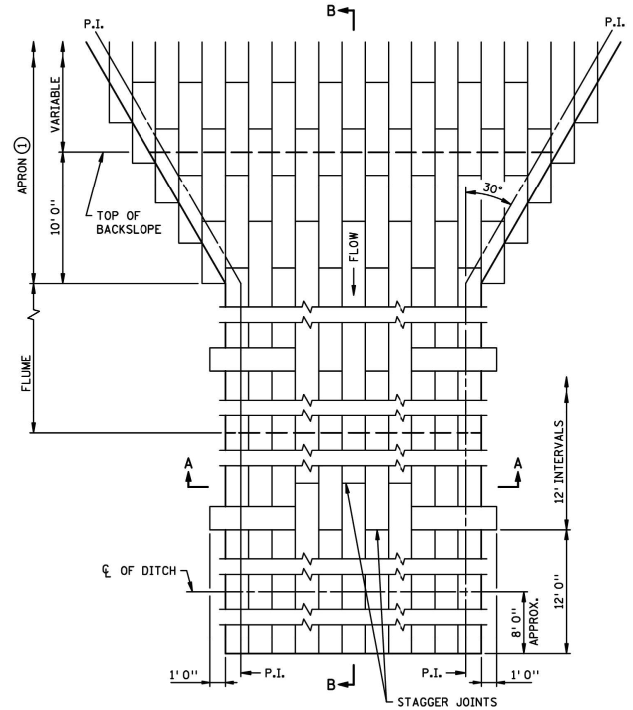
SODDED DITCH CROSS SECTION

WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.

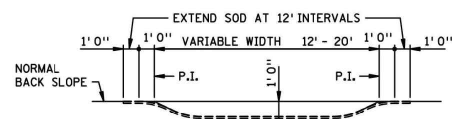


DITCH PROFILE

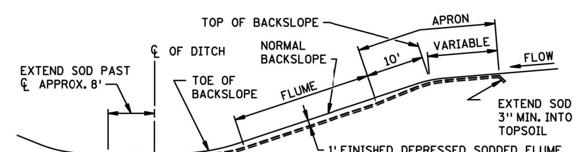
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.
① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

REVISION:
APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

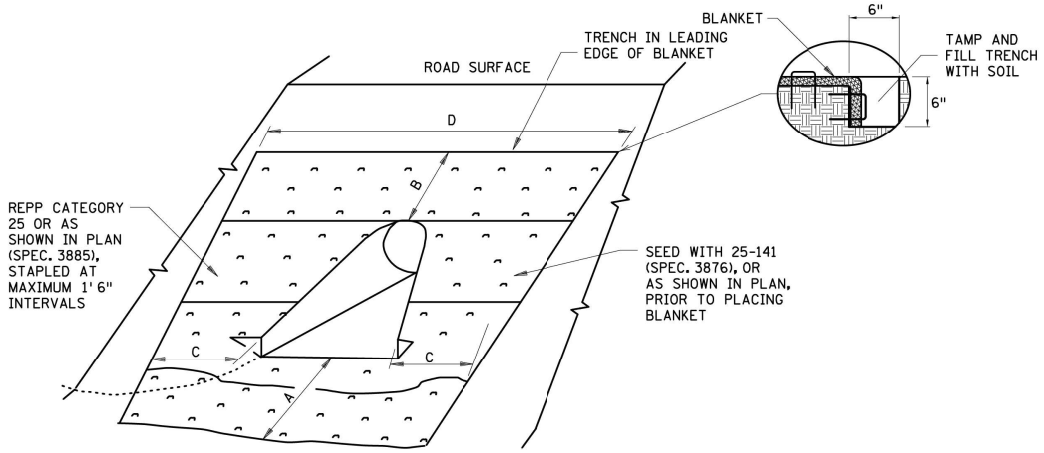
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 1 OF 3
APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

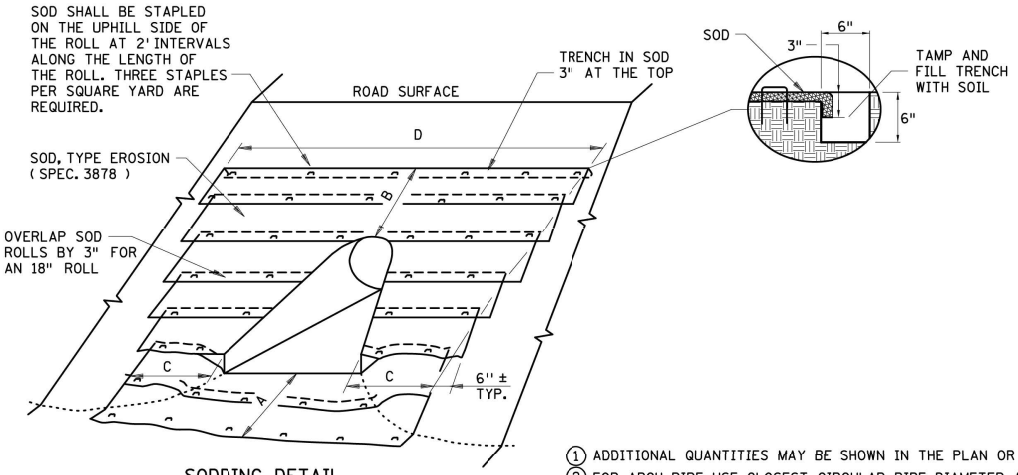
PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES

TARGET POND IMPROVEMENTS – SHEET 13 OF 18

IPLOT NAME: s404_l.spn
PATH & FILENAME: OTS\DesignStandards\Development\New Border\400_Series\s404_l_spn.dgn
PLOTTED/REVISED: 4-APR-2018



ROLLED EROSION PREVENTION PRODUCT (BLANKET) & SEED DETAIL



SODDING DETAIL

CULVERT INLET APRON ①										
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	9	9	8	8	N/A	N/A	3'	1.5'	3'	13'
18"	13	12	12	14	16	N/A	3'	3'	3'	16'
21"	14	14	14	16	18	14	3'	3'	3'	17'
24"	16	15	16	19	21	17	3'	3'	3'	18'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'	3'	20'
30"	23	22	25	30	32	N/A	3'	4.5'	3'	22'
36"	34	34	39	48	51	37	4.5'	4.5'	4.5'	27'
42"	43	40	51	64	N/A	N/A	4.5'	6'	4.5'	30'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'	4.5'	34'
54"	65	58	81	102	N/A	N/A	4.5'	9'	4.5'	37'
60"	69	59	91	115	N/A	N/A	4.5'	9'	4.5'	39'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'	4.5'	39'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'	4.5'	41'

CULVERT OUTLET APRON ①										
CULVERT DIAMETER ②	SOD OR REPP (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	10	10	9	10	N/A	N/A	4.5'	1.5'	3'	13'
18"	13	13	12	14	15	N/A	6'	1.5'	3'	14'
21"	16	14	16	18	19	15	6'	1.5'	3'	15'
24"	18	18	18	21	22	18	7.5'	1.5'	3'	16'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'	3'	17'
30"	23	23	24	28	29	N/A	9'	1.5'	3'	18'
36"	36	35	38	47	48	37	10.5'	1.5'	4.5'	23'
42"	43	40	47	58	N/A	N/A	12'	1.5'	4.5'	25'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'	4.5'	27'
54"	57	50	67	84	N/A	N/A	15'	1.5'	4.5'	29'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'	6'	33'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'	6'	33'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'	6'	34'

① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.
② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.

QUANTITIES ARE CALCULATED TO INCLUDE SOD REQUIRED TO PROVIDE A 3" OVERLAP ON ALL 18" WIDE ROLLS. THIS ALLOWS FOR SHRINKAGE OF THE SOD.

FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.

FOR CORRUGATED POLYETHYLENE PIPE METAL APRON (PLATE 3129), USE THE METAL APRON COLUMN (PLATE 3123).

AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE BASED ON APRON SIDE SLOPES OF NO STEEPER THAN 1:2, UNLESS INDICATED AS FOR SAFETY APRONS.

CARE SHOULD BE TAKEN IN SELECTING SOD TO STABILIZE THE APRON. RIP-RAP SHOULD BE USED FOR FLOW VELOCITIES GREATER THAN 6 FPS.

REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 2 OF 3

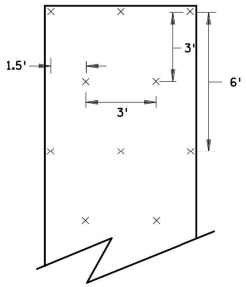
APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICCI
STATE DESIGN ENGINEER

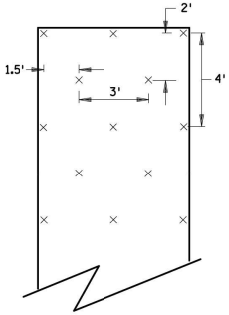
PERMANENT EROSION CONTROL

TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

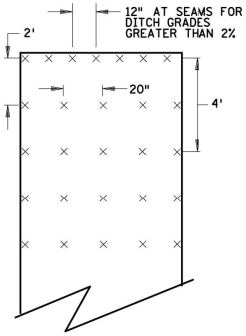
TARGET POND IMPROVEMENTS – SHEET 14 OF 18



SLOPES FLATTER THAN 1:2
120 STAPLES PER 100 SQ YD

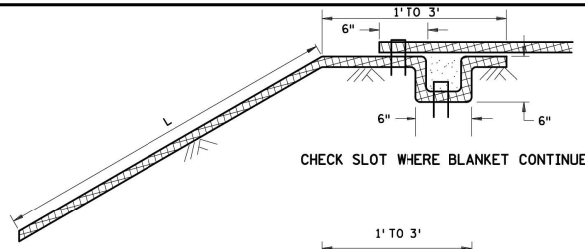


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

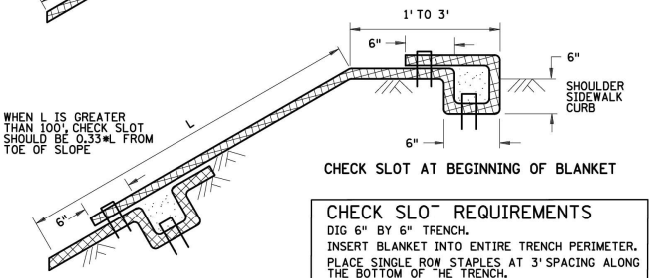


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

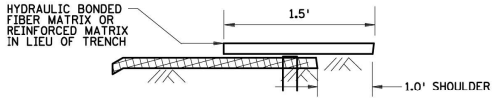
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.

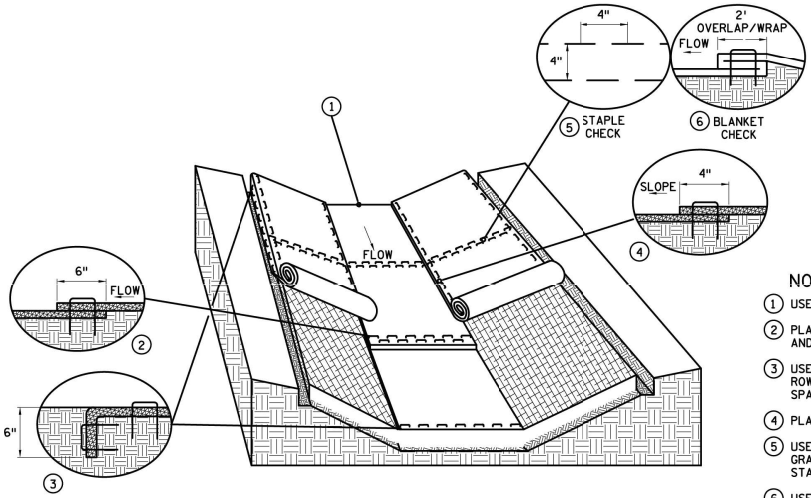
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

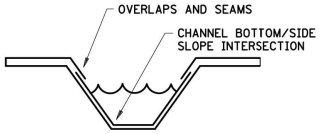


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS



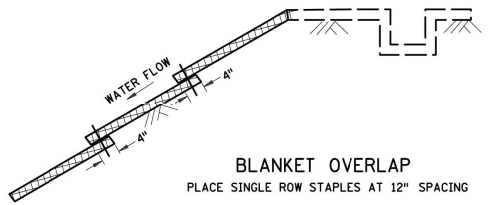
DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS (7)

NOTES:

1. USE CHECK SLOT DETAIL (NO ALTERNATES).
2. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.
3. USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.
4. PLACE SINGLE ROW OF STAPLES AT 12" SPACING.
5. USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5%. GRADE AT 100' INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.
6. USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
   2.5%-3% 100' INTERVALS
   3%-5% 50' INTERVALS
   5%-7% 25' INTERVALS
7. CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

GENERAL BLANKET INSTALLATION REQUIREMENTS

REPP = ROLLED EROSION PREVENTION PRODUCT.

PREPARE SOIL AS PER SPECIFICATION 2574.

LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".

OVERLAP BLANKET 6" (MINIMUM) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5'.

THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100' OR GREATER, INSERT BLANKET INTO A CHECK SLOT ⅓ FROM THE BOTTOM OF THE SLOPE.

REVISION:

APPROVED: JANUARY 8, 2020
MARNI KARNOWSKI
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.404 | 3 OF 3

APPROVED: 1-8-2020
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PERMANENT EROSION CONTROL

REPP (BLANKET) STAPLE PATTERN FOR SLOPES

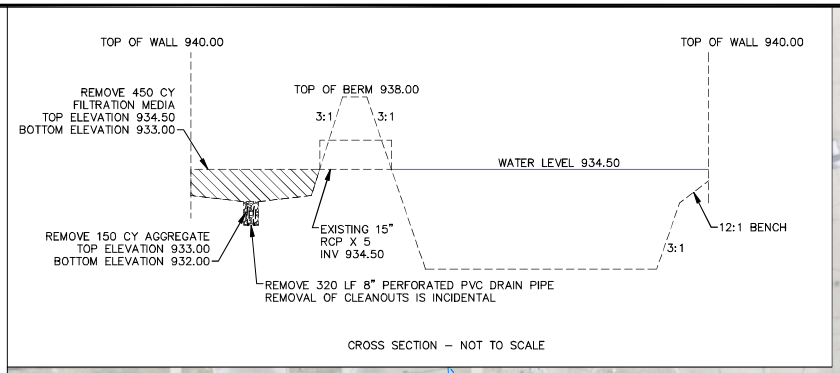
TARGET POND IMPROVEMENTS – SHEET 15 OF 18

PLOTTED/REVISED: 24 JAN 2020

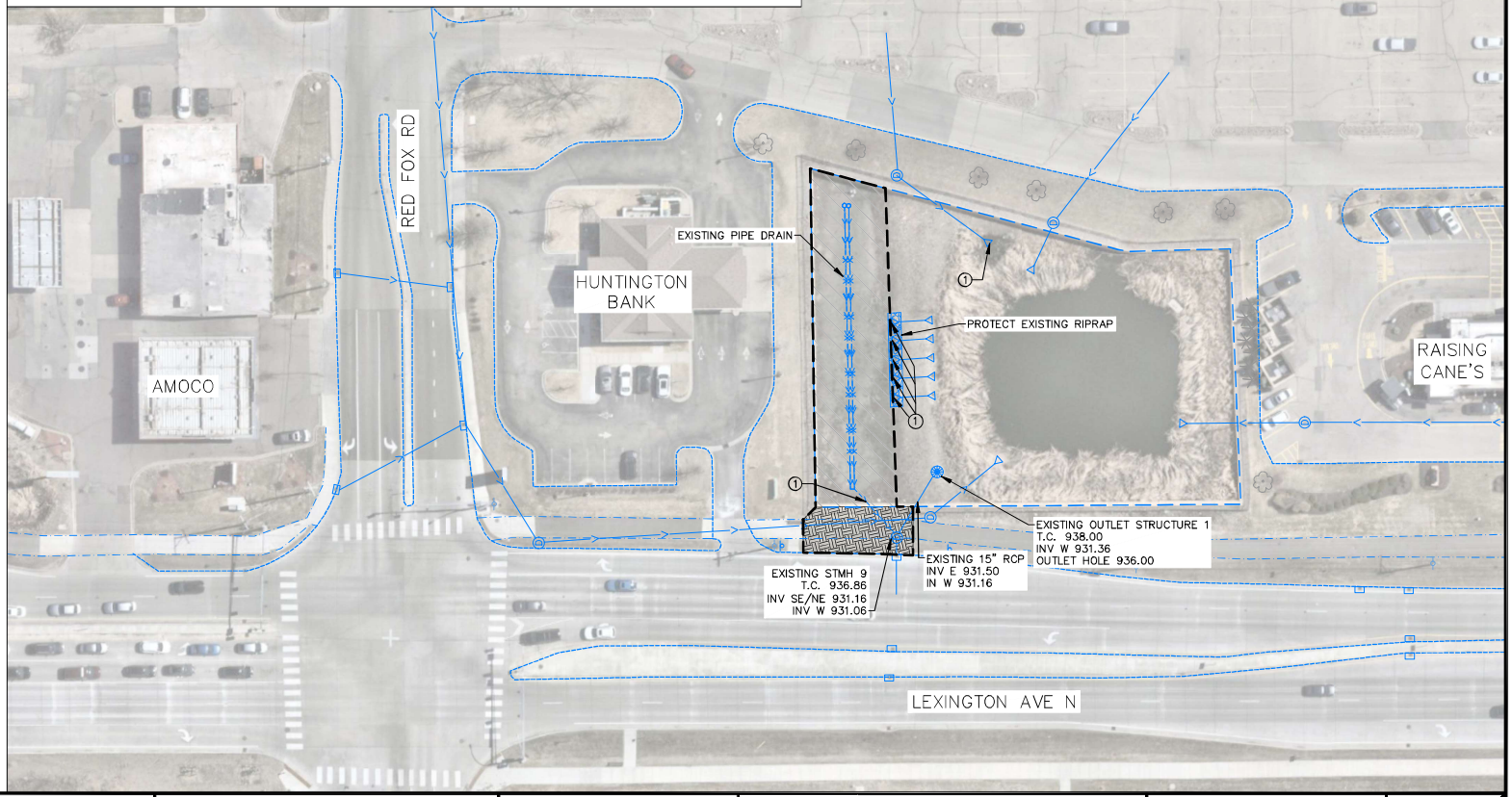
PLOT NAME: s404_3_spn
PATH & FILENAME: 07'S\Design\Standards\Development\Standard Plans\DCV\400_Series\s404_3_spn.dgn

LEGEND

- REMOVE FILTRATION MEDIA PAID FOR AS EXCAVATION – COMMON
- STABILIZED CONSTRUCTION EXIT
- CONSTRUCTION LIMITS
- REMOVE PIPE DRAIN
- EXISTING RETAINING WALL
- EXISTING TRAIL
- EXISTING STORM SEWER
- EXISTING FLARED END SECTION
- EXISTING CATCH BASIN
- EXISTING MANHOLE
- EXISTING SIGN
- (1) PROTECT INPLACE SEWER



CROSS SECTION – NOT TO SCALE



NOTES:

1. CONTRACTOR SHALL CALL GOPHER STAT ONE CALL AT 651-454-0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
3. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
4. ALL DISTURBED AREAS WITHIN CONSTRUCTION LIMITS, INCLUDING ACCESS ROUTES, SHALL BE RESTORED AND PAID FOR AS LANDSCAPE RESTORATION.
5. REMOVAL OF DOWNED TREES AND OTHER DEBRIS WITHIN AREA OF WORK SHALL BE INCIDENTAL TO THE PROJECT.
6. CONTRACTOR IS RESPONSIBLE FOR THE DAMAGE TO STREETS, CONCRETE CURB & GUTTER, TRAILS, AND TREES NOT SHOWN FOR REMOVAL.
7. WORK ASSOCIATED WITH PROTECTING AND/OR REMOVING AND REINSTALLING FENCES, RETAINING WALLS, STREET SIGNS, LAWN IRRIGATION SYSTEMS, AND OTHER ITEMS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

0 15 30 60
HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.

DRAWING NAME: TARGET-POND-REMV.dwg

DESIGNED BY:	EWM
DRAWN BY:	EWM
CHECKED BY:	ART
DATE:	12/30/2025
PROJECT NO.	XXXXXXXX

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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.

ADAM TJADEN
DATE: 12/30/2025 MN LIC. NO. 59337

CITY OF SHOREVIEW
TARGET POND IMPROVEMENTS

EXISTING CONDITIONS AND REMOVAL PLAN

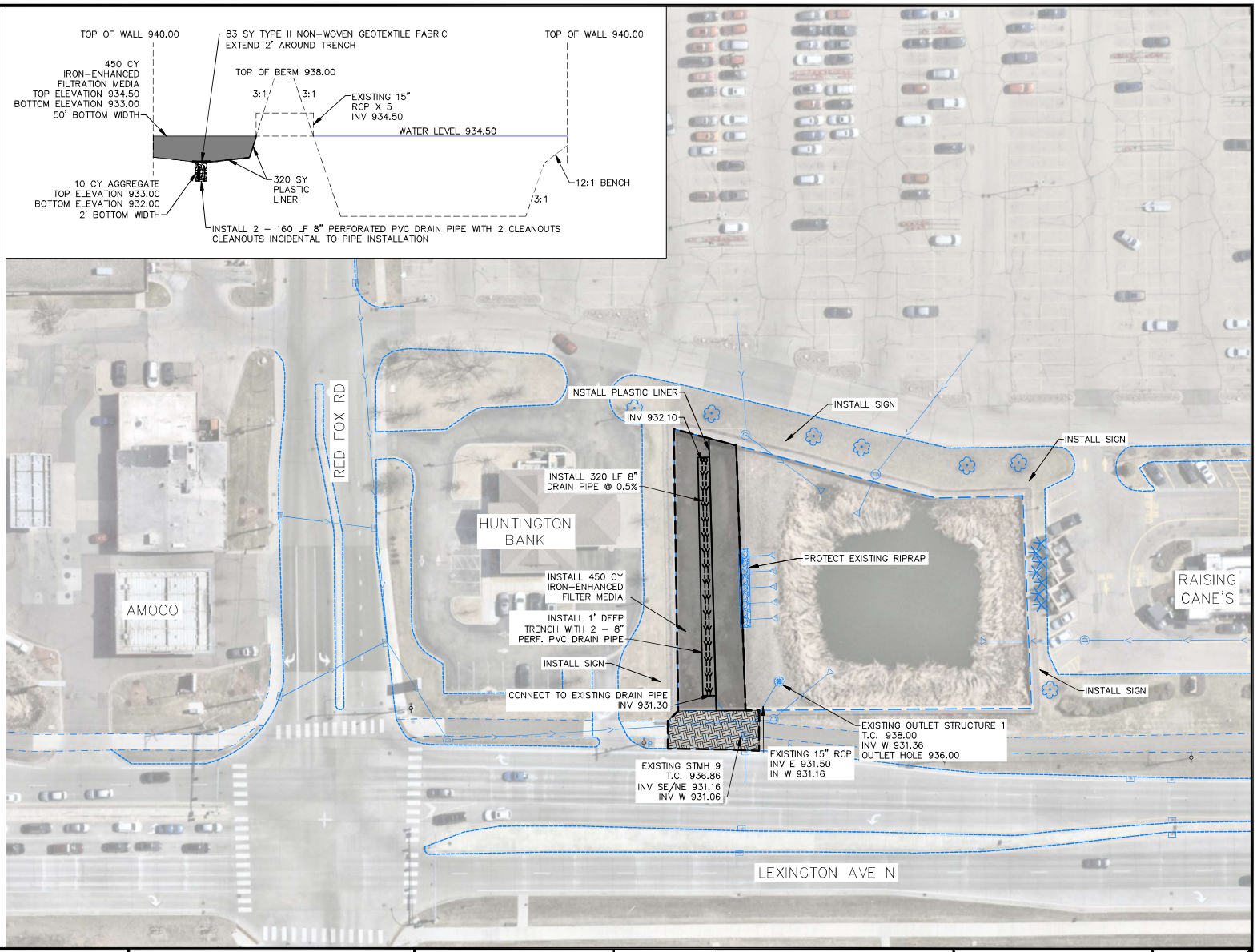
CITY PROJECT 26-10

SHEET NO. 16 / 18

K:\TWC_Civil\City\SHOREVIEW\2026 GRANT RCWD\CAD\Plan Sheets\TARGET-POND-REMV.dwg December 30, 2025 - 2:34pm

LEGEND

- IRON-ENHANCED FILTER MEDIA
- CONSTRUCTION ENTRANCE
- CONSTRUCTION LIMITS
- PROPOSED DRAIN PIPE
- EXISTING STORM SEWER
- EXISTING FLARED END SECTION
- EXISTING CATCH BASIN
- EXISTING MANHOLE



NOTES:

1. CONTRACTOR SHALL CALL GOPHER STAT ONE CALL AT 651-454-0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITY STRUCTURES THAT ARE NOT BEING REMOVED OR RELOCATED.
3. CONTRACTOR TO VERIFY REMOVAL LIMITS WITH ENGINEER.
4. ALL DISTURBED AREAS WITHIN CONSTRUCTION LIMITS, INCLUDING ACCESS ROUTES, SHALL BE RESTORED AND PAID FOR AS LANDSCAPE RESTORATION.
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0 15 30 60
HORIZONTAL

No.	Date	Revisions	App.

DRAWING NAME	TARGET-POND-CONST-PLAN.dwg
DESIGNED BY:	EWM
DRAWN BY:	EWM
CHECKED BY:	ART
DATE:	12/30/2025
PROJECT NO.	XXXXXXXX

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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.

ADAM TJADEN
DATE: 12/30/2025 MN LIC. NO. 59337

CITY OF SHOREVIEW
TARGET POND
IMPROVEMENTS

CONSTRUCTION PLAN

CITY PROJECT 26-10

SHEET NO. 17 / 18

K:\TWC_Civil\City\SHOREVIEW\2026 GRANT RCWD\CAD\Plan Sheets\TARGET-POND-CONST-PLAN.dwg December 30, 2025 - 2:26pm

LEGEND

HARROWED OR RAKED AND THEN CULTIVATED SEED MIX – SOUTHERN BOULEVARD (SB) @ 160 LBS/ACRE FERTILIZER TYPE 4 ROLLED EROSION PREVENTION CATEGORY 25 – PAID FOR AS LANDSCAPE RESTORATION

CONSTRUCTION LIMITS

EXISTING STORM SEWER

EXISTING FLARED END SECTION

EXISTING CATCH BASIN

EXISTING MANHOLE

NOTES:

1. CONTRACTOR SHALL CALL GOPHER STAT ONE CALL AT 651-454-0002. ALL UTILITIES MUST BE LOCATED PRIOR TO THE START OF CONSTRUCTION.
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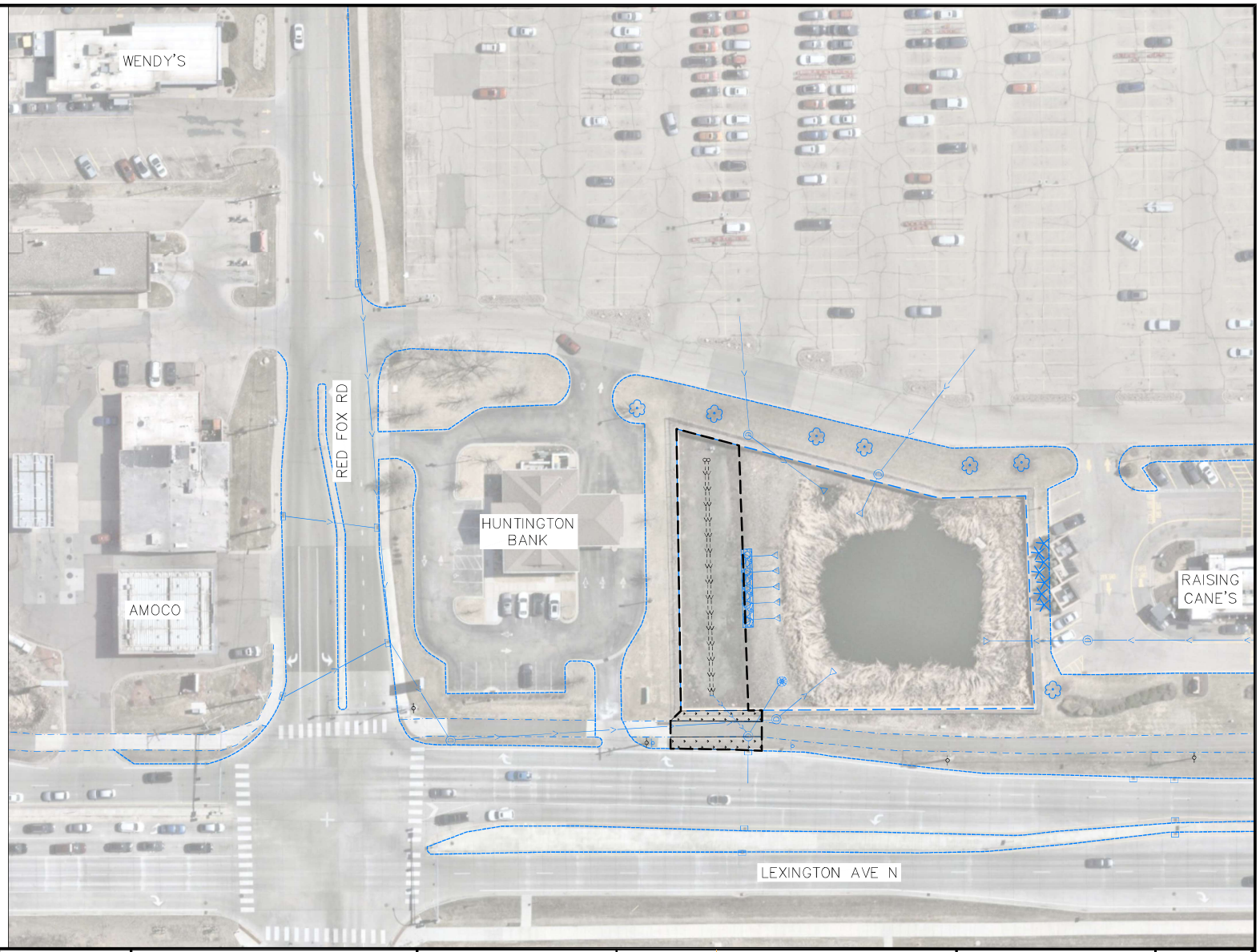

0 15 30 60
HORIZONTAL

No.	Date	Revisions	App.

DRAWING NAME: TARGET-POND-RESTORATION.dwg

DESIGNED BY:	EWM
DRAWN BY:	EWM
CHECKED BY:	ART
DATE:	12/30/2025
PROJECT NO.	XXXXXXXX

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

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.

ADAM TJADEN
DATE: 12/30/2025 MN LIC. NO. 59337

CITY OF SHOREVIEW
TARGET POND IMPROVEMENTS

RESTORATION PLAN

CITY PROJECT 26-10

SHEET NO. 18 / 18

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Expanded Answers: Shoreview Target Pond IESF

Section VI Executive Summary & Abstract

The City of Shoreview intends to convert an existing sand filtration system in the southeast corner of Red Fox Road and Lexington Avenue North into an iron-enhanced filtration system. The existing system receives runoff from the surrounding roadways and ultimately outlets into Valentine Lake, which has been on the MPCA's Impaired Water list since 2002. The goal of this project is to provide additional treatment for runoff outletting into Valentine Lake to work towards improving its water quality and removing it from the Impaired Water List. A total of $81,772.50 is requested, with a City match of $81,772.50.

Section VII Description

List and describe the Best Management Practices (BMPs) to be incorporated into this project.

Iron-enhanced filtration system: The existing sand filtration system will be converted into an iron-enhanced filtration system. The proposed filter will be designed and installed per the MPCA design standards as feasible. The system receives flow from an existing pretreatment wet pond directly south via five existing culverts. The existing sand will be removed and replaced with iron-enhanced sand. The existing draintile will be replaced to extend the lifetime of the system.

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

An iron-enhanced sand filter provides additional removal of Total Phosphorus than the existing system, which will limit the amount of phosphorus entering RCWD groundwater further downstream.

Describe how long-term operation and maintenance of the project will be accomplished and identify the individual(s) responsible for maintenance activities if different than the project officer listed in section 2.

A maintenance agreement will be executed that requires the following:

The City of Shoreview will perform annual inspections of the filter bed, inlets, and outlets. Staff will remove accumulated sediment to maintain a clean filter bed and replace structural components, as necessary.

City staff will visually inspect the filter and surrounding area on a monthly basis. Staff will verify the system, inlets, and outlets are clear of debris and remove vegetation and grasses from the filter surface, per MPCA recommendations, as needed.

The top 2-5 inches of media will be removed and replaced every 3-5 years or as needed to remove clogged filter media.

Section VIII Prioritization

The receiving water body, Valentine Lake, has TMDLs for excess nutrients and chlorine, per the RCWD WMP and MPCA Impaired Waters List. The existing sand filter system receives a significant amount of runoff from surrounding roadways and industrial areas, which ultimately discharge into Valentine Lake. This project will provide additional water quality benefit to this discharge, in line with the goal of removing Valentine Lake from the Impaired Waters List. The project is not included in the Member Community Project List within the RCWD WMP.

Section IX Targeting

The proposed system will treat runoff from the neighboring Target and Raising Cane's parking lots, a portion of Red Fox Road, and a portion of Lexington Avenue. Runoff from each of these areas introduce trash, debris, oil, grease, and sediment from cars and other vehicle into the downstream storm system. This project is able to treat all these pollutants in one central location with the existing wet pond and proposed iron-enhanced sand filter. A central location is more cost-effective and space-efficient than multiple smaller systems. The project's location allows it to treat this runoff at its source prior to entering the downstream storm system and ultimately Valentine Lake.

Rice Creek Watershed District
Stormwater Management Grant Program
2026 Application Form

I. APPLICANT INFORMATION

Organization (to be named as Grantee): City of Shoreview

Street Address: 4600 Victoria Street N

City, State, Zip: Shoreview MN 55126

Tax Status: Exempt Tax ID#: 41-6008808

(e.g., local government, non-profit 501(c)(3), private business, etc.)

II. PROJECT CONTACTS

Project Officer: Stephanie Smith Financial Officer: Kevin Knopik

Title: City Engineer Title: Finance Director

Telephone: 651-490-4651 Telephone: 651-490-4622

Fax: Fax:

Email: ssmith@shoreviewmn.gov Email: kknopik@shoreviewmn.gov

III. PROJECT INFORMATION

Project Name: 2026 Storm Improvements

Location(s) of Project: Milton Street and Randy Avenue

City: Shoreview State: MN County: Ramsey

Project Start Date: 8/1/2026 Project Completion Date: 10/1/2025

Project Type (check only those that directly apply):

- [x] Water Quality Treatment Project
- [ ] Stormwater Reuse Irrigation Project
- [ ] Peak Runoff Rate Control Project
- [x] Runoff Volume Control / Flood Storage Project
- [ ] Other:

Is a RCWD Rule C permit required for this project? [ ] YES [x] NO [ ] UNKNOWN

IV. GRANT REQUEST

RCWD Grant Funding Requested: $ 100,000

Applicant Match Funding Committed: $ 470,000

Total Estimated Project Cost: $ 570,000

Would you be willing to accept grant funding in an amount less than requested? [x] YES [ ] NO

V. SIGNATURE OF APPLICANT

I certify that the information contained within this application is true and accurate.

Signature of Project Officer

12/30/2025
Date

VI. Executive Summary / Abstract

Include a brief Executive Summary (100 words or less) that summarizes the main goals and activities of the project and the expected environmental outcomes that will be achieved. Identification of the total amount of funds being requested along with the required match. The summaries will be used in the grant review process and on the RCWD website for projects that are funded.

The City of Shoreview proposes replacement of the existing roadway asphalt with pervious pavers in two neighborhoods that have direct stormwater discharge to surface waters. The stormwater currently flows off the road and into the storm system that outlets to Island Lake. The proposed pavers will allow the water to soak into the ground, rather than having it flow to the lake. This project will reduce pollutant loading to the lake, including phosphorus, by reducing

VII. Description (10 points)

The RCWD has established guidelines for prioritizing projects based on location. Water quality improvement projects should be located to benefit a RCWD lake classified as either "Protection" or "Restoration" (see Table 2-4 in the RCWD 2020 Watershed Management Plan), and/or a waterbody with an approved Total Maximum Daily Load (TMDL) study or other recognized diagnostic water quality study. Flood storage and runoff rate control projects should focus on reducing peak flood elevations in known regional flood hazard areas and/or documented local problem areas. Describe the specific watershed management, water quality or quantity need(s) that the project will address and its impact on the target water resource within the District.

Name the target waterbody benefiting from this project: Island Lake

List and describe the Best Management Practices (BMPs) to be incorporated into this project

Pervious concrete pavers

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

The project will remove 12,450SF of impervious pavement. The installation of pervious pavers will allow infiltration of the stormwater runoff that drains to this area. The angular

Provide drawings, maps and/or schematics which graphically illustrate the location and conceptual design of the project. **(Attach separate sheets.)**

Describe how long-term operation and maintenance of the project will be accomplished and identify the individual(s) responsible for maintenance activities if different than the project officer listed in section 2.

Shoreview has 17 installations of pervious pavers throughout the city. Staff has knowledge of installation and maintenance of this style pavers and is confident in the operation of the system. Maintenance and operations include application of a spray coating to protect the pavers from salt damage, use of a rubber snow plow blade to prevent damage during snow maintenance, annual inspection, replacement of individual blocks as needed, street sweeping five times per year in

VIII. Prioritization (20 points)

How does the project support existing regional planning efforts such as the RCWD Watershed Management Plan, municipal surface water management plans, TMDLs, or other recognized diagnostic studies? Is the project included on the Member Community Project List (Appendix G) within the RCWD Watershed Management Plan? Please provide citations where possible.

By capturing stormwater runoff from Milton Street and Randy Avenue environmental benefits for the area are anticipated, including pollutant loading reduction and stormwater volume reduction. It is the intent of the project to continue to improve water quality and reduce discharge to address the TMDL for Island Lake, continuing the water quality protection work

IX. Targeting (15 points)

Describe the critical pollution or flooding sources and risks addressed by this project. Explain why the proposed project is the most cost-effective and feasible means to attain the expected resource benefits. Has a formal analysis been conducted to substantiate this position?

This project is targeted to reduce phosphorus load and stormwater volume directly discharged to Island Lake. The proposed project has been identified as the most cost-effective and feasible means to meet these goals, due to the levels high-reduction within the existing roadway footprint.

X. Measurable Outcomes (20 points)

Provide a detailed estimate and description of the anticipated pollutant reduction, stormwater rate/volume reduction, groundwater withdrawal reduction, and/or other environmental or natural resource benefits associated with the project. Describe the methods and cite the sources (i.e. P8 model, HydroCAD, XP-SWMM, MIDS, MN Stormwater Manual, etc.) used to calculate or estimate the pollutant reductions and/or hydrologic outcomes. **(Mandatory for RCWD to consider your proposal!)**

The storage volume was calculated by assuming a 0.4 porosity of the angular rock area below the pavers. The storage area provided by the pervious paver BMPs is 10,300CF, with an assumed zero infiltration. The city has contracted a geotechnical firm to perform soil sampling in the area, so the design and/or performance of the BMPs may be adjusted to account for infiltration at that time.

XI. Cost-Effectiveness (15 points)

Provide a detailed budget that lists each item for which funding is being requested. You must also list the sources of required local matching contributions. Please provide a summary that demonstrates why this is the most cost-effective approach to solving the problem. Or, have other alternatives been explored, and if so, why were they determined to not be the best alternative? What is the anticipated lifespan of the practice? **(Attach separate sheets if needed.)**

The city's funding will come from the city's surface water enterprise fund, as budgeted in the 2026 capital improvement plan. A cost estimate is attached.
As there is not currently city-owned land or right-of-way available for a stormwater pond or other large-footprint BMP, the most cost-effective method of volume abstraction was determined to be the installation of a pervious paver system within the existing roadway footprint of Milton Street and Randy Avenue. ROW purchasing is a significant cost, so this proposal aims to provide a highly-effective BMP within the existing right-of-way.
The pavers have an anticipated 25-year design life.

XII. Project Readiness (10 points)

Please describe the anticipated timeline for implementing this project. What steps have been taken to ensure that the project can be implemented according to this timeline? Are any permits needed? (If permits are required please cite from what agency and where the project is in that process).

This project is anticipated for construction in late summer of 2026. Design and plans are underway, with a 30% plan attached. Geotechnical analysis is underway, which will assist with "right-sizing" the system.
City funding is available per the 2026 Capital Improvement Plan.
No permits are anticipated.

XIII. Engagement Opportunities (10 points)

Demonstrate any potential for public engagement, education and demonstration and describe what methods will be used to ensure that the purpose and success of the project are made known to the public. Applicants must incorporate a public engagement component into the project.

Shoreview may install educational signage at the end of Milton Street. Shoreview will also post information on the website and social media, potentially including video package, that has educational components.

2026 STORMWATER IMPROVEMENTS CP 26-10
ENGINEER'S ESTIMATE (LAST UPDATE: 12/29/2025)

MILTON STREET
BASE SCHEDULE A (DRAINAGE FUND)

ITEM NO.	ITEM DESCRIPTION	UNITS	QUANITTY	UNIT PRICE	TOTAL COST
2021.501	MOBILIZATION	LS	1	$ 20,000.00	$ 20,000.00
2104.503	REMOVE CURB AND GUTTER (CONCRETE)	LF	430	$ 10.00	$ 4,300.00
2104.501	REMOVE BITUMINOUS PAVEMENT (ROAD)	SY	729	$ 11.50	$ 8,383.50
2105.504	GEOTEXTILE FABRIC (MNDOT TYPE 11, RS380i)	SY	658	$ 8.00	$ 5,264.00
2106.507	EXCAVATION - COMMON	CY	492	$ 35.00	$ 17,220.00
2108.504	GEOGRID (MNDOT TYPE 2, BX1100, BX1200, BXG110, BXG120)	SY	545	$ 5.50	$ 2,997.50
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HR	3	$ 190.00	$ 570.00
2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GAL	10	$ 10.00	$ 100.00
2360.509	TYPE SP 9.5 WEARING COURSE MIX (SPWEA230C) 2.0" THICK	TON	24	$ 100.00	$ 2,400.00
2360.509	TYPE SP 9.5 WEARING COURSE MIX (SPWEA230C) 1.5" THICK	TON	18	$ 100.00	$ 1,800.00
2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LF	430	$ 36.50	$ 15,695.00
2563.601	TRAFFIC CONTROL	LS	1	$ 1,000.00	$ 1,000.00
2573.502	STORM DRAIN INLET PROTECTION	EACH	2	$ 200.00	$ 400.00
2575.504	SODDING TYPE LAWN (WITH 6" TOPSOIL)	SY	145	$ 21.00	$ 3,045.00
2650.500	1-1/2" CLEAN ANGULAR ROCK (ASTM #2)	CY	363	$ 103.00	$ 37,389.00
2650.500	3/4" CLEAN ANGULAR ROCK (ASTM #57)	CY	91	$ 108.00	$ 9,828.00
2650.500	IMPERMEABLE GEOMEMBRANE LINER	SY	134	$ 33.00	$ 4,422.00
2650.500	PERMEABLE ARTICULATING CONCRETE BLOCK	SF	4900	$ 18.00	$ 88,200.00
				ESTIMATED TOTAL - MILTON STREET (BASE A)	**$ 223,014.00**

RANDY AVENUE
BASE SCHEDULE B (DRAINAGE FUND)

ITEM NO.	ITEM DESCRIPTION	UNITS		UNIT PRICE	TOTAL COST
2021.501	MOBILIZATION	LS	1	$ 30,000.00	$ 30,000.00
2104.503	REMOVE CURB AND GUTTER (CONCRETE)	LF	760	$ 10.00	$ 7,600.00
2104.501	REMOVE BITUMINOUS PAVEMENT (ROAD)	SY	1060	$ 11.50	$ 12,190.00
2105.504	GEOTEXTILE FABRIC (MNDOT TYPE 11, RS380i)	SY	1034	$ 8.00	$ 8,272.00
2106.507	EXCAVATION - COMMON	CY	758	$ 35.00	$ 26,530.00
2108.504	GEOGRID (MNDOT TYPE 2, BX1100, BX1200, BXG110, BXG120)	SY	839	$ 5.50	$ 4,614.50
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HR	3	$ 190.00	$ 570.00
2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GAL	11	$ 10.00	$ 110.00
2360.509	TYPE SP 9.5 WEARING COURSE MIX (SPWEA230C) 2.0" THICK	TON	28	$ 100.00	$ 2,800.00
2360.509	TYPE SP 9.5 WEARING COURSE MIX (SPWEA230C) 1.5" THICK	TON	21	$ 100.00	$ 2,100.00
2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LF	760	$ 36.50	$ 27,740.00
2563.601	TRAFFIC CONTROL	LS	1	$ 1,000.00	$ 1,000.00
2573.502	STORM DRAIN INLET PROTECTION	EACH	4	$ 200.00	$ 800.00
2575.504	SODDING TYPE LAWN (WITH 6" TOPSOIL)	SY	320	$ 21.00	$ 6,720.00
2650.500	1-1/2" CLEAN ANGULAR ROCK (ASTM #2)	CY	483	$ 102.00	$ 49,266.00
2650.500	3/4" CLEAN ANGULAR ROCK (ASTM #57)	CY	218	$ 108.00	$ 23,544.00
2650.500	IMPERMEABLE GEOMEMBRANE LINER	SY	81	$ 33.00	$ 2,673.00
2650.500	PERMEABLE ARTICULATING CONCRETE BLOCK	SF	7550	$ 18.00	$ 135,900.00
				ESTIMATED TOTAL - RANDY AVENUE (BASE B)	**$ 342,429.50**

ESTIMATED TOTAL (BASE A + BASE B) $ 565,443.50

NOTES:

(1) Estimate does not include Endurablend sealing.

(2) Assuming no temporary mail boxes needed. Will ask mail carrier if they can deliver to mail boxes by foot.

CITY OF SHOREVIEW

RAMSEY COUNTY

CONSTRUCTION PLANS FOR 2026 STORMWATER IMPROVEMENTS, CITY PROJECT NO. 26-10

STANDARD SYMBOLS

SECTION LINE	
RIGHT-OF-WAY LINE	
PROPERTY LINE	
VACATED PROPERTY LINE	
CONSTRUCTION LIMITS	
STREET CENTER LINE	
RAILROAD	
RAILROAD RIGHT-OF-WAY	
TELEPHONE CABLE	T
GAS MAIN	G
ELECTRIC CABLE	E
POWER POLE	
STREET LIGHT	
EXISTING MAIL BOX	MAIL
EXISTING CABLE TV BOX	
EXISTING STREET SIGN	
PULL BOX (Elect. or Tele.)	
EXISTING SANITARY SEWER	
NEW MANHOLE/SANITARY SEWER	
SANITARY SEWER SERVICE	
EXISTING CATCH BASIN	
NEW CATCH BASIN/STORM SEWER	
EXISTING WATER MAIN	
NEW WATER MAIN	
WATER SERVICE	
FIRE HYDRANT & ASSEMBLY	
GATE VALVE	
BUTTERFLY VALVE	
GATE VALVE MANHOLE	
AIR VENT	
METER PIT	
CREEK	
POND OR LAKE	
SWAMPY/LOW LAND AREA	
BRUSH AREA	
WOODED AREA	
EXISTING TREE (DECID. OR CONIF.)	
HEDGE	
SILT FENCE	
CHAIN LINK FENCE	XC
WOOD FENCE	
RETAINING WALL	

NO SCALE

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-.2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

PROJECT LOCATION

RAMSEY COUNTY
METRO DISTRICT

NOTE:
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MMUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

PLAN REVISIONS

DATE		APPROVED BY

GOVERNING SPECIFICATIONS

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE 2025 CEAM STANDARD SPECIFICATIONS SHALL GOVERN

INDEX

30% DRAFT PLANS
NOT FOR CONSTRUCTION

THIS PLAN CONTAINS 9 SHEETS

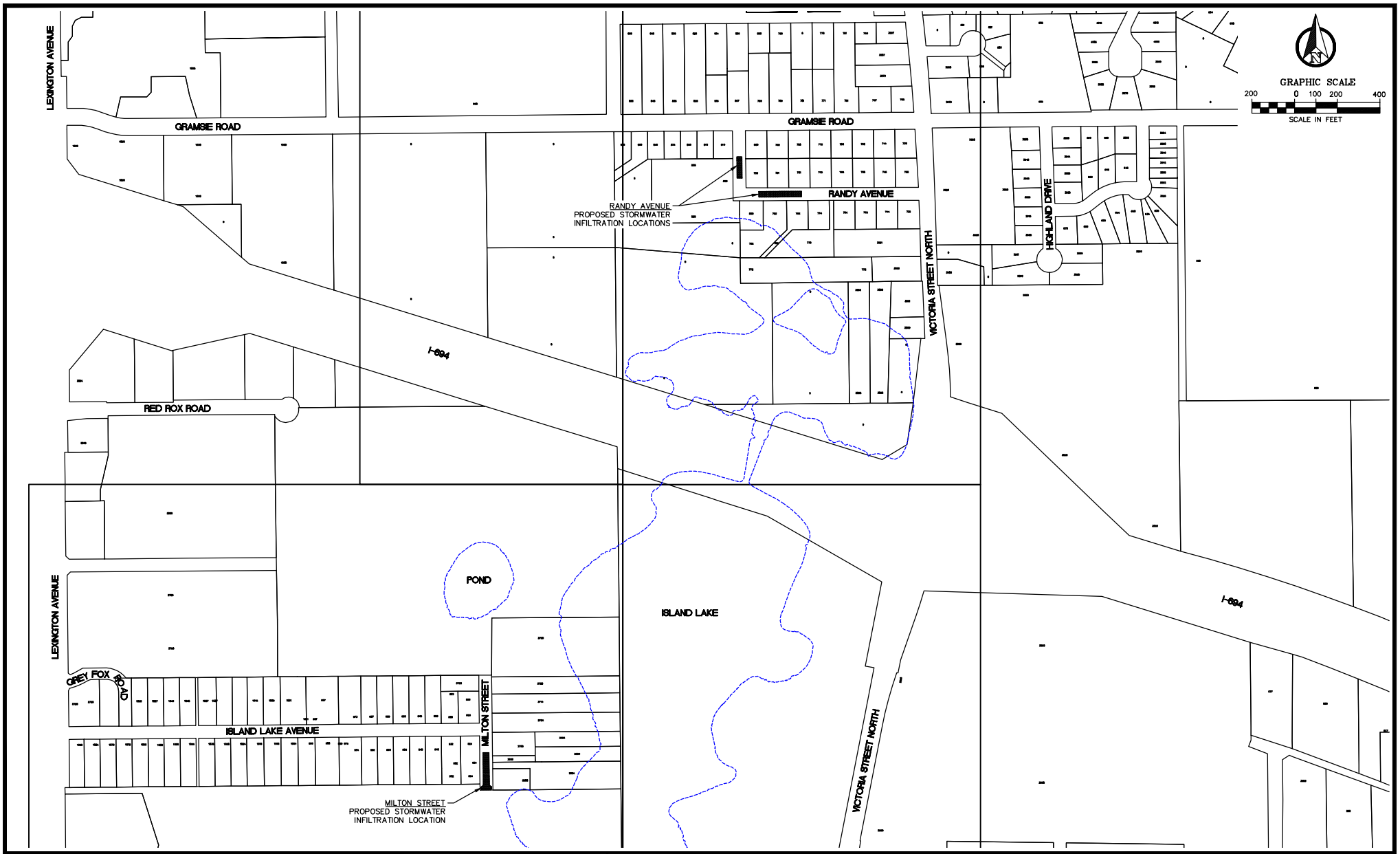
EST. 1957
SHOREVIEW
MINNESOTA

I HEREBY CERTIFY THAT THIS PLAN 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.

PRINT NAME: STEPHANIE SMITH
SIGNATURE:
DATE: FEBRUARY XX, 2026 REG NO.: 51837

CITY PROJECT NO. 26-10

SHEET NO. 1 OF 9 SHEETS



NO.	DATE:	REVISIONS	BY	APP.

30% DRAFT PLANS - NOT FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM DULY A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNED: STEPHANIE SMITH
REG. NO. 51837 DATE: FEBRUARY XX, 2026

DESIGNED BY: DKY
DRAWN BY: DKY
CHECKED BY: SS

SHOREVIEW PUBLIC WORKS

GENERAL PROJECT MAP

2026 STORMWATER IMPROVEMENTS

CITY PROJECT NO. 26-10 SHEET NO. 2 OF 9

RANDY AVENUE - BASE BID SCHEDULE A			
ITEM NO.	DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITY
2021.501	MOBILIZATION	LUMP SUM	1
2104.503	REMOVE CURB AND GUTTER (CONCRETE)	LIN FT	430
2104.501	REMOVE BITUMINOUS PAVEMENT (ROAD)	SQ YD	729
2104.504	GEOTEXTILE FABRIC (MNDOT TYPE 11, RS380I)	SQ YD	658
2106.507	EXCAVATION - COMMON	CU YD	492
2108.504	GEOGRID (MNDOT TYPE 2, BX1100, BX1200, BXG110, BXG120)	SQ YD	545
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	3
2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GAL	10
2360.509	TYPE SP 9.5 WEARING COURSE MIX. (SPWEA230C) 2.0" THICK (ROAD)	TON	24
2360.509	TYPE SP 9.5 WEARING COURSE MIX. (SPWEA230C) 1.5" THICK (ROAD)	TON	18
2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	430
2563.601	TRAFFIC CONTROL	LUMP SUM	1
2573.502	STORM DRAIN INLET PROTECTION	EACH	2
2575.504	SODDING TYPE LAWN (W/ 6" TOPSOIL)	SQ YD	145
2600.500	1-1/2" CLEAN ANGULAR ROCK (AT PERMEABLE BLOCK SECTION)	CU YD	363
2600.500	3/4" CLEAN ANGULAR ROCK (AT PERMEABLE BLOCK SECTION)	CU YD	91
2600.500	IMPERMEABLE GEOMEMBRANE LINER	SQ YD	134
2600.500	PERMEABLE ARTICULATING CONCRETE BLOCKS	SQ FT	4900

MILTON STREET - BASE BID SCHEDULE B			
ITEM NO.	DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITY
2021.501	MOBILIZATION	LUMP SUM	1
2104.503	REMOVE CURB AND GUTTER (CONCRETE)	LIN FT	760
2104.501	REMOVE BITUMINOUS PAVEMENT (ROAD)	SQ YD	1060
2104.504	GEOTEXTILE FABRIC (MNDOT TYPE 11, RS380I)	SQ YD	1034
2106.507	EXCAVATION - COMMON	CU YD	758
2108.504	GEOGRID (MNDOT TYPE 2, BX1100, BX1200, BXG110, BXG120)	SQ YD	839
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	3
2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GAL	11
2360.509	TYPE SP 9.5 WEARING COURSE MIX. (SPWEA230C) 2.0" THICK (ROAD)	TON	28
2360.509	TYPE SP 9.5 WEARING COURSE MIX. (SPWEA230C) 1.5" THICK (ROAD)	TON	21
2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	760
2563.601	TRAFFIC CONTROL	LUMP SUM	1
2573.502	STORM DRAIN INLET PROTECTION	EACH	4
2575.504	SODDING TYPE LAWN (W/ 6" TOPSOIL)	SQ YD	320
2600.500	1-1/2" CLEAN ANGULAR ROCK (AT PERMEABLE BLOCK SECTION)	CU YD	483
2600.500	3/4" CLEAN ANGULAR ROCK (AT PERMEABLE BLOCK SECTION)	CU YD	218
2600.500	IMPERMEABLE GEOMEMBRANE LINER	SQ YD	81
2600.500	PERMEABLE ARTICULATING CONCRETE BLOCKS	SQ FT	7550

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NOTES

SWPPP OVERVIEW

THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED TO ADDRESS THE REQUIREMENTS OF THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER GENERAL PERMIT (MN R100001, PART III, SUBPART A).

GENERAL PROJECT INFORMATION

PROJECT NAME: 2026 STORMWATER IMPROVEMENTS, CP 26-10
LOCATION: SHOREVIEW, MN
PROJECT START DATE: TBD
PROJECT END DATE: TBD

THIS PROJECT WILL CONSIST OF INSTALLING ROAD PAVER BLOCKS FOR STORMWATER INFILTRATION.

TOTAL PROJECT AREA:	XX.XX ACRES
TOTAL AREA DISTURBED BY CONSTRUCTION:	XX.XX ACRES
TOTAL EXISTING IMPERVIOUS AREA:	XX.XX ACRES
TOTAL PROPOSED IMPERVIOUS AREA:	XX.XX ACRES
TOTAL IMPERVIOUS AREA ADDED:	X.XX ACRES

PROJECT CONTACT INFORMATION

OWNER: CITY OF SHOREVIEW
CITY ENGINEER: STEPHANIE SMITH
PHONE: 651-490-4651
EMAIL: TWESOLOWSKI@SHOREVIEWMN.GOV

STAFF ENGINEER: DAVID YANG
AGENCY: CITY OF SHOREVIEW
PHONE: 651-490-4664
651-206-8287 (CELL)
EMAIL: DYANG@SHOREVIEWMN.GOV

PROJECT INSPECTOR: KEITH RANK
AGENCY: CITY OF SHOREVIEW
PHONE: 651-490-4606
651-206-8286 (CELL)
EMAIL: KRANK@SHOREVIEWMN.GOV

IMPAIRED AND/OR SPECIAL WATERS

IMPAIRED RECEIVING WATER: N.A.
IMPAIRMENT: N.A.
TMDL: N.A.
REQUIRED TMDL ACTION: N.A.
REQUIRED ADDITIONAL BMP'S: N.A.
SPECIAL RECEIVING WATER: N.A.
NPDES CLASSIFICATION: N.A.
REQUIRED ADDITIONAL BMP'S: N.A.
THIS PROJECT IS NOT LOCATED IN A KARST AREA, AND DOES NOT DISCHARGE TO A CALCAREOUS SEEPAGE FEN.

TRAINING REQUIREMENTS

PREPARER/DESIGNER OF SWPPP: DAVID YANG
AGENCY: CITY OF SHOREVIEW
SWPPP CERTIFICATION DATE: FEBRUARY 13, 2024

THE CONTRACTOR (OPERATOR) SHALL PROVIDE AT LEAST ONE TRAINED AND EXPERIENCED EROSION CONTROL SUPERVISOR TO WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND TO INSTALL, INSPECT, MAINTAIN, AND REPAIR PROJECT BMP'S BEFORE AND DURING CONSTRUCTION.

AMENDMENTS TO THE SWPPP

THE SWPPP WILL BE AMENDED AS NEEDED AND/OR REQUIRED BY PROVISIONS OF THE PERMIT. AMENDMENTS WILL BE APPROVED BY BOTH THE OWNER AND THE CONTRACTOR (OPERATOR) AND WILL BE ATTACHED TO THE SWPPP AS AN ADDITIONAL SHEET. THE SWPPP AND AMENDMENTS WILL BE KEPT ON SITE BY THE CONTRACTOR WHENEVER CONSTRUCTION ACTIVITY IS IN PROGRESS.

SITE INSPECTION AND MAINTENANCE

ALL INSPECTIONS, MAINTENANCE, REPAIRS, REPLACEMENTS, AND REMOVAL ARE INCIDENTAL TO THE BMP BID ITEMS.

THE CONTRACTOR (OPERATOR) IS RESPONSIBLE FOR COMPLETING REQUIRED INSPECTIONS, MAINTENANCE, AND OBSERVATIONS OF WEATHER CONDITIONS AND RAINFALL AMOUNTS TO ENSURE COMPLIANCE WITH THE PERMIT REQUIREMENTS.

THE CONTRACTOR (OPERATOR) SHALL DEVELOP A CHAIN OF RESPONSIBILITY WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE MPCA.

THE CONTRACTOR (OPERATOR) SHALL OBSERVE THE CONSTRUCTION SITE ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

THE CONTRACTOR (OPERATOR) SHALL RETAIN A WRITTEN RECORD OF ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION IN ACCORDANCE WITH PART III OF THE NPDES/SDS PERMIT.

THE CONTRACTOR (OPERATOR) SHALL MUST KEEP THE SWPPP, ALL INSPECTION REPORTS, AND AMENDMENTS ONSITE.

THE CONTRACTOR (OPERATOR) SHALL PREPARE AND SUBMIT A SITE PLAN FOR THE PROJECT ENGINEER'S APPROVAL AS PER MNDOT SPEC 1717.2E FOR PIPE JACKINGS, DEWATERING, AND AREAS SHOWN IN THE PLANS AS SPECIFIED BY THE PROJECT ENGINEER.

THE CONTRACTOR (OPERATOR) SHALL PREPARE AND SUBMIT A WRITTEN, NOT ORAL, WEEKLY SCHEDULE OF PROPOSED EROSION CONTROL ACTIVITIES FOR THE PROJECT ENGINEER'S APPROVAL AS PER MNDOT SPEC 1803.50.

ALL EROSION PREVENTION AND SEDIMENTATION CONTROL BMP'S MUST BE INSPECTED TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NON-FUNCTIONAL BMP'S MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMP'S. THE CONTRACTOR (OPERATOR) MUST INVESTIGATE AND COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:

1) ALL SEDIMENT BARRIERS, INCLUDING SILT FENCE MUST BE REPAIRED, REPLACED OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE FENCE HEIGHT. THESE REPAIRS SHALL BE MADE WITHIN 72 HOURS OF DISCOVERY.

2) TEMPORARY AND PERMANENT SEDIMENT BASINS MUST BE DRAINED AND SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED IN BASIN REACHES 1/2 OF THE STORAGE VOLUME. DRAINAGE AND REMOVAL SHALL BE COMPLETED WITHIN 72 HOURS OF DISCOVERY.

3) SURFACE WATERS, DRAINAGE DITCHES, AND CONVEYANCE SYSTEMS MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE OPERATOR SHALL REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. THE OPERATOR SHALL RESTABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN 7 DAYS OF DISCOVERY, UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL CONSTRAINTS. THE CONTRACTOR (OPERATOR) IS RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND RECEIVING ANY APPLICABLE PERMITS PRIOR TO CONDUCTING ANY WORK.

4) CONSTRUCTION SITE VEHICLE EXIT LOCATIONS SHALL BE INSPECTED DAILY FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING ONTO PAVED SURFACES. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

5) FOR THE DURATION OF THE CONSTRUCTION WORK AT THE SITE, THE CONTRACTOR (OPERATOR) IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY BMP'S, AS WELL AS EROSION AND SEDIMENT CONTROL BMP'S.

6) OFF-SITE ACCUMULATION OF SEDIMENT FROM THE CONSTRUCTION SITE MUST BE REMOVED IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

7) ALL INFILTRATION AREAS MUST BE INSPECTED TO ENSURE THAT NO SEDIMENT FROM ONGOING CONSTRUCTION ACTIVITIES IS REACHING THE INFILTRATION AREAS. INFILTRATION AREAS MUST BE PROTECTED FROM COMPACTION DUE TO CONSTRUCTION EQUIPMENT DRIVING ACROSS THE INFILTRATION AREA.

POLLUTION PREVENTION MANAGEMENT MEASURES

THE CONTRACTOR (OPERATOR) SHALL BE RESPONSIBLE FOR ALL POLLUTION PREVENTION MANAGEMENT MEASURES, AND FOR INFORMING ALL VISITORS AND/OR PERSONNEL ON-SITE OF THE POLLUTION PREVENTION MANAGEMENT MEASURES. ALL POLLUTION PREVENTION MANAGEMENT MEASURES ARE TO BE CONSIDERED INCIDENTAL TO THE MOBILIZATION BID ITEM UNLESS OTHERWISE NOTED. POLLUTION PREVENTION MANAGEMENT MEASURES INCLUDES BUT ARE NOT LIMITED TO THE FOLLOWING:

1) THE CONTRACTOR (OPERATOR) IS RESPONSIBLE FOR THE PROPER DISPOSAL, IN COMPLIANCE WITH MPCA DISPOSAL REQUIREMENTS, OF ALL SOLID WASTE AND HAZARDOUS MATERIALS ON-SITE.

2) A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR SHALL COLLECT ALL SANITARY WASTE FROM THE PORTABLE UNITS AT A RATE NECESSARY TO MAINTAIN DESIGNED FUNCTIONS.

3) ALL VEHICLES ON-SITE SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTION MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE

4) FERTILIZERS SHALL BE STORED IN A COVERED SHELTER. PARTIALLY USED BAGS SHALL BE TRANSFERRED TO A SEALABLE BIN TO REDUCE THE CHANGE OF SPILLAGE.

5) PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS AND CLEARLY LABELED.

6) SPILL KITS SHALL BE INCLUDED WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE OPERATOR.

7) ANY ASPHALT SUBSTANCES USED ON-SITE SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

8) ALL PAINT CONTAINERS AND CURING COMPOUNDS SHALL BE TIGHTLY STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT AND/OR CURING COMPOUNDS SHALL NOT BE DISCHARGED INTO THE STORM SEWER SYSTEM AND SHALL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTION.

9) ANY FUEL OR CHEMICAL TANK STORED ON THE PROJECT AREA SHALL BE PROTECTED BY A SOIL BERM OR HAVE A NEGATIVE GRADIENT TO ANY WATER RESOURCE AREA. AS PER CORP OF ENGINEERS PERMIT 404, A CONTINGENCY PLAN MUST BE CREATED BY THE CONTRACTOR IN THE EVENT OF A SPILL OR LEAK OF ANY CHEMICAL, INCLUDING PETROCHEMICALS, DEEMED HARMFUL TO THE ENVIRONMENT. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEAN-UP SHALL BE KEPT IN AN ENCLOSED TRAILER OR SHED ON-SITE. EQUIPMENT SHALL INCLUDE, BUT NOT LIMITED TO, BROOMS, MOPS, DUST PANS, RAGS, GLOVES, GOGGLES, ABSORBENT (KITTY LITTER), OIL ABSORBENT BOOMS AND DIAPERS, AND BUCKETS.

10) ALL SPILLS SHALL BE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM SHALL BE REPORTED TO THE MINNESOTA DUTY OFFICER AT 1-800-422-0798.

11) EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES AND ENGINE DEGREASING ARE PROHIBITED ON CONSTRUCTION SITE.

EROSION PREVENTION MEASURES

THE CONTRACTOR (OPERATOR) SHALL PROVIDE FOR TEMPORARY AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL BMP'S AS SHOWN IN THE PLANS AND THEY SHALL BE KEPT IN A FUNCTIONAL CONDITION AT ALL TIMES THROUGHOUT CONSTRUCTION. THESE MEASURES MAY BE MODIFIED AS APPROPRIATE FOR CONSTRUCTION STAGING AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER. THE CONTRACT SHALL REMAIN IN COMPLIANCE WITH ALL NPDES AND OTHER PERMIT REQUIREMENTS AT ALL TIMES. EROSION PREVENTION MEASURES INCLUDES BUT ARE NOT LIMITED TO THE FOLLOWING:

1) ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY, OR ORGANIC COMPONENTS (E.G., CLEAN AGGREGATE STOCKPILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES) AND THE CONSTRUCTED BASE COMPONENTS OF ROADS, PARKING LOTS, AND SIMILAR SURFACES ARE EXEMPT FROM THIS REQUIREMENT BUT MUST COMPLY WITH PART IV.C.5.

2) THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM A CONSTRUCTION SITE, OR DIVERTS WATER AROUND A SITE, SHALL BE STABILIZED WITHIN 200 LINEAR FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE TO ANY SURFACE WATER. STABILIZATION MUST BE COMPLETED WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER. THESE AREAS MUST BE KEPT STABILIZED AT ALL TIMES.

3) ALL PIPE OUTLETS SHALL BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.

4) ALL SLOPES NEAR ENVIRONMENTALLY SENSITIVE AREAS NEED TO BE IMMEDIATELY STABILIZED AS SHOWN IN THE PLANS OR DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER.

5) ALL SLOPES SHALL BE KEPT IN A SMOOTH, SHAPED CONDITION AT ALL TIMES TO LIMIT WIND AND WATER EROSION.

SEDIMENT CONTROL MEASURES

THE CONTRACTOR (OPERATOR) SHALL BE RESPONSIBLE FOR ALL SEDIMENT CONTROL MEASURES FOR THE PROJECT. SEDIMENT CONTROL MEASURES INCLUDES BUT ARE NOT LIMITED TO THE FOLLOWING:

1) SEDIMENT CONTROL DEVICES SHALL BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE DEVICES SHALL REMAIN IN PLACE UNTIL STABILIZATION HAS BEEN ESTABLISHED IN ACCORDANCE WITH PART IV.G OF THE NPDES PERMIT. THE TIMING OF THE INSTALLATION OF SEDIMENT CONTROL DEVICES MAY BE ADJUSTED TO ACCOMMODATE SHORT-TERM ACTIVITIES SUCH AS CLEARING AND GRUBBING OR PASSAGE OF VEHICLES. ANY SHORT-TERM ACTIVITY MUST BE COMPLETED AS QUICKLY AS POSSIBLE AND THE SEDIMENT CONTROL DEVICES MUST BE INSTALLED IMMEDIATELY AFTER THE ACTIVITY IS COMPLETED. HOWEVER, SEDIMENT CONTROL DEVICES MUST BE INSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE ACTIVITY IS NOT COMPLETE.

2) ON SLOPES GREATER THAN 3:1 OR STEEP GRADES, THERE SHALL BE NO UNBROKEN SLOPE LENGTH GREATER THAN 75 FEET.

3) STOCKPILES SHALL BE PROVIDED WITH AN EFFECTIVE SEDIMENT PERIMETER CONTROL AND SHALL NOT BE PLACED IN ANY TYPE OF SURFACE WATER.

4) IF SEDIMENTS DEPOSIT IN WATERS OF THE STATE OR PRIVATE PROPERTY, THE MATERIAL MUST BE REMOVED COMPLETELY WITHIN SEVEN (7) DAYS IN ACCORDANCE WITH PART IV.E.5.C OF THE NPDES PERMIT.

5) ALL STORM DRAIN AND CULVERT INLETS SHALL BE PROTECTED BY APPROPRIATE BMP DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAS BEEN STABILIZED.

6) THE CONTRACTOR SHALL USE WATER AND CALCIUM CHLORIDE ON ROADWAY GRADED AREAS AND RAPID STABILIZATION METHOD 3 ON SLOPES FOR DUST CONTROL AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER.

DEWATERING AND BASIN DRAINING MEASURES

THE CONTRACTOR (OPERATOR) SHALL BE RESPONSIBLE FOR DEWATERING AND SURFACE DRAINAGE REGULATIONS FOR THE PROJECT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1) DEWATERING AND CONCRETE TRUCK WASHING RELATED TO THE CONSTRUCTION ACTIVITY THAT MAY HAVE TURBID OR SEDIMENT LADEN DISCHARGE WATER MUST BE DISCHARGED TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN ON-SITE WHEN POSSIBLE. IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN PRIOR TO ENTERING THE SURFACE WATER, IT MUST BE TREATED WITH THE APPROPRIATE BMP'S, SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER DOWNSTREAM.

2) ALL DISCHARGE POINTS SHALL BE PROTECTED FROM EROSION AND SCOUR. DISCHARGES SHALL BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING OR OTHER ENERGY DISSIPATION MEASURES APPROVED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER. ADEQUATE SEDIMENTATION CONTROL MEASURES ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS.

3) A WATER APPROPRIATION PERMIT WILL BE REQUIRED FROM MN DNR FOR CONSTRUCTION DEWATERING EXCEEDING 10,000 GAL/DAY.

FINAL STABILIZATION

THE CONTRACTOR (OPERATOR) SHALL BE RESPONSIBLE FOR ENSURING FINAL STABILIZATION ON THE PROJECT SITE IN ACCORDANCE WITH PART IV.G OF THE NPDES PERMIT. FINAL STABILIZATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

1) VEGETATION SHALL BE MAINTAINED AT 70% OR GREATER COVERAGE AND MULCH SHALL BE MAINTAINED AT 90% OR GREATER COVERAGE BEFORE A NOTICE OF TERMINATION CAN BE SUBMITTED TO MPCA.

2) ALL TEMPORARY BMP'S HAVE BEEN REMOVED AND PROPERLY DISPOSED OF. ALL DRAINAGE DITCHES, PONDS, AND ALL STORM WATER CONVEYANCE SYSTEMS HAVE BEEN CLEARED OF SEDIMENT.

NO.	DATE:	REVISIONS	BY	APP.
		30% DRAFT PLANS - NOT FOR CONSTRUCTION		

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM DULY A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNED: STEPHANIE SMITH
REG. NO. 51837 DATE: FEBRUARY XX, 2026

DESIGNED BY: DKY
DRAWN BY: DKY
CHECKED BY: SS

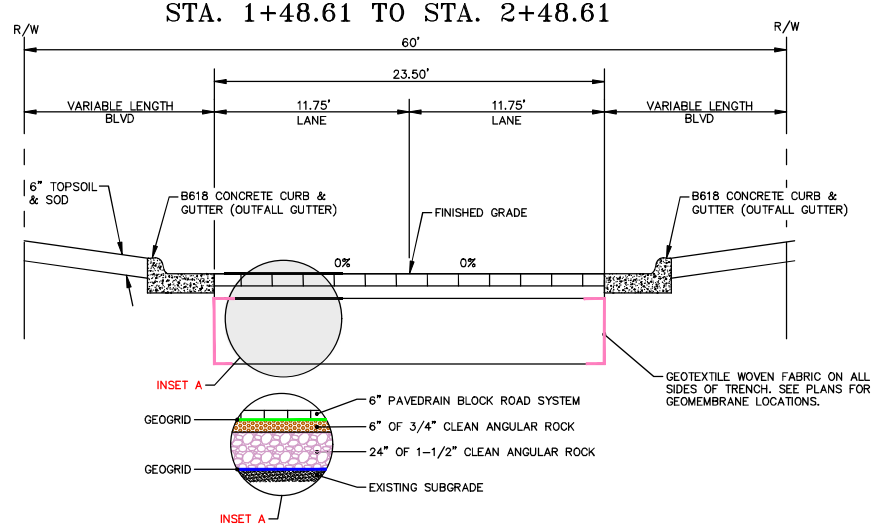
SHOREVIEW PUBLIC WORKS

SWPPP NOTES

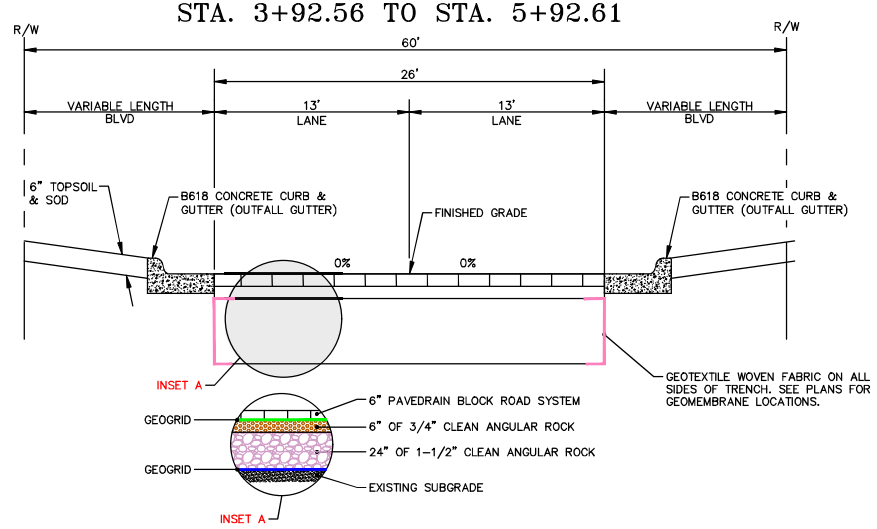
2026 STORMWATER IMPROVEMENTS

CITY PROJECT NO. 26-10 SHEET NO. 4 OF 9

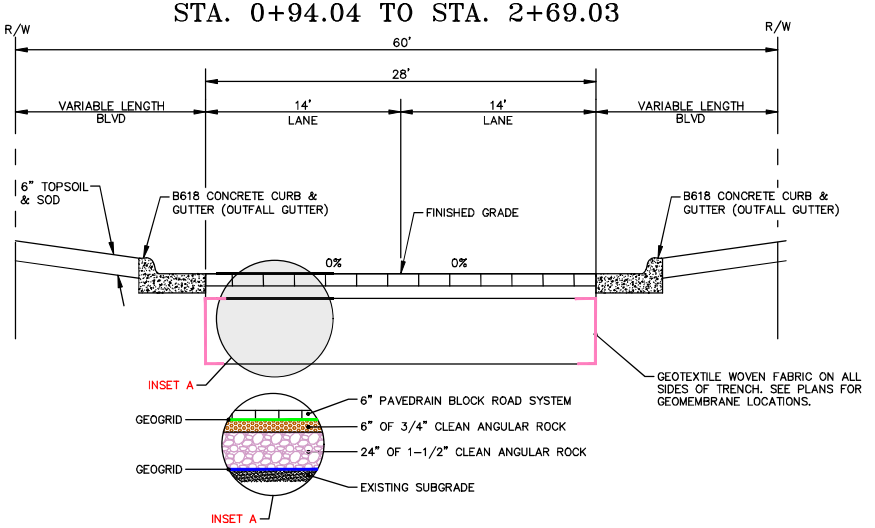
RANDY AVENUE
PAVER BLOCKS SECTION 01
STA. 1+48.61 TO STA. 2+48.61



RANDY AVENUE
PAVER BLOCKS SECTION 02
STA. 3+92.56 TO STA. 5+92.61



MILTON STREET
PAVER BLOCKS SECTION
STA. 0+94.04 TO STA. 2+69.03



NO.	DATE:	REVISIONS	BY	APP.

30% DRAFT PLANS - NOT FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM DULY A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

SIGNED: STEPHANIE SMITH

REG. NO. 51837 DATE: FEBRUARY XX, 2026

DESIGNED BY: DKY
DRAWN BY: DKY
CHECKED BY: SS

SHOREVIEW PUBLIC WORKS

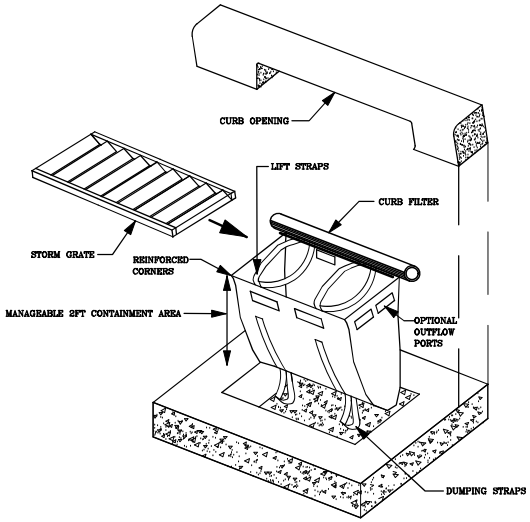
TYPICAL SECTIONS

2026 STORMWATER IMPROVEMENTS

CITY PROJECT NO. 26-10 SHEET NO. 5 OF 9

STORM SEWER STRUCTURE INLET PROTECTION

NOTES: 1. ALL EXISTING AND NEWLY INSTALLED STORM SEWER STRUCTURES SHALL HAVE A DANDY CURB SACK INSTALLED (OR APPROVED EQUAL) FOR EROSION CONTROL PROTECTION.



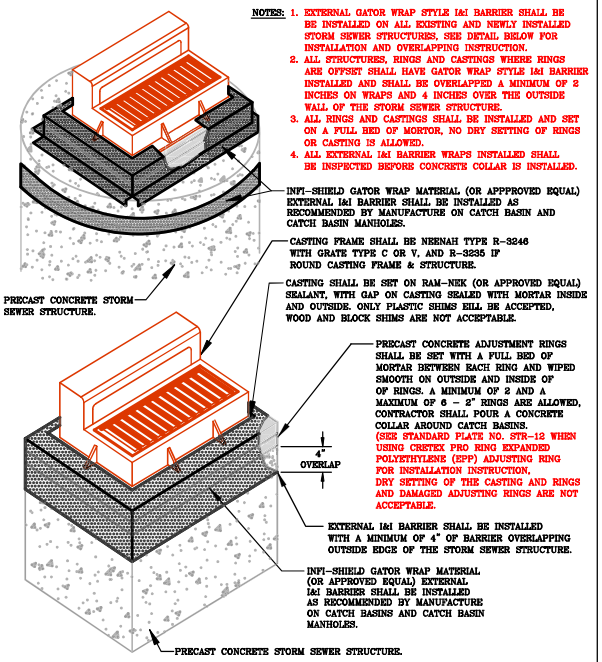
SHOREVIEW PUBLIC WORKS

TYPICAL STORM SEWER INLET PROTECTION INSTALLATION

STANDARD PLATE NO. STO-6 | REVISED JANUARY 2020

INFI-SHIELD EXTERNAL GATOR WRAP I&I BARRIER

NOTES: 1. EXTERNAL GATOR WRAP STYLE I&I BARRIER SHALL BE BE INSTALLED ON ALL EXISTING AND NEWLY INSTALLED STORM SEWER STRUCTURES, SEE DETAIL BELOW FOR INSTALLATION AND OVERLAPPING INSTRUCTION.
2. ALL STRUCTURES, RINGS AND CASTINGS WHERE RINGS ARE OFFSET SHALL HAVE GATOR WRAP STYLE I&I BARRIER INSTALLED AND SHALL BE OVERLAPPED A MINIMUM OF 2 INCHES ON WRAPS AND 4 INCHES OVER THE OUTSIDE WALL OF THE STORM SEWER STRUCTURE.
3. ALL RINGS AND CASTINGS SHALL BE INSTALLED AND SET ON A FULL BED OF MORTOR, NO DRY SETTING OF RINGS OR CASTING IS ALLOWED.
4. ALL EXTERNAL I&I BARRIER WRAPS INSTALLED SHALL BE INSPECTED BEFORE CONCRETE COLLAR IS INSTALLED.



SHOREVIEW PUBLIC WORKS

TYPICAL INFI-SHIELD EXTERNAL GATOR WRAP I&I BARRIER INSTALLATION

STANDARD PLATE NO. STO-7 | REVISED MARCH 2023

NO.	DATE:	REVISIONS	BY	APP.

30% DRAFT PLANS - NOT FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM DULY A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNED: STEPHANIE SMITH
REG. NO. 51837 DATE: FEBRUARY XX, 2026

DESIGNED BY: DKY
DRAWN BY: DKY
CHECKED BY: SS

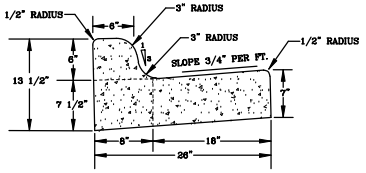
SHOREVIEW PUBLIC WORKS

STANDARD DETAILS

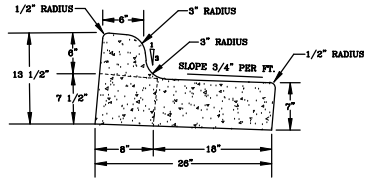
2026 STORMWATER IMPROVEMENTS

CITY PROJECT NO. 26-10 SHEET NO. 6 OF 9

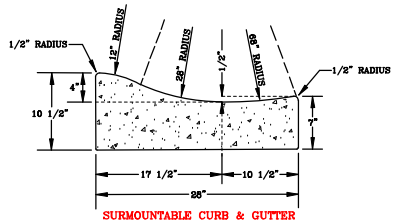
CONCRETE CURB & GUTTER



B618 CURB & GUTTER



B618 CURB & GUTTER OUTFALL



SURMOUNTABLE CURB & GUTTER

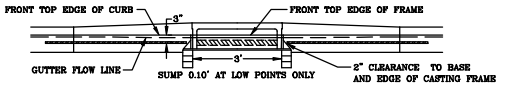
SHOREVIEW PUBLIC WORKS

TYPICAL CONCRETE CURB & GUTTER SECTIONS B618 AND SURMOUNTABLE INSTALLATION

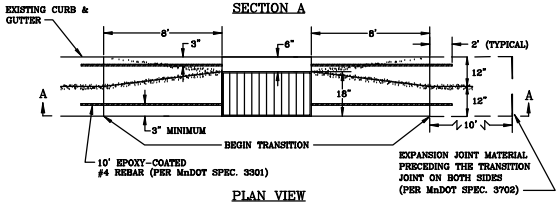
STANDARD PLATE NO. STR-1 | REVISED JANUARY 2020

SURMOUNTABLE CONC. CURB & GUTTER

NEENAH R-3246 CASTING
W/TYPE C OR V GRATE



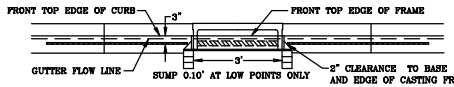
SECTION A



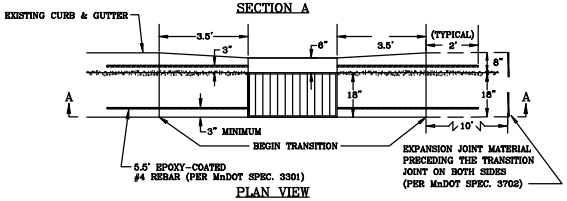
PLAN VIEW

B-618 CONC. CURB & GUTTER

NEENAH R-3246 CASTING
W/TYPE C OR V GRATE



SECTION A



PLAN VIEW

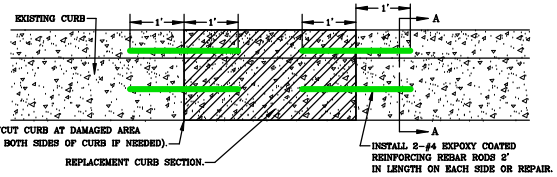
SHOREVIEW PUBLIC WORKS

TYPICAL CATCH BASIN CURB TRANSITION FOR SURMOUNTABLE AND B618 INSTALLATION

STANDARD PLATE NO. STR-2 | REVISED JANUARY 2020

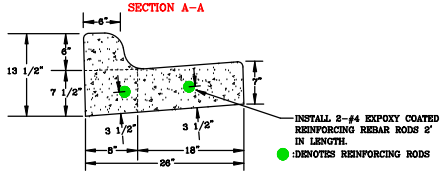
CONCRETE CURB & GUTTER SECTION REPLACEMENT

NOTES:
1. REFER TO MnDOT SPEC. 2531 FOR CONCRETE CURBING INSTALLATION.
2. EXISTING CURB SHALL BE SAWCUT THRU ENTIRE DEPTH OF CURB ON BOTH SIDES OF DAMAGED AREA AS DIRECTED BY ENGINEER IN FIELD.
3. DRILL EXISTING CURB SECTION AND INSTALL AND EXPOXY GROUT 2-#4 EXPOXY COATED REINFORCING REBAR RODS AS SHOWN ON DETAIL BELOW.
4. COST TO SUPPLY & INSTALL DOWEL BARS SHALL BE INCIDENTAL TO THE CONCRETE CURB & GUTTER BID ITEM.

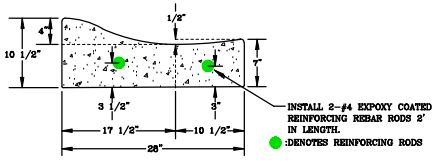


PLAN VIEW

SECTION A-A



B618 AND B612 CURB & GUTTER



SURMOUNTABLE CURB & GUTTER

SHOREVIEW PUBLIC WORKS

TYPICAL CONCRETE CURB & GUTTER SECTION REPLACEMENT REBAR RODDING INSTALLATION

STANDARD PLATE NO. STR-3 | REVISED JANUARY 2019

NO.	DATE:	REVISIONS	BY	APP.

30% DRAFT PLANS - NOT FOR CONSTRUCTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM DULY A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNED: STEPHANIE SMITH
REG. NO. 51837 DATE: FEBRUARY XX, 2026

DESIGNED BY: DKY
DRAWN BY: DKY
CHECKED BY: SS

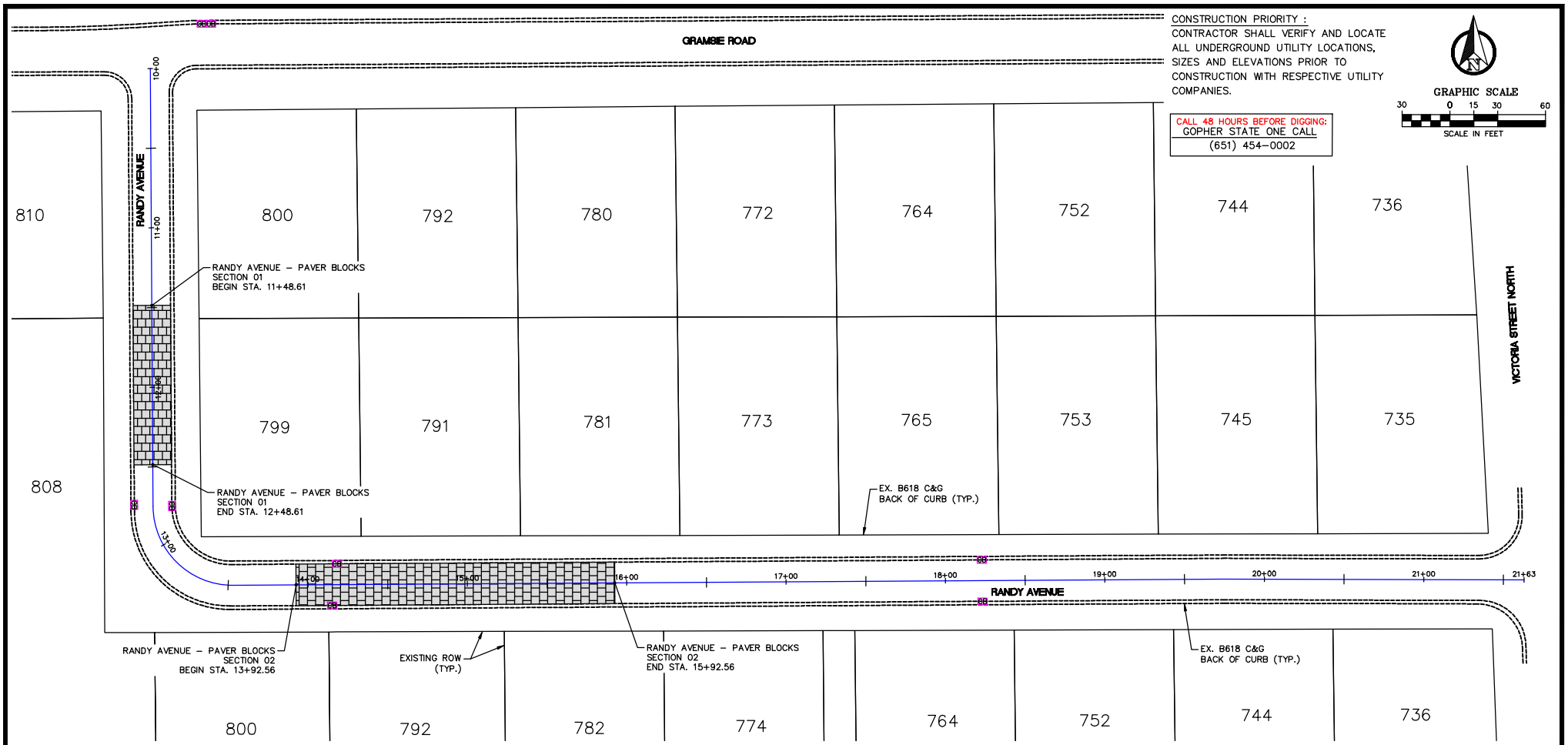
SHOREVIEW PUBLIC WORKS

STANDARD DETAILS

2026 STORMWATER IMPROVEMENTS

CITY PROJECT NO. 26-10 SHEET NO. 7 OF 9

201



CONSTRUCTION PRIORITY :
CONTRACTOR SHALL VERIFY AND LOCATE ALL UNDERGROUND UTILITY LOCATIONS, SIZES AND ELEVATIONS PRIOR TO CONSTRUCTION WITH RESPECTIVE UTILITY COMPANIES.

CALL 48 HOURS BEFORE DIGGING:
GOPHER STATE ONE CALL
(651) 454–0002

GRAPHIC SCALE
30 0 15 30 60
SCALE IN FEET

GENERAL CONSTRUCTION NOTES:
1) CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND PROTECT THEM.
2) ACTUAL LIMITS OF REMOVALS FOR PAVEMENT AND C&G SHALL BE DETERMINED IN THE FIELD BY THE CITY'S ENGINEER.
3) BOULEVARD RESTORATION SHALL INCLUDE A MINIMUM OF 6" TOPSOIL AND SOD.
4) CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING PRIVATE IRRIGATION AND FENCE COMPONENTS DAMAGED FROM ALL CURB REPLACEMENT WORK AT NO ADDITIONAL COMPENSATION FROM THE CITY.
5) BITUMINOUS EDGES SHALL BE MILLED OR SAW CUT AT MATCH POINT. ALL COST FOR THIS WORK SHALL BE INCIDENTAL TO THE PROJECT.
6) CONTRACTOR SHALL INSTALL AND MAINTAIN APPROPRIATE TEMPORARY TRAFFIC CONTROL IN ACCORDANCE WITH THE CURRENT MN MUTCD, AND ADJUST AS NECESSARY FOR ACTUAL FIELD CONDITIONS.

LEGEND
- CB EXISTING CATCH BASIN
- S EXISTING SANITARY MANHOLE
- ST EXISTING STORM SEWER MANHOLE
- EXISTING GATE VALVE
- EXISTING CURB & GUTTER
- EXISTING BITUMINOUS CURB
- EXISTING BITUMINOUS TRAIL
- EXISTING CONCRETE SIDEWALK
- EXISTING CREEK
- PROPOSED CONCRETE PAVER BLOCKS

NO.	DATE:	REVISIONS	BY	APP.

30% DRAFT PLANS – NOT FOR CONSTRUCTION

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SIGNED: STEPHANIE SMITH
REG. NO. 51837 DATE: FEBRUARY XX, 2026

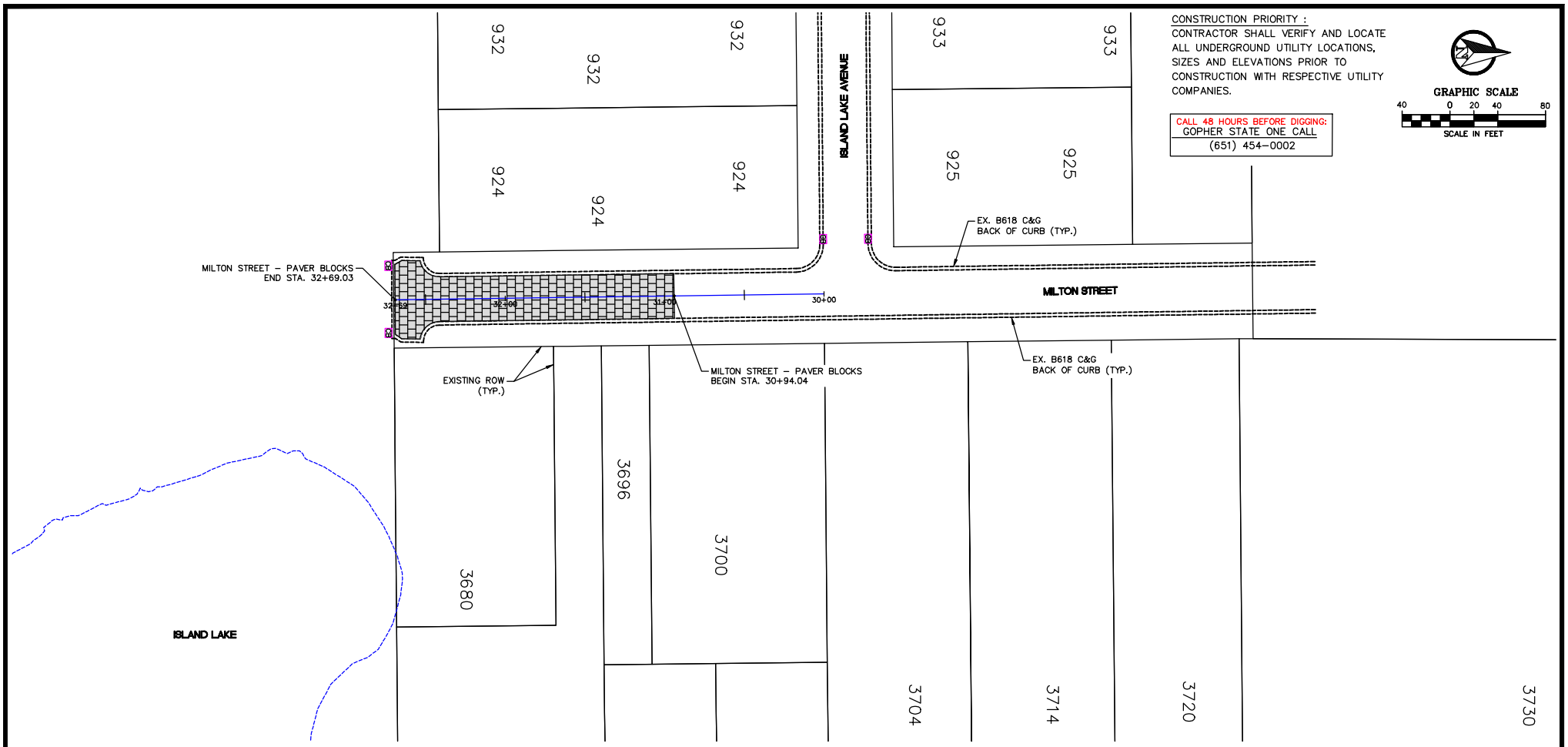
DESIGNED BY: DKY
DRAWN BY: DKY
CHECKED BY: SS

SHOREVIEW PUBLIC WORKS

RANDY AVENUE
CONSTRUCTION PLAN

2026 STORMWATER IMPROVEMENTS
CITY PROJECT NO. 26-10 SHEET NO. 8 OF 9

202



GENERAL CONSTRUCTION NOTES:

1) CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND PROTECT THEM.
2) ACTUAL LIMITS OF REMOVALS FOR PAVEMENT AND C&G SHALL BE DETERMINED IN THE FIELD BY THE CITY'S ENGINEER.
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LEGEND

- CB EXISTING CATCH BASIN
- S EXISTING SANITARY MANHOLE
- ST EXISTING STORM SEWER MANHOLE
- EXISTING GATE VALVE
- EXISTING CURB & GUTTER
- EXISTING BITUMINOUS CURB
- EXISTING BITUMINOUS TRAIL
- EXISTING CONCRETE SIDEWALK
- EXISTING CREEK
- PROPOSED CONCRETE PAVER BLOCKS

NO.	DATE:	REVISIONS	BY	APP.
		30% DRAFT PLANS – NOT FOR CONSTRUCTION		

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM DULY A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNED: STEPHANIE SMITH
REG. NO. 51837 DATE: FEBRUARY XX, 2026

DESIGNED BY: DKY
DRAWN BY: DKY
CHECKED BY: SS

SHOREVIEW PUBLIC WORKS

MILTON STREET
CONSTRUCTION PLAN

2026 STORMWATER IMPROVEMENTS

CITY PROJECT NO. 26-10 SHEET NO. 9 OF 9

Expanded Answers: Shoreview Pervious Pavers

Section VI Executive Summary & Abstract

The City of Shoreview proposes replacement of the existing roadway asphalt with pervious pavers in two neighborhoods that have direct stormwater discharge to surface waters. The stormwater currently flows off the road and into the storm system that outlets to Island Lake. The proposed pavers will allow the water to soak into the ground, rather than having it flow to the lake. This project will reduce pollutant loading to the lake, including phosphorus, by reducing stormwater discharge with the intent to improve water quality for the lake.

Section VII Description

If applicable, describe how the project impacts or protects RCWD groundwater resources, minimizes impervious surfaces, and/or maximizes infiltration.

The project will remove 12,450SF of impervious pavement. The installation of pervious pavers will allow infiltration of the stormwater runoff that drains to this area. The angular rock under the pavers allows for 10,300CF of stormwater storage volume.

Describe how long-term operation and maintenance of the project will be accomplished and identify the individual(s) responsible for maintenance activities if different than the project officer listed in section 2.

Shoreview has 17 installations of pervious pavers throughout the city. Staff has knowledge of installation and maintenance of this style pavers and is confident in the operation of the system.

Maintenance and operations include application of a spray coating to protect the pavers from salt damage, use of a rubber snow plow blade to prevent damage during snow maintenance, annual inspection, replacement of individual blocks as needed, street sweeping five times per year in addition to a vacuum sweep as needed to prevent clogging.

Section VIII Priotization

By capturing stormwater runoff from Milton Street and Randy Avenue environmental benefits for the area are anticipated, including pollutant loading reduction and stormwater volume reduction. It is the intent of the project to continue to improve water quality and reduce discharge to address the TMDL for Island Lake, continuing the water quality protection work which has recently see the lake removed from the impaired waters list.

ITEMS REQUIRING BOARD ACTION

1. Annual Designation of Depository and Newspaper (Nick Tomczik)

MEMORANDUM
Rice Creek Watershed District

Date: February 2, 2026
To: RCWD Board of Managers
From: Nick Tomczik, Administrator
Subject: Annual Designation of Depository and Newspaper

Introduction
The District by-laws require annual designation of an official depository and newspaper.

Background
The District Board must annually designate an official depository and newspaper. This is stated in the By-Laws of RCWD Article 4, Section 8 identifying the designation to occur at the first regular meeting in February.

The District's current official depository is PMA Financial Network, LLC. administering the 4M Fund with US Bank as the financial institution.

The District's current official newspaper is the St. Paul Pioneer Press.

Staff Recommendation
Staff recommends no change to District's official depository and official newspaper.

Proposed Board Motion
Manager _____moves to designate PMA Financial Network, LLC. administering the 4M Fund with US Bank as the financial institution as the official depository of the Rice Creek Watershed District and the St. Paul Pioneer Press as the official newspaper of the Rice Creek Watershed District.

ITEMS REQUIRING BOARD ACTION

2. Jones Lake Outlet Modification, Dredging, and Restoration Project – Environmental Assessment Worksheet Findings of Fact (David Petry)

MEMORANDUM
Rice Creek Watershed District

Date: February 4, 2026
To: RCWD Board of Managers
From: David Petry, Project Manager
Subject: Jones Lake Project, EAW, Finding of Fact

Introduction
Rice Creek Watershed District (RCWD) has requested Houston Engineering, Inc. (HEI) to prepare responses to comments received in response to the Environmental Assessment Worksheet (EAW) for the Jones Lake Outlet Modification, Dredging, and Restoration Project. In conclusion, staff recommend the Board adopt the Negative Environmental Impact Statement (EIS) Declaration, Findings of Fact, and Conclusions of Law and Order (Declaration).

Background
HEI prepared the EAW and it was approved by the RCWD Board for publication to the *EQB Monitor* on December 10, 2025. The 30-day comment period for the EAW was open from December 23, 2025 – January 22, 2026. Comments were received from four agencies: MN Department of Health, Met Council, MN Pollution Control Agency, and MN Department of Natural Resources. HEI prepared responses to comments with feedback from RCWD program managers.

Upon reviewing the comments received, and responses to those comments, HEI prepared (and reviewed by Rinke Noonan) the Declaration for Board consideration, and to be adopted by the Board.

Within 5 business days of making the Declaration , RCWD will distribute a notice of the Declaration to the full EAW distribution list and all individuals who submitted comments. Then, the Declaration will be posted to the EQB Monitor, which marks the RCWD's final decision. Once published, any appeal must be filed through the Court of Appeals and is limited to a 30-day window following publication.

Staff and HEI have had multiple pre-application meetings with the various regulatory agencies to discuss the project and concerns and coordinate applicable permits for this project. We will continue to engage them as we submit the permit applications to ensure any outstanding concerns are adequately addressed.

Staff Recommendation
Staff recommend the Board of Managers adopt the Negative Environmental Impact Statement Declaration, Findings of Fact, and Conclusions of Law and Order, and authorize the Administrator and Board President to execute the Order.

Proposed Motion
Manager_____ moves to adopt the Jones Lake Outlet Modification, Dredging, and Restoration Project Negative Environmental Impact Statement Declaration, Findings of Fact, and Conclusions of Law and Order, and authorize the Administrator and Board President to execute the Order, seconded by Manager _____.

Attachments
- Negative EIS Declaration, Finding of Fact, Conclusions of Law, and Order
- Appendix A – EAW Comments/Responses

RICE CREEK WATERSHED DISTRICT BOARD OF MANAGERS
NEGATIVE EIS DECLARATION

In the Matter of the Decision of the Need for an Environmental Impact Statement for the Jones Lake Outlet Modification, Dredging and Restoration Project, in Ramsey County, Minnesota.

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

WHEREAS, Rice Creek Watershed District acting as the local sponsor and RGU, adopted the following Negative Environmental Impact State Declaration, Findings of Fact, Conclusions of Law and Order in the matter of the decision of the need for an Environmental Impact Statement for the Jones Lake Outlet Modification, Dredging and Restoration Project that involves a modification to the outlet, construction of a sediment forebay, dredging sediment from within and adjacent to the basin, and restore the habitat within and around the basin.

FINDINGS OF FACT

A. Rice Creek Watershed District is proposing a project at Jones Lake to modify its outlet, construct a sediment forebay, dredge sediment from within and adjacent to the basin, and restore the habitat within and around the basin. The planned depth of excavation is intended to match historic (early mid-20th century) conditions and is based on field survey of loosely consolidated sediment depths. The outlet structure is designed to attenuate flood flows without impacting surrounding structures. A sediment forebay is planned to capture sediment before it enters Jones Lake from the RCD 5 system south of Jones Lake.

B. An extreme rainfall event on July 16th, 2011 greatly heightened the awareness of flooding and flood risk along the RCD 2, 3, and 5 public drainage systems. The consequences of this rainfall event prompted the cities (New Brighton, St. Anthony and Roseville) to evaluate the adequacy of their existing stormwater conveyance and management facilities resulting in the submission of a petition to the RCWD to develop a comprehensive plan to address flood risks in the watershed

C. A three-phase feasibility study by Houston Engineering, Inc. dated June 10, 2014, September 4, 2019 and May 18, 2021 assessed several projects within New Brighton, St. Anthony, and Roseville; forming a comprehensive strategy to achieve cost effective stormwater management, reduce flood risk, and water quality improvements, while enhancing ecological resources and public amenities. The modification of Jones Lake Outlet and Dredging was the only project which creates benefits in all three categories.

D. As local sponsor, Rice Creek Watershed District initiated environmental review, in accordance with Minnesota Rules 4410.4300 subp. 27, by the preparation of a mandatory Environmental Assessment Worksheet (EAW) to determine if the project had the potential for significant environmental effects.

E. Houston Engineering Inc., on behalf of Rice Creek Watershed District, prepared the EAW for the project in accordance with Minnesota Rules Chapter 4410.

F. The EAW and supporting technical materials used in preparation of the EAW are incorporated by reference into this Record of Decision on the Determination of Need for an Environmental Impact Statement (EIS).

G. The EAW was filed with the Environmental Quality Board (EQB) and a notice of its availability was published in the EQB *Monitor* on December 23, 2025. A copy of the EAW was sent to all persons on the EQB Distribution List and to those persons requesting a copy. Press releases announcing the availability of the EAW were sent to the local newspaper and uploaded to the Rice Creek Watershed District web site.

H. The 30-day EAW public review and comment began December 23, 2025, and ended January 22, 2026, pursuant to Minnesota Rules part 4410.1600.

I. During the 30-day public review and comment period, Rice Creek Watershed District received three (4) letters containing written comments. Comments were received from the following parties:

   a. Anna Munsell, Hydrologist, Environmental Health Division, Minnesota Department of Health.
   b. Angela Torres, Senior Manager, Local Planning Assistance, Metropolitan Council.
   c. Chris Green, Project Manager, Environmental Review Unit, Resource Management and Assistance Division, Minnesota Pollution Control Agency.
   d. Melissa Collins, Regional Environmental Assessment Ecologist, Ecological and Water Resources, Minnesota Department of Natural Resources

J. Written comments received and Houston Engineering's responses, on behalf of Rice Creek Watershed District are compiled in **Appendix A** and incorporated by reference into this Record of Decision on the Determination of Need for an EIS.

K. Responses provided by the DNR will be considered by the DNR during their public water work permit review and incorporated into the final design for the Jones Lake Outlet Modification, Dredging, and Restoration Project as applicable.

L. The Rules of the Minnesota Environmental Quality Board set forth the following standards and criteria (Minnesota Rules part 4410.1700, subps. 6 and 7) to which the effects of a project are to be compared to determine whether it has the potential for significant environmental effects:
   a. Type, extent and reversibility of the environmental effects;
   b. Cumulative potential effects of related or anticipated future projects;
   c. Extent to which the environmental effects are subject to mitigation by ongoing regulatory authority; and

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

M. Based on the information contained within the EAW and provided in written comments received and in the responses to those comments, Rice Creek Watershed District has identified no un-mitigated environmental effects for the Jones Lake Outlet Modification, Dredging, and Restoration Project.

CONCLUSIONS OF LAW

1. Rice Creek Watershed District, which is the RGU for the project, has fulfilled the procedural requirements of law and rule applicable for the need of a Mandatory EAW.

2. There are adequate and appropriate state and local regulations governing the activities of this project that will limit and control environmental effects, specifically the impacts to wetlands, public waters, and rare/natural resources.

3. It has been determined that the proposed project does not present a potential for environmental impacts of such significance that an Environmental Impact Statement would be required.

ORDER

Based on the above Findings of Fact and Conclusions and the entire record of this matter:

The Rice Creek Watershed District Board of Managers hereby makes a Negative Declaration on the need for an Environmental Impact Statement. An EIS is not required for the Jones Lake Outlet Modification, Dredging and Restoration Project in Ramsey County, Minnesota.

Any Findings that might properly be termed Conclusions and any Conclusions that might properly be termed Findings are herby adopted as such.

Dated this 11th day of February 2026

Attest:

Rice Creek Watershed District

_____

Nick Tomczik
District Administrator

_____

Michael Bradley
President

Appendix A

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
1	MDH	Emergency Well Location	Section 12.a.i discussing groundwater does not mention the New Brighton emergency well located within the area of interest. Care should be taken to protect the well during construction from both heavy equipment, possible spills, and stormwater run-off. Public water supply well locations are not public. We suggest that Rice Creek work with the Source Water Protection Unit at MDH or the city of New Brighton Public Works for the exact location of the well and in determining suitable protection for this public water supply well.	Comment noted. RCWD is aware of the well and maintains a GIS layer of wells for its regulatory authorities and programs. RCWD will coordinate with its project partner, City of New Brighton, on the proximity of the well to the construction site.
2	Metropolitan Council	Staff Review	The staff review finds that the EAW is complete and accurate with respect to regional concerns and raises no major issues of consistency with Council policies. An EIS is not necessary for regional purposes.	Comment noted.

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
3	MPCA	Watershed	Water resources section 12: Jones Lakes TMDL - I recommend that instead of "a TMDL is required", a "TMDL has not been completed."	Comment noted.
4	MPCA	Watershed	Water resources section 12: Include: County Ditch 2 (07010206-522) is within the one-mile radius. It is impaired for Benthic macroinvertebrates bioassessments, Chloride, and Fish bioassessments. There is a completed Chloride TMDL.	Comment noted.

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
5	DNR	Excavation	The magnitude of the excavation of Jones Lake that is proposed in the EAW, in terms of both area and depth, lacks clear justification and appears unlikely to meet DNR's rules regarding excavation in public waters. Minn. R 6115.0200, subp. 1, Goals states it is DNR's goal to limit excavation in public waters to "preserve the natural character of public waters and their shorelands, in order to minimize encroachment, change, or damage to the environment, particularly the ecosystem of the waters" and to "regulate the nature, degree, and purpose of excavations so that excavations will be compatible with the capability of the waters to assimilate the excavation." The proposed depth of excavation is based on a depth of refusal survey, rather than detailed soil borings. The material above and below the depth of refusal is not described. The evidence provided is insufficient to determine the depth of post-development accumulated sediment.	The proposed project meets Minn. R 6115.0200 Subp. 1. Jones Lake currently is not representative of a natural ecosystem due to the severe degradation resulting from upstream urbanization. This urbanization has delivered sediment and nutrients to the lake over the last century that has filled in much of the wetland, damaging the ecosystem. The only feasible method of restoring ecological habitat to the system is to excavate the accumulated sediment from the last 100+ years of urban development that has been deposited in the lake. The RCWD has developed extensive analysis to determine the most reasonable approximation of conditions that existed prior to rapid upstream development. This information includes: - Subsurface soil survey in Jones Lake completed by the City of New Brighton in 2015 identifying the interface between loose organic matter and compacted subsoils. Approximately 100 data points were collected - Survey completed by Houston Engineering in 2025 identifying existing top of bog and survey below the bog surface - Analysis of historic aerial photos identifying the change in open water extents from 1957 2025

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
				Material proposed to be excavated is almost entirely loosely consolidated muck and cattail material that was not present in 1957. The magnitude of excavation proposed for this project is similar to that permitted and completed just downstream at Hansen Park under the same DNR public water rule requirements.

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
6	DNR	Aerial Imagery	The EAW states that sediment removal is necessary to restore habitat to conditions similar to pre-settlement, but the area of maximum depth of excavation is based on the extent of the open water observed in a single 1957 aerial photo. Other publicly available aerial photos that pre-date 1957 show a smaller open water extent. For example, the 1940 aerial photograph available in Ramsey County's Interactive Property Map shows virtually no open water area in Jones Lake. Historical maps of Ramsey County from the late 1800s show Jones Lake as a mapped waterbody, but the depth of the lake or the amount of aquatic vegetation in the lake at the time are not shown. Jones Lake is a public waters wetland, mapped in the National Wetland Inventory as having shallow open water in the center of the lake and freshwater emergent wetland over the rest of the lake area. There is no indication that the general wetland characteristics of Jones Lake have significantly changed over time.	Multiple aerial photos were considered between the 1940s and today. The photos clearly indicate a progression from 1957 through the 1980s and beyond of a basin experiencing degradation due to sedimentation rapidly accelerated by urban development. This basin is located downstream of an urban landscape with virtually no stormwater treatment devices, and the first significant water body that runoff drains through in much of this area is Jones Lake. The 1940s aerial was taken 6/11/1940. According to Antecedent Precipitation and the historical data from the National Integrated Drought Information System, this area of Ramsey County was experiencing a "Moderate Drought" at the time. This is likewise following the "dustbowl" years of the 1930s which had prolonged drought in the region, particularly affecting shallow marshes. This explains the lack of water in the imagery and why the 1940s photo is not representative of a natural or prolonged condition in the lake. Jones Lake is appropriately characterized as a shallow open-water marsh in the central portion with freshwater emergent wetland surrounding it. However, the relative extent and quality of these wetland types

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
				have substantially changed over time, beginning with the first draining of the lake by the construction of Ramsey County Ditch 2 in 1908. Specifically, the proportion of emergent wetland relative to shallow open water has increased, and the overall ecological condition of the wetland has declined. This change in quality is evidenced by the dominance of invasive or disturbance-tolerant species, including hybrid cattail (Typha × glauca) and reed canary grass (Phalaris arundinacea), which are widely recognized indicators of altered hydrology and degraded wetland conditions.

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
7	DNR	Excavation of Public Waters	Minn. R. 6115.0201, subp. 3 has specific standards for water basin excavations. To be approved, a proposed project must be intended to achieve one or more of the following public purposes: (1) to improve navigation, swimming, and other recreational uses; (2) to reduce winter fish-kill potential; (3) sediment removal to eliminate a source of nutrients and/or contaminants. To be approved, a water basin excavation project must be designed to achieve at least one of the specific purposes mentioned in the rule. Flood control, notably, is not included in the rule's list of public purposes for excavation. If the proposed excavation is to eliminate a source of nutrients/contaminants in accumulated sediments, the depths of accumulated sediment within the basin and concentrations of nutrients/contaminants in those sediments will be required as part of a public waters work permit application.	The project meets criteria (3): "sediment removal to eliminate a source of nutrients and/or contaminants." Jones Lake internal loading is estimated to be 70 lbs. of phosphorus annually. The project will remove loose sediment which is causing release of orthophosphorus into the water column, contributing to impairments within the lake and in downstream lakes. The removal of sediment when dredged and disposed of off-site, is estimated to reduce internal loading by a range of 25% to 95%. Therefore, dredging the accumulated sediment in Jones Lake have been estimated to potentially provide an additional reduction of 15 to 63 lbs. of TP annually. Water quality in Jones Lake will continue to improve via the capture of sediment in the proposed forebay. Applicant will continue to work with DNR during the public waters work permit process to address these concerns. Depths of accumulated sediments will be provided during permit process.

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
8	DNR	Storm bounce	The EAW does not adequately describe the effect of the proposed new outlet structure on the hydrology of Jones Lake. Minn. R. 6115.0220, subp. 1, Goals state it is DNR's goal to "maintain or restore natural flow and natural water level conditions to the maximum feasible extent." Further, Minn. R. 6115.0221, subp. 2 requires proposed lake level control facilities to be "Reasonably consistent with natural conditions." It appears, however, that the design would significantly increase the "storm bounce" in Jones Lake. Storm bounce is recognized to have negative effects on wetland health. Rice Creek Watershed District's Rule C, Stormwater Management seeks to limit the negative effects of excessive bounce by setting specific hydroperiod standards for wetlands. The EAW indicates that the 100-year flood elevation would increase by 0.67 feet. No information on hydrology changes is provided for other storm events. A more thorough hydrologic analysis, including a broad range of storm events, is needed to understand the effects of the proposed outlet on Jones Lake.	An existing weir is currently present at the outlet of Jones Lake, and the proposed outlet structure does not alter the established runout elevation. Under Rice Creek Watershed District Rule C, Jones Lake is classified as a slightly susceptible wetland. For wetlands in this category, RCWD standards allow storm bounce for the 2-year and 10-year events of up to existing conditions plus 1.0 foot, with additional inundation durations of up to two days for the 2-year event and up to 14 days for the 10-year event. The anticipated hydrologic response of Jones Lake under the proposed outlet is consistent with the allowable standards. While Minn. R. 6115.0220 and 6115.0221 reference maintaining or restoring natural flow and water levels to the maximum feasible extent, it is important to note that fully natural hydrologic conditions do not currently exist within the Jones Lake basin. The watershed has experienced extensive hydrologic modification over the past century, including upstream drainage alterations, outlet modifications, and shoreline disturbances. Given the extent and permanence of these alterations, restoration of fully natural flow and water level regimes is not feasible within the basin. The proposed outlet is therefore designed to function within the context of existing,

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
				long-altered hydrologic conditions rather than attempting to replicate pre-settlement hydrology. With respect to storm bounce, while excessive and prolonged water level fluctuations can negatively affect wetland health, storm bounce in itself does not inherently result in adverse ecological impacts. Potential negative effects can be effectively mitigated through restoration strategies such as revegetation with species appropriate to the site's hydrologic regime. Existing vegetation within the basin is dominated by disturbance-tolerant and invasive species, which is not indicative of a high-quality or resilient wetland ecosystem. The proposed project provides an opportunity to improve wetland function through vegetation management and restoration, thereby offsetting potential stressors associated with water level fluctuations. The EAW discloses that the modeled 100-year flood elevation would increase by approximately 0.67 feet. A more detailed hydrologic analysis evaluating a broader range of storm events, including 2-year and 10-year events, will be provided as part of the Public Waters Work Permit application as well as the restoration and maintenance plan.

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
9	DNR	Quantifiable Flood Reductions	The desired direct effect of the project, according to the EAW, is to increase flood storage capacity and thereby reduce downstream flood risk. However, no quantifiable reductions in flood risk, such as the number of habitable structures removed from the floodplain, are described in the EAW. A major change in the configuration of the established outlet of Jones Lake must be adequately justified with a clear public benefit.	The reduction of flood risk is just one of multiple project purposes, which also include downstream and in-lake nutrient reduction and wetland habitat restoration. In prior studies, RCWD has identified specific reduction in peak inundation depth in locations such as Interstate 35W and Garden View Apartments. These studies are available on the RCWD website and will be provided in conjunction with the public waters work permit application.
10	DNR	Storm Bounce wetland impacts	The EAW claims without supporting evidence that the project will restore wetland function and will result in "enhanced habitat quality for aquatic and wetland species." Enhanced habitat quality is claimed despite the project's likely effect of increasing the "storm bounce" in Jones Lake. The EAW does not describe the target hydrology and target vegetation for the proposed restoration. Without such analysis and planning, it cannot be determined whether the proposed project will result in a successful habitat restoration.	Removing invasive species, household waste, and construction waste from the basin, and decreasing internal phosphorus loading to the basin, are evidence of wetland function restoration. Details on vegetation restoration will be provided in public waters permit submittals.

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
11	DNR	100-year Flood Elevation	In accordance with Minn. R. 6120.5700, subp. 4(A), increases in the 100-year flood elevation of greater than 0.5 feet require a special commissioner's approval. The EAW indicates that the project would increase the 100-year flood elevation by 0.67 feet.	Comment noted.
12	DNR	Alternatives	The EAW in several locations indicates that alternatives were considered in project development. However, the EAW does not explain what alternatives were evaluated nor provide any analysis of these alternatives. Please be advised that any application for a DNR public waters work permit must include a robust alternatives analysis that can demonstrate that the chosen alternative is the minimal impact solution to a specific need with respect to all other reasonable alternatives, and does not exceed more than a minimum encroachment, change, or damage to the environment, particularly the ecology of the waters.	Comment noted. Multiple alternative analyses have been completed over the last 13 years, each of which have identified the proposed project as the only feasible project to address the flooding, water quality, and ecological concerns in this location. This analysis has been discussed with regulating agencies in prior pre-application meetings. Applicant will submit a robust alternative analysis when applying for public waters work permit.

JONES LAKE RAMSEY COUNTY, MN EAW COMMENTS/RESPONSES				
COMMENT ID	**PUBLIC COMMENT /AGENCY REVIEW**	**COMMENT TOPIC**	**ORIGINAL REVIEW COMMENT**	**RESPONSE**
13	DNR	Threatened /Endangered Species	Page 43, State-Listed Species. Please note that the DNR Rare Species Guide currently lists 588 endangered, threatened, and species of special concern. It appears that the EAW shows an incorrect number of species of special concern, as well as listed species in Ramsey County. Please review these numbers and update Table 14 if there are any changes. Also note, at the time of the Natural Heritage Review, the federally-listed rusty-patched bumblebee was not state-listed, but has since been uplisted to the status of state-endangered.	Comment noted. Note correction: There are 296 species of special concern in the state of MN. Ramsey county information listed is in accordance to the 2024 NHIS layer. The note about Rusty-Patched bumblebee is noted, however no information has been provided to the public yet, nor can it be found on the DNR's website. The status and table accuracy will be checked again to ensure current information before inclusion in permit application, as applicable.

January 6, 2026

David Petry
Rice Creek Watershed District
Project Manager
4325 Pheasant Ridge Drive NE, #611
Blaine, MN 55449

Dear David Petry

Thank you for providing the Minnesota Department of Health (MDH) with the opportunity to comment on the Environmental Assessment Worksheet (EAW) for the proposed Jones Lake Outlet Modification, Dredging, and Restoration Project. The mission of MDH is to protect, maintain, and improve the health of all Minnesotans. The careful planning and development of projects such as this one supports this mission and is an important step in ensuring health in all policies.

Section 12.a.i discussing groundwater does not mention the New Brighton emergency well located within the area of interest. Care should be taken to protect the well during construction from both heavy equipment, possible spills, and stormwater run-off. Public water supply well locations are not public. We suggest that Rice Creek work with the Source Water Protection Unit at MDH or the city of New Brighton Public Works for the exact location of the well and in determining suitable protections for this public water supply well.

Health starts where we live, learn, work, and play. To create and maintain healthy Minnesota communities, we have to think in terms of health in all policies. Thank you again for the opportunity to provide comments on this EAW for the proposed Jones Lake Outlet Modification, Dredging, and Restoration Project. Feel free to contact Anneka Munsell at (651) 201-5841 or anneka.munsell@state.mn.us if you have any questions regarding this letter.

Sincerely,

Anneka Munsell
Environmental Health Division
PO Box 64975,
St. Paul, MN 55164-0975

(651) 201-5841
anneka.munsell@state.mn.us
www.health.state.mn.us

CC:

David Bell, MDH, Environmental Review Coordinator
John Woodside, MDH, Hydrologist Supervisor
Steve Robertson, MDH, Source Water Protection Manager
Abby Shea, MDH, Source Water Protection Planner

January 20, 2026

David Petry, Project Manager
Rice Creek Watershed District
4325 Pheasant Ridge Drive NE, #611
Blaine, MN 55449

RE: Rice Creek Watershed District – Environmental Assessment Worksheet (EAW) – Jones Lake Outlet Modification, Dredging, and Restoration
Metropolitan Council Review No. 23157-1
Metropolitan Council District No. 2

Dear David Petry:

The Metropolitan Council received an EAW for the Jones Lake Outlet Modification, Dredging, and Restoration project in the Rice Creek Watershed District on December 16, 2025. The proposed project is located generally east of Old Highway 8 NW and west of I-35W in the City of New Brighton in Ramsey County. The Rice Creek Watershed District proposes a project at Jones Lake to modify its outlet, construct a sediment forebay, dredge sediment from within and adjacent to the basin, and restore the habitat within and around the basin. The staff review finds that the EAW is complete and accurate with respect to regional concerns and raises no major issues of consistency with Council policies. An EIS is not necessary for regional purposes.

This concludes the Council's review of the EAW. The Council will take no formal action on the EAW. If you have any questions or need further information, please contact Amber Turnquest, Principal Reviewer, at 651-602-1576 or via email at Amber.Turnquest@metc.state.mn.us.

Sincerely,

Angela R. Torres, AICP, Senior Manager
Local Planning Assistance

CC: Tod Sherman, Development Reviews Coordinator, MnDOT - Metro Division
Reva Chamblis, Metropolitan Council District No. 2
Ben Gozola, Assistant Director of Community Assets and Development, New Brighton
Amber Turnquest, Sector Representative/Principal Reviewer
Reviews Coordinator

N:\CommDev\LPA\Agencies\Watershed Districts\Rice Creek WD\Letters\Rice Creek WD 2026 Jones Lake Outlet Modification, Dredging, and Restoration EAW Admin Review 23157-1.docx

MINNESOTA POLLUTION CONTROL AGENCY

Marshall Office | 504 Fairgrounds Road | Suite 200 | Marshall, MN 56258-1688 | 507-537-7146

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

January 21, 2026

David Petry
Rice Creek Watershed District
4325 Pheasant Ridge Drive Northeast, Suite 611
Blaine, Minnesota 55449
dpetry@ricecreek.org

RE: Jones Lake Outlet Modification – Environmental Assessment Worksheet

Dear David Petry:

Thank you for the opportunity to review and comment on the Environmental Assessment Worksheet (EAW) for the Jones Lake Outlet Modification project (Project) located in Ramsey County, Minnesota. The Project consists of Rice Creek Watershed District proposing a project at Jones Lake to modify its outlet, construct a sediment forebay, dredge sediment from within and adjacent to the basin, and restore the habitat within and around the basin. The planned depth of excavation is intended to match historic (early mid-20th century) conditions and is based on a field survey of loosely consolidated sediment depths. The outlet structure is designed to attenuate flood flows without impacting surrounding structures. A sediment forebay is planned to capture sediments before it enters Jones Lake from the RCD 5 system south of Jones Lake. Regarding matters for which the Minnesota Pollution Control Agency (MPCA) has regulatory responsibility and other interests, the MPCA staff has the following comments for your consideration.

Watershed:

- Water resources section 12:
  - Jones Lakes TMDL - I recommend that instead of "a TMDL is required", a "TMDL has not been completed."
  - Include: County Ditch 2 (07010206-522) is within the one-mile radius. It is impaired for Benthic macroinvertebrates bioassessments, Chloride, and Fish bioassessments. There is a completed Chloride TMDL.

We appreciate the opportunity to review this Project. Please be aware that this letter does not constitute approval by the MPCA of any or all elements of the Project for the purpose of pending or future permit actions by the MPCA. Ultimately, it is the responsibility of the Project Proposer to secure any required permits and to comply with any requisite permit conditions. If you have any questions concerning our review of this EAW, please contact me by email at chris.green@state.mn.us or by telephone at 507-476-4258.

Sincerely,

Chris Green

This document has been electronically signed.

Chris Green, Project Manager
Environmental Review Unit
Resource Management and Assistance Division

CG:rs

Attachment

cc: Amy Timm, MPCA (w/attachment)
Melinda Neville, MPCA (w/attachment)
Nicole Peterson, MPCA (w/attachment)
Lauren Dickerson, MPCA (w/attachment)
Deepa deAlwis, MPCA (w/attachment)

DEPARTMENT OF NATURAL RESOURCES

Division of Ecological and Water Resources
Region 3 Headquarters
1200 Warner Road
Saint Paul, MN 55106

Transmitted by Email

January 22, 2026

David Petry
Rice Creek Watershed District
4325 Pheasant Ridge Drive NE, #611
Blaine, MN 55449

Dear David Petry,

Thank you for the opportunity to review the Jones Lake Outlet Modification, Dredging, and Restoration Project Environmental Assessment Worksheet (EAW) for the project area located in Ramsey County. The DNR appreciates the ongoing coordination that has already occurred regarding the project; however, we continue to have concerns about the ability of the project to meet DNR's public water rules as currently proposed. Therefore, we respectfully submit the following comments for your consideration:

1. The magnitude of the excavation of Jones Lake that is proposed in the EAW, in terms of both area and depth, lacks clear justification and appears unlikely to meet DNR's rules regarding excavation in public waters. Minn. R 6115.0200, subp. 1, *Goals* states it is DNR's goal to limit excavation in public waters to "preserve the natural character of public waters and their shorelands, in order to minimize encroachment, change, or damage to the environment, particularly the ecosystem of the waters" and to "regulate the nature, degree, and purpose of excavations so that excavations will be compatible with the capability of the waters to assimilate the excavation."

   The proposed depth of excavation is based on a depth of refusal survey, rather than detailed soil borings. The material above and below the depth of refusal is not described. The evidence provided is insufficient to determine the depth of post-development accumulated sediment.

   The EAW states that sediment removal is necessary to restore habitat to conditions similar to pre-settlement, but the area of maximum depth of excavation is based on the extent of the open water observed in a single 1957 aerial photo. Other publicly available aerial photos that pre-date 1957 show a smaller open water extent. For example, the 1940 aerial photograph available in Ramsey County's Interactive Property Map shows virtually no open water area in Jones Lake. Historical maps of Ramsey County from the late 1800s show Jones Lake as a mapped waterbody, but the depth of the lake or the amount of aquatic vegetation in the lake

at the time are not shown. Jones Lake is a public waters wetland, mapped in the National Wetland Inventory as having shallow open water in the center of the lake and freshwater emergent wetland over the rest of the lake area. There is no indication that the general wetland characteristics of Jones Lake have significantly changed over time.

Minn. R. 6115.0201, subp. 3 has specific standards for waterbasin excavations. To be approved, a proposed project must be intended to achieve one or more of the following public purposes: (1) to improve navigation, swimming, and other recreational uses; (2) to reduce winter fish-kill potential; (3) sediment removal to eliminate a source of nutrients and/or contaminants. To be approved, a waterbasin excavation project must be designed to achieve at least one of the specific purposes mentioned in the rule. Flood control, notably, is not included in the rule's list of public purposes for excavation. If the proposed excavation is to eliminate a source of nutrients/contaminants in accumulated sediments, the depths of accumulated sediment within the basin and concentrations of nutrients/contaminants in those sediments will be required as part of a public waters work permit application.

2. The EAW does not adequately describe the effect of the proposed new outlet structure on the hydrology of Jones Lake. Minn. R. 6115.0220, subp. 1, *Goals* states it is DNR's goal to "maintain or restore natural flow and natural water level conditions to the maximum feasible extent." Further, Minn. R. 6115.0221, subp. 2 requires proposed lake level control facilities to be "reasonably consistent with natural conditions." It appears, however, that the design would significantly increase the "storm bounce" in Jones Lake. Storm bounce is recognized to have negative effects on wetland health. Rice Creek Watershed District's Rule C, Stormwater Management, seeks to limit the negative effects of excessive bounce by setting specific hydroperiod standards for wetlands. The EAW indicates that the 100-year flood elevation would increase by 0.67 feet. No information on hydrology changes is provided for other storm events. A more thorough hydrologic analysis, including a broad range of storm events, is needed to understand the effects of the proposed outlet on Jones Lake.

3. The desired direct effect of the project, according to the EAW, is to increase flood storage capacity and thereby reduce downstream flood risk. However, no quantifiable reductions in flood risk, such as the number of habitable structures removed from the floodplain, are described in the EAW. A major change in the configuration of the established outlet of Jones Lake must be adequately justified with a clear public benefit.

4. The EAW claims without supporting evidence that the project will restore wetland function and will result in "enhanced habitat quality for aquatic and wetland species." Enhanced habitat quality is claimed despite the project's likely effect of increasing the "storm bounce" in Jones Lake. The EAW does not describe the target hydrology and target vegetation for the proposed restoration. Without such analysis and planning, it cannot be determined whether the proposed project will result in a successful habitat restoration.

5. In accordance with Minn. R. 6120.5700, subp. 4(A), increases in the 100-year flood elevation of greater than 0.5 feet require a special commissioner's approval. The EAW indicates that the project would increase the 100-year flood elevation by 0.67 feet.

6. The EAW in several locations indicates that alternatives were considered in project development. However, the EAW does not explain what alternatives were evaluated nor provide any analysis of these alternatives. Please be advised that any application for a DNR public waters work permit must include a robust alternatives analysis that can demonstrate that the chosen alternative is the minimal impact solution to a specific need with respect to all other reasonable alternatives, and does not exceed more than a minimum encroachment, change, or damage to the environment, particularly the ecology of the waters.

7. Page 43, State-Listed Species. Please note that the DNR Rare Species Guide currently lists 588 endangered, threatened, and species of special concern. It appears that the EAW shows an incorrect number of species of special concern, as well as listed species in Ramsey County. Please review these numbers and update Table 14 if there are any changes. Also note, at the time of the Natural Heritage Review, the federally-listed rusty-patched bumblebee was not state-listed, but has since been uplisted to the status of state-endangered.

Thank you again for the opportunity to review this document. Please let me know if you have any questions.

Sincerely,

Melissa Collins

Regional Environmental Assessment Ecologist | Ecological and Water Resources
Minnesota Department of Natural Resources
Phone: 651-259-5755
Email: melissa.collins@state.mn.us

CC: Dan Scollan, DNR Area Hydrologist

Jack Gleason, DNR Area Hydrologist Supervisor

Equal Opportunity Employer

ITEMS REQUIRING BOARD ACTION

3. Memorials to RCWD (Nick Tomczik)

MEMORANDUM
Rice Creek Watershed District

Date: February 5, 2026
To: RCWD Board of Managers
From: Nick Tomczik, Administrator
Subject: Memorials to RCWD

Introduction
Rice Creek Watershed District staff are aware of potential memorials which require do care in the District's records.

Background
Rice Creek Watershed District has been designated the beneficiary of memorial donations by the estate of former Citizens' Advisory Committee member Gary Krejcarek. The process of accepting and documenting memorials has two steps.

Step one recognizes that the District has been designated as a beneficiary of memorial gifts for Gary Krejcarek, authorizes deposit of received funds, and acknowledges the donations as furthering a public purpose of the District. Staff will create and maintain an accounting of submitted funds. Step two is for the Board, at a subsequent meeting, to receive the accounting (donations or not), accept the final and designate as appropriate how the funds are to be used by the District.

Staff have been contacted by two parties inquiring about making a memorial donation. Staff will prepare and send an acknowledgement for any received donations.

Staff Recommendation
Staff recommend adoption of the resolution to establish protocols for any potential donation.

Proposed Motion
Manager _____ moves to approve Resolution 2026-02 Krejcarek Memorial Donations, seconded by Manager _____.

Attachment
- Resolution 2026-02 Krejcarek Memorial Donations

RESOLUTION NO. 2026-02

RICE CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

KREJCAREK MEMORIAL DONATIONS

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

WHEREAS, the Rice Creek Watershed District has been designated the beneficiary of memorial donations by the estate of former Citizens' Advisory Committee member Gary Krejcarek; and

WHEREAS, the Board of Managers of the Rice Creek Watershed District recognizes and acknowledges the donations as furthering a public purpose of the Watershed District.

THEREFORE, the Board authorizes receipt and deposit of such funds; and

FURTHER, at such later date as a full accounting of donated funds is possible, the Board directs its Treasurer and staff to provide a final accounting for approval by the Board, and

FURTHER, unless conditioned upon a specific use furthering the public purposes of the Watershed District, the Board shall, at the time of final accounting, designate how such funds shall be used.

The question was on the adoption of the Resolution and there were ___ yeas and ___ nays as follows:

	Yea	Nay	Absent	Abstain
BRADLEY	☐	☐	☐	☐
ROBERSTON	☐	☐	☐	☐
WALLER	☐	☐	☐	☐
WEINANDT	☐	☐	☐	☐

Upon vote, the President declared the Resolution _____.

Dated: February, 11, 2026

_____
Jessica Robertson, Secretary

* * * * * * * * * * * *

I, Jessica Roberston, Secretary of the Rice 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 the District and find the same to be a true and correct transcript thereof.

IN TESTIMONY WHEREOF, I hereunto set my hand this 11th day of February, 2026.

_____

Jessica Robertson, Secretary

ITEMS REQUIRING BOARD ACTION

4. Check Register Dated February 11, 2026, in the Amount of $252,912.98 Prepared by Redpath and Company

Rice Creek Watershed District
Check Register
January 29, 2026 - February 11, 2026
To Be Approved at the February 11, 2026 Board Meeting

Check #	Date	Payee	Description	Amount	
26803	02/11/26	Awards by Hammond, Inc.	Printing	54.00	
26804	02/11/26	Barr Engineering	Engineering	9,593.50	*2025
26805	02/11/26	City of Fridley	Construction	100,000.00	*2025
26806	02/11/26	City of Mounds View	Professional Services	200.00	
26807	02/11/26	EPG Companies	Professional Services	8,831.05	*2025
26808	02/11/26	Friends of the Mississippi River	Professional Services	24,000.00	*2025
26809	02/11/26	Tom Hoffman	Professional Services	1,850.00	*2025
26810	02/11/26	Metropolitan Council	Professional Services	5,700.00	*2025
26811	02/11/26	Plaudit Design	Professional Services	155.00	
26812	02/11/26	Recycle Technologies, Inc.	Professional Services	4.50	
26813	02/11/26	Rymark	Professional Services	3,255.97	
26814	02/11/26	Timesaver Off Site Secretarial	Professional Services	178.00	
26815	02/11/26	Washington Conservation District	Professional Services	2,924.00	*2025
26816	02/11/26	WSB & Associates	Engineering	709.00	*2025
11516	02/11/26	Bethel University	Surety Release - #21-021	16,900.00	
11517	02/11/26	Centerpoint Energy	Surety Release - #21-092	1,000.00	
11518	02/11/26	Mounds View Public Schools ISD 621	Surety Release - #01-064	5,000.00	
Payroll	02/15/26	February 15th Payroll (estimate)	February 15th Payroll (estimate)	40,978.85	
EFT	02/10/26	US Bank Equipment Finance	Equipment Lease	691.94	
EFT	02/11/26	Comcast	Telecommuncations	334.89	
EFT	02/11/26	Wex Bank	Vehicle Fuel	169.04	
EFT	02/11/26	Xcel Energy	Telecommuncations	13.19	
EFT	02/11/26	Xcel Energy	Telecommuncations	13.92	
EFT	12/31/26	Card Services-Elan	December Credit Card	1,623.85	*2025
EFT	02/19/26	Card Services-Elan	January Credit Card	1,505.39	
EFT	02/15/26	Internal Revenue Service	2/15 Federal Withholding (estimate)	14,392.05	
EFT	02/15/26	Minnesota Revenue	2/15 State Withholding (estimate)	2,574.00	
EFT	02/15/26	Empower Retirement	2/15 Deferred Compensation	860.00	
EFT	02/15/26	Empower Retirement	2/15 Roth IRA	390.00	
EFT	02/15/26	Health Equity	2/15 HSA	503.00	
EFT	02/15/26	PERA	2/15 PERA (estimate)	8,507.84	
Total				**$252,912.98**	

ITEMS FOR DISCUSSION AND INFORMATION

1. District Engineer Updates and Timeline

District Engineer - Monthly Project Report January 2026
Rice Creek Watershed District

Date Prepared: 4-Feb-26
Prepared by: C. Grandbois

Project Name	Task Order Manager	Estimated Budget	Cost to Date	Remaining Budget	Project Complete / Transfer Funds?	Estimated Progress Based on Work Completed	Percentage of Budget Utilized	Within Budget? (Y/N)	District Billed for Exceedence of Budget? (Y/N)	Initial Target Completion Date	Items of Interest / Concern
East Moore Lake Stormwater Resilience and Water Quality Analysis	Adam Nies	$77,000	$22,994	$54,006	N	20.0%	29.9%	Y	N/A	1-Feb-26	Potential BMP sites are currently being evaluated using the District Wide Model
Old Central Aventue Feasibility Study	Greg Bowles	$26,000	$14,911	$11,089	N	60.0%	57.3%	Y	N/A	30-Sep-25	Alternatives for water quality treatment are being reviewed.
JD 3 Clearwater Creek Final Plans	Adam Nies	$110,000	$10,687	$99,313	N	10.0%	9.7%	Y	N/A	30-Jun-26	Existing easement data has been assembled. Project limits are being compared to determine easement needs and/or project
2025 District Wide Modeling Program Annual Updates	Bret Zimmerman	$35,200	$37,131	($1,931)	N	99.0%	105.5%	N	**N**	1-Nov-25	Modeling is complete. Data is being uploaded to MS4Front
Lake Johanna Outlet Structure Feasibility Study	Chris Otterness	$13,000	$7,773	$5,227	N	80.0%	59.8%	Y	N/A	30-Aug-25	Preliminary plans are near completion, and a cost estimate has been prepared.
Jones Lake Outlet Modification and Dredging Project: Final Design and Permitting	Joe Lewis	$485,000	$185,991	$299,009	N	40.0%	38.3%	Y	N/A	30-Jun-26	EAW comments have been received. Regulatory applications are nearing completion.
Hardwood Creek / JD 2 Subwatershed Storage Feasibility Study	Adam Nies	$54,000	$21,537	$32,463	N	40.0%	39.9%	Y	N/A	1-Mar-26	Preliminary screening of potential storage sites has been completed. Potential options are being evaluated.
ARJD 1 Repair Report	Adam Nies	$102,000	$33,114	$68,887	N	30.0%	32.5%	Y	N/A	1-Jun-26	Culvert sizing has been completed. Report preparation is underway.
ACD 53-62 Branches 5 & 6 Final Design Bidding and Construction Management	Adam Nies	$125,000	$75,367	$49,633	N	60.0%	60.3%	Y	N/A	31-Dec-26	Contractor has completed most excavation within Branch 5 Lateral 2.
2026 Stormwater Management Grant Program Application Review	Chris Otterness	$8,100	$4,312	$3,788	N	95.0%	53.2%	Y	N/A	29-Jan-26	HEI has completed a review of each application and prepared scoring.
GIS and Ditch Records Maintenance; DrainageDB Annual Subscription	Brian Fischer	$19,000	$3,106	$15,894	N	8.3%	15.8%	Y	N/A	31-Dec-26	HEI uploads ditch records to DrainageDB quarterly, updates GIS data, and manages WMD charge information.
MS4Front Annual Subscription and Implementation Services	Brian Fischer	$16,000	$3,106	$12,894	N	8.3%	0.8%	Y	N/A	31-Dec-26	HEI completes updates to MS4Front on an as-requested basis.
Comprehensive Wetland Protection and Management Plans Annual Reporting - 2025	Chris Otterness	$17,000	$3,106	$13,894	N	30.0%	29.2%	Y	N/A	9-Feb-26	Summarization of WCA reviews in 2025 are underway.
Hansen Park IESF Rehabilitation	Alex Schmidt	$18,300	$3,106	$15,194	N	10.0%	17.9%	Y	N/A	30-Jun-26	We have begun initial investigation including sampling of sand substrate

Values in red are either potential budget concerns or changes in schedule.

The "overage" for those projects shown as "over budget" is not billed to the District. The cost to date column reflects HEi's actual internal cost. Projects are considered within budget if ± 5%.

HOUSTON engineering, inc.

District Engineer
Monthly Progress Report (Actual & Estimated Progress)
Through January 2026

RCWD RICE CREEK WATERSHED DISTRICT