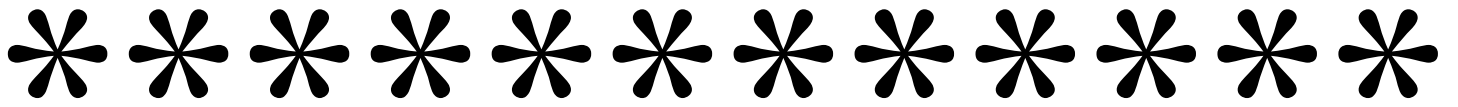


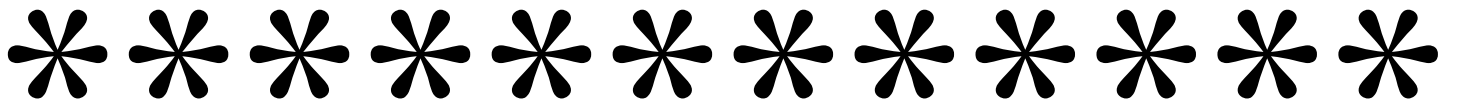


**RAMSEY-WASHINGTON**  
METRO WATERSHED DISTRICT

# **June 2020 Board Packet**



# Agenda





## Regular Board Meeting Agenda

Wednesday, June 3, 2020  
6:30 P.M.

*Due to the COVID19 pandemic, this month's board meeting will be held via the video conferencing platform Zoom. Board members, staff, consultants, and general public will be able to join in via video and/or phone. The public that wish to will be able to listen to meeting but not participate with the exception of the visitor comments portion of the agenda. If you have comments you may speak on the Zoom meeting during the visitor comments agenda item. Instructions for joining in on the Zoom meeting can be found after the agenda.*

1. Call to Order – 6:30 PM
2. **Approval of Agenda (pg. 3)**
3. **Consent Agenda: To all be approved with one motion unless removed from consent agenda for discussion.**
  - A. Approval of Regular Meeting Minutes May 6, 2020. (pg. 7)
  - B. Treasurer's Report and Bill List (pg. 13)
  - C. Permit Applications
    - i. 20-23 White Bear Lake High School South Gym, White Bear Lake (pg. 26)
    - ii. 20-24 Maple Ridge Gas Station, Maplewood (pg. 30)
    - iii. 20-25 Suzanne Gramsie Stormwater Improvements, Shoreview (pg. 34)
  - D. Stewardship Grant Program
    - i. 20-21 CS White Bear Lake Curb Cut Rain Gardens (pg. 42)
    - ii. 20-22 CS Bauer, native habitat restoration (pg. 43)
    - iii. 20-23 CS City of St. Paul Parks and Recreation, plant harvesting (pg. 45)
  - E. East St. Paul Target Retrofit Approval of Plans and Authorization to Bid (pg. 46)
4. Visitor Comments (limited to 4 minutes each)
5. Permit Program
  - A. Applications – see consent agenda
  - B. **Single Lot Residential Permit Adjustment Discussion (pg. 77)**
  - C. Enforcement Action Report (pg. 78)
6. Stewardship Grant Program
  - A. Applications – see consent agenda

- B. Budget Status Update (*pg. 81*)
- 7. Presentations and Action Items
  - A. **Stormwater Pollution Prevention Plan Annual Report (*pg. 83*)**
  - B. **Twin Lake Outlet Action (*pg. 97*)**
  - C. **Beltline Resiliency Study Accept Response to Comment/Finalize Report (*pg. 98*)**
- 8. Administrator's Report (*pg. 109*)
  - A. Meetings Attended
  - B. Upcoming Meetings and Dates
  - C. COVID-19 District Update
  - D. Future Board Workshop Planning
  - E. Ramsey County Public Meeting Update
- 9. Project and Program Status Reports (*pg. 112*)
  - A. Ongoing Project and Program Updates
    - i. Beltline Resiliency and Phalen Chain Water Level Studies
    - ii. West Vadnais to South I-694 Conveyance Feasibility Study
    - iii. Automated Lake Monitoring Systems
    - iv. Wakefield Park/Frost Avenue Stormwater Project
    - v. Targeted Retrofit Projects
    - vi. Kohlman Permeable Weir Test System
    - vii. Aldrich Arena Stormwater Project
    - viii. Keller Channel Weir and Phalen Outlet Resiliency Modifications
    - ix. West Vadnais Lakes Outlet Lowering
    - x. Twin Lake Outlet
    - xi. CIP Maintenance and Repair 2020 Project
    - xii. Beltline/Battle Creek Tunnel Inspection
    - xiii. Internal Load Management Discussion
    - xiv. Wakefield Lake Internal Loading Study
    - xv. Natural Resources Program
    - xvi. Education Program
- 10. Report of Managers
- 11. Adjourn**

*\*Items in **bold** signify that an action needs to be taken by the Board.*



# RAMSEY-WASHINGTON

## METRO WATERSHED DISTRICT

### NOTICE OF BOARD MEETING

### Wednesday, June 3, 2020

### 6:30 PM

### Via Web Conference and In Lieu of an In-Person Meeting

Per Minnesota Statute 13D.021, President Marj Ebensteiner has determined that an in-person meeting of the RWMWD Board of Managers is not practical or prudent given the COVID-19 pandemic. In compliance with Center for Disease Control and Minnesota Department of Health guidance on minimizing potential for spread of the virus, RWMWD will conduct its regular Wednesday, June 3, 2020, meeting at 6:30 p.m. CDT, by web conference and conference call. Members of the public wishing to participate in the meeting may do so by accessing the web-based conference, or by phone.

To access the meeting via webcast, please use this link:

[JOIN MEETING](#)

<https://us02web.zoom.us/j/84599334333?pwd=MzVGTjlvaDhZd2tsU1h6bHk4QWwrrZz09>

The meeting room will open at 6:20 pm with the meeting starting at 6:30 pm. To connect to audio you may choose to use your computer audio options or you may use your mobile device to call. The phone access number is **(312) 626-6799**. The Meeting ID is **845 9933 4333**. The meeting password is **236954**.

If you have any questions, please contact Tina Carstens at [tina.carstens@rwmwd.org](mailto:tina.carstens@rwmwd.org).



# Consent Agenda





**Ramsey-Washington Metro Watershed District  
Minutes of Regular Board Meeting  
May 6, 2020**

The Regular Meeting of May 6, 2020, was held at 6:30 p.m. Due to the COVID-19 pandemic, this month's Board meeting was held via a video conferencing platform called Zoom. Board members, staff consultants and general public were able to join in via video and/or phone.

**PRESENT:**

Marj Ebensteiner, President  
Cliff Aichinger, Vice President  
Lawrence Swope, Treasurer  
Dianne Ward, Secretary  
Dr. Pam Skinner, Manager

**ABSENT:**

**ALSO PRESENT:**

Tina Carstens, District Administrator  
Tracey Galowitz, Attorney for District  
Nicole Soderholm, Permit Coordinator  
Bill Bartodziej, Natural Resource Specialist  
Bruce Copley, Crestview resident  
Melissa Elke, Twin Lake resident  
Ward Isaacson, Twin Lake Association  
Lauren Hazenson, Communications and Outreach Coordinator

Paige Ahlborg, Project Manager  
Brad Lindaman, Barr Engineering  
Erin Anderson Wenz, Barr Engineering  
Dave Vlasin, District Technician  
Burt Johnson, Twin Lake Association  
Bill Dircks, Little Canada Public Works Director

**1. CALL TO ORDER**

The meeting was called to order by President Ebensteiner at 6:30 p.m.

The members of the Board and staff introduced themselves.

**2. APPROVAL OF AGENDA**

Motion: Manager Aichinger moved, Manager Skinner seconded, to approve the agenda as presented.

A roll call vote was performed:

Manager Aichinger	aye
Manager Swope	aye
Manager Ward	aye
Manager Skinner	aye
President Ebensteiner	aye

Motion carried unanimously.

**3. CONSENT AGENDA**

- A. Approval of Minutes from April 1, 2020, including written visitor comments
- B. Treasurer’s Report and Bill List
- C. Review and Accept the 2019 District Annual Financial Audit
- D. Permit Applications
  - i. 20-17 Woodbury PFAS Treatment Facility, Woodbury
  - ii. 20-20 Maplewood Dennis-McClelland SIP, Maplewood
  - iii. 20-21 Tartan High School Redevelopment Phase I, Oakdale
  - iv. 20-22 Maplewood Elementary, Maplewood
- E. Stewardship Grant Program
  - i. 20-20 CS Knappmiller, native habitat restoration
  - ii. 20-11 CS Ramundt, rain garden, native habitat restoration
  - iii. 20-12 CS Jacobson, native habitat restoration
  - iv. 20-13 CS Brenner, filtration basin
  - v. 20-14 CS Carver Lake Parking Lot, rain garden, native habitat restoration

Motion: Manager Aichinger moved, Manager Skinner seconded, to approve the consent agenda as presented.

A roll call vote was performed:

Manager Aichinger	aye
Manager Swope	aye
Manager Ward	aye
Manager Skinner	aye
President Ebensteiner	aye

Motion carried unanimously.

**4. VISITOR PRESENTATIONS**

Bruce Copley referenced the West Vadnais Conveyance Study, noting that he was pleased to see that the District is reviewing the option of opportunistic pumping of West Vadnais Lake. He added the following suggestions which he believed might improve the study: modeling span from 2014-2019, the impact on overflow of Five Star Estates and Twin Lakes as part of the output, when estimating the downstream water levels it should be clearly stated if the water levels would have created specific problems if the pumping took place, and would want to know if (related to the manhole option) the pump outlet could be fed to the end of the culvert and whether it could be used year round.

Burt Johnson thanked staff for continuing conversations and putting on a Zoom presentation related to shoreline restoration. He stated that the Twin Lake Association continues its effort to restore the outlet on Twin Lake at its historic elevation, to prevent the inflow from West Vadnais, and to restore and preserve the water quality of the lake. He stated that tonight’s meeting is a momentous occasion for the outlet project, which serves to accomplish one of those goals, and expressed appreciation to the District and hoped that project moves forward. He referenced the operation plan, stated that he understands that the gate would be closed during the March through October months, unless the elevation reaches 872.8, at which it could be opened until the elevation reaches 872.2. He commented that seems reasonable and he would like to see that move forward. He stated that the goal of the Association is to have the lake held at a predictable level and believes that this project will accomplish that at 872.2. He stated that he agrees that there is a need to continue to review the capacity in West Vadnais.

**5. PERMIT PROGRAM**



A. Applications

Permit #20-19: Maplewood County Road B and Arcade – Maplewood

A staff member provided details on the proposed road reconstruction project which includes an infiltration basin and the use of banked credits from the City. Details were provided on the variance requests for failing to meet the TSS requirement and wetland and buffer impacts. A Manager asked if the lack of meeting the TSS requirement would result in more pollution than currently occurs. A staff member replied that the proposed TSS load would still be less than existing conditions.

Motion: Manager Swope moved, Manager Ward seconded, to approve Permit #20-19.

A roll call vote was performed:

President Ebensteiner    aye  
Manager Aichinger        aye  
Manager Swope            aye  
Manager Ward             aye  
Manager Skinner         aye

Motion carried unanimously.

B. Monthly Enforcement Report

During March, 13 notices were sent to address: install/maintain perimeter control (7), install/maintain construction entrance (1), sweep streets (2), stabilize exposed soils (1), and remove discharged sediment (2).

**6. STEWARDSHIP GRANT PROGRAM (See consent agenda)**

**7. PRESENTATIONS AND ACTION ITEMS**

A. Twin Lake Outlet Action Items

- i. Operation Plan Update
- ii. 20-18 RWMWD Twin Lake Outlet Project Permit
- iii. Approval of Plans and Authorization to Advertise for Bid

A staff member stated that options for opportunistic operation of the outlet were included as previously directed. A Manager asked if it is a guiding principle to move water downstream from one location to another. A staff member replied that water management is within the guiding principles of the District, but noted that there are many methods that can be used to accomplish that. Managers commended staff for the well written operation plan, which they believed accomplished the goals of the previous meeting discussion. The Managers and staff discussed the comparison of risks versus benefits. Legal counsel asked if staff could develop an operating plan that would not require a variance and would still provide benefit to those upstream without exacerbating the risk downstream. A staff member confirmed that could be done, noting that the operating plan presented in March accomplished that. Legal counsel commented that when considering a variance, the District should consider avoiding such a variance that would nullify Rule D; a project should not increase the potential of flooding downstream. A Manager commented that they believed that the operation plan as presented, with the variance, accomplishes the intent of allowing opportunistic discharge downstream. Another Manager agreed. A staff member noted that the Board could move forward with an operation plan such as the one proposed in March, without a variance, and once the operation plans and structures are in place downstream, this operation plan could be tweaked.

It was the consensus of the Board to move ahead with an operation plan that does not increase the flood risk downstream and does not require a variance, with the understanding that there will be additional review of the

operation plan to optimize the use of the outlet and also recognizes changes once the structures and operation plans are in place downstream at Keller and Phalen.

A staff member explained that changes to the operation plan do not change the design plans and will instead factor into the permitting process. It was noted that the authorization to move forward with finalizing the design and solicit bid proposals can move forward at this time, if desired.

Motion: Manager Aichinger moved, President Ebensteiner seconded, to adopt a preliminary operating plan that does not increase the flood levels downstream and does not require a variance with direction to review opportunistic discharge possibilities once the downstream structures and operating plans are developed.

A roll call vote was performed:

Manager Skinner	aye
President Ebensteiner	aye
Manager Aichinger	aye
Manager Ward	aye
Manager Swope	aye

Motion carried unanimously.

A staff member noted that the next action before the Board would be to permit #20-18 which now only includes a variance for wetland impacts since the previous motion takes away the need for a variance from Rule D, Flood Control.

Motion: Manager Aichinger moved, President Swope seconded, to approve permit 20-18 with only the one variance for wetland impacts.

A roll call vote was performed:

Manager Swope	aye
President Ebensteiner	aye
Manager Skinner	aye
Manager Aichinger	aye
Manager Ward	aye

Motion carried unanimously.

Motion: Manager Swope moved, President Aichinger seconded, to approve the preliminary design, estimated costs, and proposed project schedule, and direct staff to finalize the design and bidding documents and solicit bid proposals.

A roll call vote was performed:

Manager Aichinger	aye
Manager Skinner	aye
Manager Swope	aye
President Ebensteiner	aye
Manager Ward	aye

Motion carried unanimously.

A staff member provided an update on the next steps and bidding process, noting that a recommendation for awarding the contract would be presented to the Board at the next Board meeting with construction anticipated to begin in June or July.

**B. Beltline Resiliency Study Accept Response to Comment and Finalize Report**

A staff member noted that the draft responses to the comments received to the study were distributed to the Board prior to the meeting for review.

Motion: Manager Aichinger moved, Manager Skinner seconded, to accept the response to comment and direct staff to finalize the study report.

Further discussion: A Manager provided some specific input to the draft responses/comments, suggesting a few additional suggestions. Another Manager noted that they would like additional time to discuss some of the draft responses with staff and would rather delay action tonight. A staff member replied that there is no set timeline, noting that regardless of the response, staff would have taken the comments into account for the study.

Manager Aichinger withdrew the motion.

Motion: Manager Aichinger moved, Manager Skinner seconded, to table the response to comment.

A roll call vote was performed:

President Ebensteiner    aye  
Manager Swope            aye  
Manager Skinner         aye  
Manager Ward             aye  
Manager Aichinger       aye

Motion carried unanimously.

**8. ADMINISTRATOR'S REPORT**

- A. Meetings Attended
- B. Upcoming Meetings and Dates
- C. COVID-19 District Update

A staff member provided an update on District policies related to the continued Stay at Home Order and interaction with the public. Additional discussion is occurring on a staff level to determine the steps and transition that will be necessary when the Stay at Home Order is lifted.

- D. Ramsey County Property Tax Extension
- E. Introducing Lauren Hazenson – Communications and Outreach Coordinator

**9. PROJECT AND PROGRAM STATUS REPORTS**

- A. Ongoing Project and Program Updates
  - i. Beltline Resiliency and Phalen Chain Water Level Studies
  - ii. West Vadnais to South I-694 Conveyance Feasibility Study

A staff member noted that the original scope for this study did not include pumping or opportunistic/shorter term pumping and therefore, following the direction of the Board, staff provided this more detailed scope in attempt to ensure the desires of the Board will be covered in the study. It was explained that this draft includes the ability for staff to provide the Board with the information that would be necessary to make the decision on whether or not

pumping would be desired/beneficial. A Manager commented that they would find it helpful to have an evaluation of the system that would allow water to move out of the West Vadnais lake system in a swifter manner. Another Manager noted that opportunistic pumping is somewhat problematic, similar to the Twin Lake discussion the Board just had and therefore it may not be possible to do opportunistic pumping. Managers provided input to staff on the items that would be helpful within the study.

- iii. FEMA Flood Mapping
- iv. Automated Lake Monitoring Systems
- v. Wakefield Park/Frost Avenue Stormwater Project
- vi. Targeted Retrofit Projects
- vii. Target Stores Stormwater Retrofit Projects

A staff member noted that the requested cost per pound phosphorus removal rate was provided. It was noted that the design for one of the projects changed, which in turn changed the estimated cost. A Manager stated that it would also be helpful to have a list of previous projects and the rate of phosphorus removal and cost for the project. A staff member confirmed that the original scope of the project was changed and only one Target store is proposed to move forward at this time. It was noted that the other two projects may move forward in the future, just with different timing.

Motion: Manager Aichinger moved, Manager Skinner seconded, to endorse moving ahead with the East Saint Paul Target store project.

A roll call vote was performed:

President Ebensteiner	aye
Manager Aichinger	aye
Manager Skinner	aye
Manager Swope	aye
Manager Ward	aye

Motion carried unanimously.

- viii. Aldrich Arena Stormwater Project
- ix. Keller Channel Weir and Phalen Outlet Resiliency Modifications
- x. West Vadnais Lakes Outlet Lowering

A staff member provided an update noting that MnDOT is going to recommend approval of the requested permit.

A staff member provided an update on the carp barrier that was installed in the channel.

- xi. CIP Maintenance and Repair 2020 Project
- xii. Beltline/Battle Creek Tunnel Inspection
- xiii. Natural Resources Program
- xiv. Education Program

## 10. REPORTS OF MANAGERS

A Manager commented that the changes to the agenda helped the meeting to run smoothly. A Manager thanked everyone, noting that this is a great group to work with and echoed the comment that the format ran smoothly with the changes to the Consent Agenda.

## 11. ADJOURN

Motion: Manager Aichinger moved, Manager Swope seconded, to adjourn the meeting at 8:36 p.m.

Motion carried unanimously.

RWMWD BUDGET STATUS REPORT  
 Administrative & Program Budget  
 Fiscal Year 2020  
 5/31/2020

Budget Category	Budget Item	Account Number	Original Budget	Budget Transfers	Current Month Expenses	Year-to-Date Expenses	Current Budget Balance	Percent of Budget
Manager	Per diems	4355	\$8,500.00	-	1,300.00	1,800.00	\$6,700.00	21.18%
	Manager expenses	4360	3,500.00	-	-	-	3,500.00	0.00%
Committees	Committee/Bd Mtg. Exp.	4365	3,500.00	-	219.00	1,272.50	2,227.50	36.36%
<b>Sub-Total: Managers/Committees:</b>			<b>\$15,500.00</b>	<b>\$0.00</b>	<b>\$1,519.00</b>	<b>\$3,072.50</b>	<b>\$12,427.50</b>	<b>19.82%</b>
Employees	Staff salary/taxes/benefits	4010	1,450,000.00	-	162,733.96	595,149.07	854,850.93	41.04%
	Employee expenses	4020	10,000.00	-	2,540.73	4,423.11	5,576.89	44.23%
	District training & education	4350	25,000.00	-	-	855.04	24,144.96	3.42%
<b>Sub-Total: Employees:</b>			<b>\$1,485,000.00</b>	<b>\$0.00</b>	<b>\$165,274.69</b>	<b>\$600,427.22</b>	<b>\$884,572.78</b>	<b>40.43%</b>
Administration/ Office	GIS system maint. & equip.	4170	15,000.00	-	-	1,694.02	13,305.98	11.29%
	Data Base/GIS Maintenance	4171	5,000.00	-	-	-	5,000.00	0.00%
	Equipment maintenance	4305	3,000.00	-	-	-	3,000.00	0.00%
	Telephone	4310	8,000.00	-	57.48	287.40	7,712.60	3.59%
	Office supplies	4320	5,000.00	-	1,514.01	2,619.78	2,380.22	52.40%
	IT/Internet/Web Site/Software Lic.	4325	55,000.00	-	5,857.81	22,989.55	32,010.45	41.80%
	Postage	4330	5,000.00	-	-	143.55	4,856.45	2.87%
	Printing/copying	4335	8,000.00	-	323.40	1,858.75	6,141.25	23.23%
	Dues & publications	4338	11,000.00	-	95.00	7,595.00	3,405.00	69.05%
	Janitorial/Trash Service	4341	15,000.00	-	-	-	15,000.00	0.00%
	Utilities/Bldg.Contracts	4342	20,000.00	-	1,035.96	14,990.85	5,009.15	74.95%
	Bldg/Site Maintenance	4343	200,000.00	-	1,085.01	4,675.83	195,324.17	2.34%
	Miscellaneous	4390	5,000.00	-	-	377.00	4,623.00	7.54%
	Insurance	4480	40,000.00	-	-	34,275.02	5,724.98	85.69%
	Office equipment	4703	150,000.00	-	5,807.32	6,286.42	143,713.58	4.19%
	Vehicle lease, maintenance	4810-40	43,000.00	-	162.74	30,687.98	12,312.02	71.37%
<b>Sub-Total: Administration/Office:</b>			<b>\$588,000.00</b>	<b>\$0.00</b>	<b>\$15,938.73</b>	<b>\$128,481.15</b>	<b>\$459,518.85</b>	<b>21.85%</b>
Consultants/ Outside Services	Auditor/Accounting	4110	60,000.00	-	25,886.00	37,839.88	22,160.12	63.07%
	Engineering-administration	4121	93,000.00	-	4,879.50	30,092.40	62,907.60	32.36%
	Engineering-permit I&E	4122	10,000.00	-	-	-	10,000.00	0.00%
	Engineering-eng. review	4123	55,000.00	-	3,223.50	14,378.50	40,621.50	26.14%
	Engineering-permit review	4124	55,000.00	-	5,359.50	24,339.50	30,660.50	44.25%
	Project Feasibility Studies	4129	570,000.00	-	17,942.33	52,790.06	517,209.94	9.26%
	Attorney-permits	4130	10,000.00	-	-	-	10,000.00	0.00%
	Attorney-general	4131	40,000.00	-	2,110.00	14,179.00	25,821.00	35.45%
	Outside Consulting Services	4160	40,000.00	-	-	-	40,000.00	0.00%
	<b>Sub-Total: Consultants/Outside Services:</b>			<b>\$933,000.00</b>	<b>\$0.00</b>	<b>\$59,400.83</b>	<b>\$173,619.34</b>	<b>\$759,380.66</b>
Programs	Educational programming	4370	60,000.00	-	-	5,593.59	54,406.41	9.32%
	Communications & Marketing	4371	25,000.00	-	-	1,469.61	23,530.39	5.88%
	Events	4372	50,000.00	-	5,000.00	23,592.03	26,407.97	47.18%
	Water QM-Engineering	4520-30	185,000.00	-	9,859.73	52,544.66	132,455.34	28.40%
	Project operations	4650	160,000.00	-	17,198.32	31,385.31	128,614.69	19.62%
	SLMP/TMDL Studies	4661	173,000.00	-	4,930.85	12,242.85	160,757.15	7.08%
	Natural Resources/Keller Creek	4670-72	140,000.00	-	6,443.34	16,265.04	123,734.96	11.62%
	Outside Prog.Support/Weed Mgmt.	4683-84	67,000.00	-	1,346.70	30,811.15	36,188.85	45.99%
	Research Projects	4695	95,000.00	-	27,374.00	40,184.50	54,815.50	42.30%
	Health and Safety Program	4697	3,000.00	-	-	139.39	2,860.61	4.65%
	NPDES Phase II	4698	10,000.00	-	-	-	10,000.00	0.00%
<b>Sub-Total: Programs:</b>			<b>\$968,000.00</b>	<b>\$0.00</b>	<b>\$72,152.94</b>	<b>\$214,228.13</b>	<b>\$753,771.87</b>	<b>22.13%</b>
<b>GENERAL FUND TOTAL</b>			<b>\$3,989,500.00</b>	<b>\$0.00</b>	<b>\$314,286.19</b>	<b>\$1,119,828.34</b>	<b>\$2,869,671.66</b>	<b>28.07%</b>
CIP's	CIP Project Repair & Maintenance	516	1,115,000.00	-	43,787.90	740,640.51	374,359.49	66.43%
	Targeted Retrofit Projects	518	1,012,000.00	-	26,126.69	151,750.92	860,249.08	15.00%
	Flood Risk Reduction Fund	520	4,000,000.00	-	40,776.11	178,928.52	3,821,071.48	4.47%
	Debt Services-96-97 Beltline/MM/Battle Creek	526	400,074.00	-	-	276,886.63	123,187.37	69.21%
	Stewardship Grant Program Fund	528-529	1,000,000.00	-	20,543.02	51,637.01	948,362.99	5.16%
	Impervious Surface Volume Reduction Opportunity	531	1,600,000.00	-	-	-	1,600,000.00	0.00%
	Wakefield Park Project	553	100,000.00	-	10,685.14	13,043.64	86,956.36	13.04%
District Office Bond Payment	585	194,885.00	-	-	120,358.21	74,526.79	61.76%	
<b>CIP BUDGET TOTAL</b>			<b>\$9,421,959.00</b>	<b>\$0.00</b>	<b>\$141,918.86</b>	<b>\$1,533,245.44</b>	<b>\$7,888,713.56</b>	<b>16.27%</b>
<b>TOTAL BUDGET</b>			<b>\$13,411,459.00</b>	<b>\$0.00</b>	<b>\$456,205.05</b>	<b>\$2,653,073.78</b>	<b>\$10,758,385.22</b>	<b>19.78%</b>

Current Fund Balances:

Fund:	Beginning Fund Balance @ 12/31/19	Fund Transfers	Year to date Revenue	Current Month Expenses	Year to Date Expense	Fund Balance @ 05/31/20
101 - General Fund	\$4,633,167.33	-	77,532.94	314,286.19	1,119,828.34	3,590,871.93
516 - CIP Project Repair & Maintenance	1,160,359.00	-	-	43,787.90	740,640.51	419,718.49
518 - Targeted Retrofit Projects	(52,309.00)	-	-	26,126.69	151,750.92	(204,059.92)
520 - Flood Damage Reduction Fund	2,565,820.00	-	17,295.25	40,776.11	178,928.52	2,404,186.73
526 - Debt Services-96-97 Beltline/MM/Beltline-Battle Creek Tunnel Repair	1,252,348.00	-	-	-	276,886.63	975,461.37
528/529 - Stewardship Grant Program Fund	711,696.00	-	-	20,543.02	51,637.01	660,058.99
531 - Impervious Surface Volume Reduction Opportunity	1,484,215.00	-	-	-	0.00	1,484,215.00
553 - Wakefield Park Project	268,349.00	-	-	10,685.14	13,043.64	255,305.36
580 - Contingency Fund	891,682.00	-	-	-	0.00	891,682.00
585 - Certificates of Participation	130,460.00	-	335.47	-	120,358.21	10,437.26
<b>Total District Fund Balance</b>	<b>\$13,045,787.33</b>	<b>\$0.00</b>	<b>\$ 95,163.66</b>	<b>\$ 456,205.05</b>	<b>\$2,653,073.78</b>	<b>\$10,487,877.21</b>

**Ramsey Washington Metro Watershed Dist.**  
**Cash Disbursements Journal**  
**For the Period From May 1, 2020 - May 31, 2020**

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
05/13/20	EFT	hea002	HealthPartners	4040-101-000	Employee Benefits-General	\$11,421.64	
05/13/20	71500	hom001	Home Depot Credit Services			1,721.07	
				4650-101-000	Project Operations-General		92.85
				4670-101-000	Natural Resources Project-General		1,608.22
				4320-101-000	Office Supplies-General		20.00
05/13/20	71501	kul001	Kyle W. Kubitzka	4020-101-000	Employee Expenses-General	129.95	
05/13/20	71502	nsp001	Xcel Energy			310.39	
				4650-101-000	Project Operations-General		16.54
				4342-101-000	Utilities/Bldg. Contracts		280.71
				4650-101-000	Project Operations-General		13.14
05/13/20	71503	pre003	Premium Waters, Inc.	4342-101-000	Utilities/Bldg. Contracts	24.00	
05/26/20	71504	ada002	Adam's Pest Control	4342-101-000	Utilities/Bldg. Contracts	79.00	
05/26/20	71505	att002	AT & T Mobility -ROC	4530-101-000	Water QM Staff-General	80.45	
05/26/20	71506	aws001	AWS Service Center	4342-101-000	Utilities/Bldg. Contracts	212.68	
05/26/20	71507	bar001	Barr Engineering			123,531.08	
				4121-101-000	Engineering Admin-General Fund		4,879.50
				4123-101-000	Engineering-Review		3,223.50
				4129-101-000	Project Feasability-General		606.50
				4129-101-000	Project Feasability-General		1,400.00
				4129-101-000	Project Feasability-General		432.00
				4129-101-000	Project Feasability-General		1,977.33
				4129-101-000	Project Feasability-General		87.50
				4129-101-000	Project Feasability-General		87.50
				4129-101-000	Project Feasability-General		12,402.50
				4129-101-000	Project Feasability-General		87.50
				4129-101-000	Project Feasability-General		861.50
				4520-101-000	Water QM-Engineering		2,342.00
				4520-101-000	Water QM-Engineering		66.00
				4520-101-000	Water QM-Engineering		586.00
				4520-101-000	Water QM-Engineering		4,484.75
				4520-101-000	Water QM-Engineering		363.50
				4124-101-000	Engineering-Permit Review		5,359.50
				4661-101-000	SLMP/TMDL Studies		1,124.50
				4661-101-000	SLMP/TMDL Studies		582.50
				4661-101-000	SLMP/TMDL Studies		1,670.00
				4661-101-000	SLMP/TMDL Studies		1,553.85
				4695-101-000	Research Projects-General		294.00
				4695-101-000	Research Projects-General		2,080.00
				4650-101-000	Project Operations-General		3,521.41
				4128-518-000	Engineering-School/Commer Retrofit		20,763.16
				4128-518-000	Engineering-School/Commer Retrofit		5,051.03
				4128-553-000	Engineering-Wakefield		10,685.14
				4128-518-000	Engineering-School/Commer Retrofit		312.50

**Ramsey Washington Metro Watershed Dist.**  
**Cash Disbursements Journal**  
**For the Period From May 1, 2020 - May 31, 2020**

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
				4682-529-000	Stewardship Grant Fund		1,989.01
				4128-520-000	Engineering-Flood Damage		3,854.00
				4128-520-000	Engineering-Flood Damage		6,189.00
				4128-520-000	Engineering-Flood Damage		12,090.00
				4128-516-000	Engineering-Maint. & Repair		1,263.00
				4128-516-000	Engineering-Maint. & Repair		3,769.90
				4128-516-000	Engineering-Maint. & Repair		7,491.00
05/26/20	71508	bar004	Deborah Barnes	4040-101-000	Employee Benefits-General	40.00	
05/26/20	71509	blo001	Simba Blood			293.95	
				4020-101-000	Employee Expenses-General		12.19
				4670-101-000	Natural Resources Project-General		281.76
05/26/20	71510	cad001	Allstream	4530-101-000	Water QM Staff-General	65.01	
05/26/20	71511	car007	Carp Solutions, LLC	4670-101-000	Natural Resources Project-General	4,170.00	
05/26/20	71512	chr001	Christ Episcopal Church	4682-529-000	Stewardship Grant Fund	750.00	
05/26/20	71513	cit011	City of Roseville	4325-101-000	IT/Website/Software	4,667.00	
05/26/20	71514	com004	Comcast	4342-101-000	Utilities/Bldg. Contracts	67.26	
05/26/20	71515	del001	Dell Marketing	4703-101-000	Office Equipment	945.62	
05/26/20	71516	don001	Matthew Doneux			658.66	
				4040-101-000	Employee Benefits-General		40.00
				4020-101-000	Employee Expenses-General		318.55
				4670-101-000	Natural Resources Project-General		300.11
05/26/20	71517	fis002	Fish & Water Conservation Fund	4682-529-000	Stewardship Grant Fund	3,418.20	
05/26/20	71518	fit001	Fitzgerald Excavating & Trucking, Inc.	4630-516-000	Construction Imp.-Maint. & Repair	27,949.00	
05/26/20	71519	fit002	Mary Fitzgerald			433.78	
				4040-101-000	Employee Benefits-General		240.00
				4020-101-000	Employee Expenses-General		193.78
05/26/20	71520	fle001	Fleming Auto Services	4820-101-000	Vehicle Maintenance-General	97.44	
05/26/20	71521	gal001	Galowitz Olson, PLLC			4,357.00	
				4131-101-000	Attorney-General		2,110.00
				4131-520-000	Attorney-Flood Damage		2,247.00
05/26/20	71522	gil001	Gilbert Mechanical Contractors, Inc.	4343-101-000	Bldg./Site Maintenance	170.76	
05/26/20	71523	haw001	Hawkins, Inc.	4650-101-000	Project Operations-General	5,577.28	
05/26/20	71524	inn001	Innovative Office Solutions, LLC	4320-101-000	Office Supplies-General	249.75	
05/26/20	71525	int001	Office of MN, IT Services	4310-101-000	Telephone-General	57.48	
05/26/20	71526	kor001	Eric Korte			203.81	
				4040-101-000	Employee Benefits-General		96.00
				4020-101-000	Employee Expenses-General		107.81
05/26/20	71527	kub001	Kyle W. Kubitz			465.74	
				4020-101-000	Employee Expenses-General		408.25
				4530-101-000	Water QM Staff-General		57.49
05/26/20	71528	mau001	Ashly Maus			409.65	
				4020-101-000	Employee Expenses-General		391.65
				4670-101-000	Natural Resources Project-General		18.00
05/26/20	71529	mbc001	MB Consulting	4372-101-000	Events	5,000.00	
05/26/20	71530	mel001	Michelle L. Melser	4343-101-000	Bldg./Site Maintenance	325.00	
05/26/20	71531	mid001	Quicksilver	4670-101-000	Natural Resources Project-General	32.75	
05/26/20	71532	nep001	NCBERS Group Life Ins.	4040-101-000	Employee Benefits-General	16.00	
05/26/20	71533	nor013	Northern Dewatering, Inc.	4630-101-000	Construction-Flood Damage	16,356.20	
05/26/20	71534	nor019	North Park Condominium Association, Inc.	4682-529-000	Stewardship Grant Fund	6,362.00	
05/26/20	71535	nsp001	Xcel Energy			709.59	
				4650-520-000	Project Operations-Flood		39.91
				4650-101-000	Project Operations-General		297.37

**Ramsey Washington Metro Watershed Dist.**  
**Cash Disbursements Journal**  
**For the Period From May 1, 2020 - May 31, 2020**

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
				4342-101-000	Utilities/Bldg. Contracts		372.31
05/26/20	71536	pac001	Pace Analytical Services, Inc.	4530-101-000	Water QM Staff-General	429.00	
05/26/20	71537	pas002	Sage Passi	4040-101-000	Employee Benefits-General	44.00	
05/26/20	71538	qwe001	CenturyLink	4650-101-000	Project Operations-General	704.73	
05/26/20	71539	red002	Redpath & Company, Ltd.	4110-101-000	Auditor/Accounting	25,851.00	
05/26/20	71540	san003	Sandstrom Land Management	4630-516-000	Construction Imp.-Maint. & Repair	3,315.00	
05/26/20	71541	sch009	Schlmoeka Services, LLC	4650-101-000	Project Operations-General	6,975.00	
05/26/20	71542	shi001	SHI International Corp.			5,956.70	
				4703-101-000	Office Equipment		4,861.70
				4325-101-000	Natural Resources Project-General		1,095.00
05/26/20	71543	sim001	Emily Simmons			537.00	
				4670-101-000	Natural Resources Project-General		14.50
				4020-101-000	Employee Expenses-General		522.50
05/26/20	71544	sod001	Nicole Soderholm			84.35	
				4040-101-000	Employee Benefits-General		40.00
				4020-101-000	Employee Expenses-General		44.35
05/26/20	71545	stp009	St. Paul Fabricating & Decorating Co.	4682-529-000	Stewardship Grant Fund	1,603.61	
05/26/20	71546	stu001	Studio Lola	4320-101-000	Office Supplies-General	428.25	
05/26/20	71547	tim002	Timesaver Off-Site Secretarial, Inc.	4365-101-000	Committee/Board Meeting Expense	219.00	
05/26/20	71548	tow001	Townhomes of Pathways HOA	4682-529-000	Stewardship Grant Fund	6,362.00	
05/26/20	71549	uni006	University of Minnesota	4695-101-000	Research Projects-General	25,000.00	
05/26/20	71550	usb002	U.S. Bancorp			2,316.85	
				4343-101-000	Bldg./Site Maintenance		39.25
				4320-101-000	Office Supplies-General		22.75
				4338-101-000	Dues & Publications-General		95.00
				4325-101-000	IT/Website/Software		95.81
				4320-101-000	Office Supplies-General		50.15
				4320-101-000	Office Supplies-General		12.83
				4320-101-000	Office Supplies-General		14.11
				4320-101-000	Office Supplies-General		18.24
				4320-101-000	Office Supplies-General		62.99
				4320-101-000	Office Supplies-General		432.00
				4320-101-000	Office Supplies-General		4.99
				4320-101-000	Office Supplies-General		95.98
				4320-101-000	Office Supplies-General		34.99
				4320-101-000	Office Supplies-General		34.99
				4320-101-000	Office Supplies-General		31.99
				4530-101-000	Water QM Staff-General		68.78
				4530-101-000	Water QM Staff-General		1,202.00
05/26/20	71551	usb005	US Bank Equipment Finance	4335-101-000	Printing-General	323.40	
05/26/20	71552	van001	Vanguard Cleaning Systems of Minnesota	4343-101-000	Bldg./Site Maintenance	550.00	
05/26/20	71553	van003	Erika Van Krevelen			429.70	
				4670-101-000	Natural Resources Project-General		18.00
				4020-101-000	Employee Expenses-General		411.70
05/26/20	71554	voy001	US Bank Voyager Fleet System	4830-101-000	Vehicle Fuel	65.30	
05/26/20	71555	was002	Washington Conservation District	4530-101-000	Water QM Staff-General	114.75	
05/26/20	71556	was003	Washington County-Taxation Division	4110-101-000	Auditor/Accounting	35.00	
05/26/20	71557	zer001	Carol & Bill Zerfas	4682-529-000	Stewardship Grant Fund	58.20	
<b>Accounts Payable Total:</b>						<b>\$302,762.03</b>	



**Ramsey Washington Metro Watershed Dist.**  
**Cash Disbursements Journal**  
**For the Period From May 1, 2020 - May 31, 2020**

Date	Check #	Vendor ID	Name	Account ID	Account Description	Amount	Check Detail
myp001	04/03/20	myp001	Payroll Fees	4110-101-000	April 3rd Payroll Fees	69.05	
myp001	04/17/20	myp001	Payroll Fees	4110-101-000	April 17th Payroll Fees	67.10	
Dir.Dep.	05/01/20	---	Payroll Expense-Net	4010-101-000	May 1st Payroll	28,361.33	
EFT	05/01/20	int002	Internal Revenue Service	2001-101-000	May 1st Federal Withholding	9,781.12	
EFT	05/01/20	mnd001	MN Revenue	2003-101-000	May 1st State Withholding	1,785.00	
EFT	05/01/20	per001	PERA	2011-101-000	May 1st PERA	5,636.16	
EFT	05/01/20	emp002	Empower Retirement	2016-101-000	Employee Def.Comp. Contributions	3,029.00	
EFT	05/01/20	emp002	Empower Retirement	2018-101-000	Employee IRA Contributions	425.00	
Dir.Dep.	05/15/20	---	Payroll Expense-Net	4010-101-000	May 15th Payroll	28,102.69	
EFT	05/15/20	int002	Internal Revenue Service	2001-101-000	May 15th Federal Withholding	9,691.72	
EFT	05/15/20	mnd001	MN Revenue	2003-101-000	May 15th State Withholding	1,767.97	
EFT	05/15/20	per001	PERA	2011-101-000	May 15th PERA	5,585.54	
EFT	05/15/20	emp002	Empower Retirement	2016-101-000	Employee Def.Comp. Contributions	3,029.00	
EFT	05/15/20	emp002	Empower Retirement	2018-101-000	Employee IRA Contributions	425.00	
Dir.Dep.	05/29/20	---	Payroll Expense-Net	4010-101-000	May 29th Payroll	31,081.92	
EFT	05/29/20	int002	Internal Revenue Service	2001-101-000	May 29th Federal Withholding	10,461.71	
EFT	05/29/20	mnd001	MN Revenue	2003-101-000	May 29th State Withholding	1,895.81	
EFT	05/29/20	per001	PERA	2011-101-000	May 29th PERA	5,928.47	
EFT	05/29/20	emp002	Empower Retirement	2016-101-000	Employee Def.Comp. Contributions	3,029.00	
EFT	05/29/20	emp002	Empower Retirement	2018-101-000	Employee IRA Contributions	425.00	
						<b>\$150,577.59</b>	
			<b>Payroll/Benefits</b>			<b>\$453,339.62</b>	
			<b>TOTAL:</b>			<b>\$453,339.62</b>	

**Ramsey Washington Metro Watershed Dist.**  
**Check Register**  
**For the Period From May 1, 2020 to May 31, 2020**

Check #	Date	Payee ID	Invoice #	Payee	Description	Amount
EFT	05/13/20	hom001	June 2020	HealthPartners	Employee Benefits	\$11,421.64
71500	05/13/20	hom001	3092906	Home Depot Credit Services	Proj.Oper./Natural Resources/Supplies	1,721.07
71501	05/13/20	kub001	Mar-Apr 2020	Kyle W. Kubitz	Employee Reimbursement	129.95
71502	05/13/20	nsp001	679934171	Xcel Energy	Project Operations/Utilities	310.39
71503	05/13/20	pre003	317503716	Premium Waters, Inc.	Utilities/Bldg. Contracts	24.00
71504	05/26/20	ada002	3130977	Adam's Pest Control, Inc.	Utilities/Bldg. Contracts	79.00
71505	05/26/20	att002	X05252020	AT & T Mobility - ROC	Water QM Staff	80.45
71506	05/26/20	aws001	S1335957-050120	AWS Service Center	Utilities/Bldg. Contracts	212.68
71507	05/26/20	bar001	4/15-5/15/20	Barr Engineering	April/May Engineering Expense	123,531.08
71508	05/26/20	bar004	May 2020	Deborah Barnes	Employee Reimbursement	40.00
71509	05/26/20	blo001	05/22/20	Simba Blood	Employee Reimbursement	293.95
71510	05/26/20	cad001	16845703	Allstream	Water QM Staff	65.01
71511	05/26/20	car007	RWMWD_5/12/20	Carp Solutions, LLC	Natural Resources Project	4,170.00
71512	05/26/20	chr001	20-04 CS	Christ Episcopal Church	Stewardship Grant Fund	750.00
71513	05/26/20	cit011	228934/228965	City of Roseville	IT/Website/Software	4,667.00
71514	05/26/20	com004	05/16/20	Comcast	Utilities/Bldg. Contracts	67.26
71515	05/26/20	del001	10392684834	Dell Marketing, L.P.	Office Equipment	945.62
71516	05/26/20	don001	May 2020	Matthew Doneux	Employee Reimbursement	658.66
71517	05/26/20	fis002	19-20 CS	Fish & Waters Conservation Fund	Stewardship Grant Fund	3,418.20
71518	05/26/20	fit001	Pay #2	Fitzgerald Excavating & Trucking, Inc.	Construction Imp.-Maint & Repair	27,949.00
71519	05/26/20	fit002	May 2020	Mary Fitzgerald	Employee Reimbursement	433.78
71520	05/26/20	fle001	83384	Flemings Auto Service	Vehicle Maintenance	97.44
71521	05/26/20	gal001	05/20/20	Galowitz Olson, PLLC	May Legal Fees	4,357.00
71522	05/26/20	gil001	192606	Gilbert Mechanical Contractors, Inc.	Bldg/Site Maintenance	170.76
71523	05/26/20	haw001	413906/4720369	Hawkins, Inc.	Project Operations	5,577.28
71524	05/26/20	inn002	IN2974433/2981529	Innovative Office Solutions LLC	Office Supplies	249.75
71525	05/26/20	int001	W20040511	Office of MN, IT Services	Telephone Expense	57.48
71526	05/26/20	kor001	05/21/20	Eric Korte	Employee Reimbursement	203.81
71527	05/26/20	kub001	May 2020	Kyle W. Kubitz	Employee Reimbursement	465.74
71528	05/26/20	mau001	05/01/20	Ashly Maus	Employee Reimbursement	409.65
71529	05/26/20	mbc001	1076	MB Consulting	Events	5,000.00
71530	05/26/20	mel001	04/21/20	Michelle L. Melser	Employee Reimbursement	325.00
71531	05/26/20	mid001	6601979	Quicksilver Express Courier	Natural Resources Project	32.75
71532	05/26/20	ncp001	05/13/20	NCPERS Group Life Ins.	Employee Benefits	16.00
71533	05/26/20	nor013	38263	Northern Dewatering, Inc.	Construction-Flood Damage	16,356.20
71534	05/26/20	nor019	19-01 CS	North Park Condominium Assoc., Inc.	Stewardship Grant Fund	6,362.00
71535	05/26/20	nsp001	683813287	Xcel Energy	Utilities/Project Oper/Flood Damage	709.59
71536	05/26/20	pac001	2012017212	Pace Analytical Services, Inc.	Water QM Staff	429.00
71537	05/26/20	pas002	Apr-May 2020	Sage Passi	Employee Reimbursement	44.00
71538	05/26/20	qwe001	05/10/20	CenturyLink	Project Operations	704.73
71539	05/26/20	red002	150453671	Redpath & Company, Ltd	Annual Audit/Monthly Accounting	25,851.00
71540	05/26/20	san003	05/07/20	Sandstrom Land Management	Construction Imp.-Maint & Repair	3,315.00
71541	05/26/20	sch009	25106	Schlomka Services, LLC	Project Operations	6,975.00
71542	05/26/20	shi001	811661664	SHI International Corp.	IT/Website/Software/Equipment	5,956.70
71543	05/26/20	sim001	Apr-May 2020	Emily Simmons	Employee Reimbursement	537.00
71544	05/26/20	sod001	May 2020	Nicole Soderholm	Employee Reimbursement	84.35
71545	05/26/20	stp009	19-03 CS	St. Paul Fabricating & Decorating Co.	Stewardship Grant Fund	1,603.61
71546	05/26/20	stu001	2019359	Studio Lola	Office Supplies	428.25
71547	05/26/20	tim002	M25637	Timesaver Off-Site Secretarial, Inc.	Committee/Board Meeting Expense	219.00
71548	05/26/20	tow001	19-01 CS	Townhomes of Pathways HOA	Stewardship Grant Fund	6,362.00
71549	05/26/20	uni006	05/05/20	University of Minnesota	Research Projects	25,000.00
71550	05/26/20	usb002	May 2020	U.S. Bank	May Credit Card Expense	2,316.85
71551	05/26/20	usb005	413314113	US Bank Equipment Finance	Printing Expense	323.40
71552	05/26/20	van001	May 2020	Vanguard Cleaning Systems of Minnesota	Bldg/Site Maintenance	550.00
71553	05/26/20	van003	May 2020	Erika Van Krevelen	Employee Reimbursement	429.70
71554	05/26/20	voy001	869293423022	US Bank Voyager Fleet Sys.	Vehicle Fuel	65.30
71555	05/26/20	was002	4828	Washington Conservation District	Water QM Staff	114.75
71556	05/26/20	was003	171533	Washington Co.-Taxation Div.	Audit Expense	35.00
71557	05/26/20	zer001	20-06 MTN	Carol & Bill Zerfas	Stewardship Grant Fund	58.20
<b>Total</b>						<b>\$302,762.03</b>

**Ramsey Washington Metro Watershed Dist.  
Check Register  
For the Period From May 1, 2020 to May 31, 2020**

Check #	Date	Payee ID	Invoice #	Payee	Description	Amount
EFT	04/03/20	myp001	04/03/20	April 3rd Payroll Fees	4110-101-000	69.05
EFT	04/17/20	myp001	04/17/20	April 17th Payroll Fees	4110-101-000	67.10
Dir.Dep.	05/01/20	---	Payroll Expense-Net	May 1st Payroll	4010-101-000	28,361.33
EFT	05/01/20	int002	Internal Rev.Serv.	May 1st Federal Withholding	2001-101-000	9,781.12
EFT	05/01/20	mnd001	MN Revenue	May 1st State Withholding	2003-101-000	1,785.00
EFT	05/01/20	per001	PERA	May 1st PERA	2011-101-000	5,636.16
EFT	05/01/20	emp002	Empower Retirement	Employee Def.Comp. Contributions	2016-101-000	3,029.00
EFT	05/01/20	emp002	Empower Retirement	Employee IRA Contributions	2018-101-000	425.00
Dir.Dep.	05/15/20	---	Payroll Expense-Net	May 15th Payroll	4010-101-000	28,102.69
EFT	05/15/20	int002	Internal Rev.Serv.	May 15th Federal Withholding	2001-101-000	9,691.72
EFT	05/15/20	mnd001	MN Revenue	May 15th State Withholding	2003-101-000	1,767.97
EFT	05/15/20	per001	PERA	May 15th PERA	2011-101-000	5,585.54
EFT	05/15/20	emp002	Empower Retirement	Employee Def.Comp. Contributions	2016-101-000	3,029.00
EFT	05/15/20	emp002	Empower Retirement	Employee IRA Contributions	2018-101-000	425.00
Dir.Dep.	05/29/20	---	Payroll Expense-Net	May 29th Payroll	4010-101-000	31,081.92
EFT	05/29/20	int002	Internal Rev.Serv.	May 29th Federal Withholding	2001-101-000	10,461.71
EFT	05/29/20	mnd001	MN Revenue	May 29th State Withholding	2003-101-000	1,895.81
EFT	05/29/20	per001	PERA	May 29th PERA	2011-101-000	5,928.47
EFT	05/29/20	emp002	Empower Retirement	Employee Def.Comp. Contributions	2016-101-000	3,029.00
EFT	05/29/20	emp002	Empower Retirement	Employee IRA Contributions	2018-101-000	425.00
<b>Payroll/Benefits</b>						<b><u>\$150,577.59</u></b>
<b>Total</b>	<b>Accounts Payable/Payroll/Benefits:</b>					<b><u>\$453,339.62</u></b>



**Summary of Professional Engineering Services During the Period  
April 18, 2020 through May 15, 2020**

	Total Engineering Budget (2020)	Total Fees to Date (2020)	Budget Balance (2020)	Fees During Period	District Accounting Code	Plan Implementation Task Number
<b>Engineering Administration</b>						
General Engineering Administration	\$76,000.00	\$30,092.40	\$45,907.60	\$4,879.50	4121-101	DW-13
RWMWD Health and Safety/ERTK Program	\$2,000.00	\$0.00	\$2,000.00		4697-101	DW-13
Educational Program/Educational Forum Assistance	\$20,000.00	\$1,109.50	\$18,890.50		4129-101	DW-11
<b>Engineering Review</b>						
Engineering Review	\$55,000.00	\$14,378.50	\$40,621.50	\$3,223.50	4123-101	DW-13
<b>Project Feasibility Studies</b>						
Interim emergency response plan funds for top priority District flooding areas	\$45,000.00	\$154.00	\$44,846.00		4129-101	DW-19
Beltline Resiliency and Phalen Chain Water Level Management Study	\$217,000.00	\$169,654.00	\$47,346.00	\$606.50	4129-101	BELT-3
FEMA Flood Mapping Update	\$109,720.00	\$50,623.50	\$59,096.50	\$1,400.00	4129-101	DW-9
Modeling of 500-year event Atlas 14 District-wide (Climate Change Scenario) and Generation of Flood Maps for Future Outreach Efforts	\$70,000.00	\$47,182.00	\$22,818.00		4129-101	DW-9
Hillcrest Golf Course (multi-use)	\$25,000.00	\$6,398.00	\$18,602.00	\$432.00	4129-101	DW-6
Gold BRT planning	\$20,000.00	\$0.00	\$20,000.00		4129-101	DW-6
Owasso Basin by-pass pipeline feasibility study/prelim design (Atlas 14 #1 priority area)	\$125,000.00	\$5,837.83	\$119,162.17	\$1,977.33	4129-101	GC-3, BELT-3
Wetland Creek flood damage reduction feasibility study (Atlas 14 #2 priority flooding area)	\$50,000.00	\$1,204.50	\$48,795.50	\$87.50	4129-101	DW-9, BELT-3
Ames Lake area flood damage reduction feasibility study (Atlas 14 #3 priority area)	\$50,000.00	\$1,204.50	\$48,795.50	\$87.50	4129-101	DW-9, BELT-3
West Vadnais Lake to South of I-694 Conveyance Feasibility Study	\$35,000.00	\$19,919.23	\$15,080.77	\$12,402.50	4129-101	DW-9, BELT-3
Battle Creek PFAS (monitoring, source ID, meetings, communications)	\$25,000.00	\$1,150.00	\$23,850.00	\$87.50	4129-101	DW-10
694/494/94 WQ treatment feasibility study	\$30,000.00	\$0.00	\$30,000.00		4129-101	BCL-3
Subwatershed feasibility studies for At-Risk creeks (Fish Creek and Gervais Creek)	\$40,000.00	\$1,800.00	\$38,200.00	\$861.50	4129-101	DW-1, DW-2
Battle Creek Lower Ravine Restoration Feasibility Study	\$25,000.00	\$0.00	\$25,000.00		4129-101	BC-3
Wetland Restoration Site Search	\$25,000.00	\$29,059.60	-\$4,059.60		4129-101	DW-8
Contingency*	\$25,000.00	\$0.00	\$25,000.00		4129-101	
<b>GIS Maintenance</b>						
GIS Maintenance	\$5,000.00	\$0.00	\$5,000.00		4170-101	DW-13
<b>Monitoring Water Quality/Project Monitoring</b>						
Lake Water Quality Monitoring (Misc QA/QC)	\$10,000.00	\$0.00	\$10,000.00		4520-101	DW-2
Special Project BMP Monitoring and annual report development	\$25,000.00	\$4,927.50	\$20,072.50	\$2,342.00	4520-101	DW-12
Auto lake monitoring system for Grass Lake	\$20,000.00	\$20,347.61	-\$347.61	\$66.00	4520-101	DW-18
Auto lake monitoring system for Owasso Lake	\$20,000.00	\$16,602.98	\$3,397.02	\$586.00	4520-101	DW-18
Auto lake monitoring system for Phalen Lake	\$20,000.00	\$18,202.28	\$1,797.72	\$4,484.75	4520-101	DW-18
Auto lake monitoring system for Snail Lake	\$20,000.00	\$19,366.99	\$633.01	\$363.50	4520-101	DW-18
Auto lake monitoring system for Wabasso Lake	\$20,000.00	\$17,658.40	\$2,341.60		4520-101	DW-18
<b>Permit Processing, Inspection and Enforcement</b>						
Permit Application Inspection and Enforcement	\$10,000.00	\$0.00	\$10,000.00		4122-101	DW-7
Permit Application Review	\$55,000.00	\$24,339.50	\$30,660.50	\$5,359.50	4124-101	DW-7
<b>Lake Studies/WRPPs/TMDL Reports</b>						
2020 Grant Applications	\$20,000.00	\$133.00	\$19,867.00		4661-101	DW-13
Tanners Flood Response Tool Model Update	\$3,000.00	\$1,502.50	\$1,497.50	\$1,124.50	4661-101	TaL-1
Internal load management - Sediment cores and macrophyte surveys for Wakefield, Bennett, Kohlman Lake, Round Lake (LC), Beaver Lake, Battle Creek Lake, Lake Owasso, Lake Emily, Twin Lake	\$50,000.00	\$4,055.00	\$45,945.00	\$582.50	4661-101	KL-2, GC-2, WL-3, BL-3, BCL-2, LE-4, Bel-3, LO-5, LE-4
Wakefield Lake internal load modeling (sediment and curlyleaf)	\$30,000.00	\$2,137.00	\$27,863.00	\$1,670.00	4661-101	WL-3, WL-4
WMP Updates - Including Implementation Plan Updates	\$10,000.00	\$1,247.50	\$8,752.50		4661-101	DW-13
Prioritization of water quality projects from subwatershed feasibility studies	\$15,000.00	\$3,167.85	\$11,832.15	\$1,553.85	4661-101	DW-13
Contingency for Lake Studies	\$25,000.00	\$0.00	\$25,000.00		4661-101	
<b>Research Projects</b>						
New Technology Mini Case Studies (average 6 per year)	\$12,000.00	\$262.50	\$11,737.50		4695-101	DW-12
Kohlman Permeable Weir Test System - Implement Monitoring Plan	\$15,000.00	\$1,414.00	\$13,586.00	\$294.00	4695-101	DW-12
Phalen Chain of Lakes Changes in Water Quality	\$5,000.00	\$4,080.00	\$920.00	\$2,080.00	4695-101	DW-12
<b>Project Operations</b>						
2020 Tanners Alum Facility Monitoring	\$15,000.00	\$3,815.41	\$11,184.59	\$3,521.41	4650-101	TaL-3
Beltline Outlet and Keller Channel Operations Plans	\$30,000.00	\$0.00	\$30,000.00		4650-101	DW-9, BELT-3
<b>Capital Improvements</b>						
Target and Motel 6	\$289,400.00	\$216,966.49	\$72,433.51	\$20,763.16	4128-518	DW-6
Owasso County Park Stormwater Master Plan and Detailed Design: Phase 1 and Phase 2	\$20,000.00	\$210.00	\$19,790.00		4128-518	DW-6
Aldrich Arena (soils and plantings)	\$25,000.00	\$8,207.03	\$16,792.97	\$5,051.03	4128-518	DW-6, WL-1
Wakefield Park/Frost Avenue Stormwater Project	\$17,500.00	\$13,043.64	\$4,456.36	\$10,685.14	4128-553	DW-6, WL-1
Commercial Sites Retrofit Projects 2020 (Targeted Retrofits) - Target/Motel 6/Boys club	\$45,000.00	\$7,249.50	\$37,750.50		4128-518	DW-6
School Sites Retrofit Projects 2020 (Targeted Retrofits)	\$45,000.00	\$4,182.50	\$40,817.50		4128-518	DW-6
Church Sites Retrofit Projects 2020 (Targeted Retrofit)	\$45,000.00	\$5,056.00	\$39,944.00	\$312.50	4128-518	DW-6
BMP Incentive Fund: Gen'l BMP Design Assistance and Review (cases where Dist is approached by landowner, or landowner is not commercial, school, church).	\$75,000.00	\$17,002.61	\$57,997.39	\$1,989.01	4682-529	DW-6
Lowering West Vadnais Lake Outlet	\$50,000.00	\$43,633.45	\$6,366.55	\$3,854.00	4128-520	DW-9
Wetland Restoration (Cottage Place or other)	\$100,000.00	\$0.00	\$100,000.00		4128-529	DW-1, DW-8
Keller Channel Weir & Phalen Outlet Resiliency Modifications	\$250,000.00	\$13,167.50	\$236,832.50	\$6,189.00	4128-520	DW-9, BELT-3
Twin Lake Outlet Easement Acquisition, Permitting, Construction Plans	\$65,000.00	\$59,796.93	\$5,203.07	\$12,090.00	4128-520	DW-9
West Vadnais Lake Emergency Overflow - Twin Lake By-Pass (permanent structures)	\$30,000.00	\$0.00	\$30,000.00		4128-520	DW-9
<b>CIP Project Repair &amp; Maintenance</b>						
Routine CIP Inspection and Unplanned Maintenance Identification	\$75,000.00	\$5,503.00	\$69,497.00	\$1,263.00	4128-516	DW-5
Beltline 5-year Inspection	\$100,000.00	\$43,829.70	\$56,170.30	\$3,769.90	4128-516	BELT-2
2020 CIP Maintenance and Repairs	\$150,000.00	\$60,140.73	\$89,859.27	\$7,491.00	4128-516	DW-5
2021 CIP Maintenance and Repairs (planning, bidding, and project setup)	\$30,000.00	\$0.00	\$30,000.00		4128-516	DW-5

TOTAL PAYABLE FOR PERIOD 4/18/20 - 5/15/20

\$123,531.08

Barr declares under the penalties of Law that this Account, Claim, or Demand is just and that no part has been paid.

Bradley J. Lindaman, Vice President

**Capital Improvement Project Maintenance/Repairs 2020  
Progress Payment Number 2**

1.0	Total Completed Through This Period:	<u>\$677,120.10</u>		
2.0	Total Completed Previously Completed:		<u>\$647,700.10</u>	
3.0	Total Completed This Period:			<u>\$29,420.00</u>
4.0	Amount Previously Retained:		<u>\$32,385.01</u>	
5.0	Amount Retained This Period (See Note 1):			<u>\$1,471.00</u>
6.0	Total Amount Retained (See Note 2):		<u>\$33,856.01</u>	
7.0	Retainage Released Through This Period:			<u>\$0.00</u>
8.0	Total Retainage Remaining:		<u>\$33,856.01</u>	
9.0	Amounts Previously Paid:	<u>\$615,315.09</u>		
10.0	Amount Due This Estimate:			<u><u>\$27,949.00</u></u>

Note 1: Retainage shall be 5 percent of the value of the Work completed.


SUBMITTED BY:

Name: Jason Fitzgerald Date: \_\_\_\_\_  
 Title: President  
 Contractor: Fitzgerald Excavating & Trucking, Inc.

Signature: \_\_\_\_\_

RECOMMENDED BY:

Name: Brad Lindaman Date: 5/22/2020  
 Title: District Engineer  
 Engineer: Barr Engineering Company

Signature:  \_\_\_\_\_

APPROVED BY:

Name: Marj Ebensteiner Date: \_\_\_\_\_  
 Title: President  
 Owner: Ramsey-Washington Metro Watershed District

Signature: \_\_\_\_\_

**Capital Improvement Project Maintenance/Repairs 2020**  
**Ramsey-Washington Metro Watershed District**  
**Summary of Work Completed Through May 19, 2020 for Progress Payment Number 2**

Item	Description	Unit	Estimated Quantity	Unit Price	Extension	(1) Total Completed Through This Period		(2) Total Completed Previous Period		(3) Total Completed This Period	
						Quantity	Amount	Quantity	Amount	Quantity	Amount
<b>General</b>											
1.04.A	Mobilization/Demobilization	L.S.	1	65,000.00	65,000.00	0.9	\$56,550.00	0.8	\$53,950.00	0.0	\$2,600.00
1.04.B	Control of Water	L.S.	1	10,000.00	10,000.00	0.9	\$8,700.00	0.8	\$8,300.00	0.0	\$400.00
1.04.C	Traffic Control	L.S.	1	15,000.00	15,000.00	0.9	\$13,050.00	0.8	\$12,450.00	0.0	\$600.00
<b>Site 1 – Tamarack Swamp, Woodbury (PFS Basins Cleaning/Sweeping &amp; Barrier Wall Repair)</b>											
1.04.G	Sediment Log (6-Inch Diameter)	L.F.	60	2.00	120.00	60	\$120.00	0	\$0.00	60	\$120.00
1.04.E	Sediment/Muck Cleanout Excavation, Loading, Hauling and Disposal of (MPCA SRV Levels 2 & 3 Material)	TON	100	28.00	2,800.00	100	\$2,800.00	0	\$0.00	100	\$2,800.00
1.04.H	Paver Sweeping (1,400 S.Y.)	S.Y.	1,400	3.00	4,200.00	1,400	\$4,200.00	0	\$0.00	1400	\$4,200.00
1.04.I	Remove Existing 1 ½" to 2" Filter Rock from Existing Rock Filter	L.S.	1	3,000.00	3,000.00	1	\$3,000.00	0	\$0.00	1	\$3,000.00
1.04.J	Clear Washed Filter Rock	TON	10	60.00	600.00	10	\$600.00	0	\$0.00	10	\$600.00
1.04.K	Replace Timber (12' X 6" X 2")	EACH	30	90.00	2,700.00	30	\$2,700.00	0	\$0.00	30	\$2,700.00
1.04.F	Site Restoration (Seeding and Erosion Control Blanket)	S.Y.	100	4.00	400.00	100	\$400.00	0	\$0.00	100	\$400.00
<b>Site 2 – 5th Street Wetland, Oakdale (Wetland Weir Maintenance)</b>											
1.04.L	Permeable Weir Maintenance (Reopening Drainage Slots and Remove all Brush and Debris)	L.F.	65	30.00	1,950.00	65	\$1,950.00	65	\$1,950.00	0	\$0.00
1.04.F	Site Restoration (Seeding and Erosion Control Blanket)	S.Y.	210	4.00	840.00	0	\$0.00	0	\$0.00	0	\$0.00
<b>Site 3 – Tanners Wetland, Oakdale (Wetland Weir Maintenance &amp; Timber Replacement)</b>											
1.04.L	Permeable Weir Maintenance (Reopening Drainage Slots and Remove all Brush and Debris)	L.F.	580	30.00	17,400.00	580	\$17,400.00	580	\$17,400.00	0	\$0.00
1.04.K	Replace Timbers (1 – 4" X 4" and 1 – 12" X 12")	EACH	2	90.00	180.00	2	\$180.00	2	\$180.00	0	\$0.00
1.04.F	Site Restoration (Seeding and Erosion Control Blanket)	S.Y.	210	4.00	840.00	0	\$0.00	0	\$0.00	0	\$0.00
<b>Site 4 – Gervais Mill Park, Little Canada (Mill Pond Filter Maintenance)</b>											
1.04.N	Install Flotation Silt Curtain	L.F.	45	25.00	1,125.00	45	\$1,125.00	45	\$1,125.00	0	\$0.00
1.04.I	Remove Existing 1 ½" to 2" Filter Rock from Existing Rock Filter	L.S.	1	8,000.00	8,000.00	1	\$8,000.00	1	\$8,000.00	0	\$0.00
1.04.J	Clear Washed Filter Rock	TON	50	60.00	3,000.00	50	\$3,000.00	50	\$3,000.00	0	\$0.00
1.04.F	Site Restoration (Seeding and Erosion Control Blanket)	S.Y.	400	4.00	1,600.00	390	\$1,560.00	390	\$1,560.00	0	\$0.00
<b>Site 5 – Lower Afton Road, Maplewood (Drainageway Sediment Removal)</b>											
1.04.O	Construction Entrance	EACH	1	2,000.00	2,000.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.P	Temporary Rock Filter Dike	TON	10	60.00	600.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.E	Sediment/Muck Cleanout Excavation, Loading, Hauling and Disposal of (MPCA SRV Levels 2 & 3 Material)	TON	140	38.00	5,320.00	69	\$2,622.00	69	\$2,622.00	0	\$0.00
1.04.F	Site Restoration (Seeding and Erosion Control Blanket)	S.Y.	210	4.00	840.00	300	\$1,200.00	300	\$1,200.00	0	\$0.00

**Capital Improvement Project Maintenance/Repairs 2020**  
**Ramsey-Washington Metro Watershed District**  
**Summary of Work Completed Through May 19, 2020 for Progress Payment Number 2**

Item	Description	Unit	Estimated Quantity	Unit Price	Extension	(1) Total Completed Through This Period		(2) Total Completed Previous Period		(3) Total Completed This Period	
						Quantity	Amount	Quantity	Amount	Quantity	Amount
<b>Site 6 – West Vadnais Lake, Vadnais Heights (Erosion Repair)</b>											
1.04.O	Construction Entrance	EACH	2	2,000.00	4,000.00	1	\$2,000.00	1	\$2,000.00	0	\$0.00
1.04.Q	Composite Mud Mats Protection (Double Layer)	SY	1,120	18.00	20,160.00	1,120	\$20,160.00	1,120	\$20,160.00	0	\$0.00
1.04.G	Sediment Log (6-Inch Diameter)	L.F.	900	4.00	3,600.00	800	\$3,200.00	800	\$3,200.00	0	\$0.00
1.04.R	Removal of Trees, Brush, and Debris (Disposal Off Site)	L.S.	1	40,000.00	40,000.00	1	\$40,000.00	1	\$40,000.00	0	\$0.00
1.04.S	Erosion Repair	L.F.	300	20.00	6,000.00	300	\$6,000.00	300	\$6,000.00	0	\$0.00
1.04.T	MN/DOT Common Borrow	C.Y.	100	12.00	1,200.00	100	\$1,200.00	100	\$1,200.00	0	\$0.00
1.04.U	Topsoil Borrow	C.Y.	60	12.00	720.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.F	Site and Access Restoration (Seeding and Erosion Control Blanket)	S.Y.	4,000	2.95	11,800.00	3,898	\$11,499.10	3,898	\$11,499.10	0	\$0.00
<b>Site 7 – Casey Lake, North St. Paul (Sediment Removal)</b>											
1.04.O	Construction Entrance	EACH	1	2,000.00	2,000.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.M	Silt Fence	L.F.	75	2.00	150.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.N	Flotation Silt Curtain	L.F.	300	25.00	7,500.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.G	Sediment Log (6-Inch Diameter)	L.F.	250	2.00	500.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.V	Inlet Protection	EACH	2	100.00	200.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.R	Removal of Trees, Brush, and Debris (Disposal Off Site)	L.S.	1	4,000.00	4,000.00	1	\$4,000.00	1	\$4,000.00	0	\$0.00
1.04.W	Boat Ramp	L.S.	1	12,000.00	12,000.00	1	\$12,000.00	0	\$0.00	1	\$12,000.00
1.04.E	Sediment/Muck Cleanout Excavation, Loading, Hauling and Disposal of (MPCA SRV Levels 2 & 3 Material)	TON	600	38.00	22,800.00	643	\$24,434.00	643	\$24,434.00	0	\$0.00
1.04.X	MN/DOT Class III Riprap with Type IV Geotextile Filter Fabric	TON	14	60.00	840.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.F	Site and Access Restoration (Seeding and Erosion Control Blanket)	S.Y.	200	4.00	800.00	0	\$0.00	0	\$0.00	0	\$0.00
<b>Site 8 – McKnight Ponds, Maplewood (Pond Cleanout)</b>											
1.04.O	Construction Entrance	EACH	1	2,000.00	2,000.00	1	\$2,000.00	1	\$2,000.00	0	\$0.00
1.04.G	Sediment Log (6-Inch Diameter)	L.F.	150	2.00	300.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.V	Inlet Protection	EACH	4	100.00	400.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.D	Sediment/Muck Cleanout Excavation, Loading, Hauling and Disposal of (Unregulated MPCA SRV Level 1 Material) (P)	C.Y.	640	28.00	17,920.00	640	\$17,920.00	640	\$17,920.00	0	\$0.00
1.04.E	Sediment/Muck Cleanout Excavation, Loading, Hauling and Disposal of (MPCA SRV Levels 2 & 3 Material)	TON	5,600	29.00	162,400.00	5,820	\$168,780.00	5,820	\$168,780.00	0	\$0.00
1.04.X	MN/DOT Class III Riprap with Type IV Geotextile Filter Fabric	TON	28	60.00	1,680.00	28	\$1,680.00	28	\$1,680.00	0	\$0.00
1.04.F	Site Access Restoration (Seeding and Erosion Control Blanket)	S.Y.	200	4.00	800.00	200	\$800.00	200	\$800.00	0	\$0.00
1.04.O	Construction Entrance	EACH	1	2,000.00	2,000.00	1	\$2,000.00	1	\$2,000.00	0	\$0.00
1.04.G	Sediment Log (6-Inch Diameter)	L.F.	250	2.00	500.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.V	Inlet Protection	EACH	2	100.00	200.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.R	Removal of Trees, Brush, and Debris (Disposal Off Site)	L.S.	1	3,500.00	3,500.00	1	\$3,500.00	1	\$3,500.00	0	\$0.00
1.04.E	Sediment/Muck Cleanout Excavation, Loading, Hauling and Disposal of (MPCA SRV Levels 2 & 3 Material)	TON	3,500	32.00	112,000.00	3,550	\$113,600.00	3,550	\$113,600.00	0	\$0.00
1.04.X	MN/DOT Class III Riprap with Type IV Geotextile Filter Fabric	TON	14	60.00	840.00	14	\$840.00	14	\$840.00	0	\$0.00
1.04.F	Site Access Restoration (Seeding and Erosion Control Blanket)	S.Y.	300	4.00	1,200.00	564	\$2,256.00	564	\$2,256.00	0	\$0.00

**Capital Improvement Project Maintenance/Repairs 2020  
 Ramsey-Washington Metro Watershed District  
 Summary of Work Completed Through May 19, 2020 for Progress Payment Number 2**

Item	Description	Unit	Estimated Quantity	Unit Price	Extension	(1) Total Completed Through This Period		(2) Total Completed Previous Period		(3) Total Completed This Period	
						Quantity	Amount	Quantity	Amount	Quantity	Amount
<b>Site 10 – Tudor Pond, Shoreview (Pond Cleanout)</b>											
1.04.O	Construction Entrance	EACH	1	2,000.00	2,000.00	1	\$2,000.00	1	\$2,000.00	0	\$0.00
1.04.G	Sediment Log (6-Inch Diameter)	L.F.	200	2.00	400.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.V	Inlet Protection	EACH	3	100.00	300.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.R	Removal of Trees, Brush, and Debris (Disposal Off Site)	L.S.	1	4,000.00	4,000.00	1	\$4,000.00	1	\$4,000.00	0	\$0.00
1.04.E	Sediment/Muck Cleanout Excavation, Loading, Hauling and Disposal of (MPCA SRV Levels 2 & 3 Material)	TON	680	38.00	25,840.00	722	\$27,436.00	722	\$27,436.00	0	\$0.00
1.04.X	MN/DOT Class III Riprap with Type IV Geotextile Filter Fabric	TON	14	60.00	840.00	14	\$840.00	14	\$840.00	0	\$0.00
1.04.F	Site Access Restoration (Seeding and Erosion Control Blanket)	S.Y.	300	4.00	1,200.00	325	\$1,300.00	325	\$1,300.00	0	\$0.00
<b>Site 11 – Reiland Pond, Shoreview (Pond Cleanout)</b>											
1.04.O	Construction Entrance	EACH	1	2,000.00	2,000.00	1	\$2,000.00	1	\$2,000.00	0	\$0.00
1.04.G	Sediment Log (6-Inch Diameter)	L.F.	150	2.00	300.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.V	Inlet Protection	EACH	4	100.00	400.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.R	Removal of Trees, Brush, and Debris (Disposal Off Site)	L.S.	1	2,000.00	2,000.00	1	\$2,000.00	1	\$2,000.00	0	\$0.00
1.04.E	Sediment/Muck Cleanout Excavation, Loading, Hauling and Disposal of (MPCA SRV Levels 2 & 3 Material)	TON	1,240	38.00	47,120.00	1,544	\$58,672.00	1,544	\$58,672.00	0	\$0.00
1.04.X	MN/DOT Class III Riprap with Type IV Geotextile Filter Fabric	TON	14	60.00	840.00	14	\$840.00	14	\$840.00	0	\$0.00
1.04.F	Site Access Restoration (Seeding and Erosion Control Blanket)	S.Y.	300	4.00	1,200.00	851	\$3,404.00	851	\$3,404.00	0	\$0.00
1.04.O	Construction Entrance	EACH	1	2,000.00	2,000.00	1	\$2,000.00	1	\$2,000.00	0	\$0.00
1.04.G	Sediment Log (6-Inch Diameter)	L.F.	150	2.00	300.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.V	Inlet Protection	EACH	4	100.00	400.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.R	Removal of Trees, Brush, and Debris (Disposal Off Site)	L.S.	1	2,000.00	2,000.00	0	\$0.00	0	\$0.00	0	\$0.00
1.04.E	Sediment/Muck Cleanout Excavation, Loading, Hauling and Disposal of (MPCA SRV Levels 2 & 3 Material)	TON	80	38.00	3,040.00	119	\$4,522.00	119	\$4,522.00	0	\$0.00
1.04.X	MN/DOT Class III Riprap with Type IV Geotextile Filter Fabric	TON	14	60.00	840.00	14	\$840.00	14	\$840.00	0	\$0.00
1.04.F	Site Access Restoration (Seeding and Erosion Control Blanket)	S.Y.	300	4.00	1,200.00	60	\$240.00	60	\$240.00	0	\$0.00

**Total of Extensions =           \$689,745.00                   \$677,120.10                   \$647,700.10                   \$29,420.00**

<b>PAYMENT STATUS LEVEL</b>	<b>COMPLETE</b>	
	<b>PARTIAL</b>	
	<b>NOT USED</b>	



Galowitz Olson, PLLC  
10390 39th Street North  
Lake Elmo, Minnesota 55042  
Office: (651) 777-6960  
Fax: (651) 777-8937

Ramsey-Washington Metro Watershed District  
C/O Tina Carstens  
2665 Noel Drive  
Little Canada MN 55117

Page: 1  
May 21, 2020  
File No: 9M

	Balance
General Account	\$2,110.00
Twin Lakes BP Project	\$2,247.00
	<u>\$4,357.00</u>

# Permit Application Coversheet

Date June 03, 2020

Project Name White Bear Lake High School South Gym Project Number 20-23

Applicant Name Tim Wald, ISD 624

Type of Development Institutional

## Property Description

This project is located at the existing White Bear Lake High School South campus off McKnight Road. The applicant is proposing to construct a new gym addition, reroute an existing access road, and associated stormwater and utilities improvements. The total site area is 1.1 acres. An infiltration basin is proposed to meet stormwater treatment requirements. Pretreatment will include a Rain Guardian inlet.

## Watershed District Policies or Standards Involved:

- |                                                                  |                                                                         |
|------------------------------------------------------------------|-------------------------------------------------------------------------|
| <input type="checkbox"/> <i>Wetlands</i>                         | <input checked="" type="checkbox"/> <i>Erosion and Sediment Control</i> |
| <input checked="" type="checkbox"/> <i>Stormwater Management</i> | <input type="checkbox"/> <i>Floodplain</i>                              |

## Water Quantity Considerations

The proposed stormwater management plan is sufficient to handle the runoff from the site.

## Water Quality Considerations

### *Short Term*

The proposed erosion and sediment control plan is sufficient to protect downstream water resources during construction.

### *Long Term*

The proposed stormwater management plan is sufficient to protect the long term quality of downstream water resources.

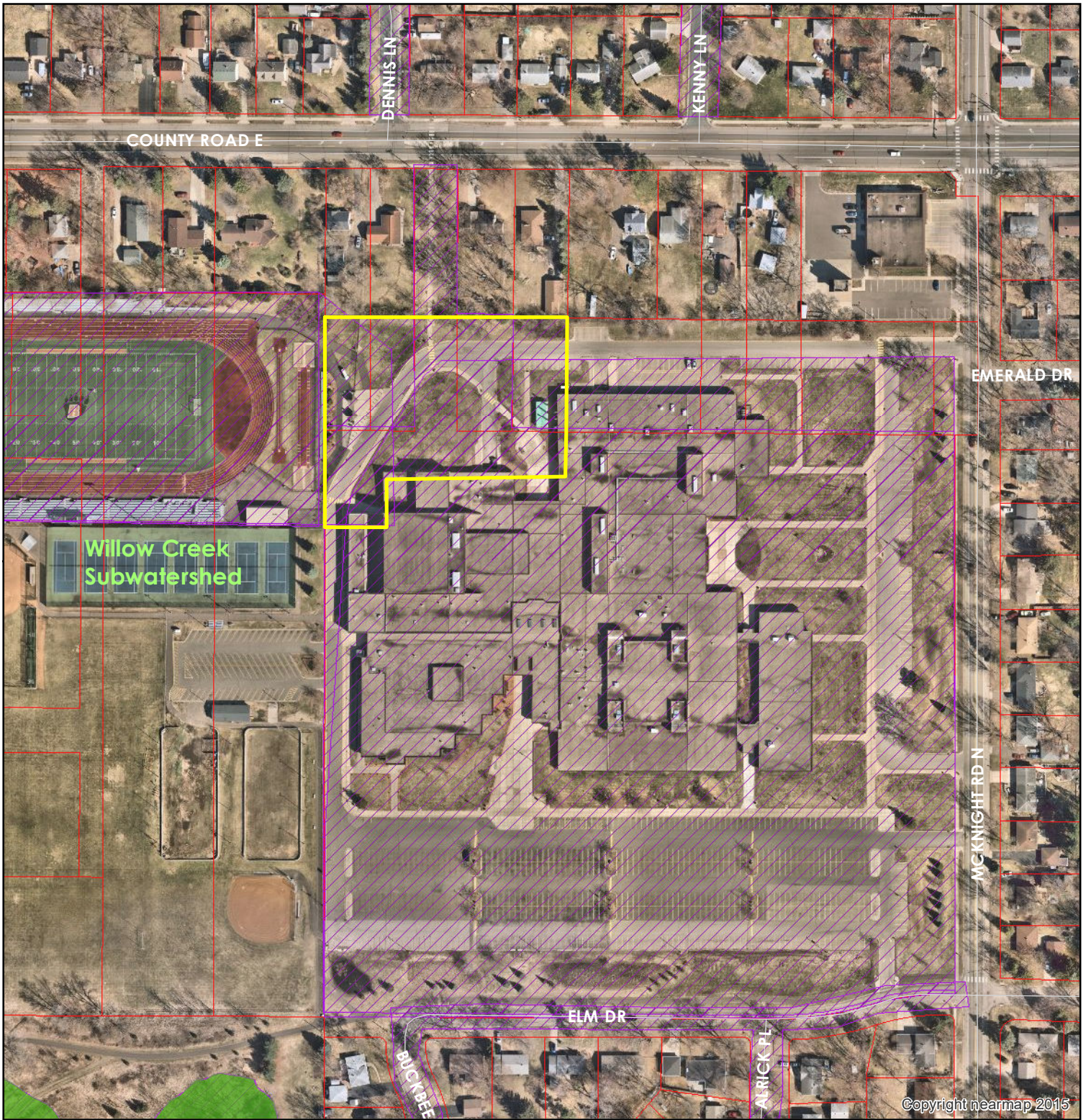
## Staff Recommendation

Staff recommends approval of this permit with the special provisions.

## Attachments:

- Project Location Map
- Project Grading Plan

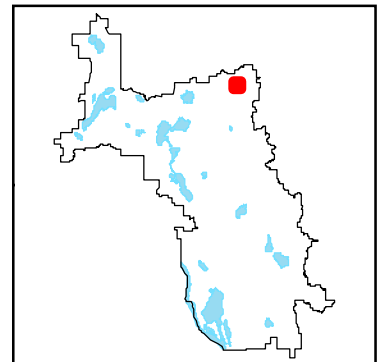
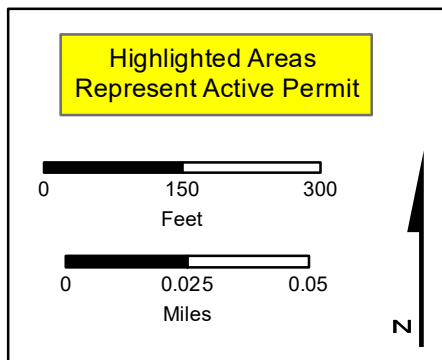
# #20-23 White Bear Lake High School South Gym



**Wetlands**

<span style="color: red;">■</span>	Manage A
<span style="color: green;">■</span>	Manage B
<span style="color: blue;">■</span>	Manage C
<span style="color: lightblue;">■</span>	Lake
<span style="color: gray;">■</span>	Sediment Pond
<span style="color: purple;">■</span>	Not Assessed

	RWMWD Boundary
	Flow Arrows
	Major Flow Arrows
	Subwatersheds
	Creeks
	Permits
	Ramsey Co Parcels



### Special Provisions

1. The applicant shall submit a revised narrative that confirms there are no wetland impacts anticipated as a result of this project.
2. The applicant shall submit a signed stormwater maintenance agreement.
3. The applicant shall submit a draft BMP Operations & Maintenance Plan. A final, as-built O&M Plan will be requested prior to permit closure.
4. The applicant shall add notes to the plans:
  - A. Providing direction on best practices for constructing the infiltration basin (i.e. limiting soil compaction, protecting the basin from sediment during construction activity, etc.)
  - B. “Notify Nicole Soderholm, Ramsey-Washington Metro Watershed District, at 651-792-7976 prior to beginning construction activity to schedule an initial SWPPP inspection.”
  - C. “Notify Nicole Soderholm, Ramsey-Washington Metro Watershed District, at 651-792-7976 at least 48 hours prior to construction of the infiltration basin.”
5. The applicant shall submit a revised erosion control plan that clearly denotes locations of proposed perimeter control, (including down-gradient curblines and around the infiltration basin once constructed) and stabilized construction entrance(s).
6. The applicant shall submit a construction detail for stabilized construction entrance(s).
7. The applicant shall submit final, signed construction plans.
8. The applicant shall submit a site-specific Stormwater Pollution Prevention Plan (SWPPP).
9. The applicant shall submit contact information for the trained erosion control coordinator responsible for implementing the SWPPP.
10. The applicant shall submit a copy of the approved Minnesota Pollution Control Agency's NPDES Construction Permit coverage for the project.



# Permit Application Coversheet

Date June 03, 2020

Project Name Maple Ridge Gas Station Project Number 20-24

Applicant Name Brittney Finch, Slate Asset Management

Type of Development Commercial/Retail

## Property Description

This project is located near Gervais Avenue and White Bear Avenue in the City of Maplewood. The applicant is proposing to partially redevelop an existing commercial area including construction of a gas station/convenience store and relocating drive accesses off White Bear Avenue. The total site area is 1.8 acres. Due to constrained site limits and the presence of fuel tanks, the applicant is proposing to pay \$100,000 into the Stormwater Impact Fund in lieu of onsite volume reduction. Drainage from proposed fueling areas will be routed to a proprietary hydrodynamic separator for oil and sediment capture. The project will result in a decrease in impervious area.

## Watershed District Policies or Standards Involved:

- |                                                                  |                                                                         |
|------------------------------------------------------------------|-------------------------------------------------------------------------|
| <input type="checkbox"/> <i>Wetlands</i>                         | <input checked="" type="checkbox"/> <i>Erosion and Sediment Control</i> |
| <input checked="" type="checkbox"/> <i>Stormwater Management</i> | <input type="checkbox"/> <i>Floodplain</i>                              |

## Water Quantity Considerations

The proposed stormwater management plan is sufficient to handle the runoff from the site.

## Water Quality Considerations

### *Short Term*

The proposed erosion and sediment control plan is sufficient to protect downstream water resources during construction.

### *Long Term*

The applicant is proposing to pay into the District's Stormwater Impact Fund in lieu of onsite treatment.

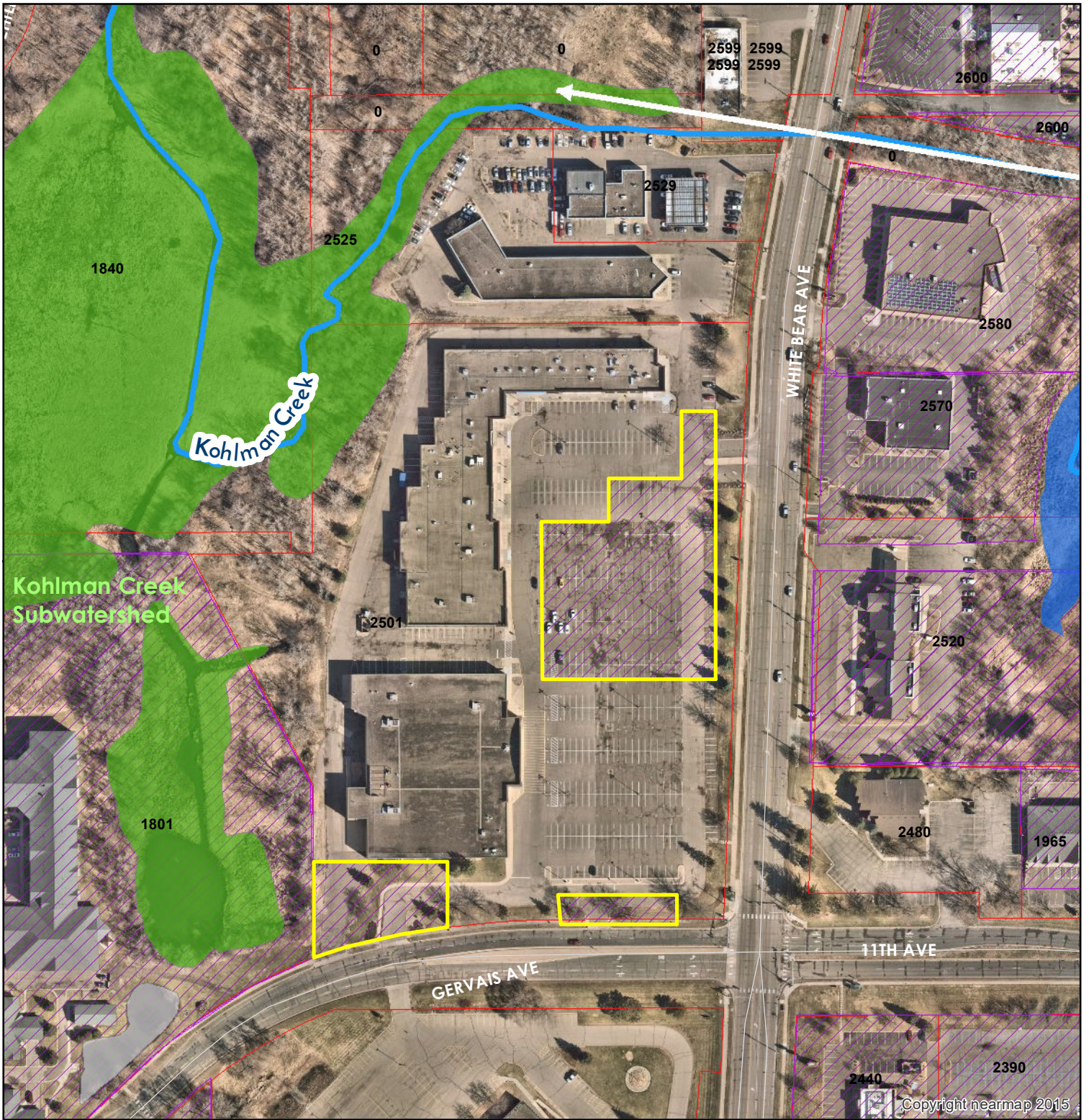
## Staff Recommendation

Staff recommends approval of this permit with the special provisions.

## Attachments:

- Project Location Map
- Project Grading Plan

# #20-24 Maple Ridge Gas Station



**Wetlands**

- Manage A
- Manage B
- Manage C
- Lake
- Sediment Pond
- Not Assessed

- RWMWD Boundary
- Flow Arrows
- ➔ Major Flow Arrows
- Subwatersheds
- Creeks
- Permits
- Ramsey Co Parcels

**Highlighted Areas  
Represent Active Permit**

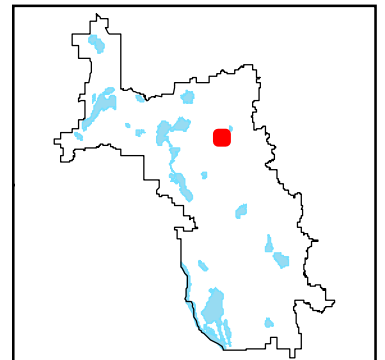
0      150      300

Feet

0      0.025      0.05

Miles

N

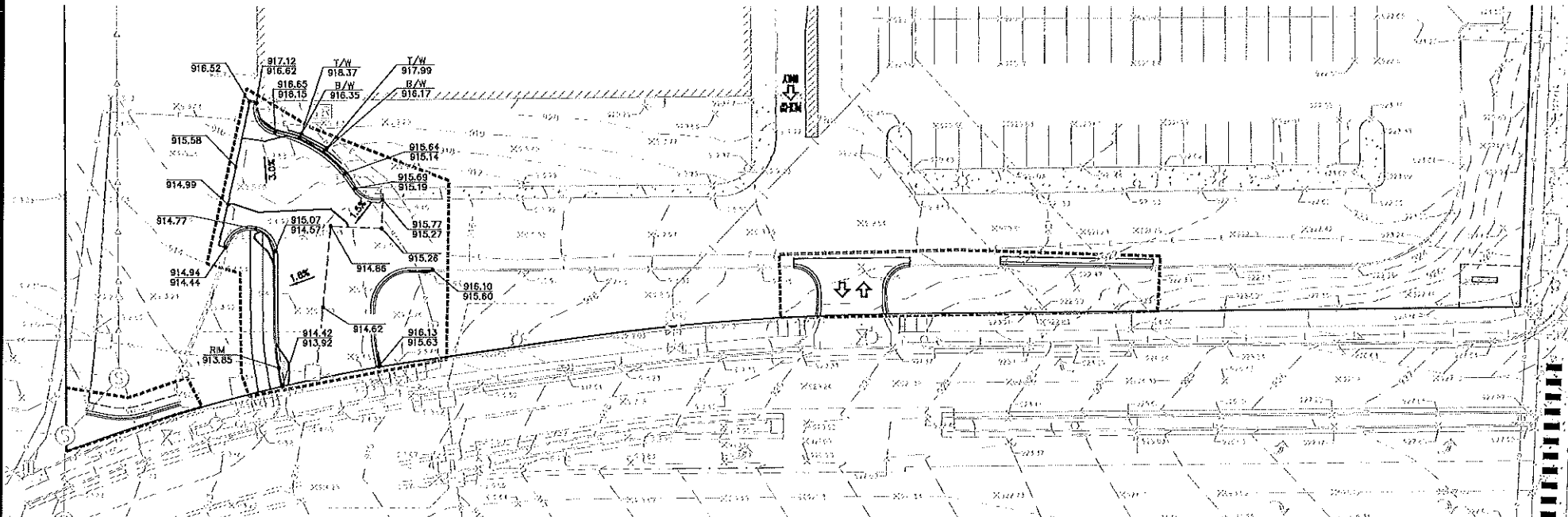
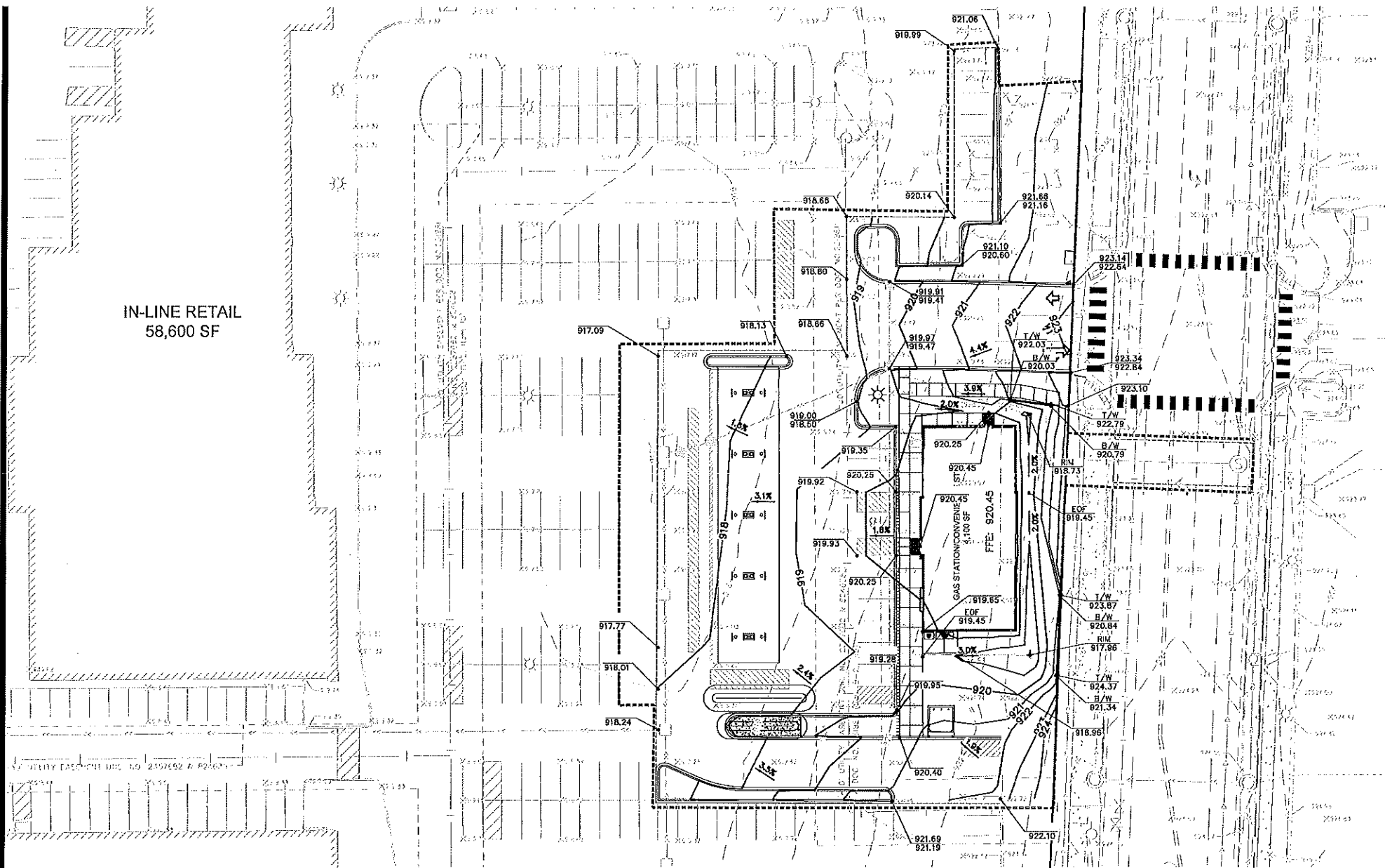


### Special Provisions

1. The applicant shall submit the escrow fee of \$9,000.
2. The applicant shall submit the Stormwater Impact Fund payment of \$100,000. An invoice will be provided.
3. The applicant shall add notes to the plans:
  - A. Notify Nicole Soderholm, Ramsey-Washington Metro Watershed District, at 651-792-7976 prior to beginning construction activity to schedule an initial SWPPP inspection.
  - B. The specified erosion and sediment control practices are the minimum. Additional practices may be required during the course of construction.
4. The applicant shall submit a revised erosion control plan that clearly denotes locations of proposed perimeter control, inlet protection, and stabilized construction entrance(s).
5. The applicant shall submit final, signed plans.
6. The applicant shall submit a site-specific Stormwater Pollution Prevention Plan (SWPPP).
7. The applicant shall submit contact information for the trained erosion control coordinator responsible for implementing the SWPPP.
8. The applicant shall submit a copy of the approved Minnesota Pollution Control Agency's NPDES Construction Permit coverage for the project.



Drawing name: C:\paw\_working\projectwise\alliant\0156027\200052\grad.dwg May 12, 2020 4:32pm



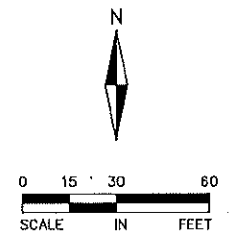
**GRADING NOTES:**

1. ALL FINISHED GRADES SHALL SLOPE AWAY FROM PROPOSED BUILDINGS.
2. THE CONTRACTOR SHALL KEEP THE ADJACENT ROADWAYS FREE OF DEBRIS AND PREVENT THE OFF-SITE TRACKING OF SOIL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MAPLEWOOD AND WASHINGTON METRO WATERSHED DISTRICT.
3. NOTIFY GOPHER STATE ONE CALL, AT (800)252-1166, 48 HOURS PRIOR TO START OF CONSTRUCTION.
4. ALL IMPROVEMENTS TO CONFORM WITH THE CITY OF MAPLEWOOD CONSTRUCTION STANDARD SPECIFICATIONS, LATEST EDITION.
5. ROCK CONSTRUCTION ENTRANCES SHALL BE PROVIDED AT ALL CONSTRUCTION ACCESS POINTS.
6. REFER TO GEOTECHNICAL REPORT AND PROJECT MANUAL, FOR SOIL CORRECTION REQUIREMENTS AND TESTING REQUIREMENTS.
7. STRIP TOPSOIL PRIOR TO ANY CONSTRUCTION. REUSE STOCKPILE ON SITE. STOCKPILE PERIMETERS MUST BE PROTECTED WITH SILT FENCE.
8. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
9. IMMEDIATELY FOLLOWING GRADING OF (3:1 OR GREATER) SIDE SLOPES AND DRAINAGE SWALES, WOOD FIBER BLANKET OR OTHER APPROVED SOIL STABILIZING METHOD (APPROVED BY ENGINEER) SHALL BE APPLIED OVER APPROVED SEED MIXTURE AND A MINIMUM OF 4" TOPSOIL.
10. THE GENERAL CONTRACTOR MUST DISCUSS DEWATERING PLANS WITH ALL SUBCONTRACTORS TO VERIFY NPDES REQUIREMENTS. IF DEWATERING IS REQUIRED DURING CONSTRUCTION, CONTRACTOR SHOULD CONSULT WITH EROSION CONTROL INSPECTOR AND ENGINEER TO DETERMINE APPROPRIATE METHOD.
11. REFER TO STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ALL EROSION AND SEDIMENT CONTROL DEVICE LOCATION, DESCRIPTIONS, NOTES AND DETAILS INCLUDING CONCRETE WASHOUT STATION INSTRUCTIONS.

**GRADING LEGEND:**

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- FFE FINISH FLOOR ELEVATION
- DIRECTION OF DRAINAGE
- EMERGENCY OVERFLOW ROUTING
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPOSED LIMITS OF CONSTRUCTION
- PROPOSED EASEMENT
- PROPERTY LINE
- PROPOSED PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- DRAINAGE DIVIDE
- INLET PROTECTION
- EROSION CONTROL FENCE
- ROCK CONSTRUCTION ENTRANCE

NOT REVIEW ONLY  
**PRELIMINARY**  
NOT FOR CONSTRUCTION



**ALLIANT**  
733 Marquette Avenue  
Suite 700  
Minneapolis, MN 55402  
612.758.3080  
www.alliant-inc.com

**PUD SUBMITTAL**  
 2515 WHITE BEAR AVE  
 MAPLEWOOD, MN  
**MAPLE RIDGE SHOPPING CENTER**  
**GRADING AND EROSION CONTROL PLAN**

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

DAVE NASH, PE

Date \_\_\_\_\_ License No. \_\_\_\_\_

**QUALITY ASSURANCE/CONTROL**

BY \_\_\_\_\_ DATE \_\_\_\_\_

DATE ISSUE

04/23/20 CITY SUBMITTAL

05/13/20 WATERSHED SUBMITTAL

**PROJECT TEAM DATA**

DESIGNED: DMS  
DRAWN: KOB  
PROJECT NO: 220-0052

**C-4.0**

# Permit Application Coversheet

Date June 03, 2020

Project Name Suzanne Gramsie Stormwater Improvements Project Number 20-25

Applicant Name Mark Maloney, City of Shoreview

Type of Development Drainage

## Property Description

This project is located on both sides of Gramsie Road near Grass Lake, Suzanne Pond, and NW Gramsie Pond. The applicant is proposing to complete drainage improvements in response to persistent high water conditions in the area. Improvements include creation of a hydraulic connection between NW Gramsie Pond and Suzanne Pond with a pipe and valve or gate to better control water surface elevations in both water bodies. The city is also proposing to upsize existing pump capacity at the Suzanne Pond lift station by replacing with a larger forcemain between Suzanne Pond and Grass Lake. To alleviate recurrent road flooding, the project will involve raising a section of Gramsie Road east of Suzanne Pond to a minimum elevation of 885.5'. The total disturbed area is 0.84 acre. The project results in fill below the 100-year water surface elevation of Grass Lake. Compensatory storage is proposed south of the road to offset the fill placement. Wetland Conservation Act (WCA) approval was granted on 5/19/2020 (#20-08 WCA) for temporary and permanent wetland impacts. Temporarily disturbed wetland areas will be restored with a native seed mix.

## Watershed District Policies or Standards Involved:

- |                                                       |                                                                         |
|-------------------------------------------------------|-------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> <i>Wetlands</i>   | <input checked="" type="checkbox"/> <i>Erosion and Sediment Control</i> |
| <input type="checkbox"/> <i>Stormwater Management</i> | <input checked="" type="checkbox"/> <i>Floodplain</i>                   |

## Water Quantity Considerations

The proposed grading plan results in no adverse floodplain impacts.

## Water Quality Considerations

### *Short Term*

The proposed erosion and sediment control plan is sufficient to protect downstream water resources during construction.

### *Long Term*

There are no long term water quality considerations.

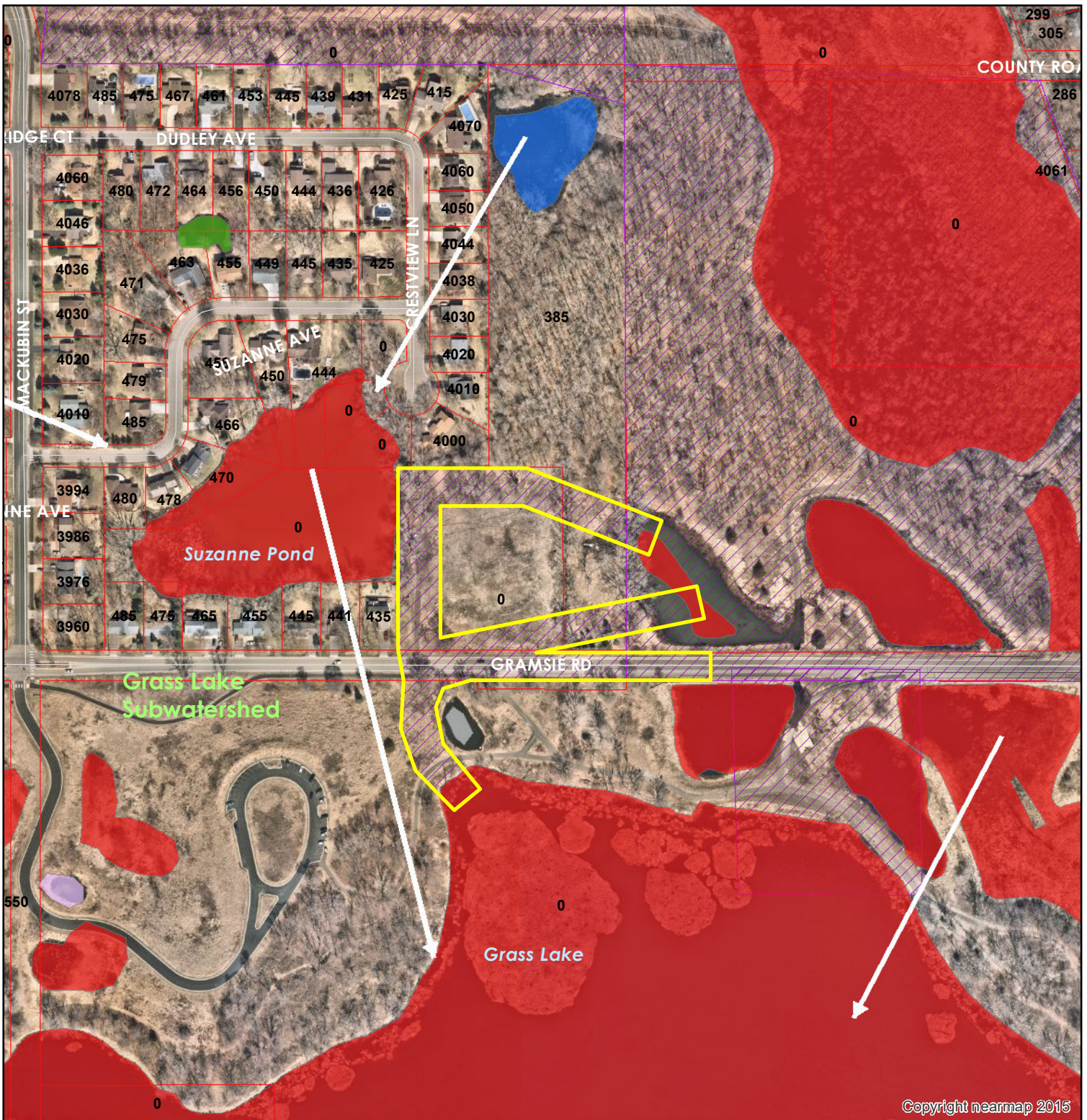
## Staff Recommendation

Staff recommends approval of this permit with the special provision.

## Attachments:

- Project Location Map
- Project Grading Plan

# #20-25 Suzanne Gramsie Stormwater Improvements



Copyright nearmap 2015

**Wetlands**

- Manage A
- Manage B
- Manage C
- Lake
- Sediment Pond
- Not Assessed

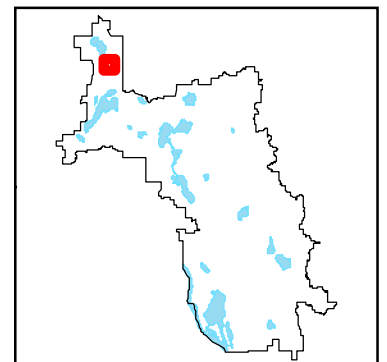
- RWMWD Boundary
- Flow Arrows
- ➔ Major Flow Arrows
- Subwatersheds
- Creeks
- Permits
- Ramsey Co Parcels

**Highlighted Areas  
Represent Active Permit**

0 250 500  
Feet

0 0.0375 0.075  
Miles

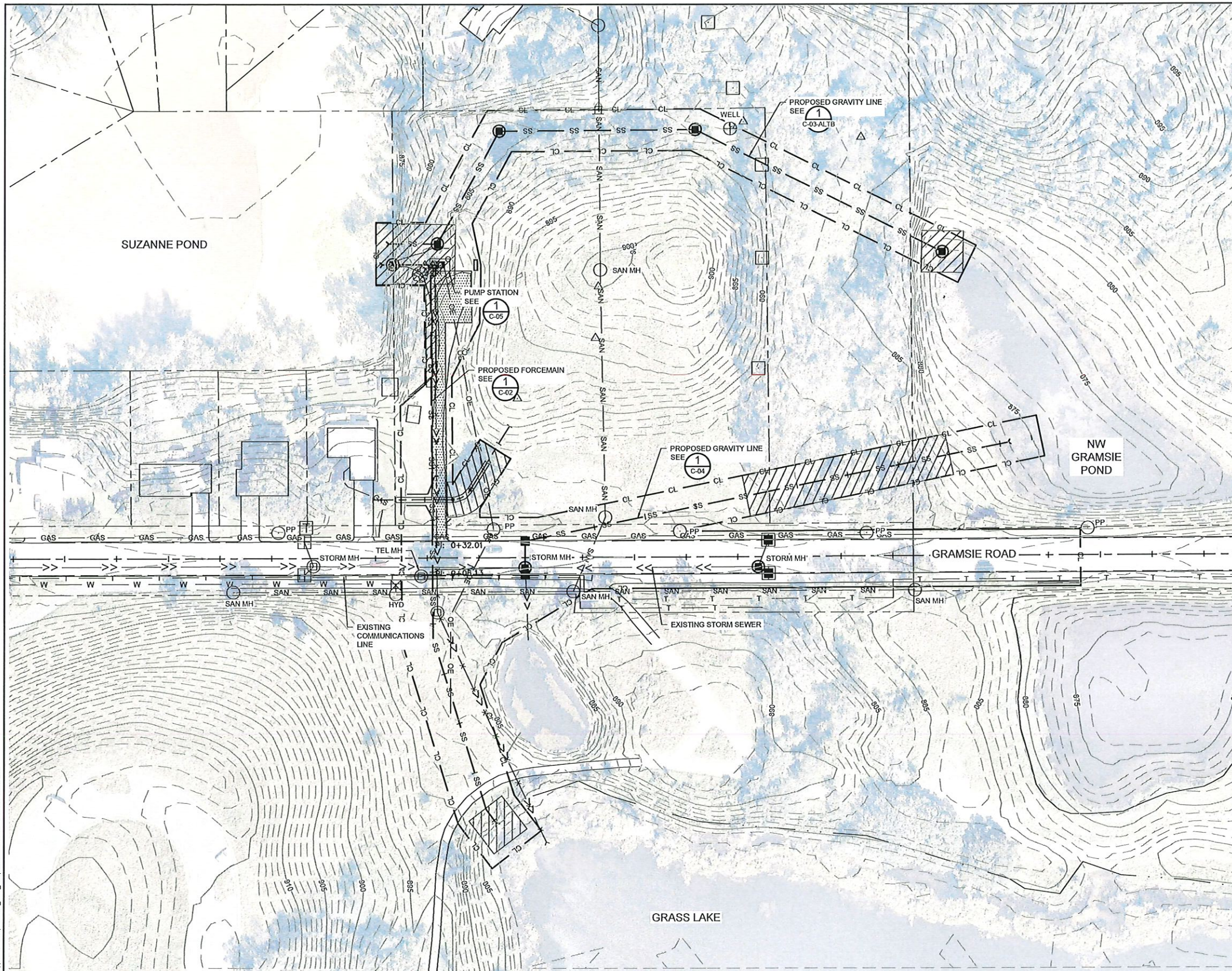
N



20-25

### Special Provisions

1. The applicant shall submit the final, signed plans.



**LEGEND**

- △ GPS CONTROL POINT
  - LATH (PROPOSED CENTERLINE OF BIT PATH)
  - POWER POLE
  - GUY WIRE
  - LIGHT POLE
  - HYDRANT
  - ⊗ GATE VALVE
  - SIGN POST
  - DECIDUOUS TREE
  - CONIFEROUS TREE
  - SANITARY MANHOLE
  - STORM SEWER MANHOLE
  - FIBER OPTIC BOX
  - ELECTRICAL BOX
  - COMMUNICATIONS BOX
  - WELL
- 
- X --- X --- PROPERTY LINE
  - FENCE LINE
  - BACK OF CURB LINE
  - FLOW LINE
- 
- T T COMMUNICATIONS LINE
  - SAN SAN SANITARY SEWER LINE
  - W W STORM SEWER LINE
  - SS SS WATERMAIN LINE
  - PROPOSED STORM SEWER
- 
- 800 MAJOR CONTOUR
  - 801 MINOR CONTOUR
  - WATER'S EDGE
- 
- CL CL CONSTRUCTION LIMITS
  - ▨ CLEAR AND GRUB LIMITS (ESTIMATED)
  - ▨ NEW GRAVEL SURFACE

1 PLAN: SITE  
 0 50 100  
 SCALE IN FEET

CADD USER: Geneth V. Becker FILE: M:\DESIGN\23621317\_00\23621317\_00\_38\FRM-C-01.DWG PLOT SCALE: 1/2"=1'-0" PLOT DATE: 5/11/2020 7:35 PM  
 BARR: M:\AutoCAD 2011\AutoCAD 2011 Support\NewTemplate\Barr\_2011\_Template.dwt Plot: 1: 10/05/2010 14:03:50

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION
2	GWB	ELA	JMA	05/13/20	REMOVE ALTA
1	GGN	ELA	JMA	03/16/20	ADD ALT. STORM SEWER ALIGNMENT

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.  
 PRINTED NAME: JULIA MACE-KOVIC  
 SIGNATURE: \_\_\_\_\_  
 DATE: 05/13/2020 LICENSE #: 47522

CLIENT	BID	CONSTRUCTION	RELEASED TO FOR	DATE RELEASED
11/15/13	02/07/20		A B C 0 1 2 3	

**BARR**  
 Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
 Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (652) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	10/22/2019
Drawn	JAMA
Checked	MTS
Designed	MTS
Approved	JMA

CITY OF SHOREVIEW  
 SHOREVIEW, MINNESOTA

SUZANNE GRAMSIE STORMWATER IMPROVEMENTS  
 SHOREVIEW, MINNESOTA  
 SITE PLAN

BARR PROJECT No.	23621317.00
CLIENT PROJECT No.	20-01
DWG. No.	C-01
REV. No.	2





<input type="checkbox"/> Attachment(s) (specify): <input checked="" type="checkbox"/> Summary: <b>Based on the wetlands' historical types and boundaries prior to flooding over the last few years, the proposed activity will not drain the wetlands nor change the historical biological functions of these areas. 320 square feet of permanent impact due to riprap placement meets exemption requirements under Subpart 6. 7,082 square feet of impact are temporary and meets the no loss requirements under Part H. Excavated areas will be backfilled to pre-existing elevations and restored with a native seed mix. Due to flooding of the wetlands in question, wetland boundaries were conservatively estimated based on historical imagery, soil maps, and a previous delineation approved at 'Grass Lake' in 2017.</b>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<sup>1</sup> Findings must consider any TEP recommendations.

**Attached Project Documents**

<input checked="" type="checkbox"/> Site Location Map <input checked="" type="checkbox"/> Project Plan(s)/Descriptions/Reports (specify):
-------------------------------------------------------------------------------------------------------------------------------------------

**Appeals of LGU Decisions**

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for \$500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator  
 Minnesota Board of Water & Soils Resources  
 520 Lafayette Road North  
 St. Paul, MN 55155  
[travis.germundson@state.mn.us](mailto:travis.germundson@state.mn.us)

Does the LGU have a local appeal process applicable to this decision?

Yes<sup>1</sup>       No

<sup>1</sup>If yes, all appeals must first be considered via the local appeals process.

**Local Appeals Submittal Requirements** (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

--

**Notice Distribution (include name)**

*Required on all notices:*

<input checked="" type="checkbox"/> SWCD TEP Member: <b>Michael Schumann (Ramsey County)</b>	<input checked="" type="checkbox"/> BWSR TEP Member: <b>Ben Meyer</b>
<input type="checkbox"/> LGU TEP Member (if different than LGU contact):	
<input checked="" type="checkbox"/> DNR Representative: <b>Leslie Parris, Jason Spiegel</b>	
<input type="checkbox"/> Watershed District or Watershed Mgmt. Org.:	
<input checked="" type="checkbox"/> Applicant (notice only): <b>Tom Wesolowski</b>	<input checked="" type="checkbox"/> Agent/Consultant (notice only): <b>Erin Anderson-Wenz</b>

*Optional or As Applicable:*

<input checked="" type="checkbox"/> Corps of Engineers:	
<input type="checkbox"/> BWSR Wetland Mitigation Coordinator (required for bank plan applications only):	
<input type="checkbox"/> Members of the Public (notice only):	<input type="checkbox"/> Other:



<b>Signature:</b> <i>Nicole Soderholm</i>	<b>Date:</b> 5/19/2020
----------------------------------------------	---------------------------

This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.

## Stewardship Grant Application Summary

**Project Name:** White Bear Lake Curb Cut Rain Gardens

**Application Number** 20-21 CS

**Board Meeting Date:** 6/3/2020

**Applicant Name:** Connie Taillon

**Residential**

**Commercial/Government**

### Project Overview:

This project is located at two residential properties in the City of White Bear Lake. The City will be doing a mill and overlay project on these streets this summer. As part of the project, the City offered to install curb-cuts free of charge to landowners and RWMWD would fund rain garden design and installation. There were 16 properties interested in a rain garden, but due to various site constraints, only these two locations were feasible.

This project is located in a priority subwatershed and is eligible for 100% coverage up to \$100,000.

### BMP type(s):

Rain Garden(2)

### Grant Request:

\$18,000.00

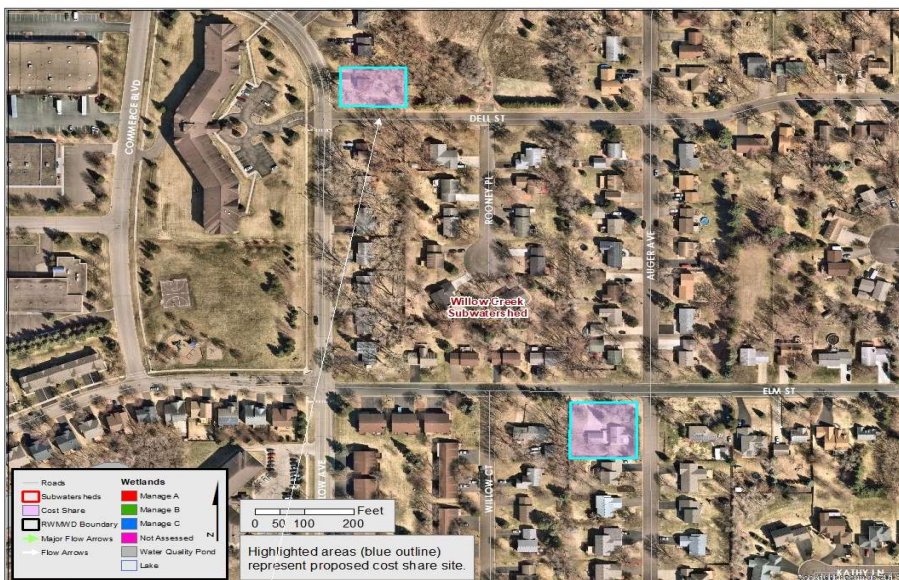
### Recommendation:

Staff recommends approval of this application.

### Subwatershed:

Willow Creek

### Location Maps:



## Stewardship Grant Application Summary

**Project Name:** Bauer

**Application Number** 20-22 CS

**Board Meeting Date:** 6/3/2020

**Applicant Name:** Paul and Lee Bauer

**Residential**

**Commercial/Government**

### Project Overview:

This project is located off Brooks Ave and Dunlap St in the City of Roseville. The applicant is a Master Water Steward pursuing a capstone project to install a native planting buffer and bee lawn adjacent to Willow Pond. The applicant already has existing native plantings that this project will tie into. They are also pursuing the possibility of installing a rain garden on their property which would be handled as a separate application. This project is eligible for 100% funding up to \$15,000.

### BMP type(s):

Shoreline Restoration(1)

### Grant Request:

\$13,000.00

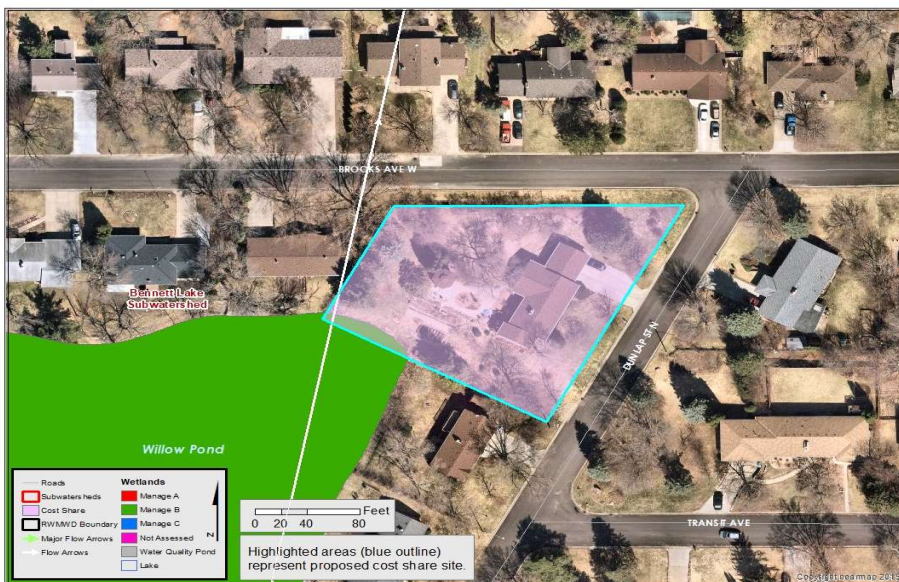
### Recommendation:

Staff recommends approval of this application.

### Subwatershed:

Bennett Lake

### Location Maps:



RAMSEY COUNTY SWCD  
 1425 PAUL KIRKWOLD DR  
 ARDEN HILLS, MN 55112  
 651-266-7274  
 www.ramseycounty.us

PROJECT: BAUER RESIDENCE  
 LOCATION:  
 2479 DUNLAP ST N  
 ROSEVILLE, MN 55113  
 WATERSHED DISTRICT:



DESIGNER: MPS  
 DATE: 01/31/2017  
 REVISION: 05/01/2020  
 REVISION:  
 REVISION:  
 REVISION:  
 CHECKED BY:  
 TAA:

NOTES:  
 -WAIT 7-10 DAYS AFTER HERBICIDE TREATMENT PRIOR TO PLANTING  
 -PLANT SPECIES & QUANTITY SUBSTITUTIONS SHALL RECEIVE APPROVAL FROM SWCD STAFF PRIOR TO PURCHASE/INSTALL  
 -AQUATIC PLANTS SHALL BE PLANTED END OF MAY-JUNE; SHALL NOT BE PLANTED LATER THAN AUGUST 31. DO NOT PLANT DURING HIGH-WATER CONDITIONS

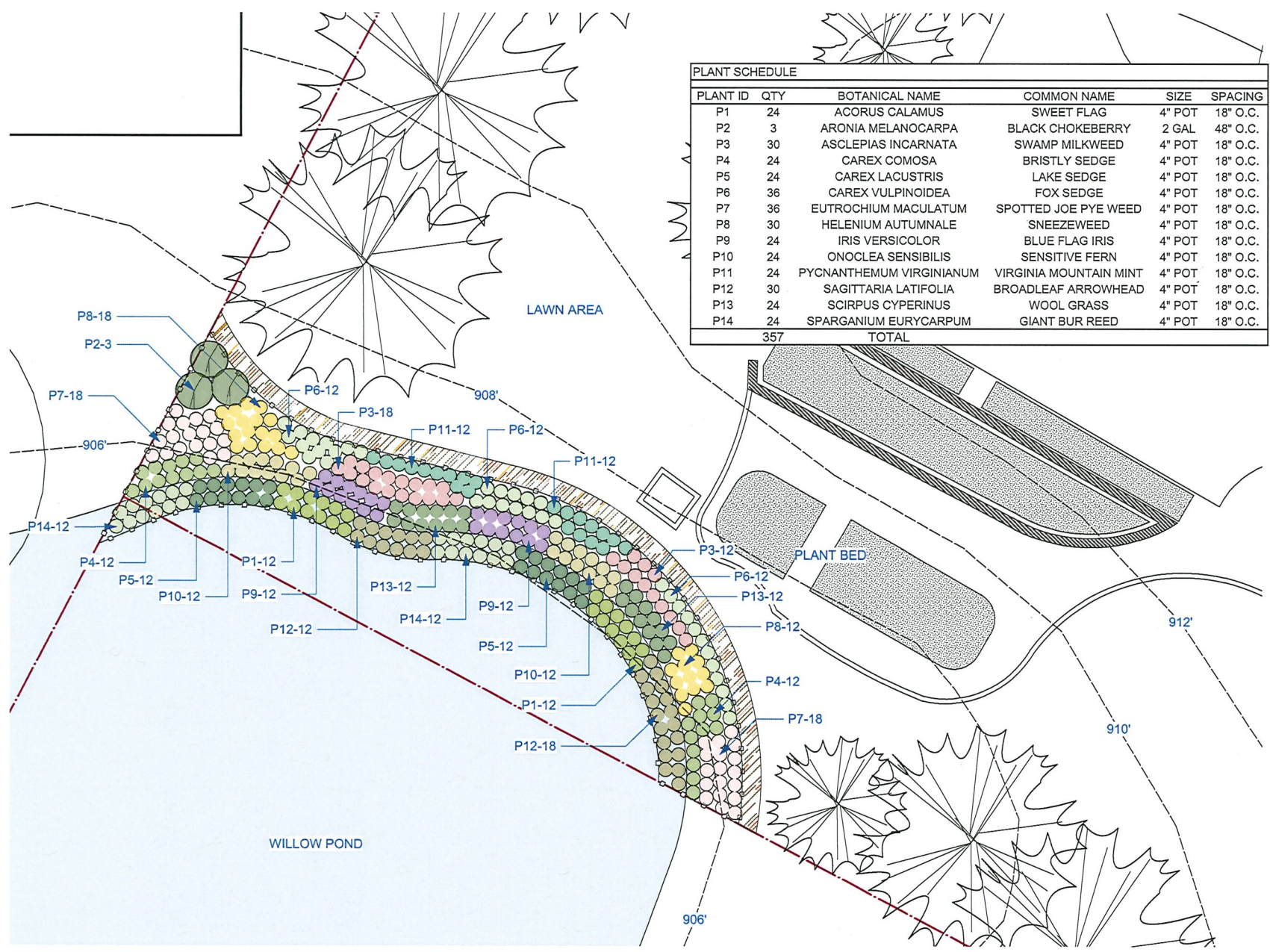
ORIGINAL SHEET SIZE: 11" x 17"  
 SCALE: 1"=10'0"

SITE PLANTING



L400

PLANT SCHEDULE					
PLANT ID	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
P1	24	ACORUS CALAMUS	SWEET FLAG	4" POT	18" O.C.
P2	3	ARONIA MELANOCARPA	BLACK CHOKEBERRY	2 GAL	48" O.C.
P3	30	ASCLEPIAS INCARNATA	SWAMP MILKWEED	4" POT	18" O.C.
P4	24	CAREX COMOSA	BRISTLY SEDGE	4" POT	18" O.C.
P5	24	CAREX LACUSTRIS	LAKE SEDGE	4" POT	18" O.C.
P6	36	CAREX VULPINOIDEA	FOX SEDGE	4" POT	18" O.C.
P7	36	EUTROCHUM MACULATUM	SPOTTED JOE PYE WEED	4" POT	18" O.C.
P8	30	HELENIUM AUTUMNALE	SNEEZEWEED	4" POT	18" O.C.
P9	24	IRIS VERSICOLOR	BLUE FLAG IRIS	4" POT	18" O.C.
P10	24	ONOCLEA SENSIBILIS	SENSITIVE FERN	4" POT	18" O.C.
P11	24	PYCNANTHEMUM VIRGINIANUM	VIRGINIA MOUNTAIN MINT	4" POT	18" O.C.
P12	30	SAGITTARIA LATIFOLIA	BROADLEAF ARROWHEAD	4" POT	18" O.C.
P13	24	SCIRPUS CYPERINUS	WOOL GRASS	4" POT	18" O.C.
P14	24	SPARGANIUM EURYCARPUM	GIANT BUR REED	4" POT	18" O.C.
357		TOTAL			





# Consent Agenda Action Item

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**Board Meeting Date:** June 3, 2020

**Agenda Item No:** 3E

**Preparer:** Tina Carstens, Administrator

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**Item Description:** East St. Paul Target Store BMP Retrofit Accept Plans and Solicit Bids

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**Background:**

See attached memo for more information.

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**Applicable District Goal and Action Item:**

**Goal: Achieve quality surface water** – The District will maintain or improve surface water quality to support healthy ecosystems and provide the public with a wide range of water-based benefits.

**Action Item:** Implement retrofit water quality improvement projects.

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**Staff Recommendation:**

Staff recommends approval of the preliminary design, estimated costs, and proposed project schedule, and direct staff to finalize the design and bidding documents and solicit bid proposals.

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**Financial Implications:**

This project will be funded through the Targeted Retrofit Fund where there are sufficient funds available.

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**Board Action Requested:**

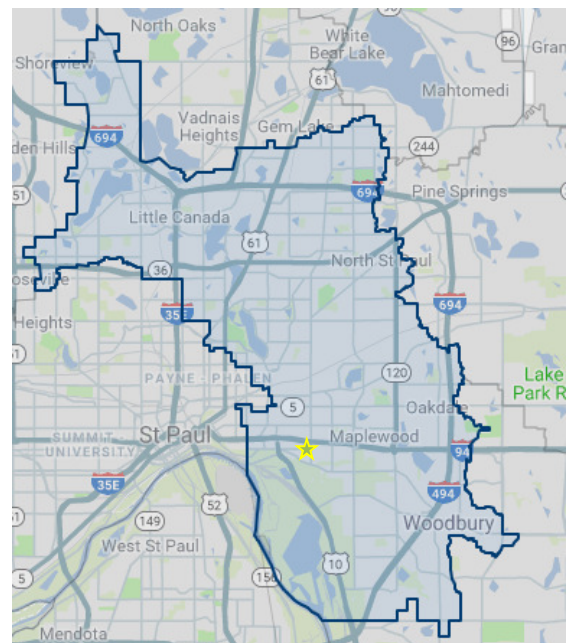
Approve the preliminary design, estimated costs, and proposed project schedule, and direct staff to finalize the design and bidding documents and solicit bid proposals.

## Memorandum

**To:** Ramsey-Washington Metro Watershed District Board of Managers  
**From:** Barr Engineering Co.  
**Subject:** Target- East St. Paul Stormwater Retrofits – Request Board Authorization to Solicit Bids for Construction  
**Date:** May 27, 2020  
**Project:** 23/62-1328.00  
**c:** Tina Carstens – RWMWD Administrator

Construction documents including bidding documents, technical specifications, and construction drawings have been prepared for the Target- East St. Paul Stormwater Retrofits project. The design consists of seven surface rain gardens and a tree trench feature. The stormwater features have been designed so that 57 percent of the parking lot will be tributary to a stormwater feature (rain garden or tree trench) and that 0.74 inches of stormwater will be captured on average across the site.

The engineer's opinion of cost is shown in the Table 1. The opinion of probable cost provided is made on the basis of Barr Engineering's experience and qualifications and represents our best judgment as experienced and qualified professionals familiar with the project. Because we have no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor's methods of determining prices, or over competitive bidding or market conditions, Barr Engineering cannot and does not guarantee that proposals, bids, or actual costs will not vary from the opinion of probable cost presented.



**East St. Paul Target Project Location**

**Table 1. Engineer’s Opinion of Probable Cost**

Item	100% Submittal	Notes
CONSTRUCTION SUBTOTAL	<b>\$679,000</b>	<b>1,2,3,4,5,6,7,8</b>
CONSTRUCTION CONTINGENCY (10%)	\$68,000	1,4,8
<b>ENGINEER’S OPINION OF PROBABLE CONSTRUCTION COST</b>	<b>\$747,000</b>	<b>1,2,3,4,5,6,7,8</b>
ENGINEERING SUBTOTAL	\$45,000	9
<b>ENGINEER’S OPINION OF TOTAL PROBABLE PROJECT COST + ENGINEERING</b>	<b>\$792,000</b>	9

Notes:

- 1 Quantities based on Design Work Completed (100%).
- 2 Unit Prices Based on Information Available at This Time.
- 3 Limited Soil Boring and Field Investigation Information Available.
- 4 This design level (Class 1, 70-100% design completion per ASTM E 2516-11) cost estimate is based on 90% designs, alignments, quantities and unit prices. Costs will change with further design. Time value-of-money escalation costs are not included. A construction schedule is not available at this time. Contingency is an allowance for the net sum of costs that will be in the Final Total Project Cost at the time of the completion of design, but are not included at this level of project definition. The estimated accuracy range for the Total Project Cost as the project is defined is -5% to +10%. The accuracy range is based on professional judgement considering the level of design completed, the complexity of the project and the uncertainties in the project as scoped. The contingency and the accuracy range are not intended to include costs for future scope changes that are not part of the project as currently scoped or costs for risk contingency. Operation and Maintenance costs are not included.
- 5 Estimate assumes that projects will not be located on contaminated soil.
- 6 Estimate costs are to design, construct, and permit each alternative. The estimated costs do not include maintenance, monitoring or additional tasks following construction.
- 7 Furnish and Install pipe cost per linear foot includes all trenching, bedding, backfilling, compaction, and disposal of excess materials.
- 8 Estimate costs are reported to nearest thousand dollars.
- 9 Engineering includes estimated fees associated with project bidding and construction administration and observation.

This opinion of cost results in an annual cost per pound of phosphorus removed of approximately \$12,000 per lb total phosphorus (TP) removed per year.

**Request for Board of Managers**

It is requested that the RWMWD Board of Managers authorize Barr Engineering Co. to solicit bids from contractors to construct the Target- East St. Paul Stormwater Retrofits project as designed and shown on the construction documents. If the Board of Managers authorizes solicitation of bids to construct the Target- East St. Paul Stormwater Retrofits Project, the following tasks would be completed:



**To:** Ramsey-Washington Metro Watershed District Board of Managers  
**From:** Barr Engineering Co.  
**Subject:** Target- East St. Paul Stormwater Retrofits – Request Board Authorization to Solicit Bids for Construction  
**Date:** May 27, 2020  
**Page:** 3

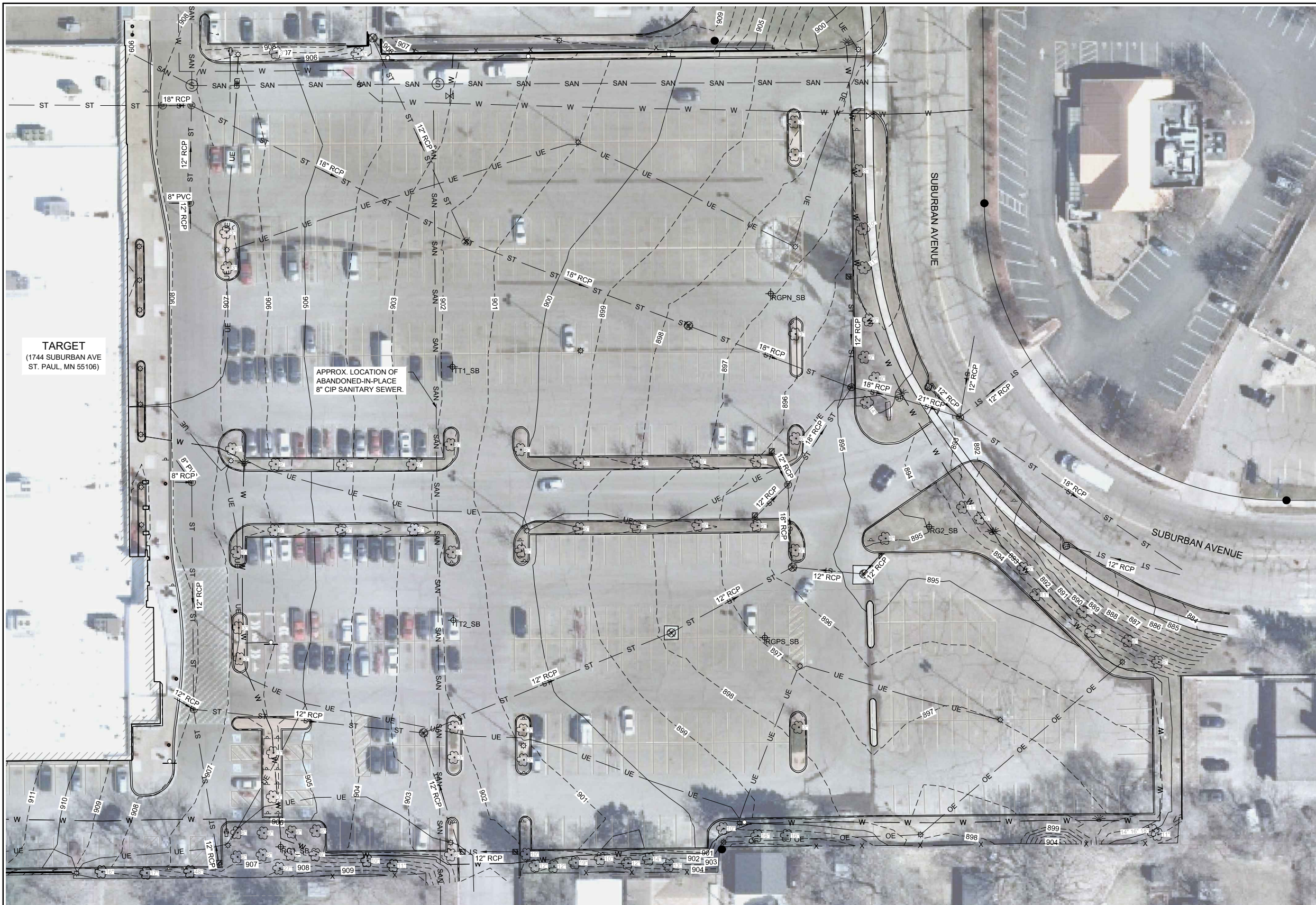
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- June 3, 2020 – Board of Managers authorizes Barr Engineering Co. to solicit bids
- June 10, 2020 (estimated) – Advertise in construction bulletin and local papers
- June 26, 2020 (estimated)– Open bids
- July 1, 2020 – Present bid results to the Board

#### Attachments

- Drawings for the Target-East St. Paul Stormwater Retrofits project
- Table of Contents for the Project Specifications





- EXISTING CONDITIONS LEGEND**
- 890 — 5 FT CONTOUR
  - - - 889 - - - 1 FT CONTOUR
  - - - - - PROPERTY LINE
  - ST — STORM SEWER
  - SAN — SANITARY SEWER
  - G — GAS LINE
  - OE — OVERHEAD UTILITY
  - UE — UNDERGROUND ELECTRIC
  - W — WATER MAIN
  - X — FENCELINE
  - — CURB

- ⊙ STORM SEWER MANHOLE
- ⊠ STORM SEWER CATCH BASIN
- ⊙ SANITARY SEWER MANHOLE
- ⊕ FIRE HYDRANT
- ⊗ POTABLE WATER VALVE
- ⊙ IRRIGATION SPRINKLER
- ⊙ SIGN
- ⊙ LIGHT POLE
- BOLLARDS
- ⊙ 6" DECIDUOUS TREE - DIAMETER
- ⊙ 6" CONIFEROUS TREE - DIAMETER
- ⊙ SOIL BORING

**TARGET**  
(1744 SUBURBAN AVE  
ST. PAUL, MN 55106)

APPROX. LOCATION OF  
ABANDONED-IN-PLACE  
8" CIP SANITARY SEWER

- NOTES:**
- 1) CONFIRM LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. NOTIFY OWNER OF ANY DISCREPANCIES.
  - 2) UTILITY LOCATIONS ARE APPROXIMATE. ALL UTILITIES IN THE PROJECT AREA SHOULD BE MARKED AND POTHOLED PRIOR TO EXCAVATION.
  - 3) UTILITY RELOCATION TO BE COORDINATED BY CONTRACTOR PRIOR TO CONSTRUCTION
  - 4) PROTECT ALL EXISTING UTILITIES DURING DEMOLITION AND CONSTRUCTION.

**PROJECT COORDINATE SYSTEM:**  
HORIZONTAL: RAMSEY COUNTY COORDINATES, NAD83, 2011 ADJUSTMENT  
VERTICAL: NAVD88

1 PLAN: EXISTING CONDITIONS 0 30 60 SCALE IN FEET

PRELIMINARY  
DRAFT

CADD USER: Garret W. Breakey FILE: M:\DESIGN\23621328\02\2362132800\_ESPT\_C1\_0\_EXCONDITIONS.DWG PLOT SCALE: 1/2" PLOT DATE: 5/1/2020 4:50 PM

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.

PRINTED NAME: Leslie A. Dell'Angelo  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	05/01					
BID						
CONSTRUCTION						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						

**BARR**  
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale: AS SHOWN  
Date: 05/01/2020  
Drawn: GWB  
Checked: KJN2  
Designed: BARR  
Approved: LAD

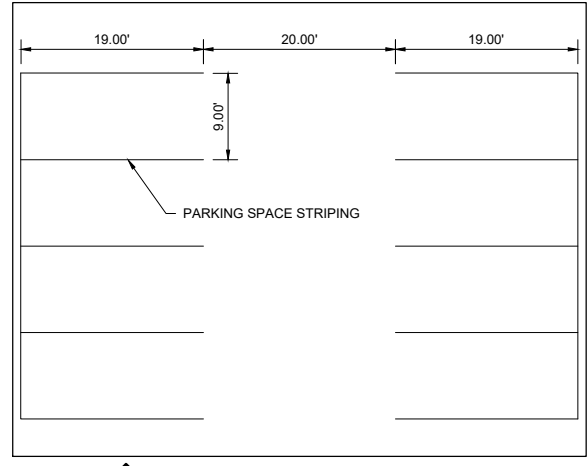
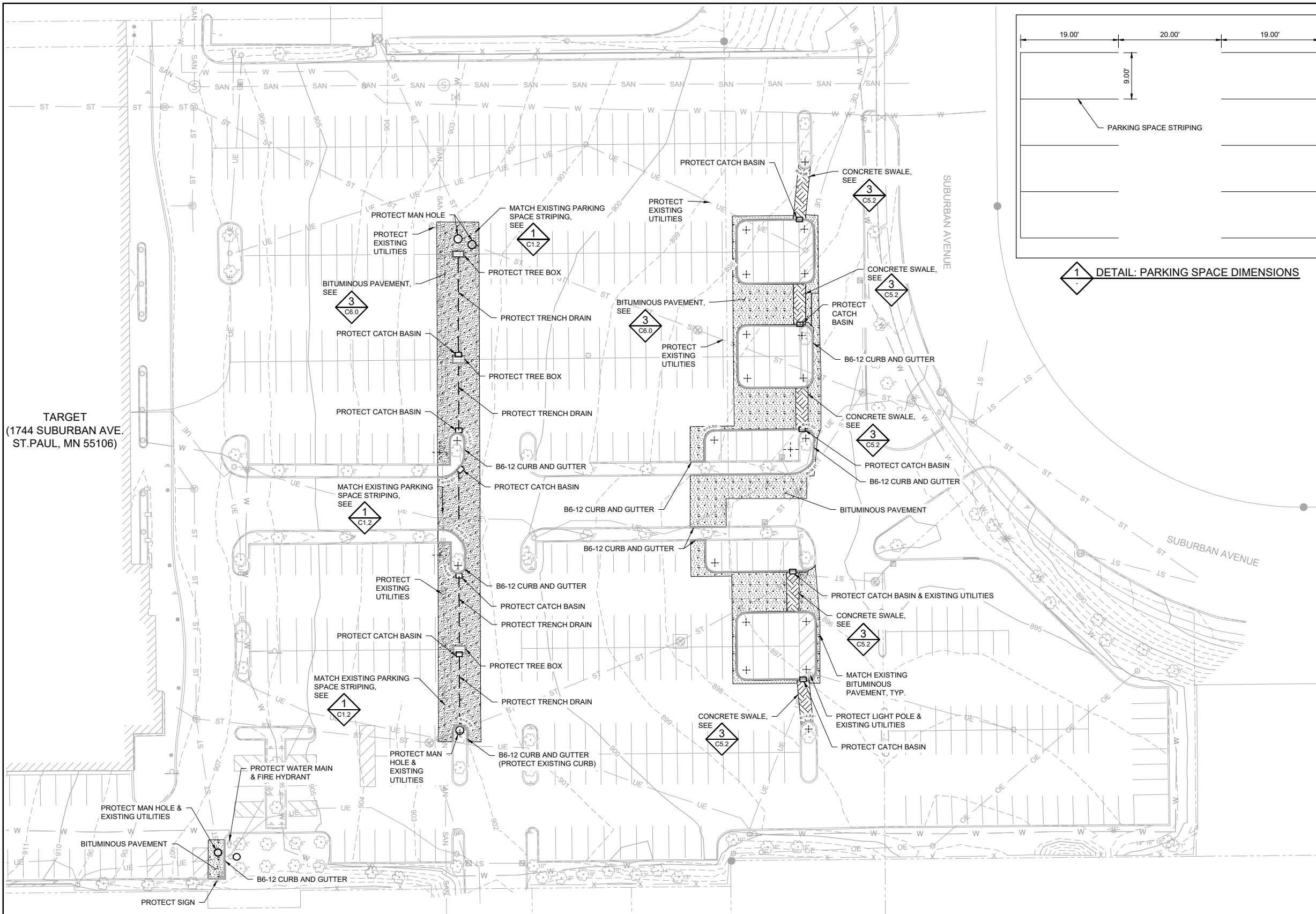


**STORMWATER IMPROVEMENTS  
TARGET - EAST ST. PAUL**

EXISTING CONDITIONS

BARR PROJECT No. 23/62-1328.00	
CLIENT PROJECT No.	
DWG. No. C1.0	REV. No. A





**EXISTING CONDITIONS LEGEND**

---	890	5 FT CONTOUR
---	889	1 FT CONTOUR
- - -		PROPERTY LINE
ST		STORM SEWER
SAN		SANITARY SEWER
G		GAS LINE
OE		OVERHEAD UTILITY
UE		UNDERGROUND ELECTRIC
W		WATER MAIN
X		FENCELINE
---		CURB

⊙	STORM SEWER MANHOLE
⊕	STORM SEWER CATCH BASIN
⊙	SANITARY SEWER MANHOLE
⊕	FIRE HYDRANT
⊕	POTABLE WATER VALVE
⊕	IRRIGATION SPRINKLER
⊕	SIGN
⊕	LIGHT POLE
•	BOLLARDS
⊕	DECIDUOUS TREE - DIAMETER
⊕	CONIFEROUS TREE - DIAMETER

**PAVING LEGEND**

▨	BITUMINOUS PAVEMENT	3 C6.0
▨	CONCRETE SWALE	3 C5.2
---	6" TRENCH DRAIN	
---	CURB AND GUTTER	
□	CATCH BASIN	
⊙	STORM SEWER MANHOLE	
⊕	TREE BOX	

- NOTES:**
- 1) PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION.
  - 2) PROTECT ALL EXISTING CURB AND GUTTER THAT IS NOT SHOWN FOR REMOVAL.
  - 3) RE-STRIPE ALL DISTURBED PARKING SPACES TO MATCH EXISTING.
  - 4) STRIPE ALL PARKING STALLS UNIFORMLY.
  - 5) ALL CONCRETE CURB AND GUTTER IS TIP-IN UNLESS NOTED OTHERWISE. SEE DETAIL 8, SHEET C6.0.

1 PLAN: PAVING

0 30 60  
SCALE IN FEET

CADD USER: Garth W. Breckler FILE: M:\DESIGN\23621328\02\23621328\_PAVING\_PLAN\_COVERALL.DWG PLOT SCALE: 1:2 PLOT DATE: 5/1/2020 4:50 PM

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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.

PRINTED NAME: Leslie A. Dell'Angelo  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	05/01						
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

**BARR** Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	05/01/2020
Drawn	DJW3
Checked	KJN2
Designed	BARR
Approved	LAD

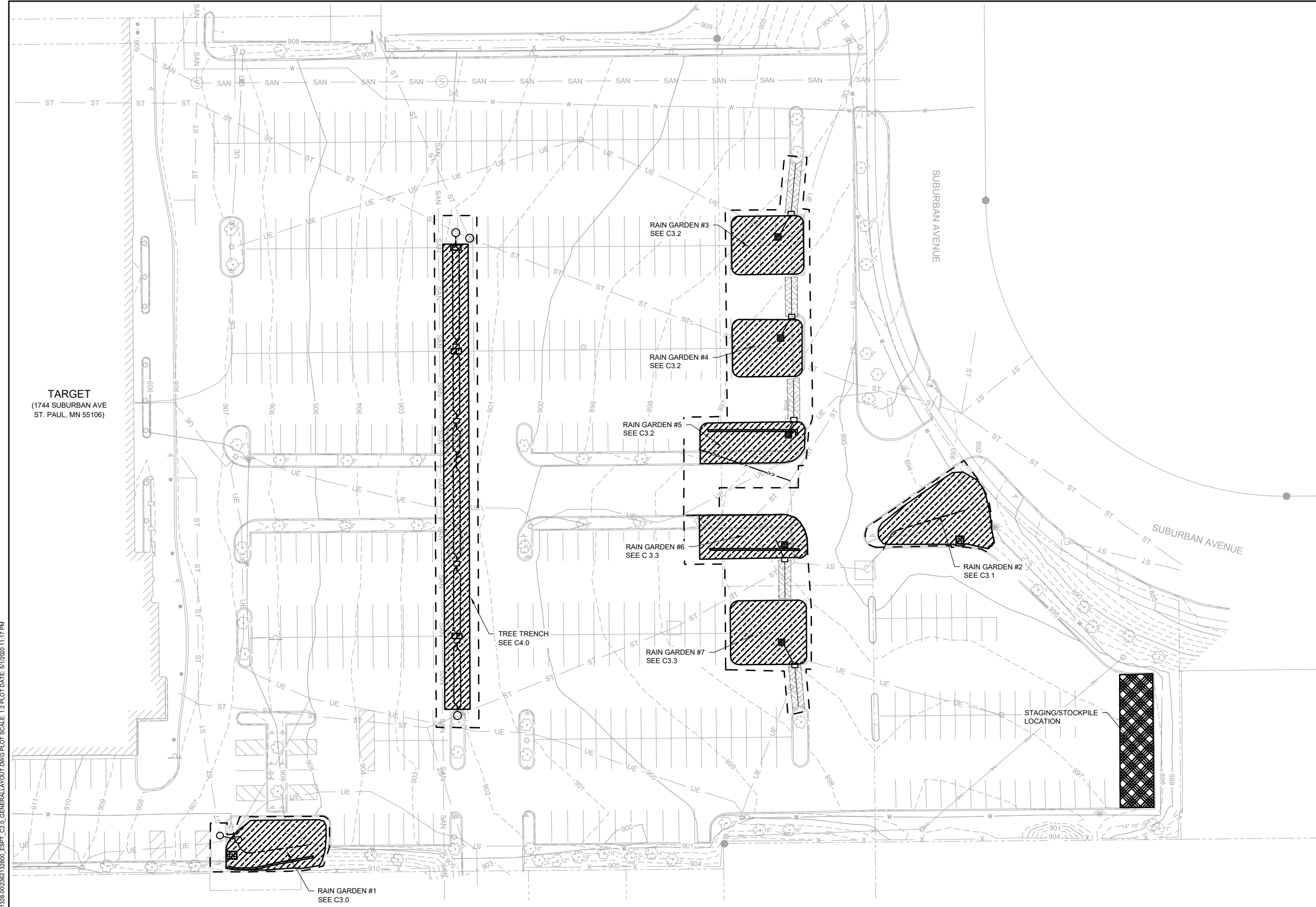


**STORMWATER IMPROVEMENTS**  
**TARGET - EAST ST. PAUL**

PAVING PLAN

BARR PROJECT No.	23/62-1328.00
CLIENT PROJECT No.	
DWG. No.	C1.2
REV. No.	A

PRELIMINARY  
DRAFT



- EXISTING CONDITIONS LEGEND**
- 890 — 5 FT CONTOUR
  - 889 --- 1 FT CONTOUR
  - - - - - PROPERTY LINE
  - ST — STORM SEWER
  - SAN — SANITARY SEWER
  - G — GAS LINE
  - OE — OVERHEAD UTILITY
  - UE — UNDERGROUND ELECTRIC
  - W — WATER MAIN
  - X — FENCELINE
  - — — CURB
  - ⊙ STORM SEWER MANHOLE
  - ⊠ STORM SEWER CATCH BASIN
  - ⊙ SANITARY SEWER MANHOLE
  - ⊕ FIRE HYDRANT
  - ⊗ POTABLE WATER VALVE
  - ⊙ IRRIGATION SPRINKLER
  - ⊙ SIGN
  - ⊙ LIGHT POLE
  - BOLLARDS
  - ⊙ DECIDUOUS TREE - DIAMETER
  - ⊙ CONIFEROUS TREE - DIAMETER

- BMPs LEGEND**
- - - - - CONSTRUCTION LIMITS
  - ⊠ BMP LOCATION
  - ⊠ SPLASH BLOCK ASSEMBLY
  - ⊙ STORM SEWER MANHOLE INSTALLATION
  - ⊠ STORM SEWER CATCH BASIN INSTALLATION
  - - - - - STORM SEWER INSTALLATION
  - ⊠ STOCKPILE AREA

1 PLAN: SITE BMP GENERAL LAYOUT

0 30 60

SCALE IN FEET

N

PRELIMINARY  
DRAFT

CADD USER: Garth W. Breckler FILE: M:\DESIGN\23021328\_02\2302132800\_ESPT\_C2.0\_GENERAL LAYOUT.DWG PLOT SCALE: 1:2 PLOT DATE: 5/1/2020 11:17 PM

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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.

PRINTED NAME: Leslie A. DellAngelo

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	05/01						
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

**BARR** Project Office:  
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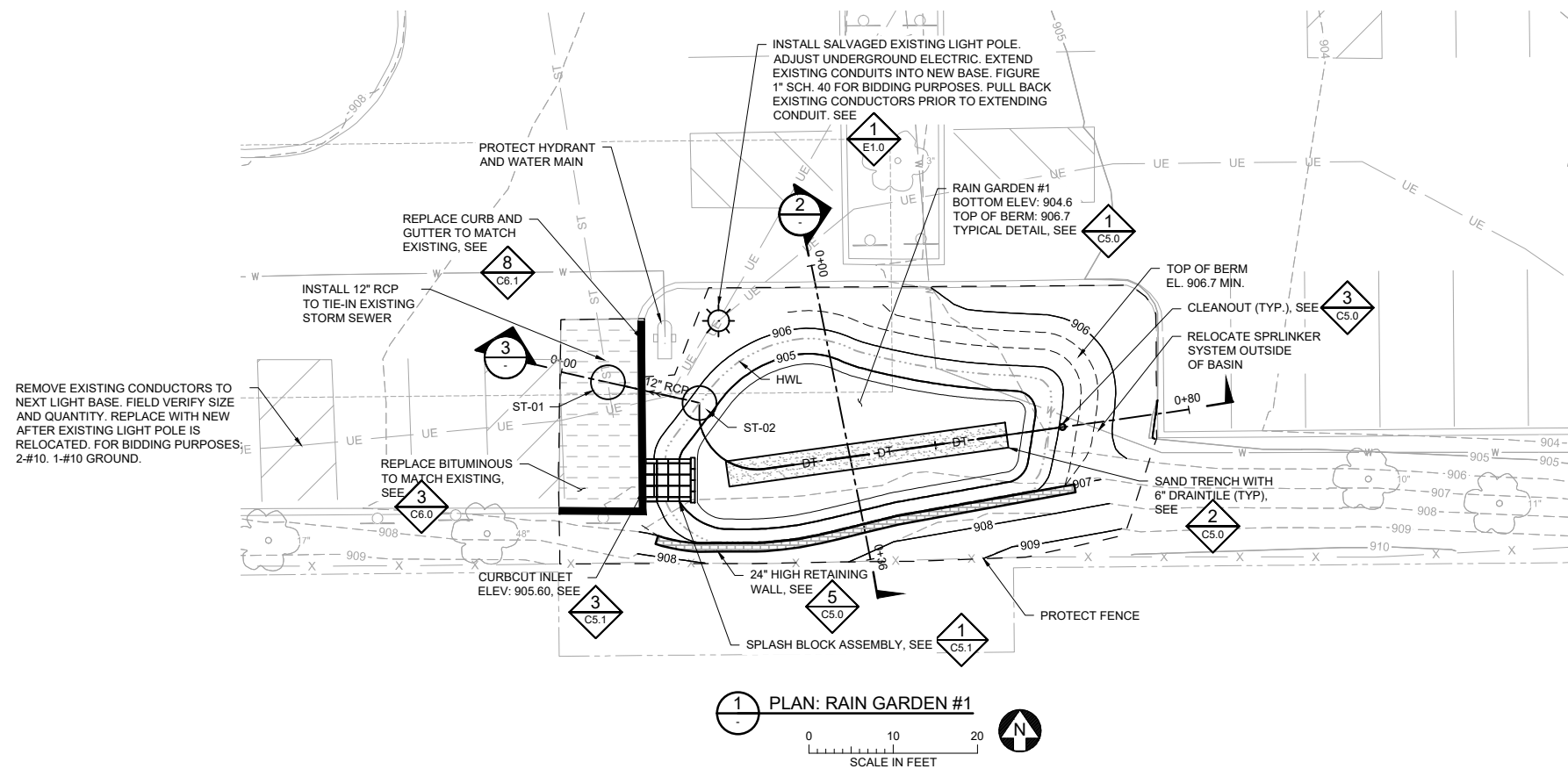
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Date	05/01/2020
Drawn	KJN2
Checked	LAD
Designed	BARR
Approved	LAD



STORMWATER IMPROVEMENTS  
TARGET - EAST ST. PAUL

SITE BMP GENERAL LAYOUT

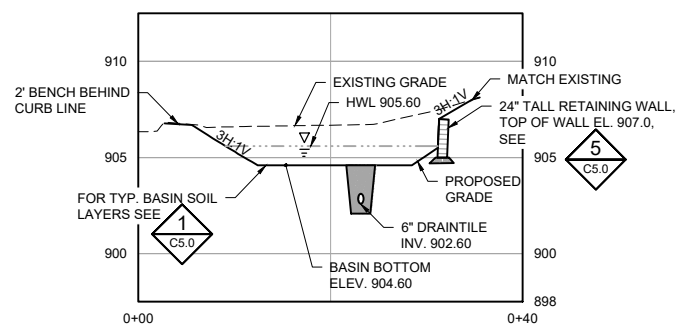
BARR PROJECT No.	23/62-1328.00
CLIENT PROJECT No.	
DWG. No.	C2.0
REV. No.	A



REMOVE EXISTING CONDUCTORS TO NEXT LIGHT BASE. FIELD VERIFY SIZE AND QUANTITY. REPLACE WITH NEW AFTER EXISTING LIGHT POLE IS RELOCATED. FOR BIDDING PURPOSES, 2-#10, 1-#10 GROUND.

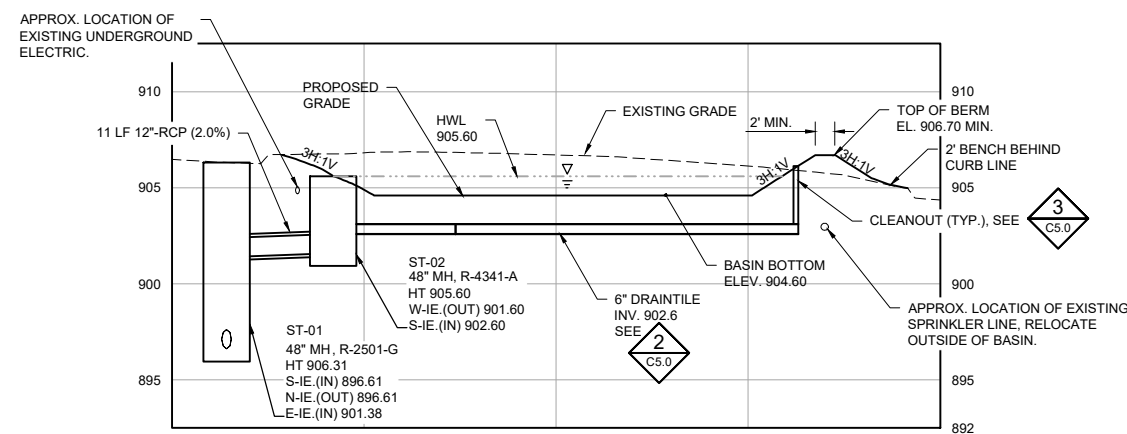
1 PLAN: RAIN GARDEN #1  
SCALE IN FEET

- EXISTING CONDITIONS LEGEND**
- 890 — 5 FT CONTOUR
  - 889 --- 1 FT CONTOUR
  - - - - - PROPERTY LINE
  - ST — STORM SEWER
  - SAN — SANITARY SEWER
  - OE — OVERHEAD UTILITY
  - UE — UNDERGROUND ELECTRIC
  - W — WATER MAIN
  - X — FENCELINE
  - C — CURB
  - (ST) STORM SEWER MANHOLE
  - (S) STORM SEWER CATCH BASIN
  - (S) SANITARY SEWER MANHOLE
  - (F) FIRE HYDRANT
  - (V) POTABLE WATER VALVE
  - (S) IRRIGATION SPRINKLER
  - (S) SIGN
  - (S) LIGHT POLE
  - (S) MANMADE STRUCTURE
  - (S) DECIDUOUS TREE - DIAMETER
  - (S) CONIFEROUS TREE - DIAMETER
  - (S) SOIL BORING
  - (S) UTILITY POTHOLE LOCATION



2 SECTION: RAIN GARDEN #1

HORIZONTAL SCALE IN FEET  
VERTICAL SCALE IN FEET



3 SECTION: RAIN GARDEN #1

HORIZONTAL SCALE IN FEET  
VERTICAL SCALE IN FEET

- CONSTRUCTION LEGEND**
- - - - - CONSTRUCTION LIMITS
  - 890 — 5 FT CONTOUR
  - 889 --- 1 FT CONTOUR
  - ST — STORM SEWER
  - DT — DRAINTILE
  - (S) SPLASH BLOCK ASSEMBLY
  - (S) STORM STRUCTURE
  - (S) SAND TRENCH
  - (S) BITUMINOUS PAVEMENT
  - (S) CURB AND GUTTER
  - (S) RETAINING WALL

- NOTES:**
- CONFIRM LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. NOTIFY OWNER OF ANY DISCREPANCIES.
  - UTILITY RELOCATION TO BE COORDINATED BY CONTRACTOR PRIOR TO CONSTRUCTION.
  - PROTECT ALL EXISTING UTILITIES DURING DEMOLITION AND CONSTRUCTION.
  - FOR EROSION CONTROL NOTES AND DETAILS, SEE SHEET SW1.0.
  - FOR SOIL BORING LOGS, SEE SHEET B1.0.

PRELIMINARY DRAFT

CADD USER: Garth W. Brecker FILE: M:\DESIGN\2020\1328\02\2020\132800\_ESPT\_C3.0\_RG1\_P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 5/11/2020 4:51 PM

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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.

PRINTED NAME: Leslie A. DellAngelo  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	BID	CONSTRUCTION	RELEASED TO/FOR	DATE RELEASED
05/01			A B C 0 1 2 3	

**BARR** Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
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Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale	Date	Drawn	Checked	Designed	Approved
AS SHOWN	05/01/2020	KJN2	LAD	BARR	LAD



STORMWATER IMPROVEMENTS  
TARGET - EAST ST. PAUL

GRADING PLAN & SECTIONS  
RAIN GARDEN #1

BARR PROJECT No. 23/62-1328.00	REV. No. A
CLIENT PROJECT No.	DWG. No. C3.0

**EXISTING CONDITIONS LEGEND**

- 890 — 5 FT CONTOUR
- 889 --- 1 FT CONTOUR
- - - - - PROPERTY LINE
- ST — STORM SEWER
- SAN — SANITARY SEWER
- OE — OVERHEAD UTILITY
- UE — UNDERGROUND ELECTRIC
- W — WATER MAIN
- X — FENCELINE
- — CURB
- (ST) STORM SEWER MANHOLE
- (S) STORM SEWER CATCH BASIN
- (S) SANITARY SEWER MANHOLE
- (F) FIRE HYDRANT
- (WV) POTABLE WATER VALVE
- (S) IRRIGATION SPRINKLER
- (S) SIGN
- (S) LIGHT POLE
- (S) MANMADE STRUCTURE
- (S) DECIDUOUS TREE - DIAMETER
- (S) CONIFEROUS TREE - DIAMETER
- (S) SOIL BORING
- (S) UTILITY POTHOLE LOCATION

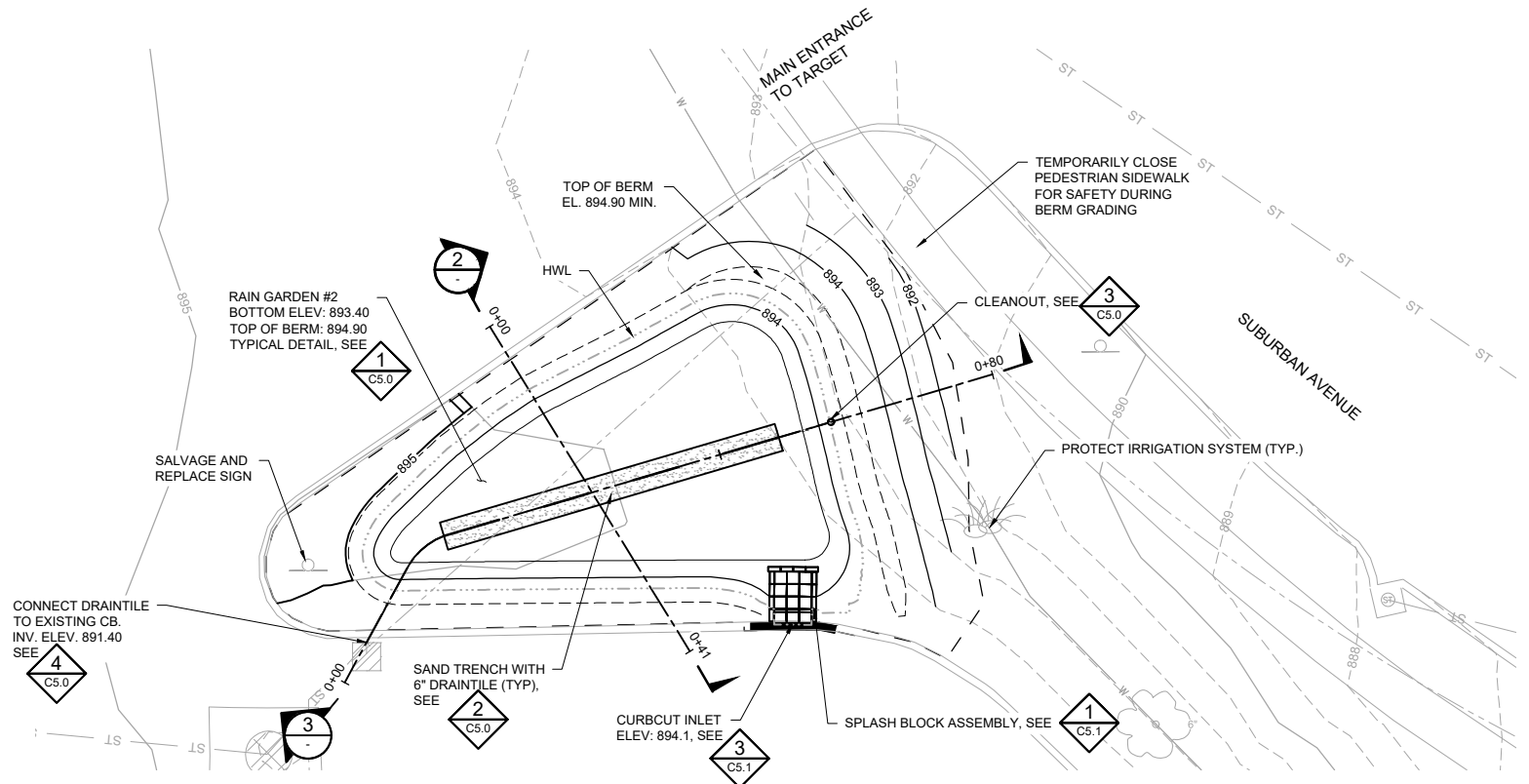
**CONSTRUCTION LEGEND**

- - - - - CONSTRUCTION LIMITS
- 890 — 5 FT CONTOUR
- 889 --- 1 FT CONTOUR
- ST — STORM SEWER
- — DRAINTILE
- (S) SPLASH BLOCK ASSEMBLY
- (S) STORM STRUCTURE
- (S) SAND TRENCH
- (S) BITUMINOUS PAVEMENT
- — CURB AND GUTTER

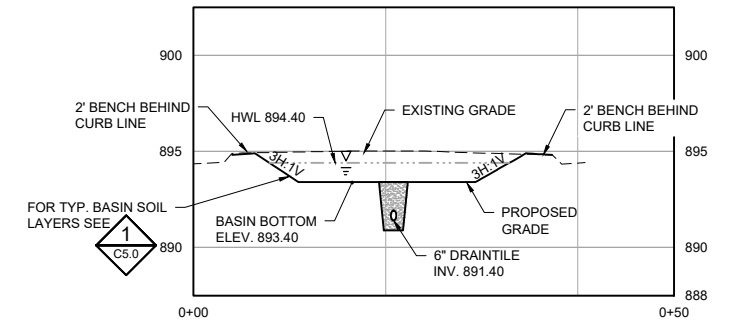
**NOTES:**

1. CONFIRM LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. NOTIFY OWNER OF ANY DISCREPANCIES.
2. UTILITY RELOCATION TO BE COORDINATED BY CONTRACTOR PRIOR TO CONSTRUCTION.
3. PROTECT ALL EXISTING UTILITIES DURING DEMOLITION AND CONSTRUCTION.
4. FOR EROSION CONTROL NOTES AND DETAILS, SEE SHEET SW1.0.
5. FOR SOIL BORING LOGS, SEE SHEET B1.0

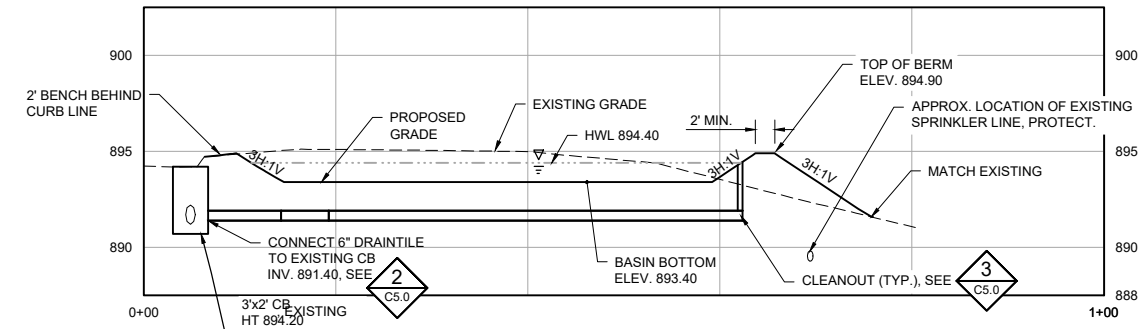
PRELIMINARY  
DRAFT



1 PLAN: RAIN GARDEN #2  
SCALE IN FEET



2 SECTION: RAIN GARDEN #2  
HORIZONTAL SCALE IN FEET  
VERTICAL SCALE IN FEET



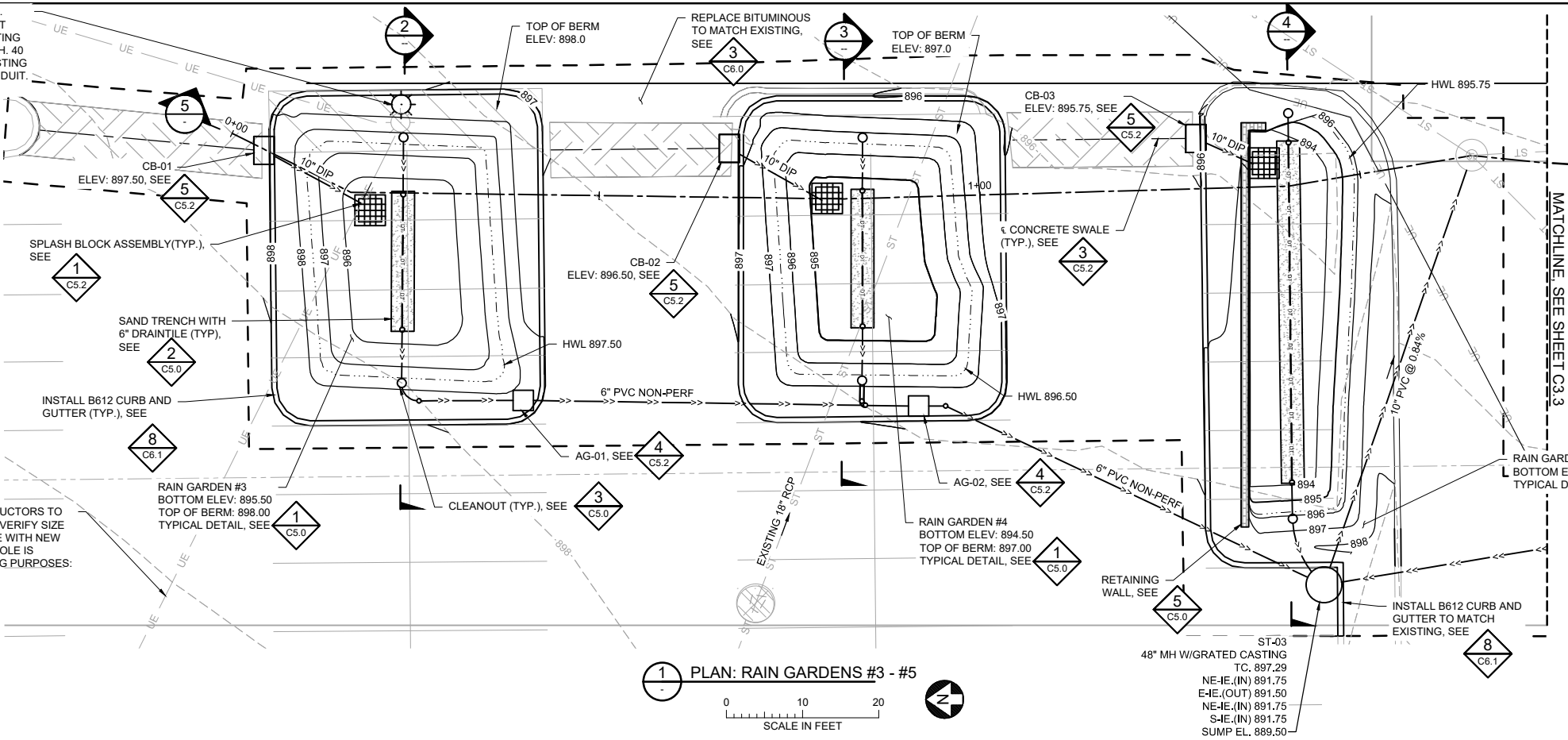
3 PROFILE: RAIN GARDEN #2  
HORIZONTAL SCALE IN FEET  
VERTICAL SCALE IN FEET

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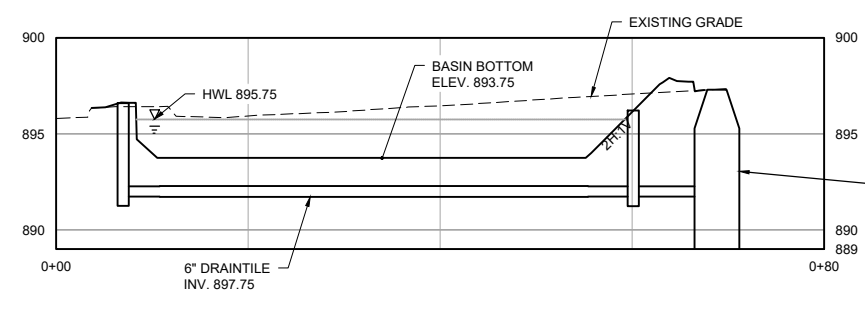
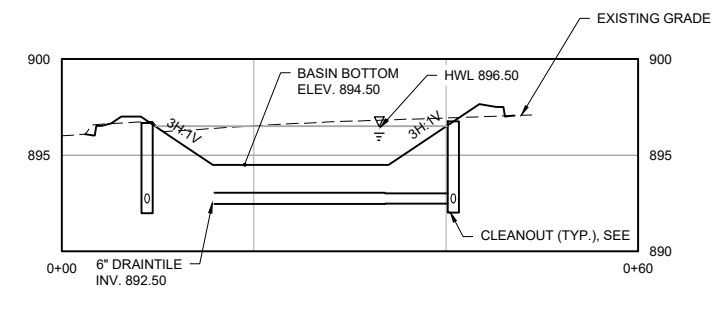
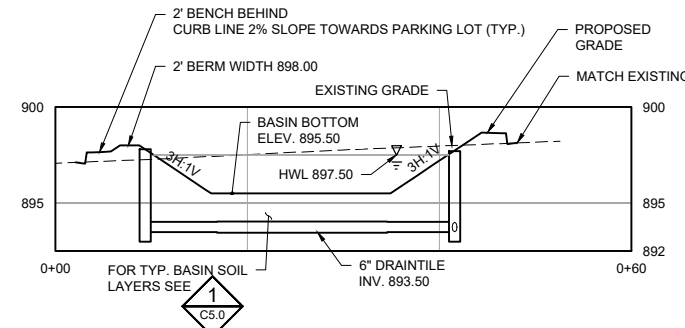
					I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: Leslie A. DellAngelo SIGNATURE: _____ DATE: _____ LICENSE # 49094					CLIENT: 05/01 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____					Project Office: <b>BARR ENGINEERING CO.</b> 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com					Scale: AS SHOWN Date: 05/01/2020 Drawn: KJN2 Checked: LAD Designed: BARR Approved: LAD					<b>RAMSEY-WASHINGTON</b> METRO WATERSHED DISTRICT					<b>STORMWATER IMPROVEMENTS</b> <b>TARGET - EAST ST. PAUL</b> <b>GRADING PLAN AND SECTIONS</b> <b>RAIN GARDEN #2</b>					BARR PROJECT No. <b>23/62-1328.00</b> CLIENT PROJECT No. DWG. No. <b>C3.1</b> REV. No. <b>A</b>				
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION																																		



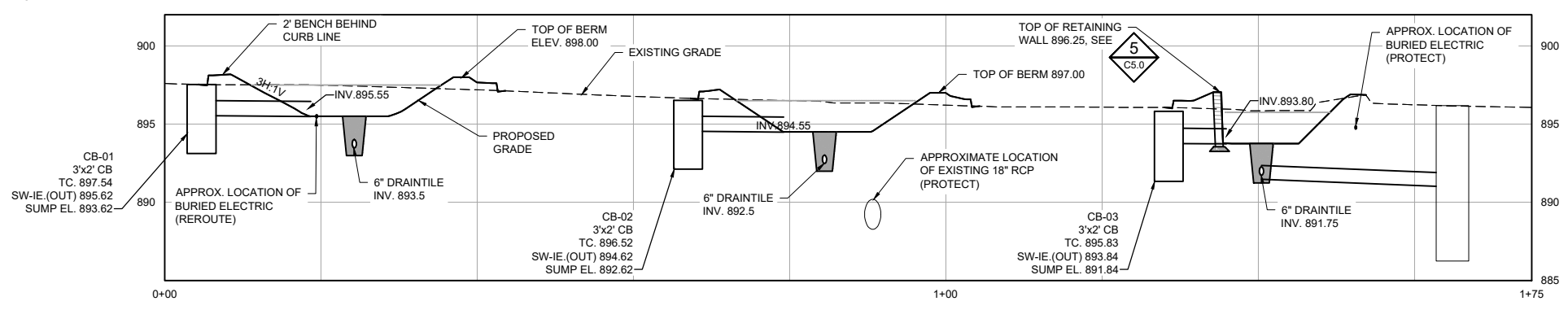
INSTALL SALVAGED EXISTING LIGHT POLE. FOOTING TO ABUT BACK OF CURB. ADJUST UNDERGROUND ELECTRIC. EXTEND EXISTING CONDUITS INTO NEW BASE. FIGURE 1" SCH. 40 FOR BIDDING PURPOSES. PULL BACK EXISTING CONDUCTORS PRIOR TO EXTENDING CONDUIT. SEE E1.0



- EXISTING CONDITIONS LEGEND**
- 890 — 5 FT CONTOUR
  - 889 — 1 FT CONTOUR
  - - - - - PROPERTY LINE
  - ST — STORM SEWER
  - SAN — SANITARY SEWER
  - OE — OVERHEAD UTILITY
  - UE — UNDERGROUND ELECTRIC
  - W — WATER MAIN
  - X — FENCELINE
  - — CURB
  - ST — STORM SEWER MANHOLE
  - ▣ — STORM SEWER CATCH BASIN
  - S — SANITARY SEWER MANHOLE
  - F — FIRE HYDRANT
  - V — POTABLE WATER VALVE
  - S — IRRIGATION SPRINKLER
  - — SIGN
  - — LIGHT POLE
  - — MANMADE STRUCTURE
  - — DECIDUOUS TREE - DIAMETER
  - — CONIFEROUS TREE - DIAMETER
  - — SOIL BORING
  - — UTILITY POTHOLE LOCATION



- CONSTRUCTION LEGEND**
- 890 — 5 FT CONTOUR
  - 889 — 1 FT CONTOUR
  - ST — STORM SEWER
  - DT — DRAINTILE
  - — STORM STRUCTURE
  - ▣ — SAND TRENCH
  - ▨ — BITUMINOUS PAVEMENT



- NOTES:**
- CONFIRM LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. NOTIFY OWNER OF ANY DISCREPANCIES.
  - UTILITY RELOCATION TO BE COORDINATED BY CITY PRIOR TO CONSTRUCTION.
  - PROTECT ALL EXISTING UTILITIES DURING DEMOLITION AND CONSTRUCTION.
  - FOR EROSION CONTROL NOTES AND DETAILS, SEE SHEET xx
  - FOR SOIL BORING LOGS, SEE SHEET xx

PRELIMINARY DRAFT

CADD USER: Garth W. Breckler FILE: M:\DESIGN\2020\1328\02\2020\132800\_P&P\DWG PLOT SCALE: 1:2 PLOT DATE: 5/1/2020 11:18 PM

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PRINTED NAME: Leslie A. Dell'Angelo  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	5/1/20						
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

**BARR** ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 SUITE 200  
 MINNEAPOLIS, MN 55435

Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
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Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

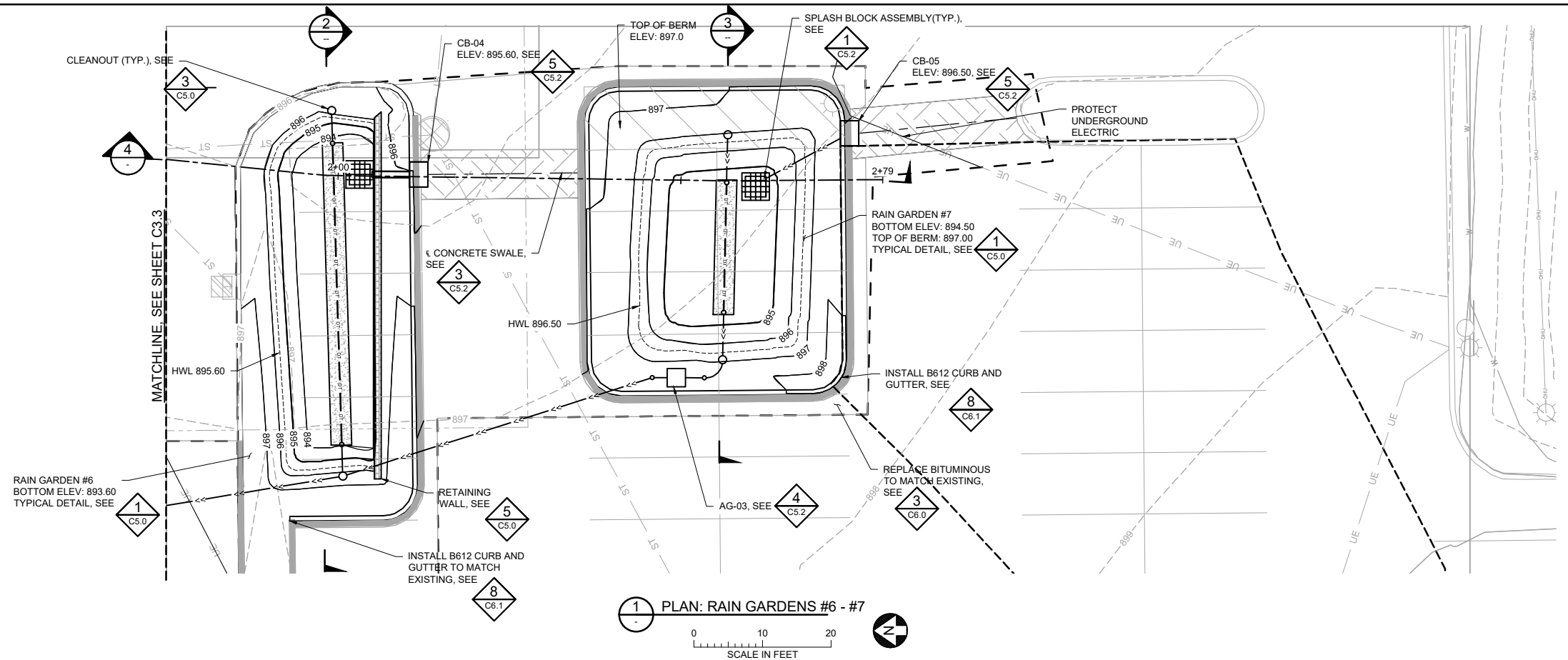
Scale	AS SHOWN
Date	2/20/20
Drawn	GWB
Checked	KJN2
Designed	BARR
Approved	LAD

**RAMSEY-WASHINGTON**  
 METRO WATERSHED DISTRICT

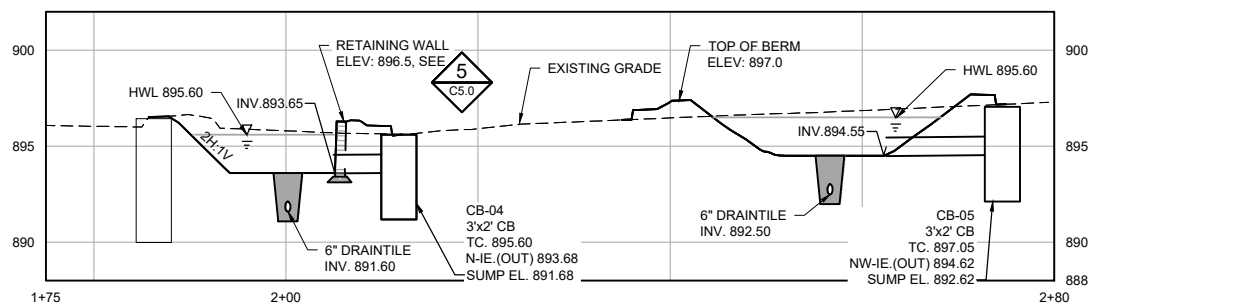
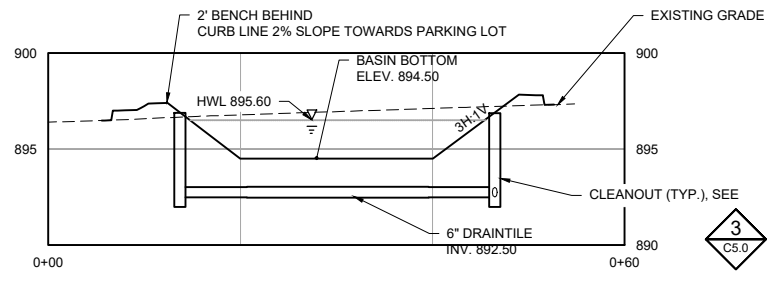
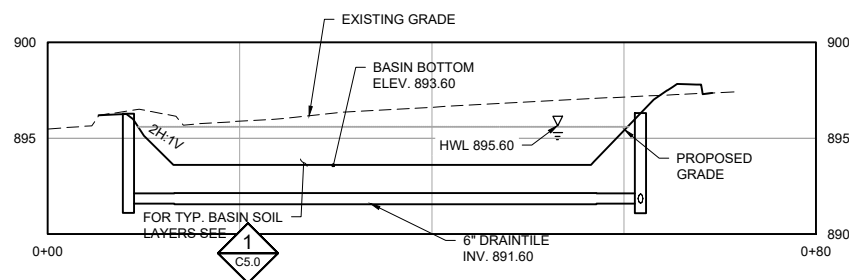
**STORMWATER IMPROVEMENTS**  
 TARGET - EAST ST. PAUL

**GRADING PLAN & SECTIONS**  
 RAIN GARDEN #3 - #5

BARR PROJECT No.	23/62-1328.00
CLIENT PROJECT No.	
DWG. No.	C3.2
REV. No.	A



- EXISTING CONDITIONS LEGEND**
- 890 — 5 FT CONTOUR
  - 889 — 1 FT CONTOUR
  - - - - - PROPERTY LINE
  - ST — STORM SEWER
  - SAN — SANITARY SEWER
  - OE — OVERHEAD UTILITY
  - UE — UNDERGROUND ELECTRIC
  - W — WATER MAIN
  - X — FENCELINE
  - — CURB
  - (ST) STORM SEWER MANHOLE
  - (S) STORM SEWER CATCH BASIN
  - (S) SANITARY SEWER MANHOLE
  - (F) FIRE HYDRANT
  - (V) POTABLE WATER VALVE
  - (S) IRRIGATION SPRINKLER
  - (S) SIGN
  - (S) LIGHT POLE
  - (S) MANMADE STRUCTURE
  - (S) DECIDUOUS TREE - DIAMETER
  - (S) CONIFEROUS TREE - DIAMETER
  - (S) SOIL BORING
  - (S) UTILITY POTHOLE LOCATION



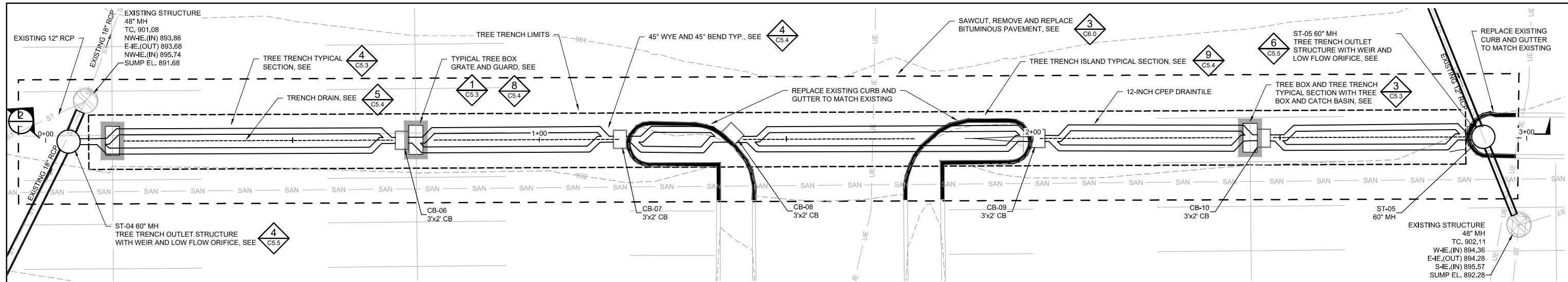
- CONSTRUCTION LEGEND**
- 890 — 5 FT CONTOUR
  - 889 — 1 FT CONTOUR
  - >> — STORM SEWER
  - DT — DRAINTILE
  - (S) SPLASH BLOCK ASSEMBLY
  - (S) STORM STRUCTURE
  - (S) SAND TRENCH
  - (S) BITUMINOUS PAVEMENT

- NOTES:**
- CONFIRM LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. NOTIFY OWNER OF ANY DISCREPANCIES.
  - UTILITY RELOCATION TO BE COORDINATED BY CITY PRIOR TO CONSTRUCTION.
  - PROTECT ALL EXISTING UTILITIES DURING DEMOLITION AND CONSTRUCTION.
  - FOR EROSION CONTROL NOTES AND DETAILS, SEE SHEET xx
  - FOR SOIL BORING LOGS, SEE SHEET xx

PRELIMINARY DRAFT

CADD USER: Garth W. Brecker FILE: M:\DESIGN\2020\1328\02\2020\132800\_ESPT\_C3.3\_RG6-7\_P&P.DWG PLOT SCALE: 1:2 PLOT DATE: 5/1/2020 11:20 PM

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. PRINTED NAME: Leslie A. DellAngelo SIGNATURE: _____ DATE: _____ LICENSE # 49094				CLIENT: 5/1/20 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____				Project Office: <b>BARR ENGINEERING CO.</b> 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Scale: AS SHOWN Date: 2/20/20 Drawn: GWB Checked: KJN2 Designed: BARR Approved: LAD				<b>STORMWATER IMPROVEMENTS</b> <b>TARGET - EAST ST. PAUL</b> <b>GRADING PLAN &amp; SECTIONS</b> <b>RAIN GARDEN #6 - #7</b>				BARR PROJECT No. 23/62-1328.00 CLIENT PROJECT No. DWG. No. C3.3 REV. No. A	
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1 PLAN: TREE TRENCH #1  
SCALE IN FEET

**TREE TRENCH NOTES:**

- SEE SHEETS C5.2 AND C5.3 FOR TREE TRENCH DETAILS AND TYPICAL SECTIONS.
- SEE TECHNICAL SPECIFICATIONS FOR TREE TRENCH SEQUENCING AND INSTALLATION NOTES.
- 12-INCH CPEP DRAINTILE DENOTES DUAL WALL CORRUGATED POLYETHYLENE DRAINTILE WITH SLITS AND NO FABRIC SOCK. CPEP FITTINGS ARE NOT PERFORATED.

**GENERAL NOTES:**

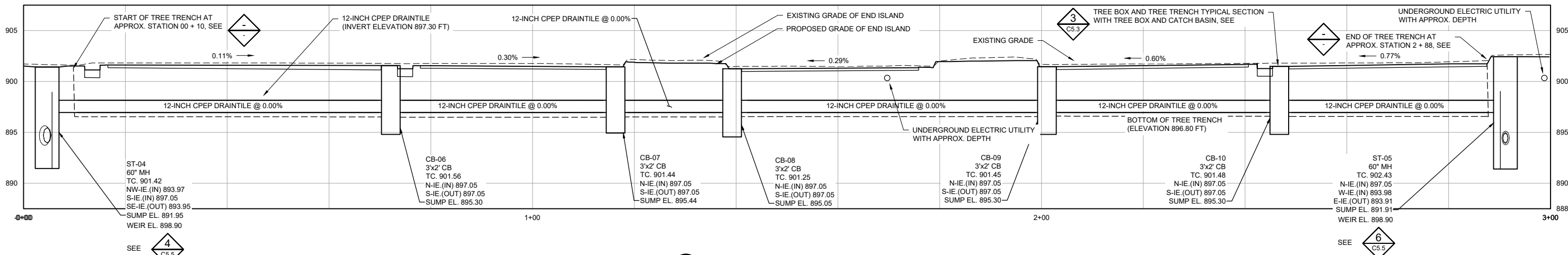
- CONFIRM LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. NOTIFY OWNER OF ANY DISCREPANCIES.
- UTILITY RELOCATION TO BE COORDINATED BY CONTRACTOR PRIOR TO CONSTRUCTION.
- PROTECT ALL EXISTING UTILITIES DURING DEMOLITION AND CONSTRUCTION.
- DETERMINE LOCATION OF ABANDONED SANITARY PIPE PRIOR TO TREE TRENCH EXCAVATION TO CONFIRM THE ABANDONED SANITARY PIPE IS OUTSIDE OF THE TREE TRENCH EXTENTS. PROTECT IN PLACE.
- FOR EROSION CONTROL NOTES AND DETAILS, SEE SHEETS SW1.0 AND SW2.0.
- FOR PAVING PLAN, SEE SHEET C2.1.
- FOR PLANTING PLAN, SEE SHEET L1.4.
- PROPOSED GRADES ARE SHOWN BASED ON EXISTING SURVEY INFORMATION. ACTUAL ELEVATIONS MAY VARY IN THE FIELD. DO WORK, TO THE EXTENT POSSIBLE, TO MATCH GRADES AND TOLERANCES SHOWN ON THE TYPICAL SECTIONS AND LISTED IN THE TECHNICAL SPECIFICATIONS.

**CONSTRUCTION LEGEND**

- CONSTRUCTION LIMITS
- 890 — 5 FT CONTOUR
- 889 — 1 FT CONTOUR
- DRAINTILE
- TRENCH DRAIN
- TREE TRENCH BOUNDARY
- STORM SEWER MANHOLE
- STORM SEWER CATCH BASIN
- ▭ TREE BOX
- CURB AND GUTTER

**EXISTING CONDITIONS LEGEND**

- 890 — 5 FT CONTOUR
- 889 — 1 FT CONTOUR
- EASEMENT
- ST — STORM SEWER
- SAN — SANITARY SEWER
- UE — UNDERGROUND ELECTRIC
- CURB
- STORM SEWER MANHOLE
- ▭ STORM SEWER CATCH BASIN
- SIGN
- 48" DECIDUOUS TREE - DIAMETER
- SOIL BORING
- ⊗ UTILITY POT HOLE LOCATION



2 PROFILE: TREE TRENCH #1  
SCALE IN FEET 1H:1V

PRELIMINARY DRAFT

CADD USER: Garth W. Breckler FILE: M:\DESIGN\2020\1328\00\2020\1328\00\TRENCH.PMP DWG PLOT SCALE: 1:2 PLOT DATE: 01/20/20 4:54 PM

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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PRINTED NAME: Leslie A. DellAngelo  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	5/1/2020								
BID									
CONSTRUCTION									
RELEASED TO/FOR	A	B	C	0	1	2	3		
DATE RELEASED									

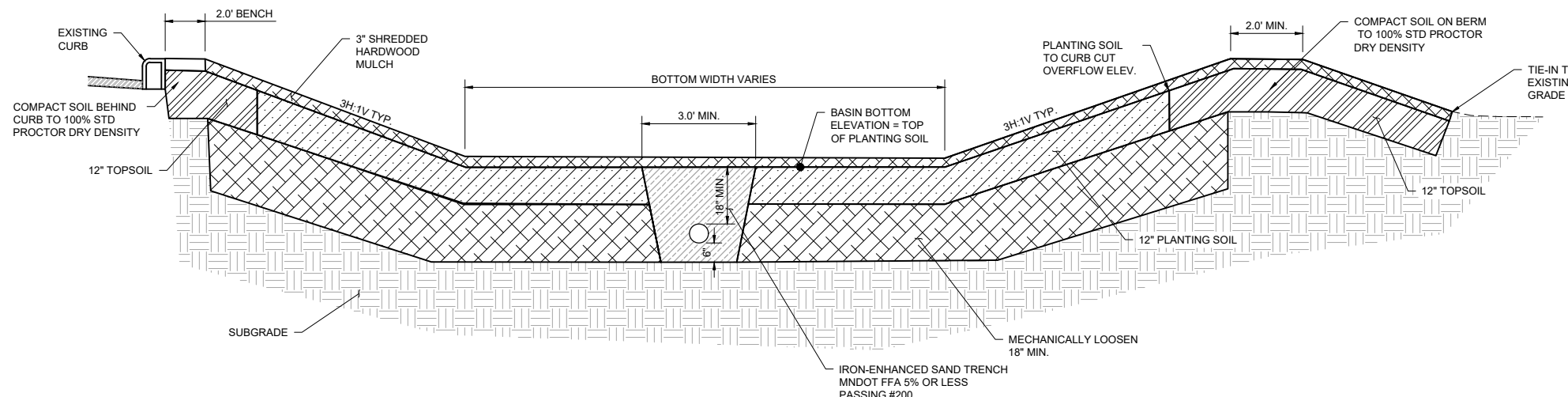
**BARR** Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	2020-05-01
Drawn	KBD
Checked	KJN2/JPP
Designed	BARR
Approved	LAD

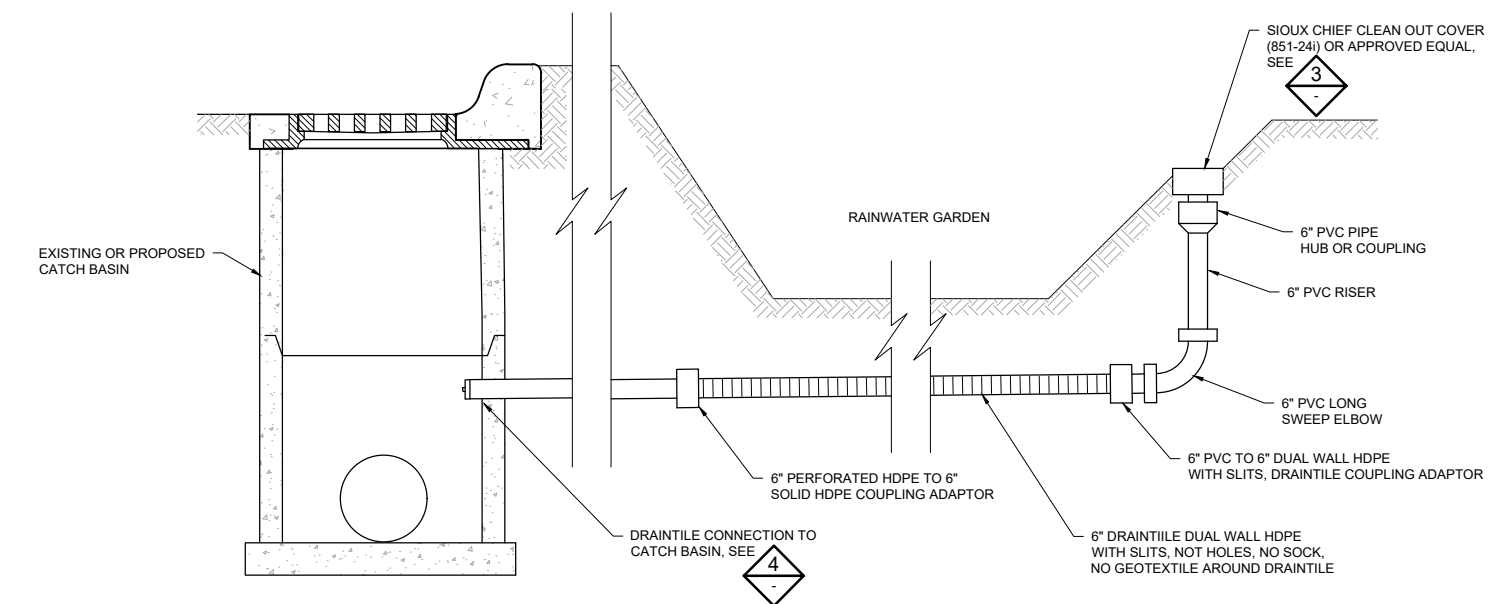
**RAMSEY-WASHINGTON**  
METRO WATERSHED DISTRICT

**STORMWATER IMPROVEMENTS TARGET - EAST ST. PAUL**  
TREE TRENCH UTILITY PLAN AND PROFILE

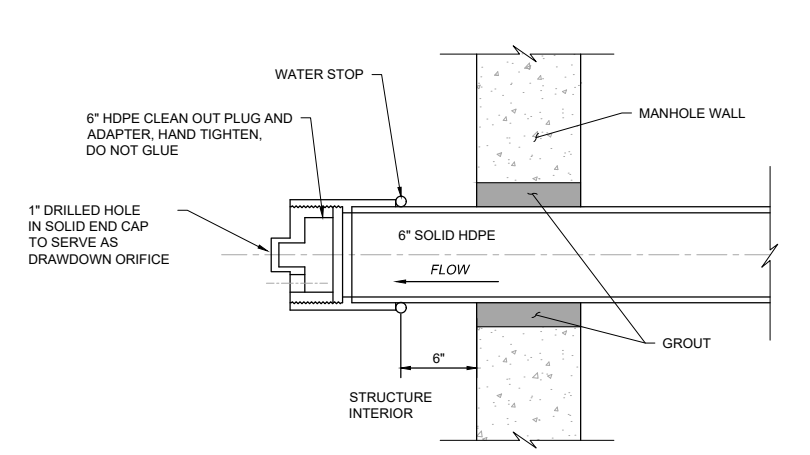
BARR PROJECT No.	23/62-1328.00
CLIENT PROJECT No.	
DWG. No.	C4.0
REV. No.	A



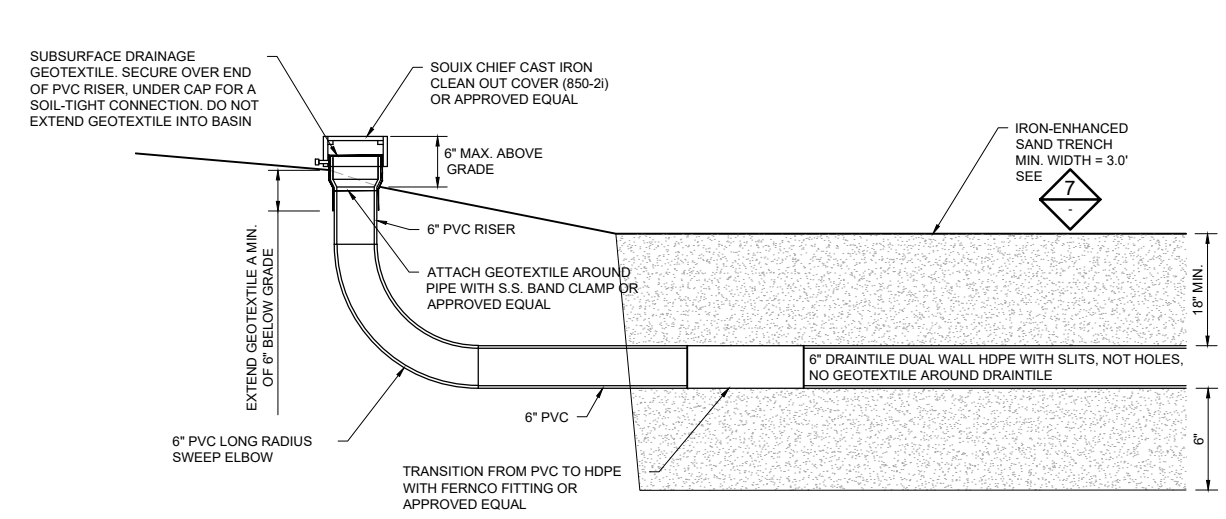
1 DETAIL: TYPICAL RAIN GARDEN



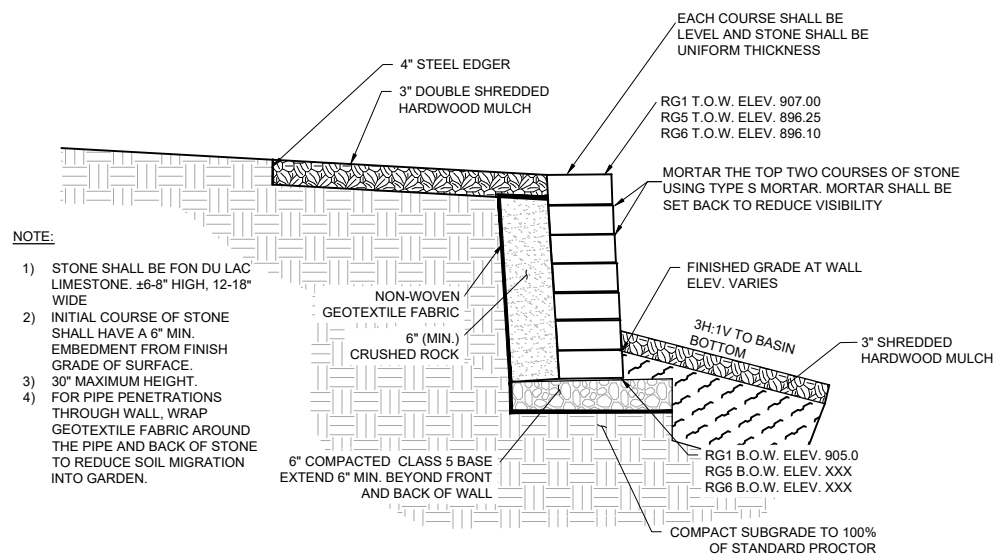
2 DETAIL: RAIN GARDEN DRAINTILE



4 DETAIL: DRAIN TILE CONNECTION  
NOT TO SCALE



3 DETAIL: DRAINTILE CLENOUT



NOTE:

- 1) STONE SHALL BE FON DU LAC LIMESTONE. ±6-8" HIGH, 12-18" WIDE
- 2) INITIAL COURSE OF STONE SHALL HAVE A 6" MIN. EMBEDMENT FROM FINISH GRADE OF SURFACE
- 3) 30" MAXIMUM HEIGHT.
- 4) FOR PIPE PENETRATIONS THROUGH WALL, WRAP GEOTEXTILE FABRIC AROUND THE PIPE AND BACK OF STONE TO REDUCE SOIL MIGRATION INTO GARDEN.

5 DETAIL: LIMESTONE RETAINING WALL

PRELIMINARY DRAFT

CADD USER: Gareth W. Becker FILE: M:\DESIGN\3621328\362132800\_ESPT\_C5.0\DETAILS\_RWG.DWG PLOT SCALE: 1:2 PLOT DATE: 5/1/2020 4:54 PM  
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 USER: G.W. Becker DATE: 5/1/2020 4:54 PM  
 USER: G.W. Becker DATE: 5/1/2020 4:54 PM

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PRINTED NAME: Leslie A. Dell'Angelo  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	05/01						
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

Project Office:  
**BARR ENGINEERING CO.**  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435

Corporate Headquarters:  
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 Ph: 1-800-632-2277  
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Scale	AS SHOWN
Date	05/01/2020
Drawn	KJN2
Checked	LAD
Designed	BARR
Approved	LAD

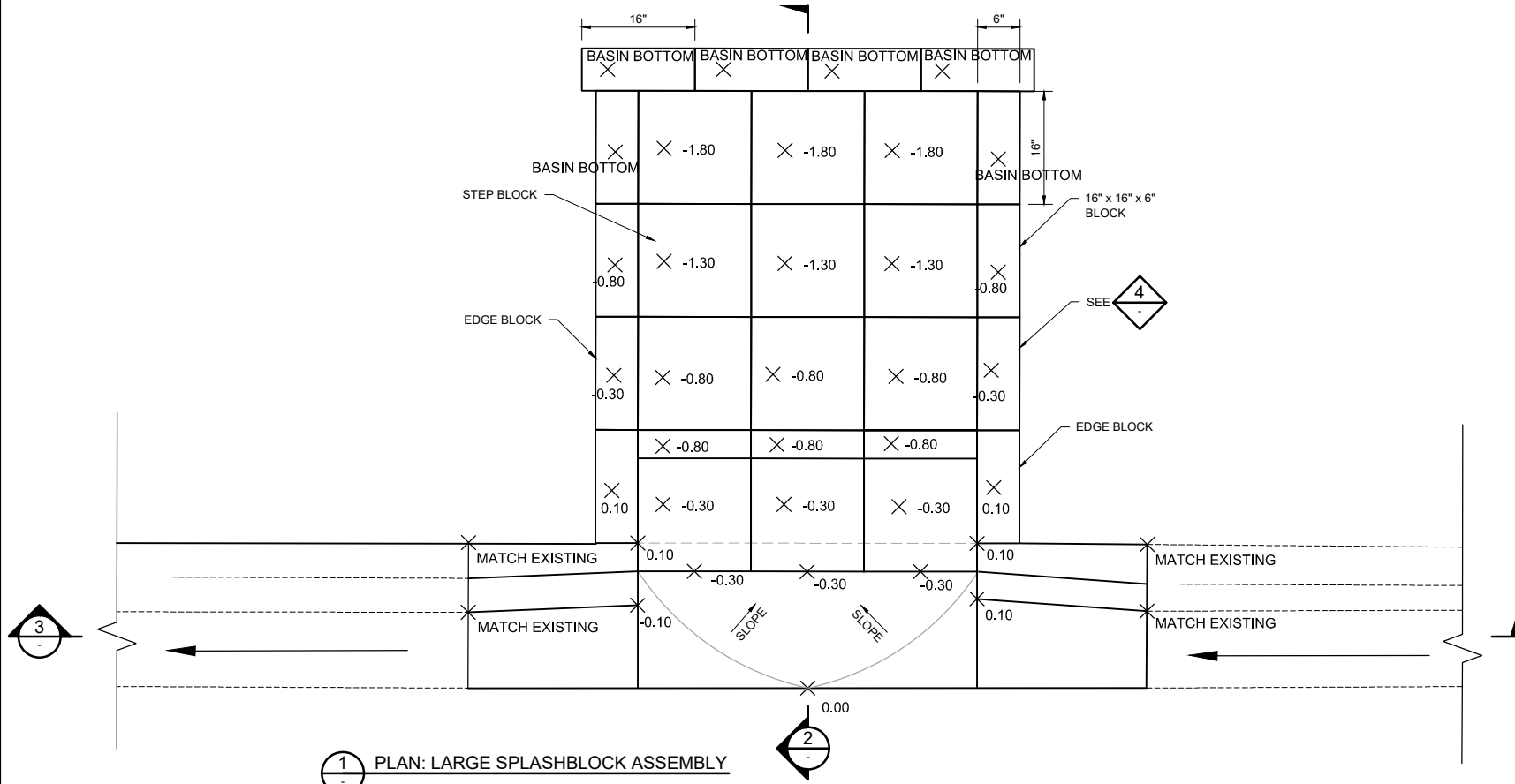
**RAMSEY-WASHINGTON**  
 METRO WATERSHED DISTRICT

STORMWATER IMPROVEMENTS  
 TARGET - EAST ST. PAUL

DETAILS - RAIN GARDEN  
 TYP. RAIN GARDEN, DRAINTILE, & RETAINING WALL

BARR PROJECT No.	23621328.00
CLIENT PROJECT No.	
DWG. No.	C5.0
REV. No.	A

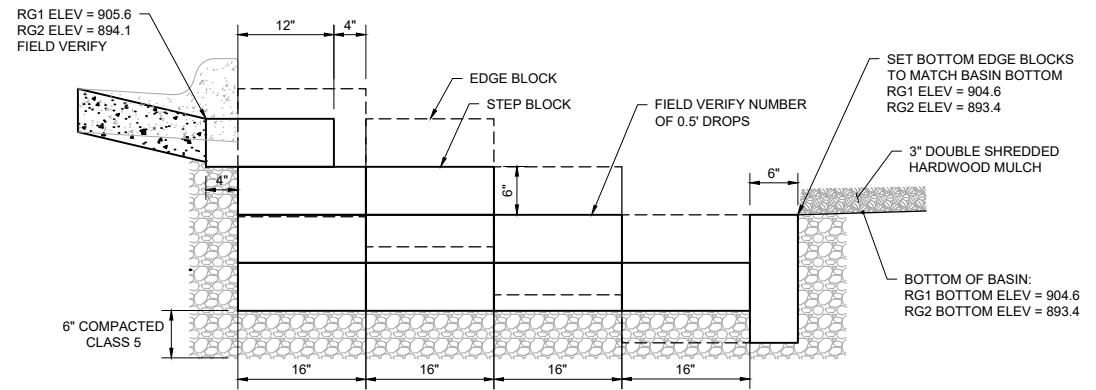
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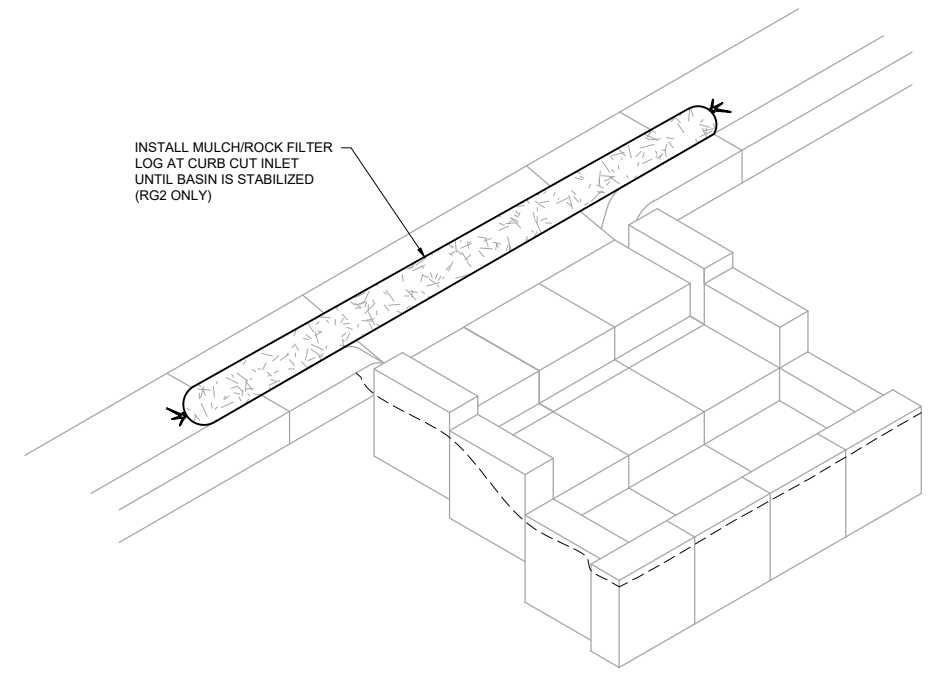
1 PLAN: LARGE SPLASHBLOCK ASSEMBLY



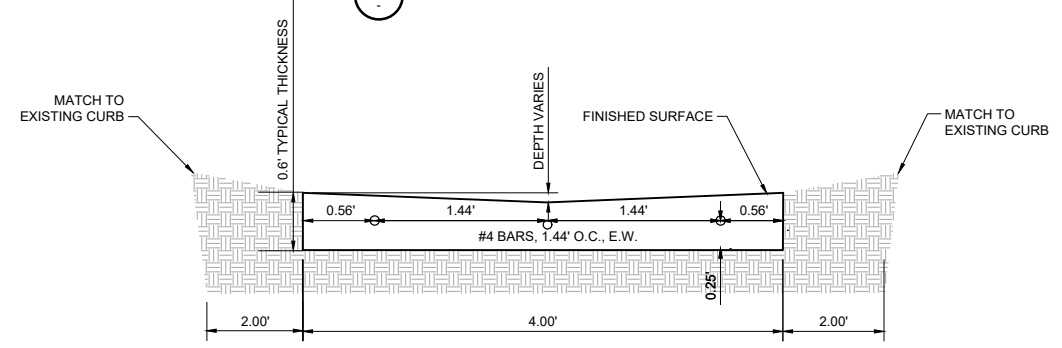
4 DETAIL: SPLASHBLOCK ASSEMBLY EXAMPLE



2 SECTION: LARGE SPLASHBLOCK ASSEMBLY



5 DETAIL: SPLASHBLOCK ASSEMBLY EROSION PROTECTION



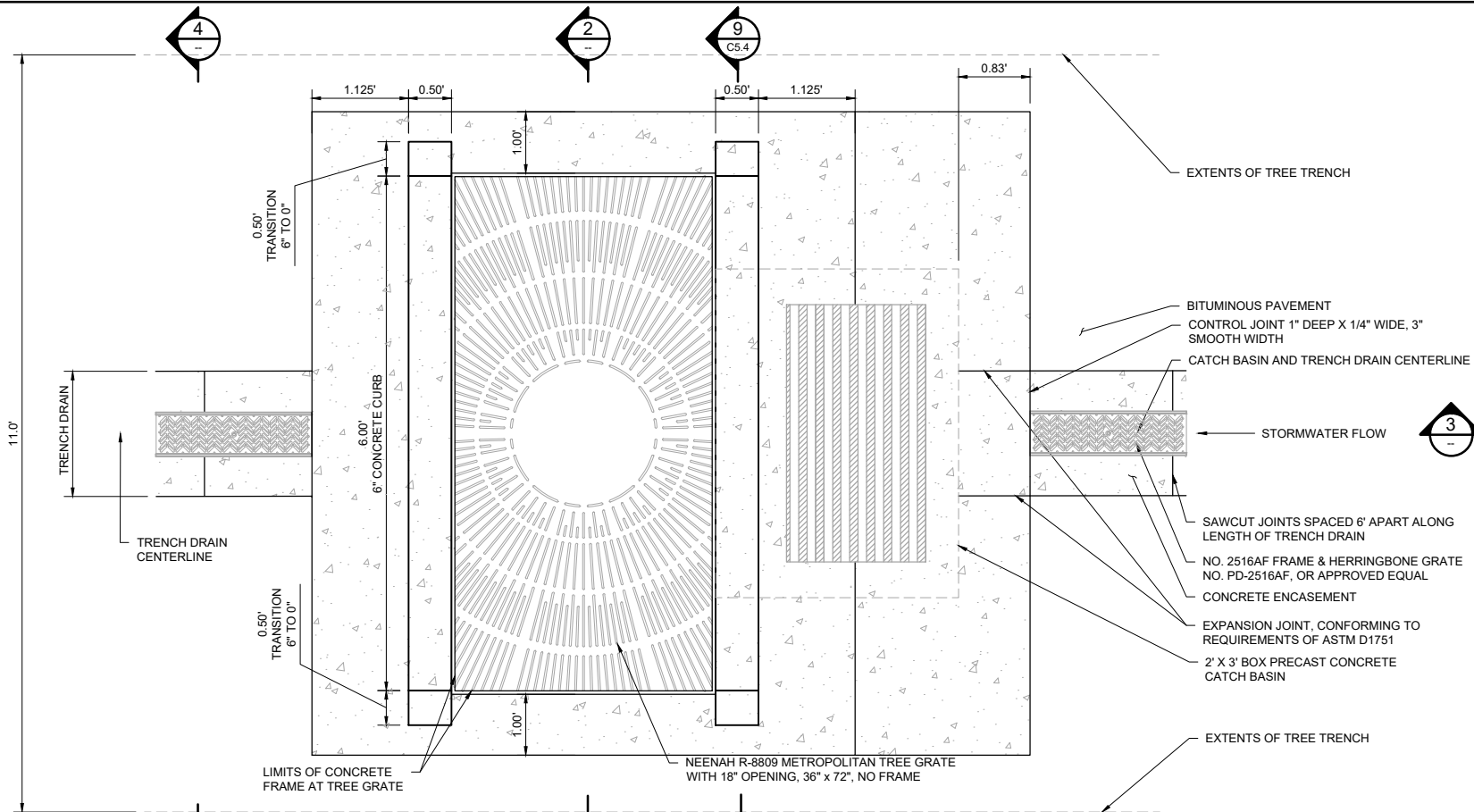
3 SECTION: CONCRETE CURB CUT

PRELIMINARY DRAFT

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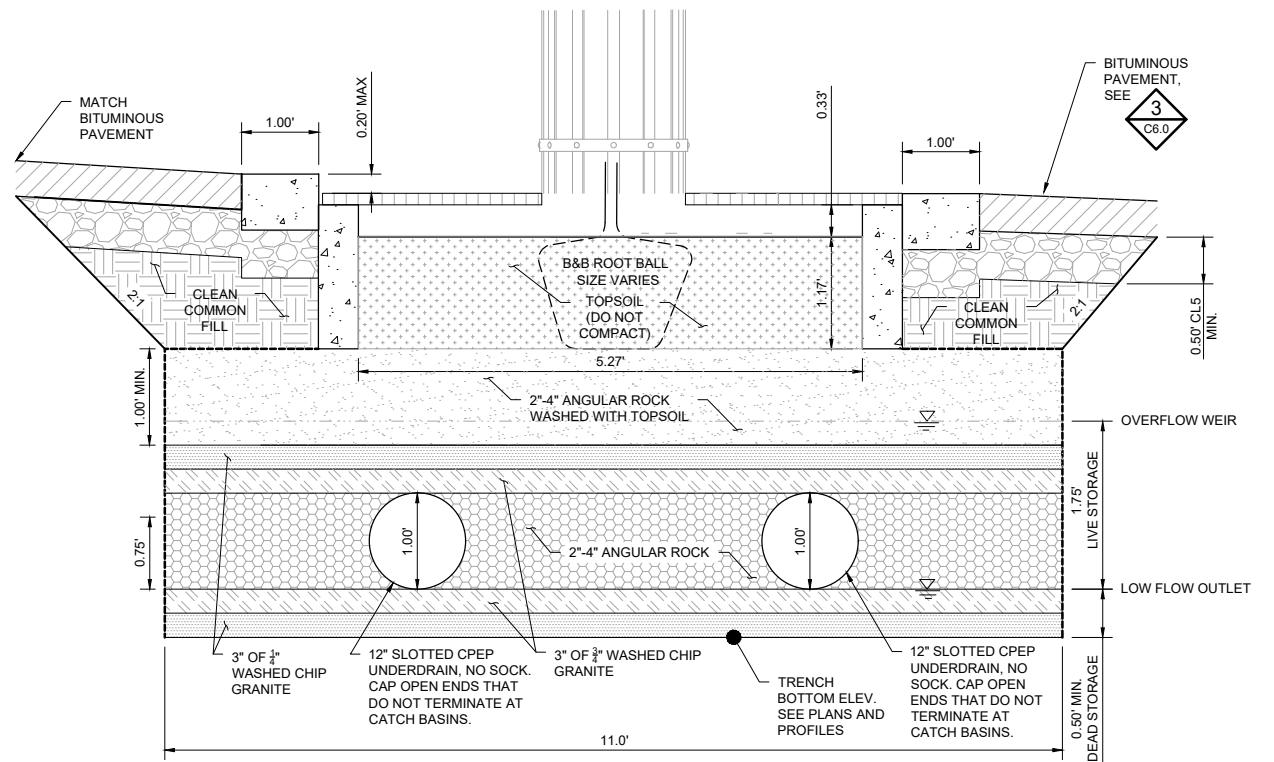


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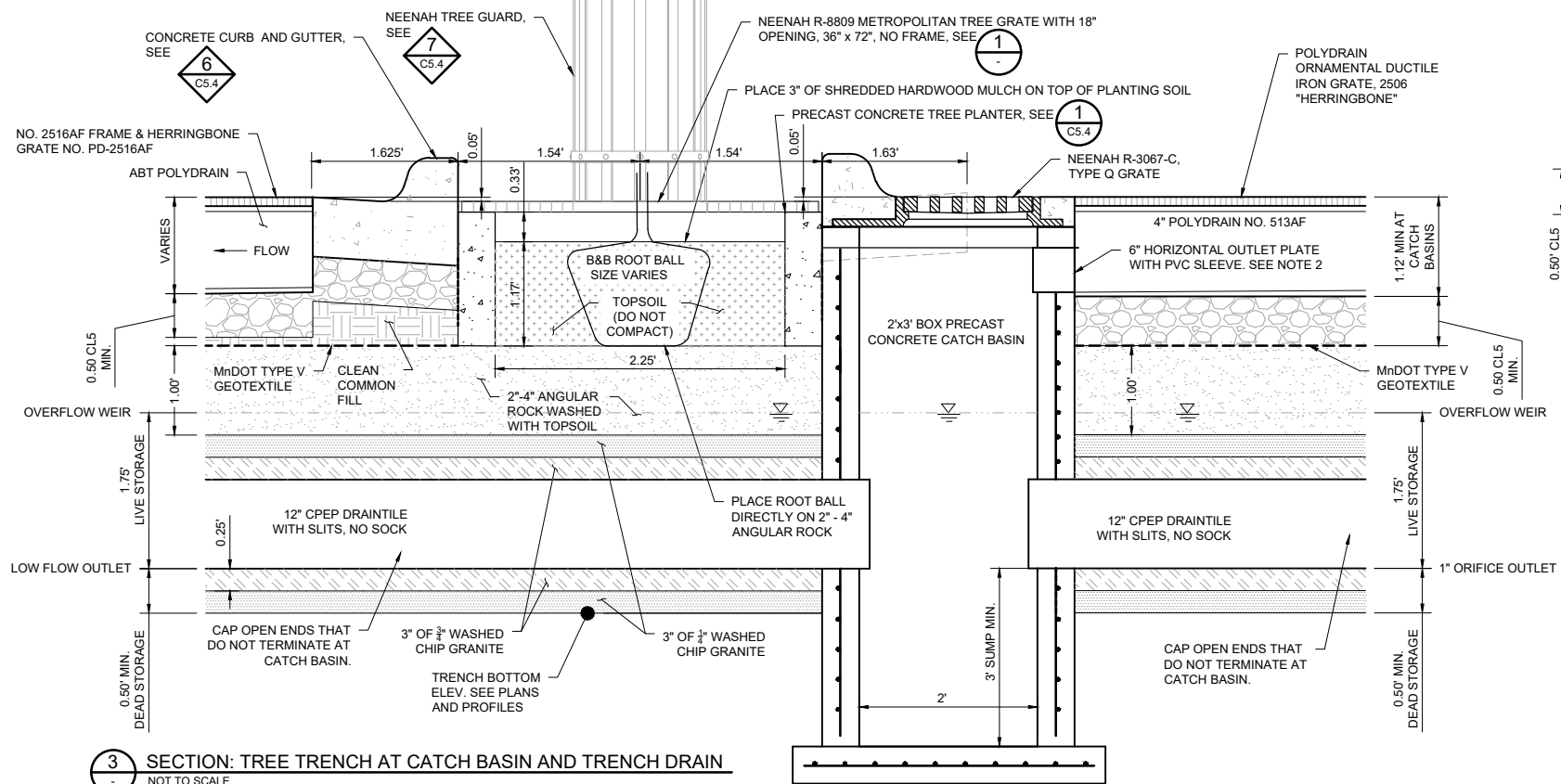


NOTES:  
 1. SEE PLAN FOR CATCH BASIN AND TRENCH DRAIN LOCATIONS. TYP. DETAIL VARIES PER PLAN LAYOUT

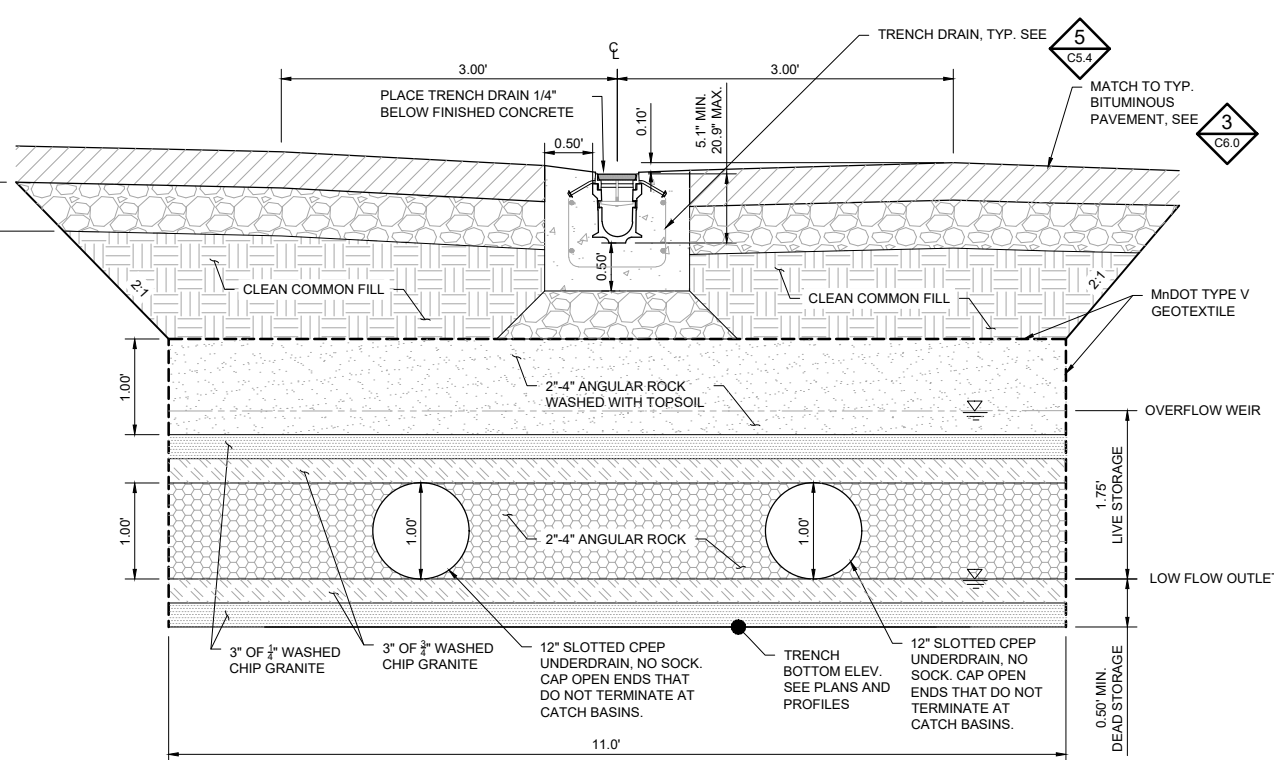
**1 PLAN: CONCRETE FRAME AT TREE GRATE, TYP.**  
 NOT TO SCALE



**2 SECTION: TREE TRENCH**  
 NOT TO SCALE



**3 SECTION: TREE TRENCH AT CATCH BASIN AND TRENCH DRAIN**  
 NOT TO SCALE



**4 SECTION: TRENCH DRAIN AND TREE TRENCH**  
 NOT TO SCALE

PRELIMINARY DRAFT

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 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	05/01								
BID									
CONSTRUCTION									
RELEASED TO/FOR	A	B	C	0	1	2	3		
DATE RELEASED									

**BARR** Engineering Co.  
 4300 MARKETPOINTE DRIVE  
 SUITE 200  
 MINNEAPOLIS, MN 55435  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
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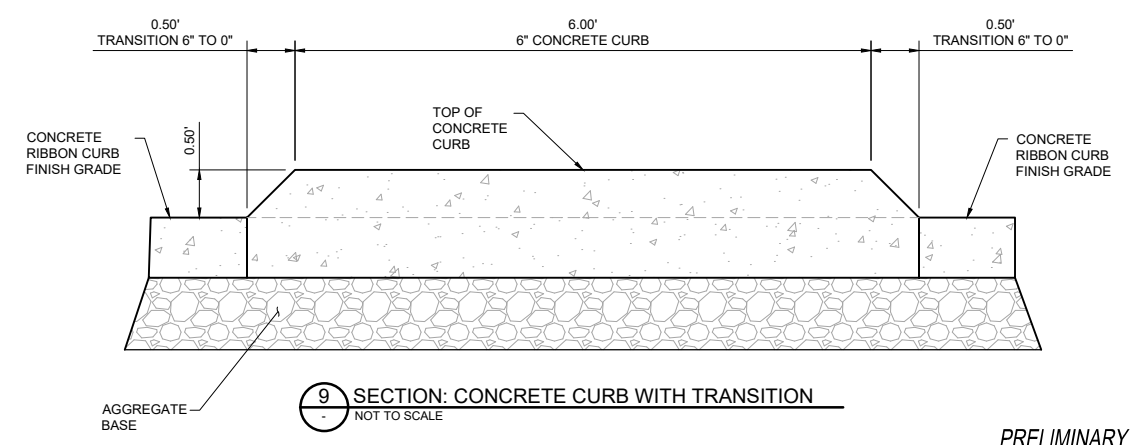
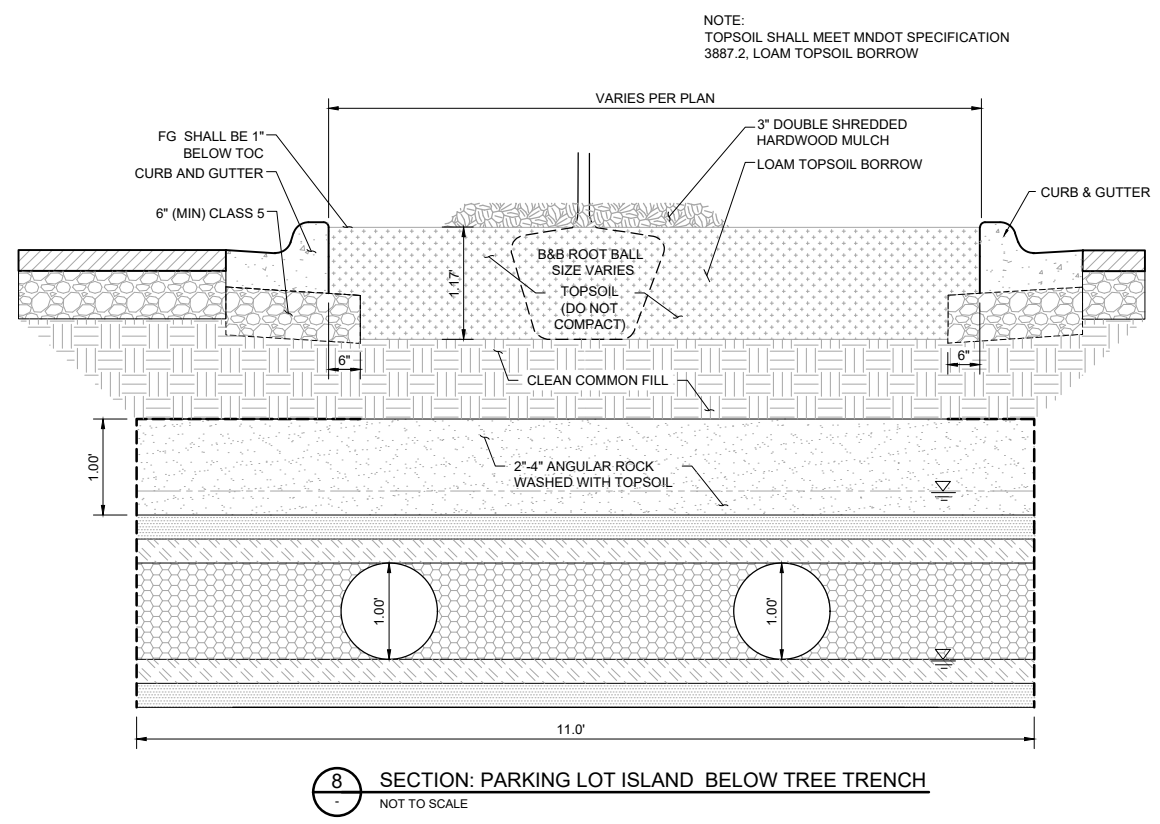
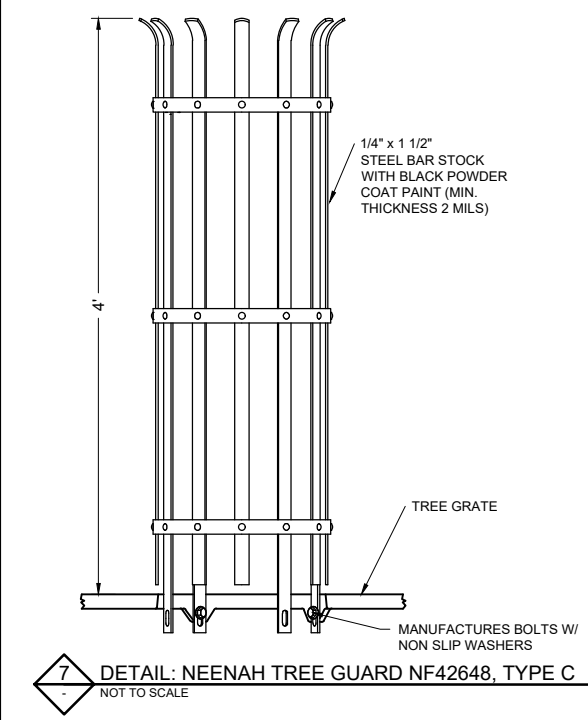
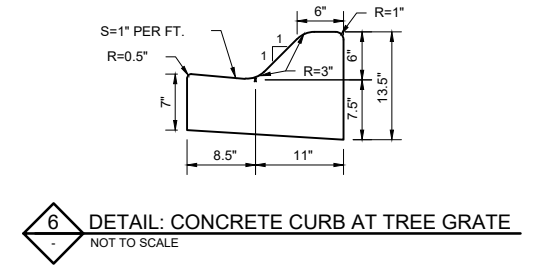
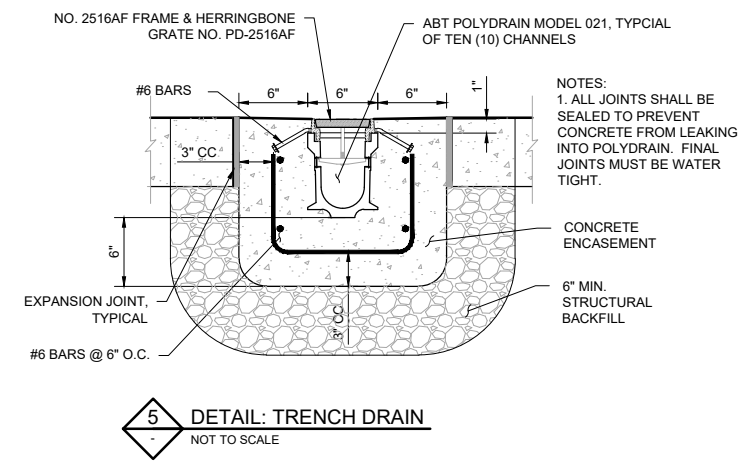
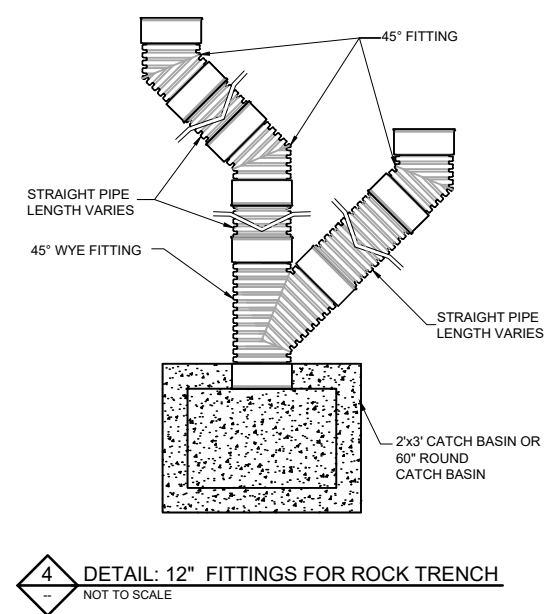
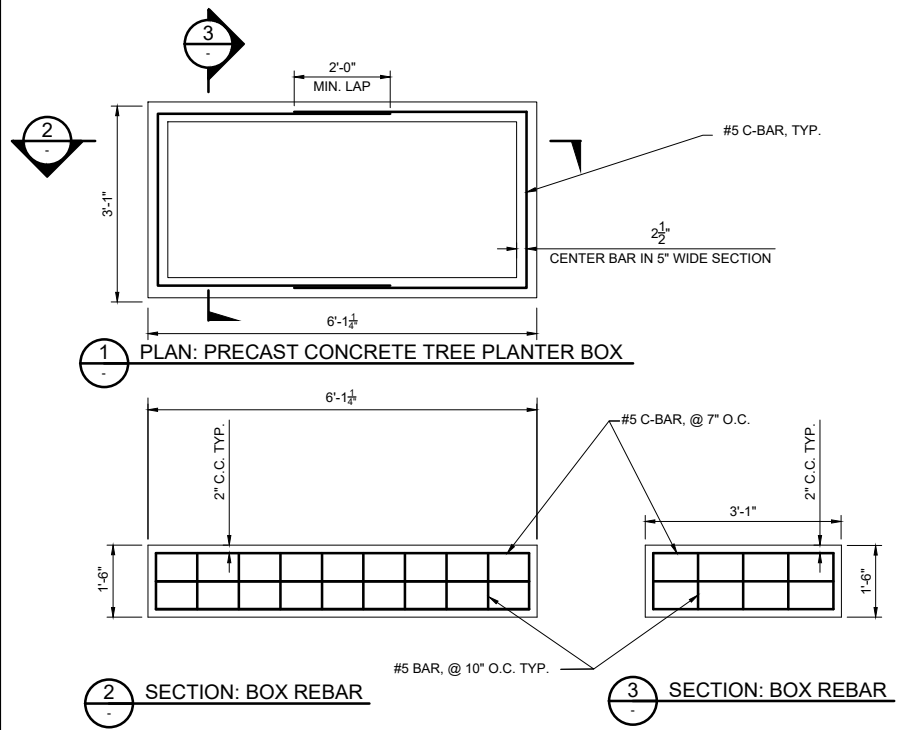
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Date	05/01/2020
Drawn	JPP
Checked	LAD
Designed	BARR
Approved	LAD

**RAMSEY-WASHINGTON**  
 METRO WATERSHED DISTRICT

STORMWATER IMPROVEMENTS  
 TARGET - EAST ST. PAUL

TREE TRENCH DETAILS  
 TREE BOX, TREE TRENCH, & TREE DRAIN

BARR PROJECT No.	23621328.00
CLIENT PROJECT No.	
DWG. No.	C5.3
REV. No.	A



PRELIMINARY DRAFT

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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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.

PRINTED NAME: Leslie A. Dell'Angelo  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	BID	CONSTRUCTION	RELEASED TO/FOR	DATE RELEASED
05/01			A B C 0 1 2 3	

**BARR** Project Office:  
 BARR ENGINEERING CO.  
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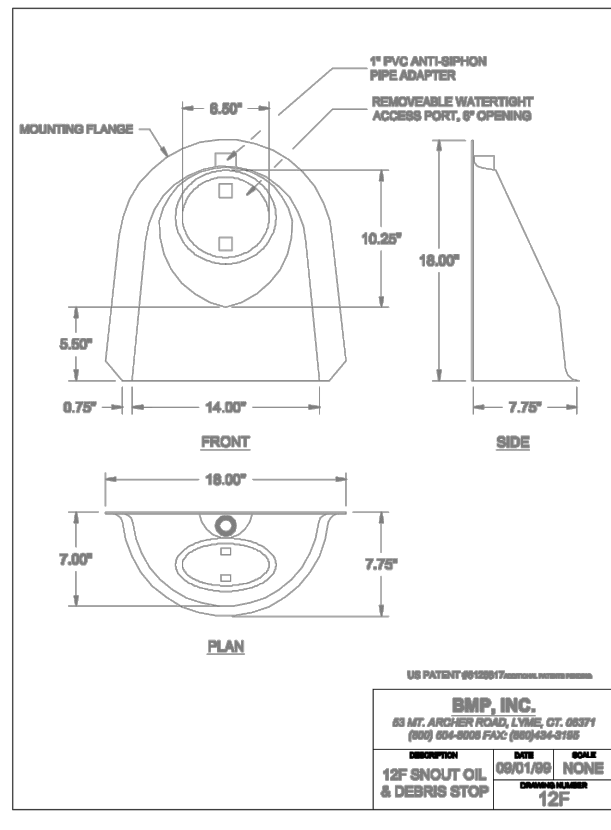
Scale	AS SHOWN
Date	05/01/2020
Drawn	JPP
Checked	LAD
Designed	BARR
Approved	LAD

**RAMSEY-WASHINGTON**  
 METRO WATERSHED DISTRICT

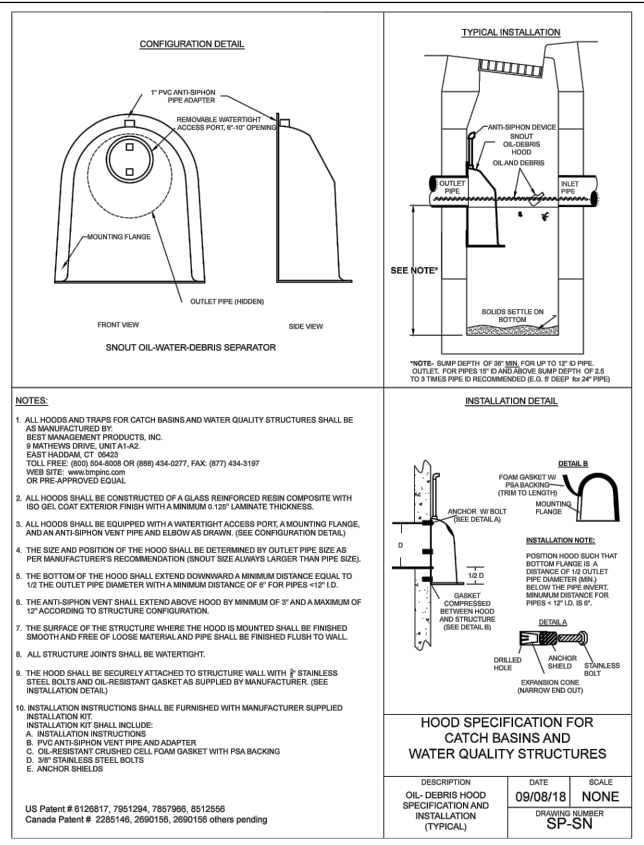
STORMWATER IMPROVEMENTS  
 TARGET - EAST ST. PAUL  
 DETAILS - TREE TRENCHES  
 TREE GUARD, TRENCH DRAIN

BARR PROJECT No. 23621328.00	REV. No. A
CLIENT PROJECT No.	DWG. No. C5.4

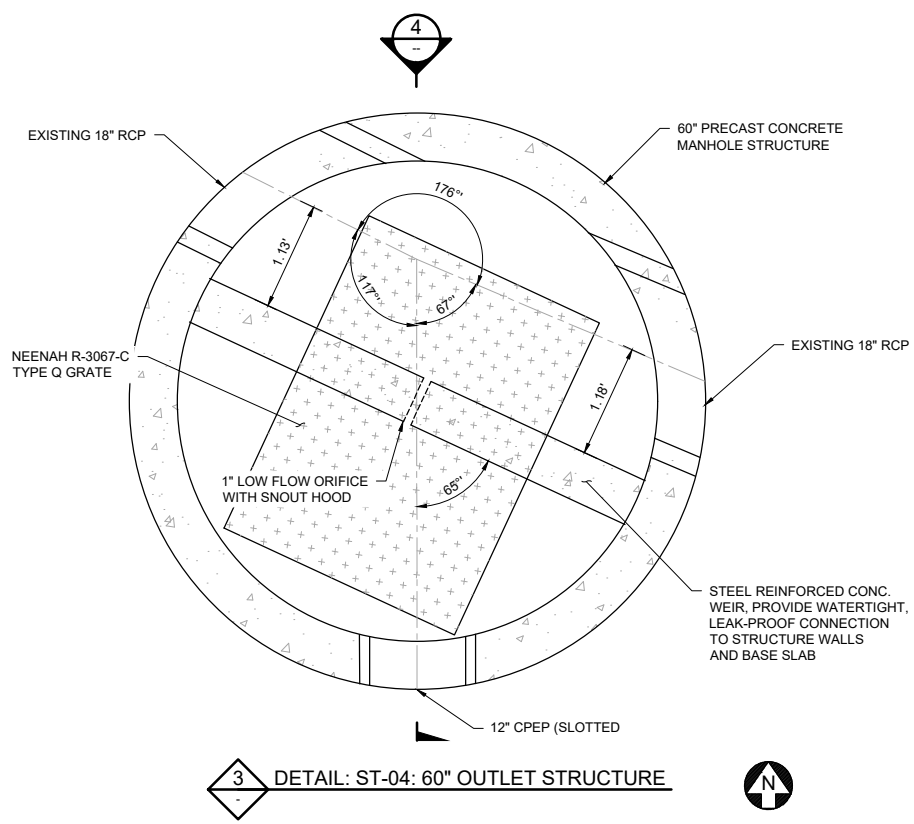




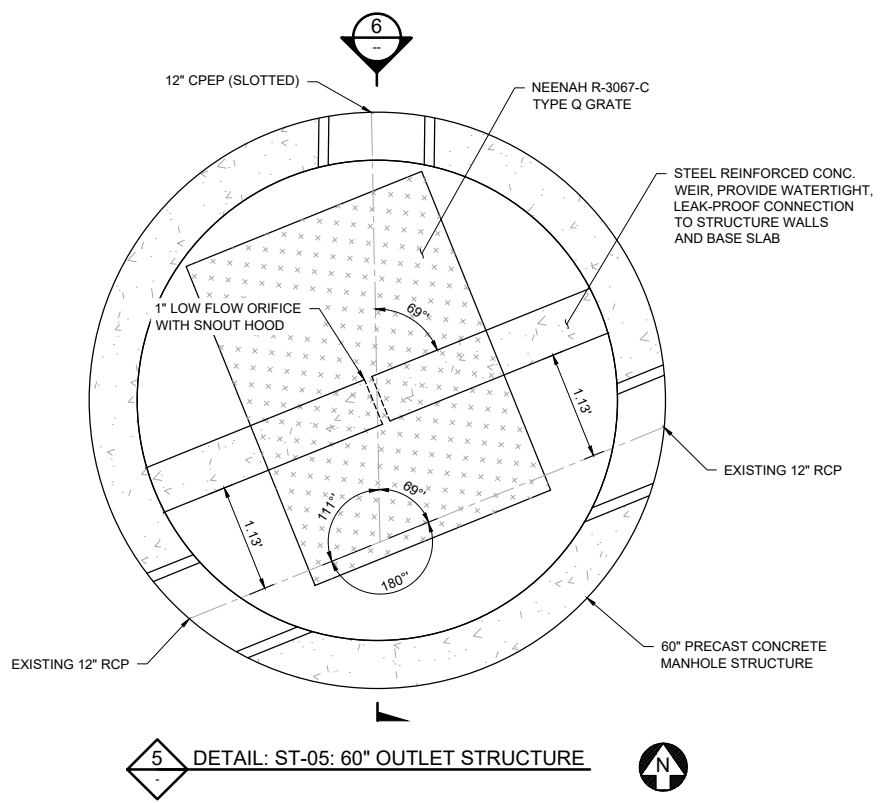
1 DETAIL: 12F SNOOT OIL & DEBRIS STOP  
NOT TO SCALE



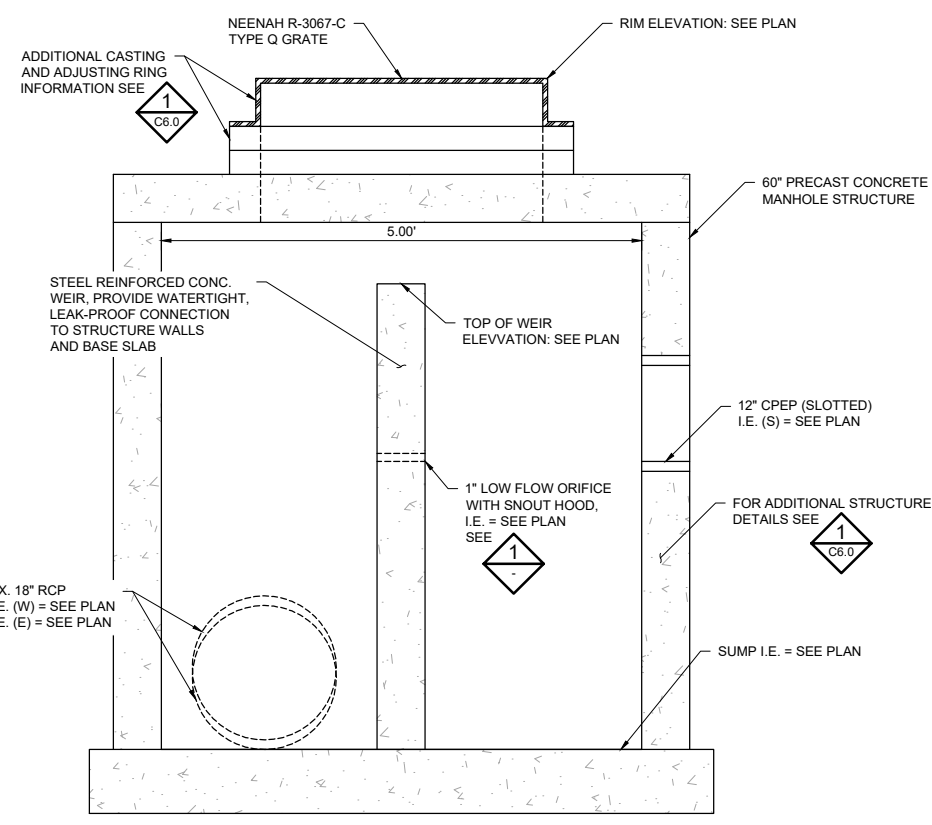
2 DETAIL: OIL-DEBRIS HOOD SPEC AND INSTALLATION  
NOT TO SCALE



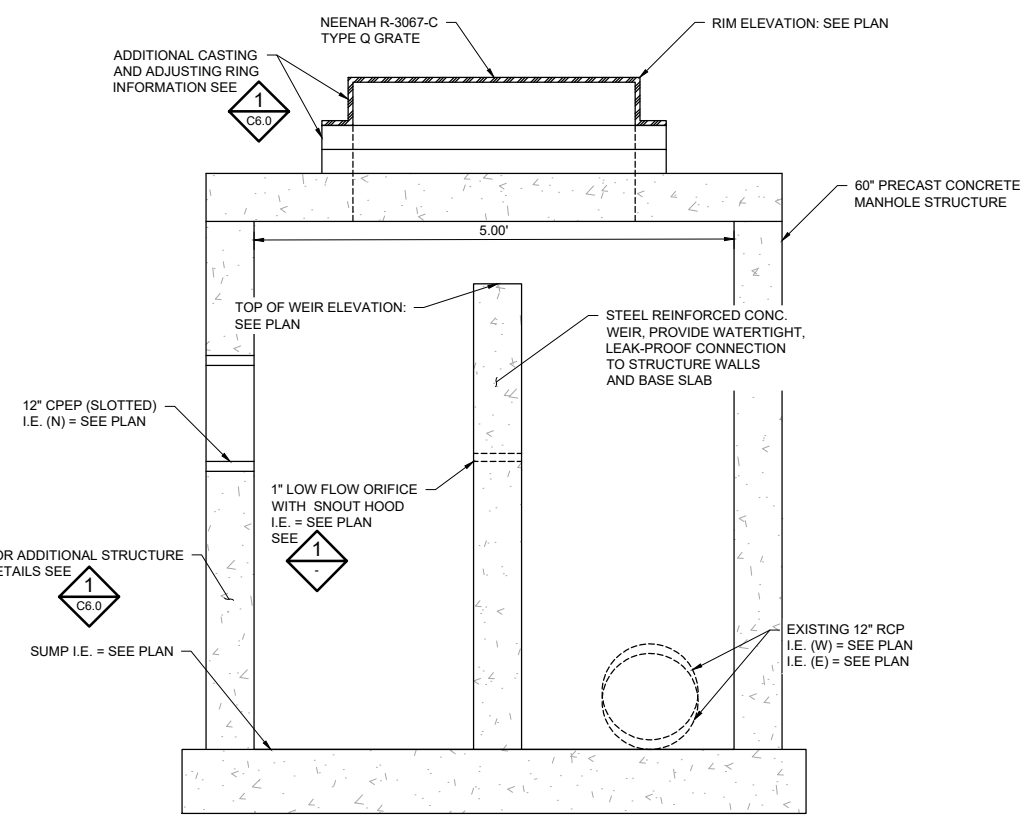
3 DETAIL: ST-04: 60" OUTLET STRUCTURE



5 DETAIL: ST-05: 60" OUTLET STRUCTURE



4 SECTION: ST-04: 60" OUTLET STRUCTURE



6 SECTION: ST-05: 60" OUTLET STRUCTURE

PRELIMINARY DRAFT

CADD USER: Gireth W. Becker FILE: M:\DESIGN\3621328\02\362132800\_ESPT\_C4.5-DETAILS\_TRENTRENCH DWG PLOT SCALE: 1:2 PLOT DATE: 05/12/2020 4:55 PM

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PRINTED NAME: Leslie A. Dell'Angelo  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	05/01						
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

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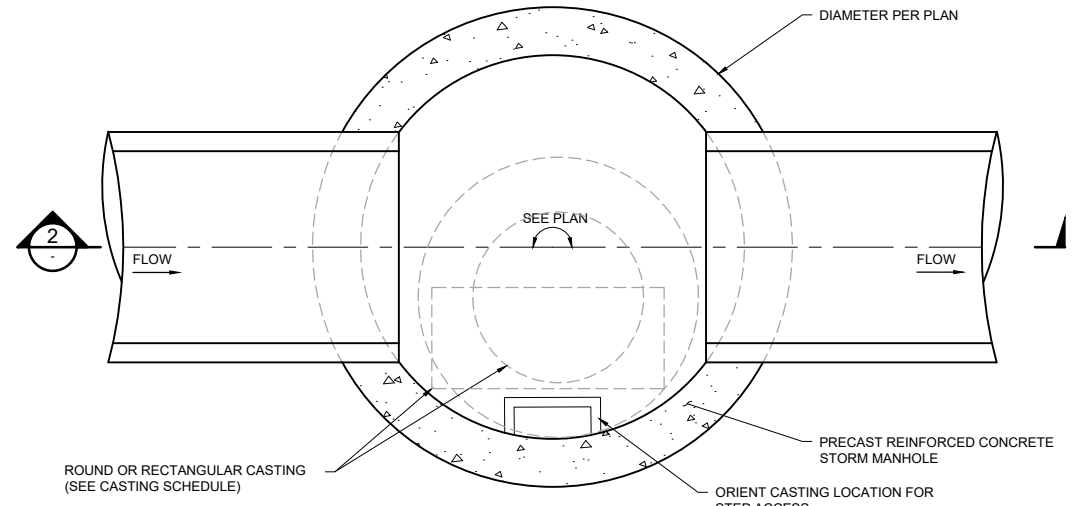
Project Office:  
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4300 MARKETPOINTE DRIVE  
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MINNEAPOLIS, MN 55435  
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Scale: AS SHOWN  
Date: 05/01/2020  
Drawn: JPP  
Checked: LAD  
Designed: BARR  
Approved: LAD

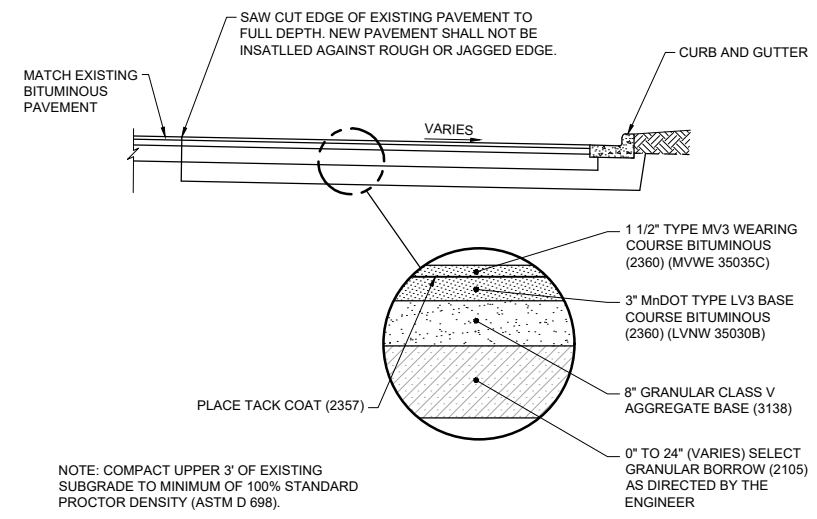
STORMWATER IMPROVEMENTS  
TARGET - EAST ST. PAUL

DETAILS  
SNOOT HOOD

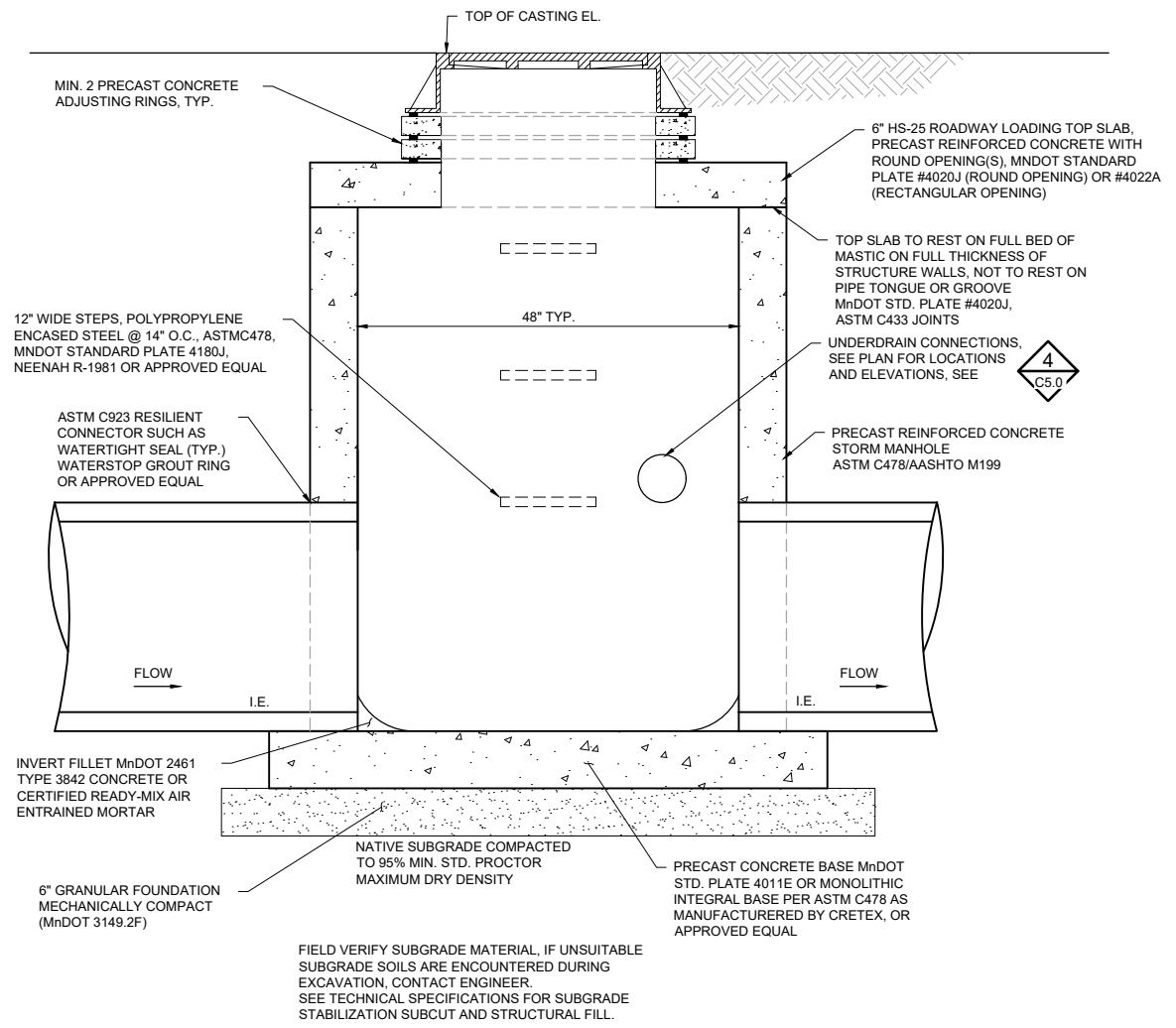
BARR PROJECT No.	23621328.00
CLIENT PROJECT No.	
DWG. No.	C5.5
REV. No.	A



1 DETAIL: STORM MANHOLE TOP VIEW (TYP.)  
NOT TO SCALE



3 DETAIL: TYPICAL BITUMINOUS PAVEMENT  
NOT TO SCALE



2 SECTION: STORM MANHOLE SIDE VIEW (TYP.)  
NOT TO SCALE

CADD USER: Garth W. Breckler FILE: M:\DESIGN\23621328\02\23621328\_STANDARD\PLATES.DWG PLOT SCALE: 1/2" = 1'-0" PLOT DATE: 5/11/2020 4:58 PM

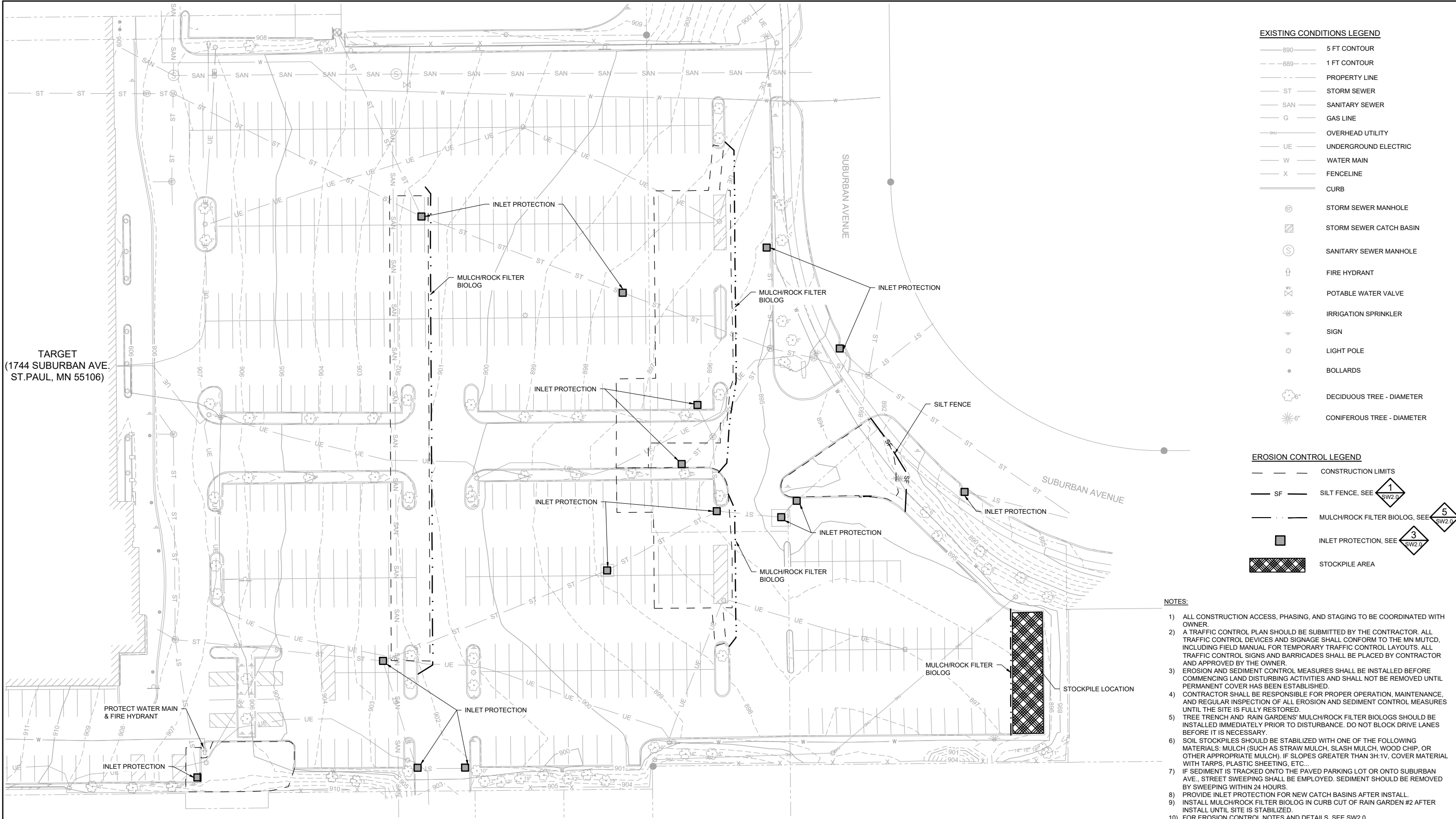
PRELIMINARY  
DRAFT

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				PRINTED NAME Leslie A. Dell'Angelo				CONSTRUCTION				Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com				Date 05/01/2020		CLIENT PROJECT No.		DWG. No. C6.0			
				SIGNATURE DATE				RELEASED TO/FOR				Date Released				Checked LAD		DESIGNED BARR		REV. No. A			
				LICENSE # 49094				A B C 0 1 2 3				Approved LAD				Approved							
NO.				BY				CHK.				APP.				DATE				REVISION DESCRIPTION			



STORMWATER IMPROVEMENTS TARGET - EAST ST. PAUL		BARR PROJECT No. 23/62-1328.00	
DETAILS STANDARD DETAILS		CLIENT PROJECT No.	
DWG. No. C6.0		REV. No. A	





**EXISTING CONDITIONS LEGEND**

— 890 —	5 FT CONTOUR
--- 889 ---	1 FT CONTOUR
- - - - -	PROPERTY LINE
— ST —	STORM SEWER
— SAN —	SANITARY SEWER
— G —	GAS LINE
— OHU —	OVERHEAD UTILITY
— UE —	UNDERGROUND ELECTRIC
— W —	WATER MAIN
— X —	FENCELINE
—	CURB
⊙	STORM SEWER MANHOLE
⊠	STORM SEWER CATCH BASIN
⊙	SANITARY SEWER MANHOLE
⊕	FIRE HYDRANT
⊕	POTABLE WATER VALVE
⊕	IRRIGATION SPRINKLER
⊕	SIGN
⊕	LIGHT POLE
•	BOLLARDS
⊕	DECIDUOUS TREE - DIAMETER
⊕	CONIFEROUS TREE - DIAMETER

**EROSION CONTROL LEGEND**

— — — — —	CONSTRUCTION LIMITS
— SF —	SILT FENCE, SEE 1 SW2.0
— — — — —	MULCH/ROCK FILTER BIOLOG, SEE 5 SW2.0
■	INLET PROTECTION, SEE 3 SW2.0
⊠	STOCKPILE AREA

- NOTES:**
- 1) ALL CONSTRUCTION ACCESS, PHASING, AND STAGING TO BE COORDINATED WITH OWNER.
  - 2) A TRAFFIC CONTROL PLAN SHOULD BE SUBMITTED BY THE CONTRACTOR. ALL TRAFFIC CONTROL DEVICES AND SIGNAGE SHALL CONFORM TO THE MN MUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL LAYOUTS. ALL TRAFFIC CONTROL SIGNS AND BARRICADES SHALL BE PLACED BY CONTRACTOR AND APPROVED BY THE OWNER.
  - 3) EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BEFORE COMMENCING LAND DISTURBING ACTIVITIES AND SHALL NOT BE REMOVED UNTIL PERMANENT COVER HAS BEEN ESTABLISHED.
  - 4) CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER OPERATION, MAINTENANCE, AND REGULAR INSPECTION OF ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL THE SITE IS FULLY RESTORED.
  - 5) TREE TRENCH AND RAIN GARDENS' MULCH/ROCK FILTER BIOLOGS SHOULD BE INSTALLED IMMEDIATELY PRIOR TO DISTURBANCE. DO NOT BLOCK DRIVE LANES BEFORE IT IS NECESSARY.
  - 6) SOIL STOCKPILES SHOULD BE STABILIZED WITH ONE OF THE FOLLOWING MATERIALS: MULCH (SUCH AS STRAW MULCH, SLASH MULCH, WOOD CHIP, OR OTHER APPROPRIATE MULCH). IF SLOPES GREATER THAN 3H:1V, COVER MATERIAL WITH TARPS, PLASTIC SHEETING, ETC...
  - 7) IF SEDIMENT IS TRACKED ONTO THE PAVED PARKING LOT OR ONTO SUBURBAN AVE., STREET SWEEPING SHALL BE EMPLOYED. SEDIMENT SHOULD BE REMOVED BY SWEEPING WITHIN 24 HOURS.
  - 8) PROVIDE INLET PROTECTION FOR NEW CATCH BASINS AFTER INSTALL.
  - 9) INSTALL MULCH/ROCK FILTER BIOLOG IN CURB CUT OF RAIN GARDEN #2 AFTER INSTALL UNTIL SITE IS STABILIZED.
  - 10) FOR EROSION CONTROL NOTES AND DETAILS, SEE SW2.0

1 PLAN: EROSION AND SEDIMENT CONTROL

0 30 60

SCALE IN FEET

N

PRELIMINARY  
DRAFT

CADD USER: Garth W. Brecker FILE: M:\DESIGN\2020\1328\02\2020\132800\_ESPT\_SW1.0\_EROSION AND SEDIMENT CONTROL PLAN.DWG PLOT SCALE: 1:2 PLOT DATE: 01/10/2020 4:46 PM

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PRINTED NAME: Leslie A. DellAngelo  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	05/01						
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

**BARR**

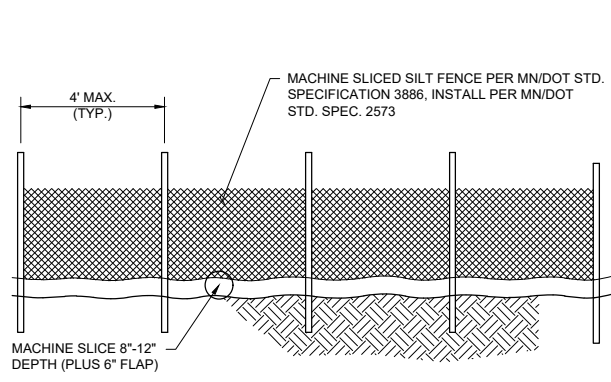
Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
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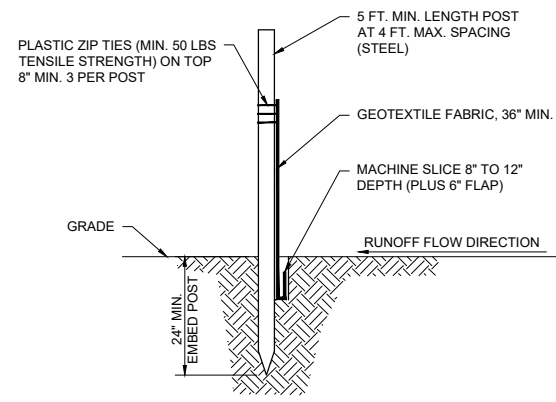
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Date	05/01/2020
Drawn	KJN2
Checked	LAD
Designed	BARR
Approved	LAD

**RAMSEY-WASHINGTON**  
METRO WATERSHED DISTRICT

STORMWATER IMPROVEMENTS TARGET - EAST ST. PAUL	BARR PROJECT No. 23/62-1328.00	
	CLIENT PROJECT No.	
EROSION AND SEDIMENT CONTROL PLAN	DWG. No. SW1.0	REV. No. A



**DOWNSTREAM VIEW**

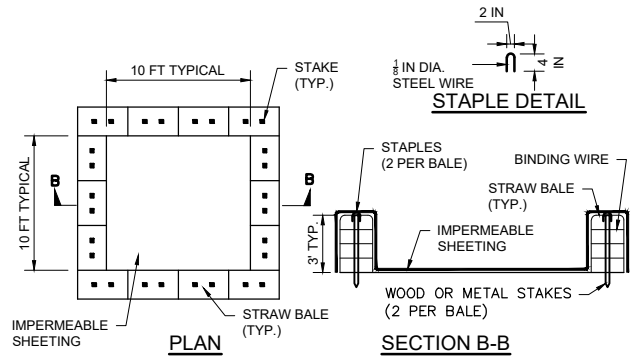


**SECTION VIEW**

**NOTES:**

- INSTALL SILT FENCE PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED AND MAINTAIN THROUGHOUT THE CONSTRUCTION PERIOD. REMOVE SILT FENCE AND ANY ACCUMULATED SEDIMENT IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
- SILT FENCE MATERIALS AND INSTALLATION SHALL MEET THE REQUIREMENTS OF MN/DOT SPECIFICATIONS 2573 AND 3886.
- NO HOLES OR GAPS SHALL BE PRESENT IN/UNDER SILT FENCE. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
- REMOVE ACCUMULATED SEDIMENT WHEN BUILD UP REACHES 1/3 OF FENCE HEIGHT. OR INSTALL A SECOND SILT FENCE DOWNSTREAM OF THE ORIGINAL FENCE AT A SUITABLE DISTANCE.
- WHEN SPLICES ARE NECESSARY MAKE SPLICE AT POST ACCORDING TO SPLICE DETAIL. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE. ROTATE BOTH POSTS TOGETHER AT LEAST 180 DEGREES TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL. CUT THE FABRIC NEAR THE BOTTOM OF THE POSTS TO ACCOMMODATE THE 6 INCH FLAP, THEN DRIVE BOTH POSTS AND BURY THE FLAP AND COMPACT BACKFILL.

**1** DETAIL: SILT FENCE - MACHINE SLICED  
NOT TO SCALE

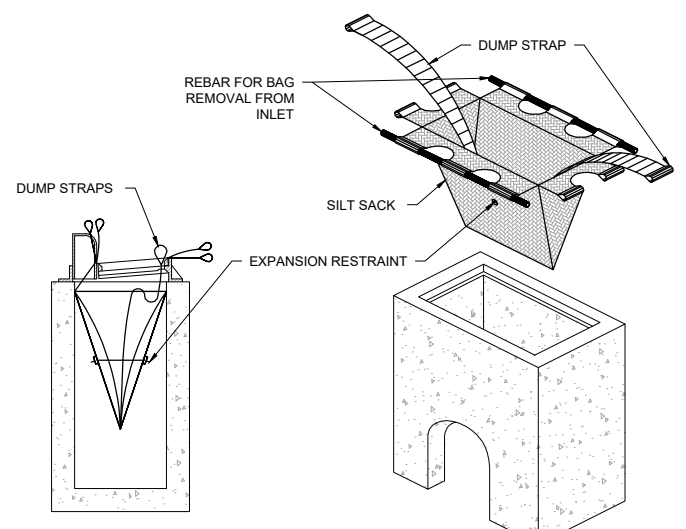


**PLAN** **SECTION B-B**

**NOTES:**

- LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
- SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
- PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
- PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
- KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.

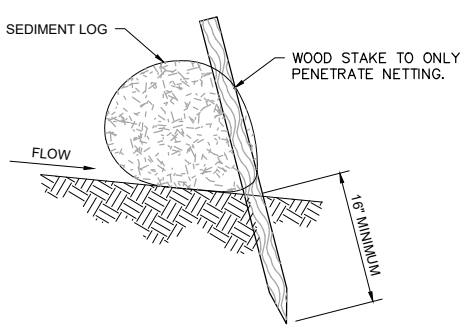
**2** DETAIL: CONCRETE WASHOUT - STRUCTURE WITH STRAW BALES  
NOT TO SCALE



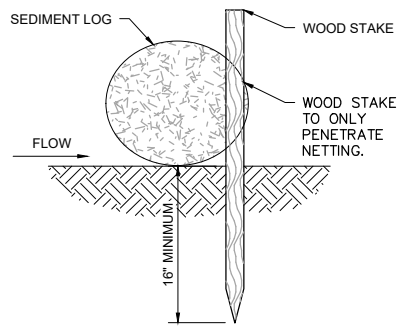
**NOTES:**

- INSTALL INLET PROTECTION PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED OR IMMEDIATELY FOLLOWING ANY CATCHBASIN INSTALLATION AND MAINTAIN THROUGHOUT THE CONSTRUCTION PERIOD.
- MATERIALS SHALL BE SUFFICIENT TO ALLOW FLOW WHILE BLOCKING SEDIMENT. NO HOLES OR GAPS SHALL BE PRESENT IN/AROUND FILTER SACK.
- CLEAN FILTER SACK AND REMOVE ACCUMULATED SEDIMENT AS REQUIRED TO ALLOW FLOW INTO THE CATCHBASIN AND PREVENT SEDIMENT FROM LEAVING THE DEVICE.
- REMOVE DEVICE AND ANY ACCUMULATED SEDIMENT IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.

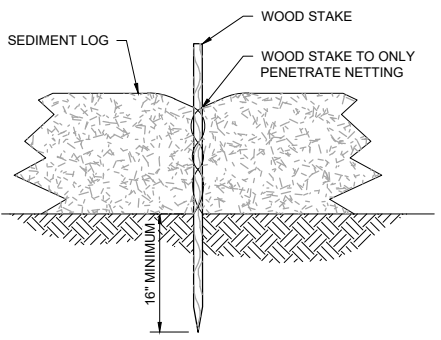
**3** DETAIL: INLET PROTECTION, FILTER SACK TYPE  
NOT TO SCALE



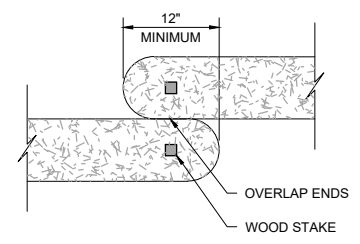
**SIDE VIEW ON SLOPE**



**SIDE VIEW FLAT**



**FRONT VIEW**

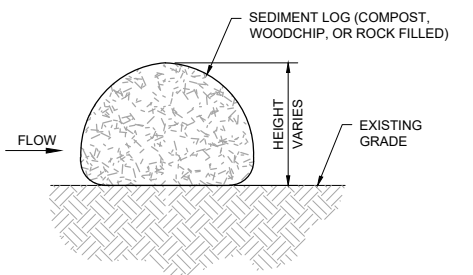


**TOP VIEW**

**NOTES:**

- INSTALL SEDIMENT LOG ALONG CONTOURS (CONSTANT ELEVATION).
- NO GAPS SHALL BE PRESENT UNDER SEDIMENT LOG. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
- REMOVE ACCUMULATED SEDIMENT WHEN REACHING 1/3 OF LOG HEIGHT.
- MAINTAIN SEDIMENT LOG THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIR OR REPLACED AS REQUIRED.

**4** DETAIL: SEDIMENT LOG - STAKING  
NOT TO SCALE



**NOTES:**

- STAKE FREE SEDIMENT LOG TO BE USED IN AREAS THAT ARE RELATIVELY FLAT AND SHOULD BE INSTALLED ALONG CONTOURS (CONSTANT ELEVATION).
- NO GAPS SHALL BE PRESENT UNDER SEDIMENT LOG. PREPARE AREA AS NEEDED TO SMOOTH SURFACE OR REMOVE DEBRIS.
- ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN REACHING 1/3 OF LOG HEIGHT.
- SEDIMENT LOG SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND REPAIRED OR REPLACED AS REQUIRED.

**5** DETAIL: SEDIMENT LOG - STAKE FREE  
NOT TO SCALE

PRELIMINARY DRAFT

CADD USER: Gareth W. Becker FILE: M:\DESIGN\2020\2020-002362132800\_ESPT\_SW2.0\_DETAILS-EROSIONCONTROL.DWG PLOT SCALE: 1:2 PLOT DATE: 5/1/2020 4:57 PM

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PRINTED NAME: Leslie A. DellAngelo  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	05/01								
BID									
CONSTRUCTION									
RELEASED TO/FOR	A	B	C	0	1	2	3		
DATE RELEASED									

**BARR** Project Office:  
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Scale	AS SHOWN
Date	05/01/2020
Drawn	KJN2
Checked	LAD
Designed	BARR
Approved	LAD

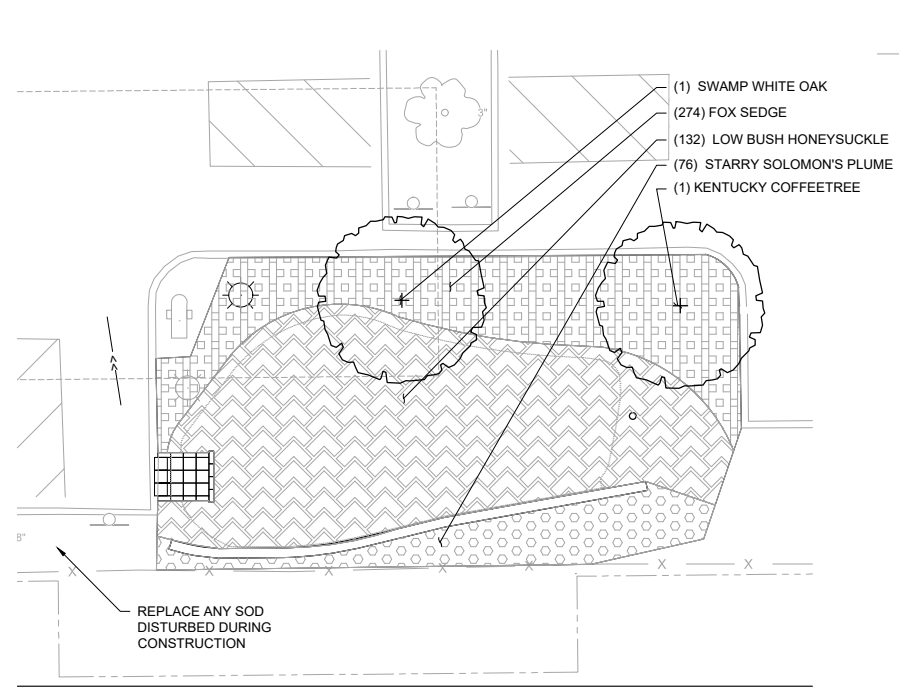
**RAMSEY-WASHINGTON**  
METRO WATERSHED DISTRICT

**STORMWATER IMPROVEMENTS**  
**TARGET - EAST ST. PAUL**  
**EROSION AND SEDIMENT CONTROL**  
**DETAILS**

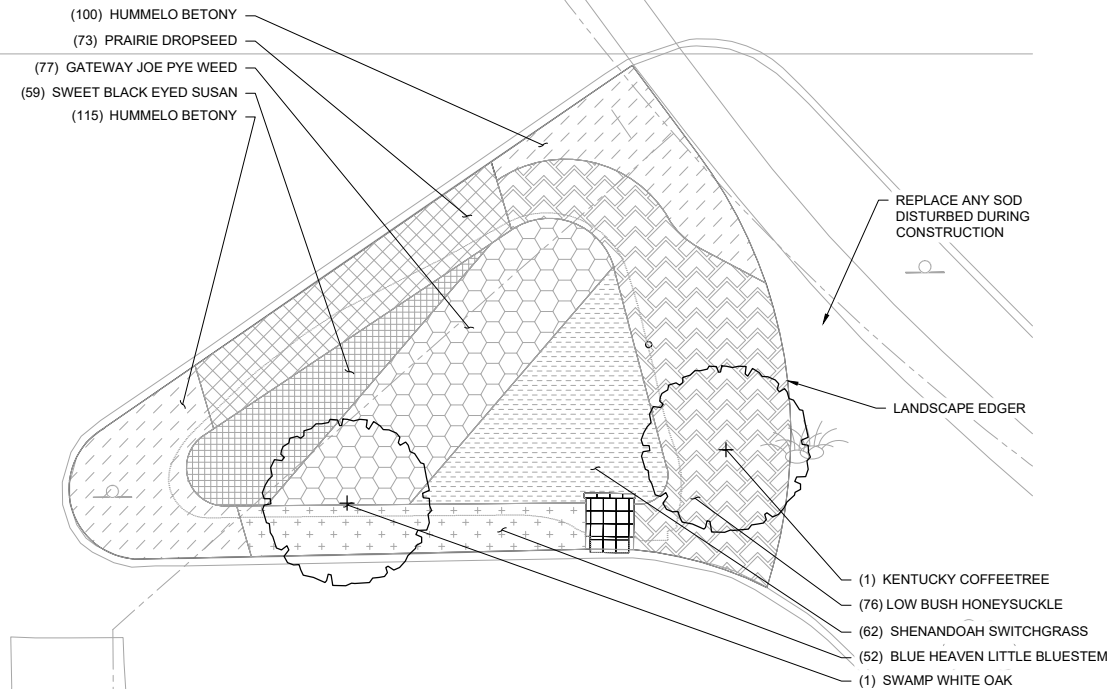
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CLIENT PROJECT No.	
DWG. No.	SW2.0
REV. No.	A

**RAIN GARDEN PLANTING SCHEDULE**

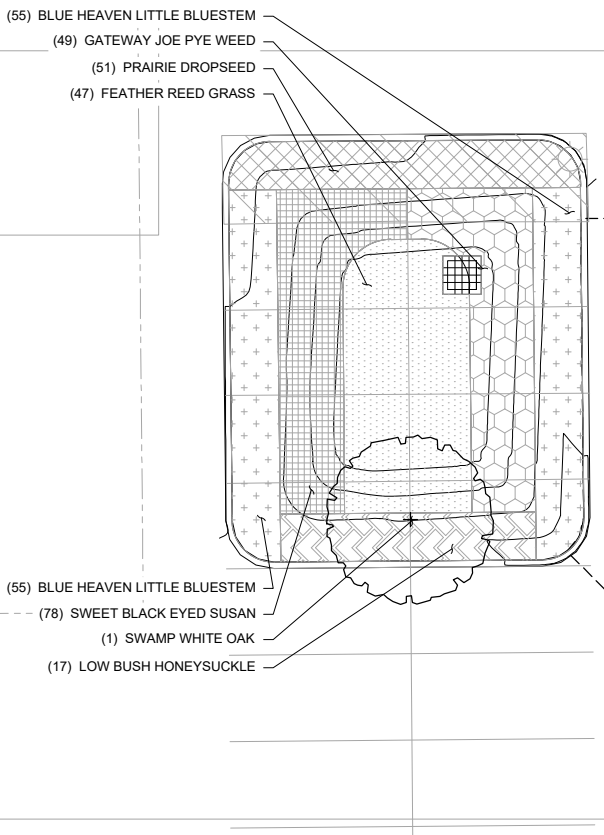
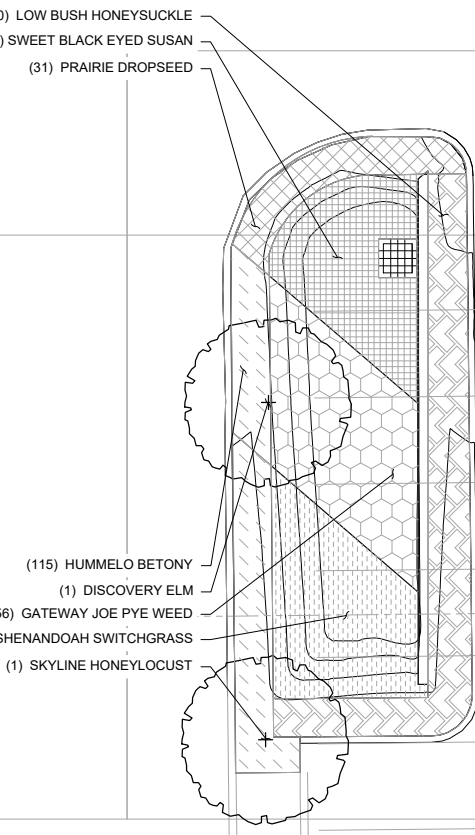
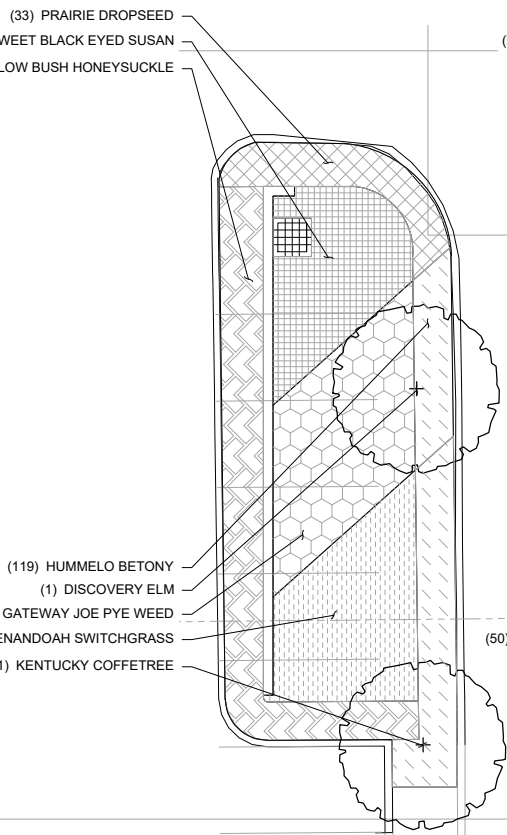
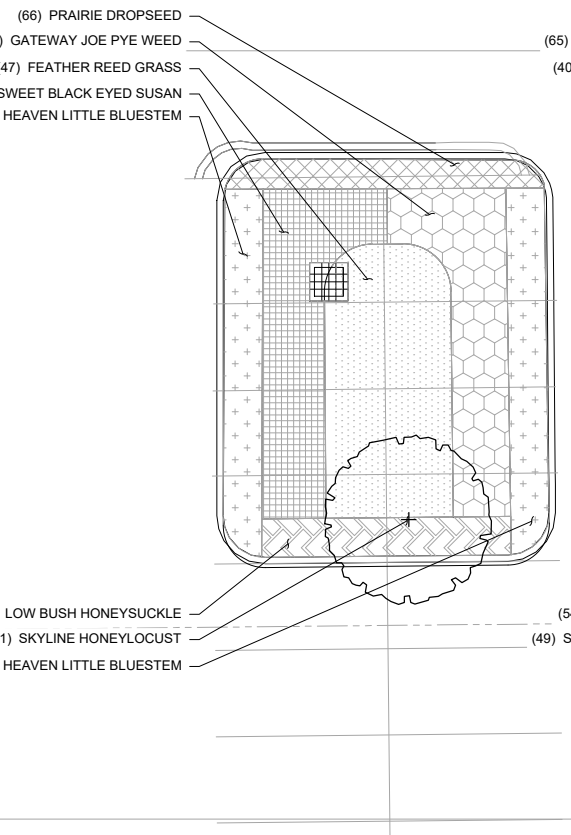
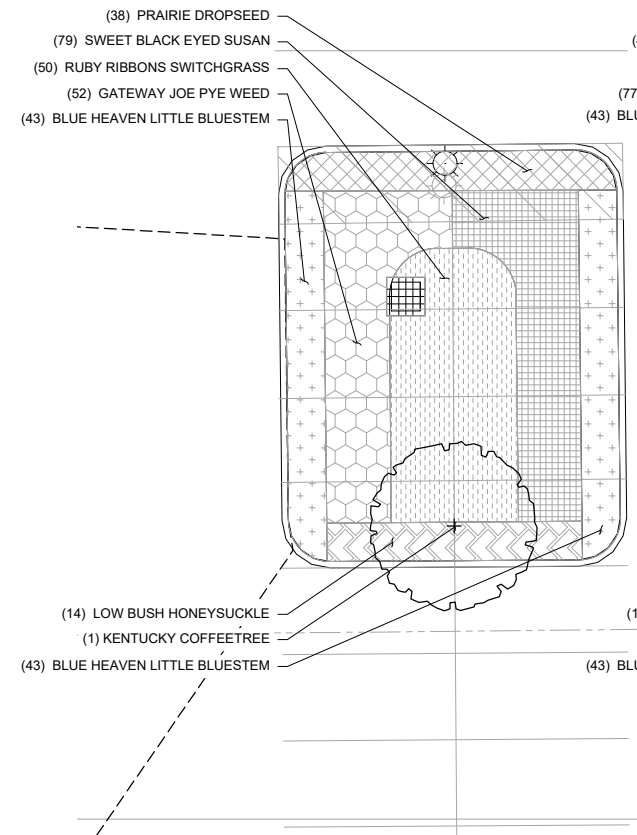
East St. Paul Target Planting Plan				
PERENNIALS				
Common Name	Botanical Name	Size	Spacing	Quantity
Feather Reed Grass	<i>Calamagrostis x acutiflora</i> 'Karl Foerster'	1 GAL	36" o.c.	94
Fox Sedge	<i>Carex vulpinoidea</i>	4" pot	18" o.c.	274
Gateway Joe Pye Weed	<i>Eupatorium maculatum</i> 'Gateway'	1 GAL	30" o.c.	333
Starry Solomon's Plume	<i>Maianthemum stellatum</i>	4" pot	24" o.c.	76
Shenandoah Switch Grass	<i>Panicum virginicum</i> 'Shenandoah'	1 GAL	30" o.c.	161
Ruby Ribbons Switch Grass	<i>Panicum virginicum</i> 'RR1'	1 GAL	30" o.c.	50
Sweet Black Eyed Susan	<i>Rudbeckia subtomentosa</i>	1 GAL	24" o.c.	428
Blue Heaven Little Bluestem	<i>Schizachyrium scoparium</i> 'Minblue A'	1 GAL	24" o.c.	334
Prairie Dropseed	<i>Sporobolus heterolepis</i>	1 GAL	24" o.c.	264
Hummelo Betony	<i>Stachys officinalis</i> 'Hummelo'	1 GAL	18" o.c.	449
SHRUBS				
Common Name	Botanical	Size	Spacing	Quantity
Low Bush Honeysuckle	<i>Diervilla lonicera</i>	1 GAL	36" o.c.	332
TREES				
Common Name	Botanical	Size	Spacing	Quantity
Skyline Honeylocust	<i>Gleditsia triacanthos</i> 'Skycole'	#20 cont	As shown	2
Kentucky Coffeetree	<i>Gymnocladus dioica</i>	#20 cont	As shown	4
Swamp White Oak	<i>Quercus bicolor</i>	#20 cont	As shown	3
Discovery Elm	<i>Ulmus davidiana</i> 'Discovery'	#20 cont	As shown	2



**1 PLANTING PLAN: RAIN GARDEN #1**  
SCALE IN FEET



**3 PLANTING PLAN: RAIN GARDEN #2**  
SCALE IN FEET



**3 PLANTING PLAN: RAIN GARDENS #3 - #7**  
SCALE IN FEET

PRELIMINARY DRAFT

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CLIENT	
BID	
CONSTRUCTION	
RELEASED TO/FOR	
DATE RELEASED	

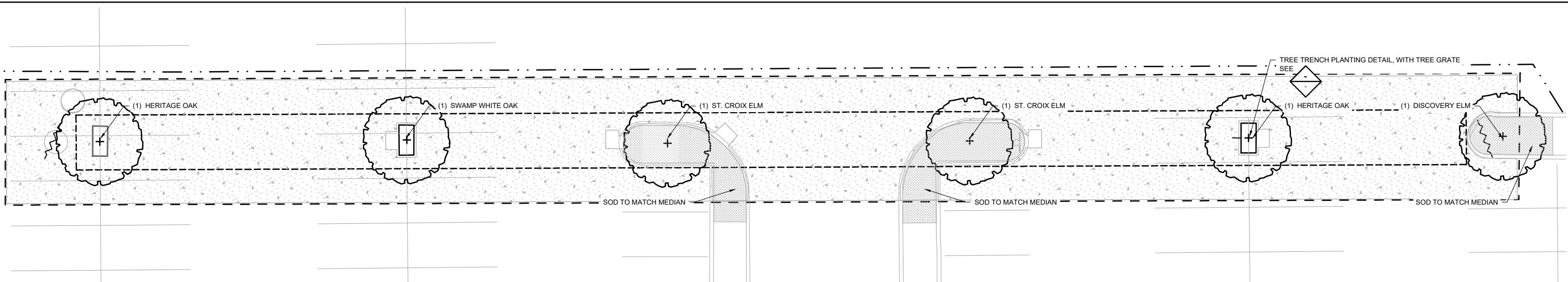
**BARR** Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

Scale	AS SHOWN
Date	04/14/2020
Drawn	MDB3
Checked	MEK2
Designed	MDB3
Approved	MEK2

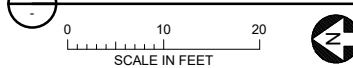


**STORMWATER IMPROVEMENTS  
TARGET - EAST ST. PAUL**  
**RESTORATION AND PLANTING PLAN  
RAINGARDENS #1 - #7**

BARR PROJECT No.	23/62-1328.00
CLIENT PROJECT No.	
DWG. No.	L1.0
REV. No.	A

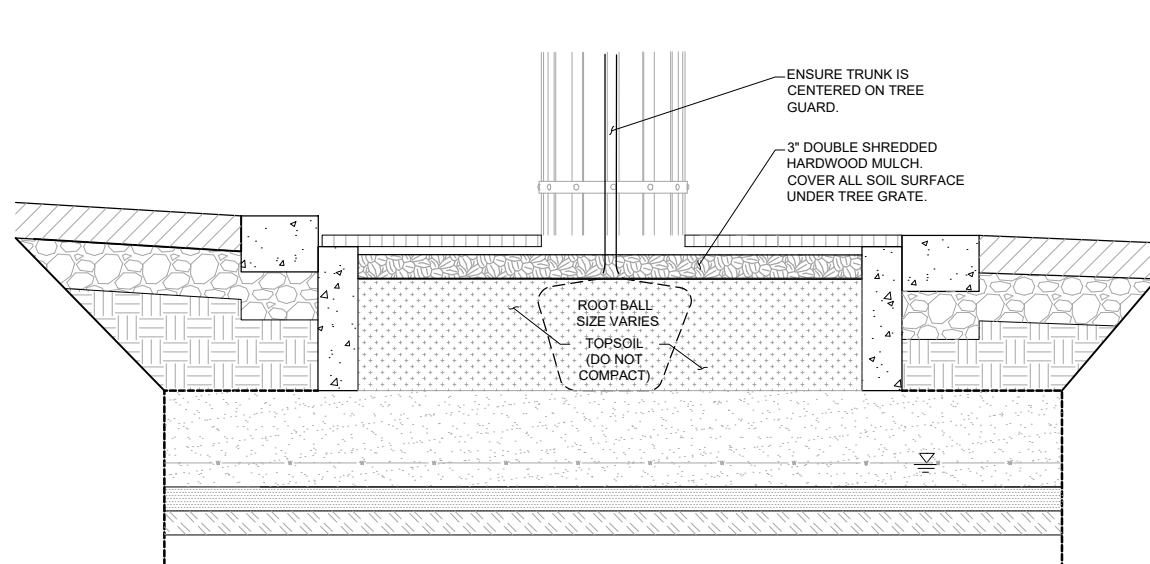


1 PLAN: TREE TRENCH PLANTING PLAN

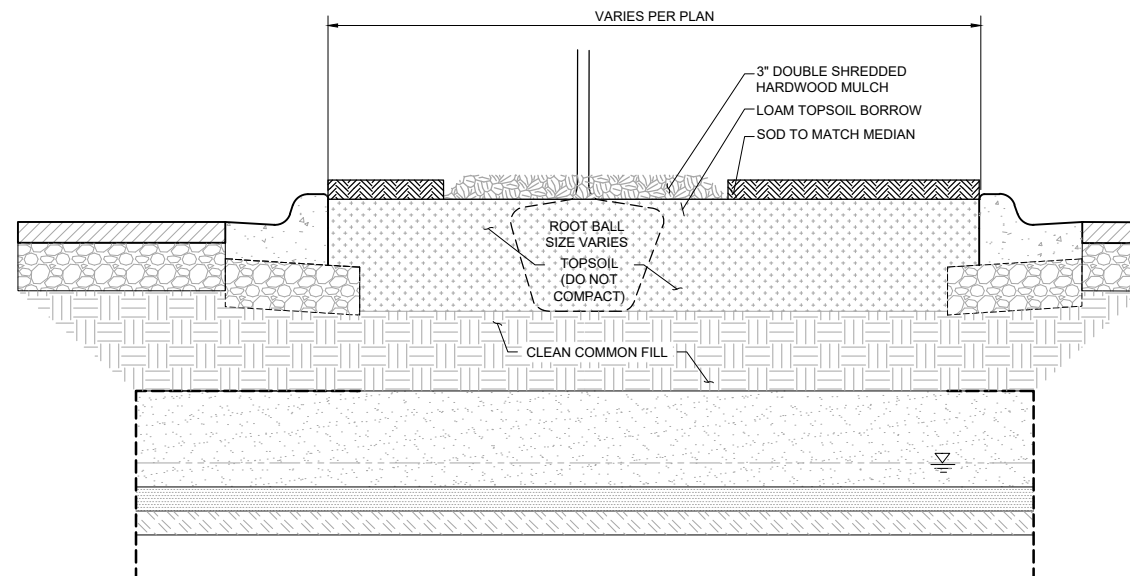


TREE TRENCH PLANTING SCHEDULE

TREE TRENCH TREES				
Common Name	Botanical	Size	Spacing	Quantity
St. Croix Elm	<i>Ulmus americana</i> 'St. Croix'	#20 cont.	As Shown	2
Heritage Oak	<i>Quercus x macdaniellii</i> 'Clemons'	#20 cont.	As Shown	2
Swamp White Oak	<i>Quercus bicolor</i>	#20 cont.	As Shown	1
Discovery Elm	<i>Ulmus davidiana</i> 'Discovery'	#20 cont.	As Shown	1



2 DETAIL: TREE TRENCH PLANTING, WITH TREE GRATE  
NOT TO SCALE



3 DETAIL: TREE TRENCH PLANTING, IN MEDIAN  
NOT TO SCALE

NOTES:

1. PROVIDE AND INSTALL TREE PER SCHEDULE.
2. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF THE TREE. DO NOT CUT THE LEADER.
3. DIG PLANT HOLES 18" MIN. LARGER THAN BALL, ALL SIDES.
4. SET TREE ON LIGHTLY FIRMED BACKFILL SOIL AT THE SAME DEPTH GROWN IN THE NURSERY (AT THE CROWN).
5. BACK FILL WITH NATIVE SOIL FIRM SOIL AROUND ROOTBALL TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS AROUND ROOTBALL.
6. CONSTRUCT 3" WATERING BASIN. THOROUGHLY WATER WITHIN 3 HOURS OF INSTALLATION.
7. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE 1-YEAR GUARANTEE PERIOD.
8. APPLY 3" DEPTH OF DOUBLE SHREDDED HARDWOOD MULCH TO A RADIUS OF 24" AROUND EACH TREE. NO MULCH IS TO BE IN CONTACT WITH TREE TRUNK

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DRAFT

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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.

PRINTED NAME: Leslie A. DellAngelo  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # 49094

CLIENT	BID	CONSTRUCTION	RELEASED TO/FOR	DATE RELEASED

**BARR** ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
Suite 200  
MINNEAPOLIS, MN 55435

Project Office:  
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MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Fax: (952) 832-2601  
www.barr.com

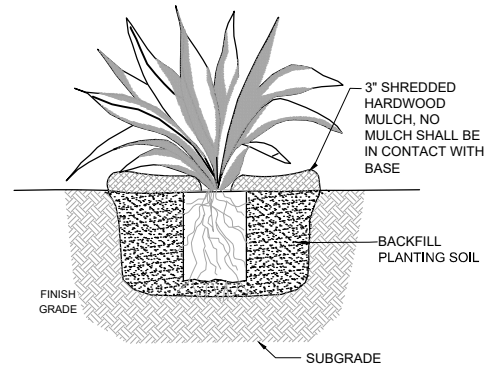
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Date	2020-04-14
Drawn	MDB3
Checked	MEK2
Designed	MBD3
Approved	MEK2

**RAMSEY-WASHINGTON**  
METRO WATERSHED DISTRICT

STORMWATER IMPROVEMENTS  
TARGET - EAST ST. PAUL

RESTORATION AND PLANTING PLAN  
TREE TRENCH

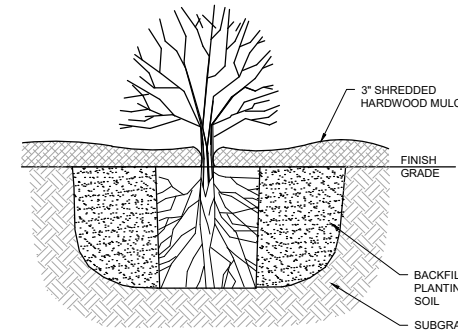
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CLIENT PROJECT No.	
DWG. No. L1.1	REV. No. A



**1** DETAIL: PERENNIAL PLANTING  
L-03 NOT TO SCALE

**HERBACEOUS PLANT PLANTING NOTES:**

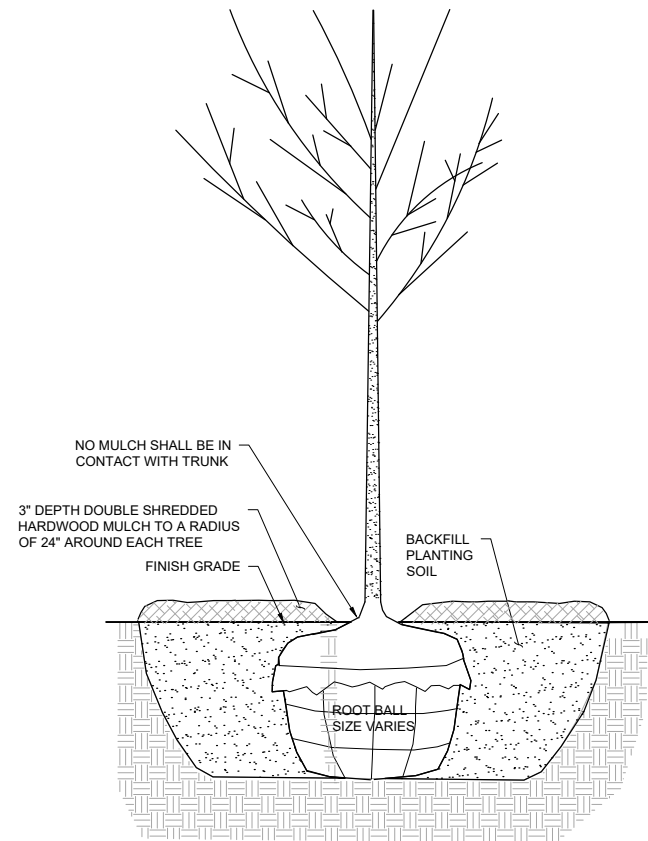
1. PROVIDE AND INSTALL PLANTS PER SCHEDULE.
2. EXCAVATE HOLE 3 TIMES WIDTH OF ROOTBALL.
3. BREAK BOTTOM OF ROOTBALL TO LOOSEN ROOTS.
4. PLANT THROUGH MULCH ALIGNING ROOTBALL TOP EVEN WITH SOIL - DO NOT PLANT TOO DEEP OR TOO SHALLOW. FIRM SOIL TO ENSURE GOOD CONTACT WITH ROOTS.
5. BACK FILL WITH PLANTING SOIL. FIRM SOIL AROUND ROOT MASS TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS AROUND ROOT MASS.
6. APPLY 3" DEPTH SHREDDED HARDWOOD MULCH TO ENTIRE PLANTING AREA (SOIL PREPARED AS PER SPECIFICATIONS).
7. NO MULCH TO BE IN CONTACT WITH PLANT.
8. CONSTRUCT 3" WATERING BASIN. THOROUGHLY WATER WITHIN 3 HOURS OF INSTALLATION.
9. WATER THOROUGHLY AFTER PLANTING.
10. ALL PERENNIAL PLANTS PROVIDED BY THE CONTRACTOR SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF PRELIMINARY ACCEPTANCE. AT THE END OF THE ONE-YEAR GUARANTEE PERIOD ALL PERENNIALS SHALL BE IN SATISFACTORY CONDITION, EXCLUDING INSTANCES OF VANDALISM, AS DETERMINED BY OWNER.
- 10.1. REPLACEMENTS: AT THE END OF THE ONE YEAR WARRANTY PERIOD ALL PLANTS SHALL FULFILL ALL THE REQUIREMENTS OF THESE SPECIFICATIONS AND REFERENCES WITH REGARD TO QUALITY AND CONDITION. FURTHER, THEY SHALL BE FREE OF DEAD BRANCHES AND TWIGS AND SHALL BEAR A MINIMUM OF 50% OF THE FOLIAGE PRESENT WHEN PLANTED HAVING NORMAL DENSITY, SIZE, SHAPE AND COLOR AS DETERMINED BY THE ENGINEER. ANY PLANTS FAILING TO SATISFY ALL THESE CONDITIONS SHALL BE REPLACED AS PER THE PRELIMINARY AND FINAL ACCEPTANCE PROCESS. PLANTS MAY BE REPLACED PRIOR TO THE END OF THEIR WARRANTY PERIOD IF SUCH AN AGREEMENT EXISTS BETWEEN THE CONTRACTOR AND THE OWNER. REPLACEMENT STOCK SHALL BE SUBJECT TO ALL REQUIREMENTS AS TO SELECTION, INSPECTIONS, PREPARATION, PLANTING AND MAINTENANCE OPERATIONS. REPLACEMENTS SHALL MATCH CALIPER AND/OR HEIGHT ATTAINED BY OTHER STOCK OF THE ORIGINAL PLANTING.
11. CONTRACTOR SHALL NOTIFY OWNER FOR A FINAL INSPECTION AFTER THE END OF THE GUARANTEE PERIOD, AND AGAIN AFTER ANY AND ALL REPLACEMENTS ARE PLANTED.



**2** DETAIL: SHRUB PLANTING  
L-03 NOT TO SCALE

**SHRUB PLANTING NOTES:**

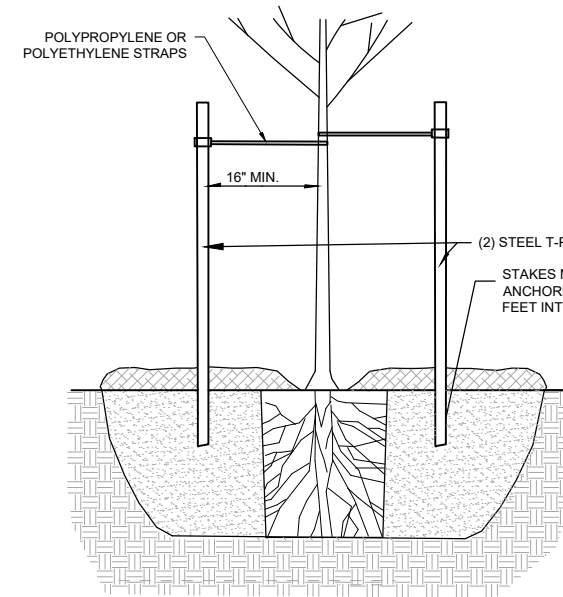
1. PREPARE SOIL WITH COMPOST AMENDMENT PER PLAN.
2. PROVIDE AND INSTALL PLANTS PER SCHEDULE.
3. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF PLANT.
3. EXCAVATE HOLE 3 TIMES WIDTH OF ROOTBALL..
4. BREAK BOTTOM OF ROOTBALL TO LOOSEN ROOTS..
5. PLANT THROUGH MULCH ALIGNING ROOTBALL TOP EVEN WITH SOIL - DO NOT PLANT TOO DEEP OR TOO SHALLOW.
6. BACK FILL WITH PLANTING SOIL FIRM SOIL AROUND ROOT MASS TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS AROUND ROOT MASS.
7. APPLY 3" DEPTH SHREDDED HARDWOOD MULCH TO ENTIRE PLANTING AREA (SOIL PREPARED AS PER PLAN).
8. NO MULCH TO BE IN CONTACT WITH PLANT.
9. WATER THOROUGHLY AFTER PLANTING.
11. SHRUBS SHALL BE GUARANTEED FOR 1-YEAR FROM TIME OF PRELIMINARY ACCEPTANCE. CONTRACTOR TO WATER AS NECESSARY TO MAINTAIN IN A HEALTHY CONDITION. AT THE END OF THIS PERIOD ANY DEAD PLANTS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
12. CONTRACTOR SHALL NOTIFY OWNER FOR A FINAL INSPECTION AFTER THE END OF THE SHRUB GUARANTEE PERIOD, AND AGAIN AFTER ANY AND ALL REPLACEMENTS ARE PLANTED.



**3** DETAIL: TREE PLANTING  
L-03 NOT TO SCALE

**TREE PLANTING NOTES:**

1. PROVIDE AND INSTALL TREE PER SCHEDULE.
2. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF THE TREE. DO NOT CUT THE LEADER.
3. DIG PLANT HOLES 18" MIN. LARGER THAN BALL, ALL SIDES.
4. SET TREE ON LIGHTLY FIRMED BACKFILL SOIL AT THE SAME DEPTH GROWN IN THE NURSERY (AT THE CROWN).
5. CUT ROPES AT BASE OF TRUNK, PULL BURLAP DOWN EXPOSING 1/3 OF ROOTBALL AND THOROUGHLY BURY ROPES AND BURLAP BELOW GRADE.
6. BACK FILL WITH NATIVE SOIL FIRM SOIL AROUND ROOTBALL TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS AROUND ROOTBALL.
7. CONSTRUCT 3" WATERING BASIN. THOROUGHLY WATER WITHIN 3 HOURS OF INSTALLATION.
8. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE 1-YEAR GUARANTEE PERIOD.
9. APPLY 3" DEPTH OF DOUBLE SHREDDED HARDWOOD MULCH TO A RADIUS OF 24" AROUND EACH TREE. NO MULCH IS TO BE IN CONTACT WITH TREE TRUNK



**4** DETAIL: TREE STAKING  
L-03 NOT TO SCALE

**NOTES:**

1. ALL TREES SHALL BE STAKED AND TIED TO MAINTAIN VERTICALITY FOLLOWING PLANTING. TREE STAKING SHALL BE CONSIDERED INCIDENTAL TO TREE PLANTING.
2. INSTALL TWO (2) 8" STEEL T-POSTS, ANCHORED 2' INTO THE GROUND ON EITHER SIDE OF THE TRUNK.
3. INSTALL 16" LONG 40 MIL POLYPROPYLENE OR POLYETHYLENE STRAPS AROUND TRUNK AND AFFIX TO HOLES IN T-POSTS WITH 10 GAUGE WIRE.
4. REMOVE THE TREE STAKING AFTER 1-YEAR.

PRELIMINARY DRAFT

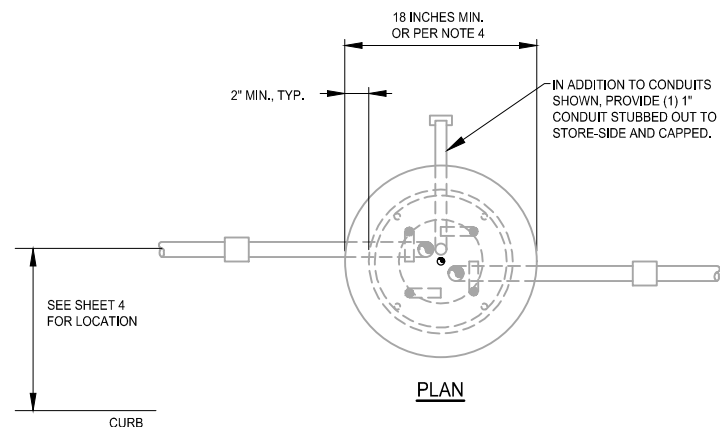
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: Matt E. Kumka SIGNATURE: _____ DATE: _____ LICENSE # _____				CLIENT: BARR ENGINEERING CO. BID: 4300 MARKETPOINTE DRIVE CONSTRUCTION: Suite 200 MINNEAPOLIS, MN 55435 RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____				Project Office: <b>BARR</b> ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com		Scale: AS SHOWN Date: 04/14/2020 Drawn: MDB3 Checked: MEK2 Designed: MDB3 Approved: MEK2		STORMWATER IMPROVEMENTS TARGET - EAST ST. PAUL PLANTING DETAILS		BARR PROJECT No. 23/62-1328.00 CLIENT PROJECT No. _____ DWG. No. L2.0 REV. No. A	
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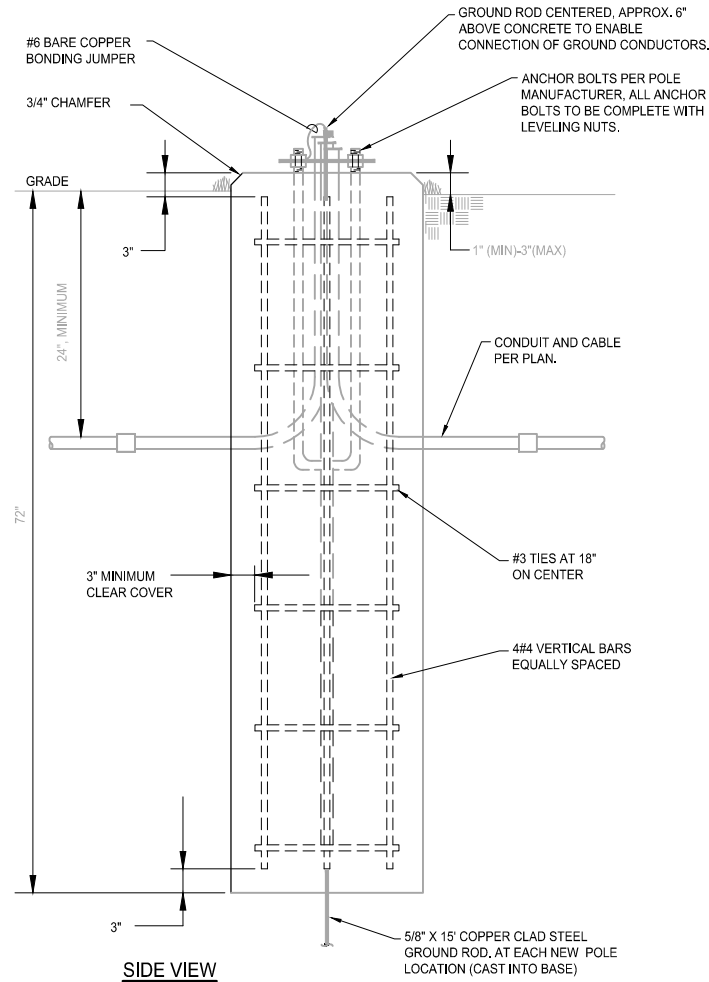


FRONT (OPEN) VIEW



CONCRETE POLE BASE NOTES

1. CONCRETE SHALL HAVE 6% AIR ENTRAINMENT AND A '28 DAY' STRENGTH OF 4000 PSI
2. REINFORCING STEEL SHALL BE ASTM A615, GRADE 60, NEW BILLET, INTERMEDIATE GRADE DEFORMED WITH 60000 PSI YIELD STRENGTH.
3. CONFIRM ALL ANCHOR BOLT REQUIREMENTS WITH POLE MANUFACTURER.
4. COORDINATE BASE DIAMETER TO BE AT LEAST 2 INCHES AND LESS THAN 6 INCHES GREATER THAN DIAMETER OF BASE OF POLE.
5. SOME POLE BASES HAVE SIGNIFICANT NUMBERS OF CONDUIT REQUIREMENTS. COORDINATE PLACEMENT OF CONDUITS INSIDE RE-BAR CAGE, AND PROVIDING A MINIMUM COVER OF 2-INCHES OVER ANCHOR BOLTS.



SIDE VIEW

1 CONCRETE POLE BASE DETAIL  
NOT TO SCALE

ELECTRICAL SPECIFICATIONS

1. THE "GENERAL CONDITIONS OF THE CONTRACT" AND ALL OTHER DIVISION 1 SECTIONS AS APPLICABLE ARE CONSIDERED A PART OF THIS CONTRACT.
2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS WHICH ARE OBVIOUSLY AND REASONABLY NECESSARY TO COMPLETE THE INSTALLATION.
3. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) AND STATE AND LOCAL CODES THAT APPLY.
4. THE CONTRACTOR SHALL TAKE OUT PERMITS, PROCURE CERTIFICATES, AND PAY FEES CONNECTED THEREWITH.
5. DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE LOCATIONS. COORDINATE ALL FINAL LOCATIONS WITH THE WORK OF OTHER TRADES, AND WITH OWNER.
6. UNLESS NOTED OTHERWISE, ALL MATERIALS SHALL BE NEW AND THE BEST OF THEIR SEVERAL KINDS, AND BE UL-LISTED.
7. THE CONTRACTOR SHALL TOUCH-UP OR REFINISH THE FACTORY FINISH OF EQUIPMENT MARRD DURING SHIPMENT OR INSTALLATION.
8. CONTRACTOR SHALL BE A LICENSED MASTER ELECTRICIAN OF THE STATE IN WHICH THE WORK IS LOCATED.
9. GROUNDING SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE.
10. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL RUBBISH CAUSED BY THE CONTRACTOR AND SHALL THOROUGHLY CLEAN ALL ELECTRICAL EQUIPMENT AND COMPONENTS.
11. ALL WORK SHALL BE GUARANTEED FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
12. ALL ITEMS OF ELECTRICAL EQUIPMENT ASSOCIATED WITH THE CONTROL OF ELECTRICAL APPARATUS SHALL BE IDENTIFIED. ENGRAVED PLATES SHALL BE USED TO IDENTIFY ASSOCIATED EQUIPMENT.
13. ALL ELECTRICAL EQUIPMENT SHALL BE SPECIFICATION GRADE, UNLESS NOTED OTHERWISE.
14. WIRING DEVICES SHALL MEET NEMA PERFORMANCE STANDARDS.
15. ALL CIRCUIT DIRECTORIES AFFECTED BY THIS CONTRACT SHALL BE NEATLY RETYPED TO REFLECT CHANGES UNDER THIS CONTRACT.
16. ALL DOWNSTREAM ELECTRICAL EQUIPMENT THAT IS TO REMAIN, BUT ARE SERVED FROM EXISTING DEVICES OR LIGHTING FIXTURES BEING REMOVED SHALL BE RECIRCUITED AS REQUIRED TO MAINTAIN CONTINUITY.
17. NECESSARY MODIFICATIONS AND ADJUSTMENTS TO ALL ELECTRICAL ITEMS AND EQUIPMENT, BOTH THE NEW AND EXISTING, SHALL BE MADE AS MAY BE REQUIRED BY THESE ALTERATIONS AND ADDITIONS. CAREFUL INSPECTION OF THE PLANS AND SITE IS REQUIRED AS THE PLANS DO NOT INDICATE ALL SUCH ELECTRICAL ITEMS AND EQUIPMENT.
18. EXISTING ELECTRICAL MATERIALS AND EQUIPMENT, INCLUDING BUT NOT LIMITED TO LIGHTING FIXTURES, WIRING DEVICES, SIGNAL EQUIPMENT, CONDUIT AND WIRES, AND ALL OTHER ELECTRICAL ITEMS WHICH ARE RENDERED OBSOLETE BY THESE ALTERATIONS AND ADDITIONS, SHALL BE DISCONNECTED AT SOURCE, REMOVED, AND DISPOSED OF BY CONTRACTOR.
19. THE CONTRACTOR SHALL PROTECT ALL HIS WORK DONE UNDER THIS CONTRACT FROM INJURY DURING CONSTRUCTION AND PROTECT ALL NEW AND EXISTING EQUIPMENT FROM DAMAGE.
20. ALL CONDUCTORS SHALL BE COPPER WITH THHN OR THWN INSULATION, OR XHHW FOR CONDUCTORS LARGER THAN #8 AWG.
21. ALL EXISTING MATERIAL AND EQUIPMENT REMOVED UNDER THIS CONTRACT SHALL REMAIN THE PROPERTY OF THE OWNER AND, UNLESS REUSED, SHALL BE STORED OR DISPOSED OF AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EQUIPMENT REMOVED UNDER THIS CONTRACT AND SHALL REPAIR OR REPLACE SUCH DAMAGED ITEMS WITHOUT COST TO THE OWNER.

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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

CLIENT	05/01								
BID									
CONSTRUCTION									
RELEASED TO/FOR	A	B	C	0	1	2	3		
DATE RELEASED									

Project Office:  
**BARR ENGINEERING CO.**  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
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 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	05/01/2020
Drawn	KBD
Checked	MEZ
Designed	BARR
Approved	MEZ

**RAMSEY-WASHINGTON**  
METRO WATERSHED DISTRICT

**STORMWATER IMPROVEMENTS**  
 TARGET - EAST ST. PAUL

DETAILS - ELECTRICAL  
 TYPICAL LIGHT POLE & ELECTRICAL

BARR PROJECT No.	23621328.00
CLIENT PROJECT No.	
DWG. No.	E1.0
REV. No.	A

**SECTION 00 01 10**

**CONTRACT DOCUMENTS**

**TARGET EAST ST. PAUL RETAIL STORE STORMWATER RETROFITS  
ST. PAUL, MINNESOTA  
RAMSEY-WASHINGTON METRO WATERSHED DISTRICT**

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 Ramsey-Washington Metro Watershed District

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C1.2	Paving and Striping Plan
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C3.1	Grading Plan and Sections – Rain Garden #2
C3.2	Grading Plan and Sections – Rain Garden #3 - #5
C3.3	Grading Plan and Sections – Rain Garden #6 - #7
C4.0	Utility Plan and Profile – Tree Trench
C5.0	Details – Rain Gardens
C5.1	Details – Rain Gardens
C5.2	Details – Rain Gardens
C5.3	Details – Tree Trench
C5.4	Details – Tree Trench
C5.5	Details – Tree Trench
C6.0	Standard Details
C6.1	Standard Details
SW1.0	Erosion and Sediment Control Plan
SW2.0	Erosion and Sediment Control Plan
L1.0	Restoration and Planting Plan – Rain Gardens
L1.1	Restoration and Planting Plan – Tree Trench
L2.0	Restoration and Planting Details
E1.0	Details – Light Pole Relocation

**Appendices**

APPENDIX A	Geotechnical Data for Soil Borings
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**END OF SECTION 00 01 10**

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# Permit Program

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## MEMORANDUM

**Date:** June 3, 2020  
**To:** RWMWD Board of Managers  
**From:** Nicole Soderholm, Permit Coordinator  
**Subject:** Single Lot Residential Permit Adjustments

Staff have seen an increase in projects triggering District Rule D for floodplain alteration. Many proposed projects have come from lakeshore owners responding to changes to their shoreline as a result of high water levels. For projects greater than 1,000 square feet adjacent to a water body, Rule F for erosion and sediment control would also trigger resulting in a refundable escrow fee of \$2,000 per acre.

Permitting staff have been asked to look at possible permit processing adjustments that could be made to better accommodate these single-lot residential project requests.

The existing rules prohibit floodplain fill without compensatory storage. While a change in the regulation is not proposed, staff would like the Board to consider some possible options to streamline permit processing **for single-lot residential projects** while maintaining the intent of the rules for flood protection and erosion and sediment control. All other projects triggering the District's rules would be subject to existing permit processes, submittal requirements, and fees.

- Reduce the non-refundable permit processing fee of \$500 (Example: City of Shoreview has fees for processing and inspection ranging from \$23.50-\$150 for larger projects).
- Allow for staff to approve permit applications that meet District requirements, eliminating the need for homeowners to wait for the next monthly board meeting.
- Work with cities to eliminate permitting redundancy. If a project stays above the floodplain elevation and would not otherwise trigger a District permit, RWMWD could defer permitting for erosion and sediment control to cities. This would require cooperation and agreement from the city in question.
- For projects greater than 1,000 square feet below the floodplain, staff suggestion is to keep the escrow fee as-is. (Example: 1,000 square feet equates to 0.02 acre, resulting in a \$40 escrow fee). This has not been cost-prohibitive to homeowners who have gone through the District's permitting process in the past.
- Provide assistance to homeowners in estimating the 100-year flood level on their properties using LIDAR and modeling information. This would eliminate the need for a professional survey for some (but not all) projects.



# RAMSEY-WASHINGTON

## METRO WATERSHED DISTRICT

### MEMORANDUM

**Date:** June 3, 2020

**To:** Board of Managers and Staff

**From:** Nicole Soderholm, Permit Coordinator  
Mary Fitzgerald, District Inspector

**Subject:** May Enforcement Action Report

During May 2020:

<b>Number of Violations:</b>	<b>14</b>
Install/Maintain Inlet Protection	1
Install/Maintain Perimeter Control	2
Install/Maintain Construction Entrance	2
Sweep Streets	1
Stabilize Exposed Soils	2
Contain Liquid/Solid Wastes	2
Repair Erosion	1
Remove Discharged Sediment	2
Maintain Permanent BMPs	1

#### Activities:

Permitting assistance to private developers and public entities, permit review with Barr Engineering, miscellaneous inquiries, ongoing ESC site inspections and reporting, WCA administration and procedures, final inspections, pre-construction meetings, MECA Conference planning meeting, draft 2019 MS4 Annual Report, BMP Maintenance Recertification, floodplain permitting discussion

#### Project Updates:

#19-42 American Indian Magnet School Addition (St. Paul)

Staff conducted an initial erosion control walkthrough with the project's superintendent and grading contractor on May 26<sup>th</sup>. Staff explained the process of their inspections, and what was to be expected from onsite personnel. All necessary erosion and sediment control BMPs were installed throughout the site. Staff observed short steep slopes towards the east end of

the project, and communicated to contractors that these areas would need to be monitored closely. Staff will continue to inspect the site biweekly.

#### #20-20 Maplewood Dennis-McClelland SIP (Maplewood)

Staff attended an initial erosion control walkthrough with onsite contractors on May 21<sup>st</sup>. Inlet protection and perimeter control were installed properly throughout the site. Staff inquired about the utility work that would be occurring adjacent to Battle Creek. Onsite contractors detailed the practices they would use to work efficiently and neatly in this area. Staff will continue to inspect the site regularly, and will monitor work being completed near Battle Creek.

#### #18-11 Whistler Pines (Shoreview)

Staff performed a routine inspection on April 21<sup>st</sup> and discovered failing perimeter control and sediment leaving the site into neighboring properties. Staff wrote a non-compliant report and detailed the repairs needed. During the next visit, staff discovered some repairs had been made, but sediment was still spilled out into the neighboring lots, resulting in another non-compliant report and deduction from escrow. Staff met onsite with the site's superintendent on May 19<sup>th</sup> to discuss the importance of making diligent repairs within permit timeframes. During this visit, staff observed several corrections made throughout the site, and the cleanup of sediment. Staff will continue to inspect the site regularly.

#### #18-30 Morrie's Mercedes-Benz (Maplewood)

Staff performed a routine SWPPP inspection with onsite contractors on May 7<sup>th</sup>. Several maintenance items were discussed including installing inlet protection to new catch basins, providing perimeter control and stabilization to stockpiles, repairing damages to perimeter control, and cleaning up all concrete waste piles. Staff conducted another inspection on May 21<sup>st</sup> and all necessary repairs had been made to the site. Staff observed a flared end that did not have riprap installed, but onsite contractors explained that they are currently working with city staff to determine the best method to control the flow of water in this area. Staff will continue to inspect the site regularly.

#### #20-04 Caves Century Townhomes Water Quality Improvements (Maplewood)

Staff met with onsite contractors on May 12<sup>th</sup> for an initial erosion control walkthrough. All necessary BMPs were in place and contractors detailed that timeline of work they had planned, which was broken down into three phases. Staff visited the site on May 26<sup>th</sup> for a routine inspection and inquired about the installation of TDA material. An onsite contractor informed staff that they plan to install one section of TDA, and leave another area exposed, to be able to show watershed staff what the process of installing this product looks like. Staff will be attending this demonstration on May 28<sup>th</sup>.

#### **Permits Closed in May 2020:**

None

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# Stewardship Grant Program

\* \* \* \* \*



## Stewardship Grant Program Budget Status Update

**June 3, 2020**

Homeowner	Coverage	Number of Projects	Funds Allocated
Habitat Restoration and rain garden w/o hard surface drainage	50% Cost Share \$15,000 Max	8	\$30,875
Rain garden w/hard surface drainage, pervious pavement, green roof	75% Cost Share \$15,000 Max	3	\$18,500
Master Water Steward Project	100% Cost Share \$15,000 Max	2	\$20,800
Shoreland Restoration	100% Cost Share \$15,000 Max	1	\$22,000

Commercial, School, Government, Church, Associations, etc.	Coverage	Number of Projects	Funds Allocated
Habitat Restoration	50% Cost Share \$15,000 Max	0	\$0
Shoreland Restoration (below 100-year flood elevation w/actively eroding banks)	100% Cost Share \$100,000 Max	1	\$200,000
Priority Area Projects	100% Cost Share \$100,000 Max	4	\$350,000
Non-Priority Area Projects	75% Cost Share \$50,000 Max	1	\$50,000
Public Art	50% Cost Share	0	\$0
Aquatic Veg Harvest/LVMP Development	50% Cost Share \$15,000 Max	0	\$0
Maintenance	50% Cost Share \$5,000 Max for 5 Years	31	\$25,900
Consultant Fees			\$31,200
<b>Total Allocated</b>			<b>\$749,275</b>

2020 Stewardship Grant Program Budget	
Budget	\$1,000,000
Total Funds Allocated	\$749,275
<b>Total Available Funds</b>	<b>\$250,725</b>

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# Action Items

\* \* \* \* \*

# Request for Board Action

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**Board Meeting Date:** June 3, 2020

**Agenda Item No:** 7A

**Preparer:** Tina Carstens, Administrator  
Nicole Soderholm, Permit Coordinator

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**Item Description:** Accept the submittal of the 2019 MS4 Storm Water Pollution Prevention Plan (SWPPP) Annual Report and receive public comments.

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**Background:**

All MS4s are required to complete an annual report and submit to the MPCA, by June 30 of each year, which details the implementation status of their approved MS4 permit program. The District SWPPP and the Annual Report are available on the District web site. I have also attached the annual report to this memo for your review.

At the June 3rd Board meeting, any members of the public that wish to comment on the SWPPP may during this agenda item.

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**Applicable District Goal and Action Item:**

**Goal: Manage organization effectively** – Operate in a manner that achieves the District’s mission while adhering to its core principles.

**Action Items:** Follow all legal requirements applicable to watershed districts.

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**Staff Recommendation:**

Accept the 2019 MS4 Annual Report.

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**Financial Implications:**

None.

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**Board Action Requested:**

Accept the 2019 MS4 Annual Report and authorize District Administrator to submit the report to the MPCA.

# MS4 question worksheet for 2019 annual report

## Municipal Separate Storm Sewer Systems (MS4s)

Reporting period January 1, 2019 to December 31, 2019

Due June 30, 2020

Copy of questions – **Not for submittal**

**Instructions:** This form is for your personal use only. Complete the online Annual Report to provide a summary of your activities under the 2013 MS4 Permit (Permit) between January 1, 2019, and December 31, 2019. The online Annual Report and additional information can be found on the Minnesota Pollution Control Agency's (MPCA) website at: [https://stormwater.pca.state.mn.us/index.php?title=MS4\\_Annual\\_Report](https://stormwater.pca.state.mn.us/index.php?title=MS4_Annual_Report).

**Questions:** Contact Cole Landgraf ([cole.landgraf@state.mn.us](mailto:cole.landgraf@state.mn.us), 651-757-2880)

### Contact information

#### MS4 General contact information

Full name: Tina Carstens Title: Administrator  
Mailing address: 2665 Noel Drive  
City: Little Canada State: MN Zip code: 55117  
Phone: 651-792-7960 Email: tina.carstens@rwmwd.org

#### Preparer contact information (if different from the MS4 General contact)

Full name: Nicole Soderholm Title: Permit Coordinator  
Mailing address: 2665 Noel Drive  
City: Little Canada State: MN Zip code: 55117  
Phone: 651-792-7976 Email: nicole.soderholm@rwmwd.org

### Minimum Control Measure (MCM) 1: Public education and outreach

The following questions refer to Part III.D.1. of the Permit.

**For new permittees only:** Since this annual report is for a time period prior to the deadline for this MCM, the following questions are optional.

2. Did you select a stormwater-related issue of high priority to be emphasized during this Permit term?  Yes  No  
[Part III.D.1.a.(1)]
3. If 'Yes' in Q2, what is your stormwater-related issue(s)? *Check all that apply.*
  - Total Maximum Daily Loads (TMDLs)
  - Local businesses
  - Residential best management practices (BMPs)
  - Pet waste
  - Yard waste
  - Deicing materials
  - Household chemicals
  - Construction activities
  - Post-construction activities
  - Other (describe): \_\_\_\_\_
4. Have you distributed educational materials or equivalent outreach to the public focused on illicit discharge recognition and reporting? [Part III.D.1.a.(2)]  Yes  No

5. Do you have an implementation plan as required by the Permit? [Part III.D.1.b.]  Yes  No
6. How did you distribute educational materials or equivalent outreach? [Part III.D.1.a.] *Check all that apply in table below.*
7. For the items checked in **Q6** below, who is the intended audience? *Check all that apply in table below.*
8. For the items checked in **Q6** below, enter the total circulation/audience in table below (if unknown, use best estimate).

Q6. How did you distribute educational materials? (Check all that apply):	Q7. Intended audience? (Check all that apply.)						Q8. Total circulation /audience:
	Residents	Local businesses	Developers	Students	Employees	Other	
<input checked="" type="checkbox"/> Brochure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	500
<input checked="" type="checkbox"/> Newsletter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	125,695
<input type="checkbox"/> Utility bill insert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Newspaper ad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Radio ad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Television ad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Cable access channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/> Stormwater-related event	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5,036
<input checked="" type="checkbox"/> School presentation or project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1,500
<input checked="" type="checkbox"/> Website	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	21,095
<input checked="" type="checkbox"/> Other (1): describe Facebook	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	757
<input checked="" type="checkbox"/> Other (2): describe Instagram	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	461
<input checked="" type="checkbox"/> Other (3): describe Twitter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1,205

For **Q9** and **Q10**, provide a brief description of each activity related to public education and outreach (e.g., rain garden workshop, school presentation, public works open house) held and the date each activity was held from January 1, 2019, to December 31, 2019. [Part III.D.1.c.(4)]

9. Date of activity *in table below*
10. Description of activity *in table below*

Q9. Date of activity	Q10. Description of activity
2/23/19	Phalen Freeze Fest- smart salting, BMP stewardship grants, upcoming events
3/25/19	Neighborhood meeting, First Covenant Church in St. Paul- stormwater mural design input
3/26/19	District 5 Community Council meeting- stormwater mural design input
5/1-5/2/19	Door hanger distribution with Master Water Stewards in Wakefield Lake neighborhood- Adopt-a-Drain
6/1/19	WaterFest at Lake Phalen
6/19/19	Door hanger distribution in East Lake Phalen neighborhood with church youth group- Adopt-a-Drain
6/20, 6/25/19	Master Water Steward tours- Woodbury BMP sites, Tamarack Nature Preserve
Additional	Details available in 'Additional Information- MCM 1'

11. Between January 1, 2019, and December 31, 2019, did you modify your BMPs, measurable goals, or future plans for your public education and outreach program? [Part IV.B.]  Yes  No

If 'Yes,' describe these modifications:

## MCM 2: Public participation/involvement

The following questions refer to Part III.D.2.a. of the Permit.

**For new permittees only:** Since this annual report is for a time period prior to the deadline for this MCM, the following questions are optional.

12. You must provide a minimum of one opportunity each year for the public to provide input on the  Yes  No

adequacy of your Stormwater Pollution Prevention Program (SWPPP). Did you provide this opportunity between January 1, 2019, and December 31, 2019? [Part III.D.2.a.(1)]

13. If 'Yes' in Q12, what was the opportunity that you provided? *Check all that apply.*  Yes  No
- Public meeting
  - Public event
  - Other
14. If 'Public meeting' in Q13, did you hold a stand-alone meeting or combine it with another event?
- Stand-alone
  - Combined
- Enter the date of the public meeting: 6/5/2019
- Enter the number of citizens that attended and were informed about your SWPPP: \_\_\_\_\_
15. If 'Public event' in Q13, describe:
- Enter the date (mm/dd/yyyy) of the public meeting: \_\_\_\_\_
- Enter the number of citizens that attended and were informed about your SWPPP: \_\_\_\_\_
16. If 'Other' in Q13, describe:
- Notices were posted on the District's website and public bulletin board at the District office regarding availability of the draft annual report for review. Number of citizens is reported 0 below because the answer is unknown.*
- Enter the date (mm/dd/yyyy) of the public meeting: 5/6/2019
- Enter the number of citizens that attended and were informed about your SWPPP: 24
17. Between January 1, 2019, and December 31, 2019, did you receive any input regarding your SWPPP?  Yes  No
- If 'Yes,' enter the total number of individuals or organizations that provided comments on your SWPPP. \_\_\_\_\_
18. If 'Yes' in Q17, did you modify your SWPPP as a result of written input received? [Part III.D.2.b.(2)]  Yes  No
- If 'Yes,' describe those modifications.
19. Between January 1, 2019, and December 31, 2019, did you modify your BMPs, measurable goals, or future plans for your public participation/involvement program? [Part IV.B.]  Yes  No
- If 'Yes,' describe those modifications.

### MCM 3: Illicit discharge detection and elimination

The following questions refer to Part III.D.3. of the Permit.

20. Do you have a regulatory mechanism which prohibits non-stormwater discharges to your MS4?  Yes  No  
[Part III.D.3.b.]

**For new permittees only:** Since this annual report is for a time period prior to the deadline for this MCM, the following questions are optional.

21. Did you identify any illicit discharges between January 1, 2019, and December 31, 2019?  Yes  No  
[Part III.D.3.h.(4)]
22. If 'Yes' in Q21, enter the number of illicit discharges detected. 3
23. If 'Yes' in Q21, how did you discover these illicit discharges? Check all that apply and enter the number

of illicit discharges discovered by each category.

- Public complaint
- Staff

24. If '**Public complaint**' in **Q23**, enter the number discovered by the public: 1
25. If '**Staff**' in **Q23**, enter the number discovered by staff: 2
26. If '**Yes**' in **Q21**, did any of the discovered illicit discharges result in an enforcement action (this includes verbal warnings)?  Yes  No
27. If '**Yes**' in **Q26**, what type of enforcement action(s) was taken and how many of each action were issued between January 1, 2019, and December 31, 2019? **Check all that apply. For each of the below checked, enter the number that were issued.**  Yes  No
- Verbal warning: 3
  - Notice of violation: \_\_\_\_\_
  - Fine: \_\_\_\_\_
  - Criminal action: \_\_\_\_\_
  - Civil penalty: \_\_\_\_\_
  - Other: describe
- Request for additional documentation: photos of spill and clean-up, estimated volume of discharge, confirmation of duty officer notification.*
28. If '**Yes**' in **Q26**, did the enforcement action(s) taken sufficiently address the illicit discharge(s)?  Yes  No
29. If '**No**' in **Q28**, why was the enforcement not sufficient to address the illicit discharge(s)?
30. Do you have written Enforcement Response Procedures (ERPs) to compel compliance with your illicit discharge regulatory mechanism(s)? [Part III.B.]  Yes  No
31. Between January 1, 2019 and December 31, 2019, did you train all field staff in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigations? [Part III.D.3.e.]  Yes  No
32. If '**Yes**' in **Q31**, how did you train your field staff? **Check all that apply.**
- Email
  - PowerPoint
  - Presentation
  - Video
  - Field training
  - Other: describe

**The following questions refer to Part III.C.1. of the Permit.**

33. Did you update your storm sewer system map between January 1, 2019, and December 31, 2019? [Part III.C.1.]  Yes  No

**For new permittees only:** will instead see the following for **Q33:**

33. Have you developed a storm sewer system map? [Part III.C.1.]  Yes  No
34. Does your storm sewer map include all pipes 12 inches or greater in diameter and the direction of stormwater flow in those pipes? [Part III.C.1.a.]  Yes  No
35. Does your storm sewer map include outfalls, including a unique identification (ID) number and an associated geographic coordinate? [Part III.C.1.b.]  Yes  No
36. Does your storm sewer map include all structural stormwater BMPs that are part of your MS4? [Part III.C.1.c.]  Yes  No
37. Does your storm sewer map include all receiving waters? [Part III.C.1.d.]  Yes  No

38. In what format is your storm sewer map available:

- Hardcopy only
- GIS
- CAD
- Other: describe

39. Between January 1, 2019, and December 31, 2019, did you modify your BMPs, measurable goals, or future plans for your illicit discharge detection and elimination program? [Part IV.B.]  Yes  No

If 'Yes,' describe those modifications.

## MCM 4: Construction site stormwater runoff control

### The following questions refer to Part III.D.4. of the Permit

40. Do you have a regulatory mechanism that is at least as stringent as the Agency's general permit to Discharge Stormwater Associated with Construction Activity (CSW Permit) No. Minn. R. 100001 (<http://www.pca.state.mn.us/index.php/view-document.html?qid=18984>) for erosion and sediment controls and waste controls? [Part III.D.4.a.]  Yes  No  
(Permit can be found on the MPCA website at <https://www.pca.state.mn.us/water/construction-stormwater> (titled 'Minnesota NPDES/SDS Construction Stormwater General Permit').
41. Have you developed written procedures for site plan reviews as required by the Permit? [Part III.D.4.b.]  Yes  No
42. Have you documented each site plan review as required by the Permit? [Part III.D.4.f.]  Yes  No
43. Enter the number of site plan reviews conducted for sites an acre or greater between January 1, 2019, and December 31, 2019. 43
44. What types of enforcement actions do you have available to compel compliance with your regulatory mechanism? Check all that apply and enter the number of each used from January 1, 2019, to December 31, 2019.
- Verbal warning, Number that were issued: 10
  - Notice of violation, Number that were issued: 68
  - Administrative order, Number that were issued: \_\_\_\_\_
  - Stop-work order, Number that were issued: 0
  - Fine, Number that were issued: \_\_\_\_\_
  - Forfeit of security of bond money: 41
  - Withholding of certificate of occupancy \_\_\_\_\_
  - Criminal action, Number that were issued: \_\_\_\_\_
  - Civil penalty, Number that were issued: 0
  - Other: describe. \_\_\_\_\_, Number that were issued: \_\_\_\_\_
45. Do you have written ERPs to compel compliance with your construction site stormwater runoff control regulatory mechanism(s)? [Part III.B.]  Yes  No
46. Enter the number of active construction sites an acre or greater that were in your jurisdiction between January 1, 2019, and December 31, 2019: 65
47. Do you have written procedures for identifying priority sites? [Part III.D.4.d.(1)]  Yes  No



48. If 'Yes,' in Q47, How are sites prioritized? Check all that apply.

- Site topography
- Soil characteristics
- Types of receiving water(s)
- Stage of construction
- Compliance history
- Weather conditions
- Citizen complaints
- Project size
- Other: describe

49. Do you have a checklist or other written means to document site inspections when determining compliance? [Part III.D.4.d.(4)]  Yes  No

50. Enter the number of site inspections conducted for sites an acre or greater between January 1, 2019, and December 31, 2019. 472

51. Weekly, monthly, or seasonally depending on project stage and priority.  
Enter the frequency at which site inspections are conducted (e.g., daily, weekly, monthly). [Part III.D.4.d.(2)]

52. Enter the number of trained inspectors that were available for construction site inspections between January 1, 2019, and December 31, 2019. 3

53. Provide the contact information for the inspector(s) and/or organization that conducts construction stormwater inspections for your MS4. List your primary construction stormwater contact first if you have multiple inspectors.

**(1) Inspector name:**

Organization: Mary Fitzgerald (RWMWD)  
Phone (office): 651-792-7956  
Phone (work cell): \_\_\_\_\_  
Email: mary.fitzgerald@rwmwd.org  
Preferred contact method: Phone or e-mail

**(2) Inspector name:**

Organization: Nicole Soderholm (RWMWD)  
Phone (office): 651-792-7976  
Phone (work cell): \_\_\_\_\_  
Email: nicole.soderholm@rwmwd.org  
Preferred contact method: Phone or e-mail

**(3) Inspector name:**

Organization: Paige Ahlborg (RWMWD)  
Phone (office): 651-792-7964  
Phone (work cell): \_\_\_\_\_  
Email: paige.ahlborg@rwmwd.org  
Preferred contact method: Phone or e-mail

54. What training did inspectors receive? **Check all that apply.**

- University of Minnesota Erosion and Stormwater Management Certification Program
- Qualified Compliance Inspector of Stormwater (QCIS)
- Minnesota Laborers Training Center Stormwater Pollution Prevention Plan Installer or Supervisor
- Minnesota Utility Contractors Association Erosion Control Training
- Certified Professional in Erosion and Sediment Control (CPESC)
- Certified Professional in Stormwater Quality (CPSWQ)
- Certified Erosion Sediment and Storm Water Inspector (CESSWI)
- Other: describe

55. Between January 1, 2019, and December 31, 2019, did you modify your BMPs, measurable goals, or future plans for your construction site stormwater runoff control program? [Part IV.B.]  Yes  No

If 'Yes,' describe those modifications:

*We adopted permit rule changes on 6/5/2019. Changes include: updated definitions, permit procedural requirements, and language regarding dewatering, temporary sediment basins, and construction waste storage/containment to achieve consistency with the MS4 and 2018 CSW state NPDES permit.*

## MCM 5: Post-construction stormwater management in new development and redevelopment

The following questions refer to Part III.D.5. of the Permit.

56. Do you have a regulatory mechanism which meets all requirements as specified in Part III.D.5.a. of the Permit?  Yes  No

57. What approach are you using to meet the performance standard for Volume, Total Suspended Solids (TSS), and Total Phosphorus (TP) as required by the permit? [Part III.D.5.a.(2)] **Check all that apply.** Refer to the Technical Support Document at <http://www.pca.state.mn.us/index.php/view-document.html?gid=17815> for guidance on stormwater management approaches. *The TSD can be found on the MPCA website at <https://www.pca.state.mn.us/water/municipal-stormwater-ms4> (refer to the Post Construction Stormwater Management section under the 'Guidance and BMPs' tab).*

- Retain a runoff volume equal to one inch times the area of the proposed increase of impervious surfaces on-site
- Retain the post-construction runoff volume on site for the 95th percentile storm
- Match the pre-development runoff conditions
- Adopt the Minimal Impact Design Standards
- An approach has not been selected
- Other method (Must be technically defensible - e.g., based on modeling, research and acceptable engineering practices)

If 'Other method,' describe:

Retain a volume of 1.1" times the area of new and reconstructed impervious surfaces onsite. All stormwater BMPs require pretreatment method(s) for TSS removal. Runoff rates for the 2, 10, and 100 year critical storm events must not exceed existing conditions (prior to the project/development).

58. Do you have written ERPs to compel compliance with your post-construction stormwater management regulatory mechanism(s)? [Part III.B.]  Yes  No

59. Between January 1, 2019, and December 31, 2019, did you modify your BMPs, measurable goals, or future plans for your post-construction stormwater management program? [Part IV.B.]  Yes  No

If 'Yes,' describe those modifications.

*We adopted permit rule changes on 6/5/2019. Changes include: updated definitions and language for clarification regarding freeboard and infiltration drawdown requirements. We increased the runoff cap for volume reduction credit to 2.5", prohibited infiltration where there are specific physical limitations to be consistent with the 2018 CSW state NPDES permit, and added BMP Operations & Maintenance Plan submittal requirements. In-lieu fee increases were adopted in 2020 to allow for budgeting flexibility.*

## MCM 6: Pollution prevention/good housekeeping for municipal operations

The following questions refer to Part III.D.6. of the Permit.

**For new permittees only:** Since this annual report is for a time period prior to the deadline for this MCM, the following questions are optional.

60. Enter the total number of **structural stormwater BMPs, outfalls** (excluding underground outfalls), and **ponds** within your MS4 (exclude privately owned). Enter the number for each category below:

Structural stormwater BMPs: 21

Outfalls: 19

Ponds: 20

61. Enter the total number of **structural stormwater BMPs, outfalls** (excluding underground outfalls), and **ponds** that were inspected from January 1, 2019 to December 31, 2019 within your MS4 (exclude privately owned) [Part III.D.6.e.]. Enter the number for each category below:

Structural stormwater BMPs: 21

Outfalls: 19

Ponds: 20

62. Have you developed an alternative inspection frequency for any structural stormwater BMPs, as allowed in Part III.D.6.e.(1) of the Permit?  Yes  No

63. Based on inspection findings, did you conduct any maintenance on any structural stormwater BMPs? [Part III.D.6.e.(1)]  Yes  No

64. If 'Yes' in Q63, briefly describe the maintenance that was conducted:

*Removed 8 cubic yards (cy) of sediment from Maplewood Mall sumps, removed 1 cy sediment from Battle Creek sump, removed 1 cy of sediment from Owasso Low Flow sump, removed 1 cy of sediment from Tanners Lake Alum Plant sump, removed 1 cy of sediment from ABI Pond sump, removed 1 cy of sediment from PCU-Target Pond sump, removed 1 cy of sediment from Frost-Kennard Spent Lime Chamber sump, removed 55 cy of sediment from Tamarack Swamp PFS pavers, removed 1,500 cy of sediment from PCU-Target Pond, cleaned 580 linear feet (lf) of permeable weirs at Tanners Wetland/Horseshoe Park, cleaned 65 lf permeable weirs at 5<sup>th</sup> Street wetland, swept permeable parking at District office, removed 700 cy of sediment from McKnight basin, removed 130 cy of sediment from Fish Creek Tributary detention pond,*

65. Do you own or operate any stockpiles, and/or storage and material handling areas? [Part III.D.6.e.(3)]  Yes  No

66. If 'Yes' in Q65, did you inspect all stockpiles and storage and material handling areas quarterly? [Part III.D.6.e.(3)]  Yes  No

67. If 'Yes' in Q66, based on inspection findings, did you conduct maintenance at any of the stockpiles and/or storage and material handling areas?  Yes  No

68. If 'Yes' in Q67, briefly describe the maintenance that was conducted:

69. Between January 1, 2019, and December 31, 2019, did you modify your BMPs, measurable goals, or future plans for your pollution prevention/good housekeeping for municipal operations program? [Part IV.B.]  Yes  No

If 'Yes,' describe those modifications:

## Discharges to impaired waters with a EPA-approved TMDL that includes an applicable WLA

If you have been assigned a Waste Load Allocation (WLA) in a TMDL that was approved by the U.S. Environmental Protection Agency (EPA) prior to August 1, 2013, and were not meeting WLA(s) at the time of your permit application, you must complete the **TMDL Annual Report Form**, available on the MPCA website at: [https://stormwater.pca.state.mn.us/index.php?title=Download\\_page\\_with\\_TMDL\\_forms](https://stormwater.pca.state.mn.us/index.php?title=Download_page_with_TMDL_forms).

Attach your completed TMDL Annual Report Form to the actual Annual Report as instructed within that document. [Part III.E.]

71. [question left blank for you to attach a file]

## Alum or Ferric Chloride Phosphorus Treatment Systems

The following questions refer to Part III.F.3.a. of the Permit. Provide the information below as it pertains to your alum or ferric chloride phosphorus treatment system.

72. Date(s) of operation:

Month	Date(s) of operation (mm/dd/yyyy – mm/dd/yyyy)
January	N/A
February	N/A
March	N/A
April	N/A
May	N/A
June	N/A
July	07/16/2019-07/31/2019
August	08/01/2019-08/31/2019
September	09/01/2019-09/30/2019
October	10/01/2019-10/31/2019
November	N/A
December	N/A

Month	Q73 Chemical(s) used for treatment	Q74 Gallons of alum or ferric chloride treatment	Q75 Gallons of water treated	Q76 Calculated pounds of phosphorus removed
January	N/A			
February	N/A			
March	N/A			
April	N/A			
May	N/A			
June	N/A			
July	Alum	1,496	10,514,284	2.94
August	Alum	2,936	19,843,500	15.91
September	Alum	3,458	23,308,900	13.09
October	Alum	4,655	34,271,800	15.49
November	N/A			
December	N/A			

77. Any performance issues and corrective action(s), including date(s) when corrective action(s) were taken, between January 1, 2019, and December 31, 2019:

*On 3 occasions, samples were taken without measuring pH because the sample water had run out. This problem will be corrected for 2020.*

## Partnerships

78. Did you rely on any other regulated MS4s to satisfy one or more permit requirements?  Yes  No
79. If 'Yes' in Q78, describe the agreements you have with other regulated MS4s and which permit requirements the other regulated MS4s help satisfy: [Part IV.B.6.]

## Additional information

If you would like to provide any additional files to accompany your Annual Report, use the space below to upload those files. For each space, you may attach one file.

80. [Optional space for you to attach a file]  
 81. [Optional space for you to attach a file]  
 82. [Optional space for you to attach a file]

83. Optional, describe the file(s) uploaded:

## Owner or Operator Certification

The person with overall administrative responsibility for SWPPP implementation and permit compliance must certify this MS4 Annual Report. This person must be duly authorized and should be either a principal executive (i.e., Director of Public Works, City Administrator) or ranking elected official (i.e., Mayor, Township Supervisor).

- Yes - I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete (Minn. R. 7001.0070). I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment (Minn. R. 7001.0540).

By typing my name in the following space, I certify the above statements to be true and correct, to the best of my knowledge, and that information can be used for the purpose of processing my MS4 Annual Report.

Name of certifying official: The certifying official must electronically sign the online Annual Report form.

Title: Administrator

Date: \_\_\_\_\_

(mm/dd/yyyy)

**Note:** In the online form, you will be prompted to provide the email(s) of the individual(s) you would like to receive the MS4 Annual Report for 2019 submittal confirmation email from the MPCA. After you submit the form, please allow up to three business days to receive this confirmation email.

Email (1) nicole.soderholm@rwmwd.org

Email (2) tina.carstens@rwmwd.org

Email (3) \_\_\_\_\_

## **2019 MS4 Annual Report: Additional Information- MCM 1**

### **Public Education/Outreach Events, Education Programs and Projects**

**Schools and Youth Engagement:** classroom education, events, field days, field trips and projects about water pollution, groundwater resources, stormwater, adopt-a-drain, water quality, smart salting practices, best management practices, rain gardens, habitat restoration, shoreline restoration, native plants for water quality

**16 schools**

**59 classes**

**5 Youth groups:** Boys and Girls Club leadership team, Urban Roots, East St. Paul Church group, 3 different Jr. ROTC groups, Summer YMCA teams

**Total Youth/Students involved: 1657**

### **Community Outreach/Education Events:**

**March 6, 2019** Stormwater Mural design input meetings with Urban Roots youth and Boys and Girls Club

**May 23, 2019: Planting for Clean Water –Wonderful Wetlands workshop -**

Oakdale Discovery Center – 18 attendees

Notice of this Clean water/wetland training and information about caring for wetlands sent to 68 homes in Oakdale and 182 in Woodbury

**May 30, 2019: Family Hike at Tamarack Nature Preserve:** (Woodbury) (65 attendees)

**June 8, 2019: Landscape Revival Native Plant Expo & Market,** (Oakdale) (1000 attendees) – the role of native plants in helping water quality is a big message at this education event.

**June 21, 2019 Take AIM** – public education at Keller Regional Park - use of native plants for water quality, stewardship grant program

**Aug. 6, 2019: WaterWorks Teacher Workshop (Oakdale)** (40 attendees) presentation about Project WET, groundwater, watersheds, and available teaching resources. Introduction to the groundwater model and the K12 Watershed Game

**Aug. 27-Sept. 27, 2019: Minnesota State Fair Blue Thumb exhibit in Eco Experience building,** displays, interaction with fair attendees about protecting lakes and wetlands through use of rain gardens, native plants and pollinator education -700

**October 19, 2019 Stafford Library in Woodbury Family Water Day** – (25 people)

- Groundwater model – where city's tap water comes from
- Discussion of water bodies in Woodbury and how the city is working to protect water through rain gardens in parks, cistern in new Public Works building and native plantings
- Comparison demo of two models: how rain gardens vs cleaning up drains -two methods for cleaning stormwater

- Water Bar – sampling water from different sources
- Water promises – an art exercise

**October 23, 2019: City of Oakdale public works annual workshop** information about illicit discharge detection and elimination (8 attendees)

**Adopt-A-Drain:** 170 new participants signed up to adopt drains and 286 additional drains were adopted in RWMWD in 2019.

## Master Water Stewards

6 Master Water Stewards participated in 6 classes in Jan – March 2019) and 2 classes were held for another team of 5 Master Water Stewards in October and November 2019, Activities include tours, education, community outreach and projects related to stormwater management, storm drain pollution, BMPs, water quality, pet waste and ecological restoration to prevent erosion

Master Water Steward outreach Projects:

- Master Water Stewards Stephanie Wang and Anna Barker worked with EMWREP and RWMWD staff to organize two raingarden clean-up events in spring 2019 at Trinity Presbyterian Church and put on a family water education program at the Stafford Library in Woodbury (see more detail in events section above).
- Master Water Steward Linda Neilson circulated pet waste educational signs at three Roseville City Parks: Willow Pond Applewood Overlook, Acorn Park throughout the year.
- Master Water Steward, Logan Stapleton engaged a community of 15 friends, family and Master Water Stewards to help install his capstone project – a shoreline restoration project on the east side of Lake Phalen to slow erosion. The event was witnessed by hundreds of people on a marathon walk who came by the spot!
- Rain Barrel education at Water Fest by Master Water Steward Betty Danielson was shared with many people – she passed out instructions for how to build your own rain barrel and engaged the public in decorating 3 rain barrels and raffled them off at the event

## Media

**Website: users:** 21,095 and **Page Views:** 56,982

**Newsletters:** content for city, watershed and Washington Conservation District newsletters

- Oakdale (pop. 28,083) –newsletter
  - Summer – Do your part one drop at a time (storm drains), sweep, rake, pick up
- White Bear Lake (pop. 25,888) - newsletter
  - Spring – Illicit discharge, street sweeping, rain barrels available for purchase
  - Fall - Adopt-a-Drain live!
- Woodbury (pop. 69,756)
  - Feb – SMART Irrigation Controller program
  - Jun – Lawn watering policy
  - Sept –Irrigation Controller program

**RWMWD blog on [rwmwd.org](http://rwmwd.org)** – 1968 subscribers

May 7, 2019 Annual: Stormwater Pollution Protection Plan and Report

July 29, 2019 Bridging Connections: Lake Phalen Stormwater Mural

August 13, Snail Lake Regional Park Wetland Buffers Get a Make-Over

September 5, 2019 Master Water Stewards Kindle Creativity, Discovery and Action

**Facebook:** 757 likes

**Instagram Followers:** 334

**Twitter:** 1205 following, 33 tweets

**You Tube Videos created in 2019**

Hayward Pond Clean-out

Phalen Chain of Lakes – Water Trail

Keller Golf Course Restoration

Water Quality – Lake Sampling

Pond Sampling – Did You Know?

RWMWD Student Planting Tradition

20<sup>th</sup> Annual RWMWD WaterFest Event



# Request for Board Action

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**Board Meeting Date:** June 3, 2020

**Agenda Item No.:** 7B

**Preparer:** Tina Carstens, Administrator

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**Item Description:** Twin Lake Outlet Project Bid Award

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**Background:**

At the May 2020 meeting, the board was presented the plans and cost estimate for the Twin Lake Outlet project. The board directed staff to finalize the design and bidding documents and solicit bid proposals. The engineer's opinion of probable cost for the project was \$167,000.

The virtual public bid opening is scheduled for May 29, and bid results will be compiled and presented to the managers at the June meeting.

If deemed appropriate, the managers should consider a motion that "awards the project to the lowest responsive and responsible bidder and direct staff to issue the notice of award and prepare the form of agreement." Assuming that the required bonds, insurance documentation, and other submittals meet contract requirements, and provided that permits and approvals are in place, the outlet will likely be constructed this summer. (Pending approvals are needed from Xcel Energy and MnDOT, as well as a signed access agreement from the property owner.)

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**Applicable District Goal and Action Item:**

**Goal: Manage risk of flooding** – The District will reduce the public's risk to life and property from flooding through programs and projects that protect public safety and well-being.

**Action Item:** Cooperate with appropriate stakeholders to identify, assess, and address potential flooding problems in the District.

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**Staff Recommendation:**

Staff recommends that the Board award the project to the lowest responsive and responsible bidder and direct staff to issue the notice of award and prepare the form of agreement.

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**Financial Implications:**

The outlet construction project will be funded through the Flood Risk Reduction Fund where there are sufficient funds available.

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**Board Action Requested:**

Accept the bids and award the Twin Lake Outlet project to \_\_\_\_\_. Direct staff to prepare and mail the notice of award and prepare the agreements, and review the required submittals.

# Request for Board Action

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**Board Meeting Date:** June 3, 2020

**Agenda Item No.:** 7C

**Preparer:** Tina Carstens, Administrator

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**Item Description:** Beltline Resiliency Study Response to Comment and Finalize Report

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## **Background:**

This item was tabled at the May 6, 2020 board meeting in order to give the managers more time to review. Based on the comments at the May meeting, staff has made a few changes to the responses that you will see in the attached table in red.

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At a December 17, 2019 workshop, staff presented the draft Beltline Resiliency Study to the board. The Beltline Resiliency Study evaluates potential system modifications that could be implemented in the Beltline watershed to reduce flood risk to habitable structures without purchasing structures. System modifications included in the draft study provide one option for mitigating flood-risk, and in many locations additional feasibility studies would be required to optimize system modifications and further evaluate the feasibility of the proposed modifications. Much of the study is centered on evaluating ways to optimize the use of the Beltline to lower flood levels upstream.

At that workshop, the board directed staff to determine a process for soliciting input from various stakeholders. In January 2020, staff held a meeting with city, county and agency stakeholders and also solicited comments from other interested stakeholders like our residents.

Staff have now reviewed all of the comments received on the Beltline Resiliency Study. 64 different comments were received from 8 individuals representing the cities of St. Paul, North St. Paul, and Shoreview, Ramsey County Public Works, one RWMWD Board manager and residents of Shoreview and St. Paul. Comments have been compiled into a spreadsheet, and answered, one by one. Responses included clarifications on parts of the Beltline Resiliency Study report, or an indication that something specific would be changed in the report as a result of the comment. Comments varied widely in terms of topic and geographic location across the District. A pdf of the comments and responses are included in this month's Board packet for the managers to review and consider.

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## **Applicable District Goal and Action Item:**

**Goal: Manage risk of flooding** – The District will reduce the public's risk to life and property from flooding through programs and projects that protect public safety and well-being.

**Action Item:** Cooperate with appropriate stakeholders to identify, assess, and address potential flooding problems in the District.

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**Staff Recommendation:**

Staff recommends the board accept the staff prepared response to comments to be sent to those that commented. The response to comments could also be appended to the study document and then called final.

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**Financial Implications:**

The response to comments does not include any financial implications.

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**Board Action Requested:**

Accept the Beltline Resiliency Study response to comments and direct staff to append the response to comments to finalize the study report.

Comments on the Beltline Resiliency Study and Associated Responses (April 28 ,2020 with revision on May 28, 2020 in red)				
Comment #	Commenter	Report Reference	Comment	Response to Comment
1	Bruce Copley	General	Overall we believe that the Beltline study is important to provide RWMWD with an initial roadmap for addressing the many potential flooding problems in the district and support this effort.	Thank you for your comment.
2	Bruce Copley	Atlas 14 Precipitation Assumptions	The inundation maps utilize Atlas 14 data. Are Atlas 14 estimates for the Twin Cities already outdated? How frequently is Atlas 14 updated? Six years of above normal precipitation suggests the norms used to publish Atlas 14 may be under predicting the rainfall resulting in under design of water management. How is the most recent rainfall data taken into account when suggesting system changes? Is it still reasonable to use a model 100-year storm event predicated on historical data given climate change observed thus far? Given the "new" high water level of Grass Lake, will there be a new 100-year flood elevation determined? If no, please comment on why it is reasonable to use old elevations in modeling. What safety factor have you incorporated in the event that Atlas 14 underestimates the precipitation amounts? Can you comment?	<p>Before the Atlas 14 precipitation record was published in 2013, the last time the precipitation record was updated was 1961. There are currently no planned updates to Atlas 14. Atlas 14 is the current industry standard for defining design rainfall depths for a given return frequency and duration. The District currently and historically designed flood-risk reduction projects to provide a 100-year level of protection. However, the District has also been evaluating incorporating resiliency into the design of flood-risk reduction systems by using the 500-year storm event for emergency planning (keeping emergency evacuation routes open, considering pathways to hospitals, grocery stores, etc. and not necessarily protecting homes from flooding). The first step in this process was to develop inundation maps for the 500-year event, which have been created and will soon be distributed to member cities for review. For flood-risk mitigation project design in the Grass Lake area in recent years, staff have been using a starting elevation of 884.1 for water bodies in the Grass Lake area (this is the elevation of Grass Lake's emergency overflow) with a 100-year storm event on top of it. The City of Shoreview's recent planning and design efforts have incorporated this assumption as well. This assumption does incorporate a safety factor implicitly, as there is currently significant storage available below 884.1 north of Grass Lake.</p> <p><i>Please note that this work has been done, and continues to be done outside of the scope of the Beltline Resiliency Study work and its associated feasibility studies.</i></p>
3	Bruce Copley	Page 7: Starting Water Level Assumption for Grass Lake	On page 7 it is stated that recent high water levels are not used as the starting point for identifying impacted structures and modeled inundation. Residents in our area are very concerned about a large storm hitting when the area water bodies are much above normal as they have been for several years. We believe the extended periods these water bodies have been above normal significantly increases the probability of an adverse event. Can you comment? We believe inundation maps in the area around Grass, Snail, Wetland A and W. Vadnais should use the higher lakes levels as a starting point for the inundation maps. Would restoring surrounding water bodies to historical norms provide protection from inundation? The inundation maps of Crestview addition on the Barr website show properties touched by projected surface water, well away from Suzanne Pond, yet these properties are not shown as at-risk. Why not?	<p>While the inundation maps and Beltline Resiliency study reflect a starting water level for Grass Lake at the outlet elevation, modeling for specific flood control projects in the Grass Lake area that inform flood management actions and projects assumes a starting elevation of Grass Lake of 884.1 (as described above). With recent flood management projects undertaken by the RWMWD and now the City of Shoreview, No homes would be at risk of flooding during the 100-year storm event even when the water level in Grass Lake begins at 884.1.</p> <p><i>Please note that this work has been done, and continues to be done outside of the scope of the Beltline Resiliency Study work and its associated feasibility studies.</i></p>
4	Bruce Copley	Conditional Probability Analysis	It has been acknowledged by Barr that the area north of I694 is very slow draining and as a result goes high and stays high after several concurrent small rain events. The area seems to be in a permanently flooded state. The decision to not use "conditional probability" analysis for this area should be reconsidered. The study seems to acknowledge that the area is unique within the water district. This suggests to us that a unique analysis and set of solutions is appropriate for this area. Can you comment?	<p>For the Beltline Resiliency study, a conditional probability was not considered for use in inundation mapping as a part of the Atlas 14 work for reasons described in the study. However, as stated above, modeling for specific flood control projects in the Grass Lake area has assumed that the lake has been at its emergency overflow elevation (884.1) when the 100-year storm happens.</p> <p><i>Please note that this work has been done, and continues to be done outside of the scope of the Beltline Resiliency Study work and its associated feasibility studies.</i></p>
5	Bruce Copley	48-hour Drawdown Question for Grass Lake Area	Also, how does the District square the "48-hour drawdown requirement" for temporary floodwater storage against using the Grass Lake parkland for additional storage, knowing that the drawdown is months or years under current conditions? Why does this requirement apply some places and not others?	<p>The District's rules require 48-hour drawdown for infiltration areas (District Rule C: Stormwater Management 3.c.1.vi. As described in the Minnesota Stormwater manual the 48-hour drawdown requirement was established to provide wet-dry cycling between rainfall events, unsuitable mosquito breeding habitat, suitable habitat for vegetation establishment, aerobic conditions, and storage for back-to-back precipitation events. Many of these considerations do not apply for naturally occurring wetlands, ponds, and lakes. In locations where water levels take more time to draw down, the District evaluates water levels using other methods such as continuous simulations, back-to-back events, or higher starting water levels. For the Grass Lake area, a starting water level of 884.1 has been used to identify whether there are flood-prone habitable structures. The Beltline Resiliency study used the outlet elevation such that the evaluation was applied consistently throughout the study area.</p>
6	Bruce Copley	Snail Lake and Wetland A	We would like to see more included in the study about the ability to control Snail Lake and Wetland A once Grass and W. Vadnais are adjusted to a lower level. This is a significant advantage of any system modification designed to maintain a lower level of Grass and W. Vadnais lakes. The dynamics of interconnectivity for Snail, Wetland A, Wabasso, Owasso, Grass, West Vadnais and Twin Lake are not clearly defined in the study.	<p>Noted. As stated in Section 1 of the Beltline Resiliency Study, this study evaluates potential system modifications that could be implemented in the Beltline watershed to reduce flood risk to habitable structures. As shown in Figure 2-2, there are no flood-prone structures identified as District within the Grass Lake or Wetland A subwatersheds. The Board of Managers may consider additional studies to evaluate the costs and benefits for providing additional connectivity as suggested. However, the Beltline Resiliency study focused on mitigating risk to flood-prone structures, and the additional evaluation in this area is outside the current scope of the study.</p> <p>The first four feasibility studies have already been identified for 2020 (Owasso Basin Bypass Pipeline Feasibility Study, Ames Lake Area Flood Damage Reduction Feasibility Study, Willow Creek Area Flood Damage Reduction Study and West Vadnais Lake to South of I-694 Conveyance Feasibility Study).</p>

Comment #	Commenter	Report Reference	Comment	Response to Comment
7	Bruce Copley	Owasso Basin Bypass Option	It would seem that the most critical bottleneck once the Keller lake and Lake Phalen outlet are modified is flooding around Owasso Basin. Most of the modifications upstream are blocked by this issue, a problem that is mostly solved by adding a large pipe along the west side of I35. This opens numerous possibilities for controlling Owasso, Wabasso, Grass, Snail, Wetland A and W. Vadnais Lakes. We strongly support the addition of a pipe along 35E or alternative that allows for high throughput to Gervais Lake. Are there other options (short of purchasing Owasso Basin) being considered in light of the high cost of the 35E pipe? Given the expected long timeline to study, permit and install a pipe, are there temporary options that can be executed?	<p>The RWMWD is currently working on a feasibility study that further evaluates the potential for a piped "bypass" of high flows around Owasso Basin to protect it from flooding (Owasso Basin Bypass Pipeline Feasibility Study). In the interim, RWMWD staff will be working on an emergency response plan that would protect the homes around Owasso Basin under existing conditions, as well as the feasibility of other options that would affect the water level in West Vadnais Lake over and above lowering the 15" outlet to an elevation of 881.0 (West Vadnais Lake to South of I-694 Conveyance Feasibility Study).</p> <p><i>Please note that this work has been done, and continues to be done outside of the scope of the Beltline Resiliency Study work and its associated feasibility studies.</i></p>
8	Bruce Copley	Owasso Shunt Option	The Owasso shunt operation needs to be considered at "opportunistic" pumping times not just seasonal pumping. By opportunistic pumping we mean that the narrow winter operation window could be expanded to include any time, year round, when flood risk downstream is minimal. Same comments apply for pumping of W. Vadnais. There is minimal detail in the study regarding the "shunt". Can more detail be provided? We would be interested in the impact of the Owasso Shunt on Grass and W. Vadnais. This is not shown as the option and is rejected with minimal discussion.	<p>The Beltline Resiliency study presents one set of system modifications to mitigate risks for habitable structures. In general, the study does not include discussion for other potential modifications. The Study does not "reject" the shunt option. This option is not presented because it is less effective at mitigating flood-risk for habitable structures on Lake Owasso. Similar to any other modification not presented in detail in the study, future evaluation could be included in a feasibility study to identify optimize system modifications at the direction of the Managers.</p> <p>The Resiliency Study does not discuss impacts of the second outlet from Lake Owasso on Grass Lake and West Vadnais Lake because there are no flood-prone habitable structures adjacent to those water bodies.</p>
9	Bruce Copley	Seasonal Pumping of West Vadnais Lake	The analysis of seasonal pumping of W. Vadnais does show three important results. First, the time that Grass/W. Vadnais are at peak levels is minimized, thus the risk of severe flooding from a 100 year storm is proportionately minimized. Second, the peak is below the overflow level for Grass and W. Vadnais lakes. Third, the average level is lower and therefore storage capacity increased. All three results appear to be advantageous to minimize flooding in the Grass/W. Vadnais area. All might look even better if the analysis was coupled with the lowering of the 15" pipe outlet from W. Vadnais. We would like to see the analysis considered with the "opportunistic" vs. seasonal pumping. Please comment on these three issues and a more detailed analysis of inundation for the area if opportunistic pumping were to be implemented and the 15" culvert lowered.	<p>Regarding comment 1, seasonal pumping does reduce the duration of when water levels are above the outlet from West Vadnais. Within the context of the Resiliency Study, system modifications were evaluated to reduce flood-risk to habitable structures. No habitable structures were identified as being flood-prone around Grass Lake or Wetland A. Additional modifications could be evaluated to further reduce water levels in this area, but since they would not address flood-risk to habitable structures they are outside the scope of the Resiliency Study.</p> <p>Regarding comment 2, the benefits of seasonal pumping are highly dependent on the amount of rainfall within a given year. As shown in Figure 3-15, the peak water levels in West Vadnais are very similar whether seasonal pumping was completed or not.</p> <p>Regarding comment 3, the average water level is lower. This is a function of reducing the duration of time the water level is above the outlet. However, as noted in other comments, there are not flood-prone habitable structures within the watershed. Other studies have evaluated a starting water level in Grass Lake at 884.1, and also did not identify flood-prone structures. The Managers may decide to evaluate additional modifications in this area. However, since the Beltline Resiliency Study focused on reducing flood-risk for habitable structures those modifications are outside the scope of this study.</p> <p>Resulting opportunistic pumping, this appears to imply that discharge from West Vadnais should be allowed any time during the year. While the Resiliency study evaluates reducing flood-risk for habitable structures, it does include a general discussion on sequencing of system modifications. In general, the sequencing presented in the Resiliency study notes that downstream improvements should be implemented prior to conveying additional flow into flood-prone areas. If the Managers decide to further evaluate opportunistic pumping, the same sequencing guidelines should apply to pumping as any other system modification to prevent adverse downstream impacts for habitable structures.</p> <p>Other options that could lower the level of West Vadnais Lake are being further evaluated in a RWMWD feasibility study this year- one of the four that came out of the Beltline Feasibility Study (West Vadnais Lake to South of I-694 Conveyance Feasibility Study)</p>
10	Bruce Copley	Seasonal Pumping of West Vadnais Lake	In the Barr presentation there is a set of charts on the seasonal pumping of W. Vadnais Lake. It covers the period from 1/1/15 to 12/31/18. When pumping is modeled, W. Vadnais never exceeds the level of the berm at 5 Star Estates and may not have affected Rice Street. Please include these data for 2019. Would a similar level of reduction have been predicted for the 2 periods when W. Vadnais overtopped the berm and closed Rice Street? Would this have eliminated the pumping of Twin Lake and the sandbagging of the low home?	<p>The model results indicate that the water level in West Vadnais did not overtop the crest elevation of the berm. However, the berm had eroded and in 2019, allowing West Vadnais Lake to discharge towards Twin Lake. Based on the period evaluated, pumping did not prevent West Vadnais Lake elevations from reaching the point in the berm that was eroded. The Beltline Resiliency Study included modeling using available information at the time of the analysis. Additional evaluation outside the scope of the Beltline Resiliency Study is ongoing.</p> <p>The low point of Rice Street was raised to 884.7 by Ramsey County in 2019. The eroded portion of the berm between the "triangle wetland" south of West Vadnais Lake and Five Star Estates had eroded, and was restored by RWMWD this past winter. RWMWD also constructed a bypass system to collect overflow from West Vadnais Lake and divert it around Twin Lake. As such, reducing the potential for impacts to habitable structures.</p> <p><i>Please note that this work has been done, and continues to be done outside of the scope of the Beltline Resiliency Study work and its associated feasibility studies.</i></p>
11	Bruce Copley	General Grass Lake question	Would much longer periods with W. Vadnais below the maximum have prevented long spells of Grass Lake overflow and water moving north of Gramsie Rd?	<p>When water is below 884.1 in Grass Lake, it can not flow north of Gramsie Road through the culvert in the road. When water is lower in Grass Lake and West Vadnais Lake, it is less likely that water will flow north of Gramsie Road through the culvert in the road due to storm events.</p> <p>Please, note that since no flood-prone habitable structures are identified north of Gramsie Road, the Resiliency Study did not evaluate system modifications to reduce water conveyed into Wetland A.</p>

Comment #	Commenter	Report Reference	Comment	Response to Comment
12	Bruce Copley	Pumping of West Vadnais Lake	As we have seen from the Twin Lake pumping, opportunistic pumping in periods throughout the year are possible. The cost to do this pumping is tiny compared to the desired installation of a pipe along 35E and may well provide a significant margin of protection from flooding by the Grass/W. Vadnais lake until the 35E pipe could be installed.	<p>This comment implies that the capital cost of pumping is less than the capital cost for installing a pipe along I-35E. However, there are two things that this comment does not consider. First is that if we evaluate the lifecycle cost of a project, then the cost for pumping (maintenance, fuel, staff time, permitting, etc...) over an operational lifespan may be closer to installing a pipe.... Second, is that if the 15-inch pipe out of WVl is flowing full, then there is nowhere to pump the water, so at a minimum pumping would also mean constructing a pipe from WVl to some location south of the highway - which significantly increases the costs.</p> <p>It is important to note that the Twin Lake system is much smaller than the system that drains through Grass and West Vadnais Lakes. As such, Twin Lake could be pumped (opportunistically) down over a relatively short period of time to protect a home that was at imminent risk of flooding, during a summer when we were fortunate to not experience any extreme storm events that would have caused flooding downstream. With the other flood management actions undertaken over the past 2 years and already planned for 2020, as well as the future Suzanne/ Gramsie Road Stormwater Improvements project that will be implemented by the City of Shoreview in 2020 in Grass Lake area, no homes will be imminent risk of flooding in the Grass Lake area up to the 100-year event. The decision to pursue options that would lower the level of West Vadnais Lake further will be weighed as a part of the West Vadnais Lake to South of I-694 Conveyance feasibility study planned for 2020.</p>
13	Bruce Copley	Pumping of West Vadnais Lake	We think that RWMWD should commence pumping from W. Vadnais into Waldo Pond immediately, before we get any further into the best time of year to discharge water into Gervais Creek.	<p>Waldo Pond is located south of Twin Lake. It is not feasible to pump West Vadnais Lake into Waldo pond. When discussing pumping from West Vadnais Lake, <b>there are three options that the RWMWD is currently evaluating:</b></p> <ol style="list-style-type: none"> <li>1. Pump from West Vadnais Lake into Stymie Pond. Stymie Pond is a MnDOT stormwater pond, which outlets below I-694. On the south side of I-694, water flows through an open ditch, and then eventually discharges into Jiggs Pond and eventually into Owasso Basin. There are flood-risk concerns near Owasso Basin. In addition, there are concerns with erosion south of the interstate system that must be mitigated following completion of pumping. Pumping from Stymie Pond requires a permit from MnDOT. This is the route that is planned for any bypass pumping to avert overflows from West Vadnais Lake to Twin Lake.</li> <li>2. <b>Leverage West Vadnais Lake's lowered outlet. Through construction of an inline check valve or other manipulation of the 15-inch and downstream manholes, the RWMWD could pump to enable the 15-inch pipe to flow full until the lake reaches 881.0. This option sends water along the same path as it does now, but allows for the 15-inch to flow full under lower lake levels; it may or may not require MnDOT and DNR approvals, and would not leverage the bypass system described above in #1. This option could maintain a total, consistent 4 cubic feet per second to leave West Vadnais Lake's 15-inch outlet (pipe full flow).</b></li> <li>3. Pump <b>(or allow increased piped gravity flow)</b> from West Vadnais Lake into a new pipe below the highway. RWMWD is evaluating the feasibility of constructing a new pipe below the highway. However, for this option pumping could not start immediately.</li> </ol> <p>See comment #12 for additional discussion regarding concerns related to downstream impacts associated with pumping.</p>
14	Bruce Copley	Lowering water levels in West Vadnais Lake, Snail and Wetland A	The addition of a large output pipe from W. Vadnais to Waldo Pond appears to be very effective and should provide excellent control of high water levels in Grass, W. Vadnais, Owasso, and Wetland A. It seems to be adequate to allow a connection between Snail and Grass as a cost effective route to control Snail. We strongly support this addition and also understand the the new pipe along 35E would be required to fully utilize the added outflow capacity.	<p>The Resiliency Study did not evaluate or recommend a piped connection to Waldo Pond. A piped connection to Waldo Pond would have adverse impacts on the MnDOT drainage system and Twin Lake. The Resiliency Study evaluated a piped connection to Porky Pond.</p> <p>The Resiliency Study did not evaluate a piped connection to lower the outlet elevations of Wetland A or Snail Lake, and does not make any assumptions or conclusions regarding the adequacy of the proposed pipe to convey water from these locations. The area around Wetland A was not evaluated because there are no flood-prone habitable structures in this area. The area around Snail Lake was not considered, because there is only one flood-prone structure, and the District completed a detailed feasibility study to identify system modifications, and identified an emergency response plan as the most feasible alternative in this location (see comment #44).</p>
15	Cliff Aichinger, RWMWD Board Manager	Page 18	I find the wording in the bullets may be a bit confusing to readers. The phrase "at the invert of the existing pipe" may be clearer if it read "at the same level as the invert of the existing pipe."	This change will be made to the final draft of the report.
16	Cliff Aichinger, RWMWD Board Manager	Page 18, second bullet	My question is whether this covered section of the creek is needed or whether it could be made into an open channel to add capacity and avoid adding new pipes. A bridge could be added for the trails.	The second bullet includes a note "or equivalent". This implies that a modification to the system that provides equivalent capacity would be sufficient. The suggestion to replace the culverts with a bridge or open channel could be a way to provide additional capacity. The Resiliency Study provides one method for mitigating flood-risk for habitable structures, and further optimization of each modification will be required. In this location, using a bridge could be a way to optimize the modification.
17	Cliff Aichinger, RWMWD Board Manager	Page 26, End of first paragraph under section 3.2.1.	My concern is that we somehow address the potential problem of cities solving "local" flooding issues by adding capacity to their system, which would then add new volume to "District" projects.	This concern will be addressed during the feasibility study phase of each area that is explored further, in close coordination with member cities.
18	Cliff Aichinger, RWMWD Board Manager	Page 31, second to last bullet	I don't see this modification reflected on the figure.	The modification is shown on Figure 3-12. The call out box is pointing to the pipe from the triangle wetland south of West Vadnais Lake and connecting to Porky Pond.
19	Molly Churchich, Ramsey County Public Works Department	Page 18, increasing culvert capacity on Edgerton Street and Keller Parkway	Edgerton Street was resurfaced in 2019 and Keller Parkway was resurfaced in 2017. Depending on pavement rating conditions, resurfacing is generally on a 10-20 year cycle factoring in Average Daily Traffic and depth of road base, etc. As I understand it, you will be implementing at the south first and then moving north for possibly a 10-year plan. We should discuss as this phase is in the queue and there is potential to coincide with our resurfacing or reconstruction projects.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.

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20	Molly Churchich, Ramsey County Public Works Department	Page 30, Culvert improvements at County Road C and Victoria	RCPW is planning a pipe lining, apron repair, and slope stabilization in this location in 2020. The catch basin to the east and manhole to the west has deteriorating pipes which will be lined. The large roadway culvert was originally replaced under S.A.P. 62-623-10 in 1972. Between 2008-2012, our crews completed a construction joint throughout the tunnel, as best guessed by our foreman.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
21	Molly Churchich, Ramsey County Public Works Department	Page 30, Lake Owasso outlet	Our lake outlet records say Shoreview holds the JPA for this outlet, as owner and operator.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
22	Molly Churchich, Ramsey County Public Works Department	Page 31, Lake Wabasso outlet modifications	As owners of the outlet, we have been monitoring some slight degradation in the structure. We planned to have it repaired with a structural joint epoxy in 2019, but scheduling and water levels did not cooperate. We plan to have this repair completed in 2020. We could coordinate dredging, if required.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
23	Molly Churchich, Ramsey County Public Works Department	Page 31, Grass Lake outlet pipes and Rice Street pipes	Parks can comment on the impacts to the trail for Grass Lake's outlet. In 2022, RCPW was planning to reconstruct this section of Rice, but the extents seemed to have shifted. Let's keep the conversation going to sync as much as we can. The storm sewer south of the railroad bridge has been on my "wish list" for some years now. No one is brave enough to tackle.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works and Ramsey County Parks.
24	Molly Churchich, Ramsey County Public Works Department	Page 31, West Vadnais Lake Vadnais Boulevard pipes	Resurfacing of Vadnais Boulevard between Rice Street and Twin Lake Boulevard was on the schedule for this year, but has since been shifted. It is expected it will land on 2023-2024. We should coordinate projects on this one. Public Works' desire is that pipes be installed at least one year prior to allowing for settling.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
25	Molly Churchich, Ramsey County Public Works Department	Page 42, Seasonal drawdown of West Vadnais	The county is supportive of this, provided dewatering practices don't interfere with traffic on our systems. Depending on the pump setup location, we may require a county ROW permit for hoses and traffic control signs.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
26	Molly Churchich, Ramsey County Public Works Department	Page 44, Casey Lake Outlet, White Bear road control, and Kohlman Basin pipeline	I have been searching for record plans for the Casey Outlet project for a year. We seem to have everything related to the road portion, but as I understand it, RWMWD added on work to the Casey Outlet as an addendum. Is that correct? Does RWMWD consider themselves owners of the outlet? What is the White Bear road control? Has the District considered any improvements to the Kohlman Wetland Treatment System constructed by the county in 1984? Our field staff have inquired if this is something the District wants to pursue but I wasn't confident that it was evaluated to have a positive impact to the watershed.	<p>The District has original plans for the Casey Lake outlet. Following construction of the outlet modifications were made which included a trashrack and weir with a sluice gate. The outlet is identified as a District managed facility in the District's 2017 Management Plan.</p> <p>The White Bear Ave control is a sheet pile weir with a v-notch. The District constructed this structure in 1994 to provide some water quality treatment in the wetland upstream of White Bear Ave.</p> <p><b>RWMWD will be sure to coordinate future maintenance efforts and coordination potential opportunities for system improvements.</b></p>
27	Molly Churchich, Ramsey County Public Works Department	Page 48, Willow Lake Outlet	We would need adequate time to engage with HB Fuller and Parks.	Noted. Thank you for your comment.
28	Molly Churchich, Ramsey County Public Works Department	Page 51, County Road C culvert capacity	I don't believe this segment is in the current resurfacing plan. We have a new engineer taking over our resurfacing program. We should schedule a meeting with the District to discuss upcoming projects.	Thank you- RWMWD would welcome this discussion to help in planning future efforts.
29	Molly Churchich, Ramsey County Public Works Department	Page 51, County Road D outlet	I don't think this is scheduled for resurfacing.	Noted. Thank you for your comment.
30	Molly Churchich, Ramsey County Public Works Department	Figure 3-21, Storm sewer at 5th Street	This segment is planned for a full width resurfacing as part of the Xcel gas main project in 2020. The resurfacing will be negotiated for Xcel to lead or the county will lead. The storm sewer to the north coming from McKnight discharges into the Urban Ecology Center. Ramsey County holds the easement that runs east-west and North Saint Paul holds the easement that intersects with ours running north-south. There is a sizeable sediment delta at this intersection point blocking flow. It has been too wet in the area for us to access. We've tried to coordinate with North Saint Paul with no success.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
31	Molly Churchich, Ramsey County Public Works Department	Figure 3-23, Modifying storm sewer to Casey Lake	This segment is not in our scheduled resurfacing plan. There is one resident at 2210 1 <sup>st</sup> Ave, Mr. Terry Noonan, who was open to having a rain garden in his yard, if we ever reconstruct the road. I told him I would keep it in mind. He has already done the pre-calculations, as expected.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
32	Molly Churchich, Ramsey County Public Works Department	Figure 3-24, Additional culverts under White Bear Avenue	The condition of these existing culverts is not known. Water levels are too high to inspect properly. This segment of White Bear Avenue is getting resurfaced this year.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
33	Molly Churchich, Ramsey County Public Works Department	Figure 3-26, County Road C culverts	This segment is not slated for resurfacing.	Noted. Thank you for your comment.

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34	Molly Churchich, Ramsey County Public Works Department	Figure 3-42, Stormwater along White Bear Avenue.	Currently, there is no project identified in this location. If this involves substantial storm sewer replacement, we may evaluate adding it to a larger project.	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
35	Molly Churchich, Ramsey County Public Works Department	Figure 3-44, Stormwater pond at Phalen Boulevard and Johnson Parkway	<a href="https://ramsevgis.maps.arcgis.com/apps/webappviewer/index.html?id=b78c7d82f13149758bfaf6bbdf77c582">According to our Land Survey records, this pond is on county ROW. https://ramsevgis.maps.arcgis.com/apps/webappviewer/index.html?id=b78c7d82f13149758bfaf6bbdf77c582 I do not have good records of plans or ownership, though.</a>	Thank you for your comment. RWMWD will be sure to coordinate future efforts with Ramsey County Public Works.
36	Molly Churchich, Ramsey County Public Works Department	General	Let's continue to discuss partnerships as these projects move forward because it could be a good way to optimize our resources, collectively.	Thank you for your comment. We agree, and will keep in touch on these projects going forward.
37	William Zajicek St. Paul Resident	Presentation	That presentation wasn't easy to follow. For one thing I don't understand what the sinks and buckets are supposed to represent.	The sinks and buckets slides were meant to show why lowering the level of water in West Vadnais Lake doesn't necessarily produce a significant effect in lowering the frequency of overflows from Grass Lake, given the large volume of water that is effectively constantly entering the area. Even if lake levels are lowered in the "off season", spring snowmelt and subsequent storm events fill the area right back up under existing outflow conditions.
38	William Zajicek St. Paul Resident	Cost of mitigation projects	Regarding the draft study, given the estimated costs of mitigation projects, the option of purchasing properties at risk didn't seem to be there. One could purchase quite a few homes for 50 million dollars.	As noted in Section 1, one of the assumptions for the Beltline Resiliency study was to present system modifications that would be required if purchasing of flood-prone structures was not an option. Further evaluation of purchasing flood-prone structures should be included in future feasibility studies and optimization of each system modification.  However, Appendix B includes a high-level estimate of the cost to purchase flood-prone property.
39	Stuart Knappmiller St. Paul Resident	Partnerships	We wondered if this was the kind of project that Payne Phalen Community Council would be interested in. We both serve on that board. Of course the sewer runs through other groups geography as well.	Thank you for your comment. Gathering input from a diverse group of stakeholders will be a critical component for identifying and evaluating optimizations for system modifications discussed in the study.
40	Stuart Knappmiller St. Paul Resident	Request for presentation	Is there a way to have knowledgeable staff explain this project? We would be happy to facilitate a meeting on the Eastside.	Thank you for your comment. Providing information and gathering input from stakeholders is an important part of this work and could be accomplished as projects are identified and pursued.
41	Stuart Knappmiller St. Paul Resident	Project purpose	Is a significant part of this project the result of contractors and home buyers who apparently didn't walk/run/ride a horse through the Stumptown Creek valley 7 days a week bringing the cows in for the evening milking? Tossing a heavy rock into a raging creek, which washes it's a significant part of this project the result of contractors and home buyers who apparently didn't walk/run/ride a horse through the Stumptown Creek valley 7 days a week bringing the downstream before it sinks, knowing the creek was on this side of the valley last year, that the frog pond is now the creek bed, let's one think about what water does. There were 4 foundations of miners cabins from the European expansion of native lead diggings on our 228 acre farm. One had a well and was on the high ground. 2 were on a platform above flood stage. Only one was (possibly) on the flood stage level. So people in the 1800's knew to not build houses (or roads) where they would flood. Are our taxes subsidizing these lakeshore homes?	Homes throughout the RWMWD were built over a wide range of years and are occupied by a wide range of homeowners who have experienced a wide range of hydrologic conditions on their properties. In addition, our climate in recent years has experienced increasing levels of precipitation that stress this infrastructure. It is the RWMWD's goal to assess flood risk to the built environment across the District, assess why the risk exists and to work with partners to figure out what can happen to decrease that risk. We have inherited this built environment, and we strive to decrease the risk to it, balancing both upstream and downstream properties.
42	Mark Maloney, City of Shoreview	Page 1, Concerning Flood Risk to Habitable Structures	The City understands the emphasis of the Study to evaluate potential system modifications to reduce flood risk to habitable structures adjacent to Watershed managed facilities. While higher than normal water levels in Shoreview have had significant impact on public infrastructure (e.g. Gramsie Road) and on Ramsey County Regional Park Property, protecting habitable structures should obviously be the highest priority. It is my understanding that carefully sequenced modifications that serve to reduce flood risk to habitable structures in the District will eventually benefit other lower priority impacts.	Thank you for your comment.
43	Mark Maloney, City of Shoreview	Page 7, Statement "RWMWD is currently evaluating flood risk reduction options for Twin Lake (and Grass Lake) outside of the scope of this Beltline Resiliency Study"	My question would be if the flood risk reduction options being studied here and those outside the scope of the study were interdependent, and if so, how does that impact the proposed sequencing or priority of storm modifications?	The goal of the Resiliency Study was to present one set of system modifications, which if implemented, would mitigate flood-risk to habitable structures. A detailed evaluation of interdependence of each modification was not completed as part of the study. The evaluation was limited to general guidance for project sequencing (i.e., do not increase discharge from one area before making downstream improvements to be able to safely convey the additional discharge)
44	Mark Maloney, City of Shoreview	Page 8 and Figure 2-2, Observation regarding structures classified as "District"	There is only one structure in the City of Shoreview estimated to be at risk due to a 100-year flood from a District-managed water body: the Snail Lake property at 4380 Reiland Lane. The City and RWMWD previously agreed in principle to an emergency response plan for that property (assuming property owner coordination) that would include the City delivering and possibly assisting in the placement of sand bags to protect the habitable structure.	Thank you for your comment.



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45	Mark Maloney, City of Shoreview	Page 26, Statement "Increasing this flow rate, without other system modifications, results in increases to downstream water levels"	I understand this to be the biggest barrier to the simple approach of just moving water out of the Grass Lake watershed at a faster rate. This limiting factor has been discussed at every public meeting on the topic that I've been involved with and it's safe to assume that the Shoreview City Council understands it as well. It is for that reason that the City expects the RWMWD will adequately study and ultimately implement modifications that do not result in increased flood risk for downstream habitable structures.	Thank you for your comment. <b>Please see the response to Comment #13 (Bruce Copley) for more information on RWMWD's feasibility studies addressing this topic.</b>
46	Mark Maloney, City of Shoreview	Page 28, Suzanne Pond	I believe that the language in the Study could be updated to reflect that the Suzanne Pond Area Improvements are currently under design and on-schedule for constructing beginning May, 2020. The proposed improvements include pump and control replacements, reconfigured inlets and outlets, and the ability to accommodate the drainage from Gramsie Road to reduce the likelihood of nuisance flooding from smaller rain events. A segment of Gramsie Road itself is being raised to provide an increased level of protection for the Crestview Neighborhood in the event that Grass Lake overtops. The cost of these City of Shoreview improvements is currently estimated at \$850,000.	Thank you for your comment. This change will be made to the final draft of the report.
47	Mark Maloney, City of Shoreview	Page 28, Snail Lake	The City concurs with the statement concerning the most effective flood management strategy for the home at 4380 Reiland Lane.	Thank you for your comment.
48	Mark Maloney, City of Shoreview	Page 36, Sequencing	The Study states an assumption that improvements downstream of the Grass Lake watershed are made before any proposed outlet modifications for Lake Wabasso, Grass Lake and West Vadnais Lake. If here is a high degree of confidence associated with that position, then the City would urge RWMWD to place the highest priority on those downstream improvements.	Thank you for your comment.
49	Mark Maloney, City of Shoreview	Page 42, Seasonal Drawdown for West Vadnais Lake	Given that higher levels of West Vadnais Lake act as a constraint for the draining of the Grass Lake watershed, the City would strongly encourage and support RWMWD efforts to implement improvements that would permit the drawdown of West Vadnais Lake during the fall and winter months.	The decision to pursue options that would lower the level of West Vadnais Lake further will be weighed as a part of the West Vadnais Lake to South of I-694 Conveyance Feasibility Study planned for 2020.
50	Mark Maloney, City of Shoreview	General	Thank you for the opportunity to participate in this process. From my perspective, the City and the District are working well together to better understand and hopefully mitigate impacts from unprecedented weather of the past decade.	Thank you for your comment. RWMWD looks forward to working with the City of Shoreview on these efforts in the future.
51	Morgan Dawley and Heather Nelson, City of North St. Paul	Coordination of Flood Risk Modeling	The city of North St. Paul completed a flood study in 2017. The result of the city's study identified 7 focus areas. Only 2 of the 7 focus areas identified in the NSP study correspond to flood issues in the RWMWD study. Would the watershed district consider including the additional detail of the City's study into their study to help identify upstream storage areas? Partnering on the modeling could help resolve some differences and show a shared benefit between the district and local flooding concerns. See the example below showing the watershed inputs between the two models.	The District continuously updates their model based on best available information, and is open to working with member Cities to incorporate better definition of the storm sewer system, add detail, and if appropriate address differences.
52	Morgan Dawley and Heather Nelson, City of North St. Paul	Coordination of Flood Risk Modeling	Was additional storage in Southwood Nature Preserve by Cowern Elementary in North St. Paul through dredging the ponds downstream from Southwood considered? This area has been previously studied.	In general, dredging of stormwater ponds was not a system modification that was considered. Dredging increases the permanent pool volume, which does not change the peak water surface elevations in the basin. Future modifications to the ponds to increase the live storage volume could be considered.
53	Morgan Dawley and Heather Nelson, City of North St. Paul	PCU Pond	Was providing more storage in PCU Pond considered?	Increasing the storage volume of the permanent pool was not considered. PCU pond currently takes up most of the parcel, so change to the pond footprint were not considered as part of this study, but should be considered as an option for future optimization as part of a detailed feasibility study for modifications in this area.

Comment #	Commenter	Report Reference	Comment	Response to Comment
54	Morgan Dawley and Heather Nelson, City of North St. Paul	Coordination of Flood Risk Modeling	The focus of the study was on Potential District Flood-Risk Areas near district managed water bodies, facilities, or previous projects. Local flooding issues were not targeted as part of the study which limits opportunities for collaboration with the Cities. The use of a 100-year, 4-day Atlas 14 rainfall event (8.3 inches) as the critical event is disconnected from existing FEMA FIRM mapping assumptions and building code use of the 100-year, 24-hr rainfall event as the basis of establishing flood plain elevations. Initial review of the results in some cases show inundation areas that exceed existing mapped 500-year flood plains. The implications of public release of these inundation maps is concerning see example below (figures provided).	<p>Potentially flood-prone areas designated as "Local" are typically representative of flooding Cities typically address. Mitigation in these areas may not change downstream peak flow rates and water elevations in other municipalities. The Resiliency study notes that Cities typically lead the evaluation of this type of flooding, but that the District may choose to support the City's efforts in a collaborative role.</p> <p>The use of the 4-day duration event is not disconnected from FEMA guidance. FEMA Guidelines and Specification for Flood Hazard Mapping Appendix C indicates that rainfall duration, at a minimum, must exceed the time of concentration for the watershed and must be large enough to capture all excess rainfall as well as provide reasonable runoff and sediment volumes when performing storage analysis. The Mapping Partner may use the critical storm concept to determine the storm duration, or use the duration specified in guidelines developed by state agencies responsible for flood control or flood regulation.</p> <p>RWMWD selected the 4-day event because it is the critical duration event for the District. The stormwater model is run using a nested rainfall distribution. The distribution was developed such that depths from shorter durations (i.e., 24-hours) are nested within the longer 4-day distribution. The hyetograph was developed so that the peak of the storm occurs at the center with decreasing intensities on either end. Following this methodology, critical storm events of lesser duration are nested in the overall 4-day event distribution. Consequently, only one design event is required to obtain critical flows and water surface elevations throughout the watershed (i.e., the drainage area of any subwatershed is irrelevant because the critical duration storm event for each subwatershed is nested within the 4-day event). This is similar to why the 24-hour duration event is used for small sites or individual parcels. The time of concentration for an individual parcel is much less than 24-hours, but because the nested distribution is used, only a single event must be evaluated. In areas where there are more storage, such as large ponds, wetlands, or lakes, the 24-hour duration event may not be sufficient to calculate the critical water surface elevations or flows.</p> <p>Finally, this comment references an example from the FEMA FIRM. The figure showed the area west of McKnight Road from approximately County Road 8 to 13th Avenue. The comment implied that because the District's model has a larger inundation area than the FEMA maps there is some concern related to the results. First, the FEMA map in the example area shown does not accurately characterize the drainage in this area. The FEMA map simulates an open ditch that drains south to north within the example area - this is an inaccurate representation of the drainage system in this location. Actually, the City storm sewer drains the area east of McKnight south towards the Highway, where it either flows east under McKnight or to the inlet to the large arch pipe connected to the MnDOT system and then into PCU pond. The summary, is that the current FEMA maps do not accurately represent the drainage system.</p> <p>In addition the FEMA FIS indicates that the analysis for this area was not updated when the FIRM was updated. The Engineering analysis for the inundation shown on the FEMA maps are based on drainage areas delineated using 1970s aerial photos, and 1975 City storm sewer.</p>
55	Morgan Dawley and Heather Nelson, City of North St. Paul	Prioritization and Funding	Cost estimates for all the improvements outlined in the study range from \$142M (-50%) to \$568M (+100%) for mitigation of 227 potentially flood-prone structures. No priority or value was assigned to structures protected and it does not appear that critical infrastructure (e.g. utilities, major access routes) were considered in the analysis for protection. It also is not clear the frequency at which the identified structures would be impacted (e.g. 2, 10, 50 year events). Has a funding mechanism been identified?	<p>The Resiliency Study does not include guidance on prioritization of system modifications. As discussed in Section 3, the Resiliency Study includes general guidance for sequencing to avoid adverse downstream impacts. The intent of the Resiliency Study was to provide one set of modifications to remove habitable structures from the floodplain. Prioritization of individual locations will be considered by the Managers.</p> <p>The Resiliency Study also does not present optimized system modifications. Additional feasibility studies will be completed prior to implementation to identify the optimized modification for each area.</p> <p>The study focused on removing habitable structures from the floodplain. Habitable structures are those that are referenced by the District's rules. The District does not set freeboard for roadways or site other infrastructure referenced. The District is open to collaboration with and support of roadway authorities Cities within the District to mitigate flood-risk in these areas.</p>
56	Morgan Dawley and Heather Nelson, City of North St. Paul	Verification of Flood Prone Structures	Has there been any verification that structures identified as "flood prone" have actually had flooding issues in the past? Has there been any categorizing of the "flood prone" structures to identified critical infrastructure such as schools, public buildings, emergency responders, etc.?	<p>The flood risk of structures identified in the Atlas 14 modeling effort was based on the 100-year, 96-hour storm event peak water surface elevations relative to structural elevations estimated from LIDAR data. The feasibility studies stemming from the Beltline Resiliency Study that are planned for 2020 involve surveying the structures that may be at risk of flooding to verify low elevations and flood risk. Also, RWMWD has developed District-wide flood inundation maps that show estimated inundation footprints for a range of flood frequency events (2, 10, 50 year events, for example). These maps will be distributed to member cities in 2020 for discussion and planning.</p> <p>Past flooding has been documented in many areas shown as flood-prone including North Star Estates, Gervais Lake, Lake Owasso. After the model was updated to Atlas 14 inundation areas were shared with municipalities within the District, and in the summer of 2015 District staff met individually with each City. Comments provided by the Cities indicated that the inundation areas shown generally aligned with areas of known flooding and frequent calls.</p>
57	Morgan Dawley and Heather Nelson, City of North St. Paul	Phasing	Are any of the phases of project stand alone or do they all have to be sequenced in order to observe the identified benefit. What is the risk to the resiliency study if feasibility or permitting road blocks are encountered?	<p>Projects that provide additional floodplain storage or reduce downstream discharge rates could be implemented immediately. The recommendation in the study, is that projects that increase downstream discharge are dependent on first implementing downstream improvements.</p> <p>Future feasibility studies to optimize modifications and verify feasibility when considering additional information such as utilities, permitting, land acquisition, etc. will be required. As part of future feasibility studies additional options that were not considered as part of the Resiliency study should also be considered, including acquisition of flood-prone property and emergency response plans. It is possible that upon further review, some modifications may not be feasible. If this occurs, re-evaluation of modifications will be required to mitigate flood-risk for habitable structures.</p>
58	Morgan Dawley and Heather Nelson, City of North St. Paul	Coordination of Work	Local and county infrastructure improvements are planned in the near future for areas in North St. Paul including McKnight Road and 17th Ave. It should be noted that this work should be coordinated as much as possible with any potential flood improvements.	RWMWD will be sure to involve the City in these efforts, working collaboratively to find solutions.
59	Morgan Dawley and Heather Nelson, City of North St. Paul	Coordination of Work	How will stakeholders be engaged in this process moving forward?	RWMWD encourages Cities to reach out to the District if there are project planned near areas identified as part of the Resiliency Study. As part of a separate effort, the District identified areas of flood-risk within each City, and plans to share those maps with member cities. Finally, when the District completes feasibility studies for specific sites, we plan to work collaboratively with the Cities to find solutions.

Comment #	Commenter	Report Reference	Comment	Response to Comment
60	Morgan Dawley and Heather Nelson, City of North St. Paul	DNR Floodplain Mapping	How was the DNR floodplain remapping that is currently underway (scheduled through April 2020) considered in this process?	<p>The floodplain remapping effort that is lead by the MnDNR is based on Existing conditions. None of the system modifications presented in this document are applicable to the DNR's remapping effort.</p> <p>However, the DNR has requested to use the District's stormwater model for remapping areas shown on the floodmaps. Survey information collected by the DNR has been incorporated into the District's model. As-built plans for water bodies shown on the FEMA floodplain have been incorporated in to the Districts model. The District submitted the model, supporting documentation regarding model hydrologic parameters, hydraulic parameters, and model calibration and validation results to the MnDNR. The MnDNR is currently reviewing the submittal and anticipates providing comments later this year. (The DNR extended the anticipated schedule for the remapping effort through the spring of 2021)</p>
61	Wes Saunders-Pierce, City of St. Paul	General	Thank you for seeking stakeholder input on the Beltline Resiliency study. The review meeting on January 17, 2020 was very informative. The breadth of the 2019 draft study is considerable and reflects the importance and complexity involved to increase system resiliency against flooding.	Thank you.
62	Wes Saunders-Pierce, City of St. Paul	Coordination of Work	The City developed a Climate Action & Resilience Plan which was adopted by the City Council in December 2019. We look forward to conversations with how RWMWD activities towards advancing the Beltline Resiliency study over the coming years can mutually support our respective goals.	Thank you for your comment. RWMWD looks forward to working with the City of St. Paul on these efforts in the future.
63	Wes Saunders-Pierce, City of St. Paul	Coordination of Work	In particular we are optimistic about the District' Ames Lake, Hayden Heights Recreation Center, and Prosperity Park/Prosperity Heights Park. Staff proposal for active management of Lake Phalen water levels. Additionally, we recommend engaging with city staff before initiating feasibility studies for strategies involving flood storage on city-managed lands. Key areas in the study include near may have local insight regarding constraints or opportunities that could inform further work.	RWMWD will be sure to involve the City in these efforts, working collaboratively to find solutions.
64	Wes Saunders-Pierce, City of St. Paul	Coordination of Work/Partnering	We appreciate our relationship with your agency and the opportunity to express support for the Beltline Resiliency study. We look forward to partnering with the RWMWD on a variety of initiatives and welcome additional dialogue on potential further work.	Thank you for your comment. RWMWD looks forward to working with the City of St. Paul on these efforts in the future.

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# Administrator's Report

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## MEMO

**TO:** Board of Managers and Staff  
**FROM:** Tina Carstens, Administrator  
**SUBJECT:** June Administrator's Report  
**DATE:** May 28, 2020

### A. Meetings Attended

Tuesday, May 5	10:00 AM	COVID-19 call with BWSR
	11:30 AM	Watershed Based Implementation Funding
Wednesday, May 6	10:00 AM	East Miss Watershed District Group
Thursday, May 7	10:00 AM	MPCA Monitoring Meeting
Monday, May 11	ALL WEEK	New Staff Onboarding with Lauren
Thursday, May 14	2:00 PM	Snail Lake Permitting
Monday, May 18	8:30 AM	VLAWMO new administrator meeting
Wednesday, May 20	11:30 AM	Lake Level website training
Thursday, May 21	10:00 AM	Water Resources Conference meeting
	1:30 PM	Meet with Ramsey County Parks
Wednesday, May 27	10:00 AM	Meet with Ram Co Parks and Commissioner
Thursday, May 28	8:00 AM	Water Resources Conference meeting
Friday, May 29	9:00 AM	North and East Metro Groundwater Area

### B. Upcoming Meetings and Dates

July Board Meeting	July 1, 2020
August Board Meeting	August 5, 2020

### C. COVID-19 District Update

Since the last meeting Governor Walz lifted the Stay at Home order and replaced it with the Stay Safe MN order. This started to change what businesses could open their business again. The Stay Safe MN order still asks all that can continue to work from home to do so. I have directed our staff to continue to do our work the way we have been operating. That means that most staff are still working from home as much as they can. The staff that were working in the field will continue to do so. I am completing a *Back to the Office* plan that includes phases of getting staff back into the office as well as safety protocols that have been and will continue to be in place. I will share that when completed.

**D. Future Board Meetings and Workshops**

Many metro area watersheds and other local governments are declaring that no public meetings will be held in person for at least the next 3 months. I would like to recommend that we continue to hold our board meetings via Zoom through our August meeting and then reevaluate. The board should discuss this decision as well as whether or not we should schedule board workshops via zoom as well. There are a few topics that we have discussed having a board workshop for. Of course, the wetlands special meeting had been cancelled. But more time imperative workshops include discussing the Watershed Management Plan update and the results of the various Beltline Resiliency Study feasibility studies. The plan update workshop was penciled in for the end of June while the feasibility study meeting could be done at the end of July. Would you like to proceed with scheduling those meetings via Zoom as well? Or would you like to include the discussion at a board meeting? Or would you like to postpone those discussions until we can meet in person?

**E. Ramsey County Public Meeting Update**

As you may recall, Ramsey County Commissioner Frethem had organized a public meeting to discuss flood concerns in the Grass Lake/Snail Lake area for mid-March. Unfortunately, that meeting was postponed due to COVID-19. The meeting has now been rescheduled to be a virtual event and will be held on Tuesday, June 9, 2020 from 5:00 pm – 7:00 pm. Three watersheds, two cities as well as the county parks and public works department will be presenting. I will be presenting for RWMWD and Brandon Barnes from Barr will also be involved in the meeting. Commissioner Frethem is also working through a way to allow for a Q&A session at this virtual event. I will forward the meeting invite to you as I receive it.

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# Project and Program Status Reports

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## Memorandum

**To:** Board of Managers and Staff  
**From:** Tina Carstens and Brad Lindaman  
**Subject:** Project and Program Status Report – June 2020  
**Date:** May 29, 2020

### Project feasibility studies

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#### **Beltline resiliency and Phalen chain water level management study (Barr project manager: Brandon Barnes; RWMWD project manager: Tina Carstens)**

*The purpose of this study is to evaluate system-level flood damage reduction options, including real-time mechanical alteration of Lake Phalen and Keller Lake channel outlet structures, as well as other critical system infrastructure, to actively manage stormwater runoff from flood-prone areas tributary to the Beltline storm sewer in an effort to reduce flood levels that would otherwise impact homes. The evaluation will use the RWMWD stormwater model to simulate system-level modifications to evaluate how adjustments to outlet structures during a flood event may be able to optimize the existing system's performance to reduce flooding impacts to homes adjacent to RWMWD-managed water bodies.*

#### **2020 feasibility studies stemming from the Beltline resiliency study**

- **Owasso Basin bypass pipeline feasibility study (Barr project manager: Matt Metzger; RWMWD project manager: Tina Carstens)**
- **Willow Creek flood-damage-reduction feasibility study (Barr project managers: Leslie DellAngelo; RWMWD project manager: Tina Carstens)**
- **Ames Lake flood-damage-reduction feasibility study (Barr project managers: Leslie DellAngelo; RWMWD project manager: Tina Carstens)**
- **West Vadnais to South I-694 conveyance feasibility study (Barr project manager: Sam Redinger, RWMWD project manager: Tina Carstens)**

This period, Barr reached out to the cities in each study area about contacting homeowners in the survey areas, as well as to request information needed for each feasibility study. Available soil boring information, existing utility information, parcel data, and elevation contours are being gathered for each project's potential alignment alternative. The surveys were initially delayed as a result of the COVID-19 pandemic, but we are exploring ways to complete the surveys safely. Work this period on the West Vadnais to South I-694 conveyance feasibility study is described in greater detail below.

#### **West Vadnais to South I-694 conveyance feasibility study (Barr project manager: Sam Redinger; RWMWD project manager: Tina Carstens)**

*The purpose of this study is to evaluate the feasibility of constructing a larger discharge pipeline that could be used to draw down West Vadnais Lake when conditions allow and/or when downstream improvements are implemented. The goal is to establish the normal water level of the system at*



*elevation 881.0 and the 100-year flood level at elevation 884.0 without increasing flood levels downstream.*

Barr has been able to make up some of the lost time due to the COVID-19 pandemic; however, due to the expanded scope associated with the evaluation of opportunistic pumping scenarios, approximately three more weeks are needed.

This period, Barr evaluated utility conflicts along the proposed alignment and developed preliminary design drawings. We are coordinating with utility owners on “major” conflicts (e.g., British Petroleum (BP) gas main) to define protection or mitigation requirements. We are also drafting an outline of construction costs and compiling reference cost data. And, Barr is currently coordinating with the permitting entities to understand permitting requirements, completing the cost estimates and drafting the report to summarize the study. A draft report and presentation of findings are expected at the July board meeting.

### ***Update on pumping scenarios***

In advance of changes to the Phalen Chain of Lakes’ control structures and other potential piped changes evaluated as described in the West Vadnais Lake conveyance south of Highway 694 feasibility study scope, the board asked Barr and the RWMWD to consider opportunistic pumping as a way to help lower West Vadnais Lake and Grass Lake levels in order to better prepare for large runoff events.

In response to this request, and as a part of the feasibility study, we have evaluated a number of pumping scenarios: evaluating their effectiveness during precipitation conditions experienced between 2014 and 2019, including the following:

1. 4 cfs continuous pumping all year (keeping the existing 15-inch outlet flowing full at all times unless West Vadnais Lake is at or below 881.0).
2. 6 cfs pumping through the bypass system (this is the max flow rate possible through the HDPE pipe that RWMWD purchased for the emergency bypass system) from November 1 to March 1.
3. Combination of (1) and (2)

Consistent with the board’s decision last month, no rise in the flood levels in Gervais Lake due to the pumping would be acceptable. This condition limits the duration and flow rates across the time evaluation period where pumping can occur. Staff will provide results and more detailed information on the upstream benefits of these pumping scenarios at the July meeting to help the board decide the feasibility of opportunistic pumping.

Next period, we will expand our evaluation to include higher flow rates (pumped or gravity flow through pipes) that assume increased downstream capacity is available as a result of other projects being implemented. The feasibility study efforts associated with those projects is currently underway.

As described last month, all scenarios assume that pumping or drawdown would stop when West Vadnais Lake reaches 881.0 (a gravity pipe would not have an elevation lower than 881.0).

These scenarios will be considered both with and without seasonal drawdown of the lake. Our aim in these evaluations is to provide ways to stop the cycle of water building up in the Grass Lake/West Vadnais Lake system with no way to draw down year to year.

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## Water quality monitoring and other district project monitoring

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### **Automated lake-monitoring systems (Barr project manager: Chris Bonick; RWMWD project manager: Eric Korte)**

*The purpose of this project is to install an automated system to monitor lake levels throughout the RWMWD and allow real-time transfer of data to the RWMWD's website for public consumption.*

Xcel Energy and Killmer Electric Co. are continuing installation of power and an electric meter at Owasso Lake. Meanwhile, Barr has been preparing to install monitoring equipment, including programming, bench testing, and mobilization, as soon as Xcel and Killmer are finished.

Barr has completed setup of an online webpage through which real-time and past data can be viewed. Currently, data can be viewed for all four completed lake-level stations (Wabasso, Snail, West Vadnais, and Phalen). Additionally, alarms have been programmed into the system, which will send messages to the RWMWD and Barr to warn when a lake reaches a critical level. At this time, the webpage is accessible to select RWMWD and Barr staff only. Access will be given to others in the near future, including public access through the RWMWD's website.

During June, Barr will begin siting, ordering equipment, and planning installation of the Twin Lake water-level monitoring station. This work was recently added to the scope in anticipation of the new outlet installation and associated operating plan.

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## Capital improvements

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### **Wakefield Park/Frost Avenue stormwater project (Barr project manager: Michelle Kimble; RWMWD project manager: Paige Ahlborg)**

*The purpose of this project is to work with the City of Maplewood and its consultants to implement a site plan that integrates stormwater management features with associated educational elements for the northern portion of Wakefield Park.*

Final restoration of the basins is finished. The weir modification was finalized after the City of Maplewood cleaned out the grit chamber. A final walkthrough will be completed soon.

### **Targeted retrofit projects (Barr project manager: Matt Kumka; RWMWD project manager: Paige Ahlborg)**

*The purpose of this project is to design, provide bid assistance for, and oversee construction of BMP retrofits on previously identified commercial, school, and faith-based properties throughout the RWMWD.*

As described last period, follow-up inspections for the 2019 BMPs constructed at Redeemer Lutheran Church in White Bear Lake and Cornerstone Montessori School in Saint Paul noted some winter damage and small design updates that need to occur this spring. Contracting for the Boys and Girls Club Eastside is concluding, and Outdoor Lab Landscape will begin construction on the permeable pavement system soon.

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**Kohlman permeable weir test system (Barr project manager: Keith Pilgrim; RWMWD project manager: Bill Bartodziej)**

*The objective of this current investigation is to develop one or more conceptual designs that will fit within the footprint of the existing Kohlman Basin permeable weir. The revised design should provide filtration capacity and remove solids and phosphorus.*

Conceptual designs are currently being developed. Next steps include sizing, expected load reductions, and floodplain and maintenance considerations.

**Aldrich Arena soils and plantings (Barr project manager: Matt Metzger; RWMWD project manager: Paige Ahlborg)**

*The purpose of this project is to incorporate green-infrastructure stormwater management into the Aldrich Arena campus renovations. The parking lot will be full-depth reclaimed by Ramsey County, which itself would not trigger the need for a RWMWD permit. The partnership between the RWMWD and Ramsey County will achieve treatment of runoff from the parking lots where none currently exists. A formalized joint-powers agreement outlining the partnership cost sharing, roles, and responsibilities was crafted between the RWMWD and Ramsey County.*

The majority of rain-garden grading, repair, and reconstruction was completed in 2019. Plantings are being installed in 2020. Final record documentation, punch-list development, and vegetation establishment are ongoing. The RWMWD's portion of the project is expected to be complete this summer.

**Keller channel weir and Phalen outlet resiliency modifications (Barr project manager: Greg Nelson; RWMWD project manager: Tina Carstens)**

*This project includes the design, bid document development, bidding, permitting, and project procurement of the modifications to the Keller channel structure and the Phalen outlet structure. The purpose is to implement a design that would allow the RWMWD to remotely adjust the weir heights on the Keller channel structure and the Phalen outlet structure in accordance with an approved operating plan. The operation of the structures under certain conditions will help reduce upstream flood levels where homes exist in the floodplain.*

This period, Barr continued to analyze the hydraulic parameters that informed the modification of the existing outlet structures and helped select the appropriate gates. Development of preliminary design and draft construction drawings and specifications is underway. In addition, an environmental review process has begun to better understand the permitting issues associated with operating the gates, once constructed, as well the permits required to complete modifications. We expect these efforts to continue throughout the summer.

**Lowering of West Vadnais Lake outlet (Barr project manager: Erin Anderson Wenz; RWMWD project manager: Tina Carstens)**

*The purpose of this project is to provide final plans and specifications and permitting required to lower the 15-inch outlet of West Vadnais Lake to an inlet elevation of 881.0.*

All permits for this project have now been granted. The district's contractor (Fitzgerald Excavating and Trucking, Inc.) will begin lowering the outlet during the first week of June as part of the RWMWD's 2020 CIP. We expect the work to be done before the July board meeting.

**Twin Lake outlet easement acquisition, permitting, and construction plans (Barr project manager: Brandon Barnes; RWMWD project manager: Tina Carstens)**

*The purpose of this project is to design and construct an outlet system and develop an outlet operating plan in accordance with feasibility study recommendations. The outlet and associated operating plan helps reduce flood risk to habitable structures in the Twin Lake watershed in Little Canada and Vadnais Heights.*

In May, Barr prepared an operation plan for the outlet. Following the May meeting, Barr adjusted the operation plan to incorporate managers' feedback about mitigating downstream impacts. The MnDOT permit requires an operation plan that, when implemented, reduces the risk to flood-prone properties downstream due to outflows from the new outlet. The operation plan includes conditions when the gate in the new outlet should be raised to minimize increases in water levels downstream, and presents conditions that may allow the outlet gate to be lowered to allow outflows from the Twin Lake watershed. The operation plan was submitted to MnDOT for review as part of the drainage permit application. The following are the key revisions following the May meeting:

1. The late fall to early spring duration when the outlet would be open is set at November 1 – March 1. (This is consistent with what was presented to the Managers at the May meeting. Prior to the May meeting the dates were November 15 – February 15)
2. The water surface elevation in Twin Lake that would allow the outlet to be opened is set at 872.8. (This is consistent with what was presented to the Managers at the May meeting, and lower than the 873.5 that was included in the plan prior to the May meeting)
3. Typical weir elevation during the summer months is set at 874.7 – or completely shut. (This is the one change that was made to the operation plan to prevent downstream impacts. The plan prior to the May meeting had the weir crest set at 873.5, so water was conveyed out of Twin Lake during a large rain event. It is this discharge that results in downstream impacts.)

Reestablishing the outlet includes obtaining approvals from BP, Xcel Energy, the City of Little Canada, and MnDOT. Barr has submitted permit applications to each entity and has received approvals from BP and the City of Little Canada. Xcel Energy has tentatively approved and is preparing an agreement for work within its easement. We have received comments from MnDOT and submitted responses following the RWMWD's May meeting, and we anticipate approval within the next month.

Barr has completed design and construction documents for the outlet. During the May meeting, managers authorized Barr to advertise the project for bid. The virtual public bid opening is scheduled for May 29, and bid results will be compiled and presented to the managers at the June meeting.

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## CIP project repair and maintenance

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### **CIP maintenance/repairs 2020 project (Barr project manager: Greg Nelson; RWMWD project manager: Dave Vlasin)**

*The purpose of this project is to maintain the existing systems and infrastructure owned and operated by the RWMWD and to assist and facilitate stormwater pond cleanouts to allow other public entities to meet their municipal separate storm-sewer system (MS4) requirements.*

As mentioned above, Fitzgerald Excavating & Trucking, Inc. has completed work on all sites associated with the original project. In addition, Fitzgerald was asked to lower the storm sewer outlet at West Vadnais Lake; that work is expected to begin in early June, with substantial completion by June 26 and final completion one week later. If the anticipated work appears that it will continue beyond final completion, a change-order request to extend contract time will be presented at the July meeting.

### **Beltline/Battle Creek tunnel five-year inspection (Barr project manager: Sam Redinger; RWMWD project manager: Dave Vlasin)**

*The purpose of this project is to maintain the existing Beltline and Battle Creek tunnel systems and infrastructure owned and operated by the RWMWD.*

In-pipe inspection of the Beltline tunnel system has been completed, with the exception of the Mississippi River branch. As noted previously, this segment was not fully inspected due to in-pipe conditions; water levels were too high and too fast to safely complete the work. Inspection of this segment has been deferred until base flows provide safer conditions, which is unlikely until winter 2020-2021.

In-pipe fieldwork for Battle Creek has been delayed due to COVID-19 concerns and government recommendations and is unlikely to occur until later this year or possibly even next year. Barr conducted a Battle Creek site visit to identify and locate the access points for a CCTV inspection of RWMWD-owned small-diameter storm sewers that are part of the Battle Creek system. We are developing the scope and coordinating with a CCTV subcontractor to safely complete this work.

The unexpected schedule delays have resulted in a large portion of field data being unattainable until later in 2020 and/or 2021. In the interim, Barr will continue to compile and analyze obtained field data to provide a summary memorandum of initial findings. The purpose of this new deliverable is to summarize the inspection(s) and their preliminary findings to identify any concerns within the Beltline system that should be addressed as part of a near-term CIP. The RWMWD can expect a draft memorandum in June 2020 to inform the 2021 budget planning process. A comprehensive report will be provided as soon as feasible and is contingent on safely collecting the remaining field data.

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## Lake studies

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### **Internal load management discussions (Barr project manager: Keith Pilgrim; RWMWD project manager: Bill Bartodziej)**

*The primary objective this study is to develop an overall assessment of a number of at-risk or total maximum daily load (TMDL) lakes with respect to the magnitude of internal phosphorus loads, benefits of controlling internal loads, and potential internal-load mitigation approaches.*

Barr and RWMWD staff have begun organizing and analyzing available lake-monitoring data. Sediment coring of several lakes will be completed in the near future.

**Wakefield Lake internal loading study (Barr project manager: Keith Pilgrim; RWMWD project manager: Bill Bartodziej)**

*The primary objective of this study is to determine the effect of curly-leaf pondweed on overall lake water quality and determine the potential water quality benefit of managing curly-leaf pondweed and internal loading.*

A shallow lake model, developed for Kohlman Lake, will be used to better understand the dynamics between aquatic plants and internal loading in Wakefield Lake. This will be used to guide plant management efforts in Wakefield Lake. Barr has started organizing and analyzing available lake-monitoring data and assisting RWMWD staff with planning aquatic-plant surveys and analysis.

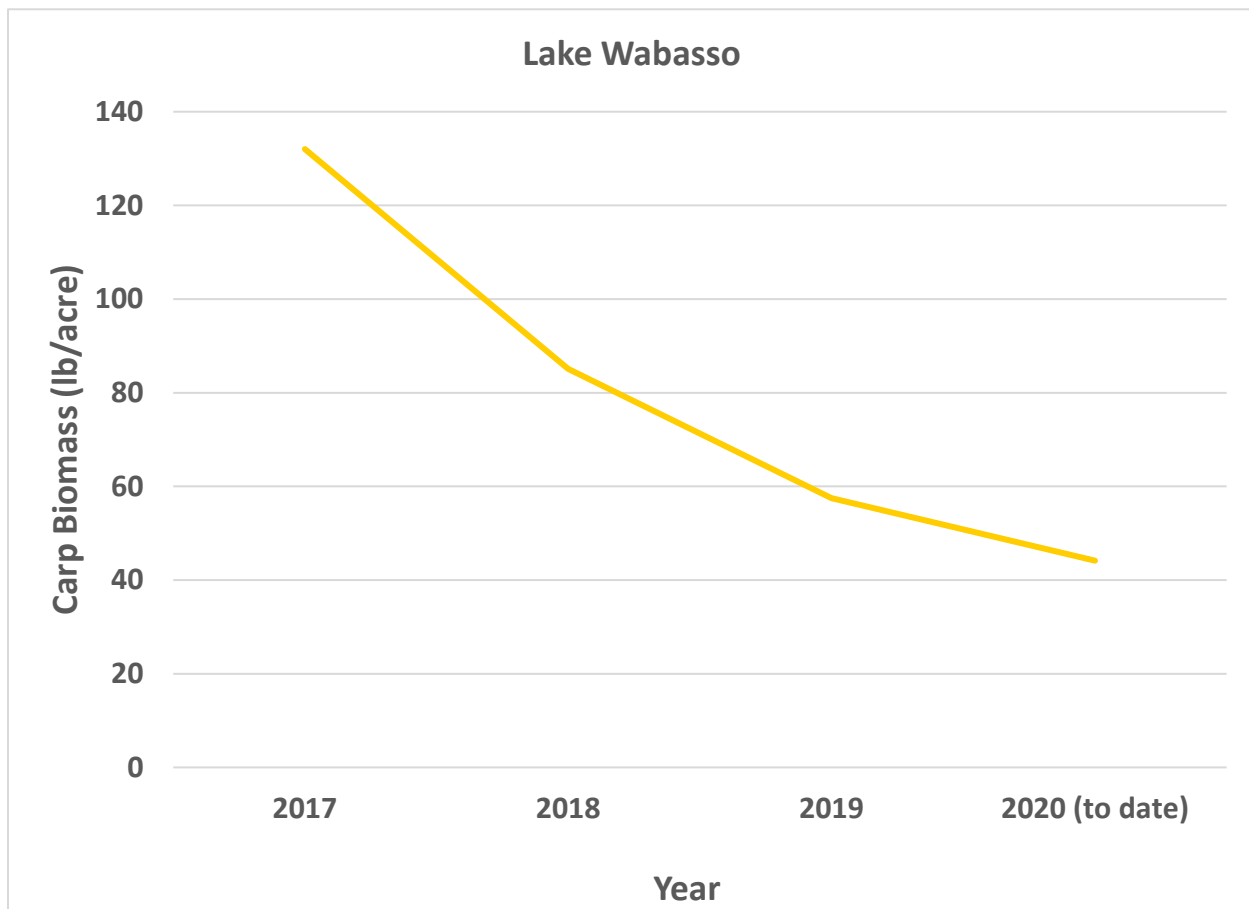
## **Natural Resources Program Update – Bill Bartodziej and Simba Blood**

### **Lake Wabasso – Carp Management Update**

- Over the last few weeks, there have been waves of carp moving out of Lake Wabasso and into the channel that leads to Grass Lake.
- The PVC carp barrier located in the channel has been a very effective tool in holding back carp from migrating into Grass Lake. It also provides an excellent opportunity to net and remove carp.
- Watershed and Carp Solutions staff, and local residents have removed 198 adult carp from this barrier location so far this year.
- Another barrier at the inlet of Wabasso has been effective at limiting carp migrating from Lake Owasso. Carp are just starting to move out of Owasso. We will report numbers next month.
- These barriers, and summer baited box netting over the last two years have worked to significantly reduce the adult carp biomass in Lake Wabasso.
- Levels have declined from 132 lb/acre to 44 lb/acre (current estimate). The threshold where substantial water quality impacts take place is around 100 lb/acre.
- Further netting at the barriers will work to bring the carp biomass down even further this year.
- Baited box nets will not be deployed this summer in Lake Wabasso due to the lower carp biomass. We see diminishing returns at these low levels.

- Resources are being allocated to determine solid carp population estimates in Grass and West Vadnais Lakes, and maintaining and removing carp at a series of barriers throughout the Owasso Chain of Lakes.
- Below is a summary chart and graph showing significant carp reduction in Lake Wabasso:

Year	Number of carp removed	Population Estimate	Ind. Carp weight (lb)	Carp - total mass (lb)	Carp Biomass (lb/acre)
2017	0	1,959	3.1	6073	132
2018	696	1,263	3.1	3915	85
2019	410	853	3.1	2644	57
2020 (to date)	198	655	3.1	2031	44



## Public Involvement and Education Program – Sage Passi

This spring we had the goal of involving up to seventeen school classes in the continued restoration in Vadnais Snail Lake Regional Park. Unfortunately, due to Covid 19, those plans had to be put aside. But thankfully this month, Master Water Stewards have helped us perform some important efforts in this project and get some other projects moving in the right direction! We are very appreciative of the people who have been willing to volunteer in ways that we can still get our work done safely and make progress.

Bobbie Scott, on the left and Stuart Knappmiller, on the right, transplant native seedlings to fill in gaps in the restoration on the east side of Wetland A in Vadnais Snail Lake Regional Park on May 27. Species planted include prairie smoke, little bluestem, prairie phlox, butterfly milkweed, little bluestem, sky blue aster, bergamot and others.



Below left (Chris Kuntz and Hassan) assist with the transplanting at Wetland A. Below right: In the foreground last year's plants are coming in robustly with interspersed plantings of other native plants added by volunteers.





## Master Water Stewards move their capstones forward in May



As a part of Lee Bauer's Master Water Steward capstone project, the cattails along the Bauer's shoreline on Willow Pond in Roseville will be removed and replaced with native plants to slow erosion and provide better habitat. The Bauers are also replacing areas of their lawn with a bee lawn and other native vegetation. Lee, already versed in gardening with native plants is working with a Master Gardener and designer for Metro Blooms, Jennifer Moeller to customize a planting plan for the lawn areas to be redesigned for her yard. The bee lawn areas will be quite visible from the street. Jennifer has been a longtime volunteer for RWMWD and meets every other Saturday on Zoom with Sage and this Roseville Master Water Steward team to do planning and check-ins on their projects.

Lee and Paul Bauer have wanted to restore their shoreline property next to Willow Pond in Roseville for many years. They have also been meeting for a long time with a group of residents who live on Willow Pond and nearby who want to improve the pond's water quality, plant life and protect the wildlife that frequent this oasis. They were considering this shoreline project five years ago along with a potential rain garden when two Master Water Stewards, Linda Neilson and Hallie Finucane approached them about making the rain garden project their capstone project. A gas line running through their boulevard nixed that plan, but the project has returned to the table. Lee and Paul applied for a stewardship grant from RWMWD in May to create the native buffer, add more native plantings to their yard and remove large turf areas and replace them with bee lawn. The rain garden will again be considered in a phase two part of their on-going project that they hope will be an inspiration for their neighborhood.

Lee and her husband, Paul along with her Master Water Stewards teammate, Phil Gel have been doing intensive outreach and coordination with their neighbors around the pond and encouraging them to take on small ecological watershed friendly projects. Other neighbors have been gradually replacing shoreline with native species. Lee and Phil and other neighbors have taken on the goal of getting people around the pond and adjacent streets to adopt their storm drains. In early May we supplied one of their neighbors on the pond with door hangers to promote the Adopt-A-Drain program. We have invited this community to attend an upcoming webinar, Resilient Yards sponsored by Blue Thumb, RWMWD and

Rice Creek Watershed District on June 11 to take the place of the live workshop we had originally planned for the neighborhood on April 29.

Phil and Samantha, two other Master Water Stewards on this team have been working through the design process for the distribution of neighborhood signs to encourage more use of native plants, rain gardens and the adoption of storm drains. We hope to have finalized prototypes in the near future.

On another front we have had support from Master Water Stewards in the spring maintenance of our schoolyard projects. Thank you to Master Water Stewards Michelle Natarajan and Chris Kunz and her husband Hassan for helping us do the work to maintain Farnsworth's native plantings in the rear of the school. This school site has been a source of a lot of education for students, plant study and seed collection for many years. We'll be scheduling this volunteer engagement at several other school demonstration gardens in the near future. Here are a couple photos shot at Farnsworth when these dedicated volunteers cut back this past year's growth and tackled the invasive plants that as they say, "go with the territory" of native plantings.

